APRIL 2020 ISSUE 2 VOLUME 25

ground handling
INTERNATIONAL

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FLIGHT ESSENTIALS
Exploring the world of the beltloader

ON THE RIGHT TRACK

Telematics, writes the Editor, has achieved maturity, with more and more GSE fleet managers appreciating its benefits.

The age in which we live is one that is data rich.

With this in mind, the growing adoption of telematics on the ramp is merely reinforcing that particular requirement. Once GSE is kitted out with the familiar black boxes users, those who are concerned about fleet monitoring in all its formats can download an array of information that will ultimately give them more control over their assets, both in terms of expenditure as well as operation. Knowing where a unit of GSE is at a given time in the environment of a large airport is of immeasurable comfort to the accountant; equally, utilising the GSE to the best of its ability from the logistical point of view will endear telematics to those involved in maintenance. There's also the monitoring of the driver, which can prove beneficial to a company. The facility, then, has much going for it – and now the sector is seeing its incorporation amongst leased and rented GSE, as well as with those actually manufacturing the original equipment.

Success in Spain

Last year saw telematics and fleet management software provider, Transpoco, work with Iberia to help the carrier achieve significant operational savings by implementing its advanced fleet management solution on the carrier's ground support equipment at numerous airports across the airline's Spanish network.

In the event, Transpoco was selected for a proof of concept in Madrid and Barcelona on up to 200 motorised assets. Impressed by the return on investment, Iberia then took the decision to fit the technology to the better part of 1,400 motorised assets across further stations throughout Spain. Citing efficiency and a curtailment of misuse, Iberia will benefit from the product's functionality that includes tracking and controlling of motorised equipment.

The system also has the potential to integrate with many other platforms within the organisation, including sharing data with airport authorities to update them with a live location of the Iberia fleet.

Ángel Marcos, Iberia's Chief Airport Services Officer, commented: "At Iberia we are constantly striving to find new ways of innovation, maximising efficiency and providing a punctual, safe and reliable service to our customers. By integrating the Transpoco fleet management software across multiple stations in Spain, we have helped to achieve this.

"The solution from Transpoco allows us to increase safety and performance on the ramp, and become more environmentally friendly while reducing operational costs," he continues.

"The Transpoco system and team have been very flexible and agile in reaching the business specifications of our requirements."

Smaller fry

It's not all about big assets, though: one longstanding challenge has been that of keeping track of containers, ULDs and dollies. The inability to gain the real-time status of a dolly, and whether it is empty or loaded, has created a lack of control over these assets. This, in turn, has caused a ripple effect, with negative impacts on GSE, manpower allocation and productivity, as well as associated costs. Recently, INFORM teamed up with Blumenbecker Technik to develop the industry's first solution that facilitates a vastly improved process of managing and maintaining dolly fleets.

By combining the information about dolly and ULD location, ground handlers are able to locate every ULD on the apron. Handlers thus have complete control over the degree of capacity utilisation of each dolly and therefore are able to efficiently use their fleet and reduce costs or the number of dollies.

The basic idea was to bring together

telematics and processes-derived information to erase blind spots on the apron. INFORM's real-time allocation solution manages the optimised allocation and assignment of ULDs and dollies to a loading or unloading task. It provides a full view of the process relating to where a ULD sits in the warehouse and to which location it will be transferred and made available. This means that INFORM's system reveals specific ULD information.

Blumenbecker's technology complements that application by introducing a next-generation tracking system that not only tracks the location of a dolly but also identifies whether a dolly is loaded or unloaded, and whether it is defective or intact. This is especially important in order to quickly feed empty dollies to the loading process. Sensors on the dolly detect whether one or even several containers are loaded on the platform. Already beta-tested at several airports, the solution facilitates location and status determination, even without direct transmission.

Part of the application involves a tracking module, which has a protective cover to shelter it against external damage from containers, luggage or bad weather conditions; this draws its energy from a solar unit. This solar-powered module is maintenance-free and eliminates the need for routine battery replacements, while also saving on personnel resources and supporting environmental sustainability goals.

