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The Complete Guide to Mobile Video Solutions for the Rail Industry

Mobile video solutions are becoming more commonplace in the rail industry. Conductors travel hundreds of miles per day, and companies need to ensure their engineers are following proper procedures, keeping them and others around them safe while proactively addressing safety matters with their locomotives.

What is a Mobile Video Solution?

Simply put, a mobile video solution is a set of cameras and DVRs (digital video recorders) implemented to record around moving objects. Forward-facing and in-cab cameras on a locomotive are examples of a mobile video solution. This differs from security cameras, which are stationary or only record a specific area.

Forward-facing Cameras Record the Journey

Forward-facing cameras, or dash cameras, record what the conductor sees. While locomotive conductors don't have to deal with traffic or pedestrians like a road vehicle would, it is helpful to capture the engineer's point of view. Should an incident occur, recording the weather conditions, track conditions or any obstructions and crossings help tell the whole story.

Additional Cameras Capture the Cab

Normally, side cameras would be placed on the outside of a vehicle capturing the drivers' blind spots. On a locomotive, outside side cameras are not necessary, so these cameras are placed inside and record what the engineers are doing in the cab.

A forward-facing camera only tells half of the story. Paired with in-cab cameras, you can see what the engineer was doing in the time that led up to an incident. Was it an avoidable incident, or was there a malfunction with the locomotive and out of the hands of the engineer?

Why Consider Mobile Video Solution?

There are several reasons for considering a mobile video solution for your locomotive fleet.

Safety

The biggest reason to implement a mobile video solution is to keep everyone safe, including engineers and those around the locomotives. According to The National Safety Council, railroad deaths totaled 893 in 2021, a 20% increase from the 2020 revised total of 744 and the highest since 2007. Nonfatal injuries totaled 5,781, a 4% increase from the 2020 revised total of 5,544. From 2020-21, fatalities at highway-rail crossings increased 21%, while fatalities involving other types of incidents increased 20%. The latter included 617 deaths (94%) attributed to trespassers. Eleven employees were killed while on duty, equal to the 2020 death toll.

Having forward-facing and in-cab cameras enhance a company's visibility into its operation, allowing for a proactive approach rather than a reactive approach to safety.

Exonerate Engineers

Operating a locomotive requires a lot of mental dexterity, and it can be difficult for engineers to remember an incident exactly how it happened.

Video solutions protect your engineers from false claims and save you money on unnecessary litigation costs.

Tell the Whole Story

Everyone wants to know the truth, and mobile video solutions provide that. With multiple camera angles and cameras focused on the track and engineers, you can get all the details should an incident occur.

Coach & Train Engineers

Recorded footage is great for training new employees or revisiting safety procedures with current employees. Ensure proper protocols are being followed and correct unsafe driver behavior with real-world lessons.

What Features Does a Mobile Video Solution Offer?

There are several features to consider when purchasing a mobile video solution.

Field of View

The field of view is an important factor in determining which camera to purchase. The bigger the field of view, the more activity that can be recorded. Most mobile video cameras provide anywhere from 110- to 170-degree field of view. Some specially designed cameras, like stop-arm cameras designed for school buses, feature 180° field of view.

A **forward-facing camera** captures conditions in front of the locomotive and two **in-cab dome cameras** that monitor all activity in the cab.

Continuous Recording

Pro-Vision's mobile video solutions ensure you won't miss a crucial detail. Continuous recording guarantees the whole journey is captured, including before the journey begins and after arriving at the destination.

Automatic Triggers

Automatically record key events without worrying about them being recorded over when a DVR runs out of space. Maneuvers such as a hard brake are automatically recorded and will remain on the DVR to be reviewed. Additionally, an event marker button can be placed in the cab so the engineer can manually mark events that don't fall under the automatic triggers.

Durability

Exterior cameras are exposed to harsh environments, including rain, snow, dirt and mud. Pro-Vision cameras are IP69K rated to perform in these conditions and feature 17.3G shock ratings to withstand rough, bumpy roads. The onboard DVRs also feature solid-state hard drives. Unlike hard disk drives, SSDs feature no moving parts or the mechanical failures that come with them, making them perfect for the rail industry.

