

Prototype Administration for a Prototype Club:

The way it worked then; the way it works now



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Our Clinic Today

1. Our club has an organization structure that is different than most clubs.
2. The club runs like a real railroad business.
3. It is based on 1950s NP/MILW, which is our prototype.
4. We think it will work for your club, too.

The way the NP worked in 1951...

- Stockholder Control
- Standard Operating Procedures
- Specialized Departments



A Few Specialized Departments

- Executive
- Accounting
- Law
- Purchasing
- Treasury

- Operating
- Traffic
- Signal
- Industrial
- Land

ADMINISTRATORS & ENGINEERS

Administrators v. Engineers

Executives chosen by stockholders, based on ability to make a profit.

Engineers are hired for their expertise, based on ability to do the job.



Prototype Modeling ~ Historic Preservation

1. 3-D Representation of signature scenes
2. Reenactment of operations & communication
3. Reproduction of functioning equipment
4. Rigorous research of prototype (2007)
5. Respect for regulation, standards, & roles (2008).

Historic Preservation of Railroad Innovations

- Technology
- Standards
- Scale
- Administration



Historic Preservation of Technological Innovations

- Equipment
 - Energy sources
 - Specialized cars
- Architecture
 - Bridges
- Communication
 - Telegraph speed and records
 - Tickets for scheduled runs
- Workers
 - Specialized skills
 - Specialized training

Historic Preservation of Bureaucratic Innovations

- From a standing army of less than 10,000 to Civil War armies of several million
- Military model of a mission-driven hierarchical structure was effective.
- Civil War leaders, North & South, were familiar with the same structure.
- Bureau prioritized authority 'drawers'.
- Veterans became the majority of railroad workers and management.

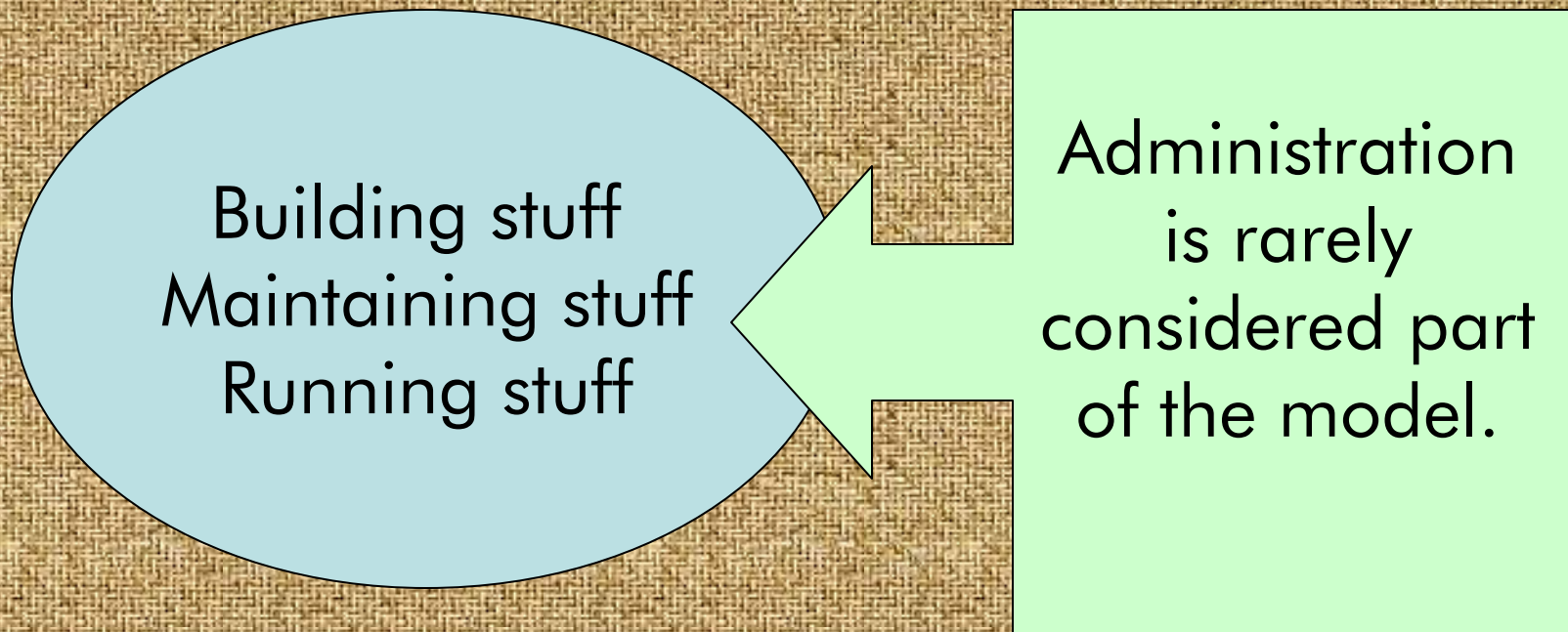
Industrial Revolution > Managerial Revolution

