



# MANUAL TASK RISK ASSESSMENTS

Volunteer Bushfire Fighter

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# OVERVIEW

Volunteer Bushfire Fighter (VBF)		
<b>Position description</b>	<p>Volunteer Bushfire Fighters (VBF) are charged with protecting rural and pastoral areas against the threat and damage caused by bushfires and are on-call at all times.</p> <p>They may chose when to respond to a call out. They carry out fire prevention, such as prescribed burning, risk management, and active fire suppression.</p> <p>VBF's are trained in personal and team safety, fire suppression methods, emergency vehicle driving (on and off road), first aid, radio communications and emergency management procedures.</p> <p>An MR license is required to operate the large tankers, which can be automatic or manual.</p> <p>All VBF's must undergo 4 days of minimal skills training in bushfire safety awareness and firefighting skills.</p> <p>Shifts may be up to 12 hours, however fatigue is managed as able. VBF's typically deploy to their immediate local area, but can also assist in neighbouring and far reaching areas as able.</p>	
<b>Environment where task/s occurs:</b>	<p>Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.</p> <p>Other hazards such as dust, smoke, ash, water, fire repellent, noise, insects, reptiles and other hazardous fumes.</p>	
<b>Tools / Equipment / PPE</b>	<b>Tools</b>	
	Bolt cutters	Axe (2kg)
	Shovel	Rakehoe
	Adjustable wrench	Pliers
	Claw hammer	Pipe wrench
	Hack saw	Crow bar
	<b>Equipment</b>	
	Drip torch (6kg)	Dolphin torch
	Suction hoses	Fast fill pump (38kg)
	Flat hoses (7-8kg uncharged, 35-42kg charged)	2 way radio
	Stand-pipe/key	Hose couplings
	Light tanker	Crow bar
	1.4, 2.4 and 4.4 tankers	Burnover blankets
	Class A foam drums (22kg)	Traffic cones (4kg)
	Road signs	Knap Sack (20kg)
	<b>PPE (Total weight 10kg)</b>	
	Helmet	Goggles
	Jacket (Proban treated)	Gloves
	Pants (Proban treated)	Full face respirator
	Lace-up/zip steel capped structural fire boots	Half face respirator
Head torch		

<p><b>Critical Physical Demands:</b></p>	<ul style="list-style-type: none"> <li>• Frequent prolonged standing</li> <li>• Frequent prolonged walking</li> <li>• Frequent prolonged sitting</li> <li>• Frequent fine motor control</li> <li>• Frequent push/pull forces up to 50kg</li> <li>• Frequent carrying up to 20kg between waist and shoulder height</li> <li>• Frequent trunk flexion</li> <li>• Frequent trunk rotation</li> <li>• Frequent hip and knee flexion 0-100 degrees</li> <li>• Frequent elbow and shoulder flexion 0-150 degrees</li> <li>• Frequent heat exposure</li> <li>• Occasional lifting floor to above shoulder height up to 8kg</li> <li>• Occasional lifting floor to shoulder height up to 20kg</li> <li>• Occasional full body vibration exposure</li> </ul>
<p><b>Work/task organisation environment:</b></p>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Writing – passenger in vehicle completing risk assessments and other documentation</li> <li>• Diagrammatic – reading and following maps for rapid response</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when not only active fire suppression but also when blacking out to prevent re-ignition</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Social perceptiveness – understanding bystander’s body language and gestures.</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

