9.32 Bushfire - Entrapment Procedures for Appliances Operational Procedure

Section 1 - Purpose and Objectives

(1) Provide guidance on preparation for and actions to be taken by CFA members during a burnover (entrapment) in a CFA vehicle.

Section 2 - Scope

(2) This procedure (SOP) applies to all CFA members.

Section 3 - Procedure

Requirement to maintain skills and currency

(3) CFA members who crew tankers and other fire appliances (including FCVs) on the fire ground must maintain their skills and knowledge of the entrapment procedure annually.

(4) CFA members who undertake operational support activities in vehicles other than fire appliances are strongly encouraged to maintain their skills and knowledge of the entrapment procedure.

(5) The practical entrapment drill provides members with the skills and knowledge to act safely during a bush/grass fire entrapment situation.

(6) CFA members should ensure they have completed the entrapment drill prior to the commencement of the fire danger period in their respective districts.

(7) The CFA member in charge of the District, Group, Brigade or CFA Business Unit is responsible for:

a. ensuring that all CFA members complete a practical entrapment drill each year on all relevant firefighting appliances; and
b. ensuring the names of those who have completed the drill are entered into the Learning Management System.

Actions to undertake on the fire ground

(8) Incident Controllers are responsible for the safety of all members on the fire ground. Crew Leaders are responsible for all members of their crew. The Incident Controller, fire ground Commanders and Crew Leaders should ensure:

a. All members wear the appropriate Personal Protective Clothing (PPC).
b. An effective communication plan is in place and known to the crew.
c. Crews are briefed and understand the fire conditions.
d. A continual dynamic risk assessment occurs by maintaining situational awareness, monitoring surroundings and constantly reviewing the assessment of potential hazards.

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(9) All CFA members on the fire ground are responsible for providing situational awareness about fire location and behaviour through the incident organisational structure.

(10) The driver should ensure where practicable that the CFA vehicle is parked in an open space with a low fuel load or on existing burnt ground.

(11) Where there are multiple CFA vehicles on the fire ground, group them together and position CFA vehicles without crew protection systems installed in such a way to be protected by those that do have crew protection systems.

Actions to undertake when entrapment by fire and possible burnover is imminent.

(12) The safety of CFA members on the fire ground is paramount. If safe and possible to do so, leaving the area to a safe zone in advance of a fire front impact is always in preference to undertaking the entrapment procedure. This entrapment procedure is to be used as a last resort where crews may become trapped and face a possible burnover.

CFA Vehicles fitted with Crew Protection Systems

(13) Driver or Pump Operator must:

a. Initiate the evacuation signal for crew members to return to the CFA vehicle with 3 short blasts at 1 second duration each on the horn and/or siren, followed by a short 10 second break. This should be repeated until all crew members have returned to the vehicle.
b. Ensure pump is running and set to idle.
c. Turn hazard and headlights on and ensure emergency warning lights are operating.
d. Ensure that there are no objects located on the dashboard that would inhibit the roll down of the crew protection curtains (where fitted).
e. Leave the engine running on a fast idle.

> NOTE: During a burnover the air conditioner is only effective with the engine running. There may also be a need to move the vehicle if conditions change and leaving the engine running removes the risk of the engine not starting.

(14) Crew members should:

a. Return to the CFA vehicle immediately upon hearing the warning signal.
b. Leave branches slightly open to decompress and uncouple the hose from the pump outlet.
c. Ensure deck-mounted short-length hoses (where fitted) are left charged with fog branches attached and closed ready for use.

(15) Crew Leaders must ensure that:

a. All crew members are accounted for.
b. A Mayday signal is sent out in accordance with SOP 9.15 Mayday and Hostile Acts Radio Signals.
c. Once inside the vehicle:
    i. All windows are closed and the air conditioning is on and set to recirculate;
    ii. All crew protection curtains are in place;
    iii. Each crew member has a fire blanket and bottle of water (where available);
    iv. Any internal cabin lights are on.

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CFA Vehicles without Crew Protection Systems

(16) The driver of the CFA vehicle must:

a. Initiate the emergency evacuation signal for crew members to return to the CFA vehicle by 3 short blasts at 1 second duration each on the horn and/or siren, followed by a short 10 second break. This should be repeated until all crew members have returned to the vehicle;
b. Turn hazard and headlights on and ensure emergency warning lights (if fitted) are operating; and
c. If safe to do so and readily available, position the vehicle with other appliances that have crew protection systems fitted so that the vehicle without crew protection systems is shielded from the approaching fire front.

(17) Crew members must return to the vehicle immediately upon hearing the evacuation warning signal.

(18) Crew leaders must ensure that:

a. All crew members are accounted for;
b. The vehicle (if able to be moved) is parked (if safe to do so) close to other appliances that use crew protection systems on the opposite side to the approaching fire;
c. Once inside the vehicle:
    i. All windows and vents are closed and the air conditioning is on and set to recirculate;
    ii. Each crew member has a fire blanket and bottle of water, and they are ready for use;
    iii. Any internal cabin lights are on; and
    iv. A Mayday signal is sent out in accordance with the Mayday Radio Procedure.

Actions to undertake during a burnover.

CFA Vehicles fitted with Crew Protection Systems

(19) CFA members taking refuge inside the cabin of the CFA vehicle should:

a. To conserve water, the crew leader should determine the appropriate time to activate the Crew Protection System.
b. Turn the Crew Protection System on or off as required.
c. Cover themselves with a dry fire blanket. Do not hose down crew members before the fire front passes, as conduction of the heat through damp clothes may cause steam burns.

