

It's not a question of knowing how-to put-on  
skins, but rather about asking yourself the  
**BASIC QUESTIONS**

# SAFETY BASICS

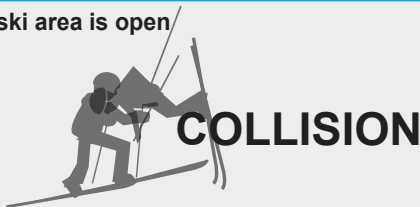
**FOR**  **SKI TOURING**

**I'M A BEGINNER :** ski touring is not like cycling. It is not because I have the equipment and the physical strength that I can go off the beaten track from the start. I should talk to a professional or start by using marked routes.

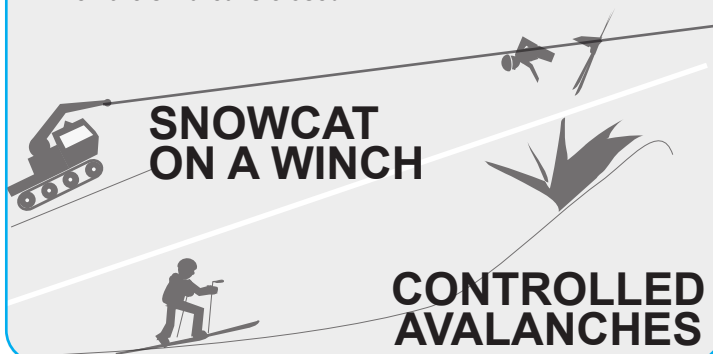
**I'VE SKI TOURED BEFORE :** I am careful to revise all the basic knowledge that I have acquired over a long time (the following 18 pages) and I can also glance at the following pages which can always be useful.

## DANGERS OF SKI TOURING ON THE PISTE:

- When the ski area is open



- When the ski area is closed



The Chamonix-Mont-Blanc Municipal Decree No. 0109928/2020, article 4, prohibits circulating in the opposite direction on open pistes (cross-country skiing, ski touring) for understandable safety reasons!

# BASICS

## SNOWPACK



Made up of different layers that change over time.

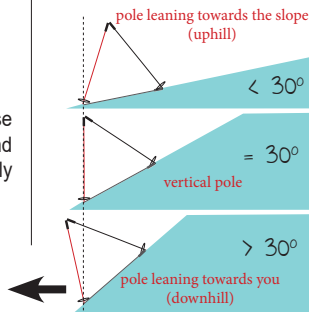


On slopes above  $30^\circ$ , avalanches might release naturally with additional loading (rain, snow, wind accumulation, cornice breaking) or be accidentally triggered by one or more skiers.

## TIP: the pole test

(to see if the slope is steeper than  $30^\circ$ )

Make a vertical line in the snow with your pole. Place a pole at either end of the line. Join the 2 handles together.



**TIP:** download an inclinometer app onto your smartphone so you can determine the steepness of the slope.

## 3 types of avalanche



**New snow**  
(powder/during snowfall)



**Slab**  
(most common and most dangerous)



**Wet snow**  
(warmer temps or rain)

- Sudden changes of temperature and wind can have an immediate effect on the stability of the snowpack.

- The stability of the snowpack and the avalanche risk is greatly dependent on the weather of the past week/days/hours.

## HOT TIP

WIND – RAIN / SNOW?

RECENT AVALANCHE ACTIVITY?

TEMPERATURE INCREASE?

# BASICS



## Avalanche risk info board

- 5 **Extreme.** Better go watch TV !
- 4 **High.** Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.
- 3 **Considerable.** Careful consideration needed in choice of areas to ride, several slopes will be hazardous
- 2 **Moderate.** Snowpack is reasonably stable but some risky areas should be avoided
- 1 **Low.** Generally OK. Off piste (out of bounds) hazards still exist, eg. rocks, tree roots

- The info board gives **an overview** of avalanche risk, but doesn't provide enough information to decide where to ride off piste.
- **Knowing the danger level is not enough.** You have to read the avalanche report to learn more about the quality of the snow and understand what slopes are more or less exposed to avalanches.

## AVALANCHE REPORT

(see an example on the next page)

### Estimated risk:

- 1, 2, 3, 4, 5
- at what altitude
- on which slopes

**Essential tool!**

**It gives an analysis of snowpack stability**

(things you can't see when you're standing on it)



Pour consulter la vigilance en cours, veuillez vous rendre sur le site <https://vigilance.meteofrance.fr/fr>

### Estimation des risques

samedi 04 novembre



Tendance pour le dimanche 05 novembre



risque marqué

Risque en hausse dimanche en raison des nouvelles chutes neige prévues (20/30 cm).