- Permanent standing armies
- Professional soldiers with
- Formal study of organizational strategies
 - Carl Von Clausewitz: fog, friction & chance
 - Dewey: pragmatism
 - Taylor: time and motion studies

System-wide Coordination and Documentation

- SOP
 - Official Forms
 - Chain of command
- Interchange
 - Equipment
 - Workers
- Accountability
 - Central Billing
 - Data collection

Prototype Modelers' Interests



All by yourself ~ autonomous, spontaneous.
Working with others requires coordination.
Any context requires creativity.

Why run a prototype model railroad organization like a railroad?

1. Promote excellence in prototype modeling;
2. Collaborate with museum;
3. Focus on functioning performance;
4. Specialize in areas of personal interest;
5. Develop expertise and quality;
6. Sustain the organization.



How the



mimics the



- They share a common mission: to build, maintain, and operate a railroad.
 - No function can be neglected.
 - Large scale operation.
- Both are real corporations
 - Not just a social club.
 - Has contractual responsibilities.
- Both provide obvious day-to-day results
 - Can't waste time/effort looking for volunteers.
 - Have to provide consistent quality.

Features of Railroad Administration



Executive is elected by membership; Engineers are appointed.



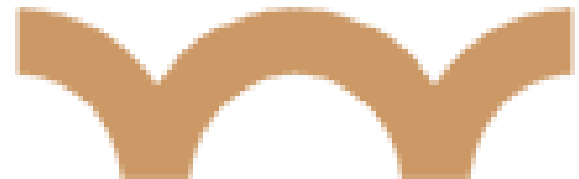
Executives voted on by stockholders; all others hired based on competence.

Most Model Railroad Clubs: Executive engineers make all decisions.

Our Context: Museum Exhibit



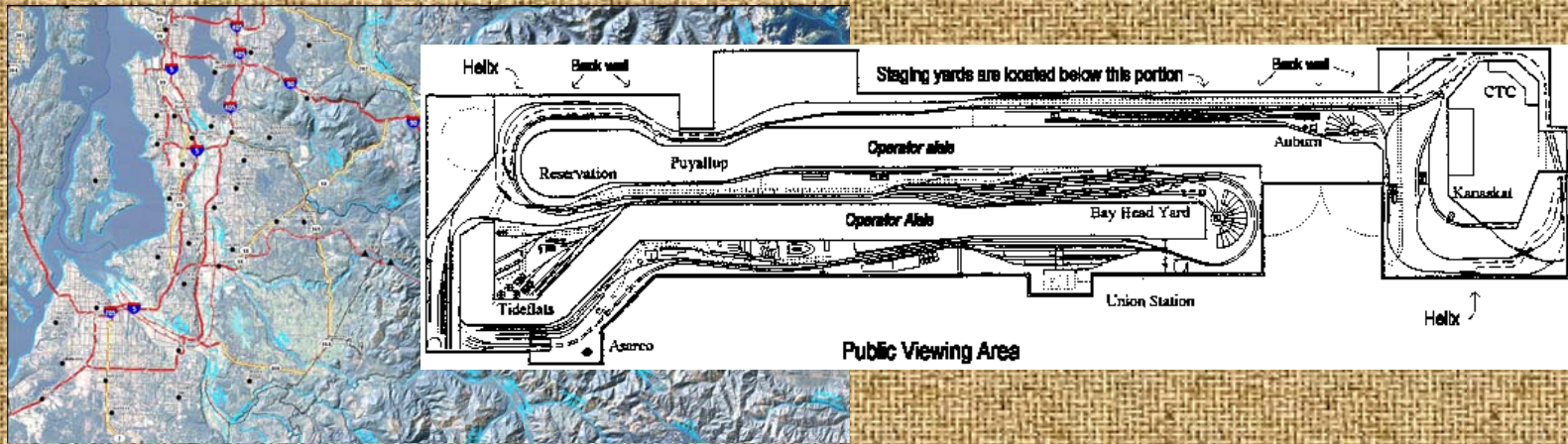
WASHINGTON STATE
HISTORY
MUSEUM



Prototype modeling in a museum

- Curators' priorities:
 - Historic accuracy
 - Happy visitors
- Visitors' priorities:
 - Making sense of their experience
 - Enjoying novelty
- Modeler's priorities:
 - Forms and functions

“Prototype-based freelancing” -



Geography: Scenes and scenery may be in scale but the overall terrain is adjusted with selective compression and redirection.

