

Preamble

The purpose of a risk assessment is to systematically identify all of the risks associated with a task, activity or process, and put appropriate controls in place to eliminate or reduce the risks associated with that activity.

This entails breaking the activity down into separate components and ascertaining all of the risks associated with each component of the activity. Once the risks are identified you then assess the level of risk, to determine its priority. According to the level of risk and hence the priority, you decide on what controls you can put in place to eliminate or reduce the risk.

Obviously something with a high level of risk is a greater priority and may need to have more complex controls in place. In many circumstances you will find that it is impossible to totally eliminate the risk.

The degree of risk that remains after you have implemented controls is referred to as residual risk. If you find that the residual risks are too high (ie you just can't put controls in place that reduce the risk), you may have to abandon the activity or think of other controls to put in place to reduce the risk.

Best results will be achieved if the risk assessment is undertaken by more than one person, as this enables different views and perspectives, meaning that you are better able to identify all of the risks. It also means greater and more varied input on determining controls.

Steps in doing a risk assessment

1. DEFINE THE SCOPE

This means setting the boundaries of what you are going to look at. For example: if you are doing a risk assessment for a field work activity; do you just want to look at the field work itself, starting from when you get to the venue and finishing when you leave the venue? Or do you want to start with getting ready for the field work and include the trip there etc? Both of these will have very different results. If you do not define the scope you can get rather inundated and lose track.

Once the scope has been defined break the activity into components, this can make it easier to identify all hazards. For example:

- loading vehicle
- travel
- unload and set up camp
- "activity" set up

2. IDENTIFY THE RISKS

Looking at one component at a time brainstorm all of the hazards or potential risks and list them in the left-hand column of the risk assessment table. For example:

- loading vehicle
 - musculoskeletal injury
- travel
 - traffic accident
 - loss of unsecured equipment
 - mechanical problems/breakdowns (including running out of fuel)
 - getting lost

This must be done for every component identified. There may be some repetition at this stage, as risks such as musculoskeletal injury will occur throughout many components of a task, activity or process. How you act on this risk in each different component may vary considerably though, so it should still be recorded.

3. ASSESS THE RISKS

When all the risks have been identified you then have to ascertain the level of risk associated with each one. To do this you have to determine the potential consequence of the risk, if it were to occur, and the potential likelihood of this happening.

Consequence is described using the table below

RATING	CRITERIA
Insignificant	<ul style="list-style-type: none"> • Minor injury • No or basic first aid required
Minor	<ul style="list-style-type: none"> • Medical or paramedical treatment • Up to four days lost time from work • Small amount of local print media coverage (< one week)
Moderate	<ul style="list-style-type: none"> • Treatment by hospital EMD or admission to hospital and/or four or more days lost time from work • Persistent negative local and/or state media coverage • Short term disruption to core activities (days) • Long term disruption to non-core activities (weeks) • Minor breaches is WHS (or related) legislation • Small scale investigation by regulatory bodies (local branch only) • Any notifiable incident that does not lead to injury, ie does not require medical or paramedical treatment (eg electrical incident with no injury) • Uncontrolled non-hazardous chemical spill/release
Major	<ul style="list-style-type: none"> • Permanent impairment/disability (unable to return to work) • National and/or international negative media coverage • Medium term disruption to core activities (weeks) • Investigation by regulatory bodies with prosecution, enforceable undertakings and/or possible criminal charges or civil suits • Any notifiable incident requiring medical attention • Uncontrolled hazardous chemical spill/release
Catastrophic	<ul style="list-style-type: none"> • Fatality/s • Significant damage to reputation • Widespread ongoing negative media coverage • Long term cessation of core activities • Investigation resulting in large legislative breaches and resultant legal actions, criminal charges, civil suits • Long term extensive environmental damage

Table 1. Consequence

- Using Table 1; look at the potential consequence. To ensure that health and safety risk is looked at in a uniform manner, you must use the criteria listed in the table. For example, you are aware that there are heavy items to be loaded, as well as numerous items that need to be stored on the roof racks. You decide that this could cause an injury that could potentially lead to hospitalisation. Hence the consequence is "Moderate".

