



ACT Fire & Rescue Community Fire Units (CFU) Induction Training Booklet



Name:

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Foreword

At the height of the 1994 Lane Cove Valley bushfires in NSW, late in the afternoon, under the influence of strong winds, high temperatures, and low humidity, the fire took its second major “run”. Knowing the resources that were available, and also the fact that no further assistance was available because of other serious fires, it was realized that homes would inevitably be lost.

In the next few hours, 17 homes were destroyed, and many more were seriously damaged. However, at the end of one street, which had been considered to be in an almost hopeless situation, all of the homes were saved despite a fearsome onslaught of flames, sparks and heat.

The difference? Resourceful residents and the local fire station crew had maintained a World War II era “Hose Post”, and despite there being insufficient fire engines available, the residents banded together and kept their homes safe. From this humble beginning, the Community Fire Unit concept was born.

On New Year’s Day 2002, fire returned to Lane Cove. If anything, the conditions were worse, and the fire more fierce than in 1994. There was a major difference however. Homes had been properly prepared before the fire arrived, and everywhere you looked, the now-familiar blue overalls were in evidence.

Using hydrants and portable pumps, local residents took over from firefighters as the main fire fronts moved through, enabling fire engines and tankers to stay ahead of the “enemy”. No homes were lost that day, and CFUs were the decisive factor. Similar stories had previously unfolded at Warimoo, Menai and in other areas during extensive fires in 1997 and 2001.

On January 18, 2003 a fire, unprecedented in Canberra's history, impacted the Capital. Over 500 homes were lost and tragically 4 people also lost their lives. The damage bill was estimated in the billions of dollars.

After the fires the ACT Fire Brigade, having listened to the community and following on from the NSW experience, equipped the ACT community with a new program of self-help and hazard identification by introducing Community Fire Units

Introduction

From humble beginnings, the CFU movement in Canberra has grown to the largest volunteer group. It is now much more than a fire defense program however. Over the years it has become clear that it is helping to build and unite communities. People who lived near each other for years, but didn't know each other's names are now firm friends. Street Christmas parties, people helping each other out with projects and problems are the norm now in a "CFU" street.

The urban interface is a difficult arena for fire agencies to operate in with its constantly changing physical and social environment. Community expectation, high housing density, access limitations, potentially dramatic fire behaviour and variations in community understanding and education present a number of challenges for ACT Fire and Rescue, the Rural Fire Service and other emergency agencies.

The CFU Program is unique to other fire agency community education programs. Education and equipment are provided within the Program so that members can carry out property protection prior to the arrival of Fire Services during bushfires. This is particularly important when, during times of extraordinary bushfire activity, Fire Service response is maybe stretched to capacity and beyond.

For the CFU Program to work well within any community there needs to be a strong partnership formed between ACT Fire and Rescue and the CFU members. The stronger these bonds become the more successful the Program will be in its operation during bushfires.

For community members that are about to undertake Program training there is an ongoing requirement to participate in the activities that are scheduled by ACT Fire and Rescue. The Program is a work in progress and a constant improvement and review process is used to deliver the "best service" to members of the community.

The safety of firefighters and community members is of paramount importance and the CFU Program has been developed with this in mind. CFU members are not firefighters and are not trained to take the place of firefighters in any way. CFU members use the equipment supplied to carry out property protection during a bushfire and this complements the firefighting effort. CFU members may also participate in mop up activities after the fire front has passed and this enables the Fire Services to move more readily with the fire front and continue their firefighting effort.

ACT Fire and Rescue has installed over 50 CFU's and the Program's membership now exceeds 800. I would like to take this opportunity to welcome new members to the Program and look forward to ACT Fire and Rescue increasing the preparation and resilience of your community.

ACT Fire & Rescue roles



ACT Fire and Rescue (ACTF&R) is the ACT government agency responsible for managing fire emergencies in the urban area of the ACT. ACTF&R has approximately 370 fighters; Over 800 Community Fire Unit members as well as administrative and trades staff working together for a safer, more confident community.

ACT Fire and Rescue has primary roles during and after:

- Respond to Structure Fires
- Respond to Hazardous Materials Incidents
- Respond to Bushfires
- Respond to Chemical, Biological and Radiological Incidents
- Respond to Vehicle Fires
- Assess Fire Engineered Building Solutions
- Undertake Motor Vehicle Accident Rescue
- Ensure Fire Safety Compliance in Buildings
- Undertake Confined Space Rescue
- Conduct Fire Hazard Inspections
- Undertake Trench Rescue
- Provide Community Education
- Respond to Building Collapse
- Provide Emergency Medical Assistance
- Undertake Animal Rescue
- Coordinate Community Fire Units
- Conduct Fire Investigation
- Conduct Community Events Planning
- Provide Storm Damage Assistance
- Conduct Community Safety Planning
- Respond to Automatic Fire Alarms
- Provide Communications Support to Emergency Agencies
- Provide Assistance to Community events and organisations

Day to day management of CFUs

CFU members are volunteer members of ACTF&R.

Members liaise with the:

- CFU Coordination Team regarding training, equipment and Personal Protective Clothing & Equipment issues.
- ACTF&R local Station Officer regarding practical drills within their operational area.



Note: Personal Protective Clothing/Equipment (PPC/PPE) is used for the personal protection of each member during training an operational activities.

Organisation Chart



Community Fire Units (CFU)

What is the CFU program?

The CFU Program is just one of the many ACTF&R initiatives that enhance community safety. CFU are volunteer teams of local residents trained to protect their homes during a bushfire, until the fire brigades can get there.

The aim of the CFU program is to reduce the impact of bushfires on the community and to protect life and property from bushfires.

CFUs do this by:

- Preparing bushfire survival plans
- Raising the level of fire awareness in their community
- Protecting property prior to bushfires, such as reducing fine fuels around properties
- Pre-treat property by wetting down identified flammable areas before the arrival of the fire front
- Extinguishing small fires and mopping up after the fire front has passed



What does ACTF&R expect from CFU members?

Community Fire Units add to the resources of ACTF&R and Rural Fire Service Brigades. They do not replace them.



It is important that you understand your role so that you can work safely and effectively with firefighters. CFU members are not trained firefighters. Your training will help you to protect your property and neighbourhood until the Fire Brigades can get there.

When participating in CFU activities, you are covered by workers' compensation and 3rd party liability insurance. However, this insurance will only be valid if you follow the directions of ACTF&R personnel and work within your Standard Operational Guidelines.

Remember, as a CFU member you are representing ACTF&R. You should act responsibly at all times.

It is expected that you will:

- Follow instructions from ACTF&R during bushfires and training sessions
- Follow the directions of the CFU Team Leader, if there is no one present from ACTF&R
- Be available for contact by your CFU Team Leader during periods of bushfire threat
- Attend and participate in at least 1 supervised skills maintenance training event each year
- Attend an ACTF&R skills refresher at ESA Training, Hume once every 3 years
- Make sure that you work safely during bushfires and training sessions
- Only use CFU equipment for training and during bushfires.

- Carry the CFU member identification card (issued by ACTF&R) at all times
- Work as part of a team
- Treat other CFU members with courtesy
- Follow all traffic rules when towing the trailer on public roads
- Act honestly at all times
- Represent ACTF&R in a positive way
- Report all incidents or accidents immediately
- From time-to-time CFU members will be invited to attend community engagement activities; such as: CFU promotional events, The Canberra Show, ACTF&R open days & CFU recruitment initiatives.

Further information about your responsibilities is included in the following CFU policies:

- Emergencies Act (2004)
- Standards and Protocols for Community Fire Units
- ACT Emergency Volunteers Charter

These policies will be explained to you by your Trainer. If you have any questions regarding CFU policies, contact your CFU Team Leader or the CFU Coordination Team.

CFU training

There are 5 components of CFU training:

1. Community Fire Unit Induction Program (ACTF&R)
2. Community Fire Unit Refresher Training (ACTF&R)
3. Training within CFU (Team Leader)
4. CFU training with local ACTF&R Fire Stations
5. Supplementary Training courses as available (ESA) including conferences and seminars.



CFU Induction Program

The CFU Induction Program has been designed to give members the basic skills and knowledge in accordance with the role and responsibilities of CFU's as defined in the Emergencies Act 2004.

Induction Training Schedule

ACTF&R eLearning Package

- Introduction to CFU Program
- Bushfire and influencing factors
- Pre-season preparation for bushfires
- During a bushfire
- CFU matters

ACTF&R Practical

- Basic skills acquisition
- Application of basic skills in simulated drills and scenarios
- CFU Personal Protective Clothing/Equipment (PPC/PPE)
- CFU member ID cards



Operational members complete the induction program and are assessed in operational activities by qualified trainers & assessors.

Once you have completed your induction program you will be issued with an ID card. Operational members are also issued a uniform & PPC Kit. You must always wear your PPC and carry your card when participating in CFU training or operations.



Skills maintenance

To maintain membership, all members must complete at least 1 supervised skills maintenance training event each year. Training can be supervised by the CFU Training Co-coordinator or your local station.

You can also complete additional training within your CFU without supervision.



You are also expected to attend a structured skills refresher program with ACTF&R at least once every 3 years.

Skills maintenance training includes:

- Understanding & experiencing Radiant Heat drills
- Using hoses, hydrants and standpipes in standard CFU deployment
- Static water supply drills
- Use of CFU radios and communication procedures

Your Team Leader will keep a record of all skills maintenance training that you complete. ACTF&R will keep and maintain training records.

Supplementary training

ESA Training will offer additional training to CFU members throughout the year, such as asbestos awareness and volunteer leadership & fire/emergency seminars & conferences. This training will be managed by your Team Leader.

Training with your local Fire Station

Your Team Leader is the main contact point between your Unit, the CFU Training Coordinator and the ACTF&R Operational Administration Officer (AO). One of the duties of the AO is to coordinate external training with other agencies.

Please remember that your local fire station has many responsibilities as well as assisting CFUs. If you are planning training and want your local station to attend, please give the CFU Coordination Team and AO plenty of notice and discuss what time is best for everyone. This training has been scheduled for day light savings hours, Monday to Thursday. Your local fire station will attend your training session but at times emergencies can occur which take priority.



Basic overview of Operations

Types of CFU membership



Each CFU is made up of:

- Team Leader
- Equipment Custodian
- Operational members
- Cadet members
- Associate members
- Auxiliary members and
- Life members.

The different types of membership allow you to participate in a CFU at a level that matches your skills and commitment and reduces the risk of injury during training and bushfire operations.

All CFU Members with the exception of cadets are to be 18 years of age or older. CFU members 16 years and older are required to hold a valid Working With Vulnerable People (WWVP) card.

CFU Team Leader

The role of the Team Leader is to:

- Lead their CFU team members
- Act as liaison with the CFU Coordination Team
- Take charge of CFU operations pending the arrival of ACTF&R
- Monitor availability of members during periods of bushfire alert
- Maintain an accurate register of members and inform the CFU Coordination Team of any changes
- Ensure the CFU Activities are logged in the Occurrence Book and is accurately maintained
- Ensure all team members wear approved Personal Protective Clothing (PPC) and;



CFU Equipment Custodian

The members of each CFU appoint an Equipment Custodian.

Duties of the Equipment Custodian include:

- Ensure that the equipment is readily accessible by CFU members at all times
- Ensure that the CFU equipment trailer is kept in good working order and is clean
- Ensure the regular checking and recording of the condition of CFU equipment and
- Notify the CFU Coordination Team of any equipment loss or damage.

CFU Operational Members

All members of a CFU share some common roles. Members should make a reasonable effort to be contactable during periods of high fire danger. It is not expected that members be available to activate at all times, however the Team Leader needs to have an awareness of available human resources during high fire danger periods.

Duties of operational members include:

- Attendance at least one CFU Training Activity a year
- The performance of CFU functions without recklessness, so as to not endanger themselves or others
- Taking directions from the Team Leader, who in turn will take directions from ACTF&R staff
- The wearing of supplied PPC when activated or in training.

CFU Cadets

The requirements to become a CFU Cadet include:

- Parent/s, guardian are to give written permission to join
- Cadets are aged between 14 and 18 years of age (On their 18th birthday Cadets will automatically become Operational Members)
- Cadets who are 16 years and older are required to hold a valid WWVP card, and
- Cadet induction training will consist of eLearning theory and a practical training day with ACTF&R staff.

CFU Associate Members

CFU Associate Members are Operational Members that choose to become an associate or are Operational Members that have not participated in any CFU Training Activities in the 12month period. They are not to go past the CFU trailer to carry out operational duties.

If an Associate Member chooses to participate in any CFU Training Activities they will be reinstated as an Operational Member.

CFU Auxiliary Member

A CFU Auxiliary Member is an interested person who does not want to become an operational member, but has skills to offer a CFU team.

Auxiliary Members can be involved in all aspects of CFU activities with the exception of;

- Activations
- May observe but not participate in a CFU Training activity.

Team Leaders are to notify the CFU Coordination Team when they have a suitable person interested in becoming an auxiliary member.

To become a CFU Auxiliary Member an interested person must complete the eLearning theory and possess a valid WWVP card. An identity card will be issued on completion of both.

Auxiliary members can become an Operational member by attending an induction practical day with ACTF&R staff at Hume.

CFU Life Member

The Chief Officer of the ACTF&R may, after receiving a nomination from the CFU Coordination Team and Consultative Committee, appoint a person as a life member of the CFU.

