
Internal Inquiry Panel

Final Report

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the national agency for sport

CHALAMAIN GAP
14th February 2013

sportscotland Internal Inquiry Report

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LIST OF ACRONYMNS

| | |
|-----------|---|
| AAIAC | Adventure Activity Industry Advisory Committee |
| AALA | Adventure Activities Licensing Authority (HSE) |
| AALS | Adventure Activities Licensing Service |
| AMI | Association of Mountaineering Instructors |
| BAIML | British Association of International Mountain Leaders |
| BASI | British Association of Snowsports Instructors |
| BCU | British Canoe Union |
| BMG | British Mountain Guides |
| CMRT | Cairngorm Mountain Rescue Team |
| CMSP | Cairngorm Mountain Ski Patrol |
| CPD | Continuing Professional Development |
| FAI | Fatal Accident Inquiry |
| GLMRT | Glenmore Lodge Mountain Rescue Team |
| GLMT | Glenmore Lodge Management Team |
| HSE | Health and Safety Executive |
| IDS | Instructor Development Scheme |
| IFMGA | International Federation of Mountain Guides Associations |
| IML | International Mountain Leader |
| MCofS | Mountaineering Council of Scotland |
| MIA | Mountain Instructor Award |
| MIC | Mountaineering Instructor Certificate |
| ML (W) | Winter Mountain Leader Award |
| MTA | Mountain Training Association |
| MTUK | Mountain Training UK |
| MWIS | Mountain Weather Information Service |
| NGB | National Governing Body |
| SAFOS | Snow and Avalanche Foundation of Scotland |
| SAIS | sport scotland Avalanche Information Service |
| SARDA | Search And Rescue Dog Association |
| SCA | Scottish Canoe Association |
| SMBLA | Scottish Mountain Bike Leaders Association |
| Incident | Incident which occurred on 14 th February in Chalamain Gap |
| The Panel | Inquiry Panel |
| The Group | Winter Mountaineering Course Group, 11 th to 15 th February |

FOREWORD BY CHAIR

- A. At approximately 1230 hrs on the 14th February 2013 two parties, including one from Glenmore Lodge, were caught up in an avalanche which started on the North-west facing slope of Chalamain Gap in the northern Cairngorms. The incident resulted in the fatality of three people, including ██████████, who was a student on a Glenmore Lodge Winter Mountaineering Course.
- B. Following the incident, the **sportscotland** Senior Management Team (SMT) established an internal Inquiry Panel (the Panel) to undertake a review of the incident with a specific focus on establishing facts and identifying lessons to be learned relevant to Glenmore Lodge operations.
- C. On behalf of the Panel, I would like to express members' deepest condolences to the family and friends of ██████████ and to reflect on what we heard from those who had met him about his likability and passion for the outdoors and the sport of mountaineering.
- D. Immediately following the incident, the Glenmore Lodge Management team (GLMT) also undertook its own interim review. The purpose of this was to ensure that any remedial actions requiring to be implemented during the remainder of the winter season were both identified and implemented.
- E. The Panel is absolutely clear (from its investigations) that the actions of the Glenmore Lodge Winter Mountaineering Group (the Group) did not trigger the avalanche. Therefore, the Panel quickly established that it should not focus on what triggered the avalanche, but instead consider the facts around why the Group was caught up in the avalanche and what actions had been taken by Glenmore Lodge and the Group instructor, prior to, during and post incident to ensure the safety of those on the Winter Mountaineering course.
- F. In considering these facts a number of key questions were identified and considered by the Panel with conclusions and recommendations detailed at the end of this report. A supporting action plan has also been agreed with the GLMT for implementation.
- G. One of the stated purposes of this inquiry was to consider if Glenmore Lodge operates within current legislation and to relevant best practice guidelines. The Panel has considered this area in detail and is satisfied that this is the case with appropriate policies in place and being actively implemented. A view also reflected in independent reviews/inspections undertaken by bodies such as the Adventure Activities Licensing Authority (AALA).
- H. During the course of the investigation, the Panel also heard that while formal policies underpin the key operations of Glenmore Lodge, day to day decisions made out in the field are in the main taken based on the instructors own 'dynamic risk assessment' of locations and conditions. The Panel found that this is standard industry practice and appropriate given that Instructors often operate in conditions which can change rapidly. With this in mind a focal point for the Panel has been to consider the qualifications, training and support which underpin Glenmore Lodge operations. This included a review of the industry-wide qualification framework, and while a number of recommendations have been made to further improve these systems, it is clear that Glenmore Lodge already provides a substantial support framework for all its staff and contractors.
- I. The Panel would also wish to express its gratitude to all those involved in the Inquiry process for their openness, candor and willingness to ensure that any and all lessons that could possibly be learned were highlighted and explored and any necessary actions taken forward.

SCOPE OF THE INQUIRY

1. **sportscotland** established Terms of Reference on 26th February 2013 for an Internal Inquiry (Inquiry) into the Chalamain Gap Incident which occurred on 14th February 2013 in the Northern Cairngorms of Scotland.
2. The specific incident occurred around 1230 hrs on Thursday 14th February 2013. [REDACTED] died following an avalanche of the North West facing slope in the Chalamain Gap. [REDACTED] was an 18 year old student in a party of six participating in a Glenmore Lodge 'Winter Mountaineering' course. Two persons from another group also died in the same avalanche.
3. The stated purpose of the Inquiry was to:
 - establish and analyse all relevant facts surrounding the fatal incident of 14th February 2013;
 - ensure that any lessons learned from the incident are captured;
 - ensure that any required changes to existing processes are identified, implemented and measured for impact; and
 - ensure that Glenmore Lodge is operating within current legislation and to relevant best practice guidelines.
4. The Terms of Reference, at Annex 1, follow the Health and Safety Executive guidelines for conducting internal inquiries and were brought to the attention of an HM Inspector of the Adventure Activities Licensing Authority (HSE) early in the process.
5. The Terms of Reference established the Internal Panel as:
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
6. The potential conflicts of interest of individual Panel members were noted, discussed and agreed as non-prejudicial to the Panel's deliberations and conclusions:
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
7. The Panel interviewed the five members of the Glenmore Lodge party directly involved in the incident, Freelance Instructors, GL Instructors, members of the GLMT and a number of representatives and expert witnesses from across the Mountaineering sector.¹
8. No member of the GLMT was present during interviews with witnesses in order to ensure impartiality.

¹ A full list of people interviewed can be found in Appendix 1

9. Whilst the Inquiry was ongoing, the GLMT undertook a comprehensive review of their winter programme arrangements, including lessons learned from all significant events and incidents classified as near misses (incidents, accidents or emergencies not resulting in injury) during the 12-week winter period. The Panel received regular updates on the actions being put in place and the Inquiry Report seeks to reflect where the GLMT action plan addresses any key points and recommendations made.

CONFIDENTIAL

ENVIRONMENTAL CONTEXT

The Cairngorms

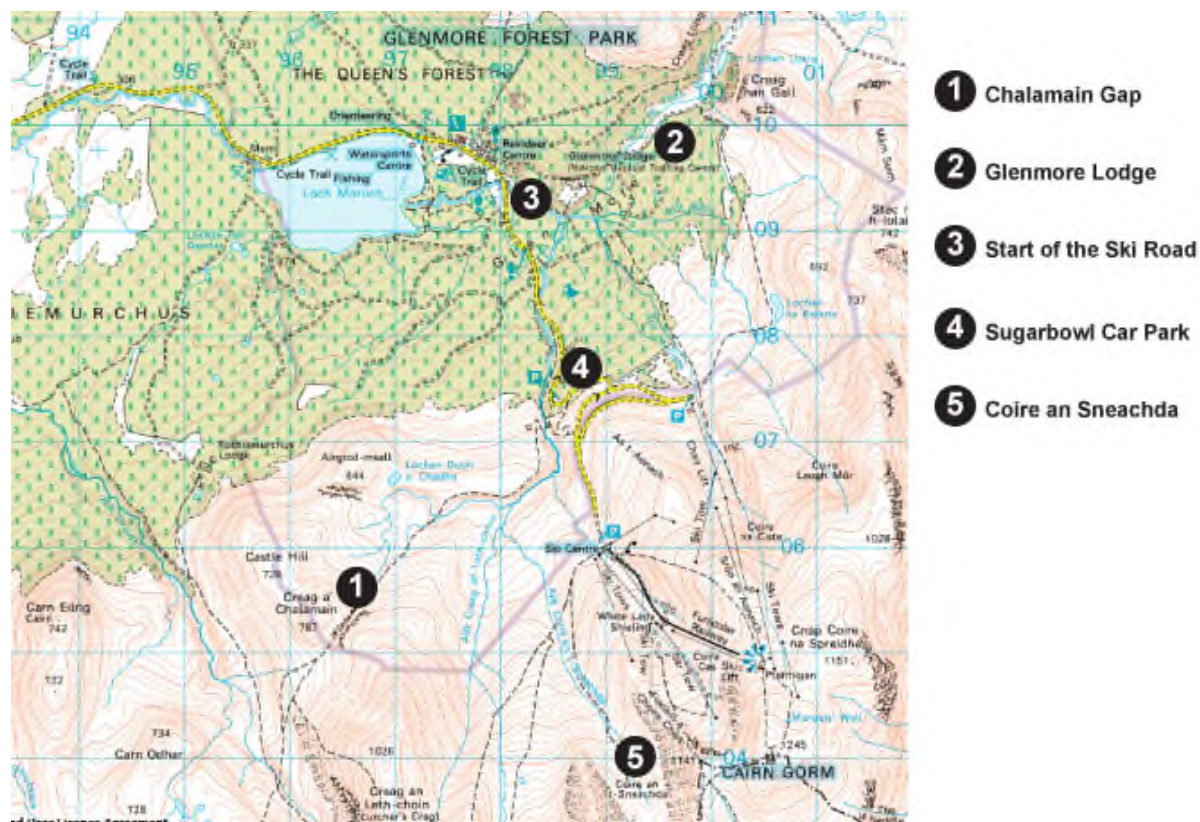


Figure 1 Cairngorm Mountains

10. At least 1.4m people visit the Cairngorms National Park every year to explore its mountains and glens, the forests and moorlands.²
11. The Cairngorms provide some of the most demanding and rewarding winter mountaineering conditions in the UK. Travelling over this high level plateau, or climbing on its many crags, often requires a very mature set of multiple skills to ensure personal survival and the successful supervision of those aspiring to become winter mountaineers.
12. In addition to the physical demands of making progress in what can become overwhelming weather conditions, clarity and quality of judgement remain an ever present need in achieving the day's objective and making a safe return.
13. Conditions can test even the most experienced, for example, short winter days, the ever present threat of avalanche and a requirement to navigate with accuracy make a compelling challenge and place a significant responsibility on those who seek to lead and train others.

