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Dear Members,

Re: Ambulances in Hot Weather

The following information is being shared by BCEHS and APBC to help provide some helpful information to members in preparation for the expected heat wave this long weekend.

With current and further expected warmer weather, here are some best practice tips and guidance on a few common vehicle concerns experienced in hot weather.

Air Conditioning: There are number of factors that affect the performance of the air conditioning (AC) systems. The following best practices will help optimize the system's cooling performance.

- The AC system works best when travelling at speeds as the airflow from vehicle movement helps cool the AC condenser
- Set the vehicle AC system to "Max AC: air recirculation." This will have the system cooling the inside air instead of drawing in the warmer outside air
- Avoid extended parking in the sun – find shaded areas or inside parking when/where possible
- When at idle: (use only in safe areas – not at hospital ER areas)
 - Use the park brake for fast idle. This will utilize the engine cooling fan to draw in air to cool the AC condenser, and will increase the speed of the AC compressor
 - Minimize the opening of doors/windows. When a door opens, cool air escapes
 - If possible, turn off the patient compartment exhaust fan. This will reduce cool air from escaping. This can be done by cycling the fan speed to 'off.'
Some vehicles won't allow for the exhaust fan to be turned off. Utilizing the above steps should still have a positive effect on cooling the patient compartment.
 - Avoid extended idle times as it can adversely affect AC performance by heating up the AC condenser
- Extended AC use with high humidity can also create a condition where the AC evaporator inside the patient compartment can "ice-up" causing the system efficiency to be reduced. It may also stop airflow.

Fuel Vapour Smell: The smell of fuel vapour can be expected during high temperature conditions. Reducing idling and keeping the fuel tank full are strategies for reducing vapour. For your information, below are details of the vehicle's evaporative emissions control systems.

- The fuel system is designed to capture fuel vapours to reduce fuel vapour emissions
- The vapours are captured and stored in a charcoal cannister and later drawn back into the engine to be burned off under certain driving conditions, typically acceleration
 - Extended idle times and short runs reduce the times the fuel vapours can be drawn out of the canister to be burned by the engine
- Over time, the canister can become saturated with fuel, and when the fuel tank pressures rise, fuel vapours are vented to the atmosphere, creating the fuel smell around the vehicle

- Extended idle times also increase the under-vehicle temperature due to limited airflow that could help remove heat from the exhaust system. This can increase the fuel tank temperature, creating more fuel vapours
- If a vehicle is experiencing multiple fuel vapour “purges,” the canister may be saturated and may need replacement by the service centre
- Excess pressure build-up (more than a small puff when opening fuel cap) indicates a failing or plugged vent system and requires servicing of the vehicle

Odors in Vehicle: There are many reasons for odours in the cab and patient compartment. Possible sources:

- Odours drawn in from outside from another vehicle close by, or other outside source
- Spills, garbage, or dirty equipment odours can be enhanced with higher temperatures
- Extended idle times increase the under-vehicle temperature which can increase the battery box temperature to a point where the batteries can vent, creating a hydrogen or sulphur smell in or around the vehicle

If there are concerns with any of the above-mentioned conditions, the service centre can check to ensure the systems are functioning as designed. Provide as much information as possible about the conditions leading up to an event. This will help the technicians replicate the conditions to perform any repairs and ensure the system is functioning as designed. The [Vehicle Concern Log](#) sheet can use to better document concerns.

Words of wisdom from Toronto Paramedic Service who operate very similar size ambulance: *“a common problem in Ontario in hot weather. Best way to avoid the issue is don’t let the fuel tank drop below half and avoid idle time.”*

Sincerely,

The Provincial Executive Committee
Ambulance Paramedics & Emergency Dispatchers of BC
CUPE Local 873

/sb/MoveUp

