

# Multi patient extrication: Your destination is reward for safe driving

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**A**wareness is the key to safety at accident scenes. Knowing the hazards and how to work around them will ensure the safety of everyone. An accident scene can be a hectic place with a lot of things going on at once. Accident scenes are often chaotic and difficult to secure with so many people coming and going. No two accident scenes are alike but they share the same goal - everybody should get home safe and sound.

Whenever you step onto a bus, whether a city bus, a tour bus, a shuttle, a school bus, etc, you are entrusting your safety to the bus driver and the owner of the bus. For some reason, we feel safe

and secure on a bus; so much so that many busses do not have or require seat belts. The driver of the bus is not only confronted by the challenges from road and environmental conditions but also the lawless and reckless road users, both human and animal!

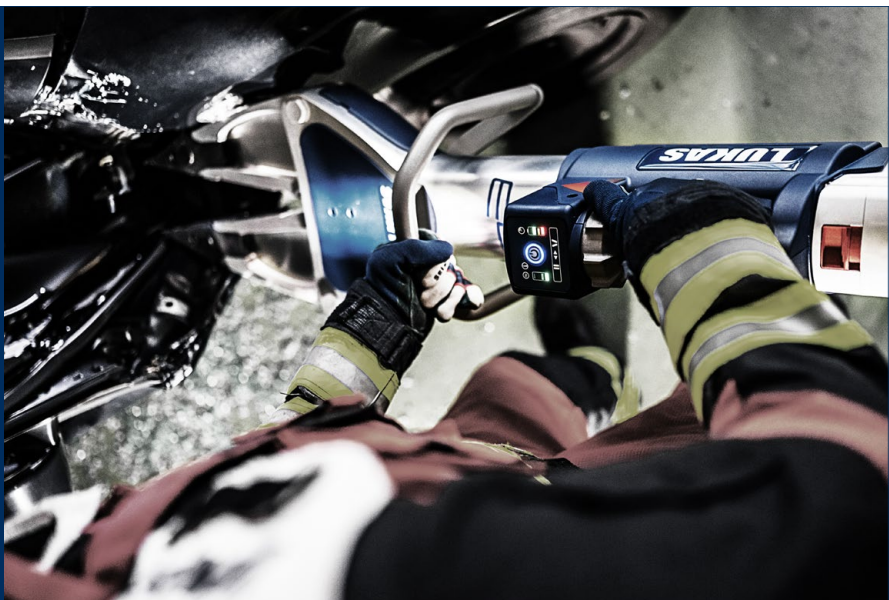
But even when in a bus, accidents do happen.

When involved in a bus accident, the consequences can be significant, possibly even more so than a typical car accident. There are more victims, more responsible parties and injuries can potentially be much more serious because of the lack of safety equipment like airbags and seatbelts.

Every day in every community, large vehicles travel the road filled with potential patients: some children, some elderly, some with special medical issues, all are potentially your responsibility. These mass casualties on wheels present a host of problems for EMS responders.

If you're the head of your agency, you may wonder how you can prepare your system. If you're a frontline supervisor you may wonder what tools you should have on hand to manage such an incident. If you're a field provider you may wonder what you can do to prepare yourself for response.

Bus collision incidents may be inherently complex but the



- ▶ cut and a battery charge status indicator, ensuring the operator is aware of runtime in real time.

The Lukas E3 line builds on the game-changing 2019 launch of the Lukas Jaws of Life eDraulic Watertight Extrication Tool (EWXT)

line, battery-powered tools that have a longer battery life and stronger cutting force, plus are completely operational when submerged in fresh water. E3 offers all the features and benefits of EWXT and then some. In addition to E3's smart dashboard, E3's new turbo function

adds increased user-controlled speed and the tool's patented watertight design allows operation in both fresh and salt water.

The Lukas Jaws of Life eDraulic 3.0 debut includes 11 tools ie SP 555 E3 spreader, SP 777 E3 spreader and SP 333 E3 spreader, the SC 358 E3 combi, SC 758 E3 combi and the SC 258 E3 combi, the S 799 E3 cutter, S 378 E3 cutter and the S 789 E3 cutter as well as the R 521 E3 ram and the R 522 E3 ram.