² <http://cairngorms.co.uk/the-park/facts-figures>

14. Cairngorm weather conditions provide a tough examination of a mountaineer's understanding of prevailing conditions underfoot and the potential avalanche hazard. A wise route choice on one day will not guarantee safe passage the next, therefore demonstrating the essential requirement for the instructor to have dynamic risk assessment skills.
15. The Chalamain Gap is a prominent rocky feature on a natural east west corridor on the northern rim of the Cairngorms. Walkers passing through the Chalamain Gap are often making their way to or from the Lairig Ghru, a popular and obvious route through the heart of the Cairngorms. Winter mountaineers on their way from Glenmore to the challenging ice climbs presented by Lurcher's Crag also pass through the rocky defile of the Gap. The Gap is a venue in its own right both for geologists and geographers studying this fine example of a glacial overflow channel, and for those training in the skills required to operate safely on steep ground.



Figure 2 : looking approximately north-eastwards towards Glenmore and the Braes of Abernethy³

16. Chalamain Gap grid ref is GR967054, with the lowest point of the Gap being 700 meters above sea level and the highest point on the sides lying at 787 meters above sea level. The physical aspects of the Chalamain Gap combined with the significant amount of snow led to it forming a terrain trap on 14th February 2013. [A terrain trap is a physical feature on a mountain which has the capacity to be a natural funnel or collecting point for avalanche debris or stone fall. Valleys, gullies, passes and gaps would be good examples, but also more subtle 'bowls' on a mountainside can have the same effect of directing and collecting debris and amplifying the effect of an avalanche in particular.]

³ Photo accessed from <http://www.geograph.org.uk/photo/185661>

17. The Panel noted that major avalanches in the Cairngorms up until the 1990s, including those involving Glenmore Lodge, are referenced in Bob Barton and Blyth Wright's publication *Chance in a Million?: Scottish Avalanches*⁴. The only recorded incident in the Gap that the Panel was able to identify is referenced in this publication and relates to an incident above the Gap in the late 1970s.⁵ However, witnesses reflected that they had seen debris from what seemed to be small avalanches in the gap in previous years, however, there was no formal record of these.

Mountain Weather Information Service (MWIS)

18. Funded by **sportscotland**, MCoFS sub-contracts MWIS to produce weather forecasts each day for five Scottish mountain areas throughout the year. Forecasts are published on the MWIS website and in a format suitable for mobile devices. During winter months forecasts are published at 1330 hrs and at 1630 hrs at other times of the year, with a further update at 0730 hrs the following morning, subject to changes in prevailing conditions.

19. Views on the MWIS site for the Cairngorm area has shown steady growth since 2010, as highlighted below, demonstrating a growing awareness of the value of access to accurate weather information for visitors to the area. In 2010, the number of annual users for the five Scottish forecasts, as measured by the total number of unique visitors each day to the website that accessed information for one or more forecast area, was 1.8 million. Over the last two years the number of such visitors increased to over 2.5 million, or 39%.⁶

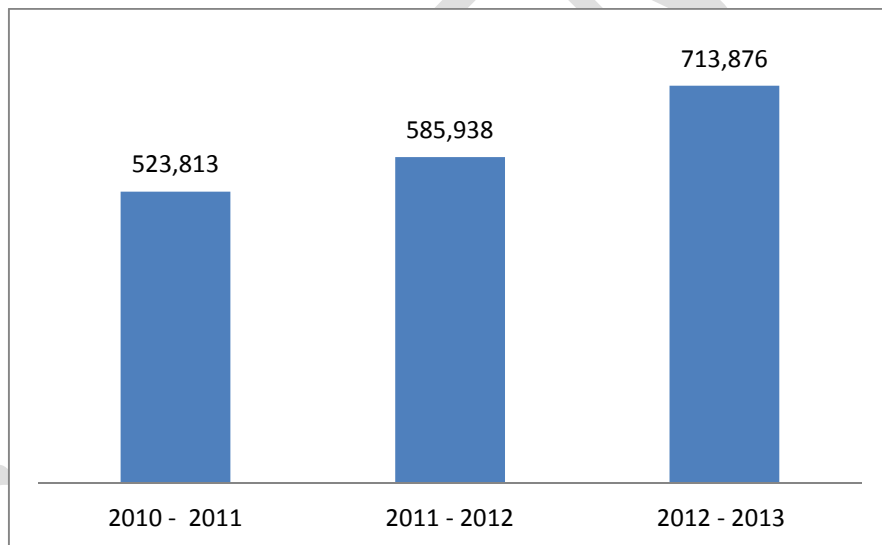


Figure 3 : number of website views for Cairngorm area

⁴ Barton.B, Wright. B, *Chance in a Million?; Scottish Avalanches*, 2nd edition, 2000. (Currently under revision)

⁵ Barton, Wright (n 4) p85.

⁶ Information provided by [REDACTED], The Mountaineering Council of Scotland

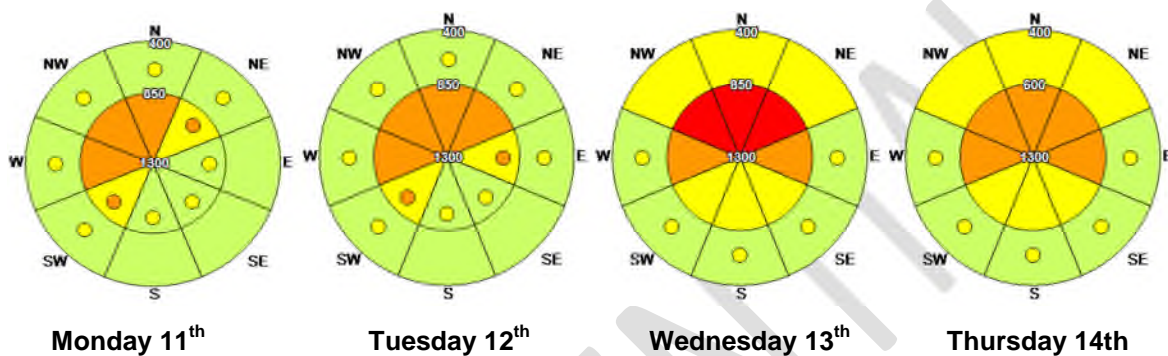
sportscotland Avalanche Information Service (SAIS)

20. Based in Glenmore Lodge, the SAIS has been funded by **sportscotland** since 1988 and now provides avalanche forecasts for the five most popular mountain areas of Scotland (Northern Cairngorms, Southern Cairngorms, Glencoe, Creag Meagaidh and Lochaber). The SAIS operates in the winter period only (from December to April) and publishes forecasts daily in the afternoon, including the forecast from the Met Office.
21. Whilst forming only part of the winter mountaineer's environmental observations, the information provided on observed avalanche conditions, used with the avalanche forecasts from SAIS and the weather information from MWIS, are essential professional tools used by Instructors and students in Glenmore Lodge.

Weather Conditions – Cairngorms & Monadhliath 2013

22. The weather conditions in the Cairngorms during the winter of 2012/13 were very changeable, with a mixture of periods of heavy sleet/snow, short periods of thaw and significantly, an unusually long period of southerly/south easterly winds.
23. The weather conditions on Monday 11th and Tuesday 12th February 2013 had been fair but worsening.
24. On Wednesday 13th February 2013 there was a day of heavy snow and storm force southerly winds which were causing severe drifting and poor visibility and avalanche hazards reported as considerable.
25. On Thursday 14th February 2013 the forecast was for much lighter south-westerly winds with no precipitation expected and for the freezing level to lower to 900 meters. The Panel noted that the previous day's weather conditions would have expected to lead to further depositing of snow on North and Northeast facing slopes
26. Overleaf in Figure 4 are the avalanche reports covering the week beginning 11th February 2013, each individually published the previous evening at 1800 hrs.
27. The Panel noted that it was not unusual for Mountaineers to operate in areas that are avalanche prone, taking action in response to their ongoing risk assessment of conditions. The Panel noted that out of the 12 weeks (or 90 days) covering the GL winter programme, the avalanche hazard level for aspects of the Northern Cairngorms was Considerable or higher on 21 of those days and therefore formed an attractive environment for winter mountaineers.

| Hazard Level | Avalanche Probability |
|---------------|---|
| Very High | Widespread Natural and Human triggered avalanches will occur. |
| High | Natural and Human triggered avalanches will occur. |
| Considerable | Natural Avalanches possible. Human triggered avalanches are likely. |
| Moderate | Natural Avalanches unlikely. Human triggered avalanches possible. |
| Low Avalanche | Natural Avalanches very unlikely. Human triggered avalanches not likely. |



| Day | Forecasted Avalanche hazard | Forecasted Weather influences |
|--|--|--|
| Monday 11th (for period 18.00 HRS Sunday 10 th to 18.00 HRS Monday 11 th .) | Weakly bonded windslab will continue to develop and avalanches are likely mainly on Westerly to Northerly aspects above 850 meters especially around corrie rims, gully tops, flanks, and crag aprons. Cross loading will affect other aspects. Wind exposed slopes will become eroded and be mostly stable with localized instabilities in sheltered areas. Cornices will develop and be unstable. The avalanche hazard will be Considerable. | Snow showers will continue into the night and gradually die out during the day. South East winds are expected to ease to Moderate and the freezing level will be at 400 metres. |
| Tuesday 12th (for period 18.00 HRS Monday 11 th to 18.00 HRS Tuesday 12 th .) | There has been heavy drifting at all levels. Accumulations of windslab have developed mostly on sheltered Westerly to Northerly aspects above 500 metres. On these aspects the snowpack is moderate to weakly bonded above 800 metres with improved stability below this level. Recent avalanche debris was observed on a North-West aspect at 1000 metres. Wind exposed slopes are mostly stable with localised instabilities in sheltered areas. The avalanche hazard is Considerable. | Occasional snow showers are expected. Moderate to strong South-East winds will veer to the South. The freezing level will be at 400 metres. |
| Wednesday 13th (for period 18.00 HRS Tuesday 12 th to 18.00 HRS Wednesday 13 th .) | There will be further loading of existing weaknesses, accompanied by a period of high instability during the temperature rise. Avalanches will occur mostly on steep North West to North East aspects above 850 metres. Cornices will weaken and be prone to collapse. Instabilities will affect other aspects due to old snowpack weaknesses and cross loading. The avalanche hazard will be High. | Light snow flurries overnight, then heavy snow expected during the day on strong to gale force Southerly winds. This will be followed by a sharp rise in temperatures as the freezing level rises from 100 to 1200 (to be checked) metres in the afternoon. |
| Thursday 14th (for period 18.00 HRS Wednesday 13 th to 18.00 HRS Thursday 14 th .) | The snowpack on Westerly through North to Easterly aspects will continue to be unstable above 600 metres where avalanches are likely, here, as cooler temperatures develop, the snowpack will gradually improve in all areas above 900 metres but will remain quite moist and moderately well below, steep slopes and convex terrain being most affected. Cornices will remain unstable. The avalanche hazard will be Considerable. | In the early part of the night heavy precipitation falling a sleet and snow above 1000 metres, with moderate South Westerly winds and a freezing level of 1200 metres. During early hours and the day no precipitation is expected, winds will be South Westerly then Westerly with the freezing level lowering to 900 metres. |

Figure 4 (avalanche reports for Northern Cairngorms 11th to 14th February 2013)

Chalamain Gap Incident

28. In line with its terms of reference, the first activity of the Panel was to establish all relevant facts surrounding the Incident of 14th February 2013. The following describes the facts deduced by the Panel on which later analysis, conclusions and recommendations are based.

