



***SPITFIRE***  
***BRAVE 2***

manual



**Dear SWING customer,**

You have just purchased a sophisticated product. We place great importance on our workmanship and the high quality of the materials used.

If you have any questions which are not answered in this manual, please do not hesitate to contact us directly (Tel: +49 81 41 32 77 888 - info@swing.de), or your Swing dealer.

**The Swing Team.**

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# 1. Disclaimer and exclusion of liability

## **Exemption from liability, waiver of claims, assumption of risk**

You agree that, before using the Swing speed rider for the first time, you have read and understood the manual in its entirety, including all instructions and warnings which are contained herein.

Furthermore, you agree to ensure that, before you allow any other person to use your Swing speed rider, this additional or subsequent user has read and understood the Swing speed rider manual in its entirety, including all instructions and warnings which are contained.

## **Assumption of risk**

Use of the Swing speed rider and of its component parts involves certain risks of personal injury or death for the user of the product and for third parties.

By using the Swing speed rider, you agree to assume and accept any and all known and unknown, and likely and unlikely risks of injury.

The risks associated with the practice of this sport can be reduced, to the extent of the care required in a particular case, by observing the warnings contained in this manual.

The risks inherent in this sport can be reduced to a large extent by observing the warning guidelines contained in this manual and by using common sense.

## **Exclusion of liability, waiver of claims**

By making a purchase of the Swing speed rider, you agree to the following points, to the extent permitted by law:

### **to waive any and all claims however they arise,**

from use of the Swing speed rider and any of its components, which you have or may in the future have against Swing Flugsportgeräte GmbH and any other parties.

### **to release**

Swing Flugsportgeräte GmbH and any other parties from any and all claims for loss, damage, injury or expense that you, your next of kin or relations or any other user of your Swing speed rider may suffer as a result of use of the Swing speed rider, including liability arising under law and contract on the part of Swing Flugsportgeräte GmbH and any other parties in the design and manufacture of the Swing speed rider and any of its components.

In the event of death or disability, all of the provisions contained herein shall be effective and binding upon the user's heirs, next of kin and relatives, executors, administrators, assigns and legal representatives. Swing Flugsportgeräte GmbH and all other parties have not made any oral or written representations and expressly deny having done so, with the exception of what is set out herein and in the Swing speed rider manual.

## 2. 10 safety rules

- **The greatest risk in Speedflying and Speedriding is their simplicity. This can cause users to be tempted into forgetting or ignoring risks. Exercise particular care if it starts to feel too “normal”.**
- **Assess objective risks**
  - WEATHER:** Never fly if there is a föhn wind, storm or cold front. Your speed rider may offer maximum safety, but the risks caused by extreme turbulence are unpredictable.
  - AVALANCHE:** In unstable areas, make sure you have the appropriate skills/training and equipment (avalanche transceiver, snow shovel etc)
- **Inspect your equipment**

Inspect your equipment thoroughly prior to each launch, and do not launch if you discover any damage. Adjust your equipment according to the conditions – we recommend that you have a reserve chute for bigger slope distances.
- **Assess your own well-being – never fly if you are unwell,** whether you are physically unwell or have other concerns. Take a rest day - the mountains will always be there.
- **WHAT IF? - Plan B** Do not make any impulsive decisions. Take time to analyse the situation. Always make a plan B (e.g. choice of route, emergency landing areas etc).
- **ALWAYS CARRY OUT A “safety run”.** Reconnoitre a new route by making a flight with sufficient height. Be on the look-out for potential obstacles. Ensure when flying near ground level that no third parties will be injured..
- **FOOT LAUNCH = INCREASED RISIK.** Please bear in mind that the Spitfire was designed for flying on skis.
- **Do not be afraid to speak out** if you feel that others are overestimating their abilities. **Likewise, accept comments from others,** even if it is unpleasant to acknowledge mistakes.
- **ANALYSE YOUR MISTAKES.** Analyse any near-accidents as if they had been actual accidents and learn the necessary lessons. Avoid a repetition, because next time it could be too late.
- **NO RISK – NO FUN, NO LIMIT – NO LIFE.**

**Respect your limits and do not go beyond them just because you are with more experienced pilots. Have the courage to say “enough”!**

### **3. WARNING!**

#### **SPEEDRIDING IS DANGEROUS**

**This speed rider is an item of sporting equipment and NOT a piece of aviation equipment and therefore it does not have aviation certification.**