Other features and benefits of Lukas Jaws of Life eDraulic 3.0 rescue tools include a brushless DC electrical motor for more efficiency and performance, an ergonomic design, LED lights and an optimised weight. All Lukas Jaws of Life tools meet NFPA 1936 2020 standards for NFPA performance ratings.

All Lukas vehicle extrication tools are available from Hamilton Hydraulics, its sole distributor for South Africa. ▲

techniques to manage each part are simple so that they can be used quickly and with confidence.

**Challenges for EMS**

Even minor bus collisions can present a variety of scene management issues including accident investigation, traffic flow, secondary collisions, rescue and extrication, interagency communication, hazardous materials release, cargo security, media and bystander management and, of course, patient care.

The key to successful management of a bus collision incident is to break the larger incident into smaller, more manageable chunks.

The three primary issues responders face can be quickly categorised as:

- Lots of patients
- Lots of problems
- Lots of partners.

Details will vary depending on needs, resources and conditions specific to each incident but broadly categorising patients, problems and partners will make it easier to begin to delegate, coordinate and take action to resolve the incident.

The first thing to consider at all bus collisions is the large number of potential patients. Although the number may range from fewer than 10 to more than 100, effective use of an mass casualty incident (MCI) system will streamline prioritised patient assessment and treatment and continue the forward movement of patients. This forward movement will help get patients to definitive care, reconnect them with friends and loved ones and resolve the overall incident faster.

Keep in mind that all the incident problems one might encounter at a motor vehicle collision (MVC) may be present and at a much larger scale than usual. These may include having to work in areas with foul weather, unstable surfaces, physical hazards such as broken metal and glass and downed power lines, as well as hazardous materials from the vehicles.



*Even minor bus collisions can present a variety of scene management issues*

As with any MVC, EMS providers must remain aware of the hazards in their area, report critical issues up the chain of command, render safe any hazards where they can do so safely and coordinate with other resources where the hazard is beyond their capability to safely address.

Although an early concern for a bus collision incident may be lack of resources, this problem often quickly shifts to one of communication and coordination with incident management partners. EMS personnel must be able to work effectively with fire, rescue, law enforcement and other agencies or organisations. Coordinating with different emergency and non-emergency agencies means recognising that each often has competing priorities.

Non-EMS priorities include law enforcement's traffic control and accident investigation, fire/rescue personnel's extrication and hazardous materials management, the bus company's control of the vehicle and passengers, the sponsor of the bus trip and/or the school if a school bus is involved.

Additionally, EMS providers must be prepared to deal with a larger than normal interest from the media, concerned family and other members of the public who may seek access to areas of the scene that are hazardous or involved in emergency operations.

The bottom line: Don't pick the first available assignment or jump from one to the next. Defining your patients, problems and partners will clarify and prioritise your incident actions and help you accomplish them.

**Phases of management**

Although management of bus collisions can be daunting, the problems they present can be addressed by completing the right jobs in order: Think ahead, on-scene arrival, patient access, triage, treatment and transport.

The first three of these jobs, preparing ahead of the incident, arriving on scene and gaining access to patients, all focus on incident coordination. Patient triage, treatment and transport focus on prioritised care and forward movement of patients. Some of these tasks and positions may be outlined by state, regional or local authorities. To meet statutory requirements and to best coordinate with your partners, follow local procedures and recommendations.

Although the job sheets and checklists for these jobs may list a dizzying number of details to be addressed, each job may be thought of within a simple three-pronged framework:

1. Size up
2. Set up
3. Move forward.

## Rescue Roundup

### Thinking ahead

Good coordination begins way before the incident occurs. Remember, the size up, set up and move forward format can help you coordinate your resources for operational success before a bus collision occurs.

**Size up:** Begin by building a list of agencies that may be concerned with a bus collision incident along with their primary contact information. Think beyond emergency service partners like fire, rescue, law enforcement and other EMS agencies.

Consider the operators of busses that travel through your response area. If not the bus companies themselves, who contracts or sponsors the busses? They may be schools, churches, senior centres, tour groups or other organisations. Consider potential patient destination locations including hospitals. Consider sources of alternative methods to transport large numbers of injured and uninjured victims from the scene.

**Set up:** Once you've established a list of stakeholders, reach out to their designated contacts and establish what their expectations and priorities will be when a bus collision occurs.