Au-dessus de 2200m risque marqué, plus bas risque faible.

Départs spontanés : Avalanches de neige poudreuse en altitude.

Déclenchements skieurs : Accumulations de neige soufflée.

Indices de risque : 5 très fort - 4 fort - 3 marqué - 2 limité - 1 faible - En noir : les pentes les plus dangereuses

### Stabilité du manteau neigeux jusqu'au samedi 4 novembre 2023 au soir

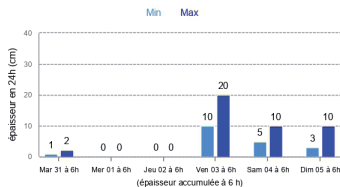


Bulletin rédigé à partir d'informations très réduites.

**DÉPARTS SPONTANÉS :** Risque faible jusqu'en mi-journée de samedi, puis en augmentation dans les heures suivantes en raison des précipitations prévues. En dessous de 2200 m environ, la pluie va humidifier la neige récente en place entraînant fonte, tassement et déstabilisation dans les pentes suffisamment raides. Vue la faible épaisseur du manteau neigeux, il ne s'agira que de coulées ou petites avalanches de neige lourde. À plus haute altitude, les 30/40 cm (localement 50 cm) de neige poudreuse attendus jusque dans la nuit de samedi à dimanche, pourraient être à l'origine d'avalanches de taille moyenne, plus rarement une grande.

**DÉCLENCHEMENT PROVOQUÉS :** Les chutes de neige ventée de jeudi ont été de l'ordre de 40/50 cm au dessus de 2500 m. Une nouvelle chute importante et fortement soufflée par le vent de sud-ouest est attendue à partir de la mi-journée de samedi. Elle va se déposer sur les quelques cm de neige tombés sous les averses de ce vendredi et qui pourraient servir de couche fragile temporaire pour le déclenchement d'une plaque par un skieur.

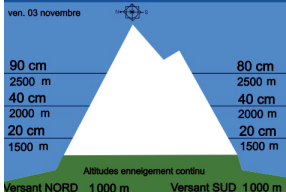
### Neige fraîche à 1800 m



### Aperçu météo

	samedi 04 novembre			
	nuit	matin	après-midi	soir
Pluie-Neige	1 200 m	1 700 m	2 100 m	1 700 m
Iso 0 °C	1 400 m	2 200 m	2 400 m	2 100 m
Vent 2000 m	15 km/h	60 km/h	65 km/h	65 km/h
Vent 3000 m	70 km/h	95 km/h	95 km/h	90 km/h

### Épaisseur de neige hors-piste



### Qualité de la neige

Sols blanchis vers 1200 m samedi matin, mais manteau neigeux peu épais en dessous de 2000 m (seules les pentes herbeuses sont skiables). Enneigement plus confortable au dessus de 2200 m.

En surface on trouve soit de la neige fraîche de plus en plus légère à mesure qu'on monte en altitude, soit de la neige fortement travaillée par le vent violent de secteur sud-ouest.

Fake news:

# BASICS



photo: Gianvi Galtarossa

- ☹️ ~~there are tracks here so it must be fine~~
- ☹️ ~~the snow is firm so it won't slide, it's cold so the snow will stick together~~
- ☹️ ~~it's great snow and it's a lovely day~~
- ☹️ ~~it's just next to the piste~~
- ☹️ ~~I've always skied here and nothing has ever happened~~
- ☹️ ~~there are loads of trees, they hold the snow~~  
(not true and an avalanche could happen on slopes above the trees)
- ☹️ ~~risk level 1 or 2 = no worries!~~

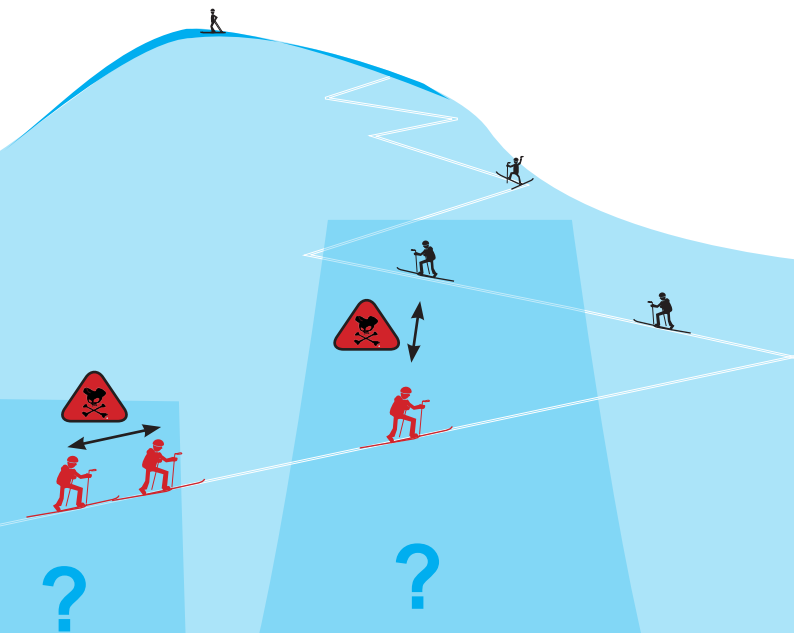
definitely  
not!



