



FATIGUE GUIDANCE NOTE FOR SEARCH AND RESCUE

About this Guidance Note

This guidance note is for the organisations in the search and rescue sector who train, develop, task, instruct, and direct people providing search and rescue expertise during a search and rescue operation (SAROP) or a search and rescue exercise (SAREX).

This guidance note supports an increased understanding of the factors that might lead to fatigue – how fatigue can impact a SAROP or SAREX; as well as providing practical information about how to manage fatigue.

All members of search and rescue organisations should be made aware of the information contained in this guidance note.

What is fatigue?

Fatigue is a normal state that people experience. It is a symptom of stress and associated with impaired performance either physical and/or mental. It can have the same negative effects on critical decision making as being chemically impaired (under the influence of drugs or alcohol). The stress experienced is often from exertion outside an individual's current fitness level or capacity (physical and/or mental) over a prolonged period of time, or can be as simple as fatigue brought on from sickness.

We often observe colleagues/workmates as “run down” referencing the fact a person is not performing as expected and needs rest (sleep) and or food and water. Sleep plays a vital role in removing metabolic cellular waste from around the brain. A permanent pattern of less than sufficient levels of sleep has links to increased levels of depression, psychosis, stroke, and obesity.

Why manage fatigue?

Fatigue can contribute to two risks during a SAROP or SAREX.

Firstly, fatigue may lead to a health and safety incident causing harm to a SAR responder. People who are fatigued are not as alert as they normally are. They are less able to make good judgements and decisions; and are slower to respond and adapt to changing circumstances. In a SAROP or SAREX, which are often conducted in high risk situations and environments, this can mean they put themselves and others at risk.

Secondly, fatigue may lessen the effectiveness of a SAROP. A fatigued person can, in particular roles and situations, hinder the search and compromise the chances of a successful outcome.

As well as these immediate problems, fatigue can lead to long-term health problems. Looking after the people that work with and for you is not just a legal requirement, it is

essential to ensuring a healthy, sustainable, and efficient search and rescue sector that is able to respond to people in distress.

It can be difficult during a SAROP for responders to pause, recognise and take care of their own needs and their own health. The drive and motivation to push through and press on can become all consuming. It is imperative that the organisations directing and controlling responders consider the health and fitness of those they are responsible for, in order to be confident they are able to participate fully in the SAROP without posing a danger to themselves, other responders, or the person(s) in distress.

Legal obligations

Harming a person is not a desired or intended outcome of any SAROP or SAREX. To remind and hold organisations accountable for doing what is reasonable and practicable to do to ensure this doesn't happen, New Zealand has health and safety legislation that sets minimum standards all organisations need to comply with.

Search and rescue organisations have significant influence and control over who is involved in SAROPs and SAREXs, and it is expected this influence and control is exerted in a way that does not cause harm to people. Organisations must, amongst other things, identify, assess and manage risk, and ensure the physical and psychological capabilities of responders match the task and activity they are being assigned to.

The liabilities and penalties that apply, should an organisation fail in this duty, vary depending on each particular situation and circumstance, but the principle of harm prevention remains. The law does not require the absolute removal of risk at any cost – only for organisations to take the action that it is reasonably practicable to take in the specific situation. This guidance note provides examples of the kinds of actions that may be reasonable to take in particular situations. However, each situation must be considered on its own merit.

How to identify fatigue

We don't go from 100% alert to 100% fatigued in one leap. At any time, those in a SAROP or SAREX will be at varying stages of fatigue. **People suffering from fatigue may display the following signs that you will be able to recognise from the side bar on the right.** If you spot any of these signs, go and talk to them and do not task them in a role where they are going to be a risk to themselves or others. A fatigued person needs to sleep – so ensure they get home safely. Remember that a fatigued person may not feel tired, so do not rely on their own assessment of tiredness.

How to recover from fatigue

Sleep is the only way to recover from fatigue.

Provide responders with regular breaks and rest opportunities during a SAROP or SAREX to reduce the potential, or effects, of fatigue.