Your system may not be ready to meet every expectation of every stakeholder; so consider meeting to establishing

short-term goals that may be achieved with current resources as well as long-term goals that will improve the system in the future.

Where possible, establish written agreements and procedures among stakeholders to solidify the priorities and expectations you've agreed upon. These agreements aren't yet the plan but they outline what everyone is trying to accomplish and what everyone is willing to offer.

**Move forward:** At some point, it will be necessary to bring together as many representatives as possible to develop a bus collision plan to deploy resources to manage the incident and attempt to meet stakeholders' priority needs. The plan shouldn't be thought of as a rigid outline for operations at every bus collision incident. Rather, it should serve as a flexible framework to be further honed by later table-top and full-scale exercises.

### Arriving on scene

When a bus collision occurs, depending on how it's reported, responders may be dispatched for a large-scale incident or a routine MVC. Because of this, all responders, regardless of rank, must be prepared to arrive first on scene and begin to manage the incident.

**Size up:** Although not every responder may give a formal

size-up report over the radio, each and every responder should do a personal size-up on arrival. This will increase both personal safety and overall operational effectiveness.

A variety of frameworks exist to facilitate size-up but one of the most simple and effective is UCAN ie unit, conditions, actions and needs. Upon arrival or at any change in assignment or location, ask the following questions:

**Unit:** What's my specific assignment and objective? Whether you set one or get one, your assignment objective should be crystal clear to you and to your partners.

**Conditions:** What are the critical aspects of the conditions in which I'll be working? What and where are the patients, hazards, resources and what's the progress of the incident?

**Actions:** What's the very next thing I'll be doing? Again, this must be clear in your own mind and clear to your partners.

**Needs:** What else will I need to accomplish my assignment, given these conditions? Call for and coordinate with your resources.

**Set up:** On arrival, it will be important for you to establish or integrate with command, control and communications. If no one else has already done so, the first step is to establish incident command to build a framework for responders to work together to resolve the incident. If the incident command system is already established, coordinate with command on arrival as appropriate.

You may not know the incident action plan but you do know that it will involve the management of patients, problems and partners. Clear designation of the patients and who will care for them, problems and who will resolve them or partners and who will work with them are crucial in moving the incident forward and getting it under control.

Effective communication means more than just good radios. Channels and methods of communication must be established during preplanning, well before the incident begins and then followed as the incident unfolds.



*The size up, set up and move forward format can help you coordinate your resources for operational success before a bus collision occurs*

**Move forward:** From the moment you arrive on scene, your goal is to move the incident forward and this will almost always be achieved by moving the patients forward. If you're the first responder on scene, it's your responsibility to set up the framework to make this happen by delegating the tasks of triage, treatment and transport, in that order, to the next available qualified crews.

**Patient access**

At a bus collision, access means more than just getting to the patients. It also means creating paths to put responders and resources in contact with victims and then moving them forward to definitive care.

**Size up:** Establish your points of entry to access patients and points of exit from vehicles and hazard areas.

**Set up:** Use one of the following three methods to gain access to your patients:

Standard access: Through the normal doors of the vehicles; basically, the same way they got on/in. This is always the first choice.

Emergency access: Through designated emergency exits such as windows and hatches. These are generally more restrictive than standard access.

Extrication: If neither standard nor emergency access is adequate, you'll need to coordinate with rescue crews to perform extrication.

**Move forward:** Consider how best to move the patients forward. Will you need assistance with moving patients from the vehicles and hazard area? Or will it be better to protect in place? Although forward movement of patients is always the goal, this may best be achieved by protecting the patients in place until you can coordinate with alternative transport to move to definitive care and evaluation or area of refuge.

**Patient triage**

Led by an assigned triage officer, triage allows EMS to move patients forward in the most efficient way and to care for them while doing it.



*Complete the right jobs in order. Think ahead, on-scene arrival, patient access, triage, treatment and transport*

**Size up:** With few exceptions, the triage officer's size-up should consider how best to rapidly access the patients to triage them and get them to the patient collection point, treatment area or area of refuge. It can be tempting to spend time evaluating and treating patients individually but this limits your ability to rapidly identify the most critical patients, move them forward to the care they need and resolve the incident overall.

