

Car Fire Exercise

Car fires are a little different to grass or bush fires. The hazards are different and in some ways more direct – hazardous materials; potentially explosive components; even passing traffic – and a greater likelihood of direct human casualties mean that each incident needs to be treated on its unique merits.

To mitigate this, we have some standard operating procedures that help us to safely approach and deal with car and vehicle fires.

While on route, the crew leader will assign one crewmember (usually the driver) to operate the pump, one to take the nozzle, and the others to bowl and connect hoses, and prepare other equipment.

Minimum Equipment

Full PPE including gloves and goggles is the minimum equipment for attacking a car fire. Better yet is structural jacket and helmet over full PPE.

A Cat 1 or 2 is basically the only vehicle able to deliver the amount of water needed at the appropriate pressure to combat a car fire.

On Arrival

On arrival at the incident, the crew leader sizes up the situation and positions the vehicle at least 30 metres for the car/s. It is a good idea to have the rear of the truck facing the accident so that the pump operator can easily see what is going on.

Set witches hats up sensibly to mitigate traffic issues around the site.

In a vehicle fire, the smoke is far more likely to contain poisonous gasses and toxic fumes. It is important to ensure the truck and crew are kept out of the smoke. To this end ensure the truck is not downwind of the accident.

Standard Operating Procedure in this case is to bowl out 1 line of 2 lengths of 38mm hose with a fog nozzle, and to make sure this line is charged. It is a good idea to have another ready as a reserve, or as direct protection of casualties, or for smoke control.

By the time the lines are ready and charged, the crew leader should have completed their recon. A decision is needed as to whether the car/s is worth saving – this will be driven by whether there is life at risk, and the other contributing circumstances. If life is not threatened, it may be the case that the car is left to burn itself out and the main job is controlling spread. For the purposes of this exercise, we will assume there is a need to fight the fire.

Approaching the vehicle

The attacking crew member and another crew member with a crowbar or Hooligan tool approach the vehicle from one of the corners at about 45° to the vehicle. The reason for this approach is to limit exposure to exploding tyres, struts and suspension parts. Keep a fog covering the entire body at all times when approaching and keep low as possible.

Starting to Attack

The first task is to extinguish and cool the nearest wheel arch. Do this while staying at the corner of the vehicle. If the engine bay or boot is closest to you, and if on fire, the second crewmember prepares to crack the bonnet or boot with their tool. As the lid is cracked (just an inch or so), the attacker directs a spray into the gap, cooling and clearing smoke. When this has dissipated somewhat, the lid can be opened further, ending with it being thrown back. The attacker directs water onto the fire, while keeping a grip of the nozzle to open a fog to protect the team if required. It is a good technique to bounce the water off the lid to better spread over the area.

What's Next?

Basically the technique is to go around the vehicle corners, extinguishing and cooling as you go. In all cases stay in the corners and in areas you have already cooled.

The biggest issue, and one which we have yet to cover, is where is the casualty?

Protecting and Assisting the Casualty

The main task, and the reason we are doing all this, is the protection and preservation of life. It may well be that the reserve hose is already stationed with the patient keeping smoke, heat and flame away while first aid is being applied. It is also important in these cases to reassure the occupant, as being stuck in a burning car is a new experience for some people.

It is also an interesting fact that a stream of water can form an effective smoke barrier using negative pressure along the face of the stream (or a half fog).

Pack Up

Once the fire is out, and the ambulance has taken charge of the casualty, we can roll up our hoses, pack up our gear and go back to the shed. Bear in mind however that in these incidents we often use more gear than usual (at shorter notice) so take special care when packing all gear and ensure nothing is lost.

We must also watch out for each other. Car fires can be traumatic for the crew.

Hazards

Some key hazards of car fires are:

- Traffic – car fires generally occur on or near roads, so traffic is a real danger;
- Hazardous or poisonous fumes – cars are made out of all kinds of plastics and other substances, most of which decompose to toxic substances;
- Explosions – any part containing air or fluid can explode when exposed to fire (tyres, suspension, struts etc.)
- Mag wheels – if the mag rims are actually on fire, DO NOT put water on them;
- Venting LPG bottles;
- Hazardous contents in car – BBQ bottles, fuels, ammo;
- Bystanders.

Other Issues

- Hybrids – Due to their nature, hybrids can be unpredictable as it is possible for them to drive forward without notice unless the power has been completely isolated. The gel in the battery packs is also highly acidic, and there is a hazard from the high voltage power from the batteries.
- Spatial Awareness is vitally important. These are dynamic situations and so each crewmember must remember LACES and keep a lookout for themselves and each other.
- Car fires use a large amount of water. The crew leader and pump operator must be able to communicate water levels etc. quickly and easily.
- Other agencies will be involved – police, ambulance etc.
- Possibility of spreading – a car fire can easily become a bush or grass fire,
- Request other resources if needed.

Exercise

1. Position two cars at southern end of shed, facing each other to simulate a head-on. Assign two casualty and place in driver's seat of each car. One passenger has chest pains, concussion and is pinned by the legs. The other is unconscious.
2. YR1 to be placed at northern end of the accident. In this case a crew of seven. These will be:
 - 2.1 Driver/pump operator
 - 2.2 Crew Leader/Incident Controller
 - 2.3 Main attack nozzle
 - 2.4 Main backup/tool man
 - 2.5 Reserve hose
 - 2.6 Reserve hose backup
 - 2.7 First Aider
3. YR2 to be placed at the southern side of the accident. Crew of three:
 - 3.1 Driver/Pump Operator
 - 3.2 Crew Leader/hose backup
 - 3.3 Main hose.
4. Crews to bowl 1x2 lengths of 38s for each truck, flaked with a LCART nozzle.
5. Fire in engine bay – attack crew to cool front passenger wheel to provide safe path to front passenger side for the reserve and first aider to approach. Reserve to protect casualty and first aider.
6. Attack crew to extinguish the engine fire.
7. Pack up and reload truck.
8. Debrief.

A crew of 7 would be ideal for each iteration, and we will rotate crews so each person gets a go at the key tasks. We will also borrow the witches hats off the Cat 9 for traffic control.