

Basics of VSG approach to risk assessment can be found in our publications.

You can get free electronic copy from your organisation (or ask Outscape). Hard copies now available for £12. (Link to purchase is on VSG website).

Now achieved one of our original aims: For government and enforcement agencies to recognise VSG represents best practice in the sector.

These words are from HSE website advising their own staff that prosecution after an accident would be unlikely if the land owner has followed VSG principles.



The law does not specify how to do risk assessment.

Under criminal law (Health and Safety at Work Act, 1974) they need to be 'suitable and sufficient' - but how to achieve this is not defined.

Under civil law (defined in several Occupiers' Liability Acts) you have a duty of care to ensure that visitors will be reasonably safe.

We have chosen to follow the method recommended by HSE. (This gives the advantage of reassurance and familiarity if you are being investigated by the enforcing authorities or in front of a judge.)



A hazard is anything that has potential to cause harm.

You need to consider the whole range of hazards that are on your site.

It is essential that someone carrying out risk assessments has good knowledge of the site and its visitors.

Risk assessments carried out by small teams almost always produce more comprehensive and higher quality results.

Sometimes it is helpful for one of the team to bring a fresh pair of eyes to the site.



It is helpful to consider the hazards through the eyes of your users.

Some will result from activities of visitors.

Recreation user groups and governing bodies will have good information about the hazards typically encountered in their particular sports and activities.

Step 2: Consider who might be harmed and how

- know your visitors age, abilities, experience
- know your visitors activities and behaviour
- accident records on site, elsewhere, emergency services
- accident reporting



√ VSG

Need to gather information from surveys?

Can learn a lot by taking time to watch behaviour of visitors.

Learn from others.

Have easy ways for staff and public to report accidents and near misses.



How do you calculate the level of risk?

And judge whether the risk is acceptable?

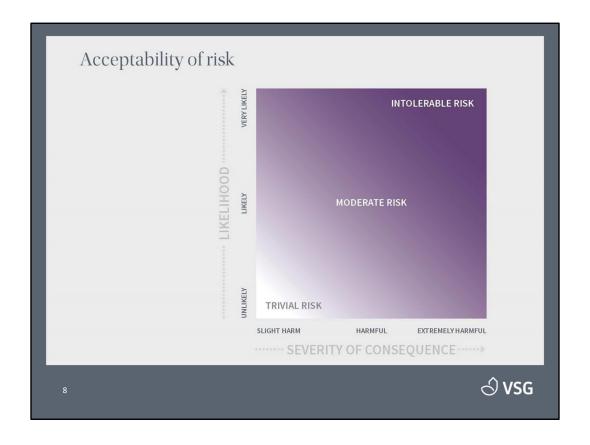


Illustration from VSG publication.

Top right: multiple fatalities almost certain to happen are not acceptable!

Bottom left: No need to consider remote possibilities causing no real harm.

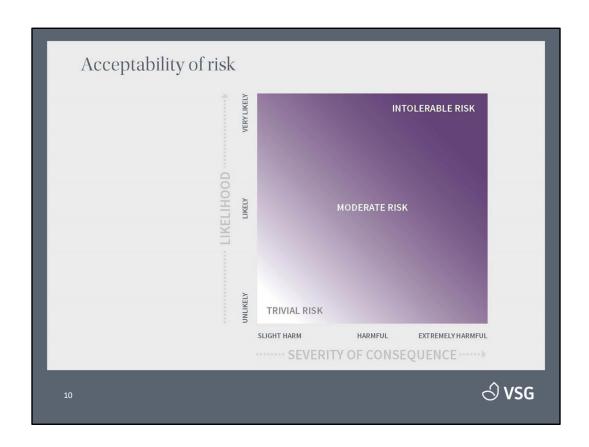
Middle area: Judgement here is trickier. But does scoring help?