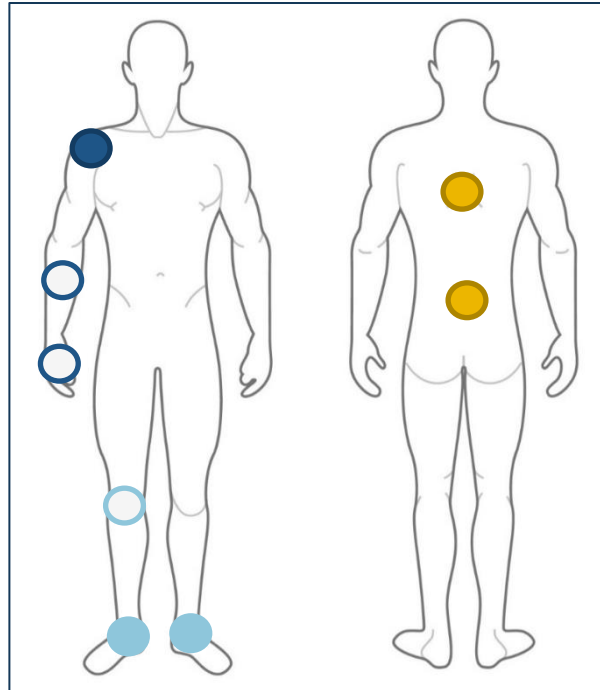
# MANUAL TASK RISK ASSESSMENT

## Light Tanker Operation

<b>Task Description</b>	<p>Light Tankers (500L) are operated by 2 people, the driver and passenger. They are used to transport personnel, equipment to the fire ground and firefighting operations.</p> <p>The cab is accessed from ground level, as per a standard light vehicle. They can be manual (primarily) or automatic, and require a standard C-class drivers' license to operate.</p> <p>The passenger is generally in charge of navigation and completing required paperwork and risk assessments.</p>
<b>Environment where task/s occurs:</b>	<p>Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.</p>
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant sitting</li> <li>• Frequent fine motor control</li> <li>• Constant use of foot pedals</li> </ul>
<b>Forceful/muscular exertions:</b>	<p>Dependant on terrain, exposure high jerky forces; vehicle seats do not provide air-suspension.</p>
<b>Repetition and duration:</b>	<p>The fire ground may be anywhere from a few minutes to a few hours' drive from the brigade base.</p>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Driving under lights and sirens can be quite an adrenaline rush, especially for new VBFs</li> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Writing – passenger in vehicle completing risk assessments and other documentation</li> <li>• Diagrammatic – reading and following maps for rapid response</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when not only active fire suppression but also when blacking out to prevent re-ignition</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Social perceptiveness – understanding bystander's body language and gestures.</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

# MANUAL TASK RISK ASSESSMENT

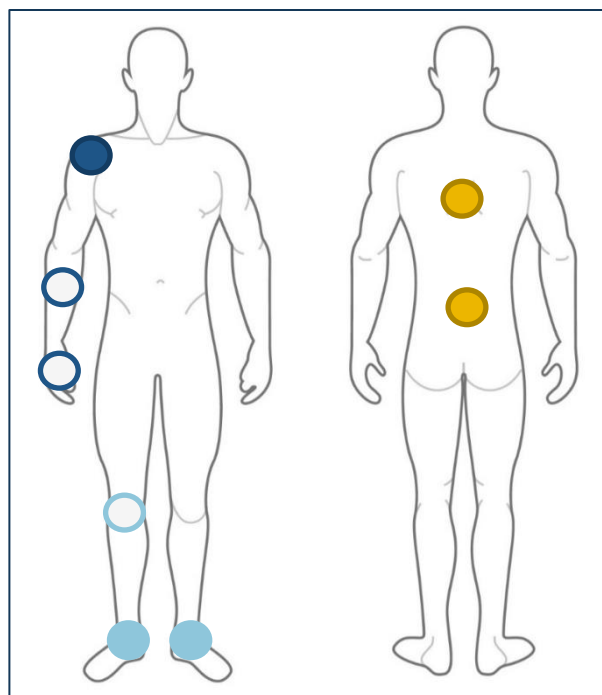
## Tanker Operation

<b>Task Description</b>	<p>The 1.4, 2.4 and 4.4 tankers (see below) operate with a crew of 3 or 4 people, and are used to transport personnel, equipment to the fire ground and firefighting operations.</p> <p>They can be automatic (primarily) or manual vehicles and require an MR license to operate.</p> <p>Cab access is via 2 vertical steps, the first being 50cm from the ground. 3 points of contact must be maintained at all times when accessing and egressing the cab or tray platform, with above shoulder height handles within the cab and tray platform.</p> <ul style="list-style-type: none"> <li>• 1.4: 1000L tank with 4wd capability</li> <li>• 2.4: 2000L tank with 4wd capability</li> <li>• 4.4: 4000L tank with 4wd capability</li> </ul>
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant sitting</li> <li>• Frequent fine motor control</li> <li>• Constant use of foot pedals</li> <li>• Occasional above shoulder height reach</li> <li>• Occasional use of vertical steps (up to 500mm)</li> <li>• Trunk rotation of front passenger during communication with those in rear seats</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Access and Egress from cab – two vertical step – 500mm step height.</li> <li>• Air suspension driver seat, passengers may be exposed to jerky, high forces due to terrain.</li> <li>• Passengers in rear bench are not provided seats with suspension</li> </ul>
<b>Repetition and duration:</b>	Travel time between destinations varies from 15 minutes to over 4 hours.
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Driving under lights and sirens can be quite an adrenaline rush, especially for new VBFS</li> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Writing – passenger in vehicle completing risk assessments and other documentation</li> <li>• Diagrammatic – reading and following maps for rapid response</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFS, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when not only active fire suppression but also when blacking out to prevent re-ignition</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Social perceptiveness – understanding bystander’s body language and gestures.</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>



## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

## Manual Task Images



Figure 1: Example of light tanker vehicle operated by 2 people teams.



