

Långfärdsskridskoåkning - 4x4 risk analysis

Based on the Werner Munter avalanche 3x3 risk analysis

Revised for skating on unprepared natural ice by Rob Mulders, Wim Willemse and Krister Valtonen

Version **1.0 as of March 24, 2017** in cooperation between LLK and HLSK



How to use - pick yes or no in each cell in the column of your moment in time. Count the number of 'yes' in that column to get the risk score at that moment in time. Take appropriate risk reducing measures counterparting the score at that moment in time.

Warning - a low risk score is no guarantee that there are no other risks involved than the risks in the column below. A low risk score is not automatically a green light to skate. You are responsible yourself at all times to make a safe skating tour. Keep thinking.

Goal - use the 4x4 risk analysis as instrument to avoid unsafe situations, by evaluating your circumstances. Judge the risks by comparing it to the reference 'normal' daytour described in this column. Use the 4x4 risk analysis to get out of a tunnel vision you might be in.

	1. The evening before your tour	2. At breakfast on tour day	3. On the ice before departure	4. During fika and after a change	<i>Risk increasing examples</i>	<i>To be regarded as normal</i>
1. Terrain						
Does the lake/sea have characteristics that are known to be risk increasing?	yes/no	yes/no	yes/no	yes/no	large size and/or depth; salt or brackish water; part of river; strong currents; border to sea; waves; tides; incoming (warmer) water; ship lanes; location sensible for hard wind; dangerous places indicated on SN	small and middle sized waters; fresh (sweet) water; uddar; sund; inflows; outflow; islands; normally changing deep/shallow water
2. Ice						
Does the ice situation have characteristics that are known to be risk increasing?	yes/no	yes/no	yes/no	yes/no	thin ice; weak structured ice; spring ice; loose from shore; connected to open water; ice floes; (newly formed) signs of recent ice drift; signals of tension; (refrozen) släpprårer; ice broken near shore due to traveling waves; råk following shoreline; stöpis/snöis without stable kärna; double ice; reduced visibility by snow/water on the ice; underfrättning; many vindbrunnar; vrakis; many torrsprickor; plurning(s) reported	thick kärnis; hard stöpis/snöis with stable kärna under; ice not degenarated; snow/rimfrost on the ice < 1cm; water on the ice < 1mm; normally placed upp/nedrårer; few vindbrunnar; generations of ice easily visible
3. Weather						
Does the weather situation have characteristics that are known to be risk increasing?	yes/no	yes/no	yes/no	yes/no	hard wind; increasing wind; wind direction change; temperature rise; temperature fall; significant air pressure change; (starting) thaw; strong sun radiation; snow; rain; fog; no or less daylight	freezing weather; temperature fluctuation < 10°; wind below 6m/s; gusts below 10m/s; wind direction change < 45°; visibility > 1km; no significant air pressure change; no precipitation; daylight
4. People						
Would you judge the composition of the group to be risk increasing?	yes/no	yes/no	yes/no	yes/no	skating alone; group size < 3 or group size > klubb maximum; only one leader; tired or injured people; one or more newbees; stubborn/competitive people; no mixed genders; safety equipment not complete; people not having done safety exercises; group split while skating; multi day trip; multi group trip; multi klubb trip; language problems; new situation(s) for leader(s); exhausting night before the daytour; bad internet / no information; bad preparation; preparation done in hurry; no or bad map available	standard daytour; group size >= 3 and <= klubb maximum; two leaders; complete safety equipment; skating in normal formation; signals known to whole group; keeping distance after keep distance signal; nothing to prove; freedom to speak; enough time to prepare; known area to at least one group member; sufficient information available; suitable map available
Count number of yes	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		

Score count

- 0 - normal risk - go skating according to your plan, taking normal precautions
- 1 - increased risk - add risk reducing measure(s) to mitigate the increased risk
- 2 - high risk - add strong risk reducing measures to mitigate the increased risks
- 3 - very high risk - take very strong risk reducing measures or choose another location
- 4 - extreme risk - don't go, retreat, choose another location or date/time