RISK ASSESSMENT: An introduction

Likelihood is described using the table below

RATING	CRITERIA
Rare	May only occur in exceptional circumstances
Unlikely	The risk event could occur at some time(during a specified period), but it is unlikely
Possible	Might happen at some time; occurrence would not be unusual
Likely	Will probably occur in most circumstances
Almost certain	Is expected to occur in most circumstances

Table 2. Likelihood

- Next, look at likelihood (Table 2). This is quite simply the predicted likelihood of the risk event occurring. This must be determined by using the criteria listed in the table. For example, you may be looking at the risk of muscular skeletal injury whilst loading the car. You determine that it is "Possible" that an injury may occur (remember that this is without any controls in place).
- Once you have determined both the consequence and the likelihood you combine them using the risk matrix (Table 3.) to determine the risk rating. For example: if you have determined that the consequence of a musculo skeletal injury is "Moderate" and the likelihood of this injury occurring is "Possible" and the resulting risk rating is Medium.

Use the risk matrix to determine the risk rating

		CONSEQUENCE				
		Insignificant	Minor	Moderate	Major	Catastrophic
LIKELIHOOD	Almost certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	Medium	High	Extreme
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	High

Table 3. Risk matrix

It is important to note here, that an event does not have to result in a major injury or illness to be considered a high priority. A small incident happening frequently, therefore affecting more people can often be considered a high priority.

It is paramount that the likelihood and consequence tables are used and combined using the risk matrix provided to determine the level of risk. This lessens the chance of people using their own biases when interpreting risk. This also standardises the way we look at and interpret risk.