Figure 2: Example of tanker vehicle, generally 3 people teams.

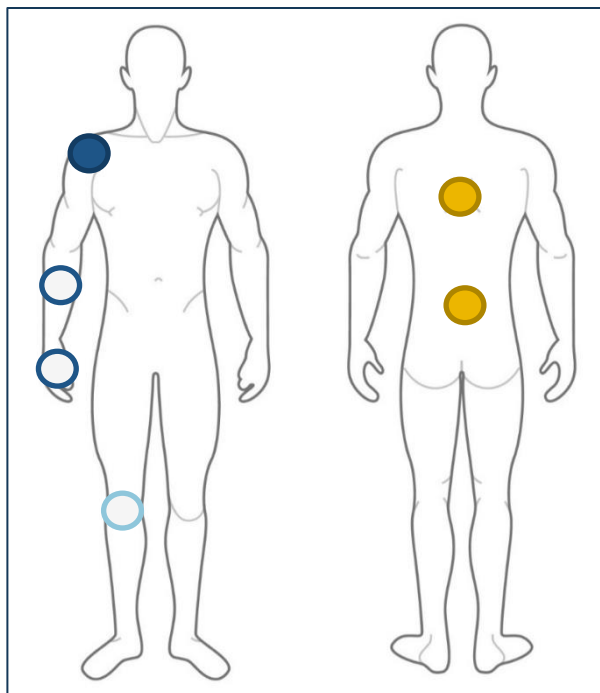
# MANUAL TASK RISK ASSESSMENT

## Rolling and Unrolling Lay-flat hoses

<b>Task Description</b>	<p>Lay-flat hoses are used for water delivery. They are stored in the tray of the tankers, and must be unrolled and re-rolled before and after use. Two main techniques of rolling are Dutch and Centre roll.</p> <p>They are a minimum of 10m long out to 30m and come in 3 thicknesses (20mm, 38mm and 64mm).</p> <p>They weigh between 10 and 15kg depending on diameter when uncharged. When charged, they weigh between 40-42kg.</p> <p>The hoses are taken from the side of the tankers, usually stored above shoulder height, and are rolled out using an underarm rolling technique (Dutch Rolled) or held at shoulder height and walked out using a circular motion to unroll the hose (Centre Rolled).</p> <p>When the hoses are uncharged, they are manually rolled back up, using one or two people to assist, and placed back on the tanker for storage.</p> <p>They are connected to the tanker via manually operated couplings. Couplings can be pushed on, twisted on or clipped on.</p> <p>Multiple lengths may be connected via couplings, and varying branches are fitted dependent on task.</p> <p>Hoses may also be wound back in using hose reels.</p>
<b>Environment where task/s occurs:</b>	<p>Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.</p>
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing</li> <li>• Occasional above shoulder height reach</li> <li>• Occasional floor to above shoulder lift up to 8kg</li> <li>• Occasional push/pull forces up to 42kg</li> <li>• Occasional fine motor control</li> <li>• Occasional trunk flexion</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Floor to above shoulder height lifting</li> <li>• Holding loads away from body when storing hoses</li> <li>• Underarm rolling of hose</li> <li>• Sustained trunk flexion, whilst holding load and rolling hose</li> <li>• Movement of charged hoses</li> <li>• Flake hose technique – requires two people, high hand grip force exerted.</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 30min – 2hours depending on quantity and VBFs available.</li> <li>• Each hose takes between 1-3mins to roll up</li> <li>• Between 1-6 hoses are rolled up by each VBF</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Attention to detail – hoses must be rolled correctly to ensure ease of use for next incident</li> <li>• Memory – procedures and correct hose rolling techniques.</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

## Manual Task Images



Figure 3: Example of unrolling flay lay hose



Figure 2: Example of unrolling flay lay hose (Note awkward trunk flexion postures)