Winter Mountaineering Course, 11th to 15th February 2013

29. The 5-day *Winter Mountaineering* course is for those who wish to develop an in-depth, practical knowledge of all the skills required to tackle winter scrambling type terrain, up to grade I/II on Britain's mountains. The course requires students to have good core winter movement skills, e.g. use of ice axe in both ascent/descent as well as crampons.
30. ██████████ completed the *Introduction to Winter Skills* course on 9th and 10th February 2013. This and his previous experience ensured he was appropriately skilled and experienced to undertake the *Winter Mountaineering* course commencing 11th February 2013.
31. The Panel heard ██████████ described as an aspiring mountaineer who was both enthusiastic and motivational. The Panel noted he planned to climb on Ben Nevis with his brother later in February.
32. ██████████ was the instructor appointed to lead the *Winter Mountaineering* course. ██████████ gained his MIC qualification in 2007 and since then had been leading courses at Glenmore Lodge for 5 to 6 weeks each year.
33. The Group met on the morning of Monday 11th February 2013 comprising:
- ██████████ Freelance Instructor, ML, MIA, MIC
 - ██████████, ML (MLW and MIA Trainee, shadowing)
 - ██████████ Student
 - ██████████ Student
 - ██████████ Student
 - ██████████, Student
34. On the first day of the course, in line with best practice highlighted in *Safety Policy: The Client Partnership*, the Group received a briefing from ██████████ about what the course would cover. He also undertook a review of the experience level of each of the students and their general mountaineering background. He made it clear that they could opt out of activities if they felt they may be beyond their ability. On each day of the programme he discussed plans for that day, including the activities, the venue, weather conditions, associated avalanche hazards and the equipment required.
35. The activity on Monday 11th February 2013 was crampon work in Coire Laogh Mor. During the day ██████████ demonstrated the digging of a snow pit as part of avalanche awareness training.
36. On Tuesday 12th February 2013 the Group worked in Coire an t-Sneachda. Having assessed weather conditions from the avalanche report the decision was made to work on the East and Southeast facing slopes. Other slope aspects in the Coire were judged to present a greater avalanche risk. They practiced moving on rock, ice and snow with crampons and building snow belays.

37. On Wednesday 13th February 2013, the weather forecast was for a day of heavy snow and storm force southerly winds with poor visibility and a high avalanche hazard level. Consequently, the access road to the mountain was closed and, as is usual practice at Glenmore Lodge on such days, Instructors evaluated their options and, in order to achieve something meaningful, sought to work in and around Glenmore Lodge. [REDACTED], in leading the *Winter Mountaineering* course, chose to work in the immediate vicinity of Glenmore Lodge using the trees to practice belays.

Incident timeline – 14th February 2013

38. On Thursday 14th February 2013 [REDACTED] attended the usual Instructors' morning meeting between 0845 and 0900 hrs. His initial plan was to take *the Group* to the Twin Ribs in Coire an t-Sneachda to practice rock belays, a core element of the *Winter Mountaineering* course.
39. The weather and avalanche forecasts (as detailed in Section 27) were reviewed during the meeting and each Instructor considered individually the impact of these on the plans for their Groups' activities. There was some discussion of where Instructors planned to take their Groups and these were recorded on the daily log sheet⁷ by the [REDACTED] (MIC, BCU Level 4 Inland).
40. Following confirmation that the ski road was closed and the Cas car park inaccessible, [REDACTED] realised that the original plan to go to Twin Ribs was no longer feasible. The Panel noted that it is not always possible to confirm whether the Cairngorm Mountain staff can clear the road of drifting snow and it is normal practice to plan on the basis of the road opening and make alternative plans when it becomes apparent that the road is not going to open.
41. Following the meeting, [REDACTED] discussed with [REDACTED] his new plan to take *the Group* to Chalamain Gap and no concerns were expressed about the proposed choice of location. The daily log sheet was amended to reflect the new venue.
42. [REDACTED] relayed the new venue to *the Group* and they discussed the equipment requirements for the day's rock belaying activity. The equipment they took from the stores that day comprised ropes and climbing racks. The Instructor made a judgement not to take snow shovels, avalanche probes or transceivers due to the nature of training planned for the day, i.e. they would be training on rock.
43. Group members had a mixture of their own equipment as well as that supplied by the Glenmore Lodge stores. [REDACTED] was given specific permission to carry two technical ice climbing tools by [REDACTED] as he wanted to provide him with the opportunity to undertake some dry tooling⁸.
44. As required by contract, [REDACTED] was carrying a Glenmore Lodge radio and his own mobile phone.
45. *The Group* waited in Glenmore Lodge for transport and arrived at the Sugarbowl car park at just after 1000 hrs and once kitted-up started the walk in.
46. The walk into the Gap was described as "uneventful" with sunny spells and a Southwesterly wind of about 15-20 mph. Throughout the walk [REDACTED] provided information and guidance to *the Group*. He highlighted the development of the snowpack on the left in the immediate approach to the Gap and the associated avalanche risk.

⁸ Dry-tooling involves climbing rock with ice axes and crampons.

47. *The Group* also noted and discussed a trail well broken by a party in front (as viewed in the photograph in Figure 4 below).



Figure 4 : ■ leading the Group towards Chalamain Gap

48. On arrival at the Gap, ■ and others in *the Group* noted the significant build-up of snow on the Northwest facing slope, as expected from the avalanche warning/s and previous weather conditions. Taking this additional risk factor into account ■ confirmed his earlier thoughts to work on the Southeast facing slope.
49. *The Group* said a brief hello to a party of 6, who were gearing up at the first buttress on the Southeast facing slope (as seen in figure 5). The full detail of all conversations with the other party is not clear, however, the Panel was able to ascertain that the other party confirmed its intention to at some point work on the Northwest facing (lower crag) on snow belays and bucket seats. ■ therefore moved *the Group* further up into the Gap on the Southeast facing slope, considering that this would ensure that each party had sufficient room to work.



Figure 5 : This reflects a photograph taken looking towards the Northeast : Glenmore Lodge party members are in the foreground preparing for their activities and the other party members are in the background

50. *The Group* then prepared for their planned activities, having lunch and selecting the equipment required for the activity on rock belaying.
51. *The Group* then split into two teams, [REDACTED] working with students [REDACTED] and [REDACTED] and [REDACTED] with students [REDACTED] and [REDACTED] leaving the kit and equipment that they did not need for the activity slightly up onto the Southeast facing slope.
52. Each team was selecting rock anchors and building belays, with instruction being given on choice of runners and anchors. [REDACTED] and [REDACTED] were at the bottom of their respective ropes. [REDACTED] was circa 1.5 to 2m up the Southeast facing slope and [REDACTED] a little higher some 12m away.
53. During this time the *other party* at some point moved to the foot of the Northwest facing slope and began their activities.
54. Just before 1230 hrs, [REDACTED] looked up and saw a roped member of the *other party* approaching the convexity high on the Northwest facing slope. This person was roped to another member of the *other party* further down the slope. The diagram below seeks to provide an estimation of deduced positions at this point.

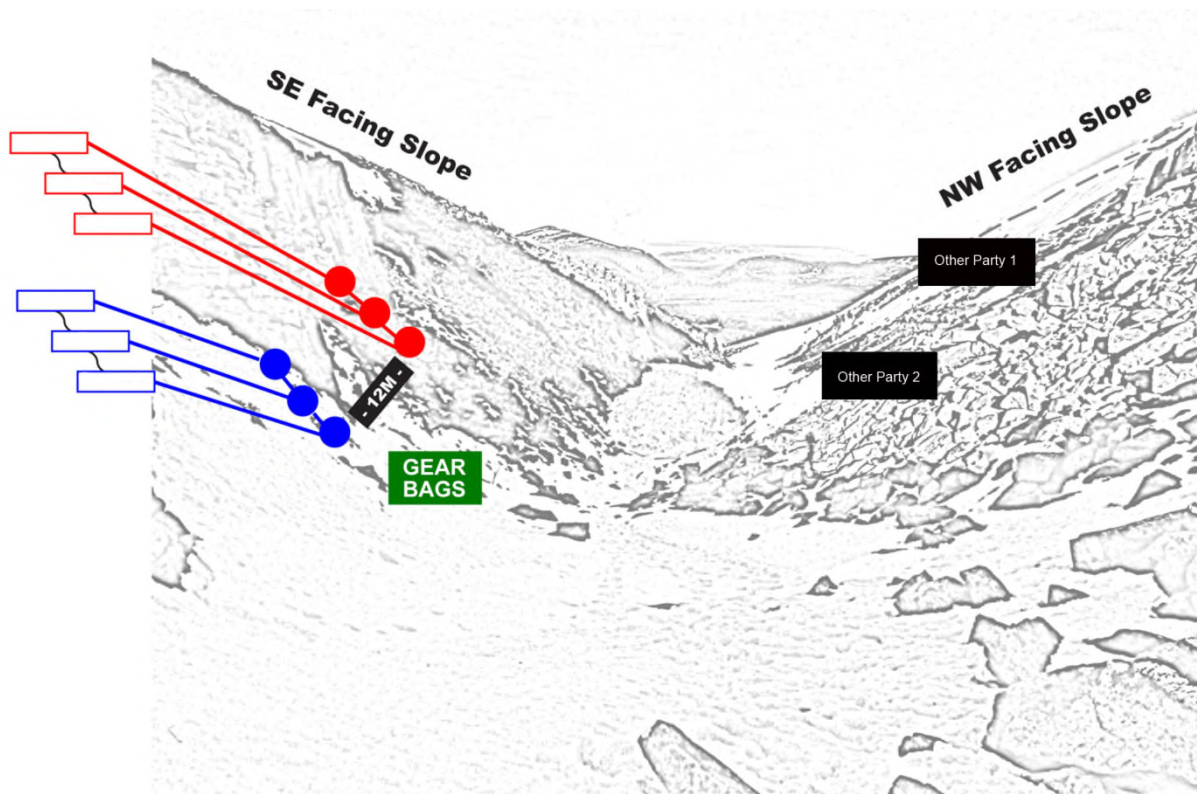


Figure 6 : Looking towards the Northeast (towards Glenmore and the Braes of Abernethy) – attempting to demonstrate the known positions immediately before the avalanche

55. Almost immediately the Northwest facing slope avalanched and, in line with accepted good practice in avalanche incidents, [REDACTED] shouted to *the Group* to spot and track the *other party* members who had been caught in the avalanche. He did this to help the accuracy of digging for the *other party* members.
56. *The Group* members recall being alerted variously by shouts and the sound of moving avalanche debris. [REDACTED], who had not yet been caught by the avalanche, was facing into the Southeast facing slope with his hood up.
57. One of *the Group* reported the avalanche flowing in two distinct phases. The first flow of avalanche debris came off the northwest facing slope and came to rest just below [REDACTED] position. The second wave of debris immediately tried to find its way past this barrier and flowed up the lower part of the Southeast facing slope overwhelming [REDACTED] as it did so. Figure 7 below attempts to describe this pattern.

