

# UKRO

## LGV & PSV Cab Stabilisation and Driver's Seat Management Techniques

UNITED KINGDOM RESCUE ORGANISATION



Chair: Dave Webb QFSM, MA, BSc (Hons)

THE CHIEF FIRE OFFICERS ASSOCIATION



President: Steve McGuirk

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## 1. Introduction

In the final part of this series of LGV/ PSV interventions for rescuers, we will look at the issues around stabilisation of the vehicle cab and other subsequent actions necessary to provide a safe and satisfactory platform in which to extricate the casualty.

In previous issues we have covered the safety elements and processes required to ensure the vehicle air brakes and air suspension have been properly managed.

Once these initial actions have been carried out successfully, the Incident Commander can move his thoughts on to the final stage of this process. The vehicle cab and driver's seat will require assessment and managing to ensure a safe and stable working platform for the casualty and rescuers alike.

The main issue for the I.C. to look at is the fact that the LGV cab will be mounted on the chassis via one of two forms of suspension unit (x4) - either a coil spring and damper unit or, (in more expensive/ modern systems) a fully pneumatic unit (air bag).

## 2. Cab Air Suspension Stabilisation

The cab air suspension system is supplied in the same way as the vehicle air brakes and air suspension systems, in that compressed air from an engine driven compressor is cleaned and dried and stored in tanks for use. It is then fed to the four cab air suspension units via a number of valves and plastic pipe work. These valves (electronically controlled) ensure the cab height is adjusted according to load. It is worth

remembering the pneumatic cab suspension units are constructed similarly to main suspension airbags i.e. from reinforced neoprene rubber and are susceptible to abrasion, perishing and wear etc

Both the coil spring and air systems whilst completely different in construction and operation, provide the same point of issue in that



they ensure road shock is minimised in its transmission through the cab and ultimately to the driver. This, for rescuers, means that the cab is an unstable working environment not only for a casualty with a possible cervical injury, but also for the rescuers. For both these reasons its movement needs to be removed or minimised.

Currently, on the market, is a wide range of equipment designed for vehicle stabilisation. These stabilisation sets either take the form of "shore's" which can be lengthened by adding more sections, or of a sliding extendable prop which is lengthened telescopically. Both types secure to the vehicle via ratchet strap imparting tension upwards into the vehicle cab, prohibiting movement.

It is fair to say that the use of rubber blocks and ratchet straps strategically placed to pull the cab down onto its springs/rubber blocks will effect some cab stabilisation on the vehicle. As this method does not mechanically join the cab to the road surface some resultant movement will remain due to tyre side wall deflection/ compression.

### 3. Air Seat Isolation

Once the vehicle cab is stabilised the next consideration for the I.C. will be to address any movement in the driver's seat. In the vast majority of modern LGV and PSV vehicles the driver's seat will be suspended by an air bag unit mounted inside a scissor type frame, adjusted by manual controls on the side of the seat. The seat is designed to remove any residual movement ensuring driver comfort. This again causes stability issues for the casualty and rescuers.

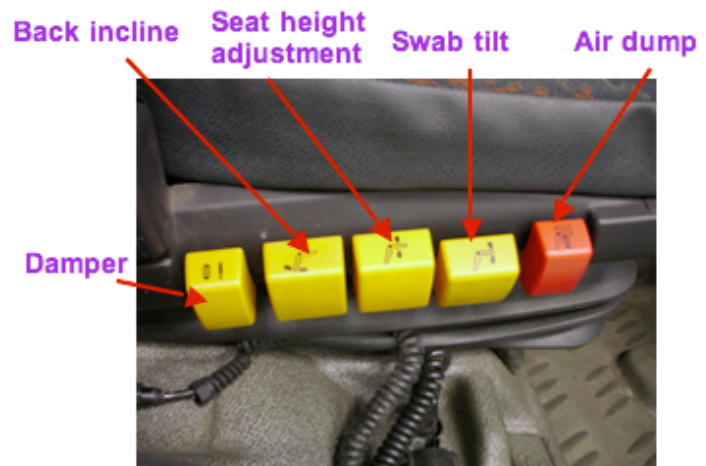
To immobilise the driver's seat, the outer skirt needs to be removed/ cut to expose the inner mechanism and air bag unit.

A wedge can then be placed under the lower part of the scissor frame. This when lowered, will hold the seat at the required height. The seat can then be lowered onto the wedge by selecting the correct button on the driver's seat controls.

(Any leg or pelvic injuries must be considered when deciding to lower the seat)



It is important to select the correct control at this point. There is an air “dump” control which completely exhausts the seat air bag within a few seconds. However, the button most suitable for lowering the seat under control, is the pneumatic height adjustment, which allows the driver to raise and lower the seat for his comfort. This can be used to bring the seat down slowly on to the wedge.



To ensure the seat does not continue to try to power up against the driver’s weight, the air supply pipe to the seat can be clamped/ cut (max 10 bar pressure).

#### 4. Considerations

Throughout this whole process the driver’s Cervical spine will require management via manual control and/or the fitting of a collar to further minimise the possibility of damage caused through movement.

(At the earliest possible stage the fitting of an LGV access platform to the cab should be considered to assist rescuers).

At this juncture rescuers can look to maximise access to the casualty before making hydraulic cutting interventions. This can be done by repositioning the driver’s steering wheel. Modern LGV and PSV vehicles have steering wheels/ columns which are adjustable in reach and rake. By releasing the manual clamp, air switch or operating pedal (various systems) the steering wheel can be lifted away from the casualty creating a notable amount of free space around the driver’s legs and torso. In many cases this can negate the need for more aggressive techniques.