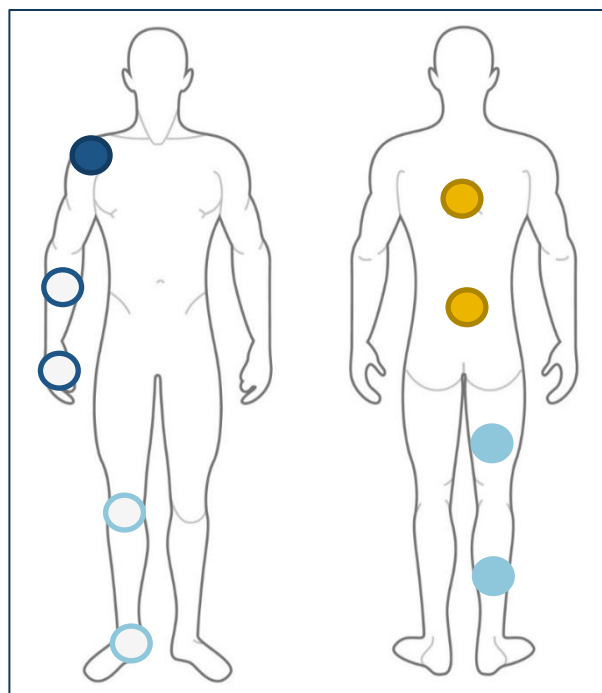
# MANUAL TASK RISK ASSESSMENT

## Active Fire Suppression

<b>Task Description</b>	<p>This is when a fire is being actively fought.</p> <p>The hose operator holds the hose, while the second person (backup) acts as a support and director of the hose for the hose operator. The backup person holds the weight and points the hose in the direction it is required.</p> <p>These roles are swapped every 15 minutes approximately, depending on fatigue levels.</p> <p>If using the hose reel, a single operator can complete this task; incident dependant.</p> <p>A charged hose weighs around 40kg, and must be dragged across uneven ground, often in dense bush and hilly terrain.</p> <p>Multiple hoses may be joined together.</p> <p>The hose is be tucked under the operators arm (preferred technique), or propped on the shoulder (not preferred), depending on volunteer preference.</p> <p>The fire may be fought from the ground or from the platform of the tankers and can use lay-flat hoses, live reels and water monitors.</p>
<b>Environment where task/s occurs:</b>	<p>Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.</p>
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing</li> <li>• Constant walking</li> <li>• Constant push/pull forces 40kg</li> <li>• Frequent fine motor control</li> <li>• Frequent 10kg lift floor to chest height</li> <li>• Frequent above shoulder lift 10kg</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Floor to above shoulder height lifting</li> <li>• Holding loads away from body</li> <li>• Sustained trunk flexion, whilst holding charged hose</li> <li>• Sustained grip and hold of charged hose</li> <li>• Movement of charged hoses</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• Active fire suppression can be ongoing for a whole 12 hour shift.</li> <li>• The hose operator directs the spray of the hose, while the second person acts as a support prop for the hose operator.</li> <li>• These roles are swapped every 15 minutes, depending on fatigue levels.</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when actively completing fire suppression</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



Exertion: How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
Awkward posture: How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
Vibration: How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
Duration: How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
Repetition: How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

## Manual Task Images



**Figure 4: Example of active fire suppression (Note environmental risk exposures)**



**Figure 2: Example of active fire suppression**



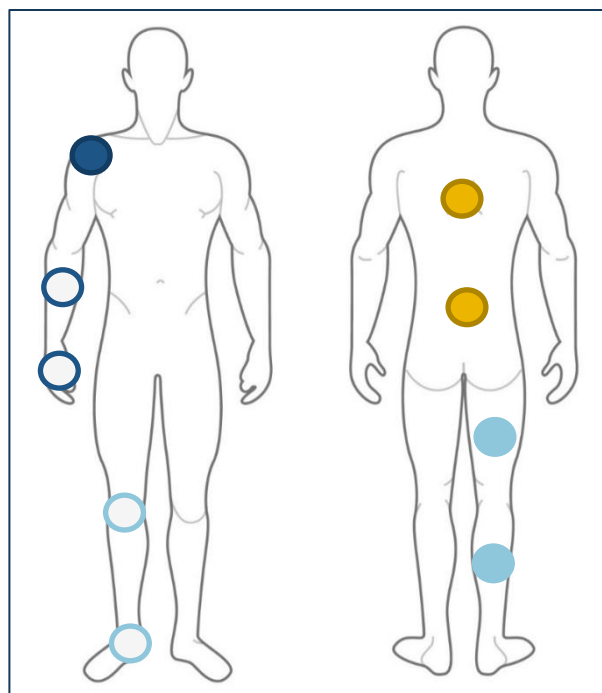
# MANUAL TASK RISK ASSESSMENT








## Drip Torch Operation

<b>Task Description</b>	<p>Drip torches are hand held devices used for controlled burning purposes.</p> <p>When full of fuel, they weigh 6kg.</p> <p>Controlled burning can last an entire shift.</p>
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing</li> <li>• Constant walking</li> <li>• Constant carrying 6kg</li> <li>• Frequent fine motor control</li> <li>• Frequent lifting 6kg ground to shoulder height</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Floor to above chest height lifting</li> <li>• Holding loads away from body</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 30min – 4hours depending on VBFs available.</li> <li>• Repetitive movement of hand/arm</li> <li>• Can cover up to 4km by foot completing tasks</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Diagrammatic – reading and following maps for rapid response</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when completing preventative burns</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct techniques.</li> <li>• Social perceptiveness – understanding bystander’s body language and gestures.</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2 	3 Moderate force & speed 	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2 	3 Moderately uncomfortable 	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None 	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours 
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4 	5 Cycle time <10 seconds

## Manual Task Images



Figure 5: Example of drip torch use (Note grip, arm and neck postures.)



