

Western Pacific
Road Conductor
Training Course



Western Pacific

Road Conductor

Training Course

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Notes from the Librarian:

This document was created from a three ring binder from the Feather River Rail Society's archives at the Western Pacific Railroad Museum at Portola.

The original apparently was a student workbook from a Western Pacific Road Conductor Training class. The date of the material is unclear, but based on the pages in the Time Table section, it is sometime after October 31, 1982.

The original had three-ring binder tab pages with the section titles. For this PDF file I created the cover page, this table of contents and comments page and the section title pages.

In the Train Orders section the original has student writing in pencil that did not scan very well. I have added the three pages with the notes transcribed so they are legible in this document.

- Paul Finnegan
August 4, 2017

Western Pacific
Road Conductor
Training Course

~ Schedules ~



CLASS SCHEDULE
ROAD CONDUCTOR TRAINING COURSE

DAY 1

TERMINAL _____

LOCATION _____

INSTRUCTOR _____

DATE _____

| PERIOD | TIME FROM - TO | SUBJECT | INSTRUCTOR | MATERIALS & REFERENCES |
|--------|----------------|--|------------|--|
| 1 | 0800 - 0815 | Welcome & Introduction | | |
| 2 | 0815 - 0950 | The Conductor as Supervisor | | ORB; OSB; TT; TTB; CGF; YN |
| 3 | 1000 - 1050 | Track Structure & Switches | | ORB; OSB; TT; TTB; YN |
| 4 | 1100 - 1200 | Mechanical (Cars & Engines) | | ORB; OSB; TT; TTB; YN |
| | 1200 - 1300 | L U N C H B R E A K | | |
| 5 | 1300 - 1420 | The Administrative Requirements of a Conductor | | ORB; OSB; TT; TTB; CGF; YN |
| 6 | 1430 - 1620 | General Safety; Injuries & Incident Reporting | | ORB; OSB; TT; CGF; YN |
| 7 | 1630 - 1700 | Discussion & Critique | | ALL |
| | | | | *ORB = Operating Rule Book OSB = Operating Safety Book TT = Timetable TTB = Timetable Bulletins CGF = Conductors' Guide to Forms |

CLASS SCHEDULE
ROAD CONDUCTOR TRAINING COURSE

DAY 2

TERMINAL _____

LOCATION _____

INSTRUCTOR _____

DATE _____

| PERIOD | TIME FROM - TO | SUBJECT | INSTRUCTOR | MATERIALS & REFERENCES |
|--------|-------------------|-------------------------------------|------------|--|
| 1 | 0800 - 0850 | Operating Rules of a General Nature | | ORB |
| 2 | 0900 - 0950 | Timetable & Timetable Bulletins | | ORB; TT; TTB |
| 3 | 1000 - 1025 | Blue Signals | | ORB; OSB; TT |
| 4 | 1025 - 1050 | Placement of Cars in Train | | ORB; OSB; YN |
| 5 | 1100 - 1200 | Air Brake Rules & Tests | | ORB; OSB; TT; TTB |
| | 1200 - 1300 | L U N C H B R E A K | | |
| 6 | 1300 - 1330 | Locomotive Rules | | ORB; TT |
| 7 | 1330 - 1420 | Switches & Derails | | ORB; OSB; TT |
| 8 | 1430 - 1620 | Signals: ABSS; TCS; Interlocking | | ORB; OSB; TT |
| 9 | 1630 - 1700 | Discussion & Critique | | ALL |
| | | | | *ORB = Operating Rule Book OSB = Operating Safety Book TT = Timetable TTB = Timetable Bulletins CGF = Conductors' Guide to Forms YN = Yellow Notice |

CLASS SCHEDULE
ROAD CONDUCTOR TRAINING COURSE

DAY 3

TERMINAL _____

LOCATION _____

INSTRUCTOR _____

DATE _____

| PERIOD | TIME FROM - TO | SUBJECT | INSTRUCTOR | MATERIALS & REFERENCES |
|--------|-------------------|--------------------------------------|--|-----------------------------------|
| 1 | 0800 - 0850 | Train Handling | | ORB; OSB |
| 2 | 0900 - 0925 | Train Inspection | | ORB; OSB; TT, YN |
| 3 | 0925 - 0950 | Flag Protection | | ORB; OSB; TT |
| 4 | 1000 - 1050 | Switching Operations | | ORB; OSB; TT |
| 5 | 1100 - 1200 | Use of Radios & Radio Rules | | ORB; OSB; TT |
| | 1200 - 1300 | L U N C H B R E A K | | |
| 6 | 1300 - 1450 | Train Orders | | ORB; TT |
| 7 | 1500 - 1530 | Miscellaneous Rules & Weather | | ORB; TT |
| 8 | 1540 - 1630 | Hazardous Materials Handling | | ORB; CGF; BOE Pamphlet 20; TT; YN |
| 9 | 1630 - 1700 | General Discussion & Course Critique | | ALL; Course Survey Questionnaires |
| | | | *ORB = Operating Rule Book OSB = Operating Safety Book TT = Timetable TTB = Timetable Bulletins CGF = Conductors' Guide to Forms YN = Yellow Notice | |

Western Pacific
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~ Supervision ~



Supervision

1. Operating Rules 800, 800A, 801 pg 172 ; 802 pg 173 ;
104 pg 78.

THE CONDUCTOR AS SUPERVISOR / EMPLOYEE ASSISTANCE

I. INTRODUCTION:

II. AUTHORITY:

III. JOB RESPONSIBILITIES:

Western Pacific
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Training Course

~ Hazardous Materials ~



(CLASS OUTLINE: SUPERVISOR & EMPL. ASST., CONT.) C-1-1&2

JOB RESPONSIBILITIES (CONT.)

