

CASE STUDY

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A Tough Solution for Efficient Engineers

Marshall Fleet Solutions transforms mechanics' workday using ADP Mobile Technician* software on Intel® technology-powered TETRAtab* C Series

One of Cambridge's great business successes, the Marshall Group, supports aerospace projects, military land systems, automotive, leasing and fleet management services around the world. Its Marshall Fleet Solutions (MFS) division is one of the UK's largest commercial vehicle fleet repair and maintenance organizations specializing in refrigeration units and tail lifts. It estimates that its 150 engineers, based around the country and managed through 15 regional service centers, provide 24-hour emergency breakdown cover and routine servicing, carrying out 80 percent of all jobs at the customer site or on the roadside. They respond to over 75,000 service requests per year. They're mobile by definition, and need their tools to keep up with them.



Marshall

"The Intel® technology-powered TETRAtab device is in the sweet spot we were looking for. It's not army-level rugged, as that would be unnecessary for us and expensive, but it's harder than a traditional device. It's as rugged as it needs to be, while staying cost effective for the business."

*Martin Heap
Training & Technical Support Executive
Marshall Fleet Solutions*

CHALLENGES

- **Consolidate hardware.** Provide mobile workers with access to all essential applications through one device
- **Stay connected.** Enable engineers to share data, wherever and whenever they need to
- **Upgrade capabilities.** Equip engineers with tools and functionality to enhance productivity and delight customers
- **User adoption.** Provide engineers with devices and software they will want to rather than have to use

SOLUTIONS

- **Rugged device.** TETRAtab C Series convertible notebook/tablet with 3G/GPRS connectivity is developed from Intel® Atom™ processor-based classmate PC
- **Enhanced application.** Core ADP Mobile Technician* software was redesigned to run on larger screens through a Web interface

TECHNOLOGY RESULTS

- **New features.** Camera and extended battery life make engineers more productive in the field
- **Connected working.** Regular connectivity is supported by caching to ensure data is captured and reported reliably, even if entered while offline
- **Increased automation.** Workflow administration and essential contract data sharing are all handled automatically, helping boost organizational efficiency
- **Large touchscreen.** Paperwork is reduced as customers can now sign a device's screen to confirm receipt of service and parts, automatically updating the system

BUSINESS VALUE

- **Faster service.** Clients receive job and billing details much faster, leading to happy customers and, according to Marshall's internal tests, 8 percent more hours billed in the first full month of use
- **Streamlined support.** According to Marshall's own results, the new devices are less expensive and simpler to maintain, helping reduce costs
- **Potential expansion.** The model can be replicated across the Marshall Group and to other customers



“We estimate that we’d spend the same on upkeep of the TETRAtabs over four years as we did for the PDAs over three years, which equates to a year’s saving for us. It’s great value.”

*Mary Wombwell
Software Support Consultant
Marshall Groups*

“Using ADP’s Mobile Technician application on the TETRAtab devices, within two months we had reduced our invoice queries by 20 percent and taken 10 days from our average debtor days.”

*Andrew Howells
Managing Director
Marshall Fleet Solutions*

“With the ADP Mobile Technician application running on the TETRAtab, now I can capture the customer’s signature as soon as the work is complete. I can leave site confident the job is done and billed, and my van stock is adjusted.”

*Service Engineer
Marshall Fleet Solutions*

Old devices slowing business

One of the Marshall mobile engineers’ most important resources is the software that helps them manage their daily tasks – from checking the day’s appointments, to tracking jobs and invoicing, and even recording parts used and ordering replacements. All of these workflow and administrative tasks are taken care of using the Mobile Technician application from ADP Dealer Services, which integrates seamlessly with Marshall’s Fleet Management System*, also from ADP. The engineers in the field and the central management office in Cambridge all depend on this application to maintain an efficient business and happy customers.

Unfortunately, the engineers were not getting the full value of this application because their devices were aging and inefficient. “They were using PDA devices, many of which were nearing end of life,” explains Martin Heap, training and technical support executive, Marshall Fleet Solutions. “They were prone to failure, which meant we were spending time and money on fixing them while engineers had to revert to paper-based processes. As a result, we were seeing a drop in efficiency and we couldn’t invoice as quickly as we’d have liked.”

In addition to the ADP Mobile Technician application, the engineers need to access a number of other programs, particularly the Thermo King* reporting, parts directory and ordering systems. As a franchisee of Thermo King refrigeration equipment, Marshall needs to ensure that it is able to accurately record and report on any work done on its products. Engineers can download data directly from faulty equipment to help determine the cause and resolve the issue, but not using the PDAs. As a result, each engineer also had a laptop to support these diagnostics. Not only was this inconvenient, but it also resulted in delays since, without mobile connectivity, the engineers would have to download the data at the customer site and then wait until they were back at their depot to submit it. Many of Marshall’s customers have strict service level agreements (SLAs) in place around the speed of response in the event of an emergency. Companies transporting highly sensitive and time-critical cargo that needs to be kept at a specific temperature — such as medicines, frozen food or livestock — cannot afford to wait while an engineer struggles with his technology. A more effective mobile device was essential.

