PrecisionTrain™ BUILDER

Reduce Risk. Increase Safety.

Eliminate Guesswork

Add more science and safety to your consist management and vetting or derailment analysis.

U.S. Patent Pending

Overview

Your Data + PTB Processing = Your Results

Putting Science behind the Planning.

With safety at the forefront of railroad technological innovation, PS Technology has developed a tool to assimilate actual train information and produce highly detailed analysis of either historic or theoretical trains. The Precision Train Builder™ (PTB), is a suite of abilities that enables railroads to enhance safety using physically accurate analysis. This ability is leading to improvements in both accident analysis and train consist design.
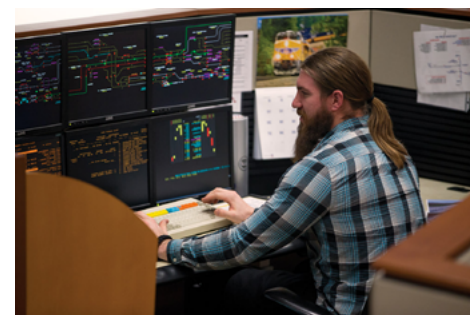
With PSR initiatives in full-play, the variety of train length, car weights, proliferation of cushioned couplers, car placement and train-builds for maximizing switching efficiencies enroute is creating new problems. These problems can include break-in-twos, derailments, stalls (loss of track adhesion for power) and other outcomes. All of these have significant safety, economic and operational concerns.

PTB Can Run on:
- Cloud
- On-Prem in your data center

Acquire PTB Analysis With:
- Enterprise License
- By-the-drink
- Analytics Consulting

With PSR driven longer manifest trains, service interruptions caused by break-in-twos or in-train force caused derailments have brought an even greater focus to prevention. PS Technology has created a way to leverage existing railroad train data into usable derailment analysis and consist comparisons.
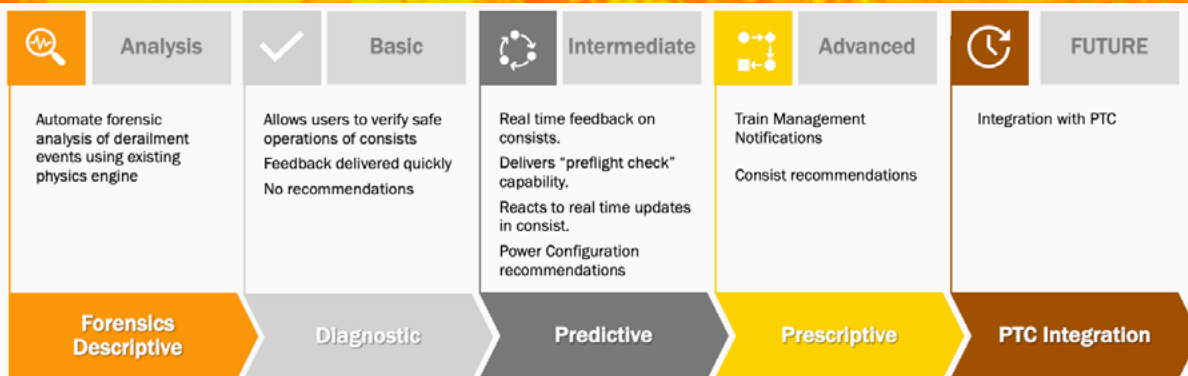
PrecisionTrain™ BUILDER

Made up of 3 modules to provide only what you need

E·R ANALYZER™
DIAGNOSTIC RECONSTRUCTION

A post-incident forensic tool for event and incident recreation.

PTB MONITOR™

Real-time monitoring during multiple points in a train's journey with simulation runs after each work event.

PTB VALIDATOR™

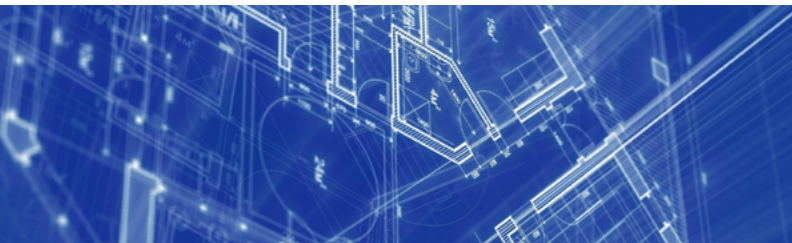Validator is used to test existing or future train placement rulesets.