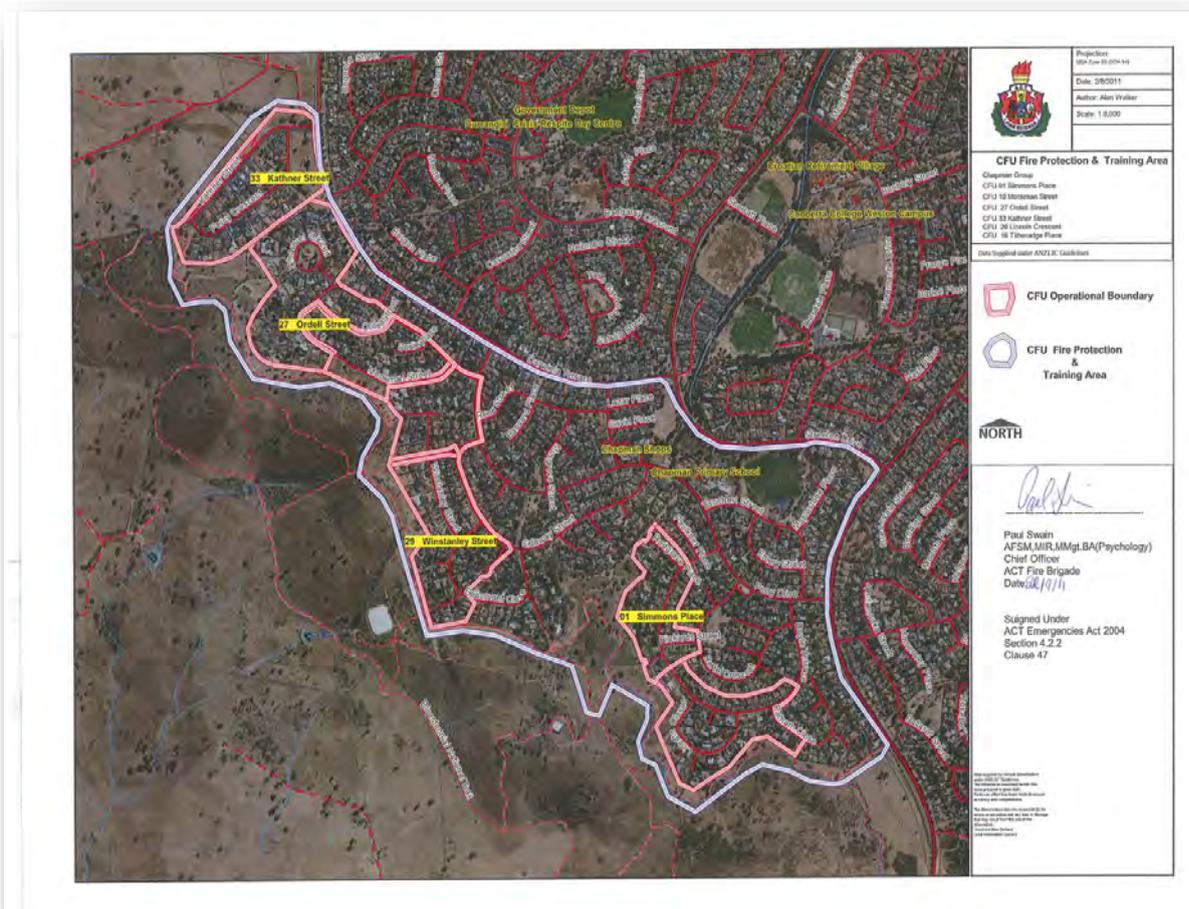
Life members may be called upon to assist with special projects or for guidance and advice in areas of expertise.

CFU Area of Operation

An area of operation in your street is chosen for each unit. Areas are decided by ACTF&R based on topography, history of fire in the area and community interest.

You must be familiar with your area of operation and only operate within it. A laminated map showing your area of operation and training area is in your CFU cabinet or trailer.

Further information about the CFU area of operation is included in the Standards and protocols for Community Fire Units. This is on the ESA web site <http://esa.act.gov.au/actfr/community-fire-units/documents/>



Total Fire Ban Days

From time to time during bushfire danger periods the ESA Commissioner, in consultation with ACTF&R, can declare a total fire ban (TOBAN) day. TOBANs are based on weather districts throughout the state and are declared in the evening prior to the TOBAN day.

Your Team Leader will be informed by ACTF&R via mobile phone SMS if a TOBAN has been declared. Your Team Leader will then inform you. You should make sure that your property preparation is complete and be prepared for the CFU to be activated if needed.

PLEASE NOTE:
CFUs will not be activated by ACTF&R during Catastrophic Fire Danger Rating (FDR) periods.



When is the CFU activated?

If a bushfire is burning in or likely to endanger the area of the CFU, the Communications Centre will notify and/or activate the CFU by contacting the Team Leader and nominated contact members.

When activated the Team Leader then:

- Contacts all members and asks them to meet at an assembly point in CFU uniform
- Gets the necessary equipment or a vehicle to tow the CFU trailer
- Notifies the Communications Centre that the CFU is operational
- Sends a Conditions, Action, Needs (CAN) report as required via ACTF&R operational radio

Alternatively, a CFU may self-activate if spot fires break out or the fire approaches and ACTF&R or Rural Fire Service are not there yet.

The Team Leader should dial 000 or contact the Communication Centre and report:

- The type of fire e.g.; bush, grass or property fire
- Address, including:
 - Street number
 - Street name and nearest cross street
 - Suburb
 - Any identifiable landmark
- Any other information which might be significant such as direction of fire travel, property under threat, extent of fire etc.
- Personal details including name, address, contact number and CFU details.

You should then stand-by in your area of operation. If necessary, set up hose lines and assist residents to prepare their homes for fire impact.

If you need advice during a bushfire alert, contact your Team Leader. If they are not available, contact the Station Officer at your local fire station, CFU Coordination Team or the Communications Centre.

Notes:



1. Working Safely



Working Safely

Introduction

Working as a Community Fire Unit (CFU) member can be dangerous. Your safety is a priority and you must avoid putting yourself and others at risk. By following safe working practices, you can minimise the risk of injury.

Common cause of accidents and injury include:

- Lifting heavy objects
- Working around smoke and dust
- Working in hot conditions.

The best way to minimise accidents when working as part of a CFU is to:

- Be aware of the situation, hazards and risks around you
- Follow instructions from ACTF&R personnel
- Follow standard operating guidelines
- Ensure equipment is in good working order and is properly maintained
- Attend scheduled training sessions.

Working as a team is also very important. Teamwork helps the CFU to be more efficient and effective, leading to a better and safer result.



Legislation and Policy

Work Health and Safety (WH&S)

There are laws to protect you from injury at work.

These are:

- Work Health and Safety Act (2011)
- Work Health and Safety Regulation (2011).

Under the Act, as stated in Division 2.2 - Primary duty of care

Section 19 - Primary duty of care

(1) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, the health and safety of—

- (a) Workers engaged, or caused to be engaged, by the person; and
- (b) Workers whose activities in carrying out work are influenced or directed by the person, while the workers are at work in the business or undertaking.

CFU members also have a personal responsibility under the Act for maintaining a safe workplace. Your workplace is the area of operation for your CFU or a place where you undertake training activities.

ACTF&R is responsible for ensuring that the workplace is safe by:

- Providing safe work areas, machinery and equipment
- Providing information, instruction, training and supervision
- Providing personal protective clothing and equipment.



You are responsible for maintaining a safe workplace by:

- Looking after your own health and safety
- Following instructions from your Team Leader and/or ACTF&R personnel
- Not putting others at risk
- Wearing the right Personal Protective Clothing (PPC) for each CFU activity
- Following all safety directions when using equipment
- Work in a safe manner
- Keeping your skills up to date.

It is important that you are aware of and accept these responsibilities so the workplace is safe and you are covered by insurance if you are injured. Action can be taken against CFU members who do not follow CFU Standards and Protocols, Recommended Practices and Policies.

Further information on Legislation and Policy

Can be found at the following link:

<http://esa.act.gov.au/actfr/community-fire-units/documents/>

- Dynamic Risk assessment overview
- Work Safety Dynamic Risk assessment
- CFU equipment Guidelines
- CFU Standards and Protocols

Code of Conduct

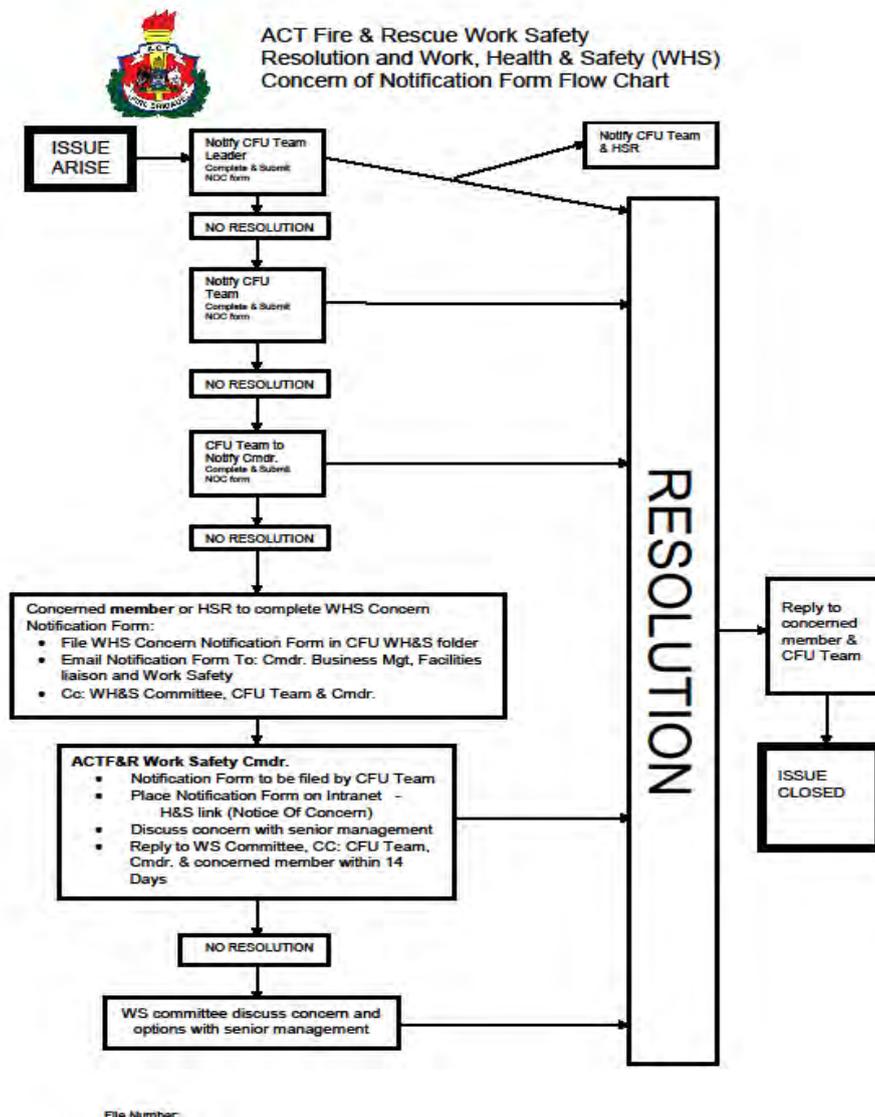
The ACTF&R is committed to the principles of diversity, and has policies in place regarding the prevention of harassment and bullying. If you need more information, contact the CFU Coordination Team.

Notice Of Concern (NOC)

A Notice Of Concern Form is for WH&S concerns which arise during training exercises, trailer checks and operational incidents that are not of an urgent nature. Once a non-urgent concern is identified, the Team leader is to be notified and they are to request a NOC form from the CFU Team. Once they have received the form, they are to complete the form or assist a member (who has the concern) to complete a form and submit it to the CFU Team email. If it is an item of equipment, it is to be tagged, not used and reported through an NOC form process.

Please note: DO NOT report personal injuries through this form refer to p50-51.

The flow chart below shows the reporting and resolution pathway of WH&S Notice of Concerns.



Personal Protective Clothing (PPC)

Personal Protective Clothing (PPC) is issued to all CFU members. It protects you and reduces the risk of injury when working near bushfire. PPC must be worn at all times during operations and practical training activities.

CFU members are issued with:

Example:

A piece of equipment is on the footpath. This is a hazard. It is likely that someone could trip over it. To remove the hazard, you could move the equipment to a safer place or use witches hats to block off the hazardous area.

- Lightweight Tunic and Over pants (operational members only)
- Helmets
- Boots (operational members only)
- Gloves
- Goggles

If any item of PPC is damaged, advise your CFU Team Leader who will have it replaced. Any member not wearing PPC will be directed away from the fire or training activity.

ACTF&R has a Recommended Practice for Wearing Uniforms and PPC. It provides information on the correct use and care of uniforms and PPC. It is important that you are familiar with this document. The Recommended Practice is in your cabinet or trailer.

The table on the following page describes your uniform and how to care for it.

CFU Uniform

Item	What is it for?	How to look after it	Note
<p data-bbox="113 645 384 712">Lightweight Tunic and Over pants</p> 	<p data-bbox="424 645 632 907">To protect body from radiant heat, chemicals, water and burning materials.</p> <p data-bbox="424 954 624 1216">They are not designed to provide protection from direct flame contact.</p>	<p data-bbox="691 645 1109 947">As your Lightweight Tunic and Over pants contain reflective material, you need to take care when washing and ironing them.</p> <ul data-bbox="691 837 1102 1417" style="list-style-type: none"> • Wash in warm water on reduced action cycle (40° C). • Use synthetic detergent. • Do not use bleach. • Cold water rinse well. • Normal spin. • Tumble dry – less than 48°C or line dry. • Warm iron only (don't iron directly on reflective material). • You can dry clean your Lightweight Tunic and Over pants. <p data-bbox="691 1464 1090 1615">These care instructions should also be on the label of your Lightweight Tunic and Over pants.</p> <p data-bbox="691 1662 1102 1812">Your Lightweight Tunic and Over pants should be kept at home, not in your CFU cabinet or trailer.</p>	<p data-bbox="1137 645 1481 1066">Long sleeve shirts and long pants are worn under the CFU Lightweight Tunic and Over pants. This clothing, including underwear and socks should be made from natural fibres such as cotton.</p> <p data-bbox="1137 1113 1481 1263">Trousler legs should be worn outside boots so that embers do not get inside the boot.</p> <p data-bbox="1137 1310 1453 1503">During operations, you must wear your Lightweight Tunic and Over pants fully done up.</p> <p data-bbox="1137 1550 1469 1771">When you are not working close to the fire, open up the overalls at the front and roll up sleeves to encourage cooling.</p>

<p>Helmet</p> 	<ul style="list-style-type: none"> • To protect your head from falling debris. 	<p>Remove any dirt or residue with warm water and soap.</p> <ul style="list-style-type: none"> • Be careful not to drop or throw your helmet as this may cause cracks which will reduce protection. • If your helmet becomes cracked or damaged, notify your Team Leader. 	<p>Always secure the chinstrap.</p>
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CFU Uniform

Item	What is it for?	How to look after it	Note
<p>Gloves</p> 	<p>To protect you from serious burns or cuts.</p>	<ul style="list-style-type: none"> • If your gloves are worn out or damaged, request a new pair from the CFU Training Coordinators office 	<p>Make sure that your gloves are the correct size. This is especially important if you have smaller or larger hands</p>
<p>Goggles</p> 	<p>To protect you from serious burns or damage to your eyes from smoke and dust.</p>	<p>Clean your goggles with mild, soapy water, rinse and then dry with a soft cloth.</p>	
<p>Boots</p> 	<p>For protection against ankle and foot injuries.</p>	<p>Keep your boots at home, not in your CFU cabinet or trailer.</p>	

Please Note:

An ACTF&R CFU Hat & T-Shirt will be issued to all new members.