The must-haves

“We needed a device that would run all our essential applications, have long battery life

and mobile connectivity to keep an engineer productive throughout a long shift, and be robust enough for a harsh working environment,” explains Heap. Engineers frequently need to use their devices on customer forecourts or at the side of the road, in all kinds of weather, so a delicate consumer-grade model would not do. With oil and grease omnipresent, the device also needed to be sealed to protect its internal parts.

Heap and his colleague, Mary Wombwell, software support consultant, Marshall Group, asked the engineers for their requirements as well. Top of the list were a larger screen and a full keyboard. “The PDA format is too small to view a lot of the detailed parts diagrams that we’d had on the laptop,” explains Heap, “so it was clear we needed something a bit larger. We wanted it to be easy to integrate with our applications and hassle-free for the engineers, so we were after a device running the Microsoft Windows operating system.”

Everything on one device

Marshall Fleet Solutions worked with its mobile service provider to understand the use case and all the operational and technical requirements it needed to address. Marshall then deployed the Intel Atom processor-based TETRAtab C Series rugged convertible tablet/notebook, based on the Intel® classmate PC. The TETRAtab offers a highly affordable robust form factor, with industry-leading performance to support a mix of demanding applications.

Marshall ran a trial of the device against a number of other options before making a final decision. “The TETRAtab was the only one that had unanimous approval from all our testers,” says Heap. Everyone approved of the device’s screen size and clarity, battery life, and Windows 7 Pro* support, while also appreciating its robust design. It’s in the sweet spot we were looking for. It’s not army-level rugged, as that would be unnecessary for us and expensive, but it’s hardier than a traditional device. It’s as rugged as it needs to be for our engineers, while staying cost-effective for the business.”

Convinced that the TETRAtab was the right device, Marshall equipped 140 engineers with their own devices, running ADP Mobile Technician software, all Thermo King programs, and email – bringing together all applications on one platform for the first time. Each device is equipped with a SIM card and connects to Marshall’s private network through a secure connection to enable data sharing. Having mobile connectivity means engineers

can send and receive up-to-date information while out in the field. Temporary caching within the ADP Mobile Technician application enables the programs to store updates when a connection is not available and then transmit it in chronological order when reception improves. Some essential content – such as parts diagrams – is stored locally on the device's solid-state drive so that it can be accessed quickly and reliably when an engineer is at a customer site.

New capabilities

The TETRAtab device brought with it a number of features new to the engineers, which they have already put to good use. "The built-in camera has been really useful," says Heap. "Our engineers can now take pictures of any damaged equipment to submit along with the job records or warranty claim, for example. As independent workers, they are all trained in making a health and safety assessment of any environment they are required to work in. If they deem it not to be safe, they can now take a photo to record why, and have the customer sign the record there and then on the integrated touchscreen to verify why the work couldn't be carried out." While the new devices have the nine-to-10-hour battery life to support a full shift, the engineers find it reassuring that the TETRAtab can be easily plugged into the cigarette lighter of their vans to charge if necessary. "They're often required to be on call, so they may have just finished a nine-hour shift and then be called out to an emergency, meaning they're on the road for up to 16 hours," says Heap. "In these instances, it's great to be able to give the device a boost on the way to the job."

Software and device working together

Marshall has had a close working relationship with ADP for a number of years and ADP was eager to ensure its customer could make the most of its application with the new devices. The original version of its application that Marshall had been using was built for a PDA platform but ADP saw the potential of a larger, more rugged model like the TETRAtab for a wide range of mobile workforces. "We have developed a new browser-based version of our software that will work more intuitively with the larger screen and that runs in HTML5," explains Andy Viner, fleet solutions product manager at ADP Dealer Services.

At the beginning of each day, the engineer downloads his list of appointments using the new ADP Mobile Technician application. When they arrive at a job, they can clock in, track the work done and parts used, down-

load the service sheet and any data from the equipment and record labor codes. When they're finished, they simply have the customer sign the device's touchscreen to confirm receipt of the job, and then they can send all the relevant documentation straight to the contract team in Cambridge to process and bill. If any urgent jobs come up at any point, the contact center team can send the nearest engineer an alert through the application.

Spare parts ordering and inventory are also handled automatically through the ADP solution. Each engineer holds a supply of common parts in their van, while regional depots supply replacements and extras when needed. The system automatically tracks which parts have been used by which engineer each day and automatically triggers the local depot to send out replacement parts so the vans remain fully equipped. The solution can also identify which engineer would be most appropriate to send to a given job, depending on the customer's need and what parts the engineer has in their van. Automating these processes saves the engineer from spending time checking through stock manually every day. If an engineer does ever need a part that isn't in the van, they can order it from the customer site and reserve it at the local depot to pick up later.