History: Signature details represent eras.

Prototype Administration is also selectively rendered based on need.



Layout

*5 autoloop trains
6 days/week*

*Digitrax
Chief
16v AC*

Every Tuesday and Thursday: work days

29" Min. curve radius

*1st & 3rd Saturdays
ops sessions*

*30 locomotives
simultaneously*

*3/4"
birch veneer
plywood
benchwork*

4 level helix

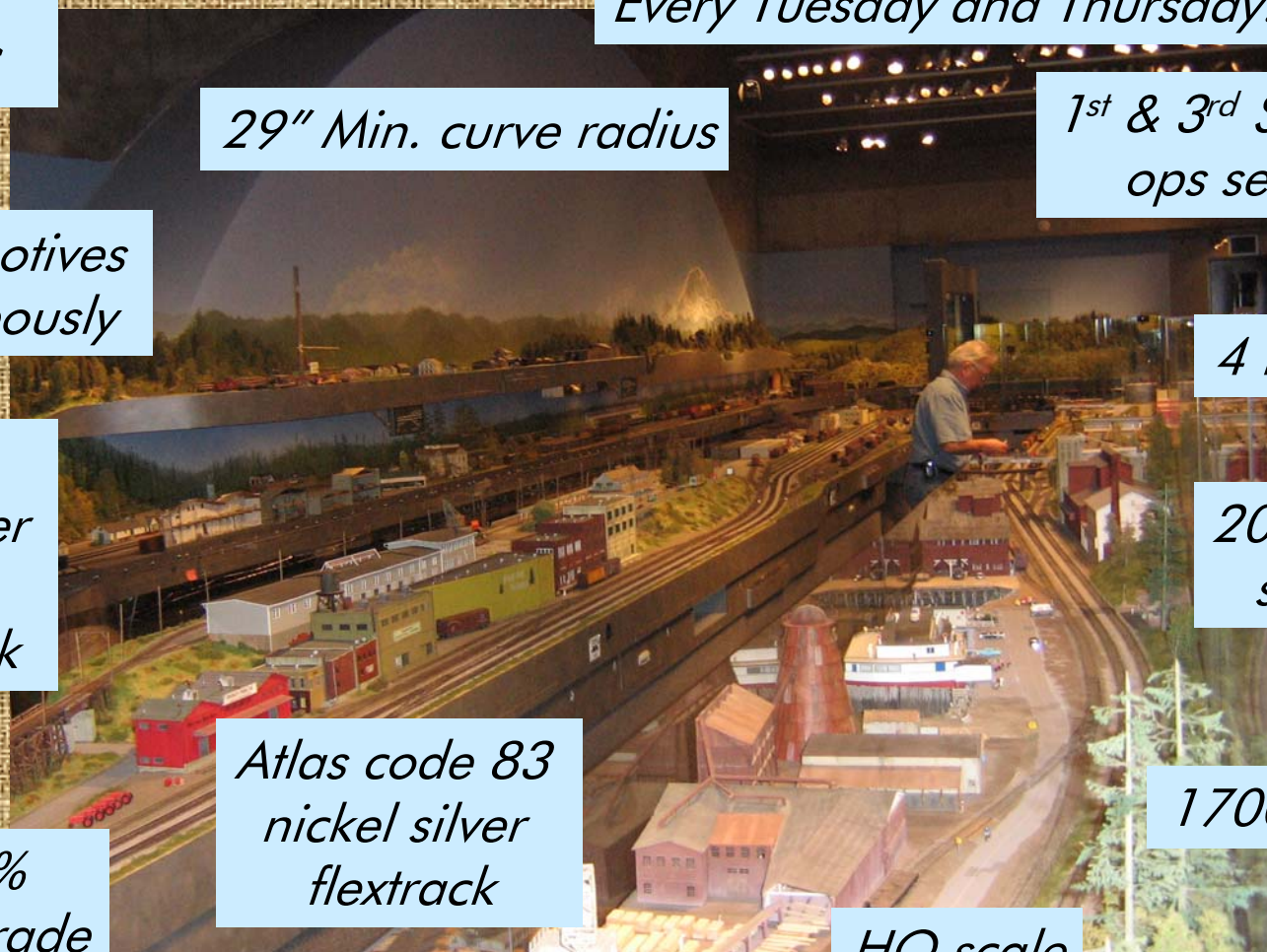
*200+ major
structures*

*Atlas code 83
nickel silver
flextrack*

*2.2%
Max grade*

1700 + sq. ft.

HO scale





Exhibit

*5 autoloop trains
6 days/week*



Prototype Administration



- Specialized Departments
 - Executive Board and Executive Committee
 - Board of Engineers and Chief Engineer
- Standard Operating Procedures
 - Recruitment and training
 - Decision-making
- Systematic Documentation
 - Bad Orders and defects; inspection forms
 - Participation
 - Operating forms; waybills; timetables
 - Rolling Stock database



Departments



Executive

Executive

Chief Engineer

*VP Operations; General
Manager*

- Track Engineer
- Civil Engineer
- Scenery Engineer
- Electrical Engineer
- Equipment Engineer
- Operations Engineer

- *Chief Engineer*
- *Bridge Engineer*
- *Supt. Of Telegraph; Signal Engineer*
- *Land Dept.*
- *Traffic Dept.*



PSMRE Administrative Structure

Executive Board

Chief Engineer

- President
 - VP
 - Secretary
 - Treasurer
- Executive Committee**
- 2 elected directors

Board of Engineers

Departments

- Civil
- Track
- Scenery
- Equipment
- Electrical
- Operations
- IDEA

Executive Board



Elected officers plus the elected chief engineer plus two directors.

Officers are responsible for day-to-day business tasks.

Directors are members at large who vote on policy decisions; they don't have day-to-day responsibilities.



Same as NP

Executive Committee

President

- Vice President
- Secretary

~~✗~~ calculates voting stock based on
hours of active service

- Treasurer

Chief Engineer

Chief Engineer

- Appointed by majority vote of executive board.
- Reviewed annually: reappointed or replaced.
- Along with president, is primary liaison with Washington State History Museum.
- Responsible for day to day management, construction, staffing, and maintenance.
- Chairman of the Board of Engineers.
- Ex-officio member and senior advisor to ensure quality control for all committees that deal with railroad construction, operations, or maintenance.



*VP Operations (COO) General
Manager: Eastern & Western Districts*

Club Structure

- Standard Operating Procedures
 - Recruitment and training
 - Decision-making
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 - Participation
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Apprentice Program



- Supervised by Recruitment Officer (usually VP)
- Formal training plan w/ orientation briefings by each Dept. Engineer plus by-laws lecture.

