Risk Management in Experiential Education

2024 Experiential Education International Forum, September 27-29, 2024

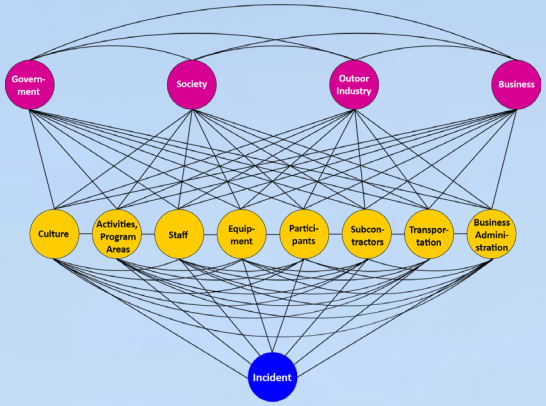
Jeff Baierlein, Director, Viristar

viristar.com/wuhan-risk

Safety Science: Key Points

Experiential Education: a Complex Sociotechnical System

Incident Causation Models



Practical Application: Providers

- Redundancy
- Extra capacity
- Just Culture

Practical Application: All Domains

- Laws & regs
- Codes of Practice
- Governing bodies

Zipline Incident

- Challenge course installed at primary school, Singapore
- Nine-year old girl sent off zipline
- Falls from zipline, 11 meters (4 storeys)
- Fractures hip, elbow, pelvis

VIRISTAR

Zipline Incident

- Zipline traveled from 4th floor across courtyard to 3rd floor
- On 3rd floor, receiving instructor removes pulley, give to participant to bring back to launching instructor

VIRISTAR

Zipline Incident

- Sending instructor attaches pulley and lanyard to zipline

VIRISTAR

Zipline Incident

- Note the dangling ‘lock slider’ attached to pulley by small plastic zip tie

VIRISTAR

Zipline Incident

- Receiving instructor took pulley off of zipline, and mistakenly clipped lanyard to plastic zip tie, not to pulley
- Launching instructor did not notice this, and launched participant

VIRISTAR

Who is Responsible?

- **Receiving instructor**
- **Sending instructor**
- **Company/managers** overseeing instructors
- **School**, where zipline was based
- **Installer**
- **Inspecting company**, who approved system
- **Manufacturer** of pulley apparatus
- **Industry associations**, lacking good practice guidelines
- **Government**, which lacked adventure safety regulations

Complex Socio-technical Systems

1. Difficult to get wide recognition that a problem exists
2. Difficult to achieve shared definition of problem
3. Difficulty to identify all contributing factors
4. Limited influence over some contributing factors
5. Interventions may have unintended consequences
6. Incomplete information about effectiveness of possible solutions
7. Constant changes to nature of problem & potential solutions

VIRISTAR

Complex Socio-technical Systems

Examples:

Global climate crisis

Inequity & exclusion

Experiential education

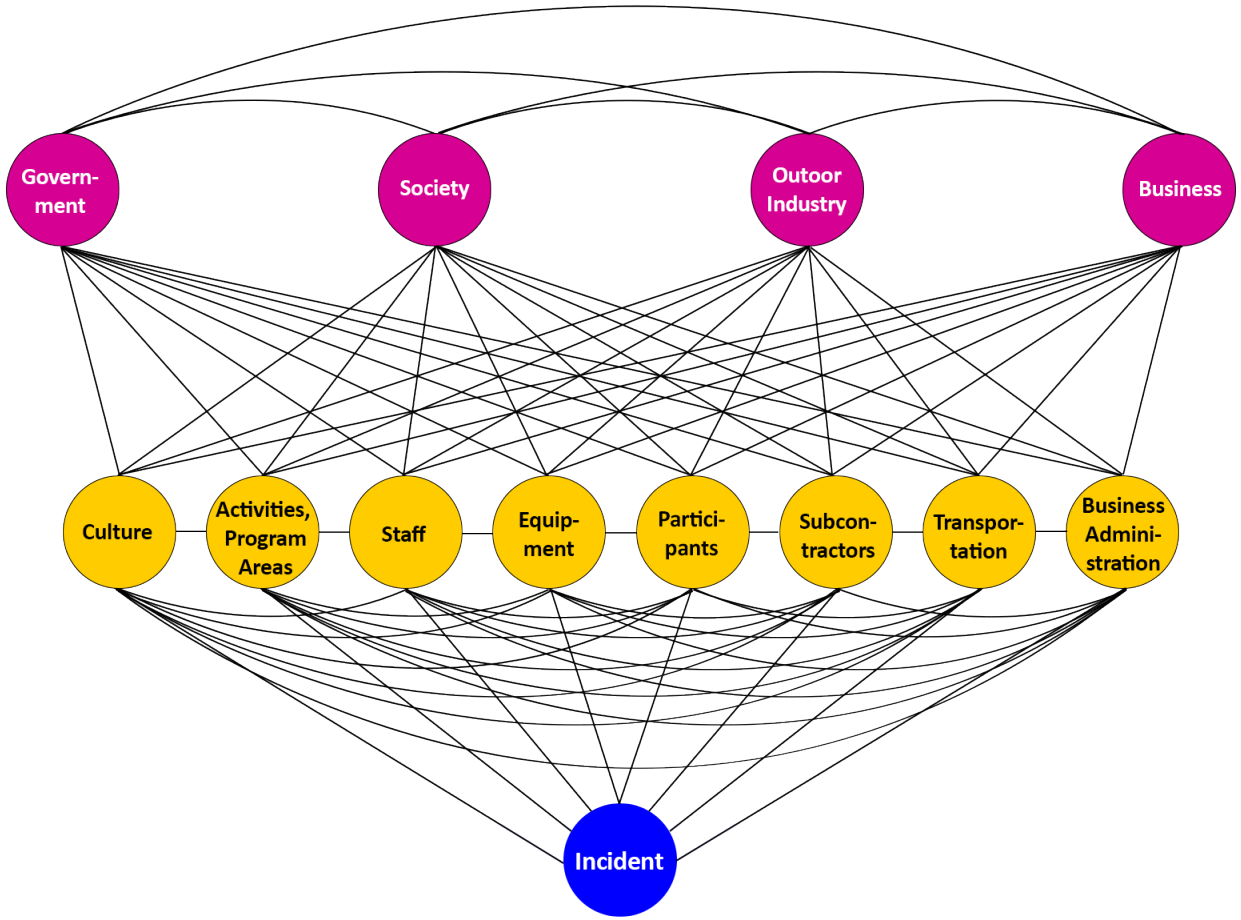
VIRISTAR

AcciMap Model

Government	*Passes laws*
Regulators, Associations	*Creates regulations*
Company	*Sets policies*
Management	*Makes operating plans*
Staff	*Performs work actions*
Work	*Involves hazardous processes*