Hazards

A hazard is anything that could hurt you or someone else. As a CFU member you must be aware of hazards and take steps to mitigate them.

If you identify a hazard you need to remember SAM:

Spot the hazard - what is the hazard?

Assess the risk - what is the chance of me or someone else getting hurt?

Make the changes - what can I do to fix it?



Some hazards may not be easy to remove or avoid.

If you see a hazard and cannot fix it, talk to your Team leader and/or ACTF&R personnel.

Mop up and monitor

Mop up is an important part of property protection. Smouldering fires could reignite and property may be in danger long after the fire front has passed.

When the fire front has moved past the area, you need to mop up leftover smouldering or burning materials. Make sure that you take advice from ACTF&R personnel when you are mopping up and wear your full PPC.

To mop up you can:

- Separate piles of smouldering materials with the McLeod tool – this helps to cool the materials
- Rake out hot coals from logs and stumps to stop them from igniting
- Make sure that smouldering branches and logs cannot roll into unburnt areas
- use the knapsack to extinguish small fires
- Hose down the outside of the house including the roof
- Look out for small fires and burning embers around the house.

Continue to patrol around the house after the main fire has passed through in case of re-ignitions. It is during this time that many houses burn down. Also watch out for falling trees and branches. Trees can be severely weakened by fire and can fall for weeks after the fire has passed.



Working on or near roadways

When setting up for operations be careful on or near roadways. During a bushfire there will be lots of smoke and visibility on or near roadways may be poor.

When parking your CFU trailer, make sure that you are not blocking the entry or exit from any roads. Park the trailer on the footpath if possible. Residents may be leaving the area and fire fighting vehicles will need access. Always leave at least one lane open for evacuating traffic.

The witches hats and signs should be used to show people that the trailer is on the road. The witches hats should be laid out in an arc from the rear of the trailer to the kerb nearest the trailer, for the longest distance that the number of witches hats will allow.

If there are enough members available, two people should stay with the trailer to slow traffic and hand out equipment to operational CFU members. There are four safety vests in your cabinet or trailer. These vests must be worn if you are working on or adjacent to the roadway.

Working around powerlines

Stay away from powerlines where possible. If you

must use water near powerlines, be extremely careful. Always assume that powerlines are live. Do not aim water at or near power lines.

If you see powerlines that are damaged or have fallen, immediately report this to your Team Leader who will contact ACTF&R personnel. Leave the area immediately and wait for the emergency services to arrive.



Carrying hand tools

When carrying hand tools, make sure that they are close to your body and parallel to the ground. Do not carry them over your shoulder. If you swing around, the tool may strike another person, or if you fall, it may cause you serious injury. Carry tools on the downhill side when walking on steep slopes. This way, if your feet slip out from under you, you will fall onto the hill and not on top on the tool.

Dangerous Trees

- Keep twice the height away. Where will it fall?
- Beware of overhead branches / limbs & Rotten trees
- Keep clear of chainsaw operations



Aircraft

- Mostly helicopter (rotary wing)

- When bombing, avoid the drop zone by 100 metres (objects and wildlife can be picked during bucket loading in dams and rivers)



Health hazards related to CFU activities

Heat Stress Awareness Guide

Contact

Anthony Walker PhD

JACS Work Health & Safety

12 Moore St Canberra City

Ph: 0412 313 870

Email: anthony.walker@act.gov.au

Heat Stress Awareness Guide

Key Points to Note:

- Ensure that you tailor your work rate to the conditions.
- Consider work / rest cycles based on the conditions
- Consider PPE use based on the risk of heat illness and the operational needs
- Ensure that you are properly hydrated prior to work
- Once you are dehydrated, you cannot play catch-up
- Proper cooling should occur following a work period in the heat.

When we work in the heat, we experience increased body temperatures. Temperatures increase as a result of the physical work we do, and also due to the protective clothing that we wear.

Increased body temperatures result in elevated heart rates, increased sweat rates, reduced strength and also cognitive declines.

When body temperatures become extreme (>39 °C) we are at risk of heat stroke, a potentially fatal condition.

Thus, when we work in the heat it should be a priority to ensure that proper heat mitigation strategies, in the form of hydration, appropriate work/rest cycles and PPE selection, are in place during any work tasks in hot weather.

This guide aims to provide operational staff and managers with a toolkit to properly manage the risks associated with working in hot weather.



Factors Influencing Heat Stress

The rate of heat gain is affected by the following factors:

- Air temperature
- Humidity
- Radiant heat load (sun, fire)
- Physical activity (how hard you are working)
- Level of encapsulation (PPE)
- Rate of cooling (mainly sweat evaporating)
- Age
- Body composition and fitness

When you are working hard wearing PPE, your body cannot dissipate heat through sweating. This makes your body work harder to lose heat and can increase your sweat rate and lead to dehydration.

Can you get used to the heat?

Yes. Over time, your body will adjust to working in the heat via a process of acclimatization. Your body becomes better at dealing with the heat by

- Sweating sooner
- Sweat becomes less salty (dilute)
- Plasma volume (amount of blood in your body) increases

Becoming acclimatized to working in the heat generally occurs over 7-14 days of exposure. During this time, you are susceptible to heat stress if you are not properly hydrated. Prior to summer, or any deployment during our winter you should aim to be properly acclimatized.

What are the effects of Working in the heat?

When we work in the heat, body temperatures can rise quickly. When body temperatures become extreme (>39 °C) fatigue, reduced strength, reduced coordination and impaired cognition occur. Also, immune system activation can lead to elevated risk of heart attacks and stroke. This risk can be elevated for up to 24hrs following work.

How is Heat Stress Risk Measured?

The standard measure of heat risk is based on the Wet-Bulb-Globe-Temperature (WBGT) index. WBGT accounts for ambient temperature, solar radiation and evaporation potential in the environment.

The risk of heat illness increases with

- Elevated temperatures
- Elevated humidity
- Exposure to solar radiation
- Wearing PPE



How can I manage the risk of heat illness?

- Monitor environmental conditions
- Assess appropriate PPE
- Use appropriate work/rest cycles
- Maintain proper hydration

Table 1: Work/rest and water consumption table for military operators working in the heat. US Army model (adapted for Australian conditions). Applies to average sized, heat-acclimated soldier wearing level 1 PPE. Note: Consider PPE – add 7 °C to WBGT when wearing Level 2 or above PPE for moderate or hard work and 3 °C for easy work. Water consumption should NOT exceed 1.5 L/hr.

Easy Work		Moderate Work		Heavy Work			
Walking: <ul style="list-style-type: none"> • Hard surface, no load ≤ 4.5 kph • Hard surface, 20 kg < 4 kph • Hard surface, 30 kg < 3.5 kph • Sand, no load < 3.5 kph 		Walking: <ul style="list-style-type: none"> • Hard surface, no load, 4.5 to 6.0 kph • Hard surface, 20 kg, 4 to 5.5 kph • Hard surface, 30 kg, 3.5 to 5.0 kph • Sand, no load, 3.5 to 4.5 kph 		Walking: <ul style="list-style-type: none"> • Hard surface, no load > 6.0 kph • Hard surface, 20 kg > 5.5 kph • Hard surface, 30 kg > 5.0 kph • Sand, no load 3.5 to 4.5 kph 			
Heat Category	WBGT Index °C	Easy Work		Moderate Work		Heavy Work	
		Work/rest (min)	Water intake (L/hr)	Work/rest (min)	Water intake (L/hr)	Work/rest (min)	Water intake (L/hr)
1	25.5 – 27.7	No Limit	0.5	No Limit	0.75	40/20 min	0.75
2 (Green)	27.8 – 28.4	No Limit	0.5	50/10 min	0.75	30/30 min	1
3 (Yellow)	28.5 – 31.1	No Limit	0.75	40/20 min	0.75	30/30 min	1
4 (Red)	31.2 – 32.2	No Limit	0.75	30/30 min	0.75	20/40 min	1
5 (Black)	> 32.2	50/10 min	1	20/40 min	1	10/50 min	1

Why is Hydration important?

Ensuring that you are properly hydrated will allow you to work more safely in the heat. Proper hydration ensures that you can continue to sweat in order to help dissipate heat when you are working. Being properly hydrated also helps you to work longer due to reduced perception of strain.

How can I ensure that I am hydrated properly?

- Proper hydration starts before you come to work. Check your urine colour first thing in the morning. Urine should be of a "straw" colour.
- Weigh yourself each morning or before & after an exercise/work session. Any changes will likely be due to sweat lost and should be replaced
- Drink small amounts of water during the day. Large volumes of water will generally pass through as urine and not be fully absorbed.
- You can sweat up to 3 L/hr. Your stomach can only process 1 – 1.5 L/hr. If you start work dehydrated, you cannot catch up.

Do I need a sports drink?

Water should be the main source of hydration during the day. However, if exercise is conducted in the heat and/or over a significant duration (> 1 hr), a sports drink may be of use. Also, if you are not properly heat acclimatised you may wish to consider a sports drink to replace lost sodium (a salt).

Be aware that sports drinks contain sugar and this should be factored into your overall energy daily energy consumption. Also, although you lose sodium when you sweat, the average western diet can generally compensate for this.

Types of sports drinks:

Sports drinks are grouped according to the amount of sugar (carbohydrates). The proportion of sugar in the drink (%) will dictate the speed of absorption into the cells based on osmotic pressure.

- **HYPOTONIC** -
 - 1 – 4 % Carbohydrates
 - Little energy from sugars
 - Designed to quench thirst
- **ISOTONIC** -
 - 4 – 8 % Carbohydrates
 - Taken up as quickly as water
 - Adds carbohydrates (energy)
- **HYPERTONIC**
 - > 8 % Carbohydrate
 - Thirst quenching is secondary to energy
 - Useful during less strenuous, long duration exercise
 - Must be offset by Hypo/Isotonic drinks or water as they can further dehydrate you



Why do we need to cool?

- Lowering body temperatures post-incident increases your safety for redeployment.
- Reducing body temperatures restores strength and cognitive function
- Lowering body temperatures may reduce immune and inflammatory activity in your body
- In extreme levels of heat stroke (a life threatening condition) rapidly cooling the body increases the likely hood of survival

What are the best methods for cooling at operational incidents?

- Water immersion:
 - Immersing the body in water is the 'gold standard' for post-exercise cooling. When using reticulated supplies, increasing the amount of your body that is immersed and circulating the water will increase the effectiveness of cooling.
 - Immersion is the safest way to cool individuals with "heat stroke" as it can rapidly reduce body temperatures.
 - Be aware of cooling for too long. Aim for about 10-15 mins of immersion in water ~20 °C.
- Iced Slush Drinks:
 - Drinking frozen "slush drinks" cools the body from the "inside out". Your body uses the heat stored to melt the ice, thereby lowering your body temperature to safe levels.
 - Be aware the commercially produced slush drinks require hypertonic solutions to ensure proper slush. A better option is to use a blender and flavoured powder.
- Misting fans
 - Removing outer layers of PPE and resting in front of fans (PPVs) will increase the rate of evaporation and reduce body temperatures. Be aware of not making people shiver as that will warm them up again.



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Fire Fighting Foam (Retardants) Awareness

The ACT Fire & Rescue and ACTRFS use a number of chemical agents to aid in the suppression of fire, these agents can be broadly categorised as follows:

- **Surfactants (Foam)** include wetting agents and foaming agents. Wetting agents increase the effectiveness of water as an extinguishing agent by reducing its surface tension, thus increasing its penetration of fuels. Foaming agents are applied either to extinguish fire or as foam blankets to form a control line.

Surfactants can be harmful to aquatic animals, e.g. frogs and fish; however the environmental effects of the repeated use of surfactant are still largely unknown.

- **Retardants** decrease the flammability of fuels by inhibiting the chemical reaction of fire preventing it from burning. They are composed of either ammonium phosphate or ammonium sulphate. They are useful in limiting the spread of low intensity sections of a fire. They are applied aerially by agricultural aircraft and by helicopter water buckets.

The use of retardants can increase soil nutrient levels, which may have impacts on the native plant community and encourage weed invasion. The use of retardants in reserves should therefore meet conditions to minimise impacts on native vegetation communities.

- **Gels** adhere to surfaces to absorb heat and form a protective layer that prevents objects from heating, charring and catching alight. When added to water these products absorb many times their own weight to reduce drift and evaporation.

The uses of these agents in fire suppression will be selectively based upon:

- The fire threat to life and property
- The estimated effectiveness in assisting the planned fire suppression operation
- The potential impacts on biodiversity, water quality and other ecosystem processes, and
- Safety considerations.

Special consideration is given when using these agents in sensitive ecological areas; all water catchments, endangered flora/fauna habitat and areas of high potential weed infestation. As a general rule their storage, mixing and use will be avoided within 100m of waterways.

For more information visit <http://cdn.esa.act.gov.au/wp-content/uploads/3.15-Foam-Retardant-and-Gels.pdf>

(Reference ACTRFS SOP 3.15)

Burns

Your PPC will help protect you from low levels of radiant heat and embers. However, they are not designed to provide protection from direct flame contact. As part of CFU training you will be taught about radiant heat levels and PPC capabilities.

If you are burnt:

- Cool with water for a minimum of 20 minutes
- Remove rings and jewellery from the affected area if possible
- Cover with a sterile dressing
- Seek medical advice.

Do not:

- Remove any clothing that is stuck to the area
- Put ice, oils or ointments on the burnt area.

If you have a serious burn, seek medical attention and contact ACTF&R personnel. Also ensure an entry is made into the occurrence book.

Sunburn

Prolonged exposure to the sun can lead to sunburn. You can easily be burnt when the sky is overcast. When working outdoors you should cover all exposed parts of your body with a SPF 30+ or SPF 50+ water resistant sunscreen.

REMEMBER

You should apply a generous amount of sunscreen to the skin and reapply it every two hours if possible. Make sure that you cover your face, neck, ears, arms and the backs of your hands.

Effects of Smoke and Dust

Smoke and dust are hazards because they reduce your visibility and you may breathe in the particles. Smoke contains toxins which may poison your body. Smoke and dust particles can irritate your eyes and airways and can kill you. Limit the time you work around smoke.

- Always wear the correct PPC.
- Never work alone and always maintain contact with others.
- Do not proceed if visibility is poor.
- Remember that smoke is often less intense close to the ground.

If you are affected by smoke, move away from the area.

If you are suffering from minor irritation seek first aid, if you are severely affected seek emergency assistance.



Bushfire Smoke Awareness Guide

FACT SHEET



Bushfire Smoke

What is bushfire smoke?