If during a SAROP or SAREX a responder is showing signs of fatigue:

- Provide safe transportation home for them to get sleep; or
- Provide an appropriate (cool, dark, quiet) area for them to sleep.

How to identify and manage fatigue

The following four tables are provided as a risk assessment tool to help in identifying and managing fatigue of responders in SAROPs and SAREXs.

The tables provide risk assessments in four areas:

1. The **mental** demands of a SAROP on a responder
2. The **physical** demands of a SAROP on a responder
3. The **environmental** demands of a SAROP on a responder
4. The **individual's** factors influencing fatigue levels



FATIGUE CHECKLIST

Use this checklist to identify signs of fatigue in your self and others

PHYSICAL SIGNS

- Eye rubbing
- Yawning
- Slumped posture
- Slow blinks
- Desire to sleep
- Reduced coordination and motor skill
- Micro sleeps or spacing out
- Slow reaction time
- Nausea or vomiting, headaches or dizziness
- Not wearing all protective gear and equipment properly /at all

MENTAL SIGNS

- Slowed reaction time and response time to questions or conversation
- Reduced situational awareness
- Poor memory
- Distracted
- Failure to anticipate
- Omissions / carelessness
- Poor decision making and judgement
- Decrease in problem solving
- Greater tolerance for error
- Reduced visual perception

EMOTIONAL / AFFECTIVE SIGNS

- Irritable, easily frustrated
- Terse communication
- Withdrawn, un-talkative
- Hyper-reactivity
- Delayed response on 2-way radio
- Disregard for command orders and tasking instructions
- More quiet
- Poor motivation or attitude
- Unstable mood and/or strained relationships

RISK ASSESSMENT: MENTAL DEMANDS

Effects of the SAROP on fatigue (how the SAROP will impact a responder's fatigue levels)

Facts that influence fatigue	LOW RISK	MODERATE RISK	HIGHER RISK	Ways to mitigate and manage fatigue
TIME OF SEARCH	Day time (<i>normal work hours</i>).	Evening or early morning.	Through the night (<i>at times when normal circadian rhythms induce sleep</i>).	ACTIONS YOU COULD TAKE <ul style="list-style-type: none"> • Verify that responders have the training and capabilities needed to do the task you are assigning them. • Task responders for shorter durations and include periods with less complex or safety critical tasks where the risk of fatigue is higher, to ensure opportunity for mental rest is provided. • Provide closer supervision / contact / buddy working when there is a higher risk of fatigue. • Ensure task rotation where there is a higher risk of fatigue. • Stand down any person who is already showing signs of fatigue.
PSYCHOLOGICAL STRESSORS	SAR responders do not know subject(s) of SAROP. <hr/> SAROP not a life-threatening situation. <hr/> No media attention.	SAR responders part of the same community as subject(s) of SAROP. <hr/> SAROP could be life threatening and there is time pressure and urgency. <hr/> Some local media attention.	Emotionally fraught task. SAR responders know the subject(s) of SAROP – could be family or friends. <hr/> SAROP is definitely life critical and there is perceived pressure to continue beyond mental and physical capability. <hr/> High public interest / national media attention.	
CAPABILITY AND EXPERIENCE	Variable capability. <hr/> Experienced and well-trained workers and volunteers.	Not all capability able to be verified – some assumptions and trust in information provision required. <hr/> SAROP volunteers and workers are trained with minimal experience.	Capability not verifiable. <hr/> Inexperienced and newly trained volunteers and workers relative to the SAROP specific context.	
SUSTAINED MENTAL EFFORT	Minimal periods of high concentration. <hr/> Consistent non-variable mental demands. Limited judgement required.	Some / intermittent periods of high concentration. <hr/> Variable mental demands. Some judgement required.	Long periods of mental concentration required over an extended period of time. <hr/> Variable and frequently changing mental demands requiring significant decision making and execution of judgement.	
COMPLEXITY of the search and task	Simple and routine.		Complex search which could involve: working alone, difficult to navigate terrain (risk of getting lost high), coordination across regional and national boundaries, some shift change over for commanders or personnel, task escalated or transferred between NZ Police and RCCNZ.	

