

HERZOG

SMART MOVES
TO GO FURTHER, FASTER





THE POWER OF CULTURE AT HERZOG

Herzog is the only service provider to the rail industry in North America that builds, operates, and maintains transit and commuter rail systems. Herzog is also the only organization to welcome clients, partners, and employees on a **Journey to Excellence** when you join our professional family. Herzog's Journey to Excellence is a disciplined effort to define, communicate, and coach the beliefs and behaviors that have made Herzog successful.

Bill Herzog founded Herzog Contracting Corp. in 1969 as an innovative company known for getting the job done through specialized solutions. Bill's dream for Herzog is our mission: to build a perpetual Herzog that transcends each of us by passing from generation to generation.

To be a perpetual organization, we need to deliver Exceptional service and Elite results. This will only happen with focus and discipline. Every member of our professional family is a Builder, Promoter and Protector of our culture. Programs don't make organizations great; People make organizations great.

From providing safe and reliable rail transportation in California to constructing track and signal systems in Florida to distributing ballast in Montana and dozens of other projects across the continent – we take care of each other, and we deliver elite results. Welcome to the Journey.

Brad Lager
Chairman & CEO
Herzog Enterprises, Inc.



OUR SERVICES – Smart Moves To Go Further, Faster

Herzog's specialized rail equipment and innovative technology are tailor-made to achieve maximum efficiency, productivity, reliability, and cost objectives. Find them in action every day helping our partners make smart moves on and off the track.

Building Lasting Rail Partnerships *That Go the Distance*

Our Track Record

Our partners rely on us for innovative technology-based, turnkey services and solutions to support all aspects of their operations. Today Herzog is the only U.S. company that builds, operates, and maintains freight and passenger rail systems.

Herzog has remained focused on putting our broad understanding of rail systems into action to create comprehensive, custom solutions to fit every need. As railways look for every opportunity to increase efficiencies, the time for smart moves on the track has never been more urgent.

Our Commitment

Herzog's core beliefs, behaviors, and outcomes guide us on our Journey to Excellence. They are essential to operating our business and responding to the challenges of a highly competitive, constantly changing environment.

Our employees focus on the reality of 20 square feet. When we own our 20 Square Feet and engage in the beliefs and behaviors that help us deliver an exceptional customer experience, we produce positive outcomes and help reinforce a culture of excellence.

Our Resources

Herzog aggressively invests in resources – our workforce, facilities, equipment, and technology systems – to ensure elite levels of customer service, highly reliable performance, and a passion to drive industry advancements to help our partners achieve their objectives.

- Highly trained workforce of 2,500+
- Project and transit operations and maintenance offices across North America
- Multiple research & development teams
- Expansive equipment fleet, including 4,000+ maintenance-of-way railcars

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- Regional Office, Leduc, CAN
Geographic Information System Group, Cedar Rapids, IA
Railcar Repair Facility, Falls City, NE
Corporate Office, St. Joseph, MO
Operator/Equipment Dispatch Center, St. Joseph, MO
Railcar Repair Facility, St. Joseph, MO
Support Operations Center, Ft. Worth, TX
- Regional Offices ● Construction Project Offices ● Transit Properties

Today, Herzog is the only U.S. company that builds, operates, and maintains freight and passenger rail systems.

INSPECTION AND SURVEY

Herzog Survey Platform (HSP)