A small slide could take you over a cliff or push you against a tree. Or if you're on a south-facing slope at 2pm in the spring, the actual risk isn't the same as the forecast risk.

# BASICS

for skinning up as a group



## IF THERE IS ANY DOUBT ABOUT THE STABILITY OF THE SLOPE:

- Ski up one after the other, leaving a distance between you.
- Remove anything that could pull you down in the event of an avalanche: remove pole straps, ski leashes ...
- Also watch out for tourers above you from other groups!

# BASICS

for skiing as a group



- **NEVER SKI DOWN ALL AT THE SAME TIME:**

Watch each other and ski one at a time. Leave enough distance between each skier.

- **STOP IN SAFE PLACES:**

Beneath a large boulder, in a group of trees, on a ridge...



# Gear: BASICS

**You cannot use the same gear for skiing on-piste and for ski touring!**

**OFF PISTE**

**UN GROOMED** (powder snow, bad snow, unskiable...)

**UNMARKED** (no maps, no warning signs, no numbers, no colours = no way of explaining where you are)

**UN SECURED** (dangers of avalanche, cliffs, rocks, roots, ice, crevasses...)

**UN PATROLLED** (if there is a problem, no one knows, no one will see you)

## KIT FOR COMFORT



## KIT FOR RESCUE



## KIT for PROTECTION



## KIT for ROUTE FINDING

Map, compass, altimeter, map apps... anything that can help you find your way!



Make sure you keep your beacon at least 20 cm from ALL other electronic device (telephone, GoPro, connected watch...).

## Beacon: searching for a single victim

# BASICS

**ONLY** the person searching for the victim should have their beacon switched on. The person calling rescue services should stand away from the search area. Only after the victim has been located with a probe, can everyone turn beacons back on. **If you are on your own, start by calling the rescue services!**

Person searching, turn off your phone and keep it at least 50 cm away from your beacon.



Start your search at the point the victim disappeared

**NO SIGNAL**

### SIGNAL SEARCH

- Ski quickly in zigzags across the avalanche area

**BEEP: SIGNAL**

### COARSE SEARCH

- Distance to victim diminishes
- Follow the direction of the arrow

### FINAL SEARCH

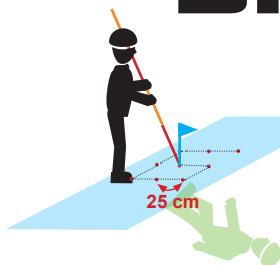
- 10, take off your skis and slow down (1 step/sec)
- Hold your beacon flat, in 2 hands
- 3, your beacon should be held at knee height



then

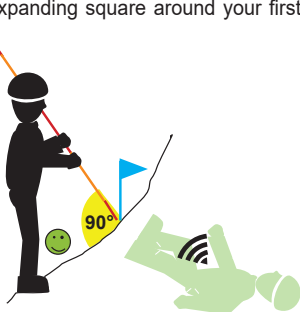


# BASICS



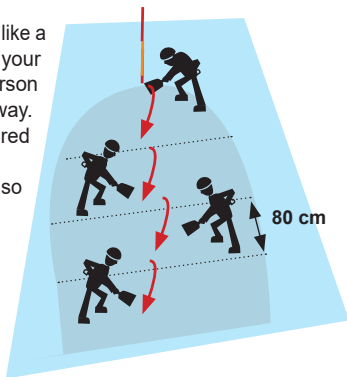
Probe at the exact location marked by your beacon. If you don't hit anything immediately, probe in an expanding square around your first point.

Probe **perpendicular** to the snow surface. As soon as you hit something, leave your probe in position.



For more efficient shoveling, hold your shovel like a paddle. Start **below** your marked point and your probe. If there is a team of diggers, one person digs and the others shovel the snow away. Make sure you take turns to avoid getting tired (2-4 min turns).