Figure 2: Example of drip torch use (Note environment risk factors)

# MANUAL TASK RISK ASSESSMENT

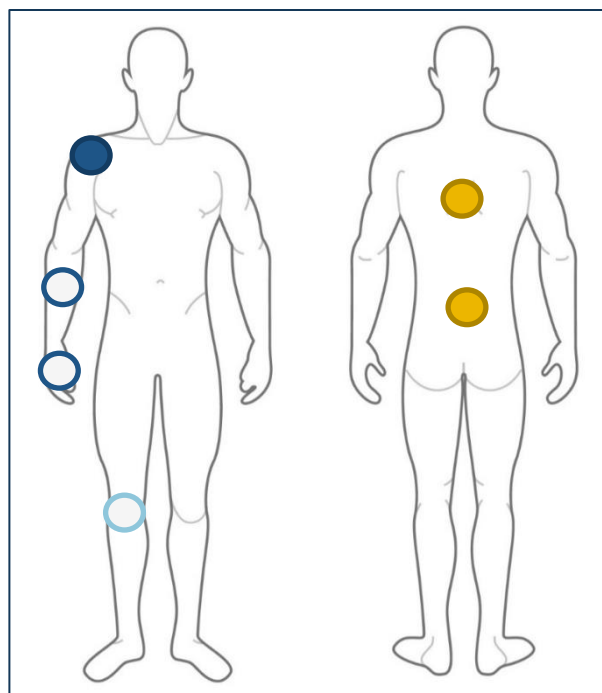
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## Vehicle Checks

<b>Task Description</b>	Visual checks of all vehicles is carried out on weekly and monthly schedule; involving inspection of tyres, electrics, petrol, water and oil levels, equipment lockers and hose reel. The weekly checks take approximately 15mins; and the monthly checks up to an hour.  Vehicle check are encouraged to be completed once returning from an incident.
<b>Environment where task/s occurs:</b>	Outdoors, on station extreme heat, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"><li>• Constant standing</li><li>• Constant walking</li><li>• Occasional trunk flexion</li><li>• Occasional fine motor control</li></ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"><li>• Waist to above shoulder height lifting</li><li>• Holding loads away from body</li></ul>
<b>Repetition and duration:</b>	The weekly checks take approximately 15mins; and the monthly checks up to an hour.
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"><li>• Attention to detail – to ensure all checks are completed and equipment is functioning</li><li>• Memory – procedures and correct techniques.</li><li>• Work with a group or team – always working in groups or teams</li></ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
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1 All postures neutral 	2   	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None    	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min    	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2    	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

## Manual Task Images



Figure 6: Example of sustained standing postures required when completing a vehicle inspection



Figure 2: Example of awkward postures required when completing a vehicle inspection.