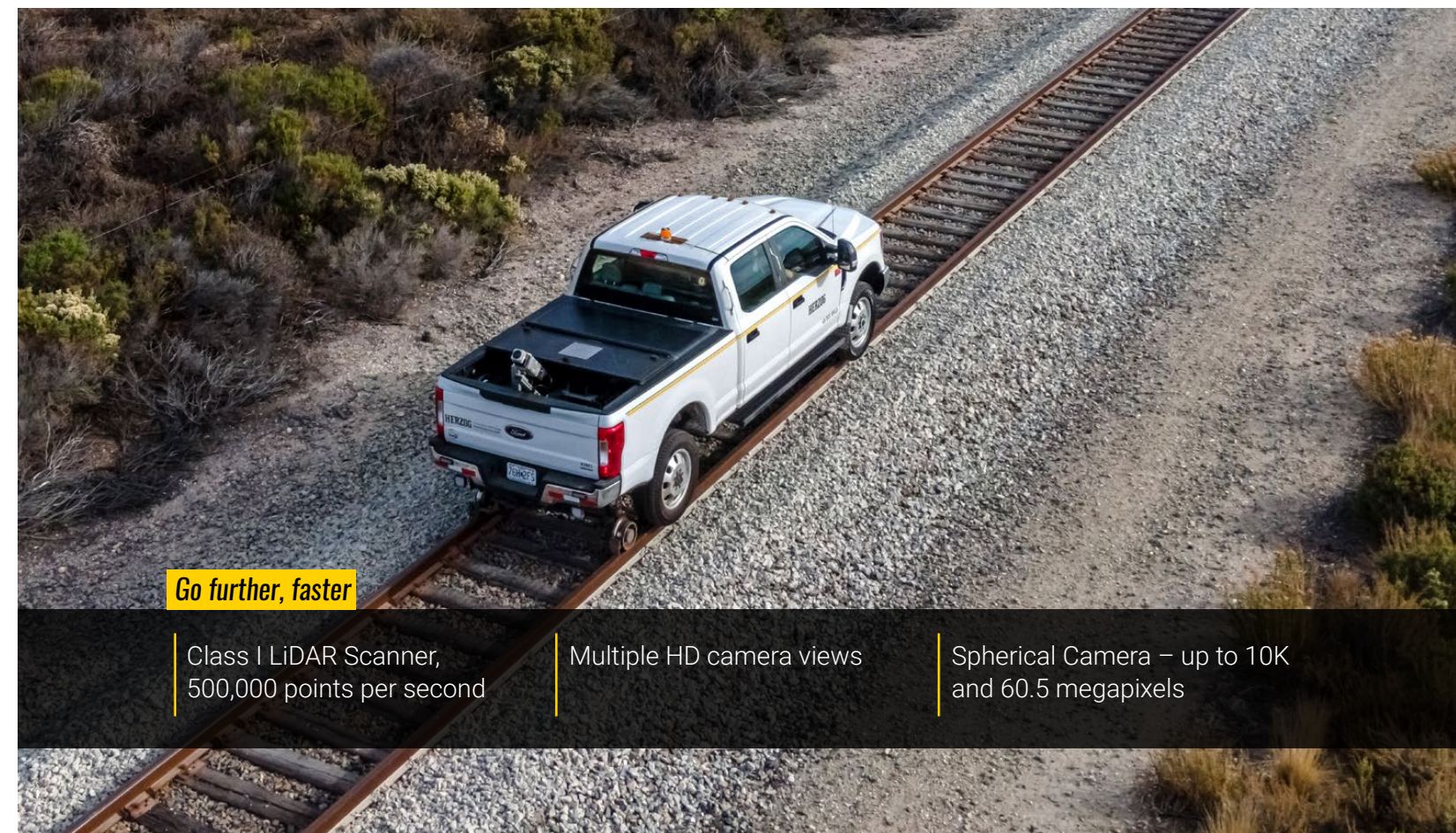
Collect, analyze and display information about the health of the track and other ROW assets utilizing a combination of LiDAR and imagery sensor technology.

Detailed, Accurate and Fast Data with a Single Survey Pass

1. The HSP scans the surface of the right-of-way area at track speed. This solution provides high-definition, highly accurate data while decreasing the need for track time.
2. A team of Herzog analysts process and evaluate the data to create a three-dimensional view of track and right-of-way assets.
3. Herzog produces customized deliverables that addresses the needs of the railroad customer. The information is stored in Herzog's data center to provide a historical record of your track assets.
4. Herzog provides the option to perform required follow-up remedial services, such as ballast unloading, according to the survey's specified quantities and GPS coordinates.