Analysis	Basic	Intermediate	Advanced	FUTURE
Automate forensic analysis of derailment events using existing physics engine	Allows users to verify safe operations of consists

Feedback delivered quickly

No recommendations | Real time feedback on consists.

Delivers "preflight check" capability.

Reacts to real time updates in consist.

Power Configuration recommendations | Train Management Notifications

Consist recommendations | Integration with PTC |
| Forensics Descriptive | Diagnostic | Predictive | Prescriptive | PTC Integration |

E·R ANALYZER™ DIAGNOSTIC RECONSTRUCTION

PrecisionTrain™ BUILDER VALIDATOR

PrecisionTrain™ BUILDER MONITOR

PST
ENTERPRISE DETAILS DONE WELL

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PrecisionTrain™ BUILDER

Key Features and Benefits

"PTB captures what's been missing in train consist design: highly specific analysis, on-demand results, and the ability to customize output."

E·R ANALYZER™
DIAGNOSTIC RECONSTRUCTION

Features

- Replay a real train run and get feedback within minutes
- Detailed analytical output to aid in incident analysis
- Shareable output with easy to read graphics
- Flexible implementation. Enterprise integrated or simple upload & run ability

Benefits

- Reduction in incidents caused by human factors and train builds
- Reduce third party cost for scientific studies that takes months
- Immediate coaching for RTE and field personnel

PTB MONITOR™

Features

- Proactive alerting of train force imbalances for all active trains
  - » Customizable thresholds for alerting train management personnel (dispatchers, safety teams, field managers, etc.)
- Repository of historical train runs with detailed output analysis
- Integration with customer TMS systems
  - » Train Consist
  - » Route Creation
  - » UMLER car characteristics

Benefits

- Derailment, break-in-two, stall incident mitigation with alerts
  - » Increased velocity and reduced asset damage
- Data Mining and Historical Trend Analysis

PTB VALIDATOR™

Features

- Uses science to enhance train placement and manage in-train forces
- Feedback to yardmaster prior to train being built

Benefits

- Improved safety
- Increased velocity due to reduced incident related delays
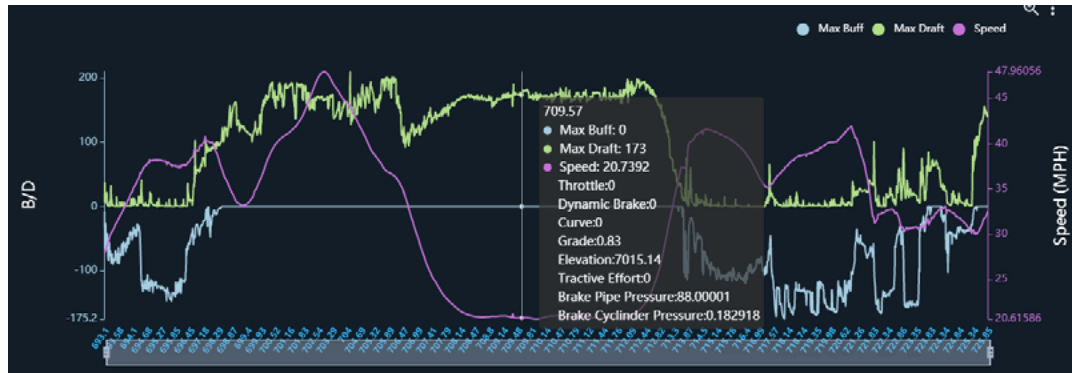- Better asset utilization

Analysis Dashboard

All reports can be customized by users to included the information or distances most important to them. Precision Train Builder has been designed to prevent needless information overload.