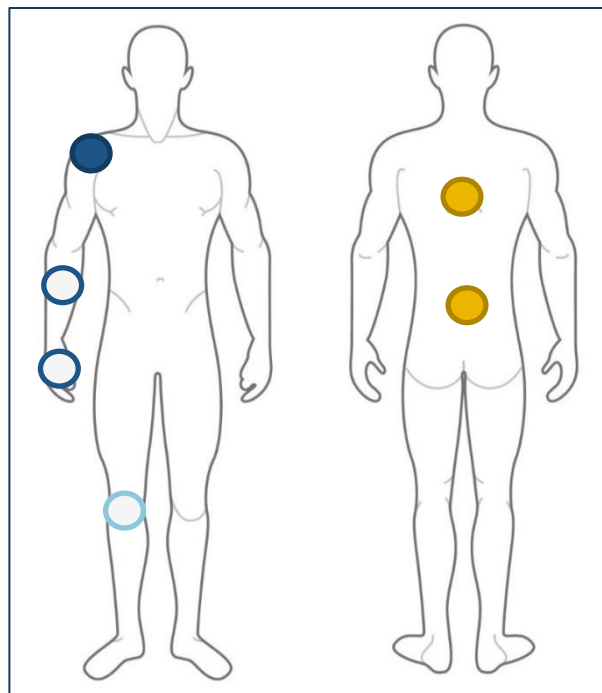
# MANUAL TASK RISK ASSESSMENT

## Knapsack Spraying

<b>Task Description</b>	Knapsack sprayers are used to contain small spot fires or maintain control of fires that have been extinguished. They hold a volume of 20L, weighing 20kg when full. The knapsack should be filled once already on the operators back.
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing or walking</li> <li>• Constant carrying 20kg</li> <li>• Constant fine motor control</li> <li>• Walking on uneven surfaces</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Lifting and carrying knapsack on back</li> <li>• Push/pull action to spray water</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 10-30min depending on VBFs available.</li> <li>• Repetitive movement of hand/arm</li> <li>• Can cover up to 2km by foot completing tasks</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when actively completing spraying</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds



## Manual Task Images



Figure 7: Example of knapsack spraying



Figure 2: Example of knapsack spraying (training image)

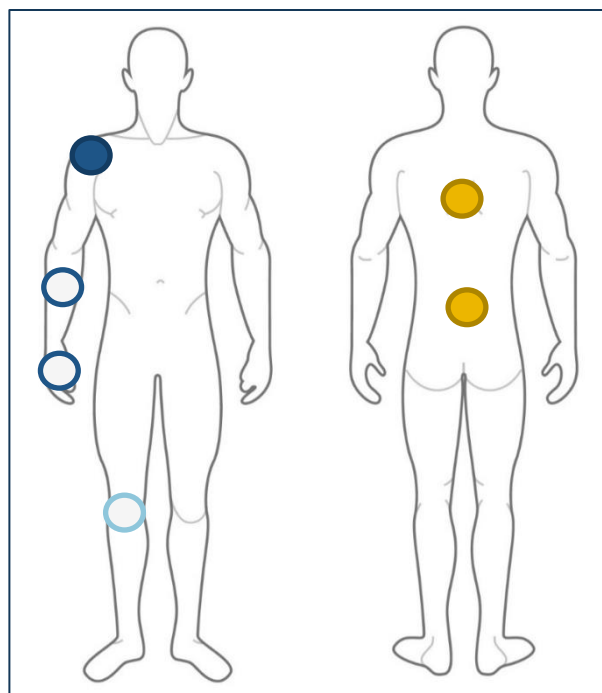
# MANUAL TASK RISK ASSESSMENT







## Support Roles

<b>Task Description</b>	Support roles encompass those not directly on the fire ground, including those operating in the incident control centre. This role involves communicating with all key personnel and agencies via phone, radio and computer, conducting risk assessments and forming strategies.
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.  Can also be performed from the rear of the Fire warden vehicle
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Frequent standing</li> <li>• Frequent sitting</li> <li>• Frequent fine motor control</li> </ul>
<b>Forceful/muscular exertions:</b>	Nil
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 30min – 12hours depending on VBFs available.</li> <li>• Repetitive movement of hand/arm</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Writing – record keeping, completing risk assessments and other documentation</li> <li>• Diagrammatic – reading and following maps for rapid response</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



Exertion: How much force is the person using? Think about starting or stopping quickly				
1 No effort 	2 	3 Moderate force & speed	4	5 Maximum force or speed
Awkward posture: How awkward is the persons posture?				
1 All postures neutral	2 	3 Moderately uncomfortable	4	5 Very uncomfortable
Vibration: How much are the whole body or hand/s being vibrated?				
1 None 	2	3 Moderate	4	5 Extreme
Duration: How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours 
Repetition: How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4 	5 Cycle time <10 seconds

## Manual Task Images



Figure 8: Example of support roles within administration/control room setting.



Figure 2: Example of incident response control centre.