Plan and Execute Based on Precise Imagery and Analysis

- PTC Asset Identification
- Ballast Profile
- Incursion and Asset Reports
- Vegetation Management Analysis
- Asset Mapping
- Crossing Clearance
- Tie Inspection
- Track Centerline
- Traditional and Digital Track Charts



Go further, faster

Class I LiDAR Scanner,
500,000 points per second

Multiple HD camera views

Spherical Camera – up to 10K
and 60.5 megapixels

Ultrasonic Rail Testing

Identify track defects with minimal track time using this turnkey solution, featuring powerful ultrasonic technology, comprehensive data collection and analysis, and vehicles for every track environment.

Tap Into the Industry’s Fastest, Most-Reliable Solution to Identify Rail Defects

1. **Multiple Platform Options** – Vehicles come in multiple options to fit a range of track environments, from main lines and sidings, to crossings, yards, and transits

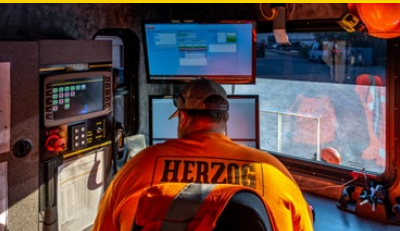
2. **Quick Mobilization** – Road-to-rail functionality means minimal traffic disruption on busy rail corridors.

3. **Multi-channel Ultrasonic Technology** – Equipped with the latest ultrasonic technology, this turnkey service flags all FRA-defined rail defects (those listed in CFR 49 213.113) as well as customer-defined anomalies.
4. **Highly Trained Personnel** – Expert ASNT-certified operators demonstrate responsiveness and expertise with every mile.

5. **Exceptional Service and Results** – Our fleet of 85+ units operating across North America deliver 98% uptime performance and an exceptional record of safety, quality and vehicle availability.

6. **Multiple Inspection Services in One Pass** – Additional geometry and joint bar testing is available in tandem with ultrasonic testing at an additional cost.

Reduce the Risk of Track Failures and Derailments with These Safe, Reliable Testing Options



Testing Tailored to Your Needs

Stop/Start Testing	Continuous Testing (CT)
Tests approximately 35 miles per day with average track conditions and access. As the rail testing vehicle moves down the track, a Chief Operator stops to manually inspect potential defects when a suspect indication appears. The operator identifies the type and location of defects within the inspection software and physically marks verified defects on the rail per customer requirements.	Tests approximately 60 to 100 miles of track a day with average track conditions and access. Testing vehicles travel without stopping to collect detailed ultrasonic data and location information of potential rail defects. Analysis is performed off-site, post collection. Verifiers are then deployed to visually inspect potential defects. CT eliminates the potential for operational interruptions and train delays associated with immediate inspections.

Rail Flaw Testing Vehicles to Fit Your Track Environment

Vehicle Type	Testing Type	Environment
 Hi-rail Freightliners	Stop/Start Continuous	Mainline track/Sidings
 Hi-rail one-ton pickups	Stop/Start Continuous	Mainline track/Sidings Urban settings Mountainous regions
 Hi-rail Utility Terrain Vehicles	Stop/Start	Tight clearance areas Rail yards Transit lines Industrial spurs
 Portable hand carts	Stop/Start	Rail inventory Crossovers Warehouses

Smart moves

98% Uptime Performance

Quality-driven, highly trained operators

30 years of rail flaw detection expertise

GPS Ballast Trains

Unload ballast with precision accuracy and minimal track time with this turnkey service featuring a detailed right-of-way assessment to ensure proper ballast placement.

An Essential Part of Any Preventive Track Maintenance Program

- 1. **Pre-Dump Survey** – Railroads provide Herzog with an existing ballast profile of the right-of-way that notes specifications and key priority areas. If needed, Herzog can perform detailed LiDAR surveys and develop the ballast profile with the Herzog Survey Platform (HSP).
- 2. **Track Profile Data** – Data with ballast quantities and GPS coordinates is loaded into Herzog patented software to create a detailed work plan.
- 3. **Precision Ballast Dump** – Ballast is unloaded onto track shoulders and centers at precise locations according to specified quantities.