Dig in a U shape downhill from the victim so you can get them out quickly and administer first aid (watch out for snow blocking the victim's mouth).



The chance of survival is greatly reduced with each passing minute.

Digging out a victim who is 1 metre deep means digging around 2.5 tonnes of snow !

**THE MORE YOU PRACTISE, THE FASTER YOU'LL BE ABLE TO RESCUE!**

# Training: **BASICS**

## Use the beacon parks!

Planpraz - Balme - Lognan - Flégère - Les Houches

photo : Eric Courcier

### **PRACTICE AND YOU COULD SAVE A LIFE!**

- 2 groups
- Kit: beacon, shovels, probes
- Group A buries a bag with a beacon in it, around 80cm under the snow. The timekeeper starts the timer, and Group B organises the rescue. 1 person searches for the signal.
- If Group B takes longer than 15 minutes for the search, probe and dig/rescue, the victim's chances of survival are small. Efficient probing and digging can save a lot of time.
- Groups A & B swap roles.



The free **Montagne Secu** app notes the 5 stages of a search and is a great training tool.

To go or not to go:

# BASICS

Who decides to go ski touring when it's high avalanche risk, or blowing a blizzard, zero visibility, or somewhere super steep, rocky or icy?

## NO ONE!

Things to check the day before you go:

- ☒ Weather
- ☒ Avalanche report
- ☒ Skill level
- ☒ Planned route
- ☒ Snow conditions



MAISON DE LA MONTAGNE  
Office de Haute Montagne  
[www.chamoniarde.com](http://www.chamoniarde.com)  
00 33 4 50 53 22 08

## WEATHER

First, check the forecast and avalanche report, then consider:

- **visibility** • if it's cloudy or foggy, you won't be able to see cliffs, rocks, the slope or your crew
- **wind** • if it's windy, it feels colder (-10°C will feel like -20°C with 40 km/h winds)
- **temperatures** • beware of frostnip if it's really cold
- **rain/snow** • low visibility



## AVALANCHE REPORT

If you missed the first pages of this masterpiece, please turn back and make sure you understand the AVALANCHE REPORT.



## SKILL LEVEL

Skiing a 45° slope or a narrow couloir might not be everyone's idea of fun. Make sure everyone is comfortable with the chosen itinerary.



## PLANNED ROUTE

- are there safe points on the route?
- is it exposed? (crevasses, seracs, cliffs ...)
- does it get skied a lot?
- are the slopes > 30°?
- are there a lot of steep sections?

### YOU NEED TO KNOW YOUR ROUTE!

In case,

- the weather changes (fog)
- you have to call for rescue
- anything else happens...



## CONDITIONS

Off piste conditions are always changing: a slope can be good one day and un-skiable the next (after strong winds overnight for example). Make sure you check!

**If everything on your checklist is ticked off, let your family and friends know where you are going and when you expect to be back.**

Crew:

# BASICS

YOUR PARTY CREW / THE BIGGEST JOKERS /  
THE ONES WITH THE NEWEST KIT / OR YOUR MATE WITH A GOPRO

AREN'T ALWAYS THE ONES  
WHO KNOW THE MOST!



**Being the Boss of the group  
isn't about impressing your mates,  
or looking cool,  
or being the freeskiier of all times.**

It's a big responsibility and means looking after the group  
and their safety.

PAY ATTENTION TO THE SKILL LEVEL, MOTIVATION,  
AND MOOD OF THE GROUP.

ALSO PAY ATTENTION TO YOUR OWN MOOD AND FITNESS.

# THAT'S IT

almost...

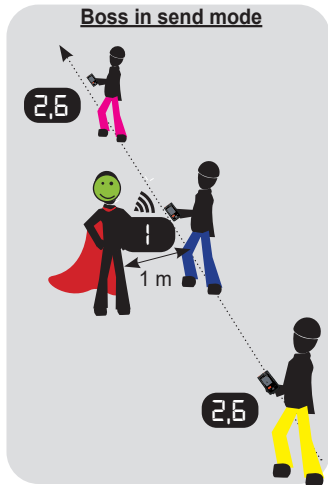
## At the meeting point, check the weather and conditions:

- Is the weather the same as what was forecast?
- If you are near a piste, ask a ski patroller about the snow conditions and your choice of route.