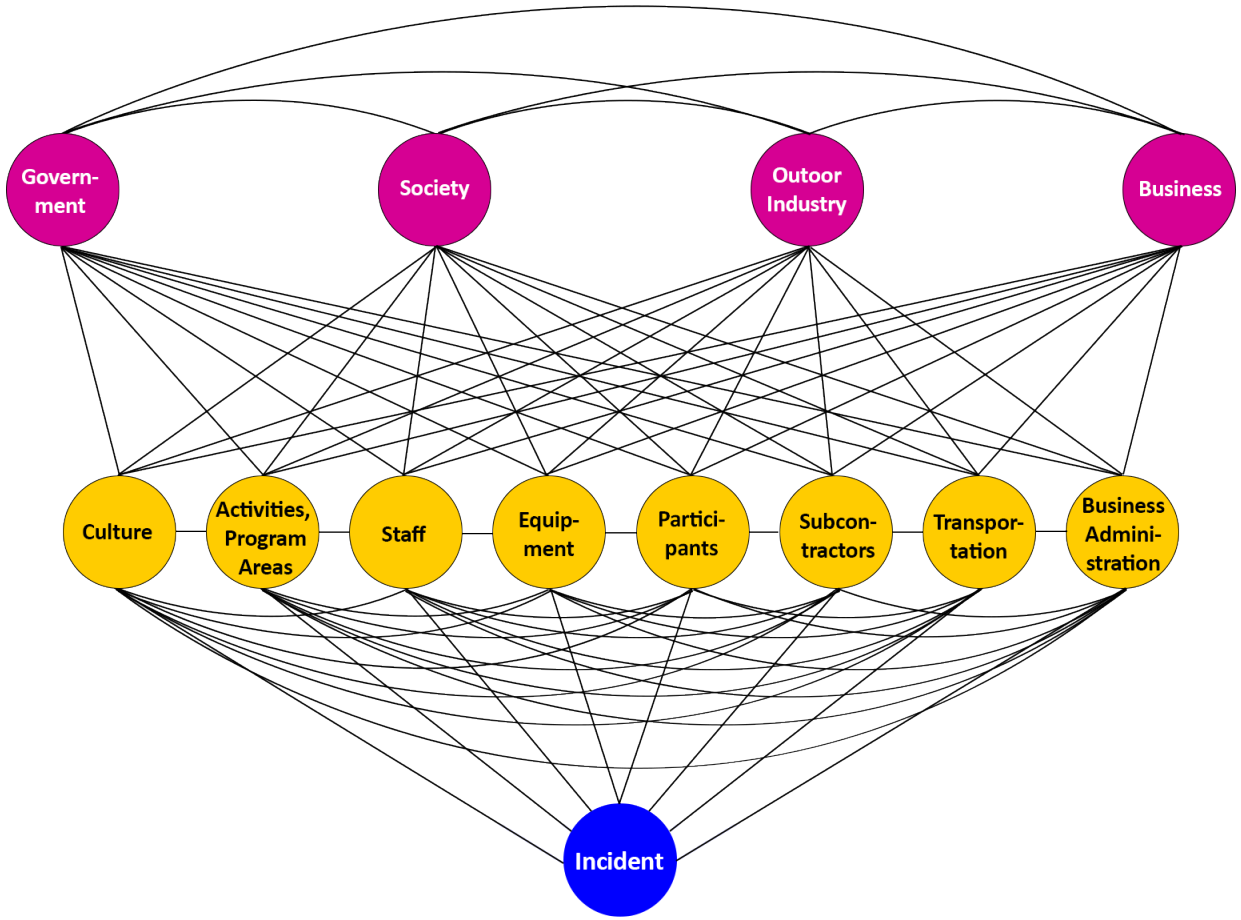
VIRISTAR

Risk Domains Model



VIRISTAR

Risk Domains Model



Risk Transfer

Incident Management

Incident Reporting

Incident Reviews

Risk Management Committee

Medical Screening

Risk Management Reviews

Media Relations

Documentation

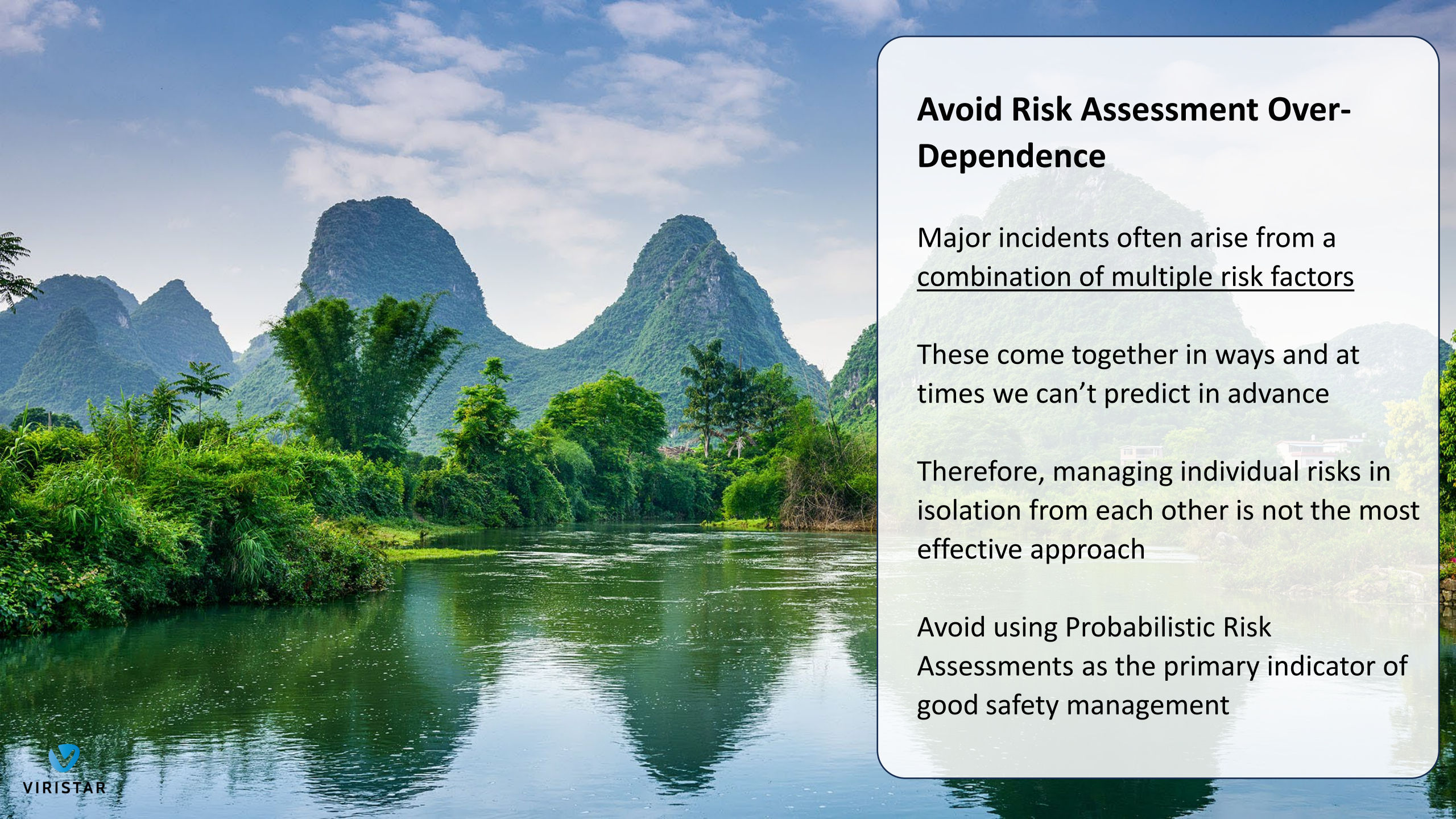
Accreditation

Seeing Systems

VIRISTAR

Practical Application: Providers

VIRISTAR



Avoid Risk Assessment Over-Dependence

Major incidents often arise from a combination of multiple risk factors

These come together in ways and at times we can't predict in advance

Therefore, managing individual risks in isolation from each other is not the most effective approach

Avoid using Probabilistic Risk Assessments as the primary indicator of good safety management