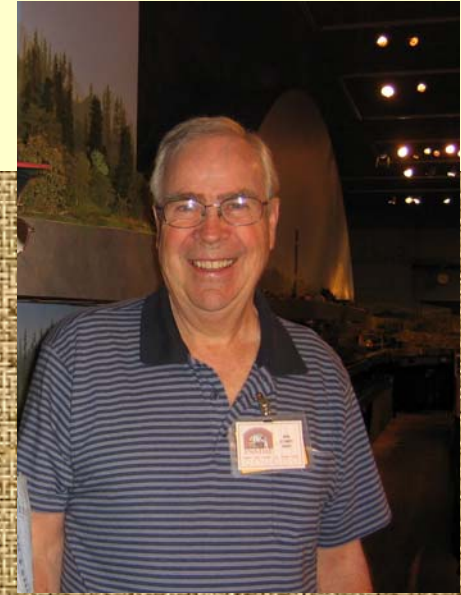
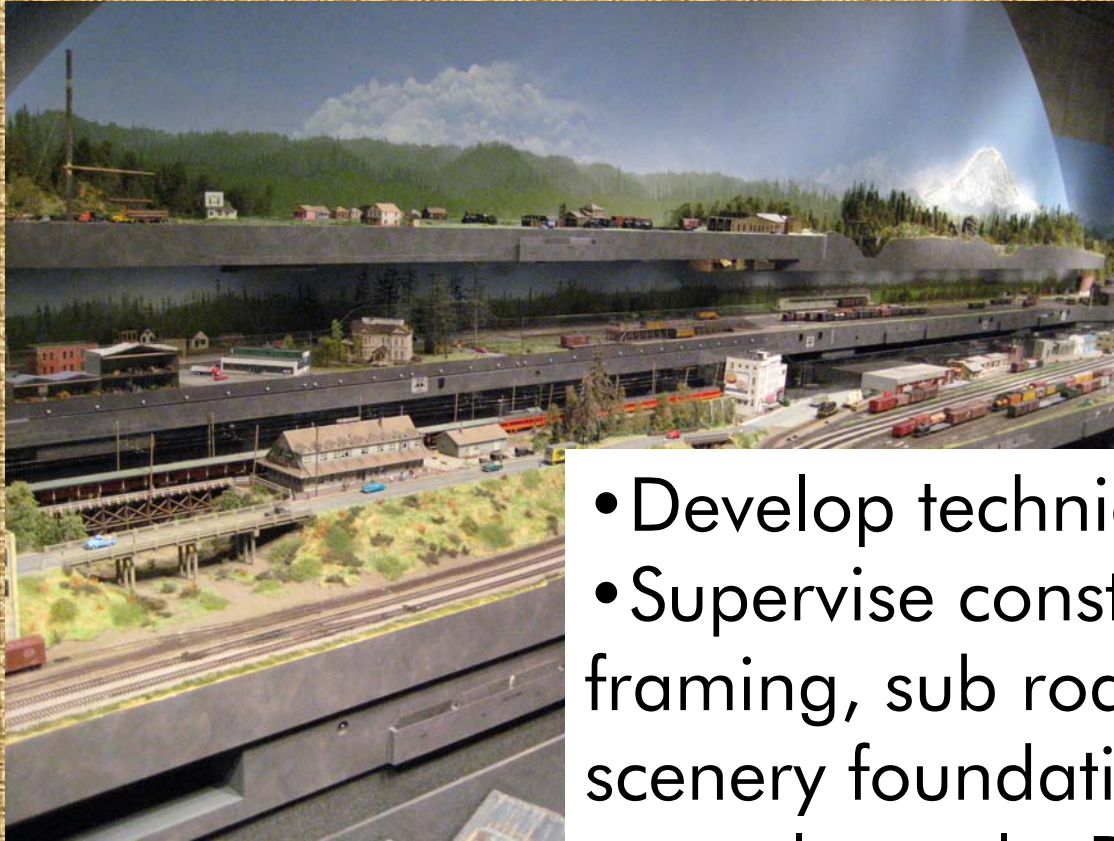


Apprentice programs were run by unions or OJT.

Civil Engineer



Civil Engineer



- Develop technical standards
- Supervise construction of wall framing, sub roadbed, basic scenery foundations, fascias, control panels, Plexiglas, doors, and security features.

