



Firefighter Safety

BF4.9 TANKER OVERRUN

Enhance your survival during a life threatening tanker overrun

A tanker overrun is when firefighters are trapped, whilst in a vehicle, by a bush fire. In past cases, firefighters involved often had less than **one minute's warning** of it occurring, although the conditions leading up to it may have developed over quite a long time.

Whilst personal protective clothing (*PPC*) and vehicle protective devices will often help, it is not possible to make them such, that they can withstand a close exposure to a severe fire overrun.

Your safety largely depends on avoiding fire overrun situations in the first place.

Always be aware of the fire location, current weather conditions and fire behaviour.

Your tanker should always keep enough reserve of water to use for self-protection (e.g. 1000 litres in the case of large Cat 1 tankers) and you should be familiar and well practiced in the use of your fire overrun emergency procedures.

There are a multiplicity of factors and scenarios that impact on the chances of survival in a tanker during a bushfire. These include the fuel type and load, topography, type of fire (low intensity grass fire through to high intensity forest fire), the type of tanker (its exterior and interior design and materials) and the amount of time there is to prepare.

Warn the crew – and ‘don’t panic’

Once you identify that fire is quickly nearing your position, warn the crew. Ensure you have a pre-determined signal to immediately return to the tanker. You may use ‘three blasts’ on the tanker horn to sound a warning.

Position the vehicle

If you still have time, use your escape route or proceed to your ‘safety refuge’. Try to park away from the away from the approaching fire. Avoid high ground fuel loads, overhanging branches and dense vegetation.

Ideally, a non-combustible surface such as previously burnt ground, gravel or a dirt track in a clearing offers the best location. Care should be taken not to leave the vehicle on the roadway as it increases the risk of collisions with other vehicles.

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Use could also be made of local features such as natural or constructed barriers. For example, parking behind a building, solid brick object or a natural feature (e.g. a rocky outcrop) will shield the vehicle from the radiant heat. If there are other vehicles nearby it is best not to park too close to them in case one vehicle does become engulfed by flames. This additional flame contact and radiant heat exposure could hasten the demise of nearby vehicles.

Positioning the vehicle towards the oncoming fire front offers a couple of possible advantages. Firstly, if any fuel tanks vent then the vapours will be blown away from the vehicle. Secondly, it reduces the amount of window surface exposed to the oncoming fire, thus reducing heat soak into the tanker or vehicle and the possibility of glass breaking (the windscreen is tougher than the side windows).

Otherwise, leave the vehicle in place, and quickly prepare for the fire's imminent impact.

Prepare for the approaching fire front

Once a satisfactory location has been found it is necessary to prepare for the approaching fire front.

- Operate emergency beacons and headlights.
- Drivers should leave the engine running to enable headlights & beacons to continue to operate without flattening the battery.
- Send an emergency radio call giving your callsign and location and details. "Emergency, Emergency, Emergency...this is ***, we have a tanker overrun at ***"
- If possible give your aerial identification number so aircraft can locate you.

Priority will be given to your situation and the radio channel cleared. If available, aircraft will be immediately dispatched to assist you. Maintain radio contact and if possible report on your situation as it evolves.



Don your emergency entrapment hood & ensure all firefighters are wearing **full** personal protective clothing and equipment (PPC and PPE) with sleeves rolled down & neck flap done up, and goggles, gloves and helmet on.

Check each other to ensure you are fully covered.

- Ensure the pump is running.

If you have time, bring hoses back to the truck and /or shut off the delivery valves – not just the branch/ nozzle in case the hoses are burnt through.

- Place spare water and a first-aid kit inside the tanker ready to treat any burns after the fire has passed.

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- All windows and vents should be tightly shut.

Vehicle air-conditioning may be kept running to keep the cab cool. However, ensure the air-conditioning is set to recycle. If the air-conditioning seals are faulty or perished smoke may enter the cab. In this case turn the air conditioning off.

Whilst entry of smoke into the vehicle is inevitable, the rate at which it occurs is reduced by ensuring all windows and vents are secured. Furthermore, it helps to prevent embers entering the vehicle and setting alight to the interior of the vehicle which could force people to leave the vehicle before it is safe to do so.

- Deploy the tanker silver heat shields (if available).
- The crew needs to get down as low as possible below the window level.

It is essential to minimise exposure to intense levels of radiant heat. Therefore, everyone needs to remain below the window level and their bodies covered with a woollen fire blanket to put a shield between themselves and the radiant heat.



Ensure your woollen blankets are easily accessed and folded to ensure they can be deployed whilst in the confines of the tanker.

Ensure you grasp the blanket from inside the blanket and not exposing your hands / fingers to radiant heat.

Extra care needs to be taken if there are multiple occupants in the vehicle which may make it harder to shelter safely. This becomes even more difficult if the crew assists bystanders who may also be trapped by this situation.

- Operate the crew / vehicle protection spray.



Crew are being showing visible under their blankets for diagram to show positions only. They will normally be fully covered with no part visible.