## Group beacon check

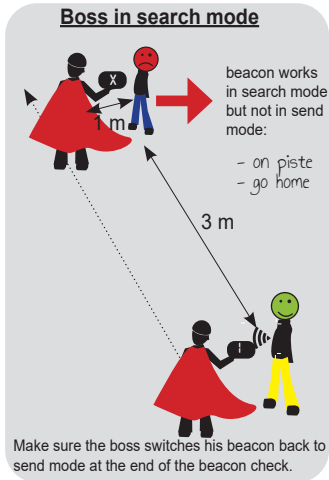
- Make sure every beacon has enough battery (according to manufacturer's instructions)
- Check everyone's beacon is functional both in send **AND** search modes.

### Boss in send mode



Everyone goes past the boss one by one, checking that their distance indicator gets lower.

### Boss in search mode



The boss puts his beacon on search mode and goes towards each member of the group to check their beacons are emitting a signal.



# THROUGHOUT YOUR RUN, OBSERVE, LISTEN, FEEL, ASK QUESTIONS, EVALUATE, AND IF IN DOUBT, TURN BACK!

- ☐ Is there any evidence of recent avalanche activity? Any cracks under your skis as you ski over a windslab?
- ☐ Are there any 'whumpfing' sounds under your skis, or hollow sounds?
- ☐ Are there any signs of wind blown snow (drifts, cornices, or wind scoured slopes)?
- ☐ How deep do you go when you take your skis off? Boot height? Knee? Thigh?
- ☐ If you push your pole into the snow handle first, can you feel the unseen layers in the snow?

**Pay attention to any of these indicators.**

## TOOLS

- data-avalanche.org 

You can consider 6 variables:



avalanche  
risk



slope angle



recent  
avalanche  
activity



rise in  
temperature



new snow or rain,  
wind loading



hidden weak  
layers in the  
snowpack

- **NIVO TEST** (free app or printed version)



The **Nivo test** is a tool for freeriders and ski mountaineers who want to assess the avalanche risk more accurately.

# WHAT TO DO

if there is an avalanche.

- Watch the victim for as long as possible and try to establish a last seen point.



## STAY CALM AND CALL FOR HELP

**If others are nearby**, call out, whistle, wave your poles, or signal with a headlamp if it's dark.

### Telephone :

France **112**

Switzerland (Valais) **144**

Italy (Aosta valley) **112**

**Take a moment to check where you are, before calling the rescue services (piste map, GPS on your phone)**

### WHO?

Your name

Your telephone number

### WHERE? *GPS coordinates*

Describe location as precisely as possible:  
route followed, altitude

### WHAT?

Size of avalanche

Number of victims

### WEATHER?

Visibility

Wind

Possible helicopter landing area

If you have no phone reception\*, send 2 people you trust to find phone reception, or find the nearest hut or ski lift, or rescue post.

*\* It could happen even with calling 112! 112 can switch networks but sometimes there just isn't any reception!*

**If there is no phone reception and you are by yourself,  
go straight to the rescue stage.**



## AVALANCHE RESCUE

- conduct a beacon search and use your probe to pinpoint the victim
- switch back to send mode after locating the victim
- dig the victim out
- perform First Aid
- protect from the cold and reassure the victim
- prepare a helicopter landing area close by the accident area
- try calling the rescue services again

*Signal to helicopter:*



**The rescue services arrive... who are they?**

- ski patrol if close to the ski area
- rescue helicopters : gendarmerie (blue), sécurité civile (yellow & red)
- rescue services (PGHM, CRS, GMSP, rescue organisations, rescue dog handlers)
- high mountain medical professionals if needed

# TRANSCIEVER TRAINING PARKS

Open & free access

**DVA  
P  
A  
R  
K**

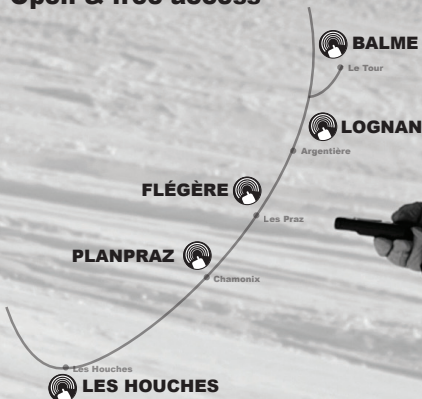
**PREVIRISK**  
Pôle Montagne

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LA CHAMONIEAN

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LA CHAMONIEAN



## + AVALANCHE RESCUE WORKSHOPS

Info [www.chamoniarde.com](http://www.chamoniarde.com)

# PRACTICE AND GET READY FOR WINTER!

La Chamoniarde, Société de Prévention et de Secours en Montagne



Conception / réalisation : La Chamoniarde - Pôle Montagne Risk

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