IV. EMPLOYEE ASSISTANCE:

Hazardous materials

- * 728. 4 Bulletin 4
- 1. B E Pamphlet # 20
- 2. Time Table # 9 , page 84 thru 93
- 3. Yellow Notice 12-1
- 4. Conductors Guide to Administration page 30 thru 36
- 5. Book of Operating Rules, Rule 103 A
- 6. TRAINING COURSE ON HAZARDOUS MATERIALS (attached)

ROAD CONDUCTOR COURSE

Section HAZARDOUS MATERIAL

PAGE

REPORTING

AIDS

LESSON PLAN

TANK CARS EFFECTIVE JANUARY 1, 1982

UNITED NATIONS HAZARDOUS CLASS NUMBERS

- | <u>NO.</u> | <u>CLASSIFICATION</u> |
|------------|------------------------------------|
| 1. | EXPLOSIVES |
| 2. | COMPRESSED GASES |
| 3. | FLAMMABLE LIQUIDS |
| 4. | FLAMMABLE SOLIDS |
| 5. | OXIDIZING SUBSTANCES |
| 6. | POISONOUS SUBSTANCES |
| 7. | RADIOACTIVE SUBSTANCES |
| 8. | CORROSIVES |
| 9. | MISCELLANEOUS DANGEROUS SUBSTANCES |

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - April 1, 1982

File - 626.56

NOTICE NO. 12-1 (Revised)

ALL OPERATING DEPARTMENT EMPLOYEES

HAZARDOUS MATERIALS

A. The Department of Transportation (DOT) regulates the transportation of hazardous materials by all modes - air, water, rail, and highway. These regulations are designed to provide only the minimum requirements necessary to insure the safe movement of these commodities. The DOT regulations are published in the Bureau of Explosives tariff to govern the handling of hazardous materials by rail. The Bureau of Explosives is an agency of the Association of American Railroads. Both the DOT and the Bureau of Explosives seek compliance with the regulations; however, the DOT will prosecute offenders when violations are detected. Failure to comply is punishable by civil penalties of up to \$10,000 in fines and willful failure is punishable by criminal penalties of up to \$25,000 in fines and/or five years in jail. For this reason and with the knowledge that compromise of these regulations could spell disaster, please insure that all DOT regulations are adhered to without deviation.

The Western Pacific Railroad has adopted several safety rules that are more restrictive than the minimum requirements established by the DOT. These safety rules are to be found in the Operating Rules current Timetable, and as may appear in this notice or other notices and bulletins. Employees should be conversant with company rules covering the handling of hazardous material as they are designed to increase the level of safety based on local conditions.

In order to clarify the DOT regulations and Western Pacific rules concerning the proper handling of hazardous materials at all our stations, employees will be guided by the following:

1. DEFINITIONS:

- a. Department of Transportation - Regulatory agency of the Federal government that prescribes the hazardous materials requirements. The Federal Railroad Administration is the enforcement branch of this agency.
- b. Bureau of Explosives - Agency of the Association of American Railroads.
- c. Hazardous Material Regulations - For our purposes they are found in the current Bureau of Explosives Tariff.
- d. Hazardous Materials - Refers to articles that have been found harmful to people, property, or the environment.

e. Hazardous Substance - A material identified by the letter "E" in Column 1 of § 172.101 of the BOE tariff when offered for transportation in one package, or in one transport vehicle if not packaged, and when the quantity of the material therein equals or exceeds the reportable quantity (RQ). A hazardous substance can also be a hazardous material.

f. Hazardous Waste - Any material that is subject to the hazardous waste manifest requirements of the U.S. Environmental Protection Agency. A hazardous waste can also be a hazardous substance and/or a hazardous material.

g. RQ - Authorized abbreviation for "Reportable Quantity" of a hazardous substance. Use of the "RQ" is to denote that the material is damaging to the environment. If spilled, notification is required.

h. Train - Means one or more engines coupled with one or more cars, except during switching operations, or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains.

i. Train Placement - Means the positioning of hazardous material carloads in a train based on the type of car and the type of placard.

j. Switching - Means movement of cars other than in train service or when an operation does not require traveling over one mile without picking up or setting out cars.

k. Occupied Caboose - Means a rail car being used to transport non-passenger personnel. If the crew does not ride in the caboose and the heater is not in operation, the caboose would not be subject to train placement restrictions.

B. USE OF SHIPPING PAPERS (172.20)

1. No freight cars or TOFC (with vans, containers or trailers) containing a hazardous material shipment or an empty tank that last contained a hazardous material shipment or hazardous material will be placed in a train without the properly endorsed waybill or bill of lading to accompany that car. Each waybill or bill of lading covering a hazardous material shipment or empty must have attached a teletype or TIS printout of emergency handling information.

The only exception to a hazardous material car moving on a proper waybill will be a load moving on a "Bill of Lading Copy" to the waybill matching location. Such "Bill of Lading Copy" must contain all proper hazardous material information and endorsements - including STCC.

Each waybill for a hazardous material shipment must have the following information and endorsements:

- a. Number of items and type of container.
- b. Proper shipping name of commodity.
- c. Hazard class.
- d. Identification number (UN or NA).

- e. Total quantity by weight or volume.
- f. Reportable quantity (if applicable).
- g. Placard notation.
- h. Placard (waybill) endorsement.
- i. "49" Series STCC number.

Each bill of lading copy used to move a hazardous material shipment to the waybill matching location must have the signed shipper's certificate, in addition to all of the above information.

Each waybill for any empty tank car which last contained a hazardous material (other than combustible) must have the following information:

- a. Proper shipping name of commodity last contained in tank.
- b. Hazard class.
- c. Identification number (UN or NA).
- d. Reportable Quantity (if applicable).
- e. Placard notation.
- f. Placard (waybill) endorsement.
- g. "49" Series STCC in parenthesis below the above.

2. The train crew must have a document showing the position in the train of each loaded placarded car of hazardous materials, except when position is changed or car is placed in train by the crew. A train consist may be used to meet this requirement. Conductor must determine that head end crew has a copy of the consist and he must also determine that he is in possession of a waybill or bill of lading copy for each and every hazardous car shown on a consist or otherwise known to be in the train.

