MAXIMIZING DRIVER SAFETY
AND MOBILE WORKER PRODUCTIVITY
WITH CONNECTED VEHICLE SOLUTIONS

Mobility Insights from the Field

TOUGHBOOK®

OVERVIEW

An ergonomic and safe mobile office in vehicle is a critical necessity for many organizations with field workers. Most often a connected vehicle solution will be comprised of rugged computers, tablets or handheld devices, mounting hardware and a combination of job-specific technologies such as wireless routers, scanners, mobile printers, etc.

VDC Research predicts the vehicle-mounted rugged computer market (excluding forklift applications) will reach $628 million in 2019.

Many Toughbook customers, such as field service companies, utilities, trucking companies, and public safety agencies, frequently rely on the Panasonic ProServices team to assess and optimize their in-vehicle mobility solutions. Sonia Arnold, ProServices Territory Account Manager, along with a team of technical field engineers and certified installation partners, regularly conduct fleet audits and 'ride alongs' with field workers to evaluate and optimize their connected vehicle solutions. *Here Sonia shares the most common in-vehicle driver safety and mobile worker productivity concerns she's uncovered and how customers should tackle them.*

MOBILITY INSIGHTS FROM THE FIELD...

Sonia Arnold
Territory Account Manager

Over the years, I've had the privilege of riding along with Toughbook customers on the road in just about every condition – from field service technicians going out to save restaurant customers by repairing critical industrial kitchen equipment, to utility workers repairing a downed wire after a storm, to heavy equipment rental companies needing to keep their clients projects moving by ordering and delivering the correct earth movers to job sites. These hardworking men and women rely on our technology to get their job done without fail and are passionate about delivering the best service to their customers. However, sometimes this passion comes along with an entrepreneurial spirit.

Field workers sometimes employ a do-it-yourself (DIY) approach in an attempt to cut costs in setting up a mobile office in their trucks, vans or cars.

Unfortunately, such handiwork not only leads to decreased productivity, but more importantly, can cause serious safety concerns.

In conducting fleet audits and ride alongs over the years, our team has seen just about every form of "creative" mobile offices set up in vehicles – from uncertified and poorly installed docks, to a tangled mess of wires, even power inverter solutions used to cool drinks and charge wireless boosters at the same time!

Properly installed Panasonic Toughpad® FZ-N1 handheld tablet

The two most common in-vehicle scenarios we encounter in the field are:

1 ▶ **THE NO-INSTALLATION APPROACH**

2 ▶ **THE DIY (Do-it-Yourself) APPROACH**

Each type of set up, or lack thereof, results in increased risk of driver injury and decreased worker productivity.

Learn about these results and the solutions we often share with our customers.

1 ▸ THE NO-INSTALLATION APPROACH (AKA "THE TUMMY CRUNCH")

One of the most common vehicle set ups we see is the no-installation approach or what we've dubbed as the 'tummy crunch.'

In this scenario, workers prop their computer up against the steering wheel and their stomach to access job information and type in the driver's seat. When they are not using their computer, they simply place the device on the seat next to them. We have even seen technicians create a makeshift desk by placing a piece of plywood on the seat or in the middle console. This set up raises many productivity and safety red flags:

DRIVER INJURY: Unsecured computers (or plywood!) can go airborne with one sudden stop or accident causing major injury to the driver.

All mobile office components should be properly secured with crash tested and certified mounting hardware.

DISTRACTED DRIVING: The lack of a locking mechanism may increase the likelihood of device use while driving, which can cause accidents.

A properly installed docking station, combined with software which locks the computer and/or applications from use while the car is in motion, is critical to maintaining driver safety.

LOST PRODUCTIVITY: As part of our ride along assessment, we often uncover missed opportunities to increase productivity. For example, we may recommend an external antenna to maintain wireless connectivity. When workers are traveling in and out of coverage and applications freeze up, we typically recommend wireless persistence software, to prevent data loss and increase productivity. Or when drivers are using their own GPS solutions, we may recommend intelligent routing software to increase efficiency on the road.