Figure 7 : Looking in to the Gap from the Southeast facing slope indicating the avalanche flow and debris build up

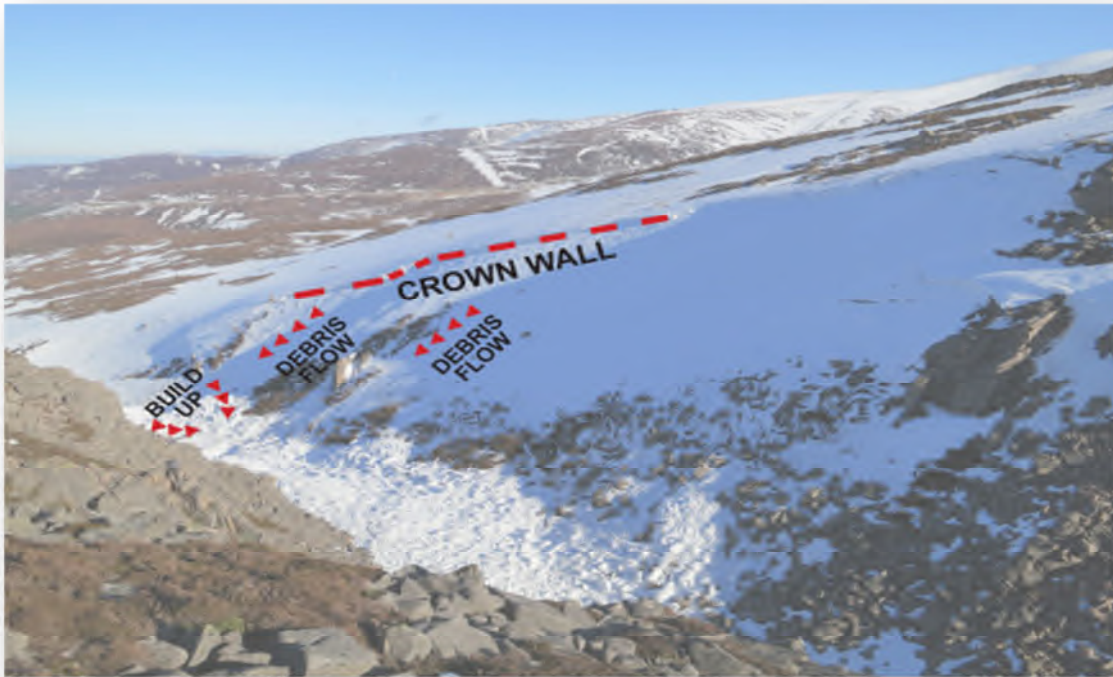


Figure 8 (taken from the Southwest facing aspect indicating the flow and build up pattern of the debris)

58. The total amount of avalanche debris that came to rest in the Gap has been estimated at upwards of 75,000 tonnes and coupled with the flow described above led to a depth of circa 7m.⁹ The photographs below show the width and depth of the post incident crown wall.

⁹ This information was reported to the panel by various sources and supported by avalanche expert [REDACTED] when interviewed.



Figures 9 and 10 : taken post incident to show the depth of the crown wall

59. █████ and █████ urgently made their way down the slope. █████, █████ and █████ untied from their ropes and also descended as quickly as they could.
60. Initially, █████ was out of █████ line of sight due to his complete focus on the *other party* members who had been caught in the avalanche to help the accuracy of any digging for the *other* members. █████ started to assist in the dig for the avalanched members of the *other party* and, as soon as he realised that █████ had been buried by the avalanche debris, he quickly changed from digging for one of the *other party* to leading █████ rescue, joining the other *GL Group* members. █████ had placed his ice axe to mark the position where █████ was last seen. The *other party* continued to dig for their buried members.
61. All rucksacks were buried under the avalanche debris, including the one containing █████ radio and phone. █████ had his mobile phone in his pocket and █████ sent him immediately to call for Mountain Rescue assistance. █████ went back up the Southeast facing slope until he got a signal and was able to make contact.
62. The essential information was relayed succinctly by █████:
 - major avalanche in the Chalamain Gap
 - three or four burials
 - at least 100m long crown wall (subsequently identified as 75m)
63. The rescue operator asked █████ to stay on the line but the connection was lost. He waited a few minutes for a call back and when none came he called Glenmore Lodge, initially speaking to █████, ensured they were aware of the situation and then returned to assist in the dig for █████.
64. *The Group* continued to dig for █████ with ice axes, using █████ rope as a guide. *The Group* rotated digging and moving the avalanche debris until the first rescue party arrived.

Rescue and Recovery Operation

65. The first rescue party arrived on site at circa 1325 hrs and [REDACTED] of MCoFS (who arrived with her SARDA dog and another handler and dog) took immediate control at the site and very quickly organized the probing and digging. Additional probes and shovels were requested and arrived with the Glenmore Lodge rescue team at circa 1345 hrs.
66. At circa 1418 hrs [REDACTED] was found unconscious and he received CPR during his evacuation.
67. The Glenmore Lodge Mountain Rescue Log noted a total number of 51 on site at 1423 hrs.



Figure 11 : Rescue party members

68. A request for [REDACTED] to be transferred to Aberdeen Royal Infirmary was made at 1429 hrs.
69. Glenmore Lodge passed on [REDACTED] personal details to Aviemore Police at 1415 hrs (and sportscotland HQ informed of incident at 1431 hrs in line with the Glenmore Lodge crisis management plan).
70. The other two casualties were airlifted to Aberdeen Royal Infirmary at 1541 hrs.
71. The remaining members of *the Group* walked out of the Gap and arrived at the Sugarbowl car park at circa 1615 hrs. They were then taken to Aviemore police station and interviewed individually by the Northern Constabulary. At the request of [REDACTED] Glenmore

Lodge) *the Group* was accompanied by [REDACTED] (Glenmore Lodge) to provide support.

72. As part of the Glenmore Lodge crisis management plan, [REDACTED]'s priority had been to support the rescue and to undertake an immediate risk assessment around continuing operations at Glenmore Lodge. He decided to continue operations, assessing that no other Group were at risk of avalanche and would soon be returning to Glenmore Lodge. [REDACTED] ensured that all Glenmore Lodge Groups were briefed on their return to Glenmore Lodge and kept informed appropriately (involving staff, students and contractors).
73. The GLMRT returned at 1658 hrs.
74. Whilst at Aviemore police station *the Group* (including [REDACTED]) was instructed by the Police not to make contact with [REDACTED] next of kin as this was the responsibility of the Police team responding to the incident.
75. *The Group* returned to Glenmore Lodge at around 2030 hrs and, after the opportunity to freshen up, they were given a hot meal by the staff that had remained on duty until their return. They then reflected on the day's events and were debriefed by [REDACTED] on all available information.
76. The notification of [REDACTED] passing was received by the Lodge at 0700 hrs on 15th February 2013 via a Northern Constabulary press update stating that [REDACTED] had lost his fight for life at 0300 hrs.
77. Training was suspended on Friday 15th February as a mark of respect to [REDACTED] and his family.

Post Incident

78. Following the release of the press statement confirming [REDACTED] death, first contact by the GLMT was made with [REDACTED] family on Sunday 17th February 2013 and following this and through the aftermath of the incident the GLMT members have sought to maintain contact through facilitating site visits, sharing openly all available information with them and providing an opportunity to meet with the Instructors who spent time with [REDACTED].
79. The Group members created their own informal contact group which the Panel noted provided valuable support immediately after the incident.
80. Members of Glenmore Lodge tried on several occasions to recover the Group's remaining personal belongings, however due to the amount of avalanche debris and continuing cold weather this was not completed until May 2013. Figure 12 below shows the depth of the avalanche debris at the beginning of March 2013 when the Inquiry Panel visited the incident site.



Figure 12 (showing avalanche debris height in March 2013)

- 81.** Whilst the Inquiry was ongoing, the GLMT undertook a comprehensive review of their winter programme arrangements, including lessons learned from all significant events and near misses. This extensive review included recommendations arising from a second avalanche incident.
- 82.** The Panel received regular updates from the GLMT on actions being taken forward whilst the internal inquiry was ongoing.
- 83.** Additionally, the Highlands and Islands Strategic Coordinating Group undertook a multi Agency structured Debrief report¹⁰ on the Chalamain Gap Avalanche on the 29th of May 2013. The

¹⁰ 'Highlands & islands Strategic Coordinating Group Multi agency Debrief Report Chalamain Gap Avalanche February 2013' Date of Report 10th June 2013.

participating agencies included Police Scotland,¹¹ Scottish Ambulance service, Cairngorm and Glenmore Lodge Mountain Rescue Teams and NHS Highland. The aims of the debrief were to:

- reflect on the multi agency response to the Chalamain gap Avalanche
- identify personal experiences of the response
- share these views and to establish: a) personal learning from the incident & positive use of that learning, and b) ideas/recommendations for the future.

84. The Panel notes the report findings as; *despite the tragic outcome the search and rescue response had been excellent with rapid response, good coordination and teamwork shown by rescuers in the location and in removal of the casualties from the avalanche debris. With the most positive aspect being the effective on scene management of the numerous rescuers in attendance. The report recommends “to ensure learning from the circumstances of the avalanche are incorporated in future training of instructional staff & outdoor skills training”.*
85. The Panel noted that prior to the Chalamain Gap Incident, plans had already been in place, by SAFOS to hold a sector-wide seminar on 20 April 2013 in order to provide a forum for leaders in the field of outdoor adventure activity to meet to discuss avalanche education in Scotland.
86. SAFOS was originally formed in 2001 and its role includes:
- *the provision of advice to sportscotland on the SAIS;*
 - *providing a forum for discussion, and support for, researchers on avalanches in Scotland;*
 - *promoting a better understanding of the avalanche problem amongst all who use the hills in winter conditions with representative bodies; and*
 - *giving advice on course content and syllabi for all levels of avalanche training and supporting appropriately qualified providers.”*
87. Glenmore Lodge is a regular contributor to SAFOS meetings and works with SAFOS in supporting the ongoing development of the services and information available from SAIS.
88. The Panel noted that the key action arising from the seminar was the development of advice for winter mountain users. SAFOS is carrying out a consultation exercise during the summer of 2013, based around giving advice in three stages:
- Planning
 - Travelling
 - Key passages
89. The consultation asked contributors to consider the effect of weather, avalanche, people and terrain factors.