RISK ASSESSMENT: An introduction

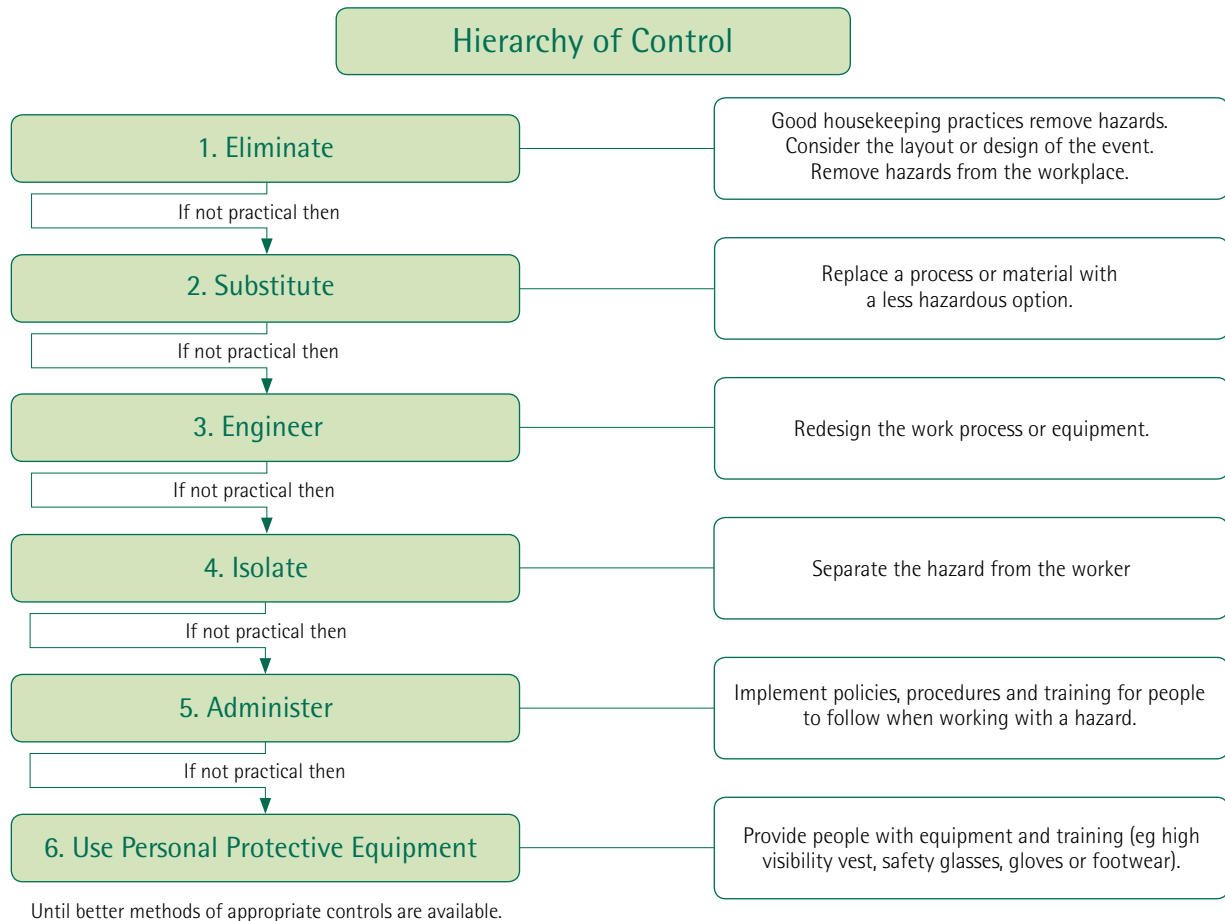
4. DECIDE ON CONTROL MEASURES

Now that the risk rating has been determined we can then ascertain what sort of action we need and its priority. Obviously something with a higher risk rating is of greater priority. This doesn't mean that you do not action the lower risk ratings, as sometimes these are quick and easy to action and are good to show progress (get some small wins on the board).

This naturally leads you into what things/strategies you are going to use to eliminate or reduce the risk.

When deciding how to reduce risk it is important that you do so in accordance with the "Hierarchy of Control". This stipulates the best methods for controlling risks:

The following diagram depicts the Hierarchy of Control



- Obviously, **eliminating the hazard** is the best and most effective way of controlling it. This may entail simply not doing the activity.
- **Substitution** refers to substituting something that you have deemed to be a risk with something that is a lower risk that achieves the same or similar thing. The best example of this would be substituting a hazardous substance with a less hazardous substance.
- **Engineer**. This requires redesign of the workplace to make it safer. Examples might be; non-slip flooring/paving to prevent slips, trips and falls; the provision of storage facilities to ensure safe and effective storage of items; introduction of mechanical lifting aids/devices; the purchase of low noise tools and machinery.
- Sometimes it is easiest to **isolate** the worker from the hazard. This is best seen in working with machinery where protective partitions and guards are put in place to prevent contact with hazardous moving parts.
- We often see **administrative** controls in the workplace. These consist of policies, procedures, guidelines, training and the like. These are necessary practices that attempt to guide people into working safely. But they are not as effective as the above mentioned controls. The above controls, especially the first two are designed to remove the hazard, therefore eliminate the risk. With administrative controls, the hazard still exists and we are relying on guiding human behavior

to reduce the level of risk. This is obviously not completely reliable. Teaching people to drive safely does not prevent road hazards and hence road accidents.

- The least effective control measure is **PPE or personal protective equipment**, such as; gloves, plastic gowns or aprons, safety glasses, boots etc. This relies on the PPE being available, in good working order, being used appropriately or just being used at all. Again this does not eliminate the hazards or risks, so should not be used as the only control but in conjunction with other controls.

The best way to control any hazard/risk is to eliminate it, but this is not always feasible. The most effective way to control or lessen the risks associated with the hazards we have identified is to use a combination of the above controls. For example:

- Have policies, procedures and guidelines, that assign responsibility and guide people as to the expectation of working safely.
- Provide training and supervision; to ensure policies etc. are communicated and to ensure competency.
- Consider health safety and wellbeing in the design and purchasing stage.
- Provide appropriate PPE.

RISK ASSESSMENT: An introduction

You may plan numerous controls, but find that you cannot bring the residual risk down to an acceptable level. If this is the case you will have to decide whether or not you should actually be undertaking this activity, or maybe brainstorm with some of your colleagues to determine if there are other controls that you could put in place. You should then record the controls that you plan to implement on your risk assessment form. You should document in your risk assessment form what the residual risk would be after your controls have been implemented. This residual risk is calculated in the same way as the initial risk; by determining the likelihood and consequence in accordance with the tables used earlier and then combining them in the risk matrix.

At this stage the risk assessment should be authorized. This process involves another party (usually a department head or cost center manager) reviewing the risk assessment to ensure that it is appropriate and that the implementation of controls is approved. For more complex risk assessments or if numerous stakeholders are involved, it may be advisable to have the requirement of two people authorizing the risk assessment.

