

# Human Factors and Led Outdoor Activity Incidents

## Stage 1 Summary of Outcomes

### ***Project Background***

While the exact rate of incidence is unknown (due to the paucity of exposure data), it is acknowledged that safety compromising accidents and incidents occur in the led outdoor activity domain, and that they represent an important issue (Salmon et al, 2010). Despite this, compared to other safety critical domains, little is currently known about the key causal factors involved in such accidents and incidents, or about the most appropriate countermeasures and strategies to employ for accident and incident prevention.

### ***Stage One Tasks***

Stage one involved the conduct of a literature review focussing on led outdoor activity accident causation and the role of human factors in led outdoor activity accidents, and the conduct of an exploratory analysis of three led outdoor activity accidents using two theoretically underpinned, systems-based accident analysis methods and one method from the led outdoor activity domain. A workshop involving project stakeholders, led outdoor activity personnel, and researchers from MUARC was then held in order to disseminate the research findings and to determine the most appropriate way forward for the subsequent phases of this research.

### ***Stage One Findings***

Compared to other safety critical domains, research into accidents and incidents in the led outdoor activity domain has thus far been sparse. As a corollary, the industries understanding of accident causation and prevention is currently limited. A number of led outdoor activity accident causation models were identified, however analyses using these models have not been evident to date. Anecdotally there seem to be relationships between accidents and human factors in this domain, and a case to continue to expand the research is strong.

A universally accepted model of led outdoor activity accident causation, and a comprehensive taxonomy of causal factors, is yet to emerge. It is also apparent that the majority of causal factors identified previously are instructor-based, focussing on instructor causal factors and errors as the main causes of accidents and incidents. Previous research in other safety critical domains, however, has highlighted the role of wider systems failures in accidents and incidents. Human error is no longer seen as the primary cause of accidents, rather it is treated as a consequence of failures created by decisions and actions at all levels of the system (e.g. government, local authority, designers, manufacturers, company management, front line operation).

The importance of accident and incident databases in ascertaining causal factors and for informing the development of accident countermeasures and prevention strategies was discussed. The literature review identified a number of National and International databases containing data regarding outdoor activity accidents and incidents; however the lack of a unified National database was highlighted. The importance of accident and incident databases in the analysis and future prevention of accidents and incidents was acknowledged.

### ***Stage 1 Recommendations***

MUARC identified the following key lines of inquiry/activities:

1. Development of a unified, theoretically underpinned accident and incident reporting system;
2. Development of a National led outdoor activity accident and incident database;
3. Development and application of a theoretically underpinned, systems-based accident analysis method;
4. In-depth analysis of led outdoor activity accident and incidents; and
5. Development of a led outdoor activity accident causation model and associated failure taxonomies.