Glenmore Lodge Health, Safety and Risk Management Framework

90. In line with its terms of reference, the Panel in considering whether any changes required to be made to existing processes, reviewed the current Glenmore Lodge policies, procedures and practices which make up its Health, Safety and Risk Management Framework.

Operating Context

91. Glenmore Lodge has been operating since 1948 and is **sportscotland**'s National Centre for Outdoor Sport, offering both personal skills and certificated training courses in a range of disciplines including Mountaineering. Glenmore Lodge, with the Inverclyde and Cumbrae National Centres, is overseen by the sportscotland Trust Board, incorporated in March 1992.

¹¹ Formally Northern Constabulary

92. The Panel heard Glenmore Lodge’s industry-wide reputation as a leader in the UK outdoor and mountaineering sector and is viewed as critical to the continuous improvement models and qualification frameworks which continue to be developed through the associated professional associations and National Governing Bodies, including MCoFS, MTUK and AMI.
93. [REDACTED], has overall responsibility for all areas of Glenmore Lodge operations and course provision. He reports to the Trust Board under the direct line management of the sportscotland Chief Executive.
94. The Glenmore Lodge Management Team (GLMT) structure relevant to the winter mountaineering programme comprises:
- [REDACTED] (UIAGM, MIC, BASI, ISIA, BCU Level 5 Inland & Surf)
 - [REDACTED] (MIC, IML, BASI)
 - [REDACTED] (MIC, IML, SMBLA)
95. The prolonged 2012/13 winter season provided excellent conditions for winter activities and as a result there was a significant increase in the number of students attending courses over previous years (as shown in Figure 12 below)

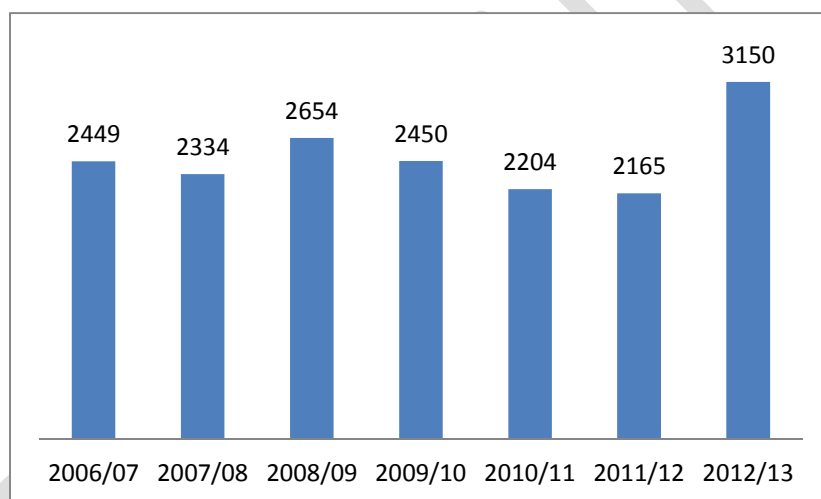


Figure 12¹² Glenmore Lodge student numbers 2006/07 to 2012/13

96. Glenmore Lodge offers over 240 different courses over a range of activities in summer and winter. Nineteen of these are mountain based courses, of which eleven contain winter climbing. Over 600 courses across all activities are delivered in a typical year, of which around 150 are winter courses carried out during a 12-week winter period. There is a structured progression from course to course allowing individuals to develop their skills and experience. The Head of Training creates an annual course calendar which is then advertised to the public through a hard copy brochure and website.¹³
97. Courses are run according to demand and once confirmed the training department will appoint an appropriately qualified and experienced instructor (either full-time or freelance). This is

¹² For brochure courses only, tailor made courses are not reflected in this graph

¹³ Glenmore Lodge. (2013). Course Calendar. Available: <http://www.glenmorelodge.org.uk/course-calendar.asp> . Last accessed 16th August 2013.

necessarily a flexible process which allows for a number of variables, including final student numbers and weather conditions. In some circumstances courses are cancelled due to lack of snow. There are clearly established ratios for the number of Students to Instructors for each of the courses.

- 98.** In line with its standard operating model for the winter programme, Glenmore Lodge engages the services of a valued and experienced cohort of Freelance Instructors (self-employed) via a contract for services over the winter period, The Glenmore Lodge Winter Mountaineering course programme is delivered predominantly by Freelance Instructors recruited for their specific skill set. They bring capability, energy and enthusiasm to the Lodge during what is recognised as a particularly demanding period of hard physical work. The nature of the contract for services means that Freelance Instructors may also choose to work for a number of other organisations and/or for themselves.
- 99.** The Panel recognised that the developing storyline of incidents and weather patterns in a single Cairngorm winter and over a number of winters provides invaluable professional knowledge for these Freelance Instructors and that consistent exposure to a Cairngorm winter produces a heightened ability to make appropriate safety decisions and to quickly tune in to the demands of leading parties on the hill, for example in the development of snowpack and the mental fitness of the instructor to make safety judgements. The Panel noted that it is not unusual for Freelance Instructors to work in other areas of Scotland when not at Glenmore Lodge allowing them to further their knowledge of developing winter conditions.
- 100.** The Panel also heard of the considerable demands placed on Instructors working week upon week in a hostile and physically demanding environment and therefore the use of Freelance Instructors provides additional support and resource for the full-time staff involved.
- 101.** Whilst the engagement pattern of some Freelance Instructors showed a gap of several weeks between periods at Glenmore Lodge, the Panel heard about the intensive instructor orientation and training which takes place at the start of the winter with all Freelance Instructors to share and reinforce best practice.
- 102.** The Panel noted that [REDACTED] had attended the winter programme induction day held for Freelance Instructors on 4th January 2013 and this was his seventh winter period working at the Lodge.
- 103.** The Panel reviewed the arrangements in place for the engagement of Freelance Instructors to ensure the best fit of instructor competence to the individual course.

Reporting Framework

104. The Panel noted that a Glenmore Lodge risk register is maintained by the Principal and reported to the **sportscotland** Trust Company Board and other internal **sportscotland** compliance groups, including the **sportscotland** Audit Committee and the **sportscotland** Health & Safety Committee.
105. Reporting for health and safety matters generally is through the **sportscotland** Health & Safety Committee which in turn reports to the **sportscotland** Board. This includes quarterly reporting of any accidents requiring external reporting through RIDDOR processes and other significant adverse events, including near misses.
106. Glenmore Lodge retains a comprehensive summary of all accidents and there have been 13 RIDDOR reported incidents in the last 5 years.
107. In reviewing the level of minor accidents over the same period (i.e. not requiring hospital attendance or time off work), it was noted that this remained fairly static at circa 20 per annum.
108. In this review of RIDDORs and minor reported incident patterns, the Panel noted that there had previously been one incident which had occurred whilst under [REDACTED] instruction, involving a broken ankle, and the Panel also noted that this was not attributable to the instruction..

Client Partnership Safety Policy

109. All clients booking onto a Glenmore Lodge course receive an induction briefing in which the *Client Partnership Safety Policy* ("Policy") is explained. This document provides key information for course participants around the risks associated with outdoor activities, what is expected of them and what they can expect from a Glenmore Lodge Instructor.
110. The policy specifically highlights to participants that *"Outdoor activities, by their nature, contain a degree of hazard and risk and despite the greatest care, accidents may still occur. All clients on Glenmore Lodge courses should be aware that involvement places them at risk of accident and potential injury, possibly serious or even fatal. Under normal circumstances, unless otherwise informed, it is assumed that clients having enrolled on the course of their choice are aware of and accept the inherent risk associated with the activity."*
111. The Policy also provides guidance around the role of the Instructor and the client's right of veto, *"Instructors are responsible for the safety of their clients during periods of training or assessment. In order to manage the risk, all clients are requested to draw to the attention of the instructor(s) if they are unhappy or feel the activity is beyond their ability. No client, irrespective of circumstances, is required to undertake any aspect of the training or assessment and may withdraw from the course at any time"*.
112. All clients are required to complete a Participation Form which requires them to sign their understanding of the terms and conditions above, which [REDACTED] had signed prior to commencing the course. During its considerations, the Panel noted that the GLMT had updated the form and the initial student briefing notes to make this even more explicit.

Safety Policy & Guidelines for Instructors (Full-Time and Freelance)

113. The Panel noted that the *Safety Policy and Guidelines for Instructors* (General, Mountain Activities & Paddlesports) had been reviewed and updated for use from January 2013. This critical document describes the risk management system in place for course provision and:
- makes clear the Instructor's Duty of Care and the role of the Instructor to “*encourage a challenge by choice approach and support the student's decision should they wish to opt in or out of any part of the programme*”. This is reiterated throughout the guidance.
 - includes the written risk assessments for key activity areas, whilst noting *it was not the intention to provide specific risk assessment of all the programmes of activity due to the variable, objective and subjective changes affecting these programmes..... Risk assessment is an important continuing process that management applies in programme and course planning. More importantly, it is the process that is an ongoing function carried out by all instructors within the delivery environment.* This refers to the dynamic risk assessment capabilities of the Instructor (referenced in detail later in the report). The individual activity risk assessments that are provided consider the hazards involved in each, assesses them in terms of Probability (Low, Medium & High) and Level (Minor, Serious & Fatal) and provides a management response.
 - provides guidance on the provision and use of radios, mobile phones and SPOT beacons.
 - provides the ratios of Instructor to Client for each of the non NGB courses (for Winter Mountaineering the normal ratio is 1 : 4). The Panel noted that the involvement of a Glenmore Lodge Trainee Instructor in the course had the effect of providing additional support for students.
 - provides guidance for groups with additional needs, e.g. under-18s.
 - makes mandatory the attendance at the Instructor Morning Meeting.
 - provides guidance around the involvement of students and mountain rescue incidents, noting that “*Students will not normally be employed in Mountain Rescue situations. If, however, a call out does request student group assistance then the instructor must determine....*”
114. The Panel noted that a “Guidelines and Risk Assessment Sign Off Sheet 2013” is in place and has been signed by Instructors once they have seen and reviewed these. [REDACTED] signed the sheet on the 4 January 2013.

Instructor Morning Meeting

115. The *Safety Policy and Guidelines for Instructors* makes attendance mandatory at the Instructor Morning Meeting which takes place daily between 0845 and 0900 hrs. In addition to reviewing the avalanche forecasts in the winter period, the stated purpose of the meeting is: “*to discuss weather conditions, logistics, transport and training venues and any other administration for the days training. The Group location for their day's activity is noted on the daily programme sheet and kept in the office. In some cases, individual instructors may source their own specialist weather/conditions information, e.g. sea state, climbing conditions prior to, or after, the morning meeting*”. The only exceptions were for groups already out on overnight snow-holing trips. With support and logistical services teams at Glenmore Lodge also represented, the meeting is the opportunity to set up a smooth delivery of the day's activities.
116. The Panel observed a meeting where the majority of the time was invested in hearing individual instructor plans for the day. Information from the MWIS and SAIS was shared and interpreted in discussion to give greater relevance. Many of the instructors' comments were based on what they had learned the previous day about their group, the progress they had made through their syllabus and the conditions they had encountered on the hill.