VIRISTAR

Example: Yukon, Canada—First Nation School Board

First Nation School Board

School board oversees experiential learning for K-12 learners

Historically, schools had to submit risk assessments for each trip

Project led by Viristar to:

- Remove risk assessments for each trip
- Add accreditation-style demonstration of standards conformance

Resilience Engineering

Recognition that failure within the safety system is inevitable

Builds capacity to withstand failure of one part of the safety system, without catastrophic loss

Involves:

- Redundancy
- Additional capacity

VIRISTAR

Resilience Engineering

Redundancy

- Multiple ways to identify emerging safety issues
- Multiple leaders per group, trained in first aid
- Participants trained emergency response
- Multiple emergency telecom devices
- Multiple emergency evacuation options

Additional capacity

- Backup staff, equipment available
- Staff trained to operate at level higher than conditions normally require—e.g. Class IV paddler to lead Class III whitewater

Just Culture

- When an incident occurs, don't automatically blame the person closest to the incident
- Look for—and address—underlying factors
  - Safety culture
  - Policies and procedures
  - Safety management system
- See normal human error as a *symptom* of a system problem, not as the problem

Distinguishes between honest human mistakes and intentional misconduct

Just Culture

Examples

Motor vehicle incident:

- Insufficient training?
- Schedule too rushed?
- Workload leads to insufficiently rested driver?
- Culture of not following rules?

Accident Compensation Corporation, New Zealand: no-fault compensation for accidents

VIRISTAR

In the experiential education sector, what is going well with regards to safety?

What are opportunities for improvement?

Practical Application: All Domains

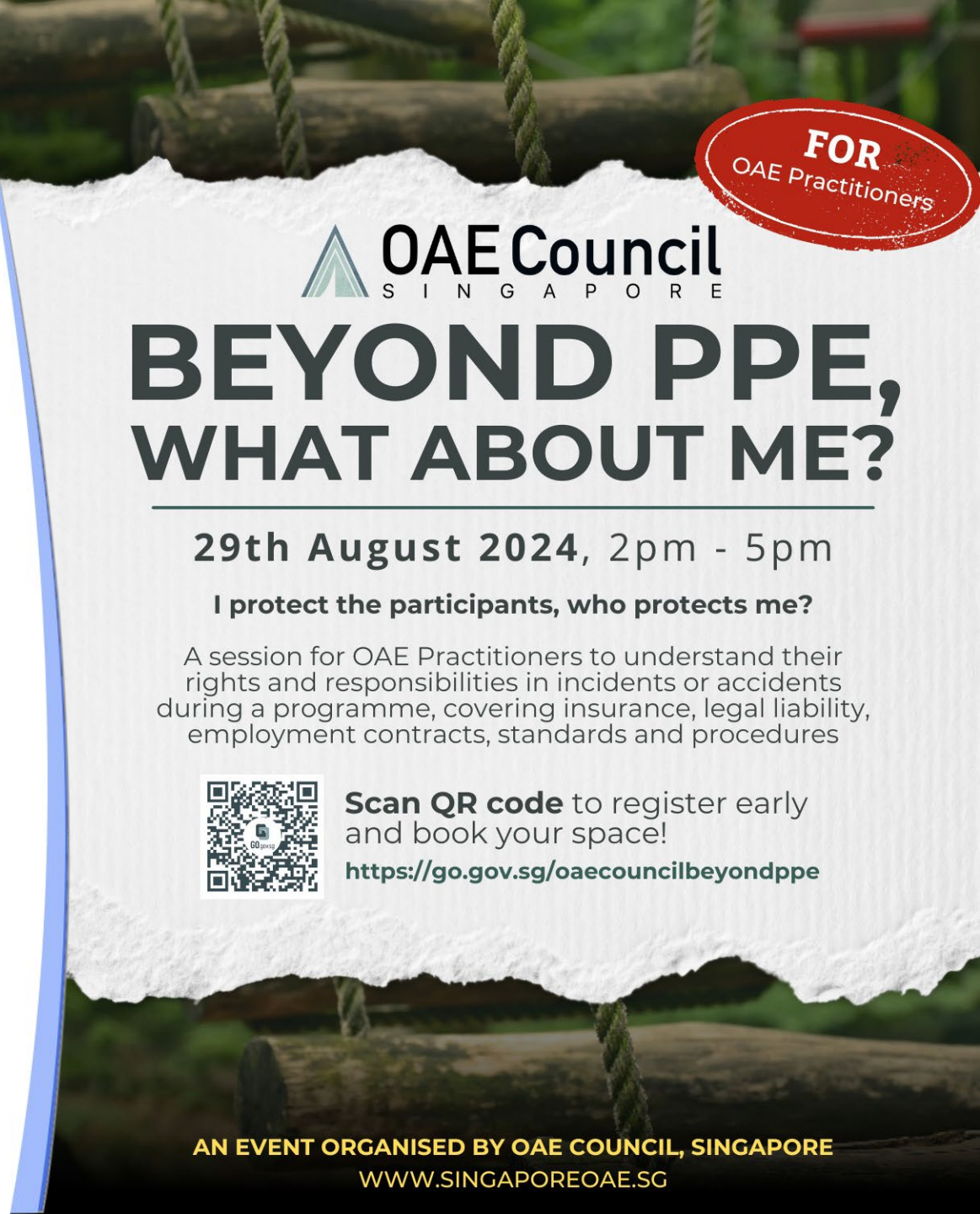
VIRISTAR

Systems-based approach to safety

Includes:

1. Laws
2. Regulations
3. Approved Codes of Practice
4. National Governing Bodies & Industry Associations
5. Good Practice Guidelines
6. Activity Leader Certification/Qualification Schemes
7. Organization Accreditation Schemes

VIRISTAR



Law and Regulation

Law

Switzerland

Ordinance
on Mountain Guides and Organisers
of other High-Risk Activities
(High-Risk Activities Ordinance)
of 30 January 2019 (Status as of 7 April 2020)

935.911

New Zealand

Health and Safety at Work Act 2015

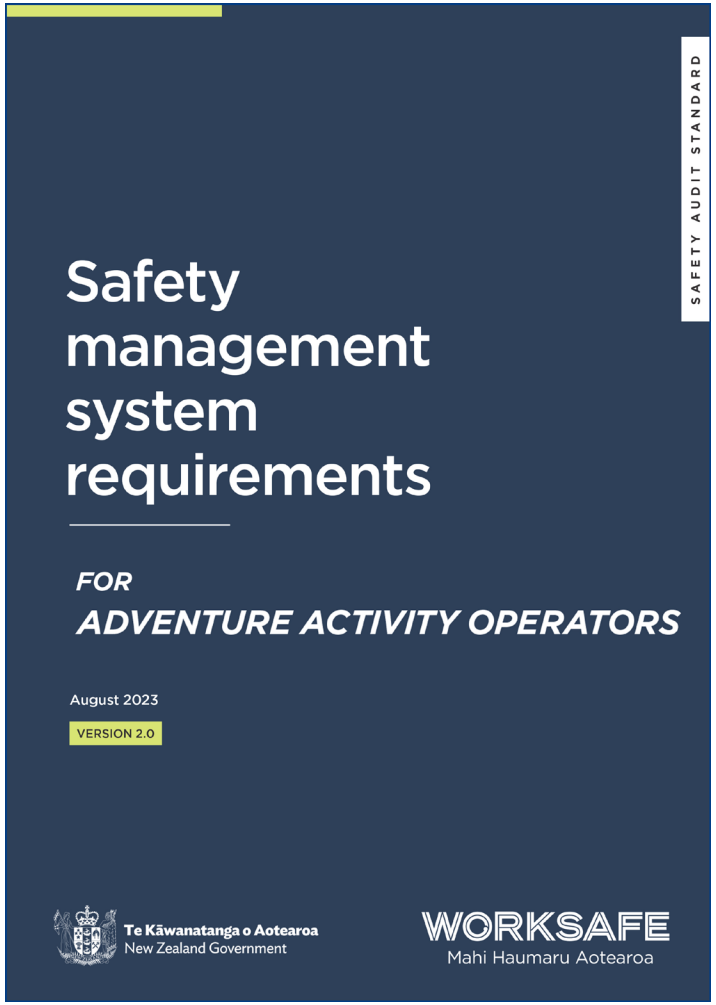
Public Act 2015 No 70

UK

Activity Centres (Young Persons' Safety) Act 1995

1995 CHAPTER 15

Regulation



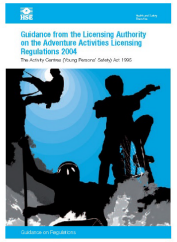
Approved Code of Practice

HSE

Health and Safety Executive

Guidance from the Licensing Authority on the Adventure Activities Licensing Regulations 2004

The Activity Centres (Young Persons' Safety) Act 1995



This is a free-to-download, web-friendly version of L77 (second edition, published 2007). This version has been adapted for online use from HSE's current printed version.

You can buy the book at www.hsebooks.co.uk and most good bookshops.

ISBN 978 0 7176 6243 2
Price £11.50

This book outlines the adventure activities licensing scheme, gives guidance on safety standards and on the licensing authority's functions and the approaches it will adopt in its dealings with providers and the public.

The aim of the licensing scheme is to give assurance that good safety management practice is being followed so that young people can continue to have opportunities to experience exciting and stimulating activities outdoors.

Much of the material in this book was issued in 1996 but the legal position changed when the Health and Safety Executive (HSE) was designated as Adventure Activities Licensing Authority (AALA) from 1 April 2007. Other changes include adopting the lessons learned in the previous years of operation; and clarifying areas that have caused confusion. The technical content has been fully updated where required.