Smoke from bushfires (and hazard reduction burns) is made up of small particles, gases and water vapour. The small particles are not visible to the human eye. The gases in bushfire smoke may include carbon monoxide, carbon dioxide, nitrogen oxides and volatile organic compounds.

Bushfire smoke exposure and health effects

Fine smoke particles affect the human breathing system. The smaller or finer the particles, the deeper they can go into the lungs when inhaled.

If present in high enough concentrations, these particles and gases can cause a variety of health problems, such as itchy or burning eyes, throat irritation, runny nose and illnesses such as bronchitis. Smoke particles can also aggravate existing lung conditions, such as **chronic bronchitis**, **emphysema**, **asthma** as well as some **cardiac conditions**. Symptoms can occur for several days after exposure, so people with the above conditions need to be vigilant with their treatment programs.

If you have **asthma** or a **lung** condition and you develop symptoms such as shortness of breath, coughing or wheezing, follow your personal Asthma or Chronic Obstructive Pulmonary Disease (COPD) Plan.

Healthy adults generally find that any symptoms they have developed during exposure to bushfire smoke resolve after the smoke disappears.

How will I know if bushfire smoke concentrations are dangerous?

Usually bushfire smoke can be seen as a visible haze and can be detected by its distinctive smell. As a general rule, the more visible the smoke haze is, and the stronger the odour, the more likely it is that the smoke contains concentrations of gases and particles that are hazardous to health.

Whilst a visible haze will indicate the presence of bushfire smoke, the concentration of hazardous particles and gases will be dependent on a number of factors including:

- The size of the bushfire and the amount of smoke produced;
- The distance the smoke has travelled from the source of the bushfire; and
- The prevailing weather conditions.

Bushfire Smoke Awareness Guide (Continued)

FACT SHEET



Air quality in the ACT is monitored routinely at several sites across Canberra for pollutants. If monitoring determines that air quality in Canberra is a hazard, a health warning will be issued as a media release. For more information on air quality, go to <http://health.act.gov.au/health-services/population-health/health-protection-service/act-air-quality-monitoring>.

Health precautions

The following precautions can help you minimise adverse effects from exposure:

- Stay indoors, with windows and doors closed;
- If possible, stay in air-conditioned premises, and switch your air-conditioner to 'recycle' or 'recirculate' to reduce the amount of smoke entering the building;
- Avoid vigorous exercise, especially if you have asthma or other chronic respiratory and/or chronic cardiac diseases; and
- It is especially important for people with asthma to continue their medication and consult their general practitioner if they have any difficulties.

If you must be outdoors when bushfire smoke is present, consider using a mask designed to filter fine particles. Use a mask rated either P1 or P2. These types of masks are available from hardware retailers. P2 masks are more effective in blocking the finest particles, however all masks have to be worn in accordance with the manufactures instructions in order to provide adequate protection.

If you are particularly susceptible to bushfire smoke, and if safe to do so during a bushfire event, consider:

- Staying with a friend or relative whose house has clean indoor air; or
- Leaving the area for a cleaner environment.

If you or anyone in your family is experiencing symptoms that may be due to bushfire smoke exposure, seek medical advice from your local doctor. Anyone experiencing difficulty breathing or chest pain should seek urgent medical assistance.

For more information visit the ACT Health website: <http://www.health.act.gov.au>.

Accessibility

If you have difficulty reading a standard printed document and would like an alternative format, please phone 13 22 81.



If English is not your first language and you need the Translating and Interpreting Service (TIS), please call 13 14 50.

For further accessibility information, visit: www.health.act.gov.au/accessibility

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Manual Handling Injuries

Manual handling covers activities such as lifting, carrying, pushing, pulling and sliding. Incorrect handling can result in injury. Common injuries include:

- Strains and sprains
- Neck and back injury
- Slips, fall and crush incidents
- Cuts, bruises and broken bones
- Hernia
- Occupational Overuse Syndrome – OOS (once known as RSI).

There are three basic rules of manual handling.

1. Do not lift more than you are comfortable with.
2. Use your legs, not your back for lifting.
3. Avoid twisting while lifting.

Sometimes you will handle heavy equipment. You should follow the steps outlined below when lifting heavy items to avoid being injured.

1. Bend the knees and crouch down, with a straight back.
2. Balancing with one foot slightly forward, take hold of the object securely by the handle
3. Straighten back. Using your thigh muscles – stand up.

REMEMBER

Under WH&S regulations you have a responsibility to speak up if you ever feel that your task is too heavy, too difficult, too tiring or puts you at risk of injury.

Other injuries

Other possible injuries to CFU members include:

- Cuts and scratches
- Bites and stings
- Fractures, sprains and bruises
- Electrocution.



You can prevent injuries by:

- Being alert – watch out for insects and snakes
- Looking out for falling trees and branches – fire severely weakens trees and they can fall for weeks after the fire
- Being careful when coupling and uncoupling trailers, so your fingers don't get caught
- Always assuming that electric wires and electrical equipment are live.
 - Never make contact with a person who is in contact, or in danger of contact with live wires or equipment until the danger is clear and power is disconnected

If you are injured, seek medical attention and contact ACTF&R personnel. Also ensure an entry is made into the occurrence book.

Remember **DRSABC**

Check:

Danger

- to you
- to others
- to the ill or injured person

Response

- is the person conscious?
- is the person unconscious?

Send for help

- Dial 000 or,
- Send someone for help
- Notify Team Leader
- Notify ACTF&R

Airway

- is the airway clear of objects?
- is the airway open?

Breathing

- is the chest rising and falling?
- can you feel the breath on your cheek?

Circulation

- can you feel a pulse?
- can you see any obvious signs of life?

If someone is injured

There may be times when you need to apply basic First Aid. This is not a first aid course but will help you to support someone until medical help arrives.

Teamwork is vital in ensuring that the ill or injured person receives prompt attention.

- Stay calm and in control.
- Get somebody to raise the alarm.
- Apply basic first aid if it is safe to do so and you know what to do.
- Do not move a seriously injured person unless their life is threatened
- Do not disturb any evidence in case there is an inquiry.
- Reassure the person that help is on the way.
- Remain with the person until assistance arrives if possible.
- Provide reassurance and privacy where possible.



Infection control

You should protect yourself and the injured person from infection.

- Wash and thoroughly dry your hands before and after attending to the person.
- Wear clean, disposable gloves before touching any open or bleeding wound, and any other body fluid. Disposable gloves are in your first aid kit.
- Wash splashes to the eye immediately under clear running water for at least 20 minutes.
- Use sterile or clean wound dressings at all times.
- Use a clean, disposable mouth mask prior to performing EAR or CPR.

REMEMBER

If someone is injured, seek medical attention and contact ACTF&R personnel.

First aid kit

Every CFU is issued with a first aid kit.

This kit is to be used to provide basic first aid only. You should familiarise yourself with the first aid kit and how to use its contents. Most CFU Teams have a trained First Aider.

Reporting

Reporting injuries

CFU members who are injured or become ill as a result of CFU activities, training or CFU activation Team Leader must report their injury as soon as possible to the Team Leader, Station Officer (if present) and CFU Co-ordinator. The CFU Co-ordinator will assist completing and submitting an Accident Incident report form. Details of the injury should also be noted in the Occurrence book.

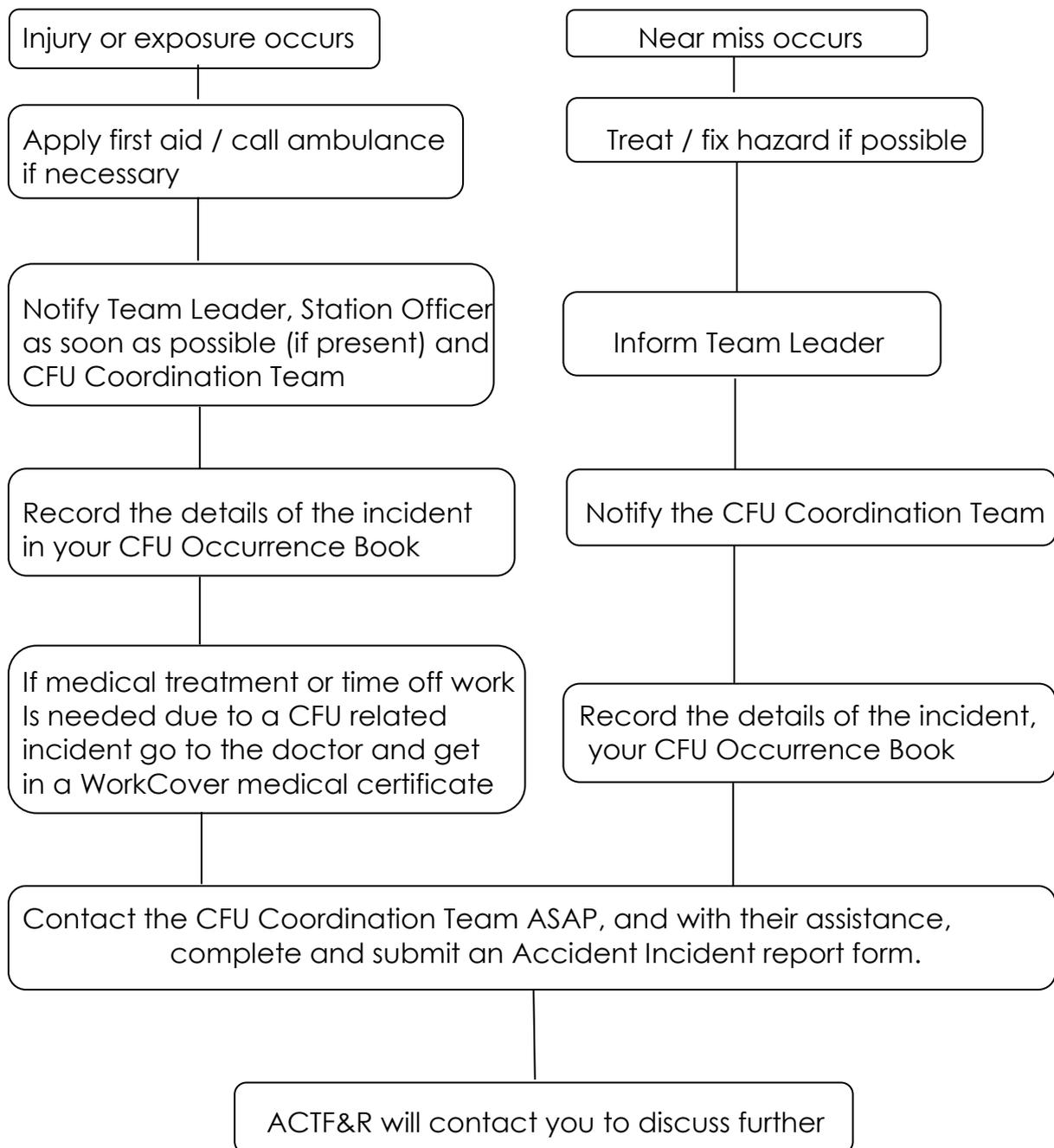
'Near misses' should also be reported. A near miss is an incident where someone could have been injured but wasn't.

Example:

A burnt out tree falls next to you. You were not hurt but if the tree had hit you, you would have been seriously injured. You must report this incident by informing your Team leader who will then notify the CFU Coordination Team. All near misses are investigated by the ACTF&R to minimise the chance of that incident happening again.

The process for managing near misses and injuries during training and CFU activities is outlined on the next page.

Diagram: Injury and near miss notification process



Reporting Faulty/Damaged equipment

Your Team Leader or local Fire Station may not know if a piece of equipment is not working properly. This can cause you injury. If you use the equipment, you must inform them when something is not working properly or needs repair and make an entry in the Occurrence Book.

If you notice something hazardous about equipment that someone else is using you should tell them and make sure you report this as well.

If you are injured when using a piece of equipment, notify the CFU Coordination Team as soon as you can.

Working Safely Conclusion

Safety is the priority. You have responsibilities under the WH&S Act, CFU Standards and Protocols and Recommended Practices. If you follow safe working practices and instructions from ACTF&R personnel you will minimise the risk of injury to yourself and your fellow CFU members.

Training regularly with your CFU is a good way to stay familiar with your equipment and keep your skills up to date.

Make sure that your equipment is in good working order and is properly maintained. If you see a hazard, it is your responsibility to take steps to remove it. You should report all injuries, near misses and equipment problems to your Team Leader and the CFU Coordination Team.

Notes:



2. CFU Equipment

CFU Equipment Introduction

Every Community Fire Unit (CFU) is issued with a standard set of equipment that is kept in the CFU cabinet or trailer. Knowing how to use this equipment safely will help you to protect your property. You must always wear your PPC when operating equipment as part of a CFU operation or training activity.

In this topic you will learn how to use and care for:

- Standpipes
- Hoses and small gear
- Portable pumps
- The hard knapsack
- McLeod tool (rakehoe).



Hydrants and standpipes

To protect your property you will need to access a water supply. The easiest way to access a water supply is to get water from the water mains (pipes) using a hydrant and standpipe.

Hydrants



A hydrant allows you to connect a standpipe and hose to a water main. There are two types of hydrants:

- Ground ball hydrants used on reticulated water main systems; and
- Pillar hydrants often found on private hydrant systems and in some inner city suburbs.

Ground ball Hydrant

Ground ball hydrants are located below ground in a cast iron pit surrounded by concrete. They usually have a hinged iron cover plate.

Pillar hydrants are located above ground. They operate in a similar way to a domestic tap. Pillar hydrants located in some older suburbs and are going to be replaced.

In suburban areas, hydrants are located 60m to 90m apart. They are commonly indicated by a blue reflective marker on the roadway and a sign on the kerb marked with the letters FH.