117. While Instructors were clearly focused on their own plans for the day there was a willingness to share knowledge based on observations made the previous day. Many of these related to avalanche risk and very specific locations where typically some wind slab development had been encountered. It was clear to the Panel that this information had a high value in the meeting and some instructors took notes while others took the opportunity to illicit further information from those who had recently been to their intended location for the day. There was a requirement for every instructor to state their intentions for the day, and while some gave alternative routes and locations there was no specific requirement to do so. Routes and activity location choice formed only part of the agenda however and transport logistics and other domestic arrangements were included.
118. Led by the Head of Training, the meeting was a formal opportunity for endorsing Instructors' plans. During later interviews the Panel heard of some uncertainty about instructor roles and responsibilities whilst in the meeting centering on how responsible instructors are for challenging or approving their peers' professional decisions and plans for the day.

Informal Arrangements

119. In addition to the formal Instructor Morning Meeting arrangements, the Panel heard that the opportunity of telling the story of a winter's day on the hill over *Tea and Cakes* or in the Instructors Office is universally recognised as an invaluable opportunity to learn critical safety information on the state of the snow pack in specific locations or where one may encounter loose rock on a crag.

Transport & Equipment Provision

120. Glenmore Lodge uses its own vehicles to transport student groups to the start points of their chosen venues and staff and contractors are required to be appropriately licensed to carry passengers. The fleet availability is necessarily finite and the mandatory Instructor Morning Meeting is also used to confirm the days transport logistics.
121. The Panel noted that Glenmore Lodge has extensive stores of the necessary equipment for all the activities it runs and makes these available for Instructors and students. The Panel heard that this was recognised and highly valued by Instructors, clients and external assessors.
122. Generally Glenmore Lodge Instructors exercise their mountaineering judgement, which reflects industry practice, around the use and carrying of equipment. The Panel noted that specific equipment guidance is identified within the Glenmore Lodge *Safety Policy & Guidelines for Instructors* related to the use of radio, mobile phone, SPOT Beacon and helmets. Additional guidance notes that the instructor should ensure the group is carrying the appropriate equipment to be drawn from "group shelter; first aid kit; emergency food; rope; shovel; avalanche probe; transceiver; and spare clothing".

Mountaineering Instructor Certificate

123. For the majority of winter mountaineering courses the MIC is the usual qualification for an Instructor, however, from time to time, Glenmore Lodge also deploys those with the Winter Mountain Leader qualification. The Instructor involved in the Chalamain Gap incident had held the Mountaineering Instructor Certificate since 2007.

124. The Panel reviewed the qualification framework for Mountaineering Leaders and Instructors, as described in Figure 14 below and noted that to achieve this Degree level qualification takes 5 years to complete.

The Mountaineering Instructors Scheme at a glance

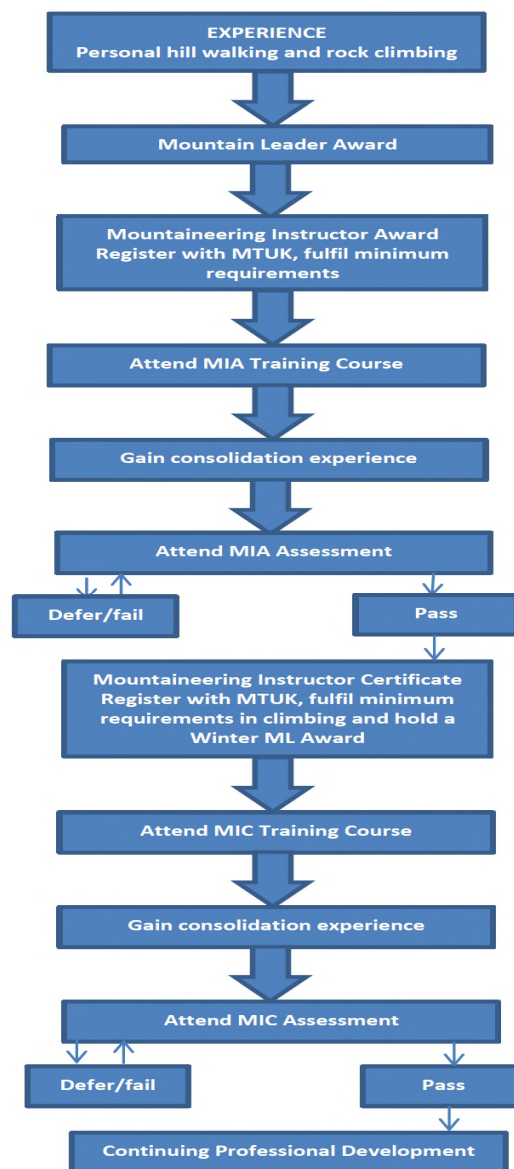


Figure 14 (Mountaineering Instructor Certificate qualification framework)

125. The MIC trains and assesses candidates in the skills required for the instruction of mountaineering, both summer and winter, including snow, ice and rock climbing. It builds on the skills acquired in both the MIA and Winter ML. Candidates must:

- hold the MIA
- hold the Winter ML

- have 20 days logged experience of winter party management, at least half of which must be post Winter ML
- lead winter climbs at Grade III or above
- have logged at least 10 routes at Grade II or above and at least 10 Grade III or above in a minimum of three main mountain areas of the UK.

126. Glenmore Lodge is one of only two places that can deliver the MIC scheme, the other being Plas y Brenin, the National English Mountain Sports Centre in Wales. MIC training is delivered at Glenmore Lodge by appropriately experienced full-time and Freelance Instructors.

127. MTUK is the Awarding Body for the MIC qualification and the Panel noted that the MIC is scheduled to be reviewed by MTUK during 2014.

Instructor Induction and Development

128. The Panel noted the quality assurance processes established and the associated continuous professional development and training opportunities offered through Glenmore Lodge to ensure that Instructors are able to maintain and develop their skills.

129. Glenmore Lodge makes a significant commitment to instructor training and development and in 2012 the average time spent on this was 13.7% for full-time staff and 16.2% for part-time staff.

130. Full-time staff generally receive 10 days training per annum in preparation for the season ahead. This includes the opportunity to trial new ideas, visit new potential venues for the various activities undertaken and work with specialist coaches across various discipline areas.

131. Most Instructors will receive further specialist training in pursuit of up-skilling to deliver NGB's latest offerings. This can range from 2 to 10 days per annum depending on what the NGB is developing and the needs of the individual to deliver the awards.

132. Specific to the winter season, Glenmore Lodge Instructors usually receive three days of mountain rescue training and work with specialists such as SAIS Co-ordinators to develop their knowledge and awareness. During 2011 and 2012, this was also offered to Freelance Instructors, who attended training sessions on an unpaid basis.

133. In preparation for both the summer and winter mountaineering programmes, it is the norm for Instructors to participate in an induction day at the beginning of the season. If Instructors are not available for this, they are required to carry out an individually tailored induction process prior to deployment.

134. The induction process aims to remind people of the ethos of the National Centre, the remit of the course in theory and practice, the operational processes surrounding the ongoing hazard evaluation and sharing requirements, the use of equipment, rescue procedures, etc.

135. The Panel noted the detail of the Glenmore Lodge Trainee Instructor Scheme, being undertaken during 2012/13 by [REDACTED], and the benefits of this to both the trainee instructors and the additional valuable skills and experience made available to training groups with which they are involved.

Dynamic Risk Assessment & Heuristic Traps

136. The Panel noted that in managing risk there is a need for Instructors to predict, based on training and experience, the sorts of events which might compromise safety and take steps to ensure, as far as possible, that they don't happen. Generic risk assessments, as outlined earlier, capture the known potential risks and remind the leader of options for mitigating them, but there are also unknown and emergent risks when operating in an outdoor winter environment.
137. In a dynamic outdoor environment such as the mountains, the sea or a river, the type, number and seriousness of risks can change as the day unfolds. For example, the variable dynamics on any given day in the mountains can include:
- the strength of the wind and wind direction
 - precipitation
 - temperature
 - the energy of *the Group* and their ability to achieve the intended objective
 - how confident the instructor feels
 - the state of the snowpack
 - remaining daylight
 - the influence of other parties
138. The above and other variables demand the ability to conduct a Dynamic Risk Assessment - which informs subtle or more radical judgements at various points during the day in order to manage emergent risks and is recognised as a core mountaineering skill. As well as being central to the MIC qualification, Dynamic Risk Assessment is identified as an important continuing process that is an ongoing function carried out by all instructors within the delivery environment.
139. Dynamic Risk Assessment will start from the moment the instructor assumes responsibility for a course and will continue until the course is complete. In practice, it is these on going decisions that will contribute to group safety and whether the activity is successful.
140. Prior to and on the day of the Incident, it is clear that [REDACTED] educated *the Group* with his thoughts and observations as they undertook their activities. Specifically on the day of the incident, during the walk into the Gap, [REDACTED] pointed out features related to the development of the snow pack, re-deposition of wind-blown snow, tracks of another party and conversations, including the associated risk of avalanche.
141. The Panel noted the concept of the heuristic trap, which forms an integral part of the Instructors' education and which was described as a shortcut to decision-making. The Panel noted that this may be a factor due to familiarity with an environment/situation or having made a commitment to undertake a particular course of action. The Panel considered its relevance in respect of the Incident and in addition to more generally to Glenmore Lodge's training and risk management systems.
142. The Panel detected in the Instructors it interviewed a broad understanding of the concept of heuristic traps and their relevance to working in avalanche terrain and noted that this subject was reinforced in the avalanche training and induction day at the start of the 2013 winter period.

Quality Assurance Framework

143. An internal quality assurance framework is in place for the Winter mountaineering programme which seeks to provide Glenmore Lodge confidence in the overall quality and the safety of course provision.

144. In reference to the Incident, the Panel noted that [REDACTED] had been assessed on three different occasions as being competent through the Glenmore Lodge internal Instructional Quality Assurance process, the last such assessment being carried out on 6th January 2012. This had been undertaken by [REDACTED].

External CPD

145. The Panel noted that Continuous Professional Development opportunities are available to Instructors through membership of various professional associations, such as AMI [REDACTED] [REDACTED] conflict of interest was noted in related discussion], BAIML, BMG, IFMGA, MTA and MTUK.