**For this reason, Swing Flugsportgeräte GmbH expressly states that it accepts no liability for its use.**

- 1) Extreme care is called for when using the equipment.**
- 2) This product should only be used by people who are in good physical condition.**
- 3) The product must at no time be used in a manner which is careless, frivolous or negligent.**
- 4) Users are responsible for their own safety and there must be no danger to third parties.**
- 5) The user alone takes full responsibility for any injury which might arise as a result of use of this product.**
- 6) The instruction manual must be read carefully before first use.**
- 7) The laws applying to use of this product in the relevant country must be observed.**

### **4. Use of the Swing Spitfire**

- The instruction manual must be read carefully before first use and passed on to any other user or subsequent owner.
- The Swing Spitfire is not suitable for foot-launch. We recommend that it be used only in combination with skis.
- The Swing Spitfire should only be used as a speed rider. Do not under any circumstances use it as a parachute.
- The product must never be used carelessly or negligently.
- Extreme care is required when using the product.
- This product should only be used by people who are in good physical condition.
- Use of the product is at your own risk. The manufacturer is not liable for any personal injury or material damage which should occur in connection with Swing speed riders. There must be no danger caused to third parties.
- Do not under any circumstances alter the construction of the Swing Spitfire. If you do, any claims under the warranty will not be accepted and the type certification will lapse.
- Familiarise yourself with the Swing Spitfire on training slopes before first use.
- The laws applying to use of this product in the relevant country must be observed.
- If you do not already hold a paraglider or parachute licence, we recommend that you carry out appropriate training and then move on to the speed rider.

This manual contains additional information in various places concerning your safety. This information is indicated by two symbols:



### Caution!

This symbol indicates a risk which may arise. If possible, we also explain how to avoid the risk or how you should react if the situation arises.