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What to expect as the fire front passes

Conditions in the tanker or vehicle will become uncomfortable as the fire front nears. The heat level will rise and the strong winds may rock the vehicle violently. The time it takes for the fire front to pass varies depending on the intensity of the fire, whether bush or grass, and the amount of fuel surrounding the vehicle. It might be considerably longer in the case of a high intensity forest fire.



During this time entry of smoke into the vehicle will occur, plus interior components may begin to give off fumes due to the intense heat. The windows may break either from the heat or from flying debris. It is also possible that the tyres and parts of the bodywork may catch alight.

Do not be tempted to get out and run.

As the vehicle fills with smoke and fumes people may need to breath through a moistened cloth. However, it is essential to stay inside the vehicle until the temperature has subsided outside.

There may even be a very short period where there may be a lack of oxygen, and breathing may become quite laboured.

When the heat level has dropped it is time to leave the vehicle.

Whilst remaining low in the vehicle, cautiously raise a hand to determine whether the heat level has dropped sufficiently. As an indicator, anything hotter than the heat sensed when skin is badly sunburned is too hot. If you are wearing gloves – you may need to roll the back of your glove down to expose the back of your hand.

If still operating, send a radio message providing a quick summary of the situation and detail the assistance required.

When the heat is at a bearable level and people leave the vehicle, it is important to be aware that door handles and internal parts will be extremely hot. Take your spare water and first aid kit.

Outside the vehicle will also be exceedingly hot. The crew needs to stay covered up in the woollen blankets and make their way to a safe place to await assistance.

You may have to assist your crew members who may be injured, suffering breathing problems, or not in a good mental state.

Treat any burns and other injuries.

If you are able, check your vehicle and extinguish any fires.

Help will be on its way.

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Summary

Tanker overrun procedures is a procedure of “last resort” and although there is no guarantee they provide the best chance to prevent death, injury or damage.

The tanker overrun procedure should be practiced at the beginning of each fire season to ensure all active members of the brigade are very familiar with the procedure.

In a life threatening situation, with fire only minutes away, it can be very scary. We often resort to a fight or flight response but this is not the time to run away – it is the time to fight - instinctively through well practiced techniques.

References

NSW Rural Fire Service 2003 *BF – (2003) Bush Firefighter Manual* Chapter 4 – Bush Firefighting Techniques

NSW Rural Fire Service *Fireground S.O.P.s (1999 Edition) - S.O.P. #12 - Part A Emergency Procedures – Bush & Grass Fires*

Bushfire Cooperative Research Centre (Bushfire CRC) and Australasian Fire Authorities Council (AFAC) 2006 *FireNote8 – Guidance for people in vehicles during bushfires*

Version Control

Check on MyRFS to ensure you have the latest version before undertaking your competency maintenance sessions.

This is **version 2 – Mar 2010**

Your comments and recommendations

Competency Maintenance Kits are tools and documents to help you maintain your skills and knowledge, and /or to help you and your brigade practice essential skills and drills. If you have recommendations for improvement or you have other thoughts for maintaining competence please forward your ideas and comments to your L&D Officer, for forwarding onto L&D Systems.

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Drills and Practice Sessions

At the beginning of each fire season encourage all active members of the brigade to practice a tanker overrun.

Perform the tanker overrun drill at a slow pace ensuring all aspects are carried out and corrected, *if required*.



Take care during this practice session. Some brigade members may find huddling under a blanket in the back of a tanker difficult due to their physical build or may have phobias, such as a phobia towards more restricted spaces.

Once, members are comfortable performing the drill, undertake the tanker overrun drill at a quicker – more urgent pace, again ensuring all aspects are carried out correctly or corrected, if required. Try to achieve the drill in less than 30 seconds.



Take care during this practice session. Although there is a sense of urgency – do take special care entering and exiting cabins.

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Tanker Overrun Drill

Crew Leader	Warn the crew using your pre-determined signal to immediately return to the tanker.
Driver	Reposition vehicle (<i>only if time is available</i>)
All	Don emergency entrapment hood & quickly check yourself. Check your sleeves are rolled down & neck flap done up, gloves, goggles and helmet are on. Check each other to ensure you are fully covered – no skin showing.
Driver	Operate emergency beacons and headlights.
Driver	Leave the engine running.
Crew Leader or Driver	Send an emergency radio call ASAP - giving your details, callsign, location and details. "Emergency, Emergency, Emergency...this is ***, we have a tanker overrun at ***" <i>If possible give your aerial identification number so aircraft can locate you.</i>
Driver	Ensure the pump is running.
Crew	If you have time, bring hoses back to the truck and /or shut off the delivery valves – not just the branch/ nozzle in case the hoses are burnt through.
Crew	Place spare water and a first-aid kit inside the tanker.
All	Enter the cabin
All	Close all windows and vents & keep air conditioning running.
All	Deploy the tanker silver heat shields (<i>if available</i>).
All	Deploy woollen blankets – one for each person. Ensure you cover all of your body. Grasp the blanket from inside the blanket and not exposing your hands / fingers to radiant heat.
All	Get down as low as possible below the window level. You may need to kneel on the floor and lay over the seat.
Driver	Operate the crew / vehicle protection spray.
Crew Leader	Maintain radio contact and provide ongoing SitReps.