Safety zone

An adequate safety zone must be identified because it may be needed as a refuge in case of an unpredicted increase in fire behaviour. A useful safety zone for fire fighters may be to escape on to burnt ground. It is safer to work as close to the fire as possible to minimise the risk of being overrun by a sudden upsurge in fire behaviour.

Remember

- **Don't let your inclination to gamble outdistance your fear.**
- **The only safe wildfire assumption is - assume the worst.**
- **Don't think you are communicating just because you are talking.**

All department personnel likely to be involved in fire management operations should be familiar with the basic information contained in the Department of Conservation and Management's booklet 'Safety in bush fire control'. Copies are available from Fire Management Services.

For further information contact

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17 Dick Perry Avenue,
Kensington WA 6151

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GOVERNMENT OF WESTERN AUSTRALIA
DEPARTMENT OF Conservation AND LAND MANAGEMENT
Conserving the nature of WA

WATCH OUT

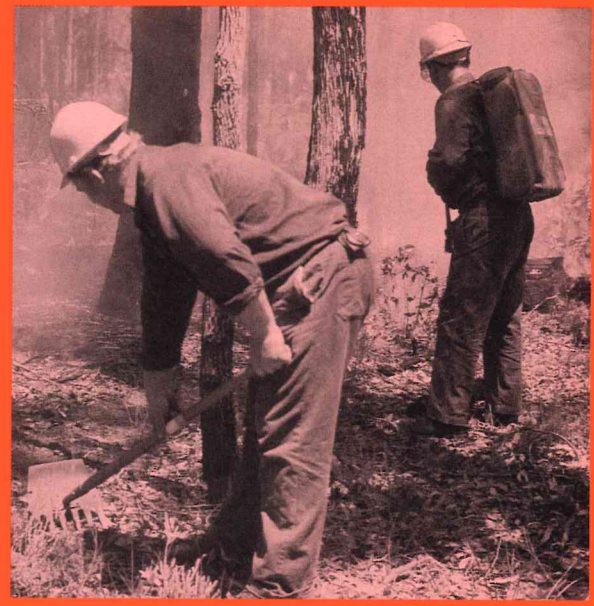
Fire Management Services Number 2 December 2001

Beat the heat

During the last 12 months, southern Western Australia has experienced one of the driest periods on record. The prolonged drought conditions will result in a long, dry summer.

Fire control staff will again be undertaking physically demanding work in hot conditions close to the radiant heat from fire, placing considerable stress on themselves.

Heat-induced dehydration impairs mental and physical performance. Symptoms include muscle fatigue and loss of concentration which can lead to accidents.



GOVERNMENT OF WESTERN AUSTRALIA
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Heat illness

Physical activity in hot conditions can result in the body becoming overheated, leading to heat induced illness. There are four stages of heat illness. They are:

- Heat swelling - where feet and hands swell in warm weather
- Heat cramps - painful muscle cramps, usually in legs and abdomen, caused by losing too much water and salt through sweating
- Heat exhaustion - fluid loss through sweating reduces the amount of water in the body so that the blood volume falls. Increasing blood flow to the skin makes the blood flow even less effective, reducing blood flow to the vital organs. As the circulatory system is affected, the body goes into a mild form of shock
- Heat stroke - is potentially lethal. Fluid levels in the body become so low that sweating stops and body temperature rises because the body can no longer cool itself. The brain and vital organs, such as the kidneys and heart begin to fail.

Avoiding heat illness:

To minimise the risk of overheating the body during strenuous work, you should:

- be physically fit and maintain a healthy body weight,
- drink fluid at regular intervals,
- get used to working in hot environments,
- wear appropriate clothing,
- take frequent breaks in the shade and avoid exposure to radiant heat,
- practice using handtools as good techniques reduce the stresses and strains in strenuous tasks, and
- monitor yourself and your workmates for signs of fatigue and heat illness.

Fluid replacement:

When on active fire duty, fluid intake requirements increase considerably. Research shows that fire line construction work in hot environments can lead to sweat loss of up to 1.5 litres per hour. Subsequent dehydration can lead to severe heat stoke and can be fatal.

To replace fluid loss during work:

- drink water before starting,
- drink regularly while working (150 - 200 mls every 10 - 15 minutes),
- always drink before you feel thirsty as thirst is a sign that your body is already dehydrated, and
- continue to drink after you have finished work.

What to drink

Fluid intake during active duty (including rest periods) should be about 750ml an hour. This should mainly consist of

- water or
- sports drinks because they contain carbohydrate and a small amount of sodium, both of which increase fluid absorption

What to avoid:

Alcohol and beverages with caffeine should be avoided because they promote fluid loss body resulting in further dehydration. These include:

- coffee,
- tea,
- alcohol, and
- cola drinks.

