

Using heavy-duty recovery vehicles in extrication

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Heavy-duty tow trucks are specifically designed to handle large and heavy vehicles

The gradual movement from rail transport to road transport in South Africa in recent years has resulted in a significant increase in heavy motor vehicles on our roads. With this comes the possibility of more accidents and more complex victim entrapments.

Rescue services trying to survive in an increasingly difficult cut-back environment has forced them, in many cases, to revert to lighter, less specialised vehicles on which to base their rescue rigs. It is clear that these two tendencies are diametrically opposed, thereby increasing the challenge to the

rescuer and decreasing the survival chances of the victim.

Something that no city or town is short of is the plethora of tow trucks that seem to arrive out of nowhere on every accident scene, sometimes even before the emergency services!

Tow trucks or recovery vehicles come in various configurations. The vast majority of tow trucks are light, two-seater, extremely fast vehicles designed to respond rapidly and to reach the scene of the accident before its competition. It is not these vehicles that will provide a rescue team with the assistance

they might need and, in many cases, create an extra risk to the rescue operation due to the high speeds at which they respond as well as overcrowding the accident scene by parking in areas which place responding units in danger.

The tow trucks that we wish to focus on here are the heavy-duty vehicles that are primarily designed for the recovery of large vehicles and loads. These powerful machines provide indispensable support to rescue services during vehicle accident extrication operations, ensuring the safety and efficiency of these critical missions.

The heavy duty tow truck: a versatile asset

Heavy-duty tow trucks, also known as wrecker trucks or recovery vehicles, are designed for one primary purpose: to recover and transport large and heavy vehicles. They are equipped with an array of specialised tools and capabilities that make them indispensable in extrication operations:

- **Lifting and winching capabilities**

Heavy-duty tow trucks are equipped with powerful winches and hydraulics that can lift and move vehicles weighing several tons. This capability is vital when rescue services need to stabilise or reposition a vehicle to access victims or safely remove them from the wreckage.

- **Securement and stabilisation**

Tow trucks can secure vehicles in precarious positions to prevent further movement, reducing the risk of secondary accidents or structural collapses. Stabilisation is critical when rescue teams are working to free trapped individuals from a tangled mass of metal.

- **Rapid vehicle removal**

Quick removal of damaged vehicles from the accident scene is crucial to clear the roadway,



The tow truck's winching and lifting capabilities allow rescue teams to stabilise the damaged vehicle

allow medical personnel to access victims and ensure the safety of responders. Heavy-duty tow trucks can expedite this process, which is essential in high-pressure situations.

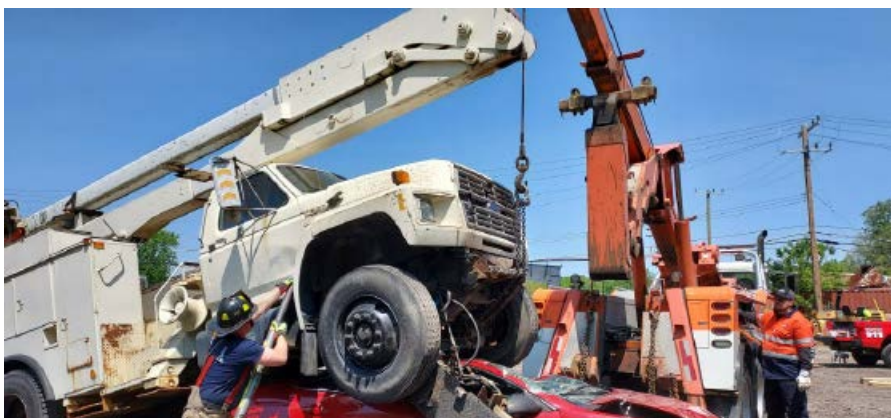
Standard operating procedures

When it comes to large scale operators, they generally are very professional and proficient at their jobs and we have found that most tow companies are eager to aid in a rescue with just a quick discussion on arrival. The tow truck operator will generally be well trained in rigging and towing and have a deep understanding of his vehicle's capabilities and how to use them to achieve the desired outcome.

While we take it for granted that a tow-truck will almost always show up at an accident scene, we might not always be sure what type of truck will arrive. There might be delays in response if it is the operator's policy to first respond with a lighter tow truck and then call for a heavier unit if required.

It would therefore be good policy to meet with the operators offering a recovery service in your jurisdiction and set up an agreement for the deployment of the desired resource. This will allow for the rescue services call centre to immediately call for the correct rig when the information received indicates a heavy load involved in the incident. Although this might not always be possible due to the caller's lack of knowledge, there should almost always be a police or traffic law-enforcement officer first on scene who could clarify the need for a heavy-duty rig. It is essential that these vehicles are dispatched early. They do not have lights and sirens and might be delayed having to negotiate traffic or travel a long distance.

It is also important to make some time to train with the



Consider the type and size of the vehicles involved in the accident



Care should also be taken when lifting or stabilising a hazardous cargo load

- ▶ heavy-duty operators to ensure that (a) the operator understands the rescue service's methods and (b) that the rescuers understand the capabilities of the heavy-duty operator.