Less Time and Maximum Benefit

- **Safe** – Fully automated service with no on-ground personnel and no risk of injury.
- **Productive** – A single, highly trained specialist is available 24/7 and in all weather conditions.
- **Accurate** – Precise quantity and location data ensures delivery to GPS targets.
- **Fast** – Minimal set-up time with high-speed unloading (up to 20mph) in one consist over significant distances.
- **Versatile** – Used for routine maintenance or to fill newly skeletonized track.
- **Reliable** – Delivery day or night in all terrains. Its inertial system ensures deliveries in mountainous areas where GPS outages occur.



Smart moves

98% uptime performance

Capable of consists up to 100 cars

Unloads 85% of ballast for Class 1 railroads

Automated Conveyor TrainSM (ACT)

Safely and accurately unload a high volume of ballast from a single consist – in any order and at multiple jobsites – saving valuable track time.

Fast and Accurate: A New Standard in Precision Ballast Placement

Herzog designed and built the ACT to address the need for a reliable solution to unload high volumes of aggregate. The ACT combines patented programming with highly productive train technology to rapidly unload materials in a 32-car consist as it moves along the track.

Highly Productive Material Delivery

- **Safe Operation** – Controlled by a single operator in a protected cab so there’s no exposure to injury, silica dust, or adverse weather.
- **Fast Mobilization** – Capability to instantly pause dumping and move to the next location with no additional setup time.

- **Adaptable for Multiple Materials/Jobsites** – Individual conveyors under each car provide the option to distribute a variety of ballast sizes (up to 5 inch minus) in one consist, at multiple job sites, in any order.
- **Unloads In Curves with No Downtime** – Unloads ballast in curves and S-curves up to 13° and hard-to-access areas, yards, mainline, and sidings.
- **Built to Plate C Specifications** – The positive lock mechanism allows for train movement on adjacent tracks while the 35-ft boom unloads to the field side.
- **Productive & Versatile** – Unloads up to 50 ft from track center when stockpiling. Its automated plow strikes off material 15 ft in front of the cab after new construction and washout recovery.



Go further, faster

One-person operation

Unload in curves up to 13 degrees

Quick mobilization

Multi-Purpose Machine® (MPM)

Safely and efficiently pick up and distribute materials on the right-of-way with this versatile, on-track workhorse.

An On-Track, Go-Getter That Gets the Job Done

Continually refined since its introduction in 1999, the MPM has never been better for demanding rail environments that require safety and speed when loading and unloading materials.

- Ballast and rip rap distribution
- Rail, tie, and OTM pickup and distribution
- Rail shearing
- Right-of-way ditching, profiling, and drainage
- Brush cutting and tree removal
- Snow removal and land clearing
- PTC, signals, and communications equipment installation

Performs Routine Maintenance or Emergency Tasks in All Track Terrains

- Class 1 and short line railroads
- Track construction jobsites
- Material and storage yards
- Quarries and cement plants
- Timber and lumber yards

Versatile, Quick-Change Attachments

- **Standard:** bucket, magnet, tie grapple, basket grapple
- **Add-on:** rotary ditcher, auger, brush cutter, rail shear, tree shear



Smart moves

27 feet - Excavator arm's reach from track center

79-cubic-yard hauling capacity per car

< 5 minutes to connect/disconnect attachments



CarTopper®

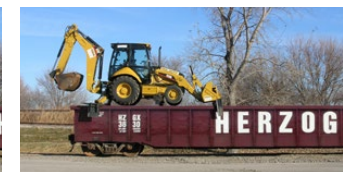
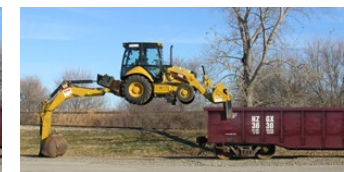
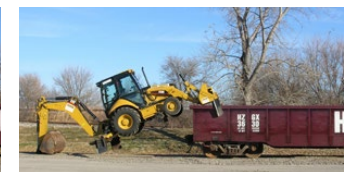
Load and unload materials within the right-of-way as the work train progresses on the track with the original material-handling machine that operates from on top of rail cars.