Fire fighter fatigue

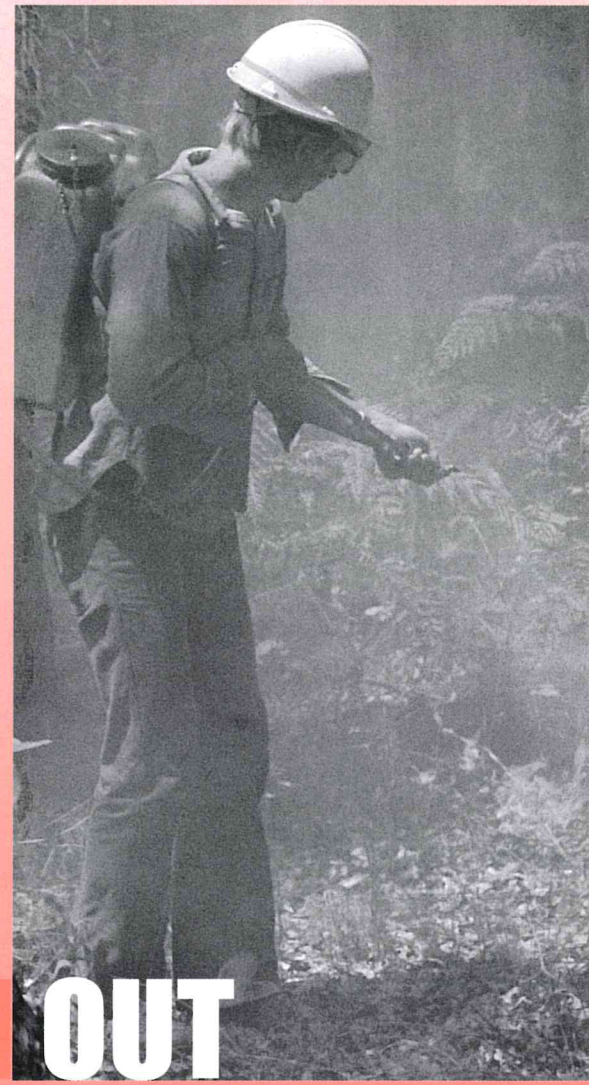
The Department of Conservation and Land Management has reviewed the Fatigue Management Guidelines that apply to fire staff and other emergency personnel. New research on the effects of fatigue on performance indicates that people who work more than 16 hours are affected physically and mentally in the same way as someone with a blood alcohol level of more than 0.05 percent.

The guidelines confirm the previous arrangements, which seek to limit shifts to a maximum of 16 hours, except for the initial period, which may be 24 hours. Where practicable, shifts should be planned to be less than 14 hours. Tours of duty will be limited to five continuous day shifts, or three night shifts. Tours of duty beyond these limits will require specific approval from the State Duty Officer.

The management of fatigue is the responsibility of individuals and managers. It is important that everybody monitors his or her fatigue levels and those of other team members.

To minimise fatigue and maximise recovery during rest periods, the guidelines recommend:

- avoiding alcohol during breaks,
- maintaining a balanced and nutritious diet, and
- maximising rest periods.



Fire fighter safety

Fire fighters' safety is the major consideration during all fire operations.

There should be no circumstance where fire fighters are required to take unreasonable risks in the defence of the public and community assets.

Fire controllers and supervisors ensure the safety and welfare of all fire fighters. They must know the capabilities of the people who are performing the tasks and ensure they receive good briefings before they start duties.

The fire ground has many inherent dangers. The best means of maintaining safety on the fireground is by adopting safe work procedures and the selection and implementation of appropriate strategies and tactics.

The maintenance of a safe fire ground can only be achieved if personnel are:

- adequately trained and allocated,
- well equipped and provided with appropriate personal protective equipment,
- well briefed, informed and supervised,
- aware of fire potential and risks, and
- fit, and alert.

It must be remembered at all times that personal safety is the major consideration, and is not to be compromised by a 'can do' attitude.

LACES

The acronym LACES (Lookout, Awareness, Communications, Escape Routes, Safety Zone) has been used in the United States as a useful way for fire fighters to remember their safety awareness rules. The 18 WATCHOUT rules and the 10 Fire Orders have been found to be too cumbersome and difficult to remember. LACES encompasses the essence of these rules and is much easier to remember. It is a safety reminder every time fire fighters tie up their boots.

WATCH OUT

Lookout

All fire fighters observe, think and discuss the current and future situation constantly. Someone, usually the crew leader, is assigned the role of Lookout (or patrol). The Lookout should have an uninterrupted view of the section of the fire in which he or she has responsibility. Regular patrols must be conducted if the Lookout is unable to view the full length of fireline. The Lookout should be competent and capable of properly assessing current and potential threats and be able to communicate changes in the environment that may affect fire fighters.

Awareness

Firefighters can only remain safe if they are aware of the fire situation, including current and possible variations in fire weather, terrain and aspects, fuel types and fuel loads, and hazards. All personnel have a responsibility to be alert and act decisively before situations become critical.

Communications

Good communication skills using protocols and procedures will ensure fire fighters and fire managers are situationally aware at all times. This will foster a culture where safety concerns can be communicated to and from the fire ground.

Escape route

Fire fighters must know the location of their escape route and have their vehicle positioned so that they can escape quickly. Contingency plans should be in place if the escape route is blocked.