The most effective connected vehicle solutions will include integrated hardware, software and wireless solutions that account for the worker's physical environment, connectivity considerations and job-specific requirements.

WORKER JOB SATISFACTION: It gets really old, really fast for workers trying to balance a laptop on the steering wheel if they have a lot of data to input. **An awkward and confined mobile office can significantly impact worker satisfaction.**

Each vehicle's in-cab design should be analyzed to determine the most optimal computer and peripheral placement to improve job satisfaction. Field workers will enjoy and be more productive when there is a comfortable, easy to use, setup to input data on a laptop or tablet.

2 THE DIY APPROACH

In this scenario the driver or company will purchase off-the-shelf products or accessories to create an in-vehicle mobile office on their own.

For example, we've seen worker-supplied inverter solutions used to accommodate heavy loading of chargers and equipment such as phones, Toughbook laptops, GPS devices, external wireless boosters, and even heaters in the winter. It's also common to see tangled cables and extensive wiring loose or precariously hung. I recall one example of an uncertified (not crash tested) mount pedestal which was placed in a cup holder. The DIY type of setup causes further safety and productivity concerns:

POOR VEHICLE POWER MANAGEMENT: An improper power solution will result in poor battery management which can ultimately compromise technician's productivity. For example, if a technician leaves a laptop and other items in his vehicle hooked up to one of these DIY power solutions during a five-hour on-site customer repair, the vehicle battery can completely drain. The technician would be left stranded and unable to complete the remaining work orders that day. Plus, they would have to get a jump start to get to the next customer appointment.

Certified installers are trained to assess the optimal battery and shutdown timer configuration for in-vehicle components.

FIRE AND TRIP HAZARDS: The untrained assembly of the varied components can cause one or all of the devices to overheat. The haphazard twisting or collection of electrical wiring and cabling can cause further risk of fire.

Proper installation should include wire sheathing to mitigate fire risk and drivers tripping/ripping out loose cables.

Complexity of parts

Depending on the field worker's industry, a connected vehicle solution can include upwards of seven different components, plus all of the associated cables for each item:

1. Rugged computer or tablet
2. Power supplies
3. External wireless router
4. Mobile printer
5. Mounting brackets/pedestal or console mount equipment/docking station
6. External radio
7. Shutdown timer

ORDERING AND KITTING: I've seen customers who try to handle the ordering and kitting of their in vehicle solutions on their own to cut costs. In the long run, this approach ends up causing delays in deployment and cost overruns due to incorrectly specified product, lead time issues on key components or failure to order a necessary item. It's important to keep in mind that ordering these parts can be just as complex as the installations themselves because multiple vendors are involved.

Opt for a single installation partner **– a one-stop-shop – who can create a single kit containing all of the hardware and installation instructions. This approach will not only streamline deployment, but will likely end up saving costs in the end.**

TROUBLESHOOTING: The complexity of these installations can also impact troubleshooting when one or more components are down. It may be unclear to the driver which cable is connected to which component when all that's visible to him is a tangled mess. Downtime is an ugly word in the field, so the quicker they can resolve any technical issues, the quicker they can get back to work.

It's important to not only select a technology partner who can diagnose areas of concern, propose solutions to enhance worker productivity and mitigate safety risks, but who can also provide a single direct service hotline should issues arise in the field.

CONCLUSION

Whether you have dozens of cars or hundreds of vans, the number one lesson learned from assessing and recommending Toughbook in-vehicle solutions is the importance of conducting a two or three vehicle pilot program.

*Properly installed Panasonic Toughbook® 20
2-in-1 detachable laptop*

The pilot will ensure the proper selection of the individual mobile office components and collect valuable driver feedback, prior to the larger rollout.

Don't skip out on a pilot as that may determine the overall success of your connected vehicle solution!

PROSERVICES

Panasonic's nationwide team of certified installers leverage their extensive product specialization and industry knowledge to deliver meticulous and timely service. With years of experience and thousands of deployments under their belt, our certified technicians can help build innovative ways to implement and use our products as part of an overall robust, supportable, serviceable solution.

If you're considering a connected vehicle solution or need to optimize your mobile worker productivity, please contact Panasonic.

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