146. Membership of professional associations is not currently a formal requirement of Glenmore Lodge full-time staff, except where membership is a condition to operate as an instructor in any particular discipline. It is, however, stipulated within the Contract for Services agreement for Freelance Instructors that they have a duty to maintain, at their own cost, membership of governing associations/bodies relevant to the courses led and as required by **sportscotland**.

External Validation

147. Glenmore Lodge participates in the AALS and has achieved the relevant standard. The aim of this is:

“to provide assurances to the public about the safety of those activity providers who have been granted a license. A license indicates that the provider has been inspected by the Adventure Activities Licensing Service on behalf of the Adventure Activities Licensing Authority, with particular attention being paid to their safety management systems with young people, and has been able to demonstrate compliance with nationally accepted standards of good practice in the delivery of adventure activities to young people, with due regard to the benefits and risks of the activity”.

148. The Panel noted that Glenmore Lodge also participates in Adventuremark, the non-statutory safety scheme which seeks to allow *“providers to demonstrate to their customers or users that the provider’s arrangements for managing the potential risks of adventure activities have been inspected and found to meet the necessary standards of good practice in the adventure activity industry.”* Adventuremark was devised by the AAIAC who in turn have appointed the Adventure Activity Association Ltd as the Supervisory Body responsible for operating Adventuremark.

149. The Panel noted that a joint BCU and AAIAC “Top Up” validation exercise was undertaken in June 2013 where Glenmore Lodge achieved a rating of 1, the best rating available. Whilst the exercise was after the incident, the report summarized *“The range of health and safety systems, risk assessments and operating procedures that were sampled appeared to be comprehensive, in date and appropriate to the activities delivered.”* This validation exercise covered both the general risk control framework in place in addition to that specifically to support paddlesports. The Panel noted that additional “top up” activity reviewed the experience and competence of the Glenmore Lodge technical advisors for winter mountaineering and climbing, winter qualifications (WML, MIC, Mountain Ski Leader) and Mountain Rescue Team training.

Crisis Management Policy

- 150.** Glenmore Lodge has a Crisis / Emergency Management Policy in place to support the management of incidents when risks have been realised. Due to the seriousness of the Chalamain Gap Incident at initial reporting stage, the policy was implemented immediately by [REDACTED].
- 151.** The policy outlines procedures to be followed, including individuals to be notified, information to be collated and details around the setting up of a crisis group.
- 152.** During the Management Team's internal review exercise, the key learning point was the need for additional training in media relations for key staff, in noting that this is often an essential element of crisis/emergency management.

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CONCLUSIONS & RECOMMENDATIONS

153. In line with the Inquiry Terms of Reference the Panel has, as detailed within this report, identified relevant facts relating to the sequence of events leading up to, during and following the Incident at Chalamain gap on the 14 February 2013. It has also considered operational policies and underpinning Health, Safety and Risk Management processes and practices at Glenmore Lodge.
154. Having established these facts, the following section aims to answer key risk control questions identified in the Terms of Reference as well as considering a range of additional questions raised during the course of the Inquiry. The focus of the Panel has been to ensure that any lessons that can be learned are identified and appropriate recommendations put in place to ensure changes are implemented.
155. The final purpose of the Inquiry has been to consider if Glenmore Lodge has been operating within current legislation and to relevant best practice guidelines. The Panel has considered this in detail and is satisfied that Glenmore Lodge meets its statutory obligations and operates effectively to industry wide best practice guidelines. Indeed, a recent external audit undertaken by AALA has provided further reassurance in this regard confirming that Glenmore Lodge has in place effective policies and processes.
156. Whilst it is clear that a number of lessons can be learned from the Incident, against which the recommendations are made, the Panel would stress that it found no evidence to suggest that these would have necessarily had any direct bearing or impact on the outcome of the Incident. However, during the course of the investigation the Panel identified a number of key questions from which the conclusions and recommendations detailed below have been drawn.
157. **What were the immediate and underlying causes of the Incident?**

Conclusions:

- It is clear, as detailed earlier in the report, that the **immediate** cause of the Incident which resulted in the fatality of [REDACTED] was an avalanche in Chalamain Gap on the 14 February 2013.
- At the outset of the Inquiry the Panel also considered what approach should be taken to establish the **underlying** cause of the Incident. The Panel is absolutely clear (from its investigations) that the actions of the Group did not trigger the avalanche, therefore it quickly established that it should not focus on what triggered the avalanche, but instead consider the facts around why the Group was caught up in the avalanche and what actions had been taken by Glenmore Lodge and the Group instructor, prior to, during and post incident to ensure the safety of those on the Winter Mountaineering course.
- The remainder of the Conclusions and Recommendations are associated with this line of questioning.

158. Was it reasonable for the Glenmore Lodge Group to be led into the Gap to undertake a rock belaying activity on the 14 February 2013?

Conclusions:

- Chalamain Gap has traditionally been regarded as a safe corridor, in summer and winter, to other popular activity areas in the Cairngorms. As a lower level and easily accessible location it is also well used in winter conditions as a training venue by Glenmore Lodge, Mountain Rescue and other training organisations.
- The Panel identified only one recorded avalanche incident at Chalamain Gap which related to an incident in the late 1970s. The details of this incident are vague, although it is believed that it took place above, rather than within Chalamain Gap.
- A number of seasoned mountaineers interviewed by the Panel confirmed that they were aware of avalanches in the Gap, but it was also significant that they were surprised by the volume of debris released in the avalanche on the 14th February 2013, with several describing the avalanche as a "landmark" event, meaning they were surprised by the volume of debris. This referring to the fact that the incident would reinforce awareness amongst the mountaineering community that even 'safe' venues can at times pose a significant risk.
- In retrospect, it is possible that those passing through and considering working in the Chalamain Gap up to and including the 14th February may have fallen into elements of both the commitment and familiarity heuristic traps.
- Although there were, prior to the avalanche on the 14th February 2013, no recorded views or recollections of Chalamain Gap acting as a terrain trap, the depth and instability of the north west facing slope snowpack that day, created optimum conditions for the Chalamain Gap to work as a terrain trap by channeling and directing the flow of the avalanche.
- On the day of the avalanche the SAIS forecast extended the Considerable avalanche hazard category to slopes as low as 600m which as a result included the Chalamain Gap, however, the Panel noted that it was not unusual for Mountaineers to operate in areas that are avalanche prone, taking action in response to their ongoing risk assessment of conditions.
- There was a high level of awareness amongst Glenmore Lodge Instructors of the winter's extended southerly and south easterly winds and the existence of a continuing weak layer in the snowpack. Indeed, the information provided by MWIS and SAIS has a very high value amongst Glenmore Lodge instructors and forms a key element in risk management and decision making on choice of training venue.
- Specifically relating to the incident, ██████████ had considered forecasts, including the avalanche risk prior to making a decision to take the Group to Chalamain Gap. Indeed, throughout the week's training and during the lead in to the Gap on the 14 February, the Panel heard from students that ██████████ had regularly discussed avalanche features and risk with them.
- Upon arrival at the Gap it is also clear that ██████████ took considered action to move to a point on the south east slope which he believed to be a 'safe' location for the day's work. This followed a discussion with the other party about their intentions and recognition of conditions on the northwest facing slope.
- Estimating the volume of snow and the reach of an avalanche is extremely difficult even for the most experienced of mountaineers.
- While it is clear that there was recognition of an avalanche risk, the difficulty in accurately predicting the scale and flow of the avalanche was a significant factor which led to a

reasonable, albeit with the benefit of hindsight, erroneous decision about the safety of working on the southeast facing slope of Chalamain Gap.

Recommendations:

- Heuristic traps continue to be highlighted for those venturing into Scottish hills in winter through formal Glenmore Lodge winter programmes and support for the SAFOS avalanche education initiative.
- Awareness of Chalamain Gap as a potential Terrain Trap to be used as an educational example for the next generation of mountaineers and instructors working in the Cairngorms.
- Glenmore Lodge instructors continue to have easy access to a range of up-to-date opinions and views on the safety of specific winter training venues. An observation log and whiteboard system to be introduced.
- Liaison between Glenmore Lodge and SAIS receives high level support with a view to maximizing opportunities for sharing intelligence and professional opinion. For instance;
 - Considering how cumulative knowledge of Scottish avalanche activity, including accounts from those involved, can be recorded and used.
 - Consideration given to how subtle changes on the SAIS avalanche hazard dart board graphic, such as a lowering of height on the altitude rings, can be further highlighted.
 - Development opportunities should continue to be made available to professional and recreational mountaineers to aid their understanding and risk assessment of avalanche conditions and environments, including terrain traps.
- Consider opportunities to share lessons learned in external publications.

159. Were the Glenmore Lodge Group student members adequately experienced and skilled to be in the Gap undertaking the planned activity?

Conclusions:

- Members of *the Group* were adequately experienced to undertake the planned activity in Chalamain Gap in line with the course syllabus.
- Their individual levels of experience had been checked by [REDACTED] in a conversation at the start of the course.
- [REDACTED] had made an on-going assessment of their skill progression through the early part of their course.
- The chosen activity for the day, choosing anchors and building rock belays, was appropriate and within the course syllabus.
- There was clarity around [REDACTED] in the role of trainee instructor. He was appropriately experienced and supervised under the IDS and added significant value for course members by improving the instructor to course member ratio. He had recently completed a six-day Winter ML training course.

Recommendation:

- When those on the IDS are used in an assistant instructor capacity they should be subject to relevant and appropriate induction and continuous professional development, in line with other instructors at Glenmore Lodge. For instance, the involvement of trainee instructors in relevant aspects of the instructor Winter Induction day should be considered.

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160. Does the employment model operated by Glenmore Lodge have a negative impact on health and safety arrangements?

Conclusions:

- Access to a valued team of professional Freelance Instructors engaged on contract for services basis is essential to the smooth and effective operation of Glenmore Lodge and adds vigor and fresh perspectives to the demanding task of working in the Cairngorms in winter.
- The current well-planned and thoughtful approach to the recruitment, induction and continuous professional development of Freelance Instructors ensures a high standard of practice and awareness of hazards.
- Specifically, [REDACTED] is an appropriately qualified and experienced freelance instructor who had attended pre-winter training and had been internally quality assessed on three different occasions. There were no concerns expressed by the GLMT about his ability, skill and knowledge to fulfill his job responsibilities.

Recommendations:

- Where there are gaps in a Freelance Instructor's employment during the winter, they continue to be given all the necessary support and information bringing themselves back up to speed with the prevailing and historic weather and snowfall patterns and that this is reflected in a formal process.
- The Panel recommends that professional reflections on the events of 14th February 2013 become part of the resources available to Instructors as they prepare to make their own mountaineering decisions in the course of their work at Glenmore Lodge and elsewhere in the wider outdoor industry.
- The Panel recommends that GLMT review the guidance to Freelance Instructors to ensure it is clear that the authority of Glenmore Lodge is paramount and will always have right of veto over any decisions made affecting the welfare of Glenmore Lodge clients.

