

WHEEL & BRAKE SERVICE TRAILER



The Challenge

Changing a wheel and brake pack on an aircraft is a testing operation as it involves moving large and heavy wheel and brake pack units along with tooling to the aircraft. The requirements of hangar and ramp mean that more than one vehicle was being used to transport the equipment to the required location. In the past, a number of vehicles and trailers were used to realise this operation resulting in costly and inefficient operations on a busy airline ramp.

Valuable time has been lost due to locating tools which are not kept in an organised system within vehicles or trailers. Often several trips are needed for one wheel change on account of the equipment being in different locations. Not only is lifting the aircraft jacks a 'manual handling' issue, the lifting equipment and wheels cannot be fitted in to the current system. These vehicles and trailers inevitably accumulate unserviceable components.

The safe loading of equipment and securing of wheels in transit is key to the operation in order to be health and safety compliant to safeguard the engineer and the integrity of the equipment. These tasks include manual handling of the aircraft jacks into position and correct handling of wheels and tyres which are awkward to manoeuvre and in many cases, weighing in excess of 240kg.

Solving the Problem

Working with a leading UK airline, Semmmco designed an innovative single, multipurpose trailer to accommodate all the engineers' requirements that must travel between hangar, ramp and airport. Storage is provided for the wheel, trolley jack, tooling and wheel and brake changer dolly.

Wheel & Brake Service Trailer - Semmmco Case Study

Case Study

In order for the vehicle to be suitable for towing, a light weight steel chassis and frame was used with non-slip flooring and secure fastenings to enable the transportation of the heavy equipment.

The trailers' gas strut assisted door lowers to the ground and acts as the loading ramp when open. This allows equipment such as the bulky and heavy wheels aircraft jack to be easily loaded and gives easy access for engineers.

An identification system was built in to categorise serviceable and unserviceable components and a tool box or tool shadow boards can be fitted to the trailer for easy location of tools and equipment. The idea was to create a set of multifunctional steps able to refuel the A380, B787 and current generation aircraft.

The Benefits

Every type of aircraft jack can be loaded using the improved trailer ramp design and accommodated in this single, next generation trailer, with its robust design enables it to move seamlessly between hangar and line.

The engineers' safety is addressed and damage to vehicles and tooling from unsecured equipment avoided.

The ability to visually identify the tools required for the job and have them ready to hand increases engineer productivity, providing cost improvements through time efficiencies. The shadow board ensures tools do not get mislaid as the components contained within the trailer are replaced.

By keeping serviceable components separate from those which are unserviceable it is possible to easily identify them and dispose of them appropriately thus further improving efficiency.

The result is safe and dedicated use of the wheel and brake pack changer enabling easy handling and manoeuvring of wheels, jacks and wheel dollies. The fact that only one piece of equipment is being used to complete the job means less airline ramp traffic.