SNOWMOBILING IN SWEDEN IN 2014 - TRENDS, ATTITUDES TO RISK AND KNOWLEDGE ABOUT AVALANCHES

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ABSTRACT: In spring 2014 a web survey aimed towards Swedish snowmobilers were conducted. The aim was to identify riding habits, attitudes to risk, knowledge of avalanches and the use of safety equipment. In total 2917 snowmobilers responded. The results provide new and important knowledge about behavior and attitudes to risk and general knowledge about avalanches and avalanche awareness. 34% of the snowmobilers state that they are sometimes or often in contact with avalanche terrain. Of those, 19% has been involved in at least one avalanche related incident. In the same group, only 14% are regularly equipped with avalanche transmitter and probe. Among those who are using avalanche safety equipment, 33% states that they rarely or never practice to use it.

In Sweden the use of snowmobile has greatly increased the past 20 years and so has the popularity regarding freeriding with snowmobiles in steep terrain. The total number of snowmobiles is now more than 280,000. Between 2005 and 2014, 102 snowmobilers in Sweden where killed in snowmobile related accidents in total but very few accidents during this period has officially been avalanche related which is surprisingly.

Do Swedish snowmobilers uses the terrain differently than in North America and in Norway where there is much more accidents recorded or is there a difference in their attitudes to risk, or is the relatively few avalanche accidents just a coincidence? Is the relatively few accidents connected with the development of stronger and faster snowmobiles? Will Sweden also see a growing number of accidents with more victims? Are there other factors?

The final results will be used in the Swedish Mountain Safety Council's efforts to develop future avalanche education programs for snowmobilers and as a way to support research and development in the area.

KEYWORDS: (Snowmobile, Avalanche Education, Avalanche Awareness, Surveys, Attitude, Risk management)

1. INTRODUCTION

The survey is part of the Swedish Mountain Safety Council's efforts to increase safety in connection with snowmobile riding focusing on riding in the mountains. The aim is to create better understanding and by analyzing the results, create better education programs in order to reduce the number of snowmobile accidents in the future.

Riding habits, snowmobilers' knowledge levels and attitudes to risk together with a number of other key disciplines have been mapped by close to 3,000 respondents who are all experienced snowmobilers. The knowledge generated in this survey, will form the basis for continued communication with the snowmobile riders about risks, safety awareness and attitudes toward snowmobiling and also create better education tools for snowmobilers. The project was conducted by the Swedish Mountain Safety Council together with the National Snowmobile Council in collaboration with the snowmobile magazines Snowmobile and Snowrider.
2. METHOD

The study was conducted as a web survey addressed to the readers and followers of the paper and online magazines Snowrider and Snowmobile during the period 17th of February to 10th of March 2014. Respondents were invited to participate through articles in magazines and via their websites and relevant social media. The aim was to identify the target group’s knowledge, experience and attitudes towards snowmobiling and avalanche awareness.

In total, the questionnaire was answered by 2917 respondents. Among the respondents 39 % were 30 years or younger, 27 % between 31 to 40 years, 31 % between 41 - 60 years and 2 % older than 60 years. Nine out of ten were men and one of ten women.

Respondents were asked to answer a total of 24 questions. The topics highlighted various aspects of snowmobiling such as riders’ profile, experience of snowmobiling, riding habits, location of riding, type and use of avalanche equipment, risk-taking, avalanche awareness, experiences of avalanche accidents and changes in behavior.

Among the total numbers of respondents, 1901 respondents (60 %) define themselves as freeriders. The rest of the respondents mainly focus on riding along snowmobile trails.

1022 respondents (34 %) answered that they often or sometimes ride in potential avalanche terrain. This group of respondents, that is to be seen as more experienced freeriders, was then analyzed in more detail.

3. VALIDITY

A reasonable question is whether the survey describes what it basically intends to do, namely to describe the Swedish snowmobiles who have been or will possibly be killed in future avalanche accidents. We compared the statistical information for all Swedish victims for all snowmobile related accidents between 2004 and 2014 with the corresponding data from the survey. The correlation regarding age was rather strong; Both the age and the location of places where there has been accidents and where there is much riding of snowmobiling are all nearly identical.

We therefore believe that it is acceptable reasonable to assume that our results essentially describes the people behind the snowmobile accidents, historically and in the future.

4 RESULTS

In order to describe the profile of the Swedish snowmobilers focusing on freeriding we here below present the answers to the key questions from the survey in the form of charts and comments.

4.1 USE OF AVALANCHE SAFETY EQUIPMENT

The use of avalanche equipment seems to be greatly neglected, even among those who often or sometime ride in avalanche terrain. That is an obvious conclusion based on the question what safety equipment the riders usually bring with them. Helmet use is though widespread. Almost all use it.

In contrast, only 14% of snowmobilers regularly riding in avalanche terrain carry an avalanche transceiver and a probe. Among the smaller group who often drive in avalanche terrain, nearly 40 % bring and wear both transceiver and probe.

The base is though limited (59 respondents), which means that the figures should be interpreted with some caution, but nevertheless gives a clear indication that there is a group of drivers who regularly drive in avalanche terrain without avalanche equipment.
4.2 AVALANCHE KNOWLEDGE AND AWARENESS

When respondents in the subgroup were asked about their own avalanche knowledge, 31% estimated they had good or excellent knowledge about avalanches and avalanche safety. The realisation of this group also points to the need for more and better education about avalanches, especially aimed for snowmobile riders.