161. Is the qualification framework and opportunities for maintaining knowledge and skills either through Professional Associations or Glenmore Lodge CPD adequate?

Conclusions:

- The qualification and CPD framework for Instructors employed at Glenmore Lodge is extensive. All Glenmore Lodge Instructors hold appropriate qualifications and undertake regular CPD either through formal governing body processes or as part of Glenmore Lodge training programmes.
- Relating specifically to the winter programme, all Freelance Instructors engaged at Glenmore Lodge on a Contract for Services basis are required as a condition of contract to hold the appropriate level qualification and complete a winter induction. In the case of [REDACTED], he holds an MIC and had attended the winter induction on the 4 January 2013 along with all other instructors leading on these programmes.
- The Panel found that there is some inconsistency in membership levels of Professional Associations. Specifically, a number of Instructors were not members of AMI, which provides access to a range of information and development opportunities, and is therefore a potential valuable resource for Instructors.

Recommendations:

- During the recruitment of Freelance Instructors, a degree of weight and importance is given to those with AMI or other relevant professional association membership as a demonstration of an individual's currency.

- Glenmore Lodge should investigate the potential of recognition of their Induction process in CPD arrangements with AMI and other relevant professional associations.
- AMI membership should be made mandatory for Instructors where this is appropriately linked to the courses being provided.
- Glenmore Lodge to contribute the findings of the Inquiry to the external review of the MIC.

162. Was [REDACTED] aware of and, if so, did he comply with Glenmore Lodge Safety Policy Guidelines and Procedures?

Conclusions:

- [REDACTED] attended the Instructor Winter Induction on the 4 January 2013 and subsequently signed documentation confirming his understanding of Glenmore Lodge *Safety Policy and Guidelines for Instructors*.
- It is clear that [REDACTED] worked within the established Safety Policy and Guidelines.

163. Noting the reliance on the dynamic risk assessment process, are Glenmore Lodge instructors adequately supported to make appropriate decisions out on the hill?

Conclusions:

- The Instructors' freedom to revise decisions about training venue and route choice, while out on the hill is a vital responsibility which places significant emphasis on the skills associated with dynamic risk assessment.
- Glenmore Lodge has a range of appropriate formal and informal mechanisms in place to support and enhance an instructor's dynamic risk assessment ability beyond their qualification status. This includes seasonal induction training, quality assurance reviews and a daily morning meeting where plan A, B and even plan C can be aired with an opportunity for the widest possible peer feedback on prevailing conditions and further alternative options.
- The Panel found, however, that when a delayed decision on a training venue is made after the morning meeting, it may be approved with significantly less background knowledge and the most up-to-date site observations.
- In order to further improve communication, the GLMT has now put in place an end of day diary and is consulting with staff around options for creating a dedicated learning environment/ room in order to avoid any reliance on informal discussions which may not routinely involve the wider group.

Recommendations:

- Update the morning meeting guidelines to clarify the roles and responsibilities of those attending. Specifically highlight the role of the person 'leading' the meeting and emphasise the instructor's contribution in influencing the effective running of Glenmore Lodge and the safety of those attending courses.
- The length and agenda for the meeting is reviewed to ensure that appropriate time can always be given to issues of safety and risk management.
- There is further development of a best practice dynamic risk assessment model which takes account of the likelihood and impact of potential hazards.

- The daily activity log which specifies the location for each group should be revised to accommodate alternative training venues – the Panel notes that the GLMT has already reviewed and augmented this.
- In line with the GLMT action plan, the end of day diary arrangements to be formalised as part of the established risk management processes to ensure that any vital information is appropriately shared, including at the next morning meeting.

164. How significant is the influence of other parties on Glenmore Lodge training, when evidence demonstrates that safety can be compromised when using “honey pot” areas?

Conclusion:

- There can be significant risks posed by other parties on the hill at certain periods and in certain locations during the winter season.
- Known training sites attract groups with varying degrees of experience and amongst the hazards are avalanches, dropped axes and rockfall.
- In the Chalamain Gap Incident it is clear that █████ did ask the *other party* about their activity and took steps to locate the Glenmore Lodge Group away from them.
- It is, however, clear from interviews that the approach of Glenmore Lodge Freelance Instructors in dealing with ‘other parties/groups’ varies when out on the hill.

Recommendations:

- Whilst recognising that it is not possible to control the behaviours of others who are in the vicinity of any GL groups, the Panel recommends a more explicit written policy for Instructors on managing the risks posed by other parties or individuals on the hill in winter. This would complement the instructor’s dynamic risk assessment approach.
- The requirement to plan for alternative venues at busy periods such as February half term should be reinforced.

165. The Panel considered what pressure is placed on Instructors to complete the delivery of a course syllabus. More specifically, were any unnecessary risks taken in order to complete the *Winter Mountaineering Skills* course syllabus prior to the Incident?

Conclusions:

- It is clear that no undue pressure is applied to Instructors to complete courses by the GLMT. Should there be an absence of suitable weather conditions, alternative arrangements can be put in place- a view fully endorsed by MTUK.
- Specifically, it was found that although the Group had not been able to go out on the hills on Wednesday 13th February due to poor weather conditions, there was no evidence of any pressure being applied to █████ either by the GLMT or the students to complete the syllabus.
- The safety of the students appeared to have been paramount at all times and the decision to go to Chalamain Gap on the 14th February was not influenced by the need to complete the syllabus.
- Glenmore Lodge carried out a staff survey in April 2013 which sought to identify sources of pressure on Instructors and have since been working with an industry specific behavioural expert to analyse responses and develop appropriate responses.

Recommendation:

- Glenmore Lodge continues to work with an industry specific behavioral expert to develop appropriate policies and guidance to ensure staff are equipped to identify and manage any related work pressures.
- Glenmore Lodge to review 'The Safety Policy: The Client Partnership' and specifically update the policy in relation to the suspension of activities.
- Consideration to be given by GLMT as to whether the Client Partnership policy should be included on the back of booking forms and handed out at the start of courses.

166. Are the Glenmore Lodge health and safety and risk management policies and procedures appropriate, up to date and effective?

Conclusions:

- The health and safety policies within Glenmore Lodge are extensive and well supported by the GLMT and Glenmore Lodge practices. Several independent reviews have been conducted by bodies such as AALA which support this finding.
- Whilst it is challenging to identify close comparators, the level of both RIDDOR and minor accidents reported within Glenmore Lodge appear to be statistically low, particularly when considering the type of activities undertaken.¹⁴

Recommendations:

- Refresh of the process used to assess hazards and the likelihood and impact of associated risks to ensure internal consistency in both terminology and responses.
- Review the definition of incidents and associated escalation processes for internal reporting purposes. For example, what is regarded as a significant event or near miss?
- Include a risk assessment checklist for use by Instructors at induction and thereafter during internal quality assurance monitoring arrangements to demonstrate their ongoing competence.¹⁵
- Glenmore Lodge should continue to seek to influence the work of IAAC in the development of a process for shared learning from significant events.

167. Are Glenmore Lodge policies sufficiently explicit with regards to the use and distribution of equipment? Was the Group adequately equipped for the activities undertaken on the 14th February?

Conclusions:

- Glenmore Lodge has an extensive equipment store. This is readily available to Instructors and students alike and there is no restriction on what can be accessed.
- The 'Safety Policy and Guidelines for Instructors' provides explicit guidance on the use of radio, mobile phone and SPOT Beacons and when climbing helmets should be worn but beyond this the use of other equipment is based on the judgment of the instructor who has 'responsibility for ensuring students are properly clad and equipped for the given activity'.

¹⁴ Health and Safety Executive (2001) Reducing risks, protecting people, UK: Her Majesty's Stationery Office.

¹⁵ Along the lines of that proposed by Marcus Baillie in an article for the Institute for Outdoor Learning (2006) 'Risk assessments, safety statements and all that....', Horizons, (Winter, 36), pp. 13-15.

- Depending upon the season, conditions, weather, and activity being undertaken, the policy states that the instructor will “draw equipment from the following; group shelter; first aid kit; emergency food; rope; shovel; avalanche probe; transceiver; and spare clothing”.
- During the course of the Inquiry it was identified that the Group had not taken transceivers, probes or shovels with them into the Gap on the day of the Incident due to the planned activity being on rock rather than on snow, as was the case on the Monday 11th February when as part of avalanche training the equipment had included a snow shovel. The Panel has not been able to identify any evidence to suggest that having any of these would have made a material difference to the outcome of the incident. It has, however, raised important questions in terms of readiness of Glenmore Lodge groups to deal with future incidents such as an avalanche.
- It was also identified by the Panel that following the avalanche, ruck sacks were buried under debris and the majority of phones/radios were still inside them. ██████████ was carrying his mobile phone on his person and was able to use this to summon help, however, this incident has shown the value and importance of carrying phones/radios on the person.
- The Panel is aware that there is an ongoing industry wide debate in the UK on when transceivers, probes and shovels should be carried, whilst noting that in countries such as Canada and most parts of Europe, it is normal practice to carry such equipment throughout the winter period.

Recommendations

- Glenmore Lodge should review and update the ‘Safety Policy and Guidelines for Instructors’ relating to the use of equipment. It should explicitly clarify its policy in relation to winter environments and the use of shovels, avalanche probes, transceivers and any new technological safety equipment.
- The Safety Policy and Guidelines for Instructors should also be reviewed to be more explicit in how radios and mobile phones should be carried to ensure they are continuously available to Instructors and Students as appropriate.

168. Could anything more have been done by *the Group* or Glenmore Lodge in responding to the Incident or its aftermath?

Conclusions:

- The immediate response by both ██████████ and ██████████ to the incident was in line with best practice, noting that ██████████ relaying of information to GLMRT ensured the rescue effort was fully and immediately informed as to venue, scale and impact.
- All reports indicated that the Glenmore Lodge response to the Incident was extremely well managed by ██████████ and his team.
- The information and support provided by the GLMT immediately after the incident was very well received (including at the Police Station, at Glenmore Lodge and attendance at ██████████ funeral).
- The Glenmore Lodge crisis management plan (or business continuity plan) was enacted appropriately, however, it did not include arrangements for any post incident support (with valuable informal contact group set up by *the Group* members themselves).

Recommendations:

- The crisis management plan to be revised to ensure clarity of categorization of incidents which will trigger its application and a form of regular scenario testing to be included to ensure it remains fit for purpose.
- Specific arrangements to be put in place to support those involved in potential traumatic events (staff, contactors and students), e.g. based on the TRiM system.
- Opportunity to be provided to students to complete course if they have been disrupted due to a significant adverse event.

169. The above recommendations have been presented to the GLMT and a management response provided against each (as detailed in Appendix 2). Progress against the actions being taken forward will be monitored through the overarching sportscotland health and safety governance arrangements, i.e. through the Health and Safety Committee, and reported to both the Trust Board and sportscotland Board.

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APPENDIX 1

WITNESS LISTING

[REDACTED]

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