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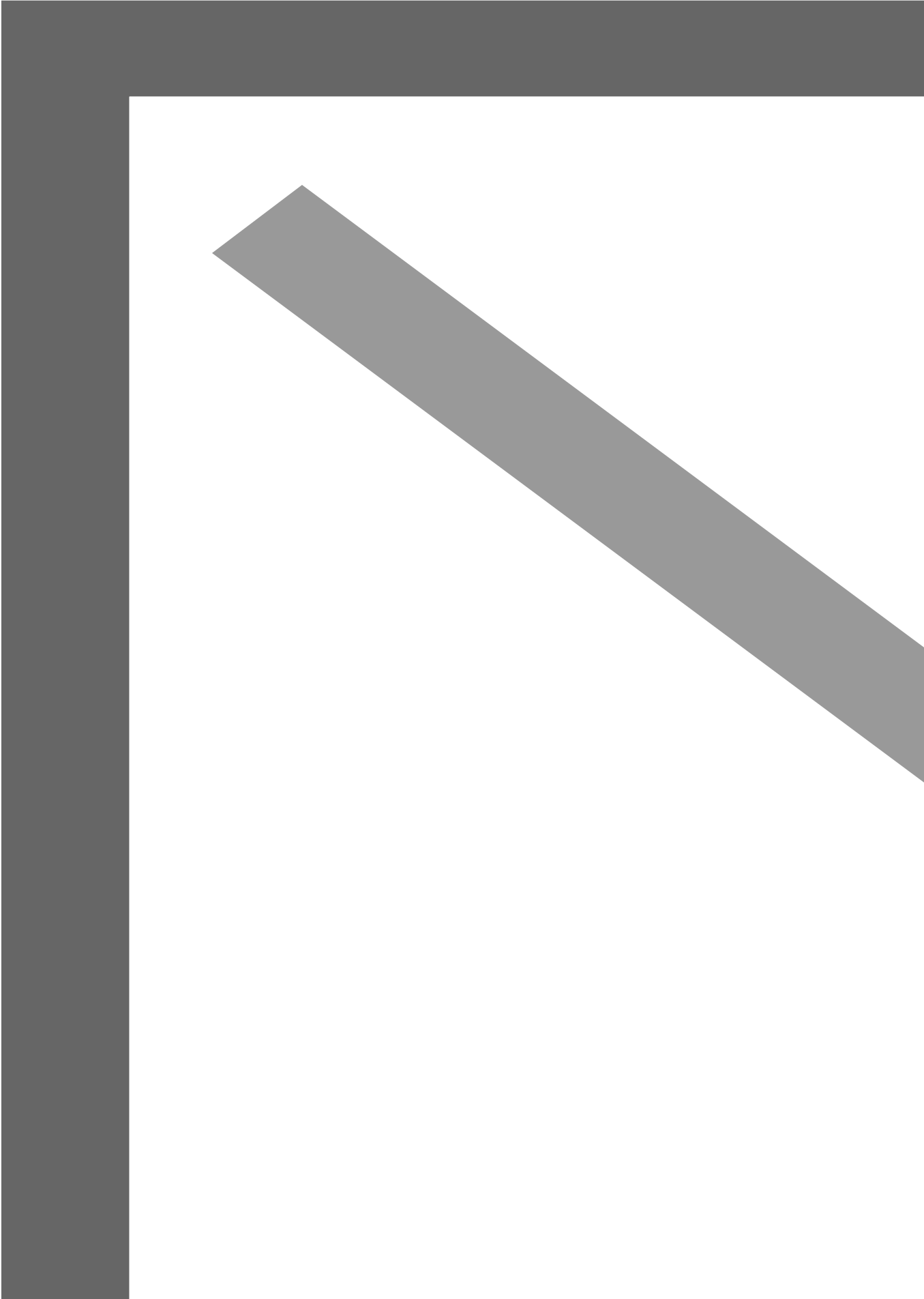
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*The Traction Power Substation team helps ensure the main electrical sources are powering the Trolley system (from L to R) Wayside Electromechanics Oscar Rivas and Moises Guardiola, Wayside Maintenance Supervisor Tony Gaskin, Training Supervisor Jeffery Love, Wayside Electromechanic Darryl Burris, and Wayside Assistant Lineman Perseo Cisnero; The Overhead Catenary team works the graveyard shift and gets the lines ready for the morning commute (from L to R) Wayside Electromechanic Joel Watson, Wayside Assistant Linemen Brian Weiber and Chris Moser, and Auxiliary Wayside Maintenance Supervisor Albert Gomez; Railway Signaling team spends a lot of time troubleshooting our 125 track switches and 400 power relay cases to keep the system safely operating on the railway (from L to R) Wayside Maintenance Supervisor Bret Vaughn and Wayside Electromechanic Daniel Erese; From L to R: Assistant Wayside Lineman Chris Moser, Assistant Wayside Superintendent Alex Pereyra and Overhead Catenary Shift Supervisor Mark Soberg examine catenary wires in the Rail Yard*

**If there was a badge of honor to give out at MTS, Wayside Maintenance would be the top contender.**

There is not an hour or a day that the 29 Wayside Maintenance employees are not working. These employees perform work that is diverse, complicated, and it demands high intelligence coupled with nerves of steel.