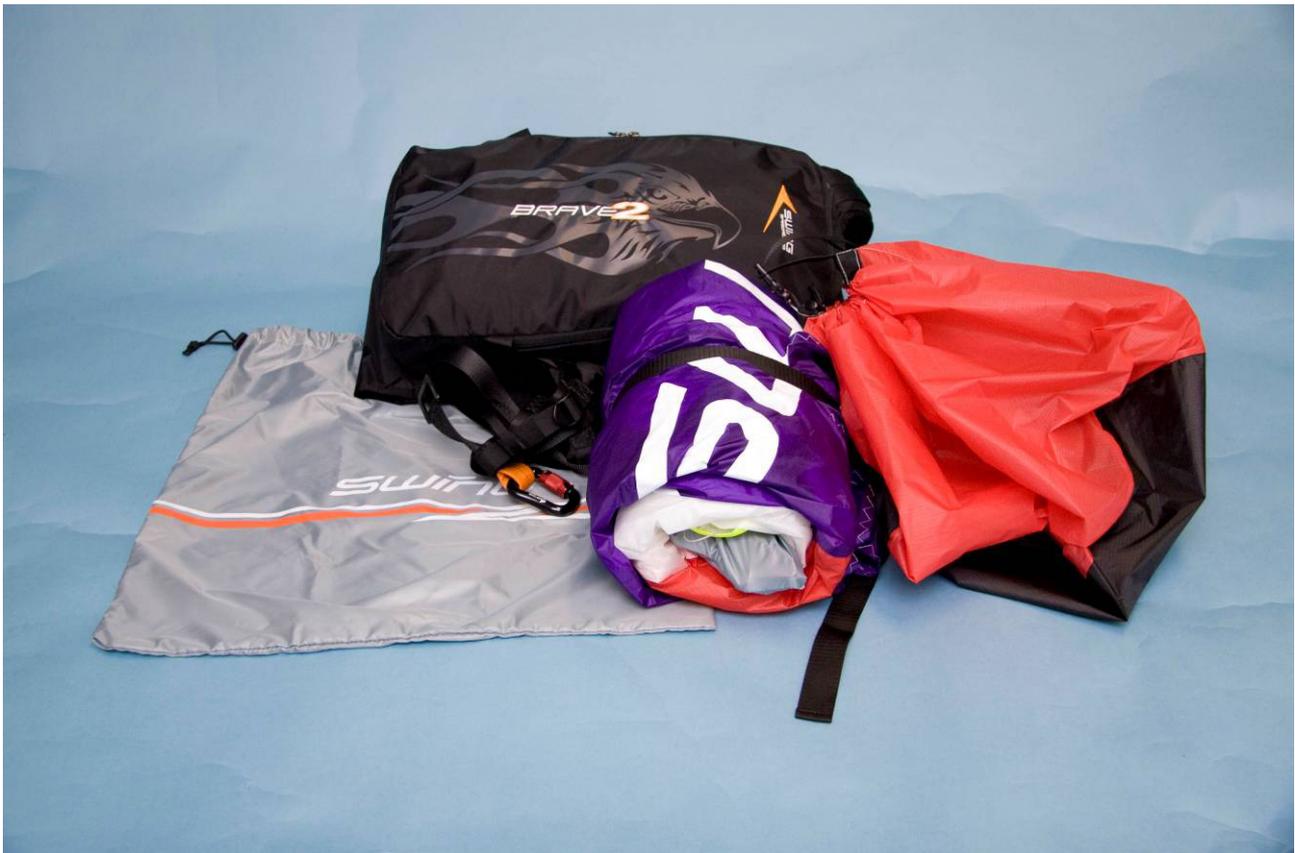


### Tip!

This symbol is used when we give advice on correct use of the speed rider.

## 5. Your Swing Spitfire and Brave II

### What is delivered with the Swing Spitfire?



**Fig. 1: Items included in delivery (incl. optional harness)**

- 1) Swing "Spitfire" speed rider
- 2) "Brave II" harness (optional)
- 3) Speed bag
- 4) Inner bag
- 5) Manual
- 6) Spare main lines

## What does the Swing Spitfire look like?



**Fig. 2: Swing Spitfire in action**

## Manufacture of the Swing Spitfire

Your Swing Spitfire was manufactured in Swing's production facility using the latest machines and manufacturing techniques.

A thorough quality control is carried out after every stage in manufacture.

The quality control of course includes inspection of the materials used as well.

This allows us to all but exclude the possibility of any material defects and to trace the exact origin of all materials used.

## Development objectives

Our development team had the following objectives in developing and testing the Swing Spitfire:

- balanced and safe launch behaviour in every situation
- the greatest possible glide ratio window
- no unwanted roll and no pumping of the canopy
- the greatest possible collapse stability (e.g. in hard "touch & go's")
- pronounced and easily controllable "dive" on releasing the brakes
- high level of brake effectiveness with long control travel
- optimal conversion of energy from altitude (e.g. in case of obstacles)

## Tests

In addition to the extensive flight tests, the strength of the Swing Spitfire has also been tested under DIN EN 926-1.

The results are at [www.swing.de](http://www.swing.de).

### Spitfire technical data

Size	7	9	11	13	15
Certification	EN926-1				
Level	Professional	Expert	Advanced	Beginner	Beginner
No. of cells	17	17	17	17	17
Area flat (m <sup>2</sup> )	7.0	9.0	11.0	13.0	15.0
Area projected (m <sup>2</sup> )	6.31	8.08	9.86	11.64	13.43
Span flat (m)	4.69	5.33	5.89	6.42	6.89
Span projected (m)	3.99	4.52	4.99	5.43	5.83
Aspect ratio	3.16	3.16	3.16	3.16	3.16
Aspect ratio projected	2.53	2.53	2.53	2.53	2.53

What does the Brave II harness look like?



Fig. 3: Brave II

## Using the Spitfire with other harnesses

The Swing Spitfire can also be used with any other Speedriding harness.

However, some features of the Swing Spitfire are specially designed for use with the Brave II and are not able to be used with other harnesses.

## 6. Before first launch

### Familiarise yourself with your equipment!

#### Adjusting the brakes

The brakes of the Swing Spitfire have been adjusted by the manufacturer in such a way that the brake handles can be held as shown in the photo. In this way, they are ideally adjusted for the Swing Spitfire. A strip of plastic is delivered with the brake handle. It can be fitted as shown in the photo to later the stiffness of the toggle. For safety reasons, in general we recommend that you loop your hands through the brake handle.