A Resourceful Performer from Start to Finish

1. **Jobsite Portability** – Flexibility to travel to multiple jobsites via rail car or trailer.
2. **Fast Mobilization** – Self mounts from the ground to an operational position on top of rail cars in less than 10 minutes. Dismounts quickly and without assistance.
3. **Highly Productive** – Performs tasks in tight work windows with a single operator or in combination with a second CarTopper.

The MVP of Any Work Train Lineup

- Safe with no need for additional on-ground personnel
- Fast material unloading with GPS precision
- Versatile to load/unload a range of materials, including OTM, ties, rip rap, sand, coal, and ballast
- Adaptable to traverse cars of various heights and lower into a rail car when traveling to avoid bridges or low-hanging obstructions
- Customized for the job, with the option of 36", 55" or 72" buckets or magnets



Go further, faster

Unload 1,200 crossties per hour

Unload 1/3 track mile of rail per hour

Unload 200 tons of aggregate per hour



Rail Unloading Machine (RUM)

Gain unparalleled advantages in rail delivery compared to conventional unloading with this innovative on-track machine.

Leverage a Revolutionary Rail Delivery Process

Herzog brought the future of rail unloading to North American freight railroads in 2005 when it engineered a revolutionary on-track machine called “the RUM” that changed rail delivery forever. This turnkey service eliminates injuries, labor-intensive processes and inefficiencies that come with rail delivery via conventional winch cars. The RUM’s safety, productivity, reliability, and cost-reduction advantages are a perfect fit for efficient operations.

Game-Changing Results

- 4 times more efficient
- No injuries, hands free
- Reduced labor
- Flexible scheduling & equipment sequencing and operations
- Improved reliability
- 15-year track record
- Ongoing R&D improvements

Herzog’s RUM: It’s as Simple as 1-2-3

1. Road-to-Rail

2. Herzog Operators

3. Precision Rail Placement



Smart moves

- 0 injuries, 0 on-ground personnel
- 240 minutes to unload a 50-pocket rail train on one/both sides
- 4 times more efficient than winch cars

Automated Tie-Down Car® (ATC)

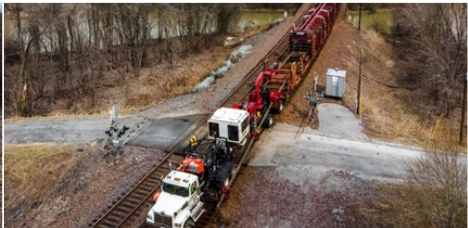
Secure CWR to most existing rail train configurations to transport rail safer, faster and with more power than conventional systems.

Cutting-edge Technology that Delivers from Start to Finish

The ATC works in tandem with the Rail Unloading Machine to automate the entire rail delivery process. The ACT secures CWR to most existing rail train configurations with more power and faster operation than conventional systems – all controlled remotely with no risk of injury.

Unlock these Operational Advantages:

- Eliminate exposure to virtually all hazards.
- Complete work in shorter windows.
- Choose a solution customized and engineered for multiple CWR train configurations.
- Gain maximum operations flexibility.
- Replace inefficient, manual processes with bottom-line savings.