The following activities are within the scope of the scheme:

- **caving** (underground exploration in natural caves and mines including potholing, cave diving and mine exploration, but not in those principally used as show-places open to the public);
- **climbing** (climbing, traversing, abseiling and scrambling activities except on purpose-designed climbing walls or abseiling towers);
- **trekking** (walking, running, pony trekking, mountain biking, off-piste skiing and related activities when done in moor- or mountain-country above 600 metres and which is remote, ie over 30 minutes travelling time from the nearest road or refuge);
- **watersports** (canoeing, rafting, sailing and related activities when done on the sea, tidal waters or larger non-placid inland waters).

Code of Practice on

Workplace Safety and Health (WSH) Risk Management

WSHCOUNCIL

Tripartite Alliance for Workplace Safety and Health

National Governing Bodies & Industry Associations

NGBs manage training schemes, training centers, and voluntary standards systems

Singapore Sport Climbing and Mountaineering Federation

association for experiential education

亞洲體驗教育學會

Asia Association for Experiential Education

Sports Councils

In the UK, the government grants a charter to a national Sports Council.

The Sport Council oversees National Governing Bodies, including matters of safety.

These cover many experiential adventure activities (climbing, paddling, etc.).

Challenge courses, not a “sport,” are excluded.

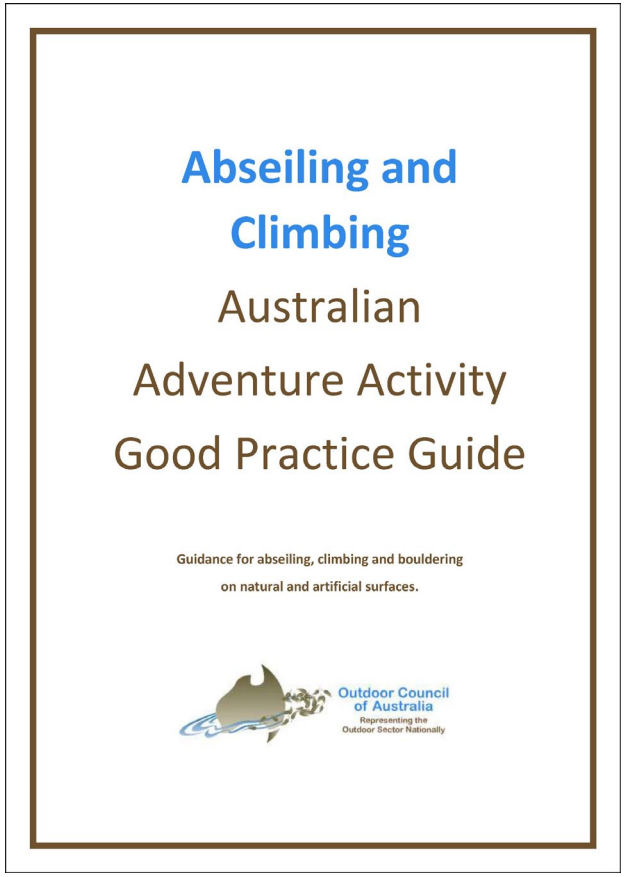
SPORT ENGLAND

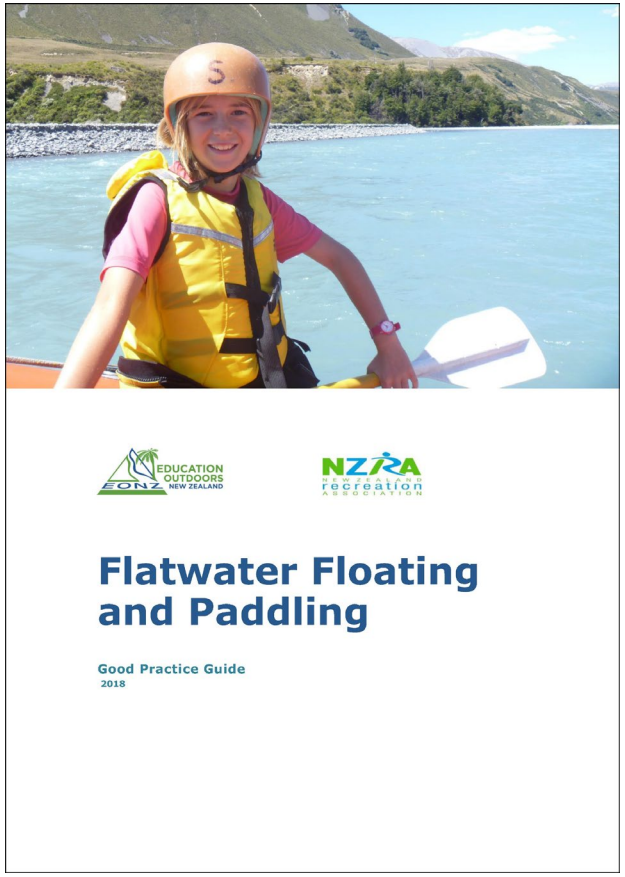
sportscotland
the national agency for sport