**Fig. 4: Recommendation: hand looped through the brake handle**



**Fig. 5: How to alter the stiffness of the loop using the strip of plastic**

### **Risers and trimmer**

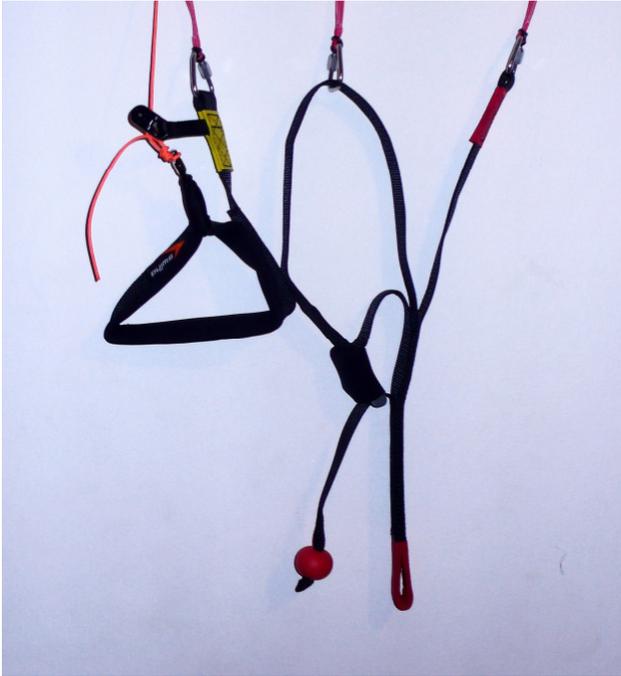
The riser of the speed rider is designed in such a way that it can be used while wearing gloves.

Your Swing Spitfire is fitted with trimmers. Even if the trim range seems short, it has a great impact on the “dive & speed” of your Swing Spitfire.

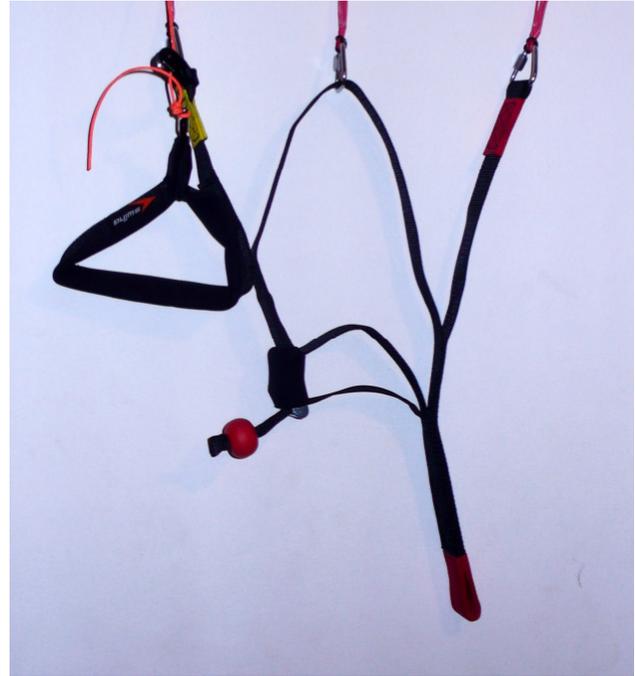
Keep the trimmer on the Swing Spitfire closed for your first flights (zero position) and familiarise yourself with that.

The trimmer allows the best glide when closed, e.g. to fly to the next snow field or to glide away from territory which is not suitable for speedriding.

Open the trimmers to ‘ride’, when there is a lot of wind, to use the ‘dive’ or to lose height.



**Fig. 6: Trimmer closed**



**Fig. 7: Trimmer open**

Gradually move towards opening the trimmers completely. The “speed & dive” increase greatly when the trimmers are open. After you have familiarised yourself with the Swing Spitfire with the trimmers closed, you should move slowly and gradually towards using the complete trim range, as ‘dive’ in particular increases greatly, so the glide angle decreases.



**Caution!**

You should never fly with the trimmer completely open in turbulent weather!!!

**Basic rule:**

Trimmer closed (**Fig. 6**), normal flight

Trimmer open (**Fig. 7**), more “speed & dive”(descent with open brakes)

**The Brave II convertible harness**

The Brave II is one of the latest generation of convertible harnesses and specifically designed for Speedriding.

The harness was designed primarily for use with the Swing Spitfire, and in its design importance was placed on ease of use, a high level of comfort and safety.

In just a few steps you can turn the backpack into a harness and vice versa.



**Fig. 8: Backpack**



**Fig. 9: Take the harness out of the backpack**

**Fig. 10: Turn the backpack inside out**



**Fig. 11: Harness**

Various adjustment options allow the Brave II to be altered according to the particular size of the pilot.

Each pilot should make his/her **own adjustments** before using the harness for the first time, to make it as comfortable as possible.

