



Introduction to the CPUC “Rail Academy”



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California Public Utilities Commission
Presentation to: League of California Cities
Public Works Officers Institute
April 3, 2019

The Railroad Commission of California

- **First Established in 1879**, a three person panel, plainly called the Railroad Commission, comprised of Southern Pacific Railroad operatives. A “No Nothing” commission, newspapers sarcastically dubbed it the “**SP Literary Club**”, due to rampant corruption. No decisions against the railroad were ever passed.
- The SP Political Bureau controlled both political parties in California through the 19th Century. Reformists from non-railroad labor and management began to increase in the late 1890’s and early 1900’s
- **FELA** was passed in **1908** to protect railroad employees.
- **39th Legislative Session of 1910** brought in a tough, new railroad regulation law in **1911**. The California Railroad Commission (CRC) was genuinely established. Regulation began in earnest.
- **In 1911**, the CRC increased from three to five members; gas, electricity and other utilities were added to its regulatory oversight. **1912** brought in more utility oversight.
- The **CRC** became the **PUC** in **1946**.
- A railroad safety oversight branch was then established within the PUC.



CPUC Regulatory Authority



Electricity



Telecommunications



Natural Gas



Water



Rail and Transportation





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Office of Rail Safety

















ORS Safety Concerns



- Public Safety along railroad and rail transit tracks
- Railroad and rail transit employee safety
- Trespassing
- Homeless encampments
- Unregulated safety conditions and risks
- Grade crossing - vehicle queueing
- Grade crossing maintenance
- Railroad & rail transit bridge conditions
- Tunnel conditions
- Looking beyond the regulations

Safety Solutions:

- Risk Management Status Reports (RMSR)
- Operation Lifesaver Presentations
- Increase railroad and rail transit surveillance and inspections



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Three Branches

- Railroad Operations and Safety Branch
- Rail Transit Safety Branch
- Rail Crossings and Engineering Branch
- Specialty Staff
 - Positive Train Control
 - Rail Bridges & Tunnels
 - Crude Oil and Ethanol Trains
 - High Speed Rail
 - Risk Assessment



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Railroad Operations and Safety Branch (ROSB)

Responsible for safety oversight of:

- Tracks and structures
- Operations
- Cars and locomotives
- Signals
- Hazardous materials



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Rail Transit Safety Branch (RTSB)

Responsible for safety oversight of:

- Tracks and structures
- Operations
- Transit vehicles
- Signals



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Rail Crossing and Engineering Branch (RCEB)

- Perform Safety Inspections and Accident Investigations
- Process new crossing applications
- Process GO 88-B applications to modify existing crossings
- Prioritize and recommend funding for Section 130 funds and Section 190 funds.
- Review and make recommendations on applications for Quiet Zones



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As a Public Works Official...

Do you:

- Have an effective communication bridge with the railroad or rail transit system running through your town?
- Deal with more than one railroad or rail transit official?
- Have an emergency response plan with railroad or rail transit entity?

Have you:

- Ever used ENS numbers posted at grade crossings?
- Established an annual meeting with rail officials?
- Had no response from rail officials regarding questions or complaints?

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Highway Rail Crossing Safety Issues

Problem Statement:

- Improving safety at railroad / rail transit grade crossings has challenges, one being to the need to coordinate rail crossing design and technological advancements with:
 - Highway / street design
 - Operating within constraints of stakeholder budgets
 - Obtaining cooperation among the various stakeholders.

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Highway Rail Crossing Safety Issues

Statistics for California Highway-Rail At-Grade Public Crossings:

- Highway-rail at-grade public crossings are the most deadly locations that the California Public Utilities Commission (CPUC) regulates.
- There were 114 vehicle-train accidents at California public highway-rail crossings in 2018, resulting in 8 deaths and 36 injuries.
- There were 60 pedestrian accidents at such crossings in 2018; resulting in 30 deaths and 24 injuries.

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Why so many?

- Distractions
- Loss of situational awareness
- Obliviousness



*May 2016 - Amtrak vs. farm truck in Madera, CA.
Photo Credit - ABC Channel 30 News – Fresno.*

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RCEB Role: Rail Crossings

- RCEB Mission: is to protect the public and rail employees by evaluating and recommending appropriate safety measures at rail crossings
- CPUC authorization is required for:
 - New at-grade and grade-separated rail crossings by filing an application with the Commission
 - Altering an existing rail crossing by filing a General Order 88-B application with the RCEB staff

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RCEB Role: Rail Crossings

- RCEB reviews all rail crossing collisions and provides safety improvement recommendations
 - Crossing warning devices, markings, channelization, chain of events, need for crossing re-evaluation, etc.