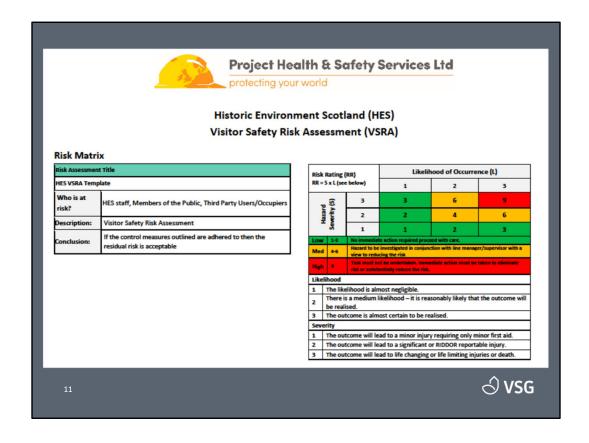
Accept	ability	ofr	isk					
	Risk Rating (RR) RR = S x L (see below)			Hazard Severity (S)				
				1	2	3		
	d of	Likelihood of Occurrence (L)		3	6	9		
	ihood			2	4	6		
	Likel			1	2	3		
			급기					
	Low	1-3	No immediate action required proceed with care.					
	Med	4-6		to be investigated in conjunction with line er/supervisor with a view to reducing the risk				
	High	9		iate action must be taken to eliminate risk or ntially reduce the risk.				
				SLIGHT HARM	HARMFUL	EXTREMELY HARMFUL		
				····· SEVE	RITY OF CONS	SEQUENCE		
9						ු vsc		

Application of numerical values to previous diagram.

Simplest three by three matrix.

Red 9 is the intolerable risk. Green 1 equates to the trivial.





This matrix is the one proposed by the consultants for HES.

Note the guidance provided on how to score.

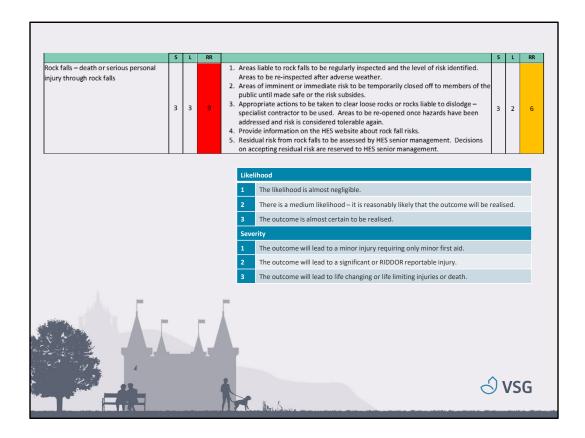
Risk Rating (RR)		Likeliho	Likelihood of Occurrence (L)					
RR = S x L (see below)		1	2	3	3			
Hazard Severity (S)		3	3	6	9			
		2	2	4	6	6		
		1	1	2	3	3		
Low	1-3	No imn	nediate action required proceed with care.					
Med	4-6		Hazard to be investigated in conjunction with line manager/supervisor with a view to reducing the risk					
High	9	1	Task must not be undertaken. Immediate action must be taken to eliminate risk or substantially reduce the risk.					

The template also tells the HES assessor whether the risk is acceptable, based on the score.

(Note the language. 'Task must not be undertaken.' Reveals the approach and template come from consultants who usually deal with occupational risk.)

I do not believe that the score should be used to provide a definitive decision. It implies a spurious degree of accuracy. When in fact the numbers entered most often derive from subjective judgements.

Happy if numerical models provide guidance to aid consideration. Unhappy to see them used unthinkingly.



3X3 scoring has benefits and drawbacks.

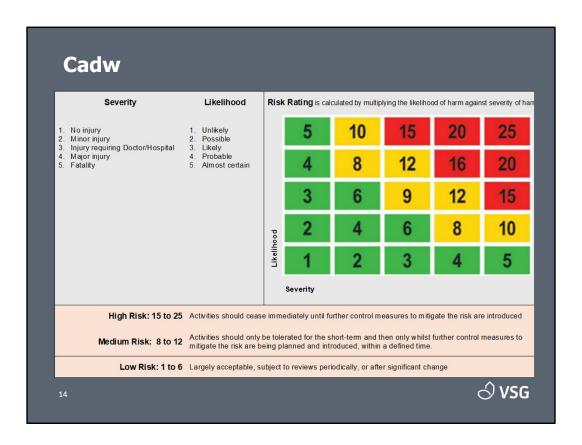
Above is extracted from HES template sent to staff responsible for site risk assessment.