Working well

Heap and Wombwell's team at Marshall are projecting a strong return on investment from the new device fleet. "We estimate that we'd spend the same on upkeep of the TETRAtabs over four years as we did for the PDAs over three years, which equates to a year's saving for us," says Wombwell. "The device gives us exactly the level of ruggedness and all the other features we were looking for at a compelling price. It's great value."

Andrew Howells, managing director of Marshall Fleet Solutions adds: "Within two months we had reduced our invoice queries by 20 percent and taken 10 days from our average debtor days." The accounts team assessed its billing figures a month after full deployment had been completed and found that the number of hours billed had increased by 8 percent, with a more than 5 percent boost to billing efficiency. Meanwhile engineer productivity had gone up by 5 percent, Marshall Fleet Solutions calculations indicate that.

The quality of the engineers' work is enhanced by the cameras and the ability to download data straight from refrigeration units, which make the devices into powerful diagnostic as well as administrative tools. "With all this data at their fingertips, the engineers can

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*Service Engineer
Marshall Fleet Solutions*



Vehicle maintenance leader empowers mobile engineers to work smarter with Intel® technology-based rugged convertible devices

now submit it all to Thermo King for warranty claims more quickly too," says Heap. "This means we're better able to meet the requirement of submitting all warranty claims within 30 days."

Feedback from the field has been strong, especially among the engineers in the Didcot area. Their local depot recently closed, meaning the only way they have to share information with the Cambridge team is through their TETRAtab devices. They have commented on the easy-to-use features, screen size and long battery life, showing that the solution has boosted employee engagement and satisfaction as well as productivity. Engineers also appreciate the simplicity of having just one device to look after and use.

"Having my technical library, the ability to download kit, and a connection to the depot all in one place cuts down on trips back to the van when I'm halfway through a job," says one service engineer. "The best thing is that the device is light and portable enough to take right up to the job." Another engineer adds: "Now I can capture the customer's signature as soon as the work is complete. I can leave site confident the job is done and billed, and my van stock is adjusted."

If ever a user does have an issue with their device, Wombwell has found that the support effort involved in getting them up and running again is now much less painful. "Before, we'd have to phone them up and get them to tell us what they were seeing on the screen," she says. "If we couldn't talk them through fixing it, they'd have to ship it back to us to resolve, leaving them dependent on pen and paper in the meantime, and costing us time and money. Now, we can manage the devices remotely using RealVNC*, meaning we can resolve issues faster and leave the devices where they belong, with the workforce."

Great potential

"We see this project as providing the foundations for continued development and innovation," says Heap. "We're already thinking about what other functionality we could include to add more value for our engineers. For example, we may introduce instant messaging for everyone, and we're looking at starting regular virtual meetings for the regional principal engineers, which would be impossible to arrange physically."

Wombwell adds: "We're also looking at making the improvements to the operational side of the business benefit the commercial side. The contracts team in the Cambridge office need job information and service sheets as quickly as possible so they can not only invoice them, but also provide customers with a full audit trail. The almost real-time updates that we can now achieve through the TETRAtab platform mean we can deliver this, and this is a unique selling point for Marshall that our customers love. There's a competitive advantage here that we're keen to maximize."

By reducing the amount of paperwork, and its associated printing and postage, Marshall expects that it will also see a significant cost reduction for its business, while also being able to invoice more quickly after a job is finished. "Getting the customer to sign there and then when the work is done, and issuing the documentation and billing details promptly all help lessen the possibility of any dispute," explains Wombwell.

Wherever Marshall goes next with this solution, the journey is far from over. Heap concludes: "Marshall has always forged ahead with technological innovation compared to the rest of our industry. We're hearing of other service providers just deploying PDAs now. We did that years ago and we're now moving

Lessons learned

The pioneering project at Marshall Fleet Services has demonstrated how the combination of the TETRAtab rugged convertible tablet/notebook with innovative, Web-based ADP software can drive business benefits for a diverse range of users. "We've taken a device originally developed for law enforcement and made it the perfect option for mobile fleet engineers," comments Roger Marsden, managing director, TETRAtab. "With the flexibility to integrate other ADP software, like vehicle health checking, and device features like GPS, handwriting and voice recognition, it's possible to tailor the solution to any use case." Already, the team is talking to potential customers in areas as diverse as workshop-based automotive repair tracking in the UK and support for highly mobile engineers in remote areas of South Africa.

on to the next step. Having the support and expertise of Intel, TETRAtab and ADP Dealer Services behind us means we're well placed to keep leading the way."

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