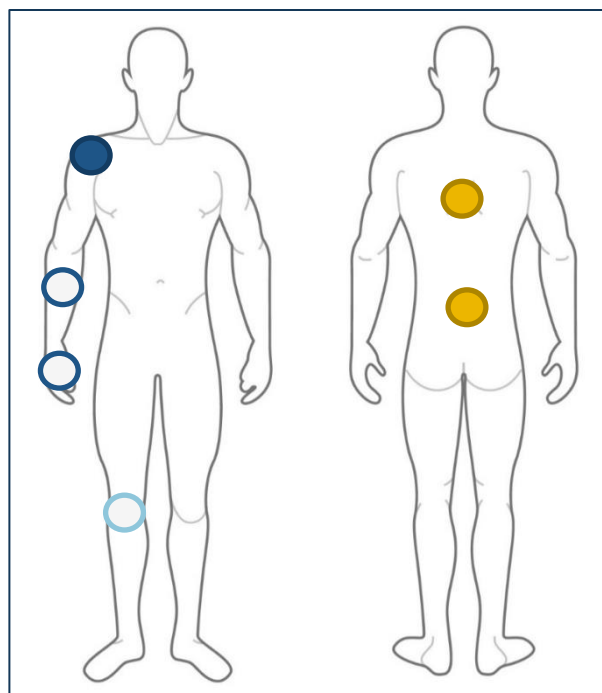
# MANUAL TASK RISK ASSESSMENT

## Use of rake hoe

<b>Task Description</b>	Rake hoe: used to cut, rake, scrape and chip and area to clear or clean up. Used by VBFs as a main tool in the fighting of fires, back burning and blacking out.
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing</li> <li>• Frequent sustained trunk flexion</li> <li>• Frequent trunk rotation</li> <li>• Constant hand grip</li> <li>• Frequent lifting 5kg ground to shoulder height</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Floor to above shoulder height lifting</li> <li>• Holding loads away from body</li> <li>• Trunk rotation</li> <li>• High jerky forces when pulling rake hoe through the ground – can strike tree roots and rocks.</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 30min – 10hours depending on VBFs available.</li> <li>• 1hr on average.</li> <li>• Repetitive movement of hand/arm</li> <li>• Repetitive trunk rotation</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when actively completing fire suppression</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed 	4 	5 Maximum force or speed 
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable 	4 	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None 	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours 	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4 	5 Cycle time <10 seconds 

## Manual Task Images



Figure 9: Example of rack hoe usage, note awkward posture and repetitive movements.



Figure 2: Example of rack hoe usage in an emergency.

# MANUAL TASK RISK ASSESSMENT

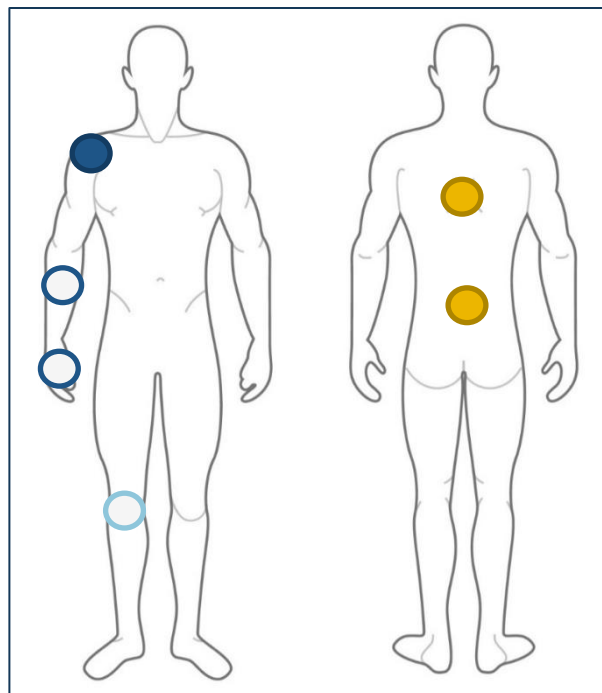
## Miscellaneous Hand Tools








<b>Task Description</b>	<p>Multiple hand tools are required to be used by VBFs at any time. These included:</p> <ul style="list-style-type: none"> <li>• Axe: used for felling small trees and shrubs, removing branches, grubbing stumps or cleaning bark from tree.</li> <li>• Shovel: used for throwing mineral soil over fire and assisting in the recovery of off-road vehicles.</li> <li>• Bolt cutters: used to cut chains, padlocks, fencing wire etc.</li> </ul>
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"> <li>• Constant standing</li> <li>• Frequent sustained trunk flexion</li> <li>• Frequent trunk rotation</li> <li>• Frequent fine motor control</li> <li>• Frequent lifting 5kg ground to shoulder height</li> </ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"> <li>• Floor to above shoulder height lifting</li> <li>• Holding loads away from body</li> <li>• Trunk rotation</li> <li>• Use of bolt cutter</li> </ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"> <li>• This task can last between 30min – 12hours depending on VBFs available.</li> <li>• Repetitive movement of hand/arm</li> <li>• Repetitive trunk rotation</li> </ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"> <li>• Oral comprehension – radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Oral expression - radio and phone communications; talking with team members in vehicle and on fire grounds</li> <li>• Critical thinking – thinking on feet to ensure safety of self and other VBFs, plus acting to constant changing conditions</li> <li>• Attention to detail – to ensure safety when actively completing fire suppression</li> <li>• Complex problem solving – deciding most appropriate action to take in current situation</li> <li>• Memory – procedures and correct firefighting techniques; memory of members of the public and vehicles in the vicinity of incidents</li> <li>• Work with a group or team – always working in groups or teams</li> </ul>



## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed 	4 	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable 	4 	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None 	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour 	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds 

## Manual Task Images



Figure 10: Example of hand tools that may be used by VBF's.