5. IMPLEMENT CONTROLS


Once you have decided on the controls you are going to put in place and the risk assessment is authorised, you have to implement these controls. This may require the addition of further training, procedures, guidelines etc. to facilitate implementation of some controls.

6. MONITOR AND REVIEW

The next step is the most important step, as there is no use implementing controls if you don't monitor and review what you have implemented. This should be a continual process if it is to be effective. The best planned control measures may not be as effective as you thought they would be once put into practice. Or, you may find that by implementing certain controls, creates other hazards. If this is the case you may have to implement further controls.

Example Risk Assessment Template

RISK ASSESSMENT



Title: _____

Background:
(brief description of task/activity)

Risk assessment completed by:
(list names of all involved in completion of risk assessment)

Date completed: _____

Date of task/activity: _____

Authorised by: _____

Hazard type	Hazard description	Level of risk			Controls	Residual risk			Responsible person	Date implemented by
		Consequence	Likelihood	Risk rating		Consequence	Likelihood	Risk rating		

Please sign below indicating that you have read and understand this risk assessment (all who are to work in accordance with this risk assessment should have read and understood it).

Name	Signature	Date

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RISK ASSESSMENT: EXAMPLE

The beginning of a risk assessment



Title: Activity/Task/Process being assessed: Field work, to Stradbroke Island: studying cohabitation of spiders in orb weaver webs.

Background: (brief description of task/activity) Two students taking ferry to Stradbroke Island, camping at Miora Springs and observing orb weaver webs between Miora Springs and Cylinder Beach. Mode of transportation: bicycle. The bikes will be loading onto a car bicycle carrier and then transported to Ferry. The risk assessment will cover the time on the Island only.

Risk assessment completed by: (list names of all involved in completion of risk assessment)

Date completed:

Date of task/activity:

Authorised by:

Hazard type	Hazard description	Level of risk		Controls	Residual risk		Responsible person	Date implemented by
		Consequence	Likelihood		Likelihood	Risk rating		
Cycling from ferry arrival point to Miora springs								
	Vehicle/bike accident	Major	Possible	<ul style="list-style-type: none"> Preventative maintenance on bikes Bikes loaded to ensure appropriate balance. Trial ride with loaded bikes prior to commencing ride. Experienced riders Bike Helmets and high visibility gear worn while riding Riding only permitted in daylight hours 	Major	Unlikely	Medium	
	Sun burn	Moderate	Likely	<ul style="list-style-type: none"> 30+ sunscreen Sun smart clothing Majority of riding planned for low risk times of day 	Insignificant	Unlikely	Low	
	Dehydration			<ul style="list-style-type: none"> Rides of greater than 30 minutes planned for low risk time of days Education re hydration requirements Water easily accessible on bike 				
	Muscle strain			<ul style="list-style-type: none"> Experienced riders 				
Camp set up								
	Muscular skeletal injuries			<ul style="list-style-type: none"> Provision of light weight equipment Manual handling training 				
	Bites, stings, envenomation			<ul style="list-style-type: none"> Provision of insect repellent First aid kit First aid training Emergency plan in place Communication plan in place 				



RISK ASSESSMENT: EXAMPLE

The beginning of a risk assessment

Hazard type	Hazard description	Level of risk		Controls	Residual risk		Responsible person	Date implemented by
		Consequence	Likelihood		Likelihood	Risk rating		
	Hit by falling objects			<ul style="list-style-type: none"> Set up suitable distance from tall trees 				
	Sunburn							
Work in field								
	Bites, stings, envenomation			<ul style="list-style-type: none"> Closed in shoes, long trousers with boot protector/sock savers Insect repellent etc 				
	Sun burn							
	Dehydration			<ul style="list-style-type: none"> adequate water taken to each site 				
	Getting lost			<ul style="list-style-type: none"> hand held GPS provided emergency plan in field communication plan 				
	Physical injury			<ul style="list-style-type: none"> First aid kit First aid trained Emergency plan Communication plan Experienced bush walkers 				
	Animal contact (wild dogs/pigs)			<ul style="list-style-type: none"> Liaise with local authorities re occurrences and locations - plan accordingly Communication plan 				
	Muscular skeletal injury							

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Name	Signature	Date