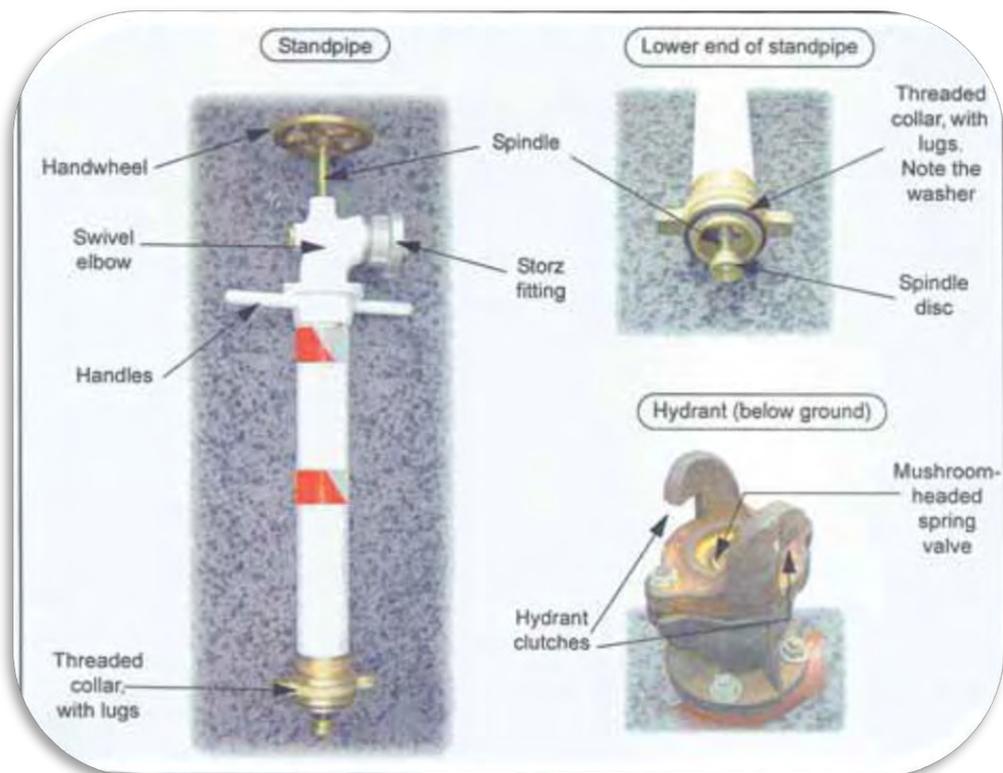


Pillar Hydrant

Standpipes

A standpipe allows you to get water from a ground ball hydrant. It raises the outlet from below the ground to above the ground level allowing control of mains water pressure.

The diagram below shows you the main features of the standpipe.



The process of connecting the standpipe to the hydrant is called shipping. Follow the steps on the next page to ship the standpipe.

Shipping a standpipe

- Make sure that you are wearing your PPC/PPE.
- Tap hydrant cover to loosen the dirt from the hinge
- Lift the hydrant cover using the hydrant bar.
- If the hydrant is dirty or full of rubbish remove it before shipping the standpipe.



Before shipping the standpipe check that:

- The hand wheel is wound up
- The threaded collar at the bottom of the standpipe is completely wound down
- The washer in the threaded collar is in place.
- Set the standpipe in the hydrant with the lugs engaged under the hydrant clutches.
- Turn the standpipe clockwise, winding the standpipe shaft down onto the hydrant.
- Ensure that the washer is in the correct place.



• !! NEVER allow your head or body parts to be above the handwheel when shipping or using a standpipe

- Flush some of the water out of the hydrant by turning the standpipe hand wheel:
 - turn the hand wheel slowly in a clockwise direction to partially open the hydrant valve/mushroom header spring
 - flush the hydrant until clear water flows from the outlet.



This minimizes the chance of dirt, gravel or other foreign matter entering hoses and blocking branches. It also tests that the standpipe is properly connected to the hydrant.



- Once the hydrant is flushed, close it slowly.

Adding a 2 into 1 Breeching or a Reducer and then a Hose

- Connect the hose, reducer or breeching to the Storz fitting on the standpipe.



- When the equipment is connected, slowly open the hydrant.

- Use the equipment as needed.



- To close the hydrant:



- Turn standpipe hand wheel slowly in an anti-clockwise direction until the water flow has stopped
- Let the water flow like this for at least 30 seconds and then fully close the hydrant
- Close the hydrant slowly to prevent water hammer and possible burst mains.





- Disconnect all equipment from the standpipe
- To unship the standpipe from the hydrant, turn the standpipe handles anti-clockwise and the lugs will disengage.
- After using the hydrant, check to ensure that the hydrant is properly closed, that no water is leaking out and that the hydrant pit is left clean.

Care and maintenance

After using the hydrant:

- Check to ensure that the hydrant is properly closed, with no water leaks
- Leave the hydrant pit clean of debris, with the hydrant cover plate in place.

After using the standpipe:

- Check the washer is still in the Storz fitting and threaded collar
- Wind the hand wheel fully up
- Wind the threaded collar fully down.

This leaves the equipment ready for use.

Report the following situations to your local station or CFU Training Coordinator:

- The concrete surround of a hydrant has been damaged or dislodged
- The hydrant itself is damaged, meaning you can't ship the standpipe
- The hydrant is leaking
- The standpipe is damaged.

Water hammer

If the water flow is suddenly cut off, it creates a shock and sends pressure through the pipes. This is known as water hammer. Water hammer can rupture hose joints, hydrants, water mains and pump casings.

To avoid water hammer:

- Shut off pumps and branches smoothly and steadily
- close hydrants slowly.

Hydrants & Standpipes Conclusion

Using hydrants and standpipes can be dangerous.

- Always wear the appropriate PPC for the activity
- Always use the hydrant bar to open and close hydrant covers.
- Check there are no spiders or other insects when removing the hydrant cover plate. Look out for broken glass or syringes in the hydrant pit.
- Clear debris from around the hydrant lugs and sealing ring.
- Do not stand with any part of your body over the top of the standpipe while it is being inserted and operated.
- During CFU operations get help from ACTF&R personnel if the standpipe will not shut off or if the hydrant is leaking. Leave the standpipe in place.
- If there is a leaking hydrant during training operations and ACTF&R personnel are not present, have your Team Leader contact ACTF&R Communication Centre to advise the repair of the hydrant.

Delivery Hoses & Small Gear

Delivery hoses

Delivery hoses are used to carry water from a hydrant or pump to where the water is needed. CFU members are issued with eight x 38mm hoses. The hoses are designed to withstand the pressure from hydrants and pumps. There are two types of hose in a CFU trailer - the red dura line and white canvas type hose.



Small gear

Small gear is the term used to describe other pieces of equipment that you use when delivering or preparing to deliver water.

Branches

A branch is attached to the hose line for controlling, directing and increasing the speed of a stream of water.

A branch operates in a similar way to a garden branch. The main positions of the branch are off, jet and spray. You rotate the outer body of the branch to get the spray pattern that you need. A branch has a shut-off lever.



It is important to select the right spray pattern
The jet pattern allows the water to come out of the branch with the most force. Use the jet pattern to achieve a greater distance of water projection or travel. This pattern can also be used to drive water in to piles of mulch to achieve maximum penetration to extinguish deep smouldering fires.

The spray pattern allows the water to cover a larger area due to the large droplets produced. The water does not exit the branch with as much force as the jet and is much more controllable. Use the spray when wetting down areas prior to fire impact and as a shield to reduce the amount of heat impacting on you.

Storz Couplings

Storz couplings are used to join two lengths of hose or to connect hoses to equipment.

Each storz coupling has:

- A shank and swivel collar
- A special rubber washer fitted to the shank
- A swivel collar with two lugs.

When the swivel collar is rotated 90 degrees, the joint is secured. Either end of the hose can be connected to any hose or equipment that has a Storz coupling of the same size. It is important not to drag the couplings along roads or gravel to avoid creating sharp edges and that could cut hands and fingers.



Adaptors and reducers

- Adaptors and reducers are fittings used to connect different size hoses.



Blank caps

- Blank caps are used to blank off a storz fitting.



Breechings

- A 1 into 2 breaching divides one hose line into two lines.

Hose spanners

- Hose spanners are used to make and break connections for 38mm storz couplings (see above).



Operating Hoses & Small Gear

Rolling out a hose



- Place the roll of hose on the ground with the couplings on top.



- Face the hose couplings in the direction of the water supply.
- Release the strap.
- Lay the couplings on the ground and roll out enough hose to allow the coil to be lifted.



- Place a foot on the hose and lift the coil to chest height, cradling the coil along the forearm.
- Hold the uncoiled part of the hose with the other hand.



- Take a step forward and bowl the coil in the required direction.
- Pick up a coupling and walk in the required direction.



When rolling out hose, make sure that you:

- Keep the hose free from kinks and sharp bends, so that the water can flow freely
- Allow enough hose at the branch, so that the hose line can be easily moved
- Do not drag the hose around corners of buildings, over rough ground, or across collapsed debris
- Do not lay the hose over burning or hot debris and avoid contact with chemicals, oil and fuels.

Testing equipment before use

Before carrying out operations, you should always visually inspect hoses and small gear for damage and test that they are set up properly.

To do this:

- Connect the hose to the water supply
- Attach a branch with a shut off control
- Tighten all connections securely with the hose spanner
- Ensure that the branch shut off is in the open position
- Slowly charge hose with water
- Close the shut off control.

If the water flows freely and there are no leaks, then your hose and small gear is connected properly. If any item is damaged, do not use it. Notify your CFU Coordinator or local station as soon as possible.

Using your equipment

Your hose and small gear can be set up in a number of different combinations depending on the local conditions and fire activity. Your trainer will discuss this with you in more detail.

It is important for your safety that you hold the branch correctly.

The following picture shows you how to do this:

- When assisting on a hose line, you should always keep the hose immediately behind the branch operator and as straight as possible. This is because bends and kinks create thrust which can make the branch difficult to hold. You should support the hose and use a forward pressure to work against the jet reaction
- Operate the shut off controls slowly. If you open them suddenly, you may throw the person holding the branch off balance
- If possible, before you move with the branch and hose you should shut off the branch first.

When moving the hose over a distance, the branch should be shut off. This will minimise the chance of the hose pressure throwing you off balance. If you feel you are losing control of a branch, try to shut it off. If this does not work, you can fall on it and use your weight to pin it to the ground. By doing this, you can prevent serious injuries from occurring. If you are working with a variable branch, you may be able to simply adjust the flow of water to better control it.



Care and maintenance of hoses and small gear

After using a hose it should:

- Be cleaned to ensure all dirt and abrasive material is removed.
- Rolled, strapped and replaced in the trailer.

To care for the hose, make sure that you:

- Avoid hot, sharp or abrasive objects
- Avoid sudden increases in pressure
- Don't drop, drag or grease couplings.

If your hose needs repair

- Turn the hose off and use another one
- Clearly mark the hole or damaged location with a circle using a marking pen then put a knot in the end closest to the hole
- Notify the CFU Coordination Team who will replace it.



Saving water during CFU operations and training

It is important to conserve water during operations. During bushfires, when a lot of people are using water from hydrants, there may be a drop in water pressure which could result in very little or no water to use.

Only use water when you really need it, so you don't take it away from someone who may need it more.

Only use water to extinguish a spot fire or wet down a property. There is no need to wet your property down hours before the fire arrives.

After using small gear:

- Rinse branches with clean water to remove any dirt or other objects stuck in the collar
- Make sure that the rubber o-rings are intact
- Dry all parts before returning them to the cabinet or trailer.

To care for small gear:

- Never drop or drag equipment along the ground
- Tighten joints using the correct size spanner
- Do not use lubricants.

Regularly inspect for:

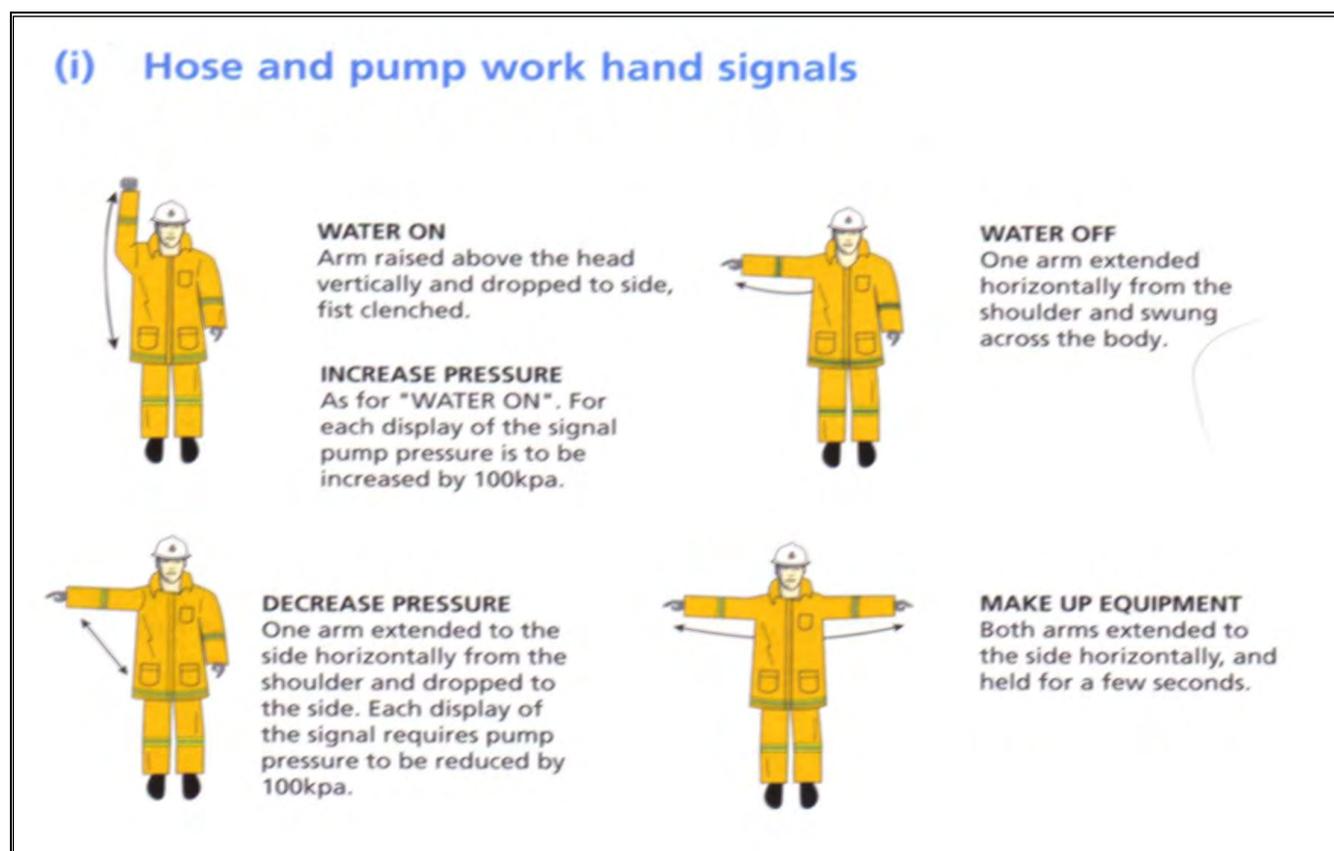
- Missing or damaged seals
- Cracks or chips to the surface that may stop a good seal.



Hand Signals

Hand signals are used to communicate between CFU members when using equipment. All hand signals must be accompanied by loud voice commands.