Rail Loading at Plant

Rail in Transit

Rail Unloading at Project Site



Go further, faster

- 85,000 lbs. of hydraulic-clamp holding power
- 5 to 10 seconds to unclamp each rail for unloading
- 0 ground personnel and exposure to injuries

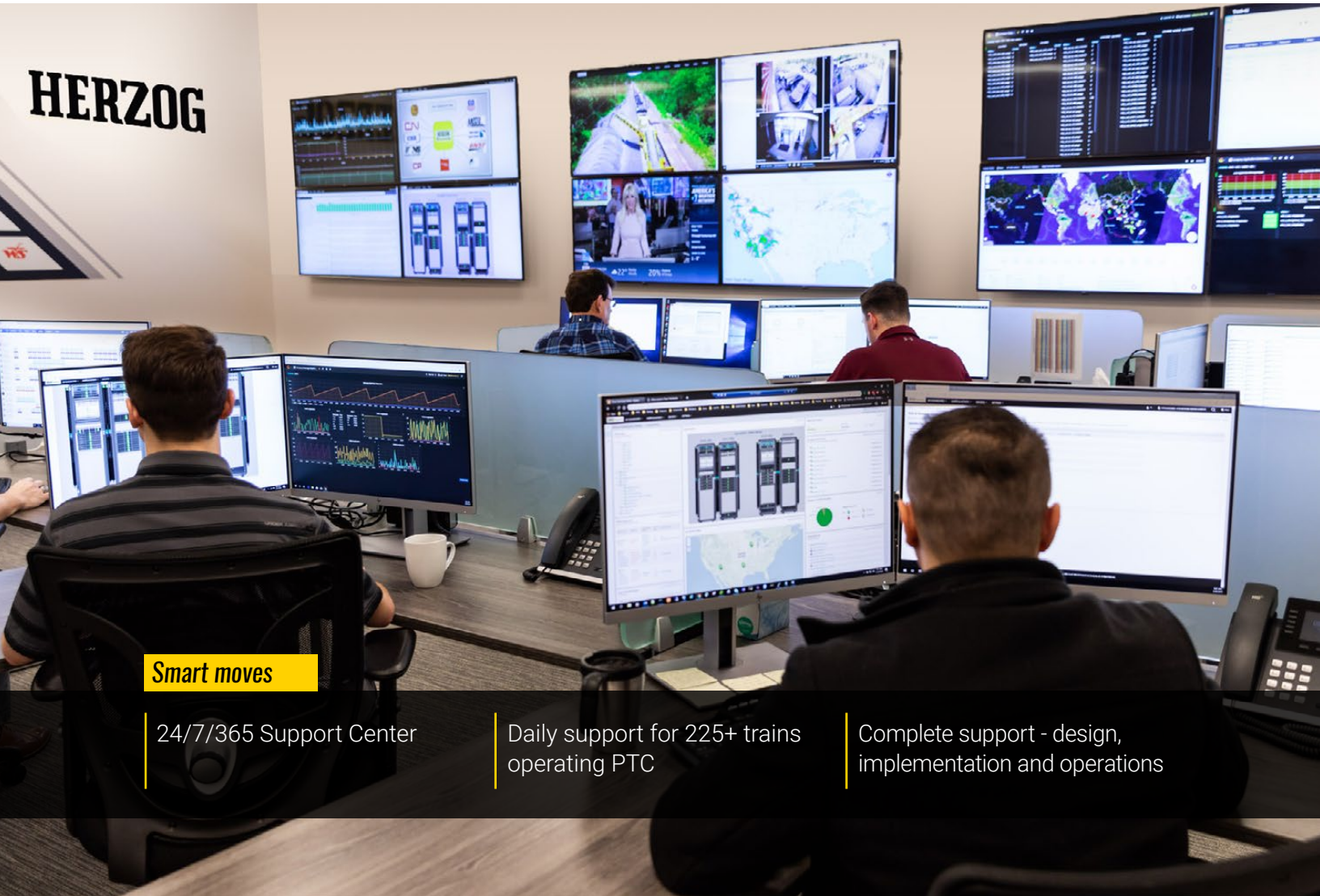
Systems Services

Optimize freight and commuter rail line operations with this invaluable combination of systems, featuring fully managed Positive Train Control (PTC) services, a 24/7 support operations center, and customized software solutions.