So what does this hard work entail? Considering the Trolley runs on electricity, there are thousands of electrical components along our 110 miles of track to make it all work. Wayside manages it all. And our trains would not run without them.

“Everything we do is highly technical,” said Fred Byle, MTS Rail-Wayside Maintenance Superintendent.

“That’s what I like about it,” added Albert Gomez, Auxiliary Wayside Maintenance Supervisor, who’s been with MTS for three years. “It’s so diverse. We are always learning something.”

“There are so many special projects that we take on,” said Chris Moser, Wayside Assistant Lineman. “That’s what’s cool about it.”

The dedication and loyalty to the system is what makes MTS’ Wayside operation successful. “We don’t micro-manage,” added Byle. “Wayside employees are trustworthy. When they fill out papers that they did some work, you can be confident it was done.”

The work assignments are varied, and that’s the way Byle likes it. “One of the unique elements to MTS Wayside Maintenance is that our employees are cross-trained among the three primary disciplines – railway signaling, traction power substation and overhead catenary wire.”

“The dedication and loyalty to the system is what makes MTS’ Wayside operation successful.”

**Here's a breakdown of each discipline:**

**Railway Signaling : (First Shift – 7 a.m. to 3:30 p.m.)**

**Railway signaling is a system used to direct train traffic and keep trains clear of each other at all times.**

Trolley signaling is comprised of 384 signals, including highway grade crossing signals, route signals, speed signals and more.

There are also 125 track switches, 400 power relay cases and 87 highway grade crossings that keep the Railway Signaling shift busy day-in and day-out.

Employees on this shift need to work fast and find solutions even faster. One of the big responsibilities for this crew is troubleshooting any electrical issues in the relay cases. When signals and crossing gates are not working properly, MTS Trolley operators have to take extra caution, such as speed restrictions, when approaching intersections. This slows down service, on-time performance, and creates scheduling issues for connections at transit centers.

**Traction Power Substation: (Second Shift – 3 p.m. to 11:30 p.m.)**

**Traction Power Substations provide the main electrical source to the overhead catenary wires that power the Trolleys. MTS has 62 substations spanning all 53 miles of track, spaced approximately every mile.**

A lot of the work done by the Substation shift is cleaning. This is because of tracking – a bad word for the Wayside team. Tracking happens due to dust and debris. It can interrupt the flow of an electrical current over the surface of something. For MTS – this can mean power disruptions and no train movement.

Inside the substations, electromechanics inspect for a variety of things, including burnt wires, faulty fuses and other issues with electrical breakers that may affect the substation's performance. "You always have to keep an eye open for things like dust and other debris," said Moises Guardiola, MTS Wayside Lineman. "Our job is making sure the equipment is working well so that power can flow to the trains and people keep moving."

**Overhead Catenary: (Third Shift – 11:30 p.m. to 7:30 a.m.)**

**The Overhead Catenary crew is constantly working on short deadlines. There's a small 2-3-hour window of work (1-4 a.m.) where no trains are using our tracks. This is when these employees are repairing and replacing wires, bonding and much more.**

MTS has more than 245 miles of wires throughout the system. If you stretched it all out it would run from San Diego to Bakersfield. The Overhead Catenary team is in charge of maintaining all of it. The catenary system is made up of two overhead wires - the bottom contact wire and the top messenger wire.

The contact wire is needed to supply the electrical current to run the train. The current is collected through the train's pantograph, which presses against the underside of the contact wire as the train travels on its route. The top wire, called messenger wire, provides vertical physical support to the contact wire between structures and helps provide more electrical conductivity.

The most common repairs for the Overhead Catenary team is splicing wires when they get worn and replacing droppers – a device that provides physical support for the catenary wires. But don't mix common repairs with easy repairs.

This team works in the dark of night. Catenary wires are suspended overhead so they work in elevated bucket trucks. There's 600 volts of electrical currents in these wires. Every step is critical. A mistake could be deadly. "We have to be in sync with each other out there. Everyone has a job to do," said Mark Soberg, Overhead Catenary Wire shift supervisor.

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## **Training**

With these inherently tough jobs, safety is paramount. There's a rigorous education and training element for new hires and mandatory ongoing training courses for all 29 employees.

New hires have eight months of training on all three shifts to be appropriately cross-trained in all three disciplines. "We start with three weeks of classroom training to get them familiar with all the equipment, then they work on each shift for six weeks, then another three weeks of classroom training to reinforce what they've learned," said Jeff Love, MTS Wayside Maintenance Training Supervisor.

Simultaneously, each employee is required to complete a four-year electrical apprenticeship program at San Diego City College. "By the time they are finished with the apprenticeship program, they should be able to wire a house," said Byle.

In addition to the new hire training, each employee must be recertified once per year on each discipline.

"We can get on each other's nerves sometimes like brothers. But we really work well together to get the job done. The camaraderie is good," added Soberg.

The highly skilled employees that make up the Wayside Department are dedicated to the craft. The work is dangerous. It requires immense training, acumen and fortitude. But each morning when the trains pull out at 4 a.m., we should know that it's this group who made it happen.

### **• Fast Facts**

- 62 Traction Power Substations
- 87 Highway Grade Crossings
- 400 Relay Cases
- 384 Railway Signals

- 125 Power Track Switches
- 245 Miles of Catenary and Messenger Wire

**News Category:**

Trolley

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