Shows reduction in residual risk after new risk controls introduced. This is useful.

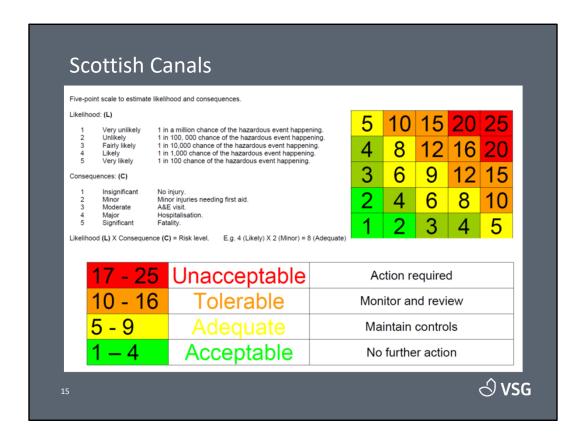
However, I would question initial premise that the hazard of rock falls should score 9. This implies that a falling rock is almost certain to strike someone underneath.

Seems unlikely, unless at sites where rocks are prone to fall where people are gathered. Might happen at, for example, seaside if cliffs are prone to fall in summer.

However, generally rock falls occur in winter. Fewer visitors likely, and mostly on the move whilst passing under hazard.

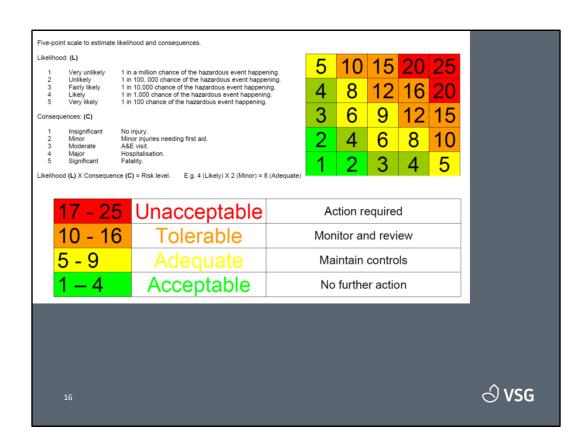


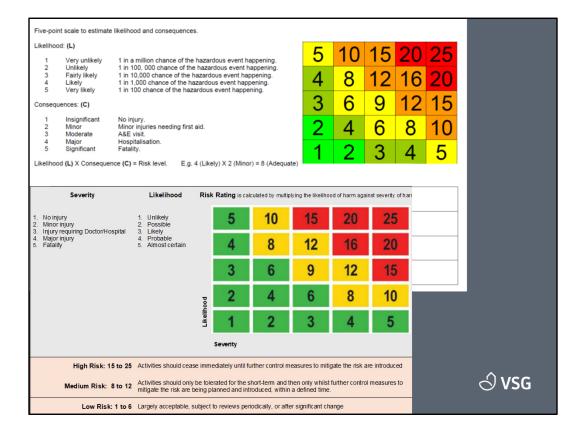
Other VSG members use 5X5 scoring matrices.



Let's compare the results from similar scoring systems.

(We will see why I question their use to provide scored answers.)

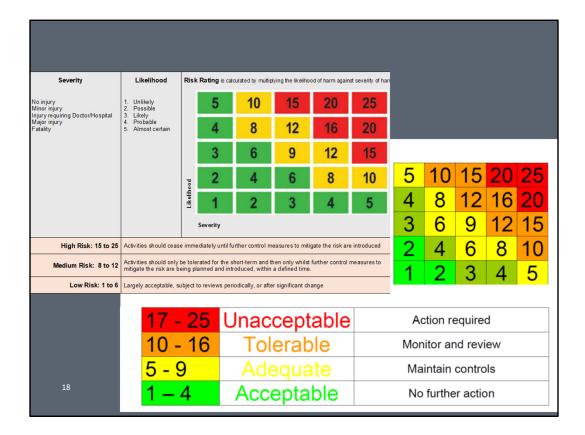




The 1 to 5 likelihood scores show variations in definition.

