

## **Mobile service – a best case study**

**Maximum availability of machines and equipment offers prime capacity utilisation and profitability. This goal can be best achieved using specially configured vehicles offering a sophisticated technical service – to the advantage of customers, equipment manufacturers and service companies.**

### **The Challenge**

Manufacturers and vendors of technical equipment are always looking for ways to differentiate themselves from their competitors. One of the most effective instruments of customer loyalty is to help customers improve the efficiency of their business.

Using equipment longer and more efficiently is one of the best ways to save costs while maintaining a high standard of quality. It is a well-known fact that there is a direct link between the length of service life and maintenance levels for equipment. An analysis of life cycle costs must include acquisition and operating costs and more particularly the direct and indirect costs for maintenance, preventative servicing and repair.

A significant economic factor for industrial equipment is that equipment should be permanently in use and create profit. Therefore companies are always endeavouring to minimise potential loss of operational hours through downtime or returns to the workshop. Processes and work flows for regular maintenance and servicing are ideally implemented if they do not impede operations. A well-tried solution is to transfer the service point directly to the customer or the location of the equipment. Service contracts guaranteeing a high degree of repair capacity on site help customers to minimise expensive downtimes. Unfortunately standard vehicles used for mobile services are not always suited to this requirement – improvements are needed.

### **Service vehicles - an analysis of the current situation**

The larger the equipment to be serviced or repaired, the more frequently the spare parts and tools carried in the vehicle reach their limits. The installed modules and auxiliary devices for heavy equipment such as construction machinery, construction vehicles, earth-moving machinery and demolition equipment, agricultural machines and hoisting platforms are often too heavy to be handled safely without using loading/hoisting devices. The limit of 25 kg for lifting without auxiliary devices as prescribed by the industrial accident insurance carriers in Germany require a vehicle loading crane when repairing hydraulic pumps, hydraulic cylinders, axles, engines or transmissions. However, very few vans used as service vehicles are equipped with such a crane. Mobile service for industrial equipment is too often limited to a diagnosis of the cause of the fault and documentation of the condition of wearing parts and damage to the defective equipment. Any necessary repair work performed

on site either directly or indirectly during the first visit by the service technician is limited in many cases to small repairs. For larger repairs or maintenance work vehicles and machines often have to be taken to a workshop or the service technician has to make several trips.

### **Solution**

If we take a look at the service vehicles used in other countries, in particular non-European countries, we will find that there are already very good solutions in operation for resolving the shortcomings identified above, some of which are in mass production. In the USA the so-called "utility bodies" have been in use for over 40 years. These can best be described as "vehicle superstructures for utility companies" and are a type of vehicle specially designed for the specific requirements of field service technicians. The vehicles unite a combination of requirements:

- The requirement for sufficiently safe loading space with simple, effective and ergonomic access. The superstructure has a number of fitted storage compartments with shelves, drawers, brackets for gas bottles, etc. for storing tools, spare parts and technical equipment required for maintenance work. These storage compartments are designed to be accessible from the outside. The service technician does not waste time climbing into and out of the vehicle to reach the equipment inside, he can immediately access everything; in the USA this aspect translates into lower insurance premiums for industrial accident insurance.
- The requirement for simple and safe access to storage space for large objects such as large components and auxiliary equipment, containers for lubricants or components for compressed air supply and welding work. In a standard van or box wagon large objects often block access to the inside and loading or unloading large parts normally requires bending down, a notorious cause of back injuries due to incorrect lifting. However, these utility vehicles have an open loading space for loading and unloading using a vehicle loading crane simply, safely and without significant limitations as to size.
- A loading / assembly aid: Many utility vehicles in the USA are equipped with telescopic cranes. These are not only used for loading (see above) but also act as effective assembly equipment. In contrast to knuckle boom cranes a telescopic crane has a straight vertical boom – ideal for positioning and supporting parts during assembly.
- The vehicles are often fitted with additional equipment for compressed air, welding and containers for waste oil and used oil filters.

A well thought-out solution: This "workshop on wheels" offers a technician almost everything he can find in a workshop. This ensures the necessary flexibility to carry out routine maintenance work so that potential problems can be identified before they actually occur. Repairs can often be carried out on site. Customers welcome this type

of service because it saves them valuable time, helps to raise the efficiency of employees and increases profitability by reducing downtime. In addition, it offers cost savings on transport to and from the workshop, drivers and downtime. The company can resume operations more quickly and can lessen the risk of missing possible orders through extended downtimes.

But service companies can also profit directly from this service concept: Since customers enjoy significant cost advantages, higher prices for this "full service" using utility vehicles are quite acceptable. Service companies can often extend their range of services and combine additional maintenance work with repair work. Combining diagnosis and servicing in one person give a service company greater flexibility in their work flows and workshops can concentrate on higher value work that genuinely cannot be done "in the field".

### **A long way to Europe**

Transferring products to new markets is a long process. The superstructure manufacturer ELITE Truck Bodies has taken on this challenge. The core team at ELITE Truck Bodies does not only combine specialist and technical know-how with practical experience from technology transfer projects, they can also draw on their long experience as an end customer and operator of service fleets of utility vehicles. Nevertheless, a project lasting 4 years was required to create a custom-designed, technically mature vehicle superstructure for the German and European market in a version ready for production.

At an early stage in the project it became clear that existing products even from the best, long-established manufacturers of utility bodies would require extensive remodelling for the European market – a complete new product development was the only answer. Prototypes were designed in three iterative development stages and presented to a selected specialist group. The core of project management concentrated on the explicit principle of including target customers, certification experts from TÜV, DEKRA and the industrial accident insurance carriers as well as experts from German manufacturers of commercial vehicles, beginning with the first sketches at the design table, and to incorporate their comments and suggestions as early as possible in product design.

### **The key to success**

The result was a product range of service vehicles in the weight category 5.0 – 26 tonnes. Whole vehicles can be configured for specific customer and application requirements using the following basic modules: Modular superstructures with storage compartments, electro-hydraulic and hydraulic cranes with varying capacity and range, freely configurable components for fluids, hydraulically operated compressors, welding equipment, auxiliary equipment and accessories. The superstructures utilise the strengths of the basic vehicle to the maximum and make use of commercially available modules from the factory – customers benefit doubly

from the resulting advantages: a rapid and hence inexpensive assembly of the superstructure and the resale value of the basic vehicle.

The gamble has paid off for ELITE Truck Bodies: After a long and expensive preparation phase the company is the first and currently the only manufacturer of utility vehicles with EU certification. First customers appreciate the fact that - in addition to technical consultations - a detailed process analysis and economic factors of their business are taken into account - to their benefit ... and the benefit of their customers.

## Photo material



The workshop with a motor underneath: Storage compartments for equipment and spare parts, loading devices for large parts, hydraulically operated compressors and welding equipment.



Best case study: Maintenance, diagnosis and repair on site