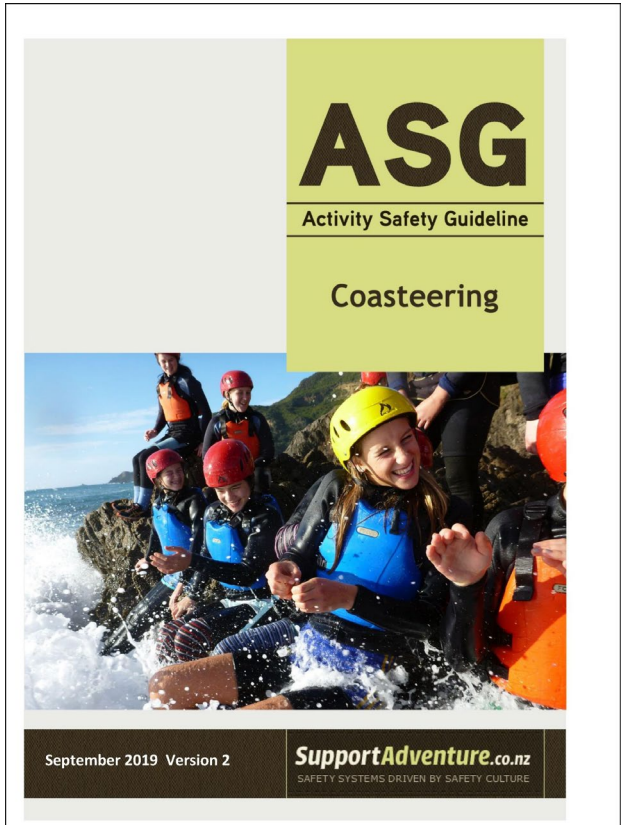
sport Northern Ireland

sportwales
chwaraeoncymru

Good Practice Guidelines







Activity Leader Qualification/Certification

Accreditation of Organization

THE OFFICIAL SEAL OF ACCT
THE ASSOCIATION FOR CHALLENGE COURSE TECHNOLOGY
ACCT

ACCREDITED
Outdoor Behavioral Healthcare
INDEPENDENTLY ACCREDITED BY aee

ACCREDITED
GAP YEAR ASSOCIATION
PROGRAM

accredited by
aee
Association for Experiential Education

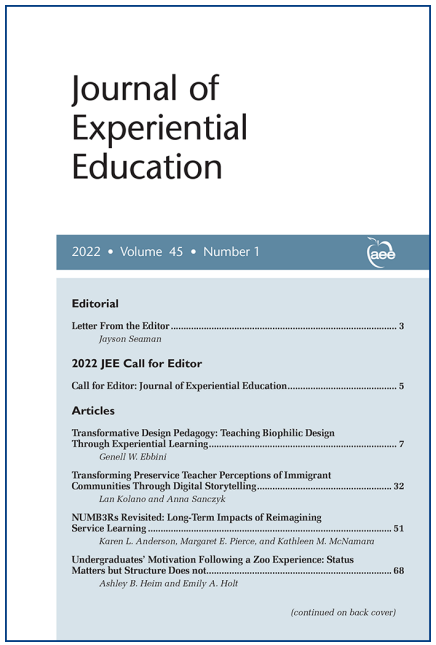
OAE Council
SINGAPORE
(pending)

ADVENTURE SAFETY
ACCREDITED ORGANIZATION
VIRISTAR

Other NGB services

Conferences

Academic journals


Journal of Experiential Education

2022 • Volume 45 • Number 1

Editorial

Letter From the Editor 3
Jayson Seaman

2022 JEE Call for Editor

Call for Editor: Journal of Experiential Education 5

Articles

Transformative Design Pedagogy: Teaching Biophilic Design Through Experiential Learning 7
Genell W. Ebbini

Transforming Preservice Teacher Perceptions of Immigrant Communities Through Digital Storytelling 32
Lan Kolano and Anna Sanczyk

NUMB3Rs Revisited: Long-Term Impacts of Reimagining Service Learning 51
Karen L. Anderson, Margaret E. Pierce, and Kathleen M. McNamara

Undergraduates' Motivation Following a Zoo Experience: Status Matters but Structure Does not 68
Ashley B. Heim and Emily A. Holt

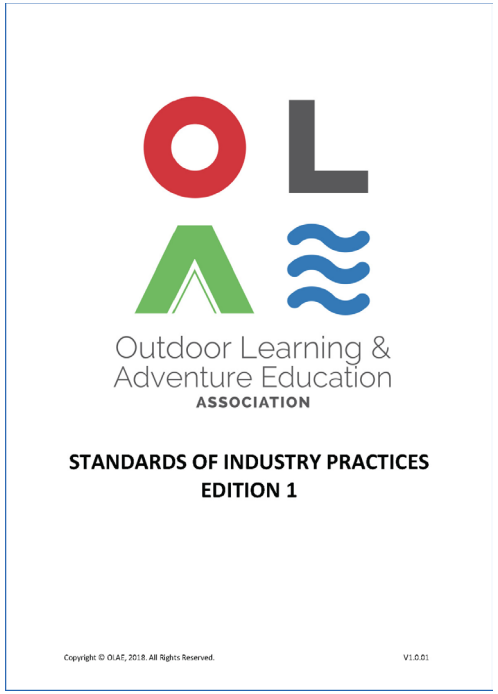
(continued on back cover)