At night time you can also use a torch to make your hand signals more visible.



Go to general assembly area / safety area

Move your arm in a circle in front of the body.

Stop immediately

Hold your arm at shoulder height with the palm of your hand facing the person receiving the message

After Use Checks

Item	After use	If the item is damaged....
Pump	<ul style="list-style-type: none"> • Ensure the engine is cold. If required, clean the pump using a water spray with warm soapy water. • Flush all parts with fresh, clean water. • Drain water from pump. • Drain fuel, carburettor and sediment cup. • check oil level 	Call or email the CFU Coordination Team's office and they will organise to repair or replace it
Hydrant	<ul style="list-style-type: none"> • Check to ensure that the hydrant is properly closed, with no water leaks. • Leave the hydrant pit clean of debris, with the hydrant cover plate in place. 	Report the following situations to the CFU Coordination Team's office: <ul style="list-style-type: none"> • the concrete surround of a hydrant has been damaged or dislodged • the hydrant itself is damaged, meaning you can't ship the standpipe • the hydrant is leaking.
Standpipe	<ul style="list-style-type: none"> • Check the washer in the Storz fitting. • Check the washer in the threaded collar. • Wind the hand wheel fully up. • Wind the threaded collar fully down. This leaves the equipment ready for use. 	Call or email the CFU Coordination Team's office and they will organise to repair or replace it
Hoses	<ul style="list-style-type: none"> • Clean to ensure dirt and abrasive material is removed prior to storage. This cleaning should be done with water and a stiff bristle brush. • Ensure that the hose is drained before being rolled and stored or stowed. 	<ul style="list-style-type: none"> • Turn it off and use another one. • Clearly mark the hole or damaged location with a circle using a marking pen and tie a knot in the end closest to the damage . • Call or email the CFU Coordination Team's office and they will organise to repair or replace it
Small gear	<ul style="list-style-type: none"> • Rinse branches with clean water to remove any dirt or other objects stuck in the collar. Inspect for: <ul style="list-style-type: none"> - missing or damaged seals. - cracks or chips to the surface that may stop a good seal • Make sure that the rubber O-rings are intact. • Dry all parts before returning to the cabinet or trailer 	Call or email the CFU Coordination Team's office and they will organise to repair or replace it

After Use Checks

Item	After use	If the item is damaged...
Knapsack	<ul style="list-style-type: none"> • Drain the tank and flush with clean water. • Wipe clean the brass filter inside the tank. • Operate the pump several times to flush the filter, hose and pump with clean water. • If required, wash the outside of the tank, the shoulder harness, straps and buckles, the hose, hand pump and brass attachments with water and diluted detergent. Do not use abrasive or scouring cleaners. • When you wash the hand pump, dry it and re-grease the piston shaft and the branch stop cock with Vaseline or clean grease. • Allow the tank to dry in a warm, airy environment. Do not dry in direct sunlight. 	<p>Call or email the CFU Coordination Team's office and they will organise to repair or replace it</p>
McLeod Tool	<ul style="list-style-type: none"> • Inspect the handle to make sure that the tapered section is fitted snugly into the head of the tool. • Ensure the retaining bolt is in place and tightened. • Make sure that the handle is smooth with no cracking or splitting. 	<ul style="list-style-type: none"> • If the McLeod tool needs sharpening. Call or email the CFU Coordination Team's office. • If the handle is split, Call or email the CFU Coordination Team's office and they will organise to repair or replace it

Operating Hoses & Small Gear Conclusion

Delivery hoses are used to carry water from a hydrant or pump to where the water is needed. To avoid injury make sure that you always follow the ACTF&R recommended work practices for water delivery when using hoses and small gear. It is essential that you care for and maintain your hoses and small gear so that they are in good condition and are always ready for CFU operations.



Portable Pumps

Portable Pumps Introduction

During bushfires a lot of people including the fire services will be using water to protect property. When there are lots of users, you might lose water pressure and may not be able to get water from a hydrant. If this happens you can use a pump and a suction hose to access water from a static water supply such as a swimming pool, dam, river or a water tank.

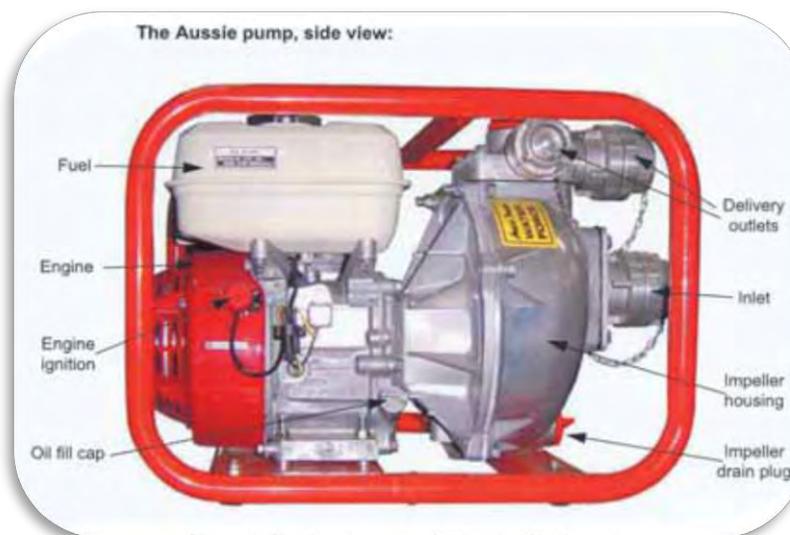
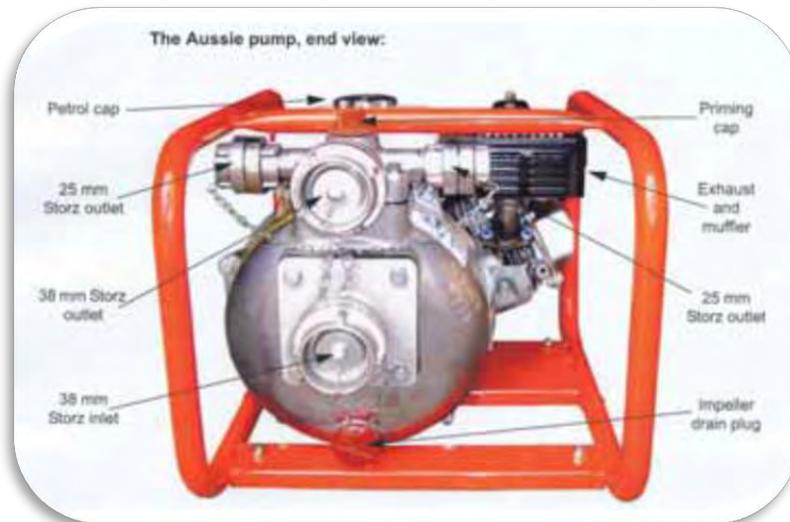
You can use water from your own property but you should never enter another property without the permission or approval of the owner, ACTF&R or the Rural Fire Service.

Each CFU is issued with a portable pump and suction hose. These are in your cabinet or trailer. Portable pumps are primarily used from static water supply, however, hydrants can be used to supply a portable pump to help boost an existing hose line and branch experiencing low pressure.



Parts of the Pump

The pictures below show you the different parts of the pump:



Two suction hoses and strainer are issued to each CFU trailer to use with the pump.

Operating instructions

Although the Davey and Aussie pumps look a little different, the operating principles are the same.

Preoperational checks

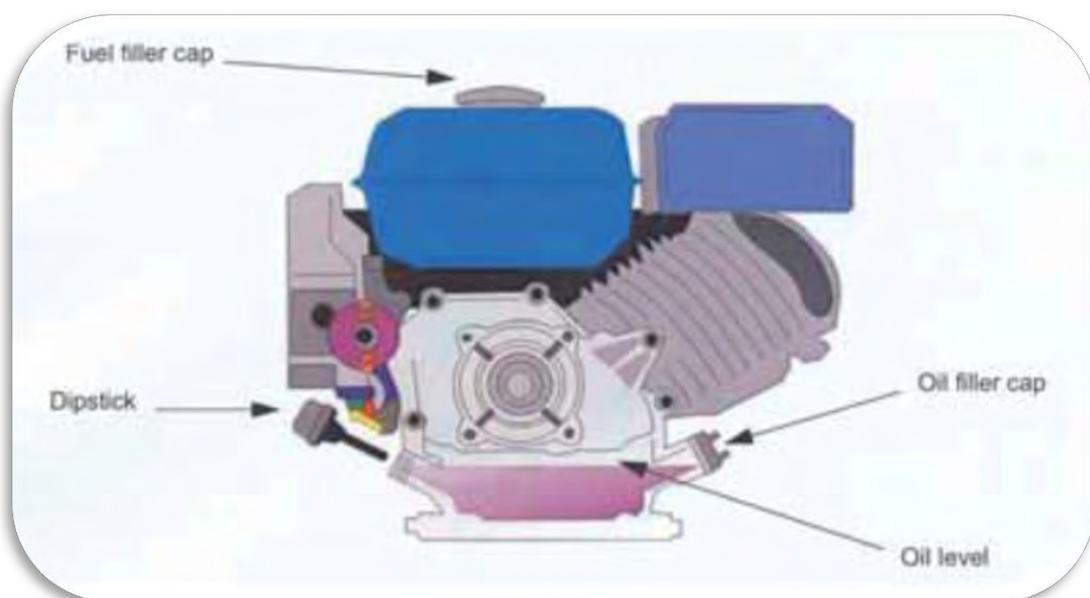
Check the oil

Running the engine without enough oil can cause serious engine damage. The majority of pumps have a safety cut out switch which will turn the pump off if the oil level is low. However, it is still important to check the oil level before use.

Be sure to check the oil on a level surface with the engine stopped.

To check the oil:

- Remove the oil filler cap, dipstick, and clean
- Insert the dipstick into the oil filler neck, but do not screw it in. Remove and check oil level
- If necessary, fill the top of the oil filler neck with oil
- Replace the dipstick and oil filler cap.



Check the Engine fuel level

Check fuel levels and refuel if necessary. To refuel:

- Use unleaded fuel only
- Unleaded petrol is extremely flammable. Refuel in a well-ventilated area with the engine stopped
- Do not smoke or allow flames or sparks in the areas where the engine is refuelled or the petrol is stored
- Do not overfill the fuel tank. There should be no petrol in the filler neck. After refuelling, make sure the tank cap is tightly closed.
- Do not spill petrol. Spilled petrol or petrol vapour may ignite. If any petrol is spilled, make sure the area is dry before starting the engine
- Avoid spilling the fuel on your skin or breathing in the fumes
- Keep the fuel away from the reach of children.

Prime the Water pump

Before starting the engine, follow these instructions to prime the pump with water:

- On top of the pump is a red or black plastic plug. Remove the plug by turning anticlockwise.
Fill the pump body with water
- Replace the plug and tighten
- A flap (non-return) valve inside the suction inlet will keep water in the pump. If the water leaks from the suction inlet while priming, the flap valve may be obstructed. Poke it a couple of times with your finger to clear the obstruction (make sure that you are wearing your gloves).

Connecting equipment

Once you have completed the preoperational check, connect the number of hoses that you need. Make sure that the pump is placed on a solid surface and in a well ventilated area. Remember, never connect a pump to a hydrant. Only use a static water supply.

Your hoses and small gear can be set up in a number of different combinations depending on the local conditions and fire activity. Your trainer will discuss this with you in more detail.

Pumping water from a static water supply

Start the pump using the following steps:

<p>Locate the pump on a level, well ventilated area as close to the water source as possible.</p>	
<p>Attach inlet and outlet hoses. Locate inlet suction hose in the water source. The strainer must be completely submerged.</p>	
<p>Prime the pump.</p>	
	<p>Move the fuel valve to the on position</p>
	<p>When starting a cold engine, move the choke lever as far as possible in the CLOSED direction, indicated by the arrow. When restarting a warm engine, leave the choke lever in the OPEN direction.</p>
	<p>Move the throttle control away from the IDLE position, about 1/3 of the way towards the FAST position</p>
	<p>Turn the ignition switch to the ON position.</p>
	<p>Pull the recoil starter handle until engine compression is felt. Then, give a fast, steady pull. Pull the start handle until the engine starts. Allow the start rope to retract slowly.</p>
	<p>When the engine starts, open the choke control gradually. Operate the Aussie pump at full engine rpm.</p>

- Throttle to desired engine speed.
- The pump should prime and begin pumping in fifteen seconds. For long or deep suction, the pump may take longer to begin pumping water.
- Make sure that there is enough water to pump. If you let the pump run dry, it may damage it. The Davey pump has a capacity to deliver 420 litres of water per minute. The Aussie pump has a capacity to deliver 460 litres per minute. An average size swimming pool (50 000 litres) will be empty in just under two hours.
- In case of an emergency, the pump can be shut down immediately by turning the ignition control to the off position.
- For normal operations you can stop the pump in the following way:

	<p>Move the throttle control lever to the idle position.</p>
	<p>Turn the ignition switch to the OFF position.</p>
	<p>Turn the fuel valve OFF.</p>

Possible problems when pumping from a static water supply

Be aware of these possible problems:

- If the seals between the lengths of suction hoses are not tight suction may not be achieved. Check seals and re-tighten
- Mud, weeds, and other foreign bodies can damage the pump. Make sure the strainer is clear of these obstacles.
- There needs to be enough depth and volume of water for the required task. If the water is too shallow the pump will not work efficiently.

Safety

- The pump weighs 32kgs. WH&S Regulations state, two people are required to lift or carry this piece of equipment
- Make sure there is good ventilation where you use the pump. The exhaust gases contain carbon monoxide and can make you sick or can be fatal.
- Do not place flammable objects or substances close to the engine
- Do not place anything on the engine. Keep the engine at least one metre away from building walls. Heat build up can affect the performance of the engine
- Don't allow the pump to run dry. Check that there is enough water flowing through the pump at all times, otherwise the pump will become damaged.