There are various ways in which the Brave II can be adjusted for your size.

The Brave II can be adjusted to suit your height using the **shoulder straps (Fig. 12)**.

Using the **chest strap (Fig. 13)** you can adjust the Brave II, firstly, according to your height and, secondly, the length of the chest strap is also relevant to using your bodyweight to steer your Swing Spitfire.

The seating position can be adjusted using the **side straps (Fig. 14)**. It is possible to sit in a more upright or a more reclined position.



**Fig. 12:** The shoulder straps can be used to adjust the Brave II to your height



**Fig. 13:** Adjust the chest strap so that it suits you best



**Tip:**

The smaller the distance between the carabiners, the less the speed rider will react to weight-shifting



**Fig. 14: How upright do I want to “ride”**



**Fig. 15: Speed bag pocket**

### **The speed bag**

The speed bag considerably facilitates use of the speed rider and its use is **COMPULSORY** in most speedriding areas.

On launch, simply take the glider out of the speed bag, roll up the speed bag and put it into the side pocket.

After you have finished riding, gather together the Swing Spitfire, take out the speed bag and lay it out open beside the glider. Place the gathered-up glider on the outspread speed bag, put away the glider into the speed bag and close up the speed bag. Hang the speed bag over your shoulder and you can make your way to the lift.

Always check when you are putting away the Swing Spitfire that you have put all of the lines and straps into the speed bag and that nothing is hanging out which could get caught.

After you have finished speedriding for the day, you can also attach the risers to the strap on the speed bag, by feeding the strap through the riser loops.

## 7. First launch

**The 10 Safety Rules above should be second nature!**

### **Conduct at skiing areas:**

Here are a few important rules which must be followed at all times in skiing areas:

- First clarify local conditions, e.g. with the lift operator.
- In general, keep to the side of the slopes when speedriding.
- If there are designated speedriding areas, then use those.
- Pack away your Swing Spitfire into the speed bag before you go back to the ski slope.
- Ensure that you do not get caught up anywhere with the Brave II or speed bag, so that it does not interfere with the lift operation. In developing the Brave II and the speed bag, we have taken care that no unnecessary straps or loops could interfere with the lift or gondola.
- Never put any third parties at risk, especially skiers.

Please observe these rules so that other speed rider pilots can continue to enjoy the areas too.

### **Launch preparations**

- Familiarise yourself with the Swing Spitfire before you launch for the first time by carrying out some practice inflations and trying out some runs on a training slope.
- Your first runs should take place in a straightforward area which is familiar to you

### **Launch**

It is not necessary to hold the A-risers with the Swing Spitfire...

The first few times you launch, make sure that both trimmers of the Swing Spitfire are **closed**

### **Landing**

After you have landed, simply remain attached, take the speed bag out of the side pocket and pack away the gathered-up speed rider so that there are no lines hanging out.

Take the speed bag under your arm and make your way back to the lift.

We refer once again to the rules at the start of this section.

## 8. Storing and looking after the glider

Always transport your Swing Spitfire in the speed bag provided.

Store your speedriding equipment away from UV light in a dry room which is well-ventilated and has a constant temperature. Remove it from the convertible harness backpack and open the speed bag so that air can get in.

Make sure that you do not store the Swing Spitfire while it is wet. It should always be dried out after use, preferably overnight in a room as described above.

If you do need to clean the speed rider, then use only a soft sponge and clear water.

### Important:

- Harsh chemical cleaners, high-pressure cleaners/steamers will destroy the speed rider.
- Clean the speed rider only if it is absolutely necessary.
- Repairs should only be carried out by Swing Flugsportgeräte GmbH or a specialist we recommend.
- Small tears in the wing can be repaired using self-adhesive rip-stop material, provided that they are in places which do not bear heavy loads, are not at the seams and are no bigger than 3 cm.
- Replace damaged lines immediately!!!
- The Spitfire has to be inspected every 100 flight hours or once a year, depending what comes first. If any damaged or worn-out parts need to be replaced, use only original parts from Swing Flugsportgeräte GmbH.

## 9. Internet product information and safety notices

Swing sends any relevant product and safety information by email to all registered customers. If you would like to receive this, please register your name through our website.

Swing generally includes all email addresses provided in warranty cards in its distribution list. If you do not wish your address to be included, please do not give it on the warranty card. Your email address will not be provided to any third parties.

