



# Wyoming Office of Emergency Medical Services, Zebra\* team up to mitigate EMS data demands

Rugged tablets equip public health division with critical data collection platform

Wyoming’s Office of Emergency Medical Services (OEMS) & Trauma oversees several programs within the state’s Emergency Medical Services system. As part of the Wyoming Department of Health’s Public Health Division, the mission of OEMS is “to promote, protect and enhance the health of all Wyoming citizens.” Their ultimate goal is to lower the number of deaths that occur before patients reach hospitals. OEMS is constantly developing, implementing, and maintaining systems, vehicles, and technology that support this goal.

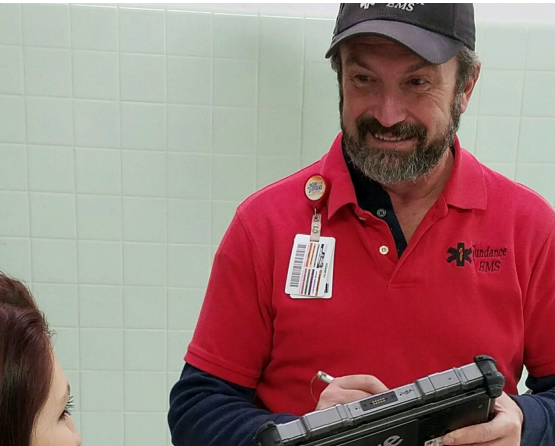
## Challenge

Establish Low-Maintenance, Highly Mobile Tech-Based Data System

The Licensing, Reporting & Data Analysis team at Wyoming’s Office of Emergency Medical Services & Trauma is the licensing authority for ambulances in Wyoming. It’s also responsible for collecting public health and system data for reporting information gathered by EMS providers during incident responses and patient care.

Unfortunately, the OEMS’ old system required ambulance personnel to take paper notes while in the field and in the ambulance. Someone else then transferred the notes into a desktop-based system, resulting in data entry delays and errors. It was taking months to submit and review reports, and some 70 piles of paper were being shuffled every month. Records management became very inefficient. This time-consuming process also needed to be changed to keep pace with the healthcare industry’s technology advances and better utilize the team’s resources and skills.

In 2008, under the direction of Jay Ostby, Licensing Officer, Reporting & Data Analyst for Wyoming’s Office of Emergency Medical Services & Trauma, the team began looking for a low maintenance, highly durable mobile solution that could enable the department’s full transition to a paperless environment. They were already in the process of developing a new electronic data recording system called Wyoming Ambulance Trip Reporting System, or WATRS. The goal was to find an integrated system that could provide an EMS component and trauma



### SUMMARY



#### Customer

Wyoming Department of Health  
Wyoming, USA

#### Industry

Public Safety – EMS; Government  
– State and Local

#### Challenge

Establish Low-Maintenance,  
Highly Mobile Tech-Based  
Data System

#### Solution

Zebra ultra-rugged tablets,  
ImageTrend, Inc. software used  
to stand up WATRS

#### Results

As soon as WATRS went live, the OEMS team immediately reduced the amount of time they spent recording incident response details.

\* Zebra acquired Xplore Technologies and all Xplore products in 2018.

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registry – which they did with ImageTrend’s Smart Client EMS System. They just needed a mobile computing platform that would be compatible with the new system and, ultimately, make WATRS effective across all workflows in the field and at the office. They recognized that their old notebook computers weren’t conducive to both Internet-based operation and wireless data transmission. Notebooks couldn’t be dropped in a bucket of bleach water for disinfection either.

The criteria was set: Any mobile computing device considered for the job must be rugged enough to withstand frequently harsh weather conditions as well as the rough handling of devices that would occur in the emergency services environment. It’s not uncommon for computers to fall in ambulances or come in contact with bodily fluids.

“The patient is priority; the computer is second,” explained Ostby. “Not only were we looking for an incredibly sturdy mobile solution, but one that could be easily disinfected to avoid cross-contamination. Not many laptops, notebooks, smartphones, or even tablets fit that description today, much less seven or eight years ago; but we weren’t in a position to compromise on our rugged or computing criteria.”

## Solution

### Zebra ultra-rugged tablets, ImageTrend, Inc. software used to stand up WATRS

Ostby researched a wide range of mobile computing options before determining that rugged tablets were the best mobile PC form factor for the job. After further evaluating several rugged tablet options, the Office of Emergency Medical Services and Trauma selected Zebra’s ultra-rugged tablet computers with dual mode sunlight readable (DMSR) display for a five unit, year-long exclusive pilot study.