RISK ASSESSMENT: MENTAL DEMANDS continued

Effects of the SAROP on fatigue (how the SAROP will impact a responder's fatigue levels)

Facts that influence fatigue	LOW RISK	MODERATE RISK	HIGHER RISK	Ways to mitigate and manage fatigue
RELATIONSHIP COMPLEXITY	<p>Working with others in the same organisation.</p> <hr/> <p>Good influence and control over others.</p> <hr/> <p>Small scale SAROP in local area.</p>	<p>Working with others in other organisations with similar goals and purpose.</p> <hr/> <p>Some influence and control over others.</p> <hr/> <p>Medium sized SAROP in a regional area.</p>	<p>Working with others across air, land and sea as well as those with different goals and purpose.</p> <hr/> <p>Limited or no influence and control over others.</p> <hr/> <p>Large scale multi-agency SAROP across a large area – may cross regional / organisational boundaries.</p>	
TEAM COHESION	<p>Team have worked together before and work well.</p> <hr/> <p>Professional responders only on the search.</p>	<p>Some team members have worked together or trained together before.</p>	<p>Team members have not worked together or trained together before.</p> <hr/> <p>Public volunteers and workers.</p>	

RISK ASSESSMENT: PHYSICAL DEMANDS

Effects of the SAROP on fatigue (how the SAROP will impact a responder's fatigue levels)

Facts that influence fatigue	LOW RISK	MODERATE RISK	HIGHER RISK	Ways to mitigate and manage fatigue
EXPECTED DURATION OF THE TASKING	Short tasking of less than 4 hours.	Tasking of 4 to 8 hours.	Tasking over 8 hours.	ACTIONS YOU COULD TAKE <ul style="list-style-type: none"> • Provide breaks and rest opportunities. • If providing foods, avoid those that are high in sugar, fat and salt. • Provide water, or ensure water is available. • Ensure all responders are wearing appropriate clothing and gear for the conditions – clearly set out the expectations for this at the commencement of the SAROP or SAREX. • Arrange safe transportation home for anyone who appears fatigued. • Where possible provide light in tasking areas and search areas. • Provide rest areas for responders in areas that are unlit and slightly away from the tasking area.
SAROP AREA ACCESS	Short travel time to SAROP site (less than 30 minutes to SAROP site). Easy access.	Up to 1.5 hours to SAROP site. Challenging access (roads closed, or difficult terrain) slowing access.	Long travel time (over 1.5 hours) to SAROP site. Compromised access requiring physical exertion, possibly technical terrain.	
TIME OF THE SAROP	Day time SAROP (normal waking hours).	SAROP at a time that bridges waking and sleeping hours.	SAROP at a time a person is normally asleep.	
RECUPERATION OPPORTUNITIES	Plenty of opportunity to rest and recuperate during the SAROP. Many responders and opportunity to rotate out of the tasking.	Some opportunity for some roles to rest and recuperate during the SAROP. May be a specialist service with fewer trained people to take over.	No ability to rest and recuperate during the SAROP either because of environmental conditions or the specialist nature of the SAROP.	

RISK ASSESSMENT: ENVIRONMENTAL DEMANDS

Effects of the SAROP on fatigue (how the SAROP will impact a responder's fatigue levels)