Before calling for a heavy-duty rig both groups must also be clear on why they need a particular unit. Are you stabilising? Are you lifting? This makes a difference in what vehicle you need to call for. You will need a rotator if you intend on moving a big rig tractor trailer or a similar type of vehicle at all. If you are only capturing and stabilising the weight, a straight boom rig may be sufficient.

Command decisions

Following the arrival and assumption of command by the fire/rescue service and the dispatch of the heavy-duty rig, based on the caller's description of the incident, the incident commander should evaluate the scene when making the decision to employ the heavy-duty rig. The following points must be considered when making this decision:

- **Scene safety**

Tow truck operators work in tandem with rescue personnel to

assess the situation. They help identify the safest approach for extrication, considering vehicle stability and the potential risks of movement. Also identify potential hazards such as leaking fluids, unstable structures or other dangerous conditions that could affect the deployment of a heavy-duty tow truck.

- **Vehicle stabilisation**

The tow truck's winching and lifting capabilities allow rescue teams to stabilise the damaged vehicle. This is critical to prevent further shifting and collapse, creating a safer working environment for responders. Evaluate the stability of the damaged vehicles. If a vehicle is severely damaged and poses a risk of collapse or movement, deploying a heavy-duty tow truck may be necessary to stabilise the vehicle before rescue operations can proceed. Lifting or stabilising requires that you control the entire weight of the load you need to control. Balance points, the centre of gravity and the lift point are all critical to a controlled lift. Setting the chains in a stable, solid location on the vehicle is imperative; use the tow operator's expertise if you are unsure of how or where

to place the chains. You can't deploy any resources close to or under a weight that is not entirely controlled. An uncontrolled load could move unexpectedly if, for some reason, it was to over-balance in a particular direction.

- **Roadway clearance**

Determine whether the accident has resulted in road blockages or obstructions. Heavy-duty tow trucks can assist in the rapid removal of damaged vehicles, helping to clear the roadway and facilitate the movement of emergency vehicles. This is essential to provide responders with ample room to work efficiently and safely.

- **Extrication assistance**

In cases where a victim is trapped inside a severely damaged vehicle, tow trucks can help in carefully opening or removing the vehicle's structure. This requires a delicate and coordinated approach between rescue teams and tow truck. Assess whether there are victims entrapped inside vehicles. If heavy extrication is required, the tow truck's capabilities for lifting, winching and stabilising can be invaluable in creating a safer environment for extrication efforts. When lifting, you need to consider additionally the lift capacity since you will now be holding the full weight of the vehicle. Any movement with that load requires using a rotator instead of a straight boom truck, and having a place to set the vehicle down once it is lifted; more space is required. Some wreckers can simultaneously lift one vehicle and move another while some have additional winches that can pull a vehicle from underneath a load in the event of a vehicle underride incident.



It is important to make some time to train with the heavy-duty operators

- **Vehicle size and weight:** Consider the type and size of the vehicles involved in the accident. Heavy-duty tow trucks are specifically designed to handle large and heavy vehicles, so their deployment is most effective in incidents involving busses, trucks or other oversized vehicles.
- **Communication with rescue teams:** Establish effective communication with rescue services to understand their needs and requirements. Collaboration is key to coordinating the efforts of tow truck operators and rescue personnel for a seamless and safe operation.
- **Weather conditions:** Consider the impact of weather conditions on the rescue operation. Adverse weather, such as rain or snow, can affect the stability of the accident scene and the capabilities of the tow truck.
- **Hazardous cargoes:** Care should also be taken when lifting or stabilising a hazardous cargo load. Any pressure

vessel or gravity tank that is fully loaded and has sustained damage to its cargo hull could suffer further damage and catastrophically fail if undue pressure is placed on a particularly heavily compromised area.

- **Vehicle placement and resource allocation:** Evaluate the availability of other resources and personnel. Deploy the heavy-duty tow truck in a manner that optimises the use of available resources without compromising overall rescue operations. At the initial staging phase when you are expecting the heavy-duty rig to arrive make sure you leave enough space for them to set up. The rigs have outriggers like a ladder truck, reach could be as much as six metres, and they have to be close enough not to overreach the boom. Remember that you lose lifting capacity there further you have to extend the boom.

By carefully considering these factors, the incident commander can make informed decisions regarding the deployment of heavy-duty tow trucks,

ensuring a coordinated and safe response to vehicle accident extrication situations.

Conclusion

Heavy-duty tow trucks can be a vital piece of equipment in an extrication operation where heavy loads are involved and need to be lifted off victims or separated from areas where patients are trapped. They are not there to replace the rescue capacity but compliment it. You will still need the heavy hydraulic spreaders, rams and cutters to do the close-in moving and cutting and possible pneumatic lifting bags more precise work. The measure of how successful your team will be is in their ability to combine their resources and expertise with that of the heavy duty rig operator to safely extricate the victim.

Finally, remember that, like many tools we have brought into the rescue field in recent years such as core drills, concrete breakers, chainsaws etc, tow trucks were not specifically built for vehicle rescue. Understand its limits and its capabilities. It will then become an indispensable part of your rescue armoury. ▲