Networking

VIRISTAR

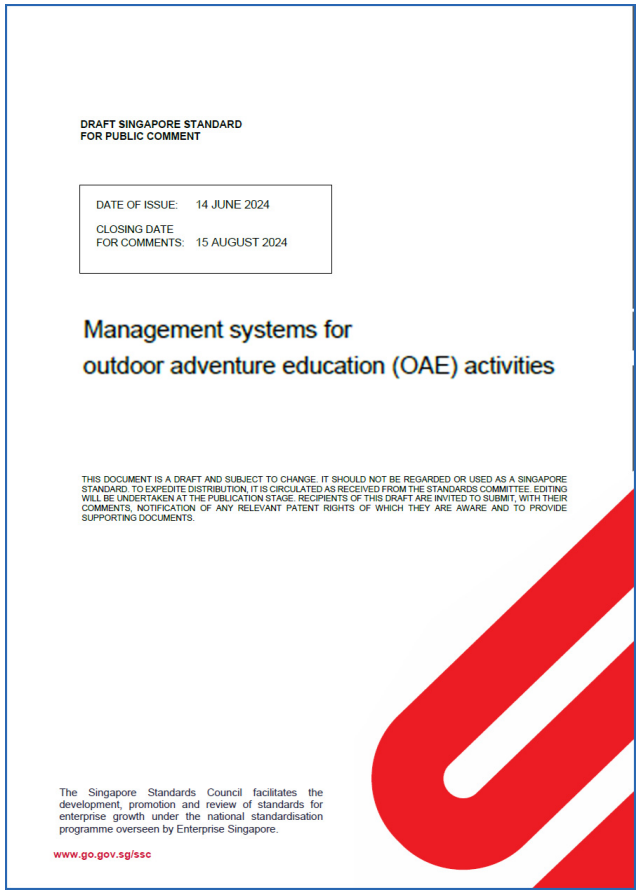
Challenge Course Incident

- Government temporarily suspended high elements activities
- Industry association investigated improvements to existing standards
- Government required additional height-based activity facility accreditation, instructor qualification



Challenge Course Incident

- Public-private collaboration developed comprehensive outdoor adventure education standard
- Outdoor adventure education accreditation planned


DRAFT SINGAPORE STANDARD
FOR PUBLIC COMMENT

DATE OF ISSUE: 14 JUNE 2024

CLOSING DATE
FOR COMMENTS: 15 AUGUST 2024

Management systems for
outdoor adventure education (OAE) activities

THIS DOCUMENT IS A DRAFT AND SUBJECT TO CHANGE. IT SHOULD NOT BE REGARDED OR USED AS A SINGAPORE STANDARD. TO EXPEDITE DISTRIBUTION, IT IS CIRCULATED AS RECEIVED FROM THE STANDARDS COMMITTEE. EDITING WILL BE UNDERTAKEN AT THE PUBLICATION STAGE. RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTS.

The Singapore Standards Council facilitates the development, promotion and review of standards for enterprise growth under the national standardisation programme overseen by Enterprise Singapore.

www.go.gov.sg/ssc

Outdoor Learning & Adventure Education ASSOCIATION

Ministry of Education SINGAPORE

OAE Council SINGAPORE

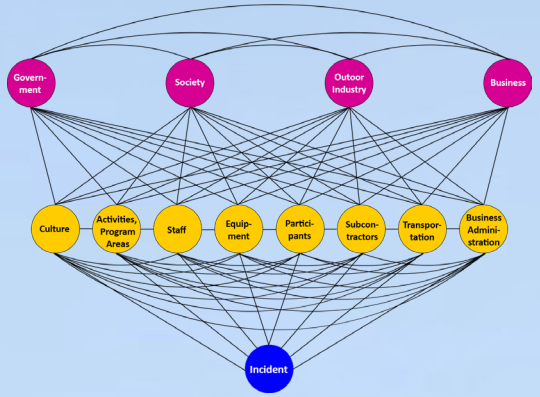
NYC NATIONAL YOUTH COUNCIL SINGAPORE

Safety Science: Key Points

VIRISTAR

Experiential Education: a Complex Sociotechnical System

Incident Causation Models



Practical Application: Providers

- Redundancy
- Extra capacity
- Just Culture

Practical Application: All Domains

- Laws & regs
- Codes of Practice
- Governing bodies

Risk Management in Experiential Education

2024 Experiential Education International Forum, September 27-29, 2024

Jeff Baierlein, Director, Viristar

viristar.com/wuhan-risk

Questions

1. What next steps can be taken to support the development of **National Governing Bodies** and **industry associations** in China to advance the field of experiential education?
2. What **good practice guides** can be written and shared, to enhance safety in experiential activities?
3. What **activity leader qualification (certification) schemes** can be further developed, to improve safety and quality in experiential education?
4. What **organization accreditation schemes** can be established to support quality and safety at the company level?
5. How can **government and the private sector continue to collaborate** to advance the safety and quality of experiential education?