> NOTE: Once the crew protection system is pressurised the green LED light will activate in both the cabin and rear of the tanker.

(20) If the cabin windows break during a burnover, hold crew protection curtains in place with fire blankets and block areas that are emitting smoke into the cabin.

(21) CFA members taking refuge on the rear of a CFA vehicle (e.g. tanker) should:

a. Set the pump to idle;
b. Deploy crew protection awning ensuring Velcro edges are secured;
c. Cover themselves with a dry fire blanket. CFA members should not be hosed down prior to the fire front passing, as this may result in steam burns; and
d. Get down as low as possible in the vehicle.

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(22) In the event that the crew protection system fails or the Crew Leader deems a better option, two spray fog/pattern branches can be used as an alternative. Ensure the branch is held over the side of the appliance before opening the delivery valve in order to keep CFA members on the deck dry to reduce the potential for steam burns.

> NOTE: Spray/fog branches are to be used sparingly for water conservation and positioned between the appliance and the source of radiant heat. Situational awareness should be maintained at all times around the entire tanker including the pump, engine, cabin, as well as the area around the tanker.

CFA Vehicles without Crew Protection Systems

(23) If a CFA vehicle without a crew protection system is with a CFA vehicle(s) that do have crew protection systems, CFA members should exit the CFA vehicle (if safe to do so) and take refuge in the vehicle with the crew protection system.

(24) In the event that the CFA vehicle is not with other CFA vehicles, CFA members should take refuge inside the cabin of the CFA vehicle and ensure they:

a. Are wearing full Personal Protective Clothing (PPC) and a P2 mask;
b. Cover themselves with a dry fire blanket;
c. Get as low as possible in the vehicle;
d. Turn off the fan and air conditioner; and
e. Turn off the vehicle engine.

> NOTE: Vehicles not fitted with crew protection systems have no protection preventing materials inside the vehicle from off gassing which may produce vapours toxic or irritant to the airways. By having the fan and air conditioner off reduces the mixing of these vapours. This advice is consistent with advice provided by the AFAC guideline: 'People in Vehicles During Bushfires'.

Actions to take where safety in a CFA vehicle is compromised during a fire

(25) Where a CFA vehicle becomes untenable for crew survival in the cabin or deck areas during a fire, CFA members should:

a. Exit the cabin or deck on the side with the least fire visible outside;
b. Wear full Personal Protective Clothing (PPC) including a helmet and a P2 facemask;
c. Take a dry fire blanket for protection and bottled water;
d. Take a first aid kit;
e. Move to the largest area practicable that is already burnt out or devoid of fine fuel or trees, shrubs and branches and away from toxic smoke that may be coming from a burning CFA vehicle;
f. Lay flat on the ground to reduce the impact of radiant heat and point feet towards the maximum source of radiant heat. To limit radiant heat, this should be behind a solid object or in a ditch.
g. Ensure your body is covered with the dry fire blanket.
h. Wait until the fire front has passed before removing the blanket.

Actions to take after the fire front passes

(26) Ensure all crew members are accounted for and checked for any injuries.

(27) Extinguish any fires on or near the vehicle that may be a threat to member safety or the vehicle.

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(28) Report and record your situation through the incident chain of command.

(29) Record the incident in CFA Safe.

Section 4 - Definitions

(30) Commonly defined terms are located in the CFA centralised glossary. Document-specific definitions are listed below.

Section 5 - Related Documents

(31) Chief Officer's SOP – 9.15 Mayday and Hostile Acts Signal Radio Signals

(32) Chief Officer's SOP – 9.37 Emergency Evacuation Signal

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Status and Details

Status	Not Yet Approved
Effective Date	To Be Advised
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Approval Date	To Be Advised
Expiry Date	Not Applicable
Accountable Officer	Garry Cook Deputy Chief Officer Operational Response & Coordination
Responsible Officer	Richard Bourke Assistant Chief Fire Officer Bushfire & Forest Industry Brigades
Author	Tracey Parkhill
Enquiries Contact	Garry Cook Deputy Chief Officer Operational Response & Coordination Operational Response and Coordination

Glossary Terms and Definitions

"CFA member" - Refers to all CFA volunteers, volunteer auxiliary workers, officers, employees and secondees.

"CFA vehicle" - All vehicles owned or operated by CFA or any Group or Brigade. This includes FRV vehicles being driven by an FRV Secondee.

"Crew Leader" - Crew Leader is the person designated to have responsibility for the management of the crew.

"Dynamic Risk Assessment" - The continuous assessment and control of risk in the rapidly changing circumstances of an operational incident. DRA is an intuitive thought process and is typically not recorded.

"Personal Protective Clothing (PPC)" - Includes clothing used to provide protection to CFA members from the risks associated with performing a specific operational task for which they are competent and endorsed

"Mayday" - A call via radio that indicates “I am threatened by grave and imminent danger and request immediate assistance.”

"Crew Protection System" - Design features incorporated into CFA tankers of over 1000 litres of water carrying capacity to protect the crew by negating the effects of the flame and radiant heat associated with the fire front on the vulnerable components of the appliances cabin, under-body, pum and tray areas. This includes the crew protection spray system, crew protection water system, crew protection curtains and the crew protection awning or deck access hatch where fitted.

" Entrapment" - A situation in which individuals are exposed to life threatening conditions from which they cannot safely remove themselves.

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