I have rarely encountered risk assessors who have the data to accurately score likelihood for all hazards. However, if you have a managed site with comprehensive accident reports, and reliable data for visitor numbers, you may be able to do so.

The severity of outcome scores are comparable.



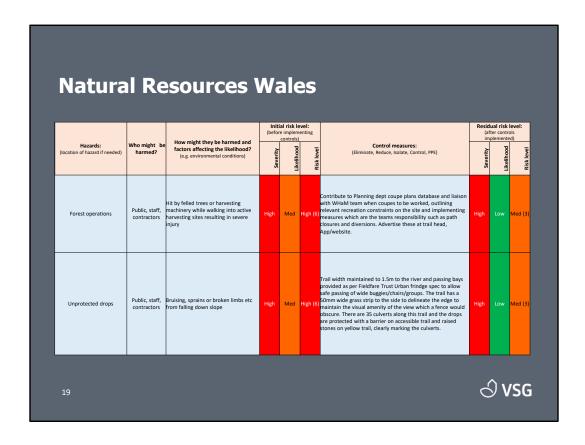
Look at the level of risk outcomes.

Scoring 15 on one matrix is tolerable, but red and unacceptable on the other.

This could reflect that the appetite to accept risk varies between organisations.

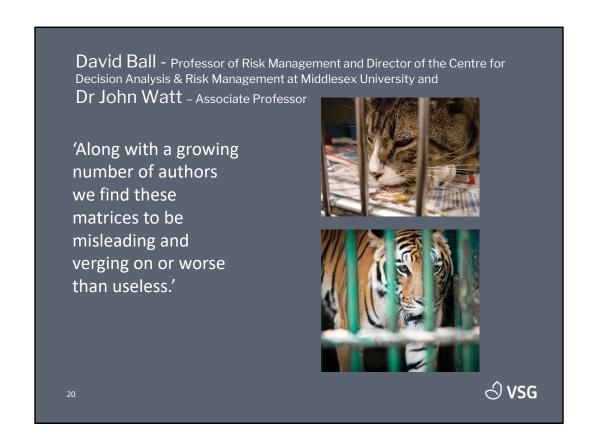
I am also concerned that the scoring might suggest that you don't need to think too much about minor injuries even if they are judged very likely/almost certain to happen. If there are reasonably practicable risk controls that can be easily introduced, they should be employed.

So the lesson is, if you choose to use a scoring system be aware of its limitations and that the scores reflect subjective judgements rather than accurate truth.



NRW also employ scoring that results in colour-coded categories for risk.

However, they feel that the key part of the risk-assessment is to be found in the narrative, capturing the consideration of the need for possible additional risk controls.



"Risk matrices are commonly-encountered devices for rating hazards in numerous areas of risk management. Part of their popularity is predicated on their apparent simplicity and transparency.

Recent research, however, has identified serious mathematical defects and inconsistencies. This article further examines the reliability and utility of risk matrices for ranking hazards, specifically in the context of public leisure activities.

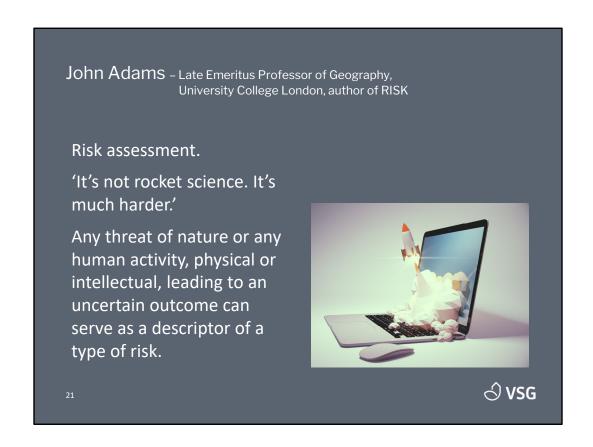
We find that

- (a) different risk assessors may assign vastly different ratings to the same hazard,
- (b) that even following lengthy reflection and learning scatter remains high,
- (c) the underlying drivers of disparate ratings relate to fundamentally different worldviews, beliefs and a panoply of psycho-social factors which are seldom explicitly acknowledged.