3. If a car containing a hazardous material shipment is found in a train not at a terminal, and is not accompanied by a waybill or bill of lading, it must be reported and removed from the train at the next reporting station. It will then be the responsibility of that station to trace for the waybill, and when received, input to ATS and attach a copy of hazardous material emergency handling printout before forwarding shipment.

4. In industry switching operations, it is required that a shipping paper or switching ticket with all information required on the waybill or bill of lading must be supplied to the Yard Crew, in addition to a copy of emergency handling instructions for the hazardous commodity involved.

5. a. Unless the car is placed in a train by the crew accompanying outbound movement, the train and engine crew must be given a consecutively numbered written notice [Use WP Form No. CS-804 (Rev.)] of each car placarded "Explosives A" or "Poison Gas". Copy of the Notice must be kept on file at the station which executed the Notice.
- b. At the first crew change station when the inbound crew has placed these cars in the train, the station will execute a notice for the outbound train and engine crew.
- c. At points where the train or engine crews are changed, unless consist is changed, the Notice must be transferred from crew to crew.
- d. WP Form No. CS-804(Rev.) must be completed with the following information:
 - 1) Station where prepared.
 - 2) Current date.
 - 3) Number of this Notice (consecutively numbered).
 - 4) Train number and symbol.
 - 5) Initial and number, contents, and number of cars from the engine for each "Poison Gas" and "Explosive A" car in the train. Do not execute this for Explosive Class "B" or "C" or "Poison B" placarded cars.
 - 6) Name of person preparing Notice and delivering to train crew.
 - 7) The conductors and engineer's names shall be noted on the form.
 - 8) The form shall be issued in triplicate with one copy delivered to the conductor, one to the engineer and one retained on file.

C. SWITCHING RESTRICTIONS:

1. A car placarded "Explosive A" or "Poison Gas", any placarded TOFC-COFC car, or any flammable Gas, Phosphorus or Chlorine car must not be cut off while in motion, nor may a car moving under its own momentum strike any such car. These cars must not be coupled into with more force than is necessary to complete the coupling.

2. When switching a car placarded "Explosive A", it must be separated by at least one non-placarded car from the engine at all times.

3. In yards and sidings, cars placarded "Explosive A" must be placed so as to be safe from all probable danger of fire, and may not be placed under a bridge or overhead highway crossing nor in or along the side of a passenger station or shed.

D. PLACEMENT OF CARS IN TRAINS: The following train placement restrictions may also be found in current Timetable, BOE Tariff, and posted in Yard offices.

1. Any car placarded "Explosives A" or "Poison Gas" must not be placed nearer than the sixth car from the engine and caboose if length of train permits. If length of train does not permit, such car must be placed as near the middle of the train as possible, but not less than the second car from the engine and occupied caboose. In addition, such car must not be placed next to:

a. A passenger car or combination car that may be occupied, except that if such placarded car is accompanied by guards or technical experts, the car occupied by those experts must be placed next to and behind the placarded car. If the "experts' car" contains a lighted heater or stove, it must be the fourth car behind a car placarded "Explosives A".

b. Any loaded placarded car, other than a car placarded "Combustible" or placarded with the same placard.

c. Any engine, occupied caboose, car occupied by any person, or any car containing lighted heaters, stoves or lanterns.

d. Any loaded flatcar except that loaded cars placarded "Explosives A" may be placed next to each other and bulkhead flats, which are considered to be an open top car.

e. An open top car with lading extending over the ends, or when any lading loaded above the car end is liable to shift so as to protrude beyond the car ends.

f. Any car with mechanical refrigeration apparatus in operation, or a car with any open flame heating apparatus in service.

2. Any car placarded "Radioactive" must not be placed next to a car displaying another type of placard (except combustible), an engine, occupied caboose, or carload of undeveloped film.

3. Cars other than tank cars placarded "Dangerous", "Explosives B", "Blasting Agents", "Non-Flammable Gas", "Flammable Gas", "Flammable", "Flammable Solid", "Flammable Solid (water reactive)", "Oxidizer", "Organic Peroxide", "Poison" or "Corrosive".

a. These cars carry no restriction other than that they may not be placed next to cars placarded "Explosives A", "Poison Gas", and "Radioactive".

4. Tank cars placarded "Combustible" carry no restriction and may be placed at any location in train.

April 1, 1982

5. Tank cars placarded "Non-Flammable Gas", "Flammable Gas", "Flammable", "Flammable Solid", "Flammable Solid (water reactive)", "Oxidizer", "Organic Peroxide", "Poison", "Chlorine", or "Corrosive" must be placed not nearer than the sixth car from the engine and occupied caboose, if length of train does not permit, then such car must be placed as near the middle of the train as possible, but not nearer than the second car from the engine or occupied caboose. In addition, such cars must not be placed next to:

- a. Passenger car or combination car other than a car occupied by authorized personnel accompanying the shipment.
- b. Any car placarded "Explosives A", "Poison Gas", or "Radioactive".
- c. An engine or occupied caboose.
- d. Loaded flat car other than TOFC-COFC, or a flat car loaded with vehicles secured by permanently installed tie down approved for interchange service. This exception does not apply to loaded flatbed TOFC trailers, loaded open top trailers, or loaded trailers without securely closed doors. Bulkhead flat cars are considered to be the same as open top cars.
- e. Open top car when any of the lading protrudes beyond the car end or when any lading which extends above the car end is liable to shift so as to protrude beyond the car end.
- f. Any car with mechanical refrigeration in operation, or with open flame heater in service.

6. Empty placarded tank cars, i.e., "Non-Flammable Gas-Empty", "Flammable Gas-Empty", etc., must be placed no nearer than the second car from the engine or occupied caboose. "Empty Combustible" cars are not placarded.

NOTE: Energy Research & Development Administration may move couriered shipments of Dangerous Commodities without placarding such shipments. All other provisions of these Regulations apply.

For reference in handling explosive and dangerous commodities, refer to the following chart: B. E. Poster No. 4.

E. INSPECTION:

1. "Explosive A" cars must receive a detailed inspection before and after loading by a qualified inspector. See Sec. 174.104 in Bureau of Explosives Pamphlet 20.