Figure 2: Example of hose reels and tool storage on the back of the vehicles.

# MANUAL TASK RISK ASSESSMENT

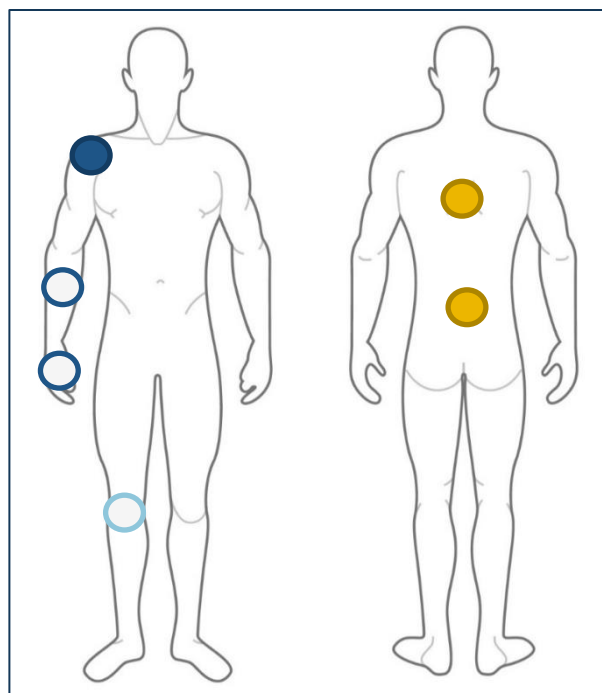
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## General Equipment Lifting

<b>Task Description</b>	Throughout the course of a shift, various items may need to be lifted on/off the fire appliances. This could include a fast fill pump, jerry cans of fuel and water, containers of Class A foam and traffic control signs and cones.
<b>Environment where task/s occurs:</b>	Outdoors, varying terrain, hills, extreme heat, extreme wind, dense bush, uneven ground surfaces, and shift work.
<b>Critical Physical Demands:</b>	<ul style="list-style-type: none"><li>• Frequent fine motor control</li><li>• Frequent single person lift floor to above shoulder height up to 22kgs</li><li>• Occasional two person lift floor to above shoulder height up to 38kgs</li></ul>
<b>Forceful/muscular exertions:</b>	<ul style="list-style-type: none"><li>• Floor to above shoulder height lifting</li><li>• Holding loads away from body</li><li>• Fast fill pumps weigh 38kgs – requiring a two person lift</li><li>• Class A foam container weighs 22kg – one person lift</li></ul>
<b>Repetition and duration:</b>	<ul style="list-style-type: none"><li>• This task can last between 30min – 1hour depending on VBFs available.</li><li>• Repetitive movement of hand/arm</li></ul>
<b>Work/task organisation environment:</b>	<ul style="list-style-type: none"><li>• Attention to detail – to ensure all items are correct positioned and located for ease of use</li><li>• Memory – procedures and correct storage techniques</li><li>• Work with a group or team – always working in groups or teams</li></ul>

## Risk Factor Assessment

1. Indicate on the body chart which area/s of the body you feel are affected by the task.
2. If more than one body part is affected, you may shade the different body parts in different colours. If this occurs, use the matching colour when scoring the risk factors (e.g. red for arms on the body and score sheet, blue for low back on the body and score sheet).
3. Give each risk factor a score out of five. One (1) is when the risk factor is not present and five (5) is when the risk factor is the most severe level they have experienced.



<b>Exertion:</b> How much force is the person using? Think about starting or stopping quickly				
1 No effort	2	3 Moderate force & speed	4	5 Maximum force or speed
<b>Awkward posture:</b> How awkward is the persons posture?				
1 All postures neutral	2	3 Moderately uncomfortable	4	5 Very uncomfortable
<b>Vibration:</b> How much are the whole body or hand/s being vibrated?				
1 None	2	3 Moderate	4	5 Extreme
<b>Duration:</b> How long is the action performed for?				
1 <10 minutes	2 10-30min	3 30min-1 hour	4 1-2 hours	5 >2 hours
<b>Repetition:</b> How often are similar actions completed?				
1 No repetition	2	3 Cycle time <30 seconds	4	5 Cycle time <10 seconds

## Manual Task Images



Figure 11: Example of lifting of general equipment (note 2 person lift with above waist height lifting)



Figure 2: Example of equipment that may be moved off the back of vehicles.

# CONTACT DETAILS

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For any further information or onsite review, please don't hesitate to contact LGIS.

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