Care and maintenance

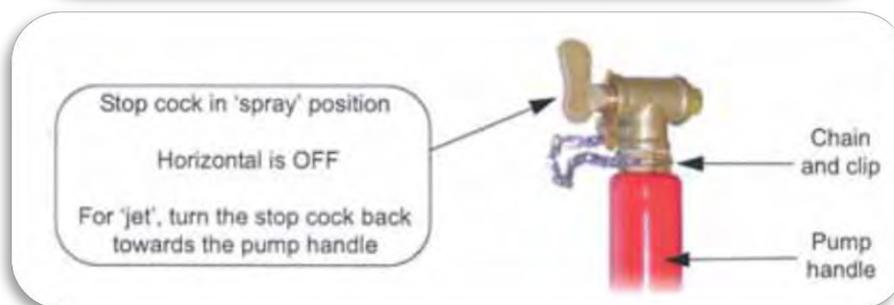
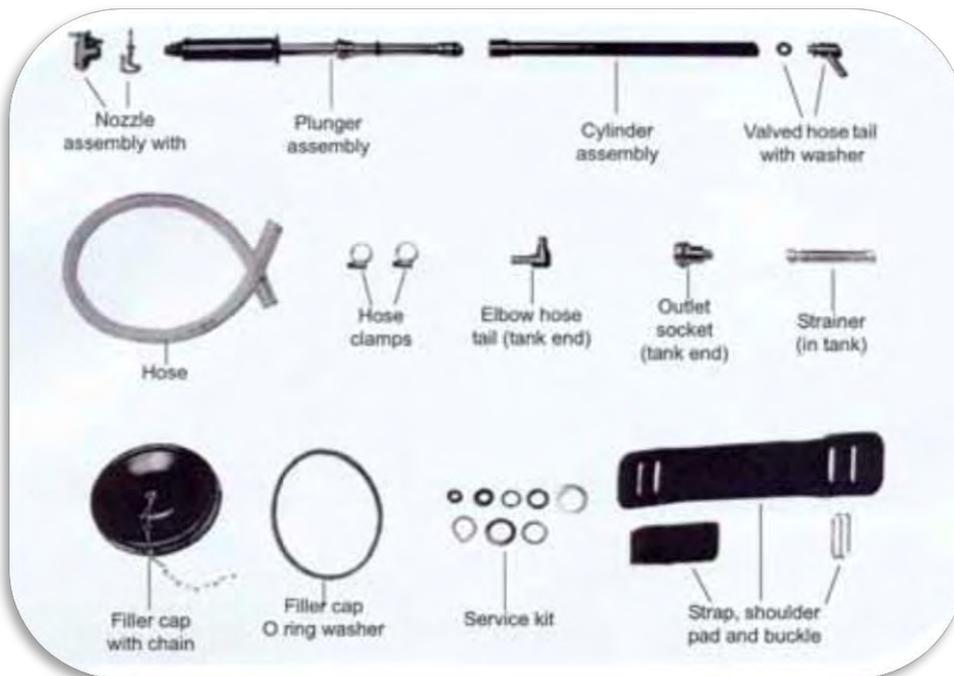
- If the engine has been running, the muffler will be very hot.
Be careful not to touch it
- Ensure the engine is cold. If required, clean the pump using a water spray with warm soapy water
- Remove the priming cap and drain plug
- Flush the pump housing, fittings and all hoses – both suction and delivery - with fresh clean water
- Refit drain plug
- Fill the pump housing half full of water
- Refit priming cap
- To drain the fuel:
 - start pump engine and operate at slow speed.
 - turn the fuel valve OFF
 - allow the pump to operate until it runs out of fuel. There should be no fuel left in the sediment cup or fuel tank
- Drain any water from the pump housing:
 - remove the pump drain plug, which is located at the base of the housing below the inlet
 - Remove the priming cap
 - let the water drain from the pump body,
 - replace priming cap and drain plug.

When transporting the pump, turn the fuel valve OFF and keep the engine level to prevent fuel spillage.
Fuel vapour or spilled fuel may ignite.

If you need to purchase more fuel, keep the receipt and claim the expense from the CFU Coordination Team.

Hard Knapsack

The hard knapsack is used in CFU operations and during mop-up. It has a hand operated pump attached that delivers water as a jet or spray to extinguish embers and small spot fires.





Lifting and carrying the knapsack

You should not put more than 12 litres of water in the knapsack; otherwise it will be too heavy and unsafe to lift.

To put the knapsack on, sit it on the trailer mudguard or a fence and extend your arms through the straps, or have another member help you fit the knapsack.

Using the knapsack

- Remove the filler cap. Fill the tank - use the cleanest water possible.
- Before use, inspect the hard knapsack.
 - check connections don't leak
 - check the operation of the hand-pump
 - check that the plunger and stop cock are lubricated.
- Place arms through the shoulder straps and adjust for comfort. Use both straps so that the weight of the knapsack is evenly distributed across your body.
- Operate the pump and turn the stop cock for either a jet or fan spray pattern. The spray pattern can be adjusted by slightly turning the stop cock.
- Short pump strokes of 10 to 12 cm give an easy, comfortable operation.
- Changes in temperature can result in a pressure build up even when the hand-pump is not operated. Do not aim the pump directly at a person's face.

- Work in pairs and do not go beyond the operational boundary.
- Do not fill to a greater weight than you are comfortable carrying.
- Do not run while carrying the hard knapsack.
- If you can't lift the hard knapsack when filled, don't use it.
- When the hard knapsack is partly full, the contents will slosh from side to side.

Be careful to maintain your balance.

Care and maintenance

After Use

- Drain the knapsack tank and flush with clean water.
- Wipe clean the brass filter inside the tank.
- Operate the pump several times to flush the filter, hose and pump with clean water.
- If required, wash the outside of the tank, the shoulder harness, straps and buckles, the hose, hand pump and brass attachments with water and diluted detergent. Do not use abrasive or scouring cleaners.
- When you wash the hand pump, dry it and re-grease the piston shaft and the branch stop cock with Vaseline or clean grease.
- Open the inlet cap and leave the tank to stand in a warm, airy environment so that the interior can dry out. Do not dry in direct sunlight.
- Once the tank is clean and dry, store in your cabinet or trailer.
- Leave the shoulder harness at full extension, ready for wear.

Do not store in direct sunlight. Even though the tank is made of a UV stabilised material, long exposure to sunlight will weaken it.

Checking Procedure

- Inspect the knapsack for cracks or signs of damage.
- Ensure the filter is clean.
- Check the pump and stop cock for smooth operation.

If necessary, apply a small amount of Vaseline or clean grease.

- To ensure pump pressure:
 - check the filter is clean
 - check the plunger O-rings are not worn or damaged
 - check the plunger valve is not blocked
 - check the hose tail valve is not blocked
 - check the hose connections are tight.
- Check the branch assembly is clean and undamaged.
- Ensure buckles on shoulder straps are correctly positioned.

Buckles should be positioned close to the tank anchoring points.

- If you need replacement parts contact the CFU Coordination Team.

McLeod tool (Rakehoe)

The McLeod tool is used for cutting fire trails and firebreaks, raking litter and scraping bark from tree trunks. Fire breaks slow down or stop the spread of bushfires by reducing or removing the fuel from the path of a fire.

• Using hand tools can be very dangerous. Always carry the tool on your downhill side, not over your shoulder. If for some reason you must pass another CFU member using hand tools, make sure that you give a warning 'coming through' so that they know you are coming.



Care and Maintenance

- Inspect the handle to make sure that the tapered section is fitted snugly into the head of the tool
- Ensure the retaining bolt is in place and tightened
- The handle should be smooth with no cracking or Splitting
- Oil handle with linseed oil when required.

Notes:



3. The CFU Trailers and Cabinet



The CFU Trailers and Cabinet Introduction

There are presently 49 CFU trailers and one cabinet, which contain all of the required equipment that you will need during CFU operations. Throughout this chapter when the trailer is referred to this includes the cabinet.

Your equipment must be working properly and be ready to use at all times.

It is important that you complete regular inventory checks to ensure that all of the equipment is available and in working order. Inventory checks also allow you to become familiar with handling the equipment.

Specific information regarding the safe operation, maintenance and testing of CFU equipment is included in CFU Induction booklet.

CFU equipment must be available at all times for inspection and testing by ACTF&R personnel.

CFU Trailers

All CFU's are issued with a trailer that has a unique identification number. The trailer is a heavy duty mobile trailer with a single axle and anti-theft device.

Each trailer contains a standard set of equipment and an inventory list.

If more equipment is required, this will be decided by ACTF&R and issued in accordance with CFU Policy.



Caring for your equipment

As part of a CFU team, you will participate in inventory and equipment checks.

An inventory check consists of, accounting for all of the equipment and:

- Testing
- Cleaning
- Stowing (putting away).

Conducting an inventory check involves looking for items on the inventory checklist. The inventory check list is located inside the trailer. The purpose of this check is to see if anything is missing, the equipment is operational and keeps you familiar with the equipment.

After checking that all items are there, you need to test the operation of the equipment.

Testing involves operating equipment to ensure that it is working properly and safely. For example: testing torches, pumps, standpipes, branches and anything with moving parts.

The following is a useful list of questions that you should consider when carrying out an inventory check and testing of the equipment.

- Is the item there?
- Is the item stored in the correct location?
- Does it appear unsafe for any reason?
- Does it have all of the parts?
- Are the fuel, oil and fluid levels correct?
- Are all handles secured?
- Do all moving parts move freely as designed?
- Are there any pieces worn out or missing, e.g.; washers, O rings, seals?
- Is the handle free of splits, splinters, sharp or protruding edges?
- Do batteries, globes or other electrical items need replacing?
- Are all of the screws, bolts, nuts, washers, rivets, split pins secure?
- Is the item clean, free of rust and excessive grease or grime



If you notice an item is missing or damaged during an inventory check, inspection or test, you should tell your Team Leader and note it in the Occurrence Book. Your Team Leader will report this to the CFU Co-ordinator's office.



An Example of an INVENTORY FOR COMMUNITY FIRE UNITS

CFU Number..... Trailer rego number.....

Qty.	Actual:	Item:
1		5.5HP Honda Davey Pump
1		Powerlite pump Frame
8		38mm hose - rolled
2		38mm Branch
2		38mm red plastic diffuser nozzle
2		Standpipe
2		65 -38mm adaptors
2		Hydrant Bars
2		Hydrant Scoop
2		Y breeching with shutoff valves
8		Hose Spanners
2		McLeod Tools
2		P2 face masks (box)
1		First Aid Kit
1		Fuel container 10L
2		Knapsack
4		Safety vests
8		Hose straps 38mm
2		Dolphin Torch 6V
2		Torch Batteries 6V
8		Traffic Cones
2		Suction Hose
1		Suction strainer
2		Drinking Water (box 24)
1		Fuel Funnel
1		Unleaded Fuel Label
2		Wheel Chocks
1		Equipment folder
1		Occurrence Book
3		Padlocks
1		TRN Radio
5		Benelec Radios
2		Signs
2		Plastic Storage Tub
1		Trailer Lock
1		Bucket
1		CFU Barrier Tape

Trailer maintenance

In the winter months ACTF&R carry out an annual maintenance service and a “bar code” inventory check.

During the bushfire season, it is important that CFU teams maintain the CFU trailer and carry out regular checks.

These checks are in addition to the inventory and equipment checks.



The regular maintenance during bushfire season

- Check that the tyres are correctly inflated to 220kPa, 32psi, or 2.2 bar, when cold
- Inspect tyres for tread and wear damage
- Check the lubrication of hinges, and grease if necessary
- Check wheel nuts for security
- Visually inspect wheel bearings for signs of leakage
- Check the trailer body, frame and paintwork for signs of rust, deterioration or damage
- Check the condition of all reflective tape and signage
- Check suspension springs for rust, cracks and damage
- Check the condition of the safety chain and shackle
- Check lighting and other electrical items are working properly.

If you need to repair a tyre on the trailer, email or ring the CFU Coordination Team's office.

The CFU Trailers and Cabinet

Conclusion

When you have completed your practical training session (training day), you will know how to use hoses, pumps and small gear. As a member of a CFU team and under the directions of your Team Leader and/or ACTF&R personnel, you will be able to pre-treat and extinguish an ember attack prior to the arrival of the fire front. After the fire front passes, carry out mop and monitor operations



Appendices:

Compressed Air Foam System (CAFS) Tankers



ACTF&R currently has two heavy and two medium CAFS tanker units strategically located north and south of Lake Burley Griffin. The CAFS units work in tandem and assist in the protection of life and property when responding to bush and grass fire incidents in the built up area and on the rural interface of the ACT.

The great advantage of these appliances is the ability to generate and apply large amounts of 'sticky' foam to structures, fences and vegetation that are at risk from fire.

The units are staffed by a Station Officer and three Firefighters and are located on the south of the ACT at Chisholm Fire Station and in the north at Gungahlin Fire Station.

CFU Benelec Radios

Each CFU will receive:

5 x Benelec BL520U UHF 5w Portable FM Radio 32CH, Included 1700mAH Li-Ion Battery, Single Bay AC/DC Rapid Charger, Belt Clip & Antenna - (if avail at ordering)- Sub-tones & Scrambler feature

1x IP67 Speaker Mike for Team Leaders radio

1 x 6 outlet power board for charging units

32 x available CFU channels on the Benelec radios have been configured as per table 1 (p.90)

The **Red button on top of the radio has been made inactive.**

Radio allocation when CFU is stood up:

1. Team Leader with extension mike (Motorola radio for Comcen also)
2. Hydrant or pump operator
3. Branch operator #1
4. Branch operator #2
5. Runner or spare

Procedure:

- Radios are to be kept in a charged state when not in use
- Team Leader will determine channel selection
- Team leaders to carry out radio tests as required

CB Channels

Channels 13 – 16 are regular CB channels as per table 1 (p.90).

Configuration profile for CFU CB - Benelec BL520

Code plug ID: CFU 2016 devV2_2 Revision **Date:** 12th Dec 2016 **Status:** Testing Phase



Channels:

Benelec Channel	CB Channel	Frequency	CTCSS	Scramble	Squelch
1	52	476.7125	On	On	7
2	53	476.7375	On	On	7
3	54	476.7625	On	On	7
4	55	476.7875	On	On	7
5	56	476.8125	On	On	7
6	57	476.8375	On	On	7
7	58	476.8625	On	On	7
8	59	476.8875	On	On	7
9	60	476.9125	On	On	7
10	64	477.0125	On	On	7
11	65	477.0375	On	On	7
12	66	477.0625	On	On	7
13	67	477.0875	Off	Off	7
14	68	477.1125	Off	Off	7
15	69	477.1375	Off	Off	7
16	70	477.1625	Off	Off	7

Table1

CTCSS: CTCSS is switched on. You will not hear transmissions from other CB users unless they coincide/conflict with a transmission from one of your own radios. Always use the Squelch Button to un-squelch the radio when seeking a vacant channel. Ensuring a channel is actually vacant before selecting it is polite and will help to avoid conflicts with other CB users.

Radio Procedures During Normal Operating Conditions – Calling And Communicating Techniques

The secret to working quickly and efficiently in an emergency communication net is to use standard procedures. These techniques are the most common. Standards and guidelines must be established and then utilized to improve efficiency.