2. Yard or Train crews picking up loaded placarded tank cars must inspect for:

- a. Leaking conditions. Icing, fumes or liquids from the dome area, strange odors, or other obvious leaks dictate that the car must not be transported until the leak is corrected.

b. Running gear. All brakes, hand brakes, journal boxes and trucks are in condition for service.

c. Placards, as indicated on the shipping paper, must be displayed on each side and each end of the car.

Defects found at origin must be left with the shipper for correction.

F. DERAILMENTS:

1. Train & Engine Crews - Before members of Train and Engine crews approach derailed cars, Conductor will check waybills and ensure that no hazardous material is involved in cars derailed. Conductor will notify Chief Train Dispatcher.

If hazardous material is involved, Conductor will notify Chief Train Dispatcher and be governed by Chief Train Dispatcher or Superintendent's instructions before any close inspection of car will be made. Chief Train Dispatcher or Superintendent will make necessary inquiries concerning hazardous material and advise personnel in field necessary precautions to be taken before handling cars containing such materials or making close inspection of cars.

Conductor will pull waybills on derailed cars and leave at derailment site with officer in charge or where instructed by Chief Train Dispatcher.

2. Maintenance of Way, Signal and Mechanical Personnel - Maintenance of Way, Signal and Mechanical personnel summoned to derailment will contact Chief Train Dispatcher or Superintendent before approaching derailed cars and will be governed by their instructions if hazardous material is involved.

3. Yardmasters - Before allowing crews in yard, including Yard Trainmen, Maintenance of Way and Mechanical personnel, to approach derailed cars, have yard forces inspect waybills for cars derailed to ascertain if any hazardous materials are involved and so advise Terminal Supervisor and Chief Train Dispatcher. If hazardous materials are involved, all concerned be governed by instructions concerning handling of such from Chief Train Dispatcher, or Superintendent or his designated representative.

All other personnel summoned to derailment site must be governed by the same instructions.

G. UNINTENTIONAL RELEASES (SPILLS) OF HAZARDOUS MATERIALS:

1. In the event of a hazardous material spill, the same precautions and procedures as in Section F must be followed.

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

CLASS OUTLINE
HANDLING HAZARDOUS MATERIALS

C-3-8

I. NEW REGULATIONS & CHANGES IN LAWS:

II. TIMETABLE INSTRUCTIONS:

III. BUREAU OF EXPLOSIVES HAZMAT FILM:

IV. UNION PACIFIC FILM (GETTING NUMBERS STRAIGHT: UN):

V. EMERGENCY HANDLING FORM:

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~ Tracks & Switches ~



TRACK and Switches

1. Definitions

A. Training Program manual

1. Single track page 16
2. Double track and Siding page 6
3. Joint track page 12
4. turnout page 22
5. Other definitions for future reference

?. Book of Operating Rules, Rule 104 page 78

. Book of Operating Rules, Rule 802 page 173

CLASS OUTLINE
TRACK STRUCTURE AND SWITCHES

C-1-3

I. DEFINITIONS:

II. BASIC TRACK STRUCTURE:

- A. ROAD BED
- B. DRAINAGE
- C. SUB-BASE
- D. BALLAST
- E. TIES
- F. TIE PLATES
- G. SPIKES
- H. RAIL

(CLASS OUTLINE: TRACK & SWITCHES, CONT.)

C-1-3

I. ANCHORS

J. BONDING

III. TRACK NOMENCLATURE AND GEOMETRY

Section 4 Track and Structures

4.1 Introduction

4.2 Track Components

4.3 Curve Geometry

4.3.1 Superelevation

4.3.2 Spirals

4.3.3 Reverse Curves

4.4 Curve Negotiation

4.5 Curving Forces

4.5.1 Frictional Forces

4.5.2 Centrifugal Forces

4.6 Dynamic Forces

4.6.1 Longitudinal Forces

4.6.2 Lateral Forces

4.6.3 Truck Hunting

4.6.4 Vertical Forces

4.6.5 Harmonic Roll

4.6.5.1 Factors Contributing to Harmonic Roll

4.6.5.2 Remedies for Harmonic Roll

4.6.6 Loads on Cars

4.7 L/V Ratio

4.7.1 General

4.7.2 Effect of Variation in Surface

4.7.3 Effect of Variation in Cross Level

4.7.4 Effect of Wide Gauge

4.7.5 Effect of Variation in Alignment

4.8 Practices to Control or Minimize Forces

4.8.1 Track Inspection

4.8.2 Speed Restrictions

4.8.2.1 Placement of Signs

4.8.2.2 Zoning of Speeds

4.8.2.3 Graduated Speeds

4.8.2.4 Speed Restrictions on Bridges

4.8.2.5 Fixed Signals

4.8.2.6 Temporary Speed Restrictions

4 Track and Structures

4.1 Introduction

Reliable train operations are dependent to a large extent on the condition of the track and supporting structures.

Irregularities in track alignment, surface, and gage can cause damage to equipment and lading and, in extreme cases, may cause derailment. Inadequate train handling or incompatibility between track and rolling stock can result in force levels that will damage track in the best of condition.

Thus it is important that maintenance and design personnel understand the dynamic forces involved in train operation and their effects on the track and structures. Such personnel must also be aware of the effects their actions have on the train and engine crews' ability to handle trains through areas in which the track is being repaired or rebuilt.

It is equally important that train and engine crews be aware of the forces expended in starting, running, and stopping a train and the manner in which these forces are transmitted through the equipment of the train to the track and structures.

Most track-train dynamics problems associated with track conditions can be recognized by the ride quality of trains and/or by careful track inspection. The Track and Structures section of this manual deals with these dynamic problems without excessive use of technical terminology.

4.2 Track Components

Prior to dealing with forces in track, a brief description of the different components of the track structure will be useful.

The foremost component in the track structure is the rail. Conventional "T" rails, which are the standard in North America, are designated by their section and nominal weight in pounds per yard. The criteria for installing different weights of rail are, in general, based on maximum axle loads and tonnage moved annually over a particular section of line. The rail transmits the loads from the wheels of the train to the track structure.