Live Feeds

The mobile video solution can be configured so railroad management can view any of the camera feeds live. This allows management to troubleshoot problems and advise the engineers in real time when necessary.

Data Management

Pro-Vision offers an optional video management solution, CloudConnect, which is a cloud-based solution that simplifies the data management process and saves time. CloudConnect allows you to request video and share footage with individuals either inside or outside your organization while storing the data on Pro-Vision's cloud.
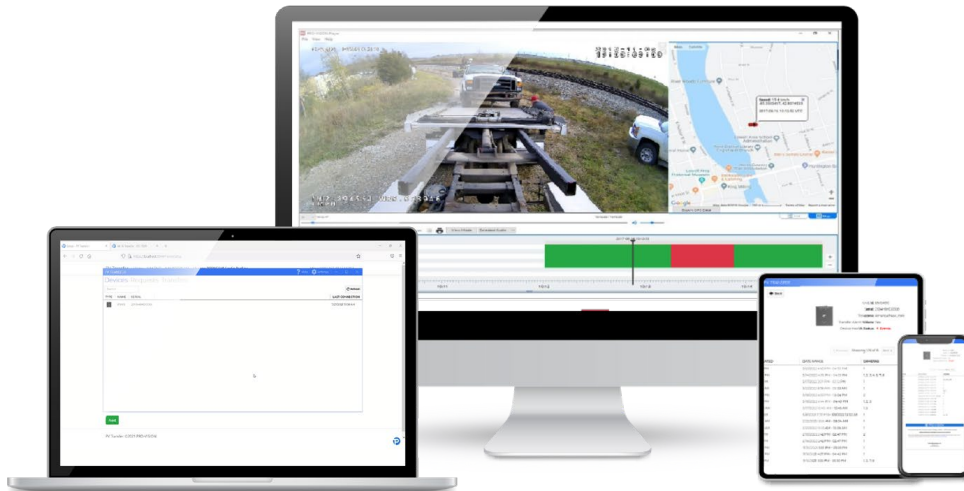
What Questions Should I Ask
When Considering a Mobile Video Solution?

Now that you've got a good understanding of what a mobile video solution is and why it would be beneficial to your organization, you've probably got a lot of questions.

Every organization's wants, needs and capabilities will be different, but every mobile video solution can be customized to work for you.

Some key questions to ask are:

- What type of warranty comes with the products?

- Can the solution be upgraded should you need to add more coverage later?

- Is extensive training needed to learn how to use the solution?

- What type of training is included?

- How do I keep software up to date?

- How do I access the video footage?

- What happens when the DVR runs out of space?

- Does it matter what operating system (Windows, Mac, etc.) I use when accessing videos?

- Are there any monthly costs associated with a mobile video solution?

- Is it a one-size-fits-all type of solution or is there a variety of options that are selected to fit my unique needs?

- Where and how exactly are the cameras going to be mounted on the vehicles and what will the views look like?

- Who is handling the installation & implementation process?

- Is the system integrable to other programs and ecosystems?

- Does the system utilize an open API architecture?
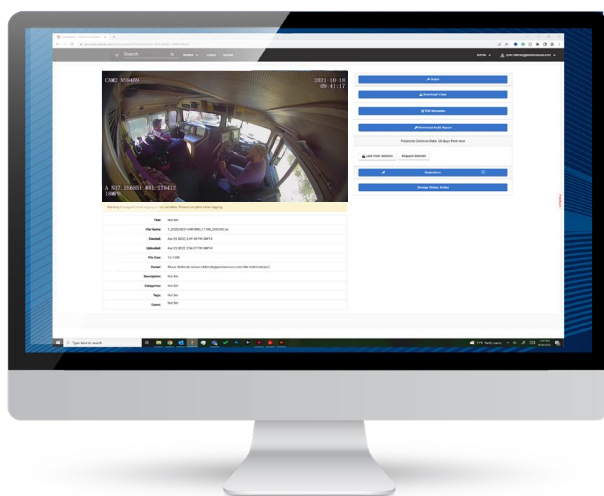
Warranty/Upgrade

Most Pro-Vision cameras and products come with a 5-year warranty, and more cameras/DVRs can easily be added should you decide you want to expand your coverage later.