Our website: [www.swing.de](http://www.swing.de)

Visit the Swing Speedflying Team fan-page for discussion and up-to-date information:

<http://www.facebook.com/pages/Swing-Speedflying-Team/150047078156>

One further website:

<http://twitter.com/SSTSpitfire>

We hope you enjoy using your Swing Spitfire & Brave II harness!

**The Swing Team**

## 10. Glider and pilot details

Model:	<i>SPITFIRE</i>
Size:	<input type="checkbox"/> 7 <input type="checkbox"/> 9 <input type="checkbox"/> 11 <input type="checkbox"/> 13 <input type="checkbox"/> 15
Serial number:	_____
Colour:	_____
Date of purchase:	_____

**1. Owner**

First name: \_\_\_\_\_

Surname: \_\_\_\_\_

Street: \_\_\_\_\_

Town/City: \_\_\_\_\_

Country: \_\_\_\_\_

Tel.: \_\_\_\_\_

Email: \_\_\_\_\_

**2. Owner**

First name: \_\_\_\_\_

Surname: \_\_\_\_\_

Street: \_\_\_\_\_

Town/City: \_\_\_\_\_

Country: \_\_\_\_\_

Tel.: \_\_\_\_\_

Email: \_\_\_\_\_

# R I S I K O - K O N Z E P T

RISIKO = SCHADENAUSMASS  $\times$  EINTRETENSWAHRSCHEINLICHKEIT

RISIKO-MINIMIERUNG

REDUZIERTES  
SCHADENAUSMASS

- ⇒ *sichere Ausrüstung*
- ⇒ *adäquates Flugprogramm*
- ⇒ *spez. Fähigkeiten*

## **sichere Ausrüstung:**

- Schirm(-grösse)
- Notschirm
- Schutz-ausrüstung (Helm, Protektoren)
- Ski / Schuhe

## **adäquates Flugprogramm:**

- dem persönlichen Zustand (phys.&psych.) angepasst
- dem Gelände angepasst
- dem Wetter angepasst
- der (Flug-)Gruppe angepasst

## **spezifische Fähigkeiten:**

- Konditionsfaktoren (K,A,S,B)
- Flug-Fähigkeiten (*canopy-control*)
- Skifahrerische Fähigkeiten
- Alpin-Fähigkeiten (Lawinenrettung)



REDUZIERTE  
EINTRETENSWAHR-  
SCHEINLICHKEIT

- ⇒ *gute Planung*
- ⇒ *Erfahrung*
- ⇒ *Lernprozess*



## **gute Planung:**

- Wetter (Wind, Sicht, Niederschlag)
- Schnee (Lawinensituation, Menge, Zustand)
- Gelände (Start-/Landeplatz, Hindernisse)
- Fluggruppe (Erfahrungsstand, Grösse)
- Tagesablauf (Anz. Flüge)
- spez. Flugplanung (Gefahren, Plan-B)

## **Erfahrung:**

- spezifische Fähigkeiten (vgl. oben)
- Anz. Flüge und Dauer (Jahre) von Flugerfahrung
- erlebte kritische Situationen

## **Lernprozess:**

- Analyse von Fehlern
- offener Dialog in Fluggruppe, Club, Verein
- stetige Neubeurteilung der Situation auf Grund von Planung und Erfahrung

RISK CONCEPT

RISK = DEGREE OF HARM X LIKELIHOOD OF OCCURRENCE

RISK-MINIMISATION

=

**REDUCED  
DEGREE OF HARM**

- safe equipment
- appropriate flight programme
- specific skills

**safe equipment:**

- glider (size)
- reserve chute
- safety equipment (helmet, protection)
- skis/shoes

**appropriate flight programme:**

- developed according to your personal condition (physical and mental)
- suitable for the area
- suitable for the weather
- suitable for the (flying) group

**specific skills:**

- condition factors
- flying ability (canopy control)
- skiing ability
- alpine knowledge (avalanche rescue)

X

**REDUCED  
LIKELIHOOD OF OCCURRENCE**

- good planning
- experience
- learning process

**good planning:**

- weather (wind, visibility, rain)
- snow (avalanche situation, amount, condition)
- area (launch/landing place, obstacles)
- flying group (experience, number)
- day's activities (no. of flights)
- specific flight-planning (experience, Pan B)

**experience:**

- specific skills (see above)
- no. of flights and years of experience
- critical situations experienced

**learning process:**

- analysis of mistakes
- open discussion in flying group, club, association
- continual re-assessment of the situation based on planning and experience