It appears that risk matrices when used in this context may be creating no more than an artificial and even untrustworthy picture of the relative importance of hazards which may be of little or no benefit to those trying to manage risk effectively and rationally."

Journal of Risk Analysis

You don't need a score to decide which cage is safe to enter!



Original Board of Directors of Friends of the Earth. Honorary Member of the <u>Institute of Risk Management</u>

'The risk manager must, however, deal not only with risk perceived through science , but also with virtual risk - risks where the science is inconclusive and people are thus "liberated to argue from, and act upon, pre-established beliefs, convictions, prejudices and superstitions.'

I would add

Do we have the data?

When we do, beware, "Lies, Damn Lies and Statistics"

Waterfall Country example (in Bannau Brycheiniog National Park).

5 deaths in three years. FAR (number of deaths per million hours exposure to risk) is over 200. This is quite high – between air sports (like hang-gliding) and being an agricultural worker.

However, the number of non-fatal accidents is normal in comparison to other national parks.

But the above data is misleading as it is derived from all the time spent by all the visitors, so includes walking, picnicking etc. Four of the deaths were to people choosing to go into the water. We don't have accurate figures for the number of people doing this, but reasonable estimates of hours of exposure to risk would give a FAR, well over 400, and more than the FAR for riding a motor bike.

Who decides what risk level is acceptable? Society Or the media Or Judges in court Individual choice

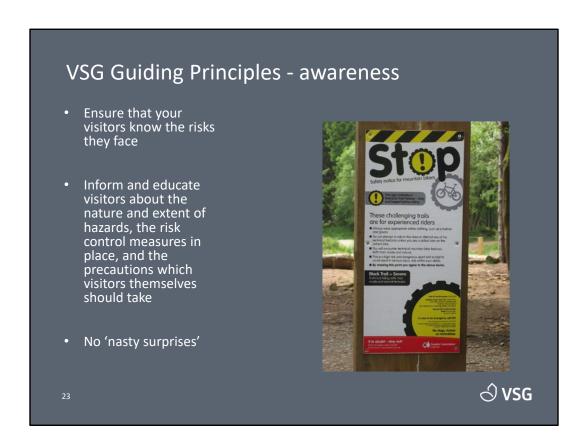
Rail accident Clapham Junction 1988 - 35 fatalities Similar accident at Ladbroke Grove 1999 Both from SPADs (Signal passed at danger)

Automatic Train Protection (ATP) would have prevented crashes.

Media outcry after each crash. Paradoxically, probably because rail travel is very safe so the occasional accident is very newsworthy.

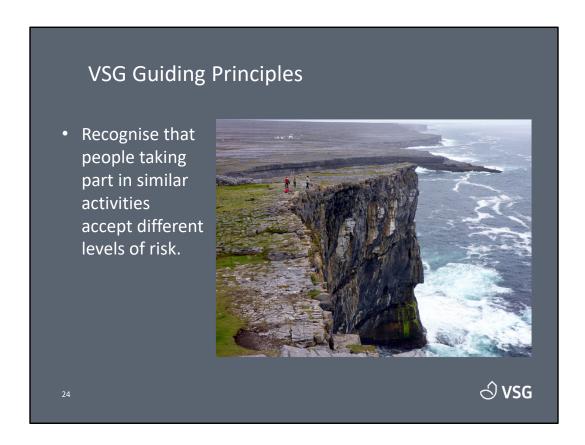
Following second crash, John Prescott, deputy PM, announced it would never happen again and money would be spent to retrofit ATP.