Scenery Department

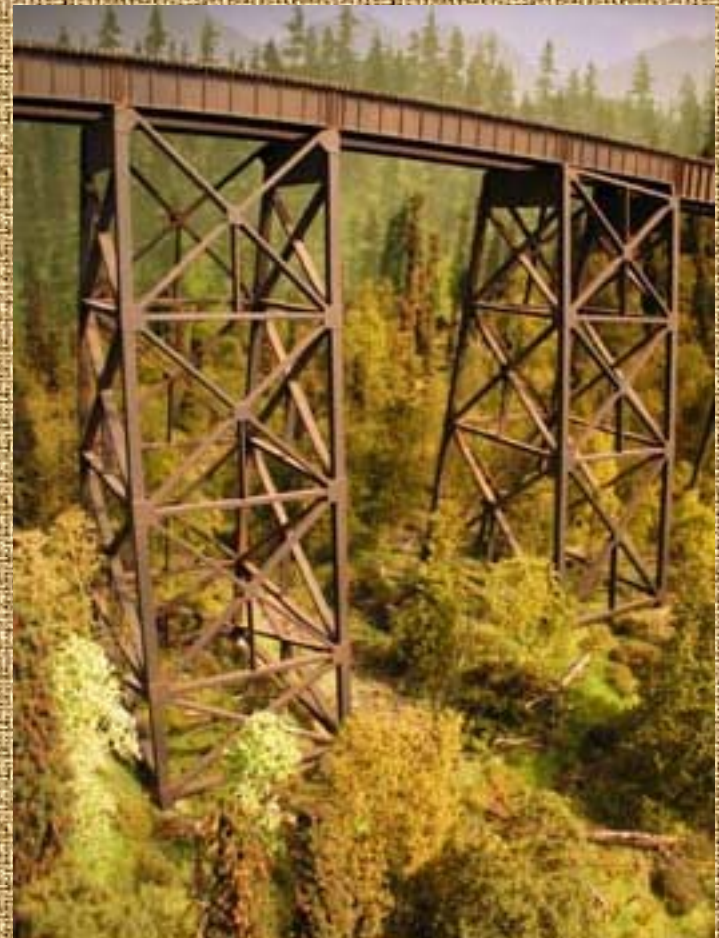


- Develop technical standards for scenery.
- Supervise construction and maintenance of basic landform contours, ground cover, track ballast, roads, water, backdrop painting, and collection and placement of structures.



*Bridge Engineer;
Chief Geologist*

PSMRE Scenery



Track Department



Track Department

1. Keep track clean.
2. Plan and lay roadbed and track.
3. Preparing for electrical.



*Bridge Engineer;
Chief Geologist*



Electrical Department

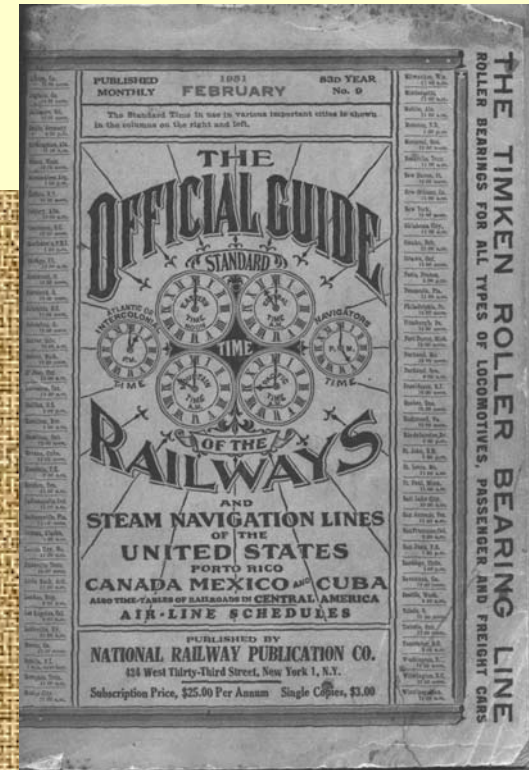
- Develop usual tech standards.
- Supervise anything that sparks: circuit wiring, turnouts, signals, control panels, computer interfaces, logic & detection circuits, and locomotive command control.
- Selection, acquisition, and maintenance of all computer hardware and software.



Signal Engineer; Supt. Of Telegraph.

Operations Department

- Develop, institute, and maintain RR operational rules.
- Maintain a list of qualified operating personnel and seniority levels.
- Develop timetable for monthly ops sessions based on 1950s NP Tacoma Division and MILW Coast Division.
- Pre-positions rolling stock for ops sessions.



*Trainmasters;
Terminal Supt.;
MOW Engineer*

Equipment Department



Chief Mechanical Engineer



- Develop specifications for, inspection of, and approval of all motive power and rolling stock.
- Certify motive power and rolling stock inspectors.
- Acquisition, composition and maintenance of all WSHM owned motive power and rolling stock.
- Maintain an inventory of all PSMRE equipment, including tools, supplies, etc.
- Maintain a list of all WSHS equipment.
- Maintain a list of all PSMRE member-owned equipment on loan.

I.D.E.A. Department

Interpretive Displays and Educational Applications

- Develop, coordinate, and direct the installation of all diagrams, maps, photographs and signage plus audio/visual interpretive applications in the public areas.
- Direct or coordinate special events, open houses, group tours (e.g. 2008 NPRHA Convention; annual Train Festival).
- Liaison between PSMRE and WSHM for coordination with other exhibits and programs



Advertising; Public Relations



Developing the PSMRE

- Vision became a mission.
- 3 years to plan before construction began.
- Acknowledge "everyone likes to play trains; virtually no one wants to document wiring diagrams or clean track on a regular basis".
- Charter members with military and industrial experience: rigor, standards, pride of work.
- Individual accountability in a mission-drive organization.





- Come see us in Tacoma!
- Share your thoughts with us at model.railroad.education@gmail.com