In recent years the size of rail has been increased and the stiffer rail sections have been helpful in increasing rail life. As a result of this increase in rail size, most heavier rail in principal main tracks today is generally quite capable of supporting increased wheel loads insofar as flexural stresses are concerned. However, the critical stresses in rail today are those associated with the contact pressures of the wheel on the rail. The actual contact area of the wheel on top of the rail is an ellipse in the order of $\frac{3}{4}$ inches wide and $\frac{5}{8}$ inches long. This small area must withstand the entire wheel load and its size is not significantly affected by the size of the rail.

The contact surfaces of the rail and wheel are subjected to high compressive stresses from the wheel load. These stresses in the rail vary significantly in magnitude with the passing of the wheel, resulting in stress reversals and fatigue failures. Therefore, not only flexural stresses, but also contact pressures are of great importance when considering heavier axle loadings. These pressures may result in stresses beyond the yield strength of the rail causing corrugation, shelling and progressive fractures.

The parameters having the most significant effect on contact pressures are wheel diameter, axle load and speed. To a lesser extent, wheel profile and rail head contact will also have an effect.

Ordinary rail joints consist of a pair of joint bars with holes for either four or six track bolts to join the rails together. They are the weakest part of the track structure and,

4.2 Track Components

because their deflection under load is greater than that of the remainder of the rail, they are subjected to higher dynamic forces.

Tie plates were first introduced as a means of distributing the rail loads over a greater area of the tie. As the beneficial results of the increased bearing area afforded by the plates became evident, tie plates were designed wider, longer and thicker. In addition to protecting ties against mechanical wear, tie plates assist in holding the rails to gage.

Track spikes are used to hold the rail and tie plates in proper alignment and gage. Various spiking patterns are used, depending on the types of rail and tie plates being used, and whether track alignment is tangent or curved. At selected locations, compression type fasteners are used in lieu of track spikes to provide greater resistance to rail turnover.

Rail anchors are used to control rail creep caused by expansion and contraction of the rail due to changing temperatures, and/or by grades, rail traffic, and braking action.

Ties may be of wood or concrete and are intended to hold track gage and distribute the loads imposed by the train from the rails and tie plates to the ballast.

Ballast transmits the imposed loadings uniformly to the roadbed. It provides uniform support for the ties and absorbs vibrations and shock. Ballast also anchors the track in place; that is, it resists lateral and longitudinal movement.

4.3 Curve Geometry

The forces expended by trains in starting, running and stopping are transmitted from the wheel to the rail and must be contained. In general, the highest forces are experienced during the negotiation of curves. Before dealing with these forces, it is appropriate to discuss the characteristics of curves.

A train is made to change direction by introducing curvature into the track. A curve consists of two parts; a circular curve of constant radius, and a transitional curve, called a spiral, inserted between the tangent and circular curve. The rail on the outside of the curve guides the wheel and truck by resisting its tendency to go straight, thus turning the locomotive or car.

4.3.1 Superelevation

Trains travelling around curves are affected by centrifugal force which acts away from the center of the curve and tends to overturn the cars. This tendency directs the weight of the train toward the outside rail.

To counteract the effect of centrifugal force, the outer rail on a curve is raised, or superelevated. This moves the effect of the weight force toward the inside rail. Combining the effect of the centrifugal force and the vehicle weight produces a resultant force as illustrated in Figure 4-1.

When the resultant force passes through the center line of the track, the curve is described as being balanced and equilibrium speed has been reached. In this condition the vertical forces on each rail are equal, which permits maximum utilization of tractive effort and results in minimum wear on wheels and rails.

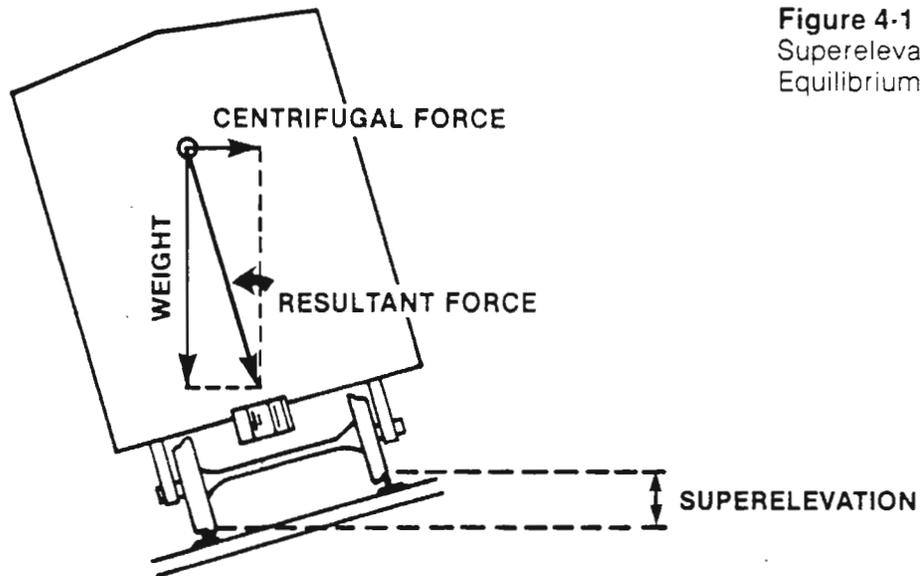


Figure 4-1
Superelevated Car in
Equilibrium

4.3.2 Spirals

When trains are operated at other than low speeds, it is necessary to insert a spiral between the tangent and the curve. The spiral is a curve of constantly-changing radius, decreasing from an infinitely-long radius at the beginning of the spiral to a radius equal to that of the circular curve.

The spiral provides a smooth transition from tangent to curve and allows superelevation to be gradually increased before entering the main body of the curve.

The length of spiral should vary directly with the amount of superelevation of the curve. When speed and superelevation have been determined, the allowable rate of change of superelevation will determine the minimum length of spiral.

An excessive rate of change of superelevation which could cause unloading of diagonally-opposite wheels on a car must be avoided. Where trains operate above equilibrium speed, special consideration must be given to the spiral design.