**Set up:** There are many triage and mass casualty management systems to choose from. None have definitively proven superiority over the others so the best choice is usually the system with which your providers and partners are most familiar.

**Patient treatment**

Treating victims involved in bus collision incidents typically facilitates the continued forward movement of the patients. Although MCI treatment and transport systems vary, incoming ambulances may separate crews so that the drivers remain with transporting ambulances while other crewmembers bring relevant gear and supplies to the treatment area and begin patient care.

**Size up:** The EMS provider in charge of patient treatment, typically designated as the treatment officer, must rapidly

evaluate resources ie structures, staff and supplies. The first consideration is to ensure available structures that protect patients and allow for the provision of care as well as storage of equipment and supplies. Evaluate the number and skill level of staff that will be providing care. Take stock of the equipment and supplies on hand or that provider will be bringing with them.

**Set up:** If set up is completed quickly, as triage is just getting started, the treatment officer should assign some of the staff to help move patients from the triage area, casualty collection point or area of refuge, to the treatment area. As triage wraps up, the triage officer can assign additional staff to assist in the treatment area.

The treatment officer must set up the treatment area to allow for both prioritised patient care as well as the forward movement of patients ie keep in, keep out, clear route. Consider what you want to keep in eg staff, supplies, patients, keep out eg freelancing providers, bystanders, physical hazards and a clear route allowing the effective movement of patients from triage, into treatment and out to transport.

**Move forward:** The first patients in the treatment area will often be the least injured and they may

# Ambulance technology

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Oliver Wright, CEO of SAPAESA

**T**echnology and its development continue to shape and revolutionize

our daily lives and these same developments are evident within the emergency medical services sector world-wide.

In terms of international development within the emergency medical services sector, how does South Africa compare? Are we leading the pack or lagging behind?

Sadly, it appears that even though South African paramedical staff members continue to remain some of the most capable and experienced in the world, the sector in general is not taking full advantage of a wealth of international research that is readily available for implementation within South Africa. The question must be asked, why?

While it should be noted that the emergency medical services sector in South Africa is chronically underfunded, both by Government and by medical schemes, there are certain changes that can be made and that should be made, with minimal cost implications. With this in mind, we will explore the following topics in more detail:

1. Ambulance cabinet layout design and equipment placement
2. Ambulance seating layout
3. LDV/bakkie ambulance conversions

When it comes to the design of the cabinets in your ambulance, safety and functionality should be top of the list. While the matter of safety and functionality on its own would

be able to assist in moving more seriously injured patients as well as children, the elderly or the mobility challenged.

## Patient transport

The transport office, perhaps the most challenging assignment, plays a key role in the forward movement of patients and often requires at least one assistant.

**Size up:** The transport officer needs to size up the patients, ambulances and available destinations. These are the first three pieces of information that the transport officer will need at a bus collision incident. The number and severity of patients determines the ambulances or other vehicles that may be needed and the destinations where they'll be transported.

This information will inform the transport officer's size-up of the best location to connect patients in the treatment area with the transporting ambulances or other vehicles.

**Set up:** As the patient loading area is set up at the juncture of the treatment area and the ambulance route, the transport officer will need to establish a method to rapidly track, at a minimum, the patient's priority, the ambulance in which the patient was transported and the patient's destination.

The transport officer and assistants must also establish communications with incident command, as well as destination hospitals and transporting resources. In order to facilitate the forward movement of patients, the transport officer should consider the best routes of transport from the scene to destinations. This is important not only because mutual aid resources may not be familiar with the best routes but also because normal routes may be affected by traffic disruptions.

**Move forward:** The transport officer and assistants focus on moving patients forward by helping to load patients into vehicles according to

priority, while also tracking patients, providing destinations and clear routes to the transporting vehicles, providing incident command with reports and communicating with destinations to ensure that they are prepared to receive.

## Conclusion

Bus collision incidents can be overwhelming but by quickly identifying your patients (number and severity), problems (hazards) and partners (resources), you can quickly begin to bring things under control.

Stack the cards in your favour by coordinating with your resources and stakeholders ahead of time, taking command or an assignment on arrival and gaining access that allows responders to get in and patients to get out of the MCI area. Use effective triage, treatment and transport practices that allow for treatment of a continuous flow of patients who can be effectively moved forward to definitive care. 🔥