



CASE  
STUDY



## 1 | Challenge : **From defects to performance optimization**

**The world market leader in the production of airport vehicles wanted to optimise the performance of its batteries and turned to HOPPECKE.**

The customer's batteries had very low performance due to too frequent intermediate charges. Those responsible had often not adhered exactly to the operating instructions and, contrary to these, the batteries, none of which were equipped with electrolyte circulation, had often been temporarily charged during breaks. This initially led to acid stratification in many batteries, resulting in long-term performance losses. In some cases, batteries failed completely, resulting in high replacement costs. A situation that was neither sustainable nor acceptable in the long term.

In addition, the batteries had shorter service lives in winter than in summer - a full charge could not be

guaranteed every time, which also impaired performance. In addition, water topping up was carried out irregularly or not at all. The cells often dried out, causing battery failure.

HOPPECKE therefore had a lot to do to restore the operational capability of the vehicle fleet and maintain it in the long term.

The customer's main objective was to optimise the battery life per day and the service life of the batteries. He also wanted to receive a reminder in future to top up the water and carry out the necessary battery maintenance in order to prevent damage caused by neglect.

**Low battery performance**  
due to frequent intermediate charging

**Dried out cells**  
due to insufficient maintenance

**Low battery life**  
in winter

**No overview**  
over maintenance necessity



Clemens Roehnelt  
HOPPECKE Motive Power

"The solutions we offer guarantee great value for money compared to expensive batteries.

We are pleased to have been able to provide customer valuable advice."

**Better performance** through electrolyte circulation

**Continuous full charge** due to use of winter charging curve

**Water level indicator** facilitates regular maintenance

**Good price-performance ratio**

## 2 | Solution : **New charging system for improved processes**

**After analysing the situation and the problems, HOPPECKE was able to recommend the best products for the customer.**

By using HOPPECKE **trak | uplift** batteries with the built-in **trak | air** electrolyte circulation system, the problem of acid stratification in the battery could be prevented. The **trak | charger HF premium chargers** used for charging also help to optimise and gently charge each battery. By using these technologies, the batteries were better protected and were able to demonstrate demonstrably better performance.

The second problem was that the battery life was too short in winter. When lead-acid batteries are used outdoors in cold temperatures, the battery accepts the charging current less well than in summer. The solution is to extend the charging time or to add a winter charging characteristic. This ensures a real full charge in the pre-programmed time and improves the absorption of the charging current by increasing the charging voltage accordingly.

The third problem, irregular water refilling and the associated drying out of cells, was solved with the **trak | aquacheck** LED display. It enables the fill level to be read even from a distance and also indicates when maintenance is required. According to the customer, the signal is easy to see and reliably indicates when water needs to be topped up. The previous damage to the batteries has not occurred since the **trak | aquacheck** was installed. For the future, the use of an extended LED display is currently being discussed, which, thanks to an electrical signal output, automatically reports to the vehicle control system or the service centre when maintenance is required.

The customer particularly liked the price-performance ratio of the solution, as the products used make improper use of the batteries more difficult, which saves maintenance and repair costs in the long term.

### Key Benefits

- Charger is optimally adapted to the battery
- Electrolyte circulation prevents acid stratification
- Filling level can be read from distance
- Optimised battery charging time through the use of a winter charging curve
- Signal when maintenance is required

## 3 | Products :

- ▶ **Batteries:** **trak | uplift air**
- ▶ **Chargers:** **trak | charger HF premium**
- ▶ **Water level indicator:** **trak | aquacheck**



POWER FROM INNOVATION

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