4-1

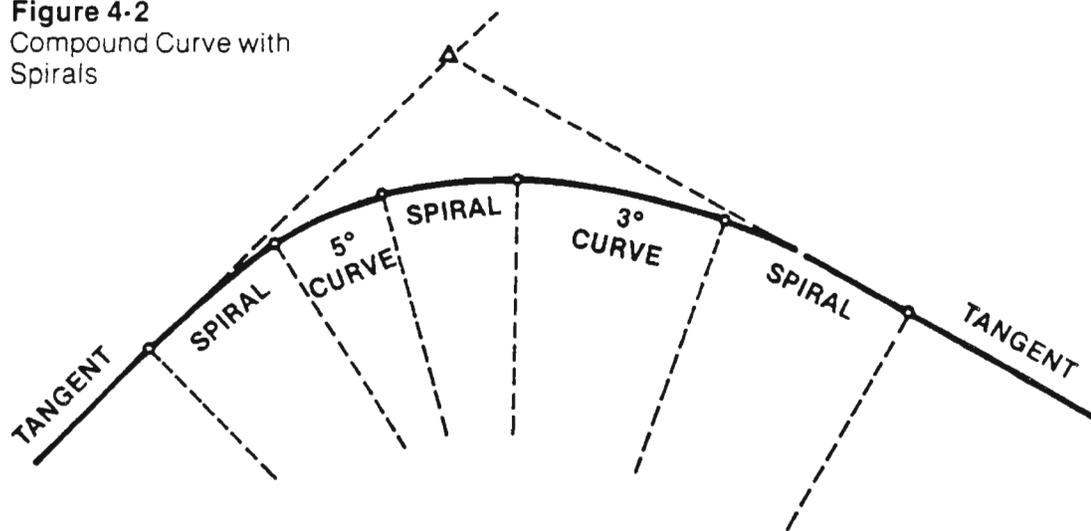
There are several methods of determining acceptable spiral lengths. One guide often used for mixed traffic is:

The minimum length of curve spiral (in feet) should be at least equal to the superelevation of the outer rail in the curve (in inches) multiplied by the maximum train speed on the curve (in MPH).

This recommendation for minimum spiral length is based on considerations of ride comfort. If safety of operation is the prime concern, spiral lengths calculated using this formula yield conservative results. TTD model studies have shown that substantially shorter spiral lengths provide for adequate safety of train operation.

4.3.2 Spirals

Figure 4-2
Compound Curve with
Spirals



Transition between curves of different degrees and superelevations in a compound curve should be accomplished by use of a spiral based on the above criteria. See Figure 4-2.

It may be necessary to reduce the maximum permissible train speeds and/or superelevation in compound curves in order to provide minimum spiral lengths and maintain a desirable rate of change of superelevation between the curves.

4.3.3 Reverse Curves

A length of intervening tangent track, at least equal to the length of the longest car permitted on the track, should be provided between reverse curves to allow the trucks of a car to recover from the first curve before entering the second curve or, alternatively, speed should be reduced. See Figure 4-3.

4-2

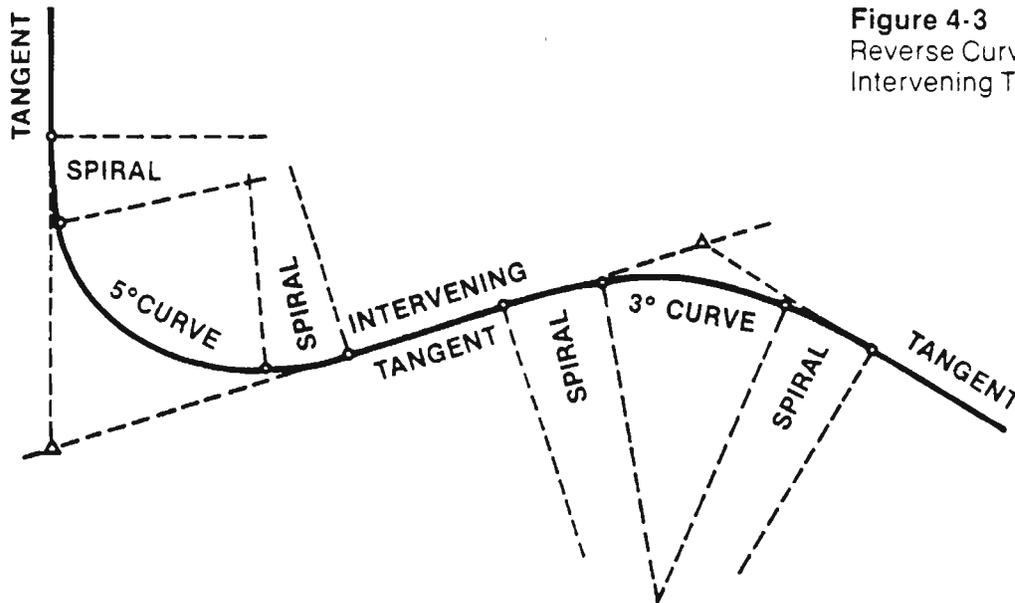


Figure 4-3
Reverse Curves with
Intervening Tangent

The length of intervening tangent required is a function of the speed of the train, the degree of the curve, the spiral, the superelevation, and the length of cars handled. At higher speeds there is less time for the trucks of an individual car to recover. For this reason, even though proper spirals have been provided, it is desirable, where possible, that the amount of tangent track between reverse curves should be more than one car length. If this is not possible, then the authorized speed should not exceed equilibrium speed for the elevation in the adjacent curves.

Siding turnouts should be recognized as consisting of a curve from the point of switch to the frog, and a tangent from there to the point where the reverse curve begins. A more severe reverse curve situation may occur in the case of switches facing one another such as in a series of crossovers if there is insufficient tangent distance between adjacent switches in the same track.

Where high lateral forces are being exerted on the track through turnouts, higher guard rails may be effective in preventing wheel climb.