A Smart, Reliable and Secure Way To Extend Your Business

From its Support Operations Center in Ft. Worth, Texas, Herzog works in partnership with rail lines to provide a full range of information and technical support systems:

- **Fully Managed PTC Hosting** – The full complement of interoperable PTC-related services:
 - **Centralized Integration and PTC Hosting** – Turnkey systems solutions deliver back-office PTC functionality.
- **Dedicated PTC Specialists** – This team provides around-the-clock support to respond to queries, run diagnostic programs, isolate problems, and implement solutions.
- **Rapid, Organized Responses** – Specialists get out ahead of issues before they impact operations.
- **Customized Software** – Developers create and implement applications to programmatically manage data allowing railroads the opportunity to free up valuable resources.

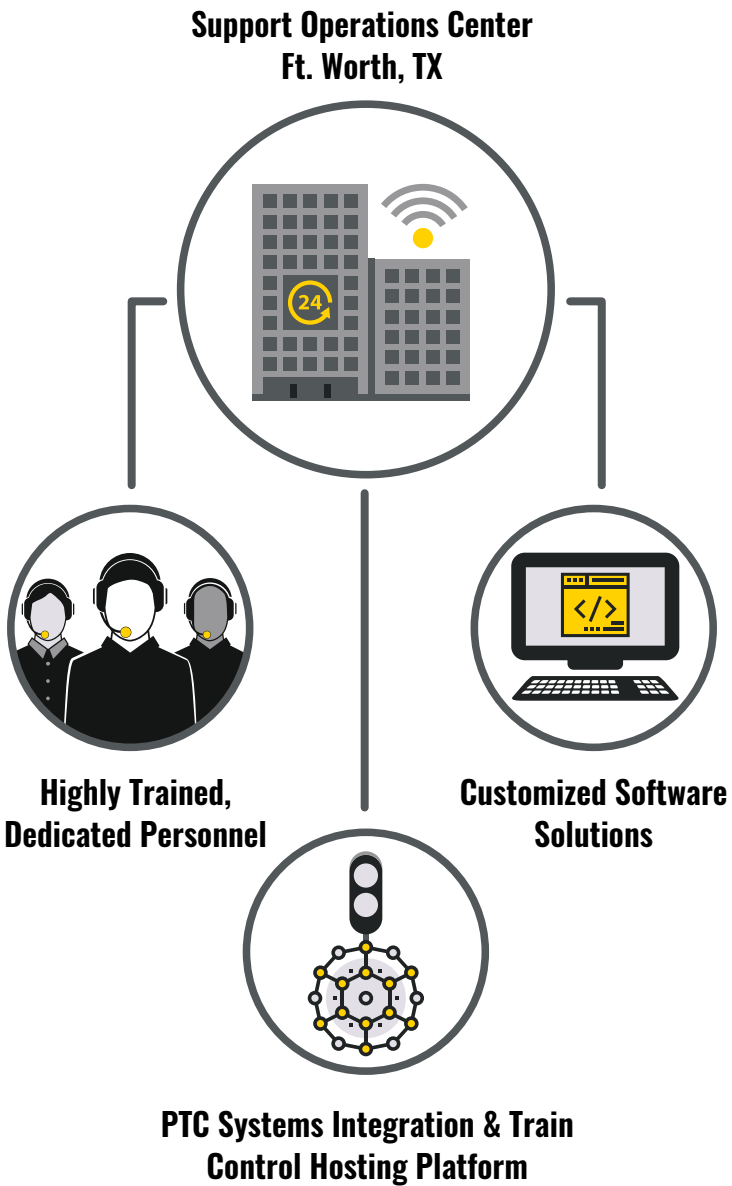


Smart moves

- 24/7/365 Support Center
- Daily support for 225+ trains operating PTC
- Complete support - design, implementation and operations

Let Herzog Support Your Data-Driven Operations Decisions in these Areas:

- PTC
- Emergencies
- Crossing Incidents
- Safety Operations
- Track & Signals MOW
- General Inquiries



PTC Systems Integration Services

- Full Project Life-Cycle Support
- Program Management
- Design Services
- Installation & Testing
- Lab Support
- Training Services
- Configuration Management
- FRA Reporting
- Railroad Expertise
- Implementation & Interoperability



HERZOG

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