Facts that influence fatigue	LOW RISK	MODERATE RISK	HIGHER RISK	Ways to mitigate and manage fatigue
EXPOSURES TO ENVIRONMENTAL FACTORS – <i>Noise, Temperature extremes, Vibration, Hazardous substances</i>	One off / minimal exposure to noise, temperature extremes, vibration or hazardous substances.	Intermittent exposure to noise, temperature extremes, vibration or hazardous substances.	Long / ongoing exposure noise, temperature extremes, vibration or hazardous substances.	ACTIONS YOU COULD TAKE <ul style="list-style-type: none"> Assess the context of the SAROP and determine the environmental risk factors in the SAROP. Use this to determine how to conduct the SAROP. Remember that risk is dynamic and so your initial assessment will continually change – revisit this frequently. Seek advice on mitigation measures from a competent person where there are, or could be, exposures of a higher risk nature. Encourage the reporting of issues or incidents. Verify that the right equipment and plant is available suitable to the terrain to be accessed and traversed (off road vehicles, air support, marine vessels with capability in different sea conditions).
ACCESS	Easy site access and egress.	Challenging site access and egress, constrained but manageable with existing equipment.	Difficult, steep and challenging terrain. Multiple use of machinery and transport (helicopters, quads etc) to access SAROP area.	
WEATHER	Relatively stable weather conducive to the SAROP, with good forecast for duration of SAROP.	Unstable weather or weather not ideal for the SAROP. Uncertain / changing forecast.	Bad weather impeding the SAROP (high winds, snow, flooding, heavy rain, fog) Weather forecast to deteriorate.	
TERRAIN	Simple terrain with even ground and easy to traverse.	Changeable terrain with uneven ground and moderate hazards manageable through routine measures.	Dangerous terrain with high hazards e.g. cliffs and steep drop-offs requiring specialist training or measures to navigate or traverse.	
VISIBILITY	Good visibility over a significant distance.	Average / compromised visibility with low light.	Poor visibility with bad light.	
PERSONAL SECURITY	Safe SAROP area in terms of personal security.	Some areas of compromised security.	Dangerous SAROP area in terms of personal security.	
LOCATION / DISTANCE of SAROP area from responders base	Short distance to travel to SAROP area.	Moving vehicles.	Long distance to travel to SAROP area.	
OTHER ACTIVITIES in SAROP area (part of, or not part of, the SAROP)	No/minimal other businesses or activities operating in the SAROP area.	There are others operating in SAROP area undertaking activity with some risk to responders. This could include agricultural activity for example.	There are others operating in SAROP area undertaking high risk activity. This could include operational aircraft / marine movements or hunting for example.	

RISK ASSESSMENT: INDIVIDUAL'S INFLUENCING FACTORS

Effects of the individual on fatigue

Facts that influence fatigue	LOW RISK	MODERATE RISK	HIGHER RISK	Ways to mitigate and manage fatigue
QUALITY AND DURATION OF SLEEP	Good quality sleep, alert and refreshed.	Disturbed sleep and showing signs of fatigue.	Health or personal factors that impacts sleep quality (apnoea, new baby, work demands etc).	ACTIONS YOU COULD TAKE <ul style="list-style-type: none"> • Check that all responders have turned up to the SAROP in a fit for action state. This may include asking a few questions about alcohol use and sleep/work if you have any cause for concern. • Develop a policy or process which clearly outlines your expectations for fitness when turning up for a SAROP, and any support that your organisation provides in this regard.
HEALTH	Good health.	OK health, with some minor physical symptoms but manageable and not going to impact the search.	Poor diet (B12 or Iron deficient) and inability to replenish during SAROP. Current sickness (Cold & Flu).	
FITNESS	Fit for the activities and SAROP environment and demands.	Some issues with particular types of terrain or activities.	Recent illness or injury.	
LIFESTYLE FACTORS	Occasional alcohol consumption.	Moderate user of alcohol.	Alcohol / drug taking or dependencies.	
SUPPORT	Good support at home and work.	Some support at home with friends and family. Work supportive in general.	Little support at home or work.	
<i>Usual HOURS WORKED (in all roles not just SAR) over a three-month period</i>	Daily: 8 hours or less. 40 hour working week.	Daily: 9 to 12 hours. 48 hour working week.	Daily: Over 12 hours. 56 hour working week.	
TIME AWAKE prior to SAROP commencing	Awake for less than 12 hours. More than 10 hours since last at work.	Awake for 12 to 16 hours.	Awake for more than 18 hours. Less than 10 hours since last at work.	
CAPABILITY AND EXPERIENCE	Verifiable capability. Experienced and well-trained responders.	Not all capability able to be verified – some assumptions and trust in information provision required. SAR responders are trained with minimal experience.	Capability not verifiable. Inexperienced and newly trained responders relative to the SAROP specific context.	