

RAIL CARRIAGE ROOF ACCESS



The Challenge

In order to carry out maintenance, engineers must gain access to a variety of equipment such as: passenger displays, telecommunications equipment, air-conditioning units and pantographs. For short periods of time it will also be necessary to maintain locomotive carriage roofs and it is important to minimise the length of time that this equipment is out of service. One, multifunctional piece of equipment is required to deal with all the needs.

During the maintenance a system of fall arrest is needed which requires Personal Protection Equipment (PPE) training and is not popular with staff as it is considered to hamper efficient working. A widely used system of fixed gantries is an expensive option.

The chosen design must be robust for stability and longevity but light enough to be easily deployed by 2 people and then stored neatly while not in use. It is also important to avoid vehicle damage during the manoeuvres.

The employer has an obligation to their staff to eliminate risk of accident so a solution must be found that the engineers will embrace willingly to ensure that it adopted.

Solving the Problem

A relatively light, fold away frame of high strength aluminium was designed using triple caster wheels to ensure that the equipment moves easily across the working area. Once in position it is secured by using the telescopic jacks.

Rail Carriage Roof Access – Semmco Case Study

The platform folds out forming a fully contained 'boxing ring' with guard rail over the area with protective padding placed against the vehicle.

The ergonomically designed handrails and platform have specifically shaped components to ensure close profile to vehicle shape.

The Benefits

The equipment can be easily and swiftly moved by two people while the triple caster wheels allow rapid access between roadways to all points on the train. Stability is aided by the use of telescopic jacks increasing the foot print when in operation thus increasing platform stability.

Even during the deployment of the fold out 'boxing ring' system the handrails ensure that the engineers are in a safe contained working area. The protective padding on the profile eliminates vehicle damage.

The steps fold up and the 'boxing ring' concertinas to enable the equipment to be held in a very compact storage footprint.

No additional specialist PPE training required.

Unique bolted and plated design reduces the need of continuous maintenance due to aluminium stress fractures as experienced with inferior welded box section or tube designs.

The Company Background

Semmco is a design and engineering company offering a range of specialist services for ground support equipment and access solutions for the aircraft and aviation maintenance markets. Providing engineering design and consultancy for special projects and bespoke customer requirements, Semmco is committed to quality, safety and reliability throughout its innovative designs, manufacturing safe and cost effective engineered solutions.

The Health & Safety Executive has used Semmco as a reference supplier for working with commercial aviation airlines and achieving major improvements in access equipment.

Since 1992 Semmco has operating throughout the UK and international markets while working with customers to design multi-functional, safe equipment, providing the customer with long-term solutions and efficiency improvements.