However, this was quietly dropped later. Certainly, the same money spent in better ways would have saved more lives.



VSG guidance recognizes that individuals vary in their appetite for risk.

Our aim should be for them to have all the knowledge needed to make informed judgement.



Dun Aonghasa, Aran Isles Hill Fort OPW site

VSG Guiding Principles

 Recognise that people taking part in similar activities accept different levels of risk.



⊘ vsg

VSG Guiding Principles

 Recognise that people taking part in similar activities accept different levels of risk.



26



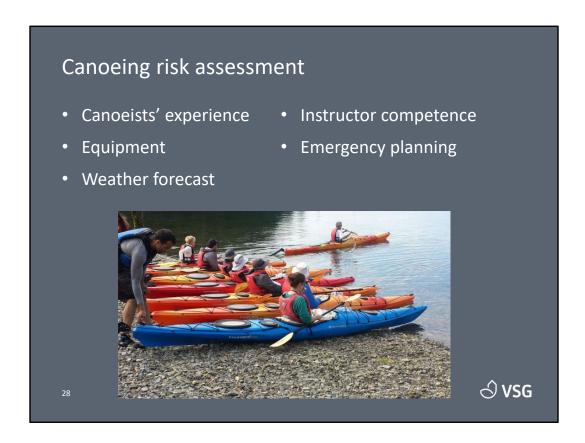
The event that lead to the formation of VSG and start of visitor risk management.

Four young girls died canoeing whilst on an activities holiday.

HSE used HASWA to prosecute the company running the activity and the owner went to prison for manslaughter.

The deaths resulted in the need to licence operators of adventure activities.

VSG came about to develop principles for safe management of visitors.



Would risk scoring matrices have helped to prevent these deaths?

Maybe. But the application of common sense, certainly. I call them GOBOs – Glimpses Of the Blindingly Obvious.

Consider who might be harmed and how – group of inexperienced canoeists Hazard – capsizing into water Likelihood – high

Consequence – depends on site conditions and competence of trainers. In a swimming pool with warm water and a life-guard, probably excitement, exercise and fun. Out at sea with cold water, strong wind, high waves and inexperienced instructors –very sadly, multiple fatalities.

	Touch	of Grey	y and kda						
	Area and location	a and location Hazard People at risk			Typical outcome Current precautions				
	Where on the property	The hazard under consideration Which groups are at risk		'Typical' outcome is probably more useful than 'worst' outcome		What precautions are in place, whether physical or organisational			
	Discu	ssion and relevant fac	etors	Decision and rational	le	Action required	Time scale	Completed	
The main points of any discussion should be recorded. For many hazards, the decision will be straightforward and little discussion will be required – but for 'grey areas' where there may be some apparent conflict between safety, conservation and other objectives, the discussion may become more complex. Relevant factors in the discussion can include: Numbers and types of visitors Severity of the consequences Foreseeable visitor behaviour Presence of 'vulnerable' visitors Adverse effect of precautions on the visitor experience Damage to any structures from installing physical safety measures Inappropriate impact of safety measures and signs on historic structures or landscape Impact of safety measures on aesthetics Consistency within the site and with other historic structures and landscapes elsewhere Physical difficulty and cost of installing safety measures Risks to staff or contractors from installing safety measures Risks to staff or contractors from installing safety measures				Record what decision has been reached and the reasons for reaching that conclusion		Specify what further actions are needed to manage the risk			
29)						ી	/SG	

Touch of Grey is Mark Daniels. kda is Ken Dodd We do not use scoring matrix.

I will only train and guide client to carry out their own final assessments and selection of additional risk controls, if judged necessary. (Hence the three blank columns in the following example.)



The introduction to the risk assessment (not reproduced here) explained the use of VSG principles, including zoning and its impact on how much management intervention might be appropriate.

We use multiple photographs to show the nature of hazards on the site.



Key recommendation is to document discussions. This is especially important when you conclude that no further risk controls are appropriate.