4-3

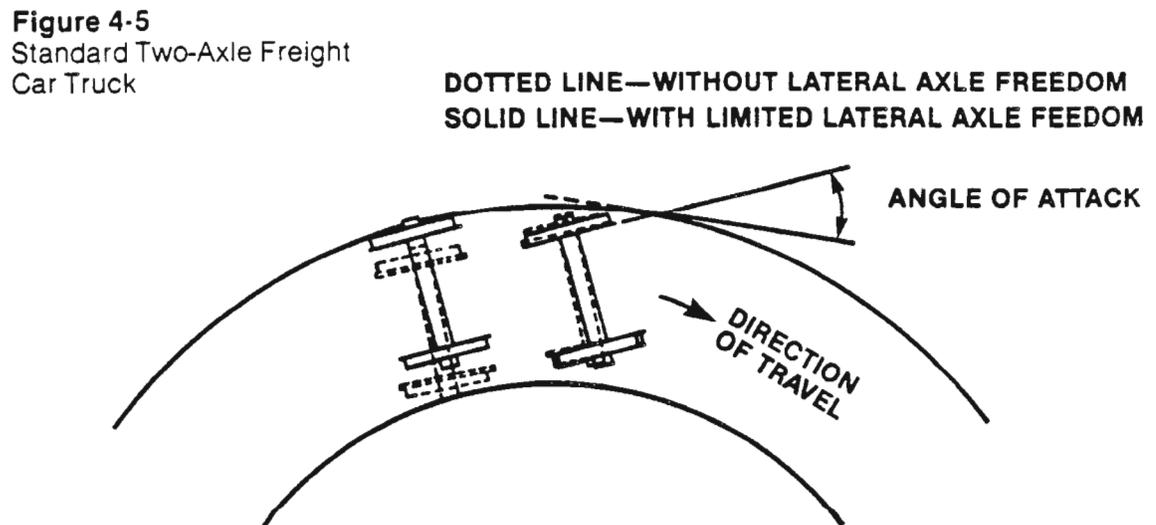
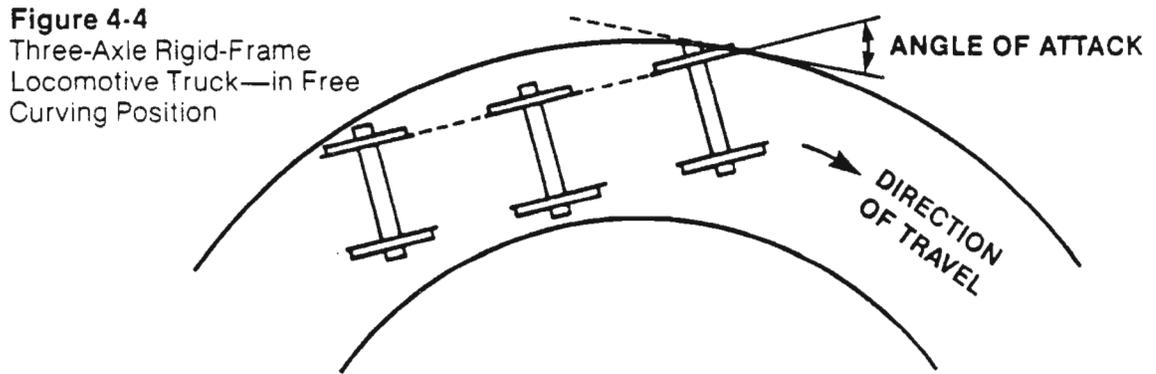
4.4 Curve Negotiation

4.4 Curve Negotiation

In curve negotiation the leading wheel bears against the outside rail of the curve. The angle between the leading outer wheel and the outside rail is referred to as the "angle of attack." Figure 4-4 illustrates the relative position of a three-axle rigid-frame locomotive truck while traversing a curve.

The axles can shift relative to one another due to the lateral freedom of motion built into the trucks. This lateral freedom allows the trailing axles to shift slightly toward the outer rail, reducing the angle of attack.

Figure 4-5 illustrates the relative position of the wheels and axles of a standard two-axle freight car truck while traversing a curve, with and without the effect of lateral freedom.



Generally, the geometry of coupled cars and locomotives governs the maximum curvature that can be negotiated. However, a more restrictive condition may exist with cars or locomotives having rigid frame trucks with three or more axles. The maximum curvature these trucks can negotiate without excessive friction and binding depends on the truck wheel base, the gage of track and the lateral freedom per axle.

Equipment must not be permitted to operate on curvature greater than that for which the equipment is designed.

Limiting conditions for various three-axle truck lengths are as follows:

| Length of Truck Wheel Base | Standard Gage of 4'8 $\frac{1}{2}$ " Standard Lateral Freedom Per Axle- $\frac{3}{8}$ " | Standard Gage, With $\frac{1}{2}$ " Lateral Freedom Per Axle | 4'-9" Gage, Standard Lateral Freedom Per Axle- $\frac{3}{8}$ " |
|----------------------------|--|--|--|
| 11'-6" | 22° | 25° | 36° |
| 13'-6" | 16° | 18° | 26° |
| 15'-6" | 12° | 14° | 20° |

Reference: American Railway Engineering Association Portfolio of Trackwork Plans, No. 792 A-159.

4.5 Curving Forces

There are two basic types of forces to be considered in the analysis of the wheel-rail system. These are steady-state forces and dynamic forces. Generally, steady-state forces are those forces which are always present when the wheel is moving over the rail, including centrifugal forces on curves. Dynamic forces are additive to the steady-state forces and are caused by variations in track or vehicle characteristics and train handling. This sub-section deals only with steady-state forces in curves, namely, frictional forces and centrifugal forces. Dynamic forces are discussed in sub-section 4.6.

4.5.1 Frictional Forces

On a curve, frictional forces occur between the wheel and rail, even when the centrifugal force is exactly balanced by the superelevation of the track.

Longitudinal wheel slip occurs in curves because the outer wheels of a truck have a greater distance to travel around the curve than do the inner wheels. Lateral wheel slip occurs because the wheels are travelling at a slight angle to the rails at the point of contact and they attempt to run either toward or away from the rails and are restrained by one or more wheel flanges which forces them to slip sideways.