- **Run Summary**: Before getting into the details, users can easily get an overview of the incident being recreated. These areas include: Run Time, Max Speed, Fuel Burn, Miles Traveled, Train Weight and Train Length. This information can be customized and can include other items like power configuration, number of cushion couplers involved and more.

- **Route**: This displays a map of the area being analyzed and the route of the train involved.

- **Heat Map**: This visual heat map displays Buff and Draft information for every car in the train for every second of the run. The color red indicates cars Buffing (coming together) and the green shows the cars drafting (pulling against each other). Green or red is neither good nor bad, but this allows viewers to easily see when an abundance of one or the other is present.

- **Throttles**: This displays throttle notch locations for each locomotive in the consist.

- **Fuel Burn**: Estimate fuel burn across multiple consist iterations and speeds.

- **Track Profile**: Here, the elevation (slope) of the track is mapped against the curves in the route. With this co-located information, viewer can bet a better feel for the route and where increasing stress on consists can be expected.

- **Max Buff/Draft with Speed**: It is easy to pinpoint incidents using this graph and specifically see how far the in-train forces exceed equipment abilities or operational parameters.
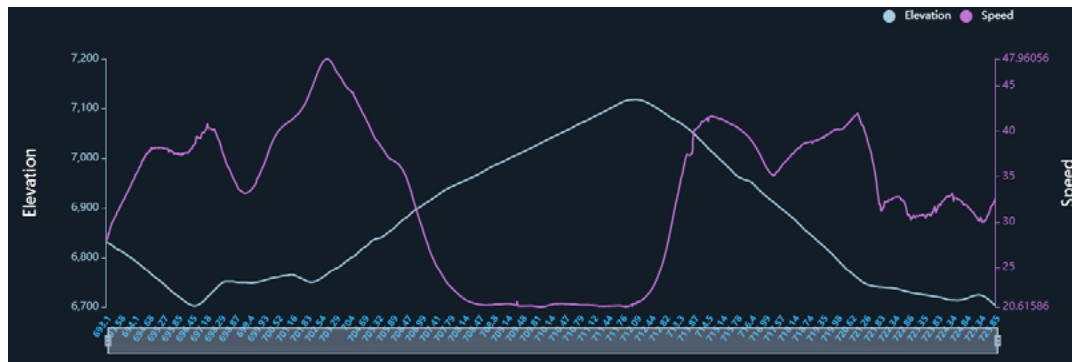
Users can compare theoretical consist designs over actual routes. Factors like weather, track adhesion and more are calculated.

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Buff/Draft with Speed – Compare the changes in in-train forces versus speed. Did train accelerate to fast causing high draft? Did train slow to quickly causing high buff?

Compare Speed vs Elevation or Fuel Burn to see the relationship between the two values.

Buff/draft vs Brake Pipe Pressure – Determine if any braking events caused your in train forces to spike.

What advantages do customizable reports give you?

PTB uses physical analysis to reveal things like in-train energy spikes that can cause over-stress on couplers and train behaviors. PTB then shows you where in the train, down to the exact car, where the problem was or is expected to be.

The combination of manifest trains, increasing train length and rolling terrain mean that unknown train handling and equipment behavior is becoming the norm.

Taking the guesswork out of where the problem occurred and then quantifiably identifying what happened lets railroads change operating practices and prevent future occurrences of the same event – but with certainty.

Common-sense Customization

The PTB dashboard is clear and easy to understand. Very little hands-on learning is required to master it and create meaningful reports for different stakeholders.

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PTB Dashboard

- Simple graphic information
- Understandable for non-specialists
- Standard and repeatable workflow
- Quickly get meaningful insights

Reports Available

- Speed
- Buff/draft
- Throttle
- Fuel Burn
- Tractive Effort
- Dynamic Brake
- Brake Pipe Pressure
- Brake Cylinder Pressure
- Elevation
- Curve
- Grade
- L/V

Want to see a demo?
Click Here.

Precisi⊕nTrain™
B U I L D E R

U.S. Patent Pending

PS Technology
248 Centennial Parkway
Suite 150
Louisville, CO 80027

800-766-1630

www.pstechnology.com

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