Training/Software Updates

Extensive training is not needed to operate the solution, but should you need assistance, Pro-Vision's support team is just a phone call or email away. Your installation technician will configure your mobile video solution to your desired settings and answer any questions you have about using the system.

Pro-Vision's support page offers firmware updates to make sure your equipment is running smoothly.

Accessing Video Footage

To access video footage from Pro-Vision cameras and DVRs, you use the PV Player program to submit a video request. The footage is sorted by date and camera. You could also hook up an SD card to your computer if you don't want the footage to be on a network or the cloud.

DVR Out of Space

When there is no more free space left on the DVR, it begins recording over the earliest recorded footage. However, automatically triggered events or events marked with an event marker button will never be recorded over.

Operating System

Pro-Vision's equipment only works on Windows operating systems.

Monthly Fees

Should you decide you want to host your video footage on our cloud, there would be a monthly fee to store and keep that data secure. Otherwise, there are no other monthly fees.

Where Are Cameras Mounted?

Dash cams generally are mounted on the windshield inside the vehicle, side cameras generally are mounted on exterior body panel near the side view mirrors and rear cameras generally are mounted behind the vehicle, either on the bumper or on top of the vehicle. Of course, depending on the vehicle and your goals, the location of these mounts could change.
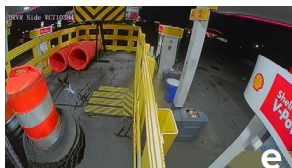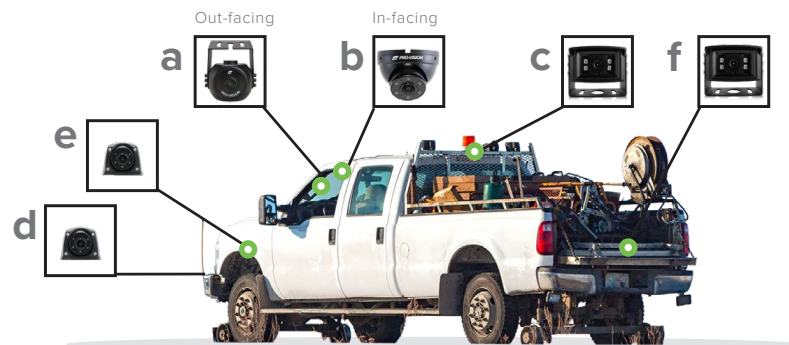
One-size-fits-all

Every mobile video solution can be customized to fit your needs. Even if you've got an out-of-the-box idea for how you want your company to utilize a mobile video solution, we will work with you to determine the best way to accomplish your goals.

Installation Process

Pro-Vision has a national team of installation experts that will set up your system and configure system settings so when installation is complete, you're ready to go.

Ecosystem Integration

Pro-Vision's system can be integrated with other programs and mobile video solutions. For example, if you have a dash camera but are looking to add side and rear cameras, Pro-Vision's hardware will work with your old hardware for a complete view of your vehicle.

API Utilization

If you were previously working with a telematics company to obtain vehicle tracking data, Pro-Vision's API (application programming interface) allows you to seamlessly integrate the mobile video solution into a telematics company's back-end dashboard. Do you have more questions that we haven't covered here or in our other industry-specific articles? Contact a sales representative to help get your questions answered and find a mobile video solution that fits you.

About Pro-Vision

Founded in 2003, Pro-Vision is a leading video technology solutions provider trusted by thousands of organizations in 58 countries. Pro-Vision solutions include vehicle video recording systems, body-worn cameras, data management and cloud-based storage solutions. Pro-Vision's transit, law enforcement and commercial partners utilize these solutions to enhance safety, increase productivity and protect critical assets.

No matter the size or purpose of your locomotive fleet, Pro-Vision has the scalable and versatile hardware solution to fit your needs.

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