

# Amusement Park Ride Restraint Testing

## S-Type, Load Pin, and Wireless Telemetry System

Industry: Entertainment

### Summary

#### Customer Challenge

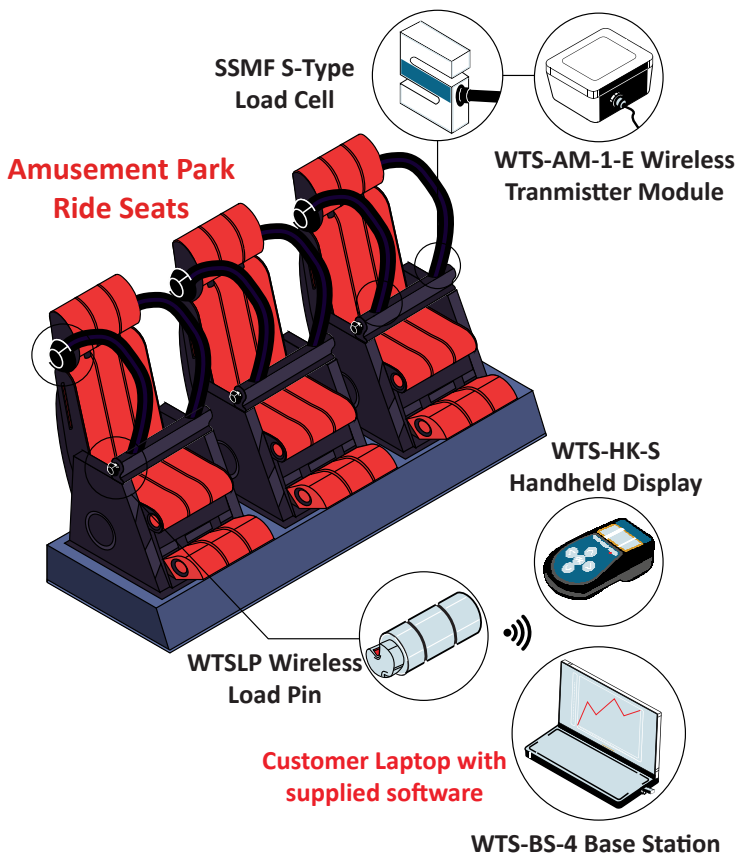
Amusement park rides rely on restraint systems to securely hold riders under rapidly changing and multi-directional forces. These systems must perform reliably across a wide range of rider sizes, seating configurations, and dynamic loading conditions. Engineers need accurate, real-world force data to validate restraint performance, ensure passenger safety, and meet strict industry regulations.

#### Interface Solution

Interface suggests integrating the SSMF Fatigue Rated S-Type Load Cells into the lap and shoulder bar assemblies to measure applied force during ride conditions. Results are wirelessly sent to the customer's PC when connected to the WTS-AM-1E Wireless Strain Bridge Transmitter Module. WTSLP Wireless Custom Stainless Steel Load Pins are used within pivot joints to monitor shear forces during ride motion. When connected to the WTS-BS-4 USB Industrial Base Station, results are wirelessly sent to the WTS-HK-S Next-Generation Wireless Handheld.

#### Results

Engineers gained precise insight into how restraint systems behave under rollercoaster operating conditions. This test enables improved restraint design, enhanced rider comfort, and increased confidence in safety performance.



### Materials

- WTSLP Wireless Custom Stainless Steel Load Pins
- SSMF Fatigue Rated S-Type Load Cells
- WTS-AM-1E Wireless Strain Bridge Transmitter Module
- WTS-BS-4 USB Industrial Base Station
- WTS-HK-S Next-Generation Wireless Handheld
- Customer PC or Laptop

### How It Works

1. SSMF Fatigue Rated S-Type Load Cells are installed within the lap bar and shoulder harness assemblies to measure applied restraint forces on riders. When connected to the WTS-AM-1E Wireless Strain Bridge Transmitter Module, results are wirelessly sent to the customer's PC or laptop for data to be logged and graphed.
2. WTSLP Wireless Custom Stainless Steel Load Pin are integrated into pivot joints to measure shear forces during engagement and locking cycles. As the amusement ride operates, sensors continuously capture force data.
3. When connected to the WTS-BS-4 USB Industrial Base Station, results are wirelessly sent to the WTS-HK-S Next-Generation Wireless Handheld.