4.3 AVALANCHE INFORMATION IMPORTANT BUT DIFFICULT TO ACHIEVE

Approximately six out of ten respondents who regularly ride in avalanche terrain believe that it is important to take advantage of relevant avalanche information. But nearly half in the same group believe it is difficult to find relevant information about avalanche hazard and avalanche terrain.

4.4 GENERAL SNOWMOBILING AND MOUNTAIN EXPERIENCE

Here, a picture emerges of the subgroup as experienced and very active, as many as 42% were snowmobiling more than two weeks the past season. When asked how long they have been snowmobiling the image of an experienced rider is further reinforced, as 72% have been snowmobiling for more than 10 years.

4.5 ACCIDENTS AND INCIDENTS

Avalanches and avalanche awareness has traditionally not been a particularly big issue for snowmobile riders. As snowmobiles have become stronger and easier, this has now changed. A modern mountain snowmobile rider can easily ride in steep slopes and areas that were not available before due to technical limitations. As mentioned earlier, one of three respondents regularly practice freeriding in areas that they know can be dangerous avalanche terrain. Almost
two out of ten of these have been involved in at least one avalanche incident.

<table>
<thead>
<tr>
<th>Experience of avalanche incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td><strong>Yes, a minor avalanche</strong></td>
</tr>
<tr>
<td><strong>Yes, a major avalanche but I managed to stay on the surface</strong></td>
</tr>
<tr>
<td><strong>Yes, a major avalanche where I was buried</strong></td>
</tr>
</tbody>
</table>

Base: Regularly ride in avalanche terrain

Figure 6: Experience of avalanche incidents

This corresponds to one of twelve of the entire group of respondents.

Among those who answered that they often run in avalanche terrain, half have experienced at least one avalanche incident. A small number have also been buried by an avalanche. This result is based on a limited sample and should also be interpreted with some caution, yet it gives evidence of serious avalanche accidents with snowmobiles in Sweden and the possibility of a growing number of avalanche-related fatalities in the future cannot be ignored.

More than two in ten of those who ride snowmobiles in avalanche terrain also has friends who has been involved in avalanche related incidents.

4.6 RISK-TAKING AND BEHAVIOUR

The issue of risk is a clear illustration of the various snowmobile riders. Six out of ten of the sub-group with riders in avalanche terrain completely or partly agrees that risk taking is necessary for good snowmobiling when it comes to freeriding. In the entire respondent group the corresponding number is five out of ten.

Not surprisingly, when studying the complete respondent group the youngest drivers are most risk willing. Among them, eight out of ten is ready to take risks to a greater or lesser extent. Among 50-61 year old, the corresponding share is two out of ten.

4.7 FUTURE TRENDS IN SNOWMOBILING

Freeriding with snowmobiles outside marked trails is already becoming the dominant way regarding riding habits in most mountain areas in Sweden. It has also increased over the past three years and is expected to continue to increase.

Six out of ten of the respondents define themselves as freeriders. In practice, it equates to traveling outside the marked trails. Even those who do not define themselves as freeriders ride off tracks to a greater or lesser extent. Among all respondents, one in three state they are more engaged in freeriding, than riding on marked trails. Only 4 % say they never practice freeriding.
Younger people are significantly overrepresented among those who usually practice freeriding, which is consistent with the results on the question of how they define themselves as drivers.

Nearly four in ten respondents more often rides outside the trails compared with three years ago. One in ten rides less frequently. The change is strongest in the younger age groups but is visible all the way up to the oldest age groups. The conclusion is clear: snowmobiling outside tracks are growing in popularity and this connected with the other demands regarding the knowledge of avalanches and safety awareness.

The trend is also clear, freeriding will continue to increase. Nearly three in ten of all respondents answering the survey estimate they will ride more off the joints the coming years compared to today. Only six percent believe they will drive less outside snowmobile trails compared to today. The largest group responded that they will ride the same as today but the net still shows a clear increase for freeriding.

5 CONCLUSIONS AND DISCUSSION

The survey has provided many answers about snowmobiling and riding habits in Sweden but has also raised several new questions. Apparently it occurs that significantly more avalanche-related snowmobile accidents happens than is to be found in the official statistics. During the period 2001-2014, only two documented snowmobile-related avalanche accidents with loss of life were documented in Sweden. But due to the answers in the survey, more accidents seems to occur but this seems to happens without loss of lifes.

So important questions are, do Swedish snowmobilers use the terrain different than in North America or is there a difference in attitudes towards risk, or are they relatively few documented avalanche accidents just a coincidence? Is the relatively few accidents related to the development of stronger snowmobiles which are more protected from damage when buried? We do not have the answers yet but this could be of interest to look deeper into in the future. Likely, Sweden will see a growing number of accidents with more victims in the future when analyzing the trends regarding riding habits and the results clearly show though, that many of the snowmobilers are less prepared regarding knowledge and use of avalanche safety equipment in comparison with Swedish off-piste skiers (ref. Stefan M. ISSW 2013). The knowledge about avalanche safety needs to be raised to avoid a probable future increase in avalanche-related snowmobile accidents in Sweden.

The trend about increasing freeriding with snowmobiles is strong, this is also seen in the sales statistics regarding what kind of snowmobiles are sold. New models of snowmobiles which is designed for advanced freeriding are now the most frequent buy. This is also confirmed in the results of the survey.

One other parallel development can be seen in Norway, where the past two winters have seen eight fatalities of snowmobile riders in avalanche-related accidents.

More and more riders are leaving the trails and moving into potential avalanche terrain and in order to prevent future accidents, it is important that both the communication about avalanche safety reaches the snowmobile society and that better avalanche training programs is adapted for snowmobile riders.

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