This relative slip between wheel and rail, usually referred to as "creep", results in frictional forces between wheel tread and rail. These frictional forces, together with the lateral axle force, are balanced by the force between the wheel flange and rail; that is, the flange force, as shown in Figure 4-6.

The frictional forces of curve negotiation increase sharply as curvature increases. The relative magnitude of the lateral frictional forces developed for various degrees of curvature for a typical locomotive is shown in Figure 4-7.

4-4

4-5

Figure 4-6
Frictional Forces on Axle-Wheel Set

K = Flange Force
 f = Frictional Forces
 H = Lateral Axle Force
 $K = f_1 + f_2 + H$

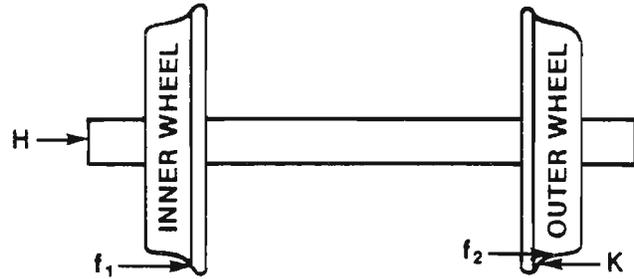
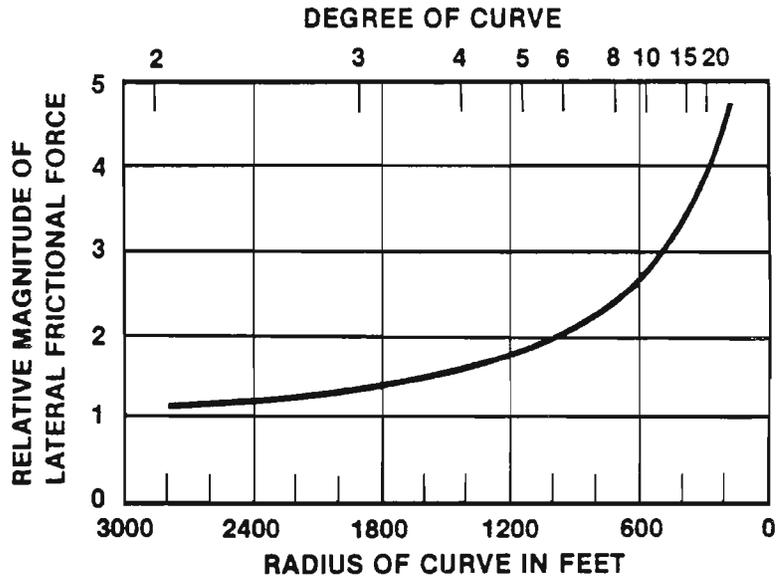


Figure 4-7
Relationship of Lateral Frictional Forces to Curvature



Frictional forces are significantly increased when engine sand is used because the sand increases the coefficient of friction between wheel and rail.

4-6

Unnecessary sanding should be avoided during all modes of operation, particularly in curves and turnouts.

The greater the angle of attack, the greater are the resultant lateral creep and frictional forces, and the more "scuffing" there is between wheel flange and rail resulting in increased wear.

As frictional forces increase, the probability of wheel climb, rail turnover and lateral buckling of the track also increases. Although these steady-state frictional forces by themselves usually do not cause excessive lateral forces, critical force levels may be reached when other train forces occur, such as those applied to the axle and wheels due to centrifugal force, centerplate reactions and track irregularities, all of which are in addition to the frictional forces.

4.5.2 Centrifugal Forces

When a train goes around a curve it is subjected to an outward horizontal centrifugal force which theoretically acts through the center of gravity of the cars. Centrifugal force varies directly with the square of the speed and in direct proportion to the degree of curvature.

Figure 4-1 illustrated equilibrium speed and superelevation for a given train speed. The track can be superelevated so that the weight of the car continues to be distributed equally on the two rails as it negotiates the curve. When this is the case the speed is referred to as the equilibrium or balance speed. When trains operate on curves at speeds which are higher (underbalanced) or lower (overbalanced) than the equilibrium speed, the superelevation is "unbalanced".

Figure 4-8 shows the effects of centrifugal force when a car is travelling around a curve faster than the equilibrium speed. The resultant force acting through the center of gravity of the car is directed away from the center of the track toward the high rail. The higher speed increases both lateral and vertical forces on the high rail and in combination with other lateral forces may result in wheel climb or overturning of the high rail.

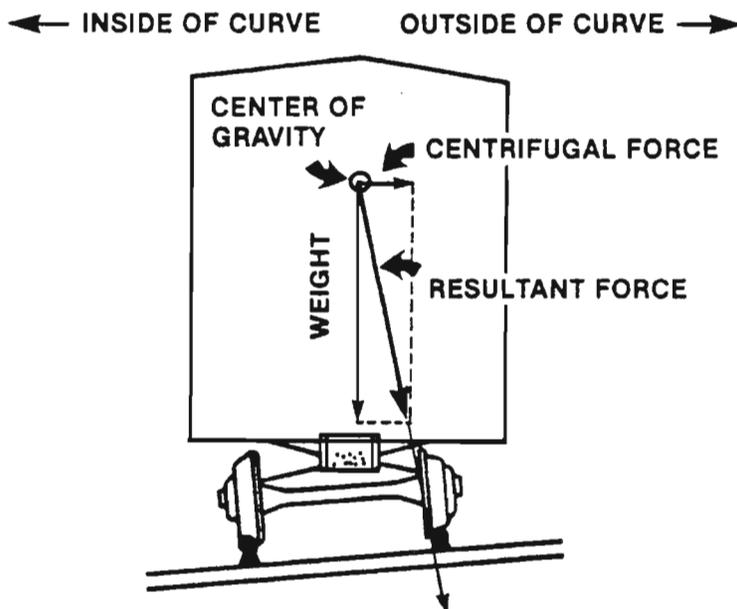