In operation, the system transmits data via an energy-saving low power wide area network (LPWAN) or via 4G Cat M1 (GSM). It brings the advantage of reduced data transmission and the use of much more cost-effective BLE (Bluetooth low energy) tags for the majority of dollies. The other significant feature of this network technology is its ability to operate even when direct transmission fails.

"The solution from Transpoco allows us to increase safety and performance"

**Ángel Marcos**, Chief Airport Services Officer, Iberia

Because of the indoor location, any location can be reliably detected, even if a dolly is located in a building.

By identifying whether a dolly is loaded or unloaded, defective or intact, unnecessary empty runs or time-consuming searches are avoided, enabling tractor drivers to locate operational and empty dollies as quickly as possible. The tracking module can also be supplemented by a loading sensor that detects containers on the cargo trailers and continuously transmits the loading status to the airport's monitoring system. Additionally, a fault message can be sent with a simple push of a button on the module. This enables fast detection of defective equipment.

Real-time data provision

In combination with INFORM's real-time allocation solution, it is possible to take the information and deliver precise data regarding a ULD's status as to what time it was loaded in the warehouse, where the dolly (including the respective ULD) was parked and when it is ready for pick-up. In fact, by transmitting the dolly's status data in real time, ground handlers have complete control over their ULD as well. As soon as a ULD is placed on a dolly, the system knows which ULD has been loaded because the pick-up information has been delivered by INFORM's software. This provides full assurance as to which ULD is loaded on which specific dolly, and the exact location of both dolly and ULD on the apron at any given moment.

Through the tracking module or RFID, each dolly is uniquely identified, enabling individual object data to be called up. This transmitted data can be used to create an operating profile for each dolly. Considering that some dollies are loaded more than others, maintenance by a strict calendar date is not the most efficient method. The system can also evaluate mileage and create load profiles to assist targeted maintenance.
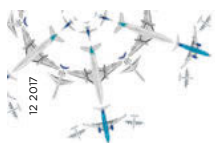
Ultimately, localisation alone cannot reduce a fleet size; however, when a ground handler knows that, for instance, 500 of its 4,000 dollies are always empty on parking positions, an informed decision can be made to reduce the fleet. The solution also provides the ability to identify defective dollies and promptly calculate an alternative scenario should an empty dolly be needed for immediate loading.

Today, with increasing air traffic and the heightened emphasis on airlines' on-time performance, the pressure on ground handlers to operate at peak efficiency has never been greater. Airports, too, are under high cost pressures. Aircraft handling must be fast and efficient. Advanced solutions help to promote greater control and to improve processes on the ground: Blumenbecker and INFORM have shown how pooling the strengths of both sides can help to maximise these goals.

A Latin American case study

Peru-headquartered Talma has been using the fleet management system designed by Quantum Aviation Solutions. Talma started its business back in 1992 and has grown to become one of the largest ground handling companies in the South American region; it is currently present in a number of key airports spread over Peru, Mexico, Ecuador and Colombia.

Four years ago Talma selected Quantum Aviation Solutions as a partner for the implementation of a fleet management product in Lima, Peru. Today the Quantum telematics system is installed at four stations and embraces over 500 units of GSE.

With this installation Talma was able to address the key operational challenges that it faced before going live with the Quantum system. At all times it has a complete view of the full fleet; data collected from the GSE in real time provides information on capacity, availability, usage and billable workhours. The system became essential for Talma if it was to deliver an accurate and timely service to its airline customers. With configurable alerts for problem areas (such as broken down vehicles, low fuel situations, idling engine run times or mechanical problems), Talma has been able to address exceptions immediately before they have become an operational issue. Moreover, the time and people required for day-to-day planning were significantly reduced after the installation.