Key members of Zebra’s technology team had flown to Wyoming to meet with the OEMS team in person, demonstrate their rugged tablets’ capabilities, and answer all of the OEMS team’s questions before implementation even began. Not only did this level of customer service impress Ostby personally, but he had been able to experience the true ruggedness of the Zebra tablets risk-free upfront. Zebra shared Ostby’s goals, and the rugged tablet manufacturer was accurate in their performance assessments of the tablet PC in various EMS environments. For example, “It’s important that batteries last at what they are advertised and we found that the Zebra battery life was superb. We were quite surprised and pleased at this,” explained Ostby.

“The Zebra rugged tablets, in combination with the ImageTrend Smart Client Internet-based software, made it significantly easier for ambulance personnel to enter data in real-time from the ambulance.”

**Jay Ostby**  
Licensing Officer,  
Wyoming’s Office of  
Emergency Medical  
Services & Trauma



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Ostby had a high degree of confidence that every Zebra ultra-rugged tablet used by the ambulance service would remain resistant to drops, vibrations, rain, snow, sunshine, extreme temperatures, disinfecting chemicals, and any bodily fluids for many years to come. After all, the Zebra ultra-rugged tablet could be completely submerged in bleach when needed to ensure an effective cleaning.

On one occasion, the durability of the Zebra tablets was clearly demonstrated in a real-life “training accident.” Ostby was showing EMS technicians how to clean and disinfect the rugged tablets and dropped one into a bucket to showcase their resistance to fluid penetration and contamination. Not only did the tablet handle being submerged in water, it actually broke the bucket it was dropped into. This resulted in quite a mess and many “I’m sorry about that” statements. In a separate instance, Ostby received an Zebra ultra-rugged tablet in his office that needed to be cleaned up. It looked like the ambulance personnel had “hammered in nails with it,” but the tablet still worked. Ostby likes to tell people that you can play Solitaire underwater on Zebra’s ultra-rugged tablets with no issues.

But the Zebra-based solution was not chosen strictly for its tolerance of rough handling. Ostby was also confident that the Zebra’s tablet technologies offered the right combination of processing power, storage capacity, connectivity, and data capture tools to support a quick rollout of WATRS and allow for easy and frequent expansion of the electronic records system as new privacy and interoperability standards dictated. Indeed they did. There was a 100 percent positive acceptance rate of the paperless system among ambulance attendants during the first round of trials.

“The Zebra rugged tablets, in combination with the ImageTrend Smart Client Internet-based software, made it significantly easier for ambulance personnel to enter data in real-time from the ambulance, at the scene, and even once they returned to the hospital or office,” continued Ostby.

In fact, Wyoming’s OEMS experienced such an overwhelmingly positive return on investment for their Zebra rugged tablets that, after the pilot program was complete, they purchased another 180 Zebra rugged tablets over a period of five years. Today, nearly every ambulance in the state of Wyoming is equipped with an Zebra’s ultra-rugged tablet computers.

## Results

### Rugged tablets reduced the amount of time they spent recording incident response details

As soon as WATRS went live, the OEMS team immediately reduced the amount of time they spent recording incident response details. There was also an impressive improvement in the quality of data being entered into WATRS and a reduction in lost data. Ostby estimates that the Zebra ultra-rugged tablets still save about 40-50% of the time previously spent recording and tracking data. Report retrieval times have also decreased since they are now being sent to necessary parties immediately upon completion.

OEMS also continues to benefit greatly from the longterm stability that Zebra’s rugged tablet quality and customer service have provided to their team. Over the years, OEMS has had only one unit that has failed after 6½ years of being in service. When support

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or repairs are needed, Zebra is quick to provide technical support and set up repairs. However, Ostby noted that the low number of repairs is very impressive given the extensive level of wear and tear the units experience and the amount of abuse they've been forced to withstand over the years. Some rugged tablets have been actively used since 2008. Repairs have mainly been broken screens from the tablet taking a hard, direct hit by an object.

"I could not have accomplished what we have with WATRS without the consistent and expert support of Kim Witkofsky at CounterTrade Products, Inc., and Zebra's technology team," Ostby praised.

CounterTrade Products began managing the relationship between the Wyoming's OEMS and Zebra in 2010.

"It didn't matter if it was a \$300 order or a \$50,000 order, Witkofsky and CounterTrade Products have delivered consistently high quality customer service since they partnered with Zebra to support our OEMS team," Ostby praised. "They take care of the little guy."

## What's Next

Wyoming's Office of Emergency Medical Services and Trauma will continue using Zebra tablets for the foreseeable future. They will continue to replace them with the next generation of Zebra rugged tablets as necessary and as funds become available.

For more information on Zebra Tablets and In-Vehicle solutions,  
visit [www.zebra.com/tablets](http://www.zebra.com/tablets)



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