- RCEB Manages Rail Crossing Improvement Funding Programs
 - At-Grade Highway-Rail Crossing Improvements under Title 23 – Federal Code Section 130 Program
 - CA Grade Separations Program under the Streets and Highways Code Section 190
 - Crossing Maintenance Program under Public Utilities Code Section 1231.1



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RCEB Criteria

- Review rail crossing configuration and improve rail crossing safety
- Eliminate the rail crossing hazard through Crossing closure or grade separation
- Improve roadway design through Engineering: Roadway geometry, traffic control devices, pedestrian treatments, etc.
- Educate the public for rail crossing safety



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Diagnostic Reviews

- RCEB participates in field diagnostic reviews of crossing and recommends safety modifications
 - Representatives of all parties participate
 - Roadway Agency, Railroad, Rail Transit Agency, and CPUC
- RCEB Evaluates conditions at crossing to make determinations or recommendations concerning safety needs and warning devices.
- RCEB can protest a rail crossing application with the Commission if safety is compromised



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Railroad Crossings and Engineering Branch

- For more information visit the RCEB website at:
- <http://www.cpuc.ca.gov/crossings/>



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Solutions: Signs?

Railroad Crossing Signs and Signals



LOOK FOR and OBEY all railroad crossing signs and signals



Advance warning signs – a round, yellow sign with a black “RR” tells you that a highway-rail crossing is ahead--be prepared to stop.



Pavement markings – when you see the “RR” painted on the pavement, be prepared to stop.

STOP signs at railroad crossings – the same laws apply here as for any other intersection regulated by a **STOP** sign. You must come to a complete stop. If no trains are coming, you may proceed.

Crossbuck signs are like yield signs – You must **YIELD** to trains.

- Slow down and be prepared to stop when you see the crossbuck sign.
- A sign below the crossbuck indicates the number of tracks.



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Emergency Notification Sign





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Driver Responsibilities

It is the driver's responsibility to take appropriate actions at a HRGC:

- **Always** approach a HRGC being prepared to stop.
- **Never** drive through flashing warning signals without stopping first.
- **Stop** 15 feet from track at the stop bar white line.
- **Never** go around lowered warning gates or under warning gates that are descending.
- **Look** both ways before proceeding.
- **Simple** – right?



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All improvements are costly

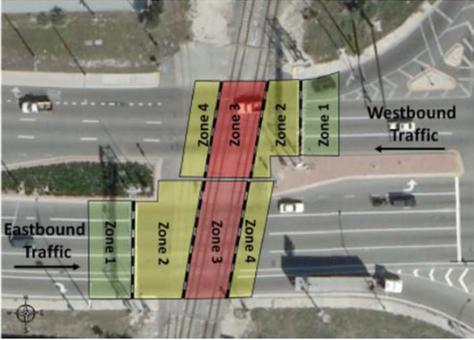


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What Stopping Behavior Is Safe?



Commercial Blvd & FECR crossing. Picture and graphic from Page 10, Figure 14, DOT Report: DOT/FRA/ORD-14/04

Zone 1 (not dangerous): A motorist who stops in Zone 1 has stopped before the stop line where the gate descends during an activation. Motorists stopping in this zone are behaving safely.

Zone 2 (moderately dangerous): A motorist who stops in Zone 2 has stopped after the stop line, but before the dynamic envelope. Motorists stopping in Zone 2 would be stuck inside of a descended gate but not struck by a train.

Zone 3 – Dynamic Envelope Zone (very dangerous): A motorist who stops in Zone 3 has stopped in the most dangerous part of the crossing—the dynamic envelope zone. In this zone, a train and vehicle would collide.

Zone 4 (moderately dangerous): A motorist who stops in Zone 4 has stopped past but adjacent to the dynamic envelope zone. Motorists stopping in Zone 4 would not be struck by a train.

Information obtained from DOT Report: DOT/FRA/ORD-14/04 and <http://www.fra.dot.gov>




A Cost-Efficient Proposal for Safety: Integrated Pavement Markings and Signage Improvements for At-Grade Crossings



Railroad Crossing utilizing "Color-Safe®" Pavement Marking for Dynamic Envelope
 Example: Commercial Blvd & Florida East Coast Railway (FECR), Ft Lauderdale, FL
**Photo property of Transpo Industries, Inc..*





Operation Lifesaver

- Railroad tracks, trestles, yards and equipment are private property. Walking or playing on them is not only dangerous, it's illegal. Trespassers can be arrested and fined - the ultimate penalty is death



<https://oli.org/>



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Operation Lifesaver













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Thank you!

For Additional Information please contact me or visit our webpage:

<http://www.cpuc.ca.gov/rail/>



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