Before you begin to talk into the microphone, gather your thoughts about what you are going to say, keeping it simple and prioritise the information in your message. Many people with radios have a tendency to talk and/or repeat too much. Say what you need to say without unnecessary repeats. Keep in mind that you must strive to get your message through the first time and ensure the listener has received your message clearly.

In general, there are five parts to Calling/Communications. The more serious or complex the situation, the more important these procedures become. The radio procedures **MUST** be practiced until it is second nature and you are comfortable. Practicing proper day-to-day radio procedures will make emergency radio procedures automatic and reduces confusion. Another way of saying this is that the secret to working quickly and efficiently in an emergency is to use common approved radio communication procedures and guidelines and practice, practice, practice.

1st, you **MUST** give the radio call sign of the station you are calling. This alerts that station that they are being called and that they should listen to determine who is calling.

2nd; say "THIS IS". The called station knows your tactical call follows. This is extremely important in cases where there is a lot of confusion or poor signal conditions.

3rd, give your radio call sign. Don't give your first name. Radio call signs are important and first names are not, egos notwithstanding. Remember, we are licensed for radio to radio **NOT** person to person communications. You **WILL** create confusion if you reverse the first three steps, especially during

emergencies and when you are communicating with a dispatcher or people who do not know you. If your practice is the reverse of the "norm", you will not be able to change "on the fly" especially during the added stress brought on by an emergency situation.

4th, give your message. Speak clearly. Don't speak too fast especially if the message needs to be written down. Pause after logical phrases. Do not use the word "break" when you pause. It is confusing, wastes time and has other connotations. Merely stop pressing the "push to talk" button on the microphone and pause. If the other station has questions, they should make their request known. This also permits other stations to break in if they have emergency traffic.

5th, you can end your conversation with "CLEAR" however it isn't required.

Crime Stoppers

Crime Stoppers

Crime Stoppers allows you to provide anonymous information about criminal activity to the police without being directly involved in the investigation process. You could be eligible for a reward of up to \$1000 if the information you report results in an arrest.

Every piece of information is important. It may seem insignificant to you but it could prove vital to the investigation, arrest and prosecution.

How you can help

If you are in a life threatening situation or emergency dial 000.

If you are witnessing a crime in progress or wish to report a crime please contact the Australian Federal Police on 131 444.

If you have information about illegal activity or suspected perpetrators relating to crime anywhere in Australia, you can help by providing information to Crime Stoppers. To provide your information phone the toll free number 1800 333 000.



Why we need your help

Police cannot always solve every crime on their own. Forensic science and investigation skills are vital tools in solving crime. However, information from the public can often be the vital key. Through Crime Stoppers you can effectively provide an 'eyes and ears' extension.

Crime Stoppers is based on the principal that 'someone other than the criminal has information that can solve a crime' and was created to combat the three major problems faced by law enforcement agencies in generating that information:

- fear of reprisal.
- an attitude of apathy
- reluctance to get involved.

Crime Stoppers resolves these problems by:

- offering anonymity to people who provide information about crimes (callers do not give their names, calls are not traced or recorded, and callers are only known by a unique code number to facilitate payment of rewards if eligible - anonymity is essential to the success of the program)
- paying rewards of up to \$1000 when the information supplied leads to arrest.

Towing Trailers

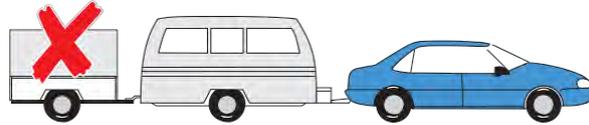
Things you should know.....



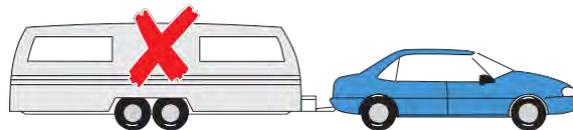
RULES FOR TOWING

Towing a trailer requires additional knowledge and skill. All trailers, including caravans, affect the performance of the towing vehicle. They affect fuel consumption, acceleration, braking ability, general control and maneuverability. These effects worsen as the size and weight of the trailer increase relative to that of the towing vehicle. The extra length and width can be hard to manage, with wind, road roughness and passing vehicles having a greater effect than on the vehicle alone. This puts additional responsibilities on a driver.

The information in this brochure applies to vehicles not exceeding 4.5 tons gross vehicle mass (GVM).



Towing more than one trailer at a time is not allowed.



Nobody is allowed to ride in trailers or caravans.

When towing and driving on a road without street lights, drive at least 60 meters behind heavy vehicles or other vehicles towing trailers, unless overtaking.

Learner drivers and learner and provisional motorcycle riders are not allowed to tow.

P1 car licence holders can tow small trailers with up to 250 kg of unloaded weight.

THE DRIVER

Driving with a trailer takes practice. Remember:

- Allow for the trailer's tendency to 'cut-in' on corners and curves following by a wide turning circle
- Allow longer distances for braking, overtaking and joining a traffic stream
- When reversing, it is advisable to have someone outside the vehicle giving directions and keeping people away from the trailer movement
- Avoid sudden lane changes and changes of direction
- Look further ahead than normal so you can react to changes in traffic or road conditions
- Use the accelerator, brakes and steering smoothly and gently at all times

- Use a lower gear when travelling downhill to increase vehicle control and reduce strain on brakes
- Slow down well before entering corners and curves
- Trailers tend to jerk the back of the vehicle around and can cause sway (snaking). If a trailer starts to sway, the vehicle's brakes should not be applied, except as an absolute last resort. If the trailer's brakes can be operated by themselves they should be applied gently, otherwise a steady speed or slight acceleration should be held if possible until the sway stops
- Take care not to hold up traffic unnecessarily
- Plan more rest stops and shorter travelling days as towing is more stressful and tiring than normal driving
- There is no specific speed restriction while towing a trailer. However, the posted speed limits must not be exceeded. Always drive to the road, traffic and weather conditions.

Before each trip, check:

- ✓ Vehicle and trailer are roadworthy
- ✓ All tyres are properly inflated
- ✓ Trailer's wheel-bearings, suspension and brakes work properly
- ✓ All lights work and safety chains are properly connected
- ✓ Oil, water, brake fluid, battery and other service checks on the vehicle.

At regular intervals during the trip, check:

- ✓ Couplings, all doors, hatches, covers and any load or equipment are still properly secured
- ✓ Tyres are still properly inflated and not rubbing on suspension or body work.

If travelling to another State, check with the relevant roads authority whether there are different rules.

THE TOWING VEHICLE

Vehicles must be suited to the trailer. Vehicle manufacturers usually indicate in the owner's manuals the maximum weight and other features of trailers appropriate for the vehicle. These limits should not be exceeded.

Registration:

- All vehicles must comply with all relevant standards for registration and be roadworthy at all times
- Rear number plates and lights must not be obscured by the tow bar when there is no trailer connected.

Towing vehicles must be properly equipped with:

- Tow bars and couplings of a suitable type and capacity. Electrical sockets for lighting
- Brake connections if the trailer is fitted with power or electric brakes.

Additionally:

- Extra mirrors may be needed for the towing vehicle if towing a large trailer
- For vehicles with automatic transmission
- an extra transmission oil cooler may be needed
- Some vehicles need structural reinforcement and/or special suspension and transmission options and load-distributing devices to be able to tow heavier trailers.

TOW BAR

A properly designed and fitted tow bar is essential for towing. The rated capacity of the tow bar and coupling should not be exceeded.

The tow bar should be clearly and permanently marked with its:

- Maximum rated capacity
- Make and model of the vehicle it is intended for or the manufacturer's part number
- Manufacturer's name or trade mark.

This is compulsory for vehicles built after 1 January 1992. The exception is where the tow bar is a permanent part of the vehicle.

Tow bars must not protrude dangerously when there is no trailer connected.

LOAD EQUALISERS

Load equalisers can be used when towing large caravans. Load equalisers:

- Help the vehicle retain normal suspension height and effective steering control
- Transfer some of the weight from the tow bar to the front and rear suspension of the vehicle.

As load equalisers may overload the tow bar and its components, check with the tow bar manufacturer for advice before use.

THE TRAILER

Trailers must be a suitable size and type for their intended tasks. They must be built to meet the standards for registration. If a trailer is required to be registered it must be fitted with a rear number plate and a registration label holder and current registration label mounted as close as possible to the number plate.

TOWING RATIO REQUIREMENT

The loaded mass of the trailer must not exceed the lesser of:

- Rated capacity of the tow bar and tow coupling
- Maximum towing capacity of the vehicle
- Maximum carrying capacity of the trailer
- Maximum rated carrying capacity of the tyres.

If the vehicle manufacturer has not specified the maximum towing mass, the maximum towing mass is:

- One and a half times the unladen mass of the towing vehicle, provided that the trailer is fitted with brakes which are connected and in working order, or
- The unladen mass of the towing vehicle if the trailer does not require brakes.

Vehicles with a manufacturer's gross combination mass (GCM) more than 4.5 tons may tow in accordance with the above requirements. The GCM is the gross combination mass of the car and loaded trailer.

BRAKING SYSTEM

The minimum braking system for a trailer depends on the type of trailer, its weight and the weight of the vehicle:

- 0 – 750 kg loaded weight – no brakes required
- 751 – 2000 kg loaded weight – braking on both wheels on at least one axle
- 2001– 4500 kg loaded weight – braking on all wheels, and an automatic breakaway system in case the trailer becomes detached from the vehicle.

Brakes must be operable from the driver's seating position.

TOWING COUPLING

All couplings:

- Must be strong enough to take the weight of a fully loaded trailer
- Should be marked with the manufacturer's name or trade mark and rated capacity
- Must be equipped with a positive locking mechanism. The locking mechanism must be able to be released regardless of the angle of the trailer to the towing vehicle.

SAFETY CHAINS

- Must comply with Australian Standards
- Trailers less than 2500 kg when loaded must be fitted with at least one safety chain.
- Trailers over 2500 kg when loaded must be fitted with two safety chains.

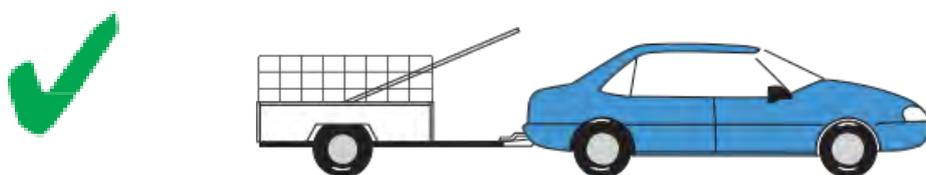
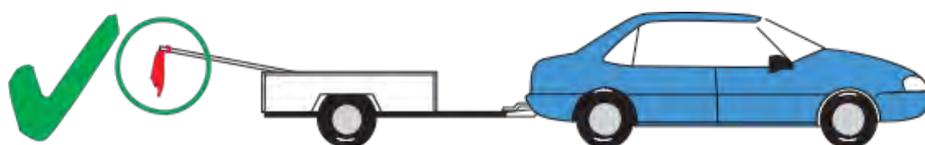
To prevent the front end of the drawbar from hitting the ground if the coupling is disconnected, safety chains must be:

- As short as practicable and connected to the towing vehicle
- Crossed over if two chains are fitted.

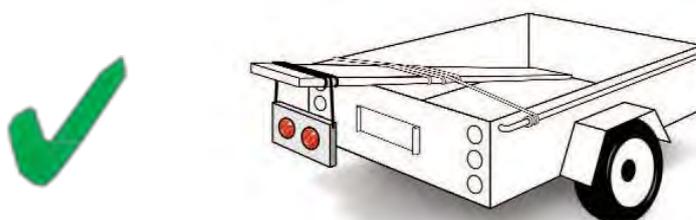
LOADING TRAILERS

It is important that trailers are not overloaded and that loads are properly secured to or contained within the trailer:

- A load must not project more than 150 mm beyond the trailer's width or be more than 2.5 m overall width, whichever is less
- Loads that project more than 1.2 m behind a trailer must have a red flag attached to the end of the load. This flag must be at least 300 mm square and clearly visible. To avoid having an overhanging load, you should purchase a trailer that suitably contains the load.

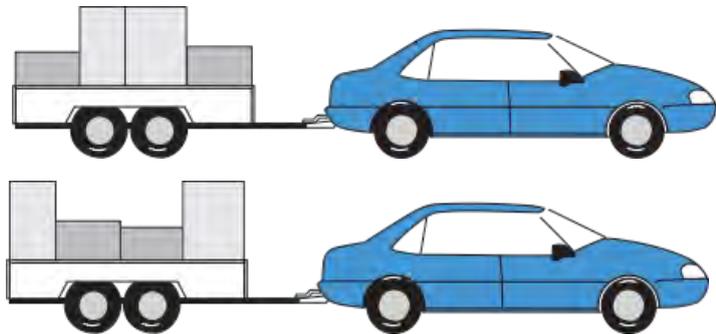


- Between sunset and sunrise, or when there is insufficient daylight, a clear red light or at least two red reflectors must be fixed to the end of any projecting load

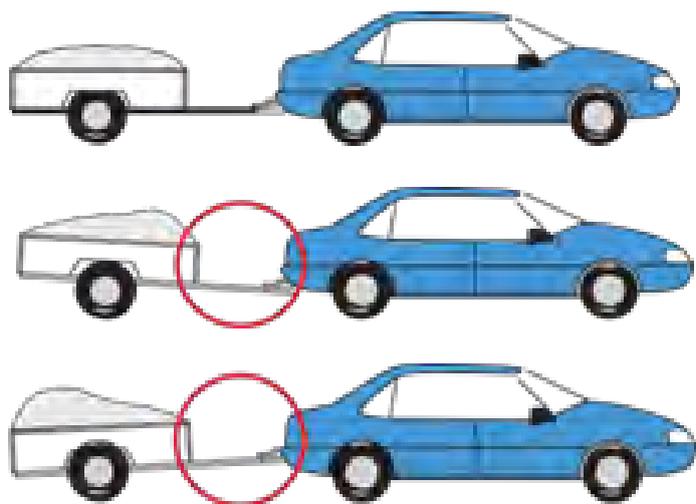


- Overall length of the vehicle and trailer combination including its load must not be more than 19 m.

- To reduce sway, heavy loads should be concentrated towards the centre of the trailer



- Loads should be kept as low and as close as possible to the axle or axles with about 60 per cent of the total weight forward of the centre of the axle or axles. As a general rule, about 5 –10 per cent of the total mass of the trailer plus load should be supported by the vehicle through the coupling. The trailer drawbar should be level or slightly 'nose down'.



Reference: Roads and Traffic Authority - www.rta.nsw.gov.au