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)
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

- Building stuff
- Maintaining stuff
- Running stuff

Administration is rarely considered part of the model.

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.
• 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
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
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.
HO scale

Layout

Digitrax Chief 16v AC

30 locomotives simultaneously

29” Min. curve radius

3/4” birch veneer plywood benchwork

Atlas code 83 nickel silver flextrack

2.2% Max grade

1700 + sq. ft.

5 autoloop trains
6 days/week

Every Tuesday and Thursday: work days

1st & 3rd Saturdays ops sessions

4 level helix

200+ major structures
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

Chief Engineer

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

VP Operations; General Manager

- Chief Engineer
- Bridge Engineer
- Supt. Of Telegraph; Signal Engineer
- Land Dept.
- Traffic Dept.
PSMRE Administrative Structure

Executive Board

- President
- VP
- Secretary
- Treasurer
- 2 elected directors

Chief Engineer

Executive Committee

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

• Systematic Documentation
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  – Participation
  – Operating forms; waybills; timetables
  – Rolling Stock database
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
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.
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