Incidents down

Through the system's access control, Talma can also control the correct certification

The ability of today's systems to update GSE status in real time is hugely beneficial
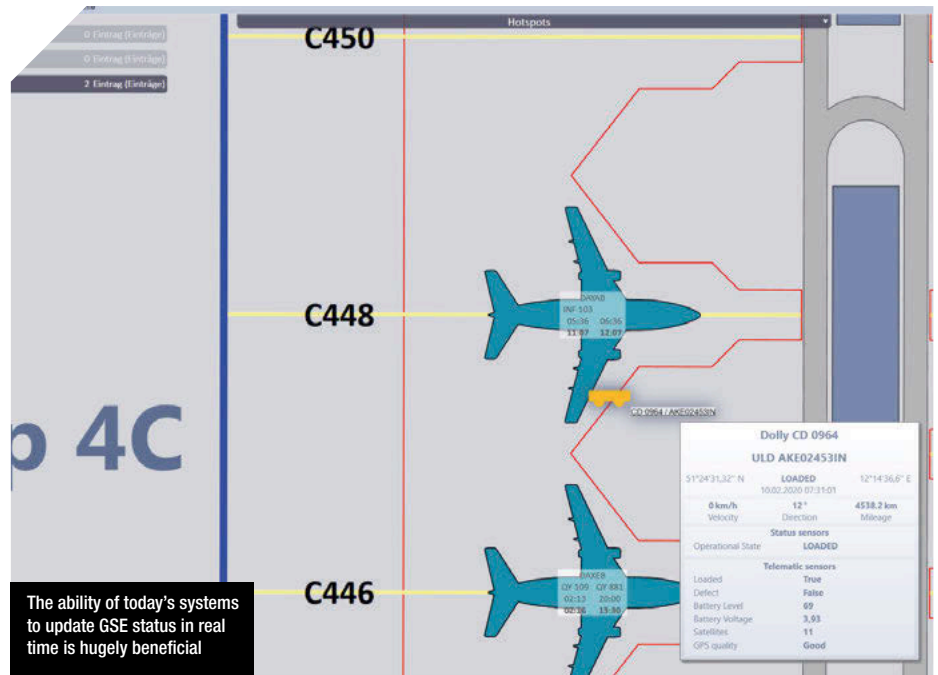
IN THE CAN

This February, Swissport announced that it would be working with Unilode and Descartes to track and monitor ULDs using Bluetooth technology at its cargo warehouses. To that end, the cargo handling division would be equipping 115 cargo warehouses with tracking sensors during the course of 2020.

This technology is aimed at increasing the levels of transparency for Swissport customers using digitally tagged ULDs. Geolocation of ULDs enables real-time tracking and inventory control, allowing airlines and freight companies to plan the distribution of their vast ULD fleets more efficiently and cost effectively.

"Our co-operation with Unilode and Descartes and the introduction of global ULD tracking at our cargo warehouses create added-value for our customers and drive the digital transformation of the cargo supply chain and the industry," commented Hendrik Leyssens, Swissport's Vice President Global Operations - Cargo.

of a driver's licence. Incidents happening on the ramp or even outside the airport have actually been significantly reduced because of this application. Drivers are now undertaking training based on actual data collected over time with the system and are rewarded for good driving behaviour.

As for maintenance schedules, these are based on actual engine hours. Data about vehicle malfunctions and problem codes are collected in real time, providing the workshop with all the information to support the fleet more efficiently.

Talma has furthermore been experiencing

savings in OPEX and CAPEX. Items like reduction in fuel consumption, reduction of maintenance cycles and repair costs are major contributors to the measurable benefits. A reduction in fleet size has also reduced its capital expenditure. In addition to this, both safety and security issues have been addressed. The handler also cites many intangible benefits in connection with its operational efficiency that have resulted directly from the use of the Quantum system.

Based on these benefits, Talma continues its expansion to other stations. Today the system is also integrated with five back-end systems at Talma, including a flight information system and maintenance systems.

"Quantum is more than a GPS, more than a telematics system; Quantum is a fleet management system, providing us with significant savings and an increase in our profitability," states Juan Ferrúa, Operations Manager in Lima at Talma Peru and one of the main system users.

Alejandro Molina, Talma's Colombia-based Operations Director, adds: "Quantum has allowed us to maintain great benefits related to the optimisation of our equipment. Now we can accurately identify the quantity of GSE required for an operation, reduce our fuel consumption, optimise our refuelling process, reduce maintenance costs, analyse safety events and improve driver behaviour."

Quantum Aviation Solutions, with its global installations, has had a local presence in Latin America since 2014 and today it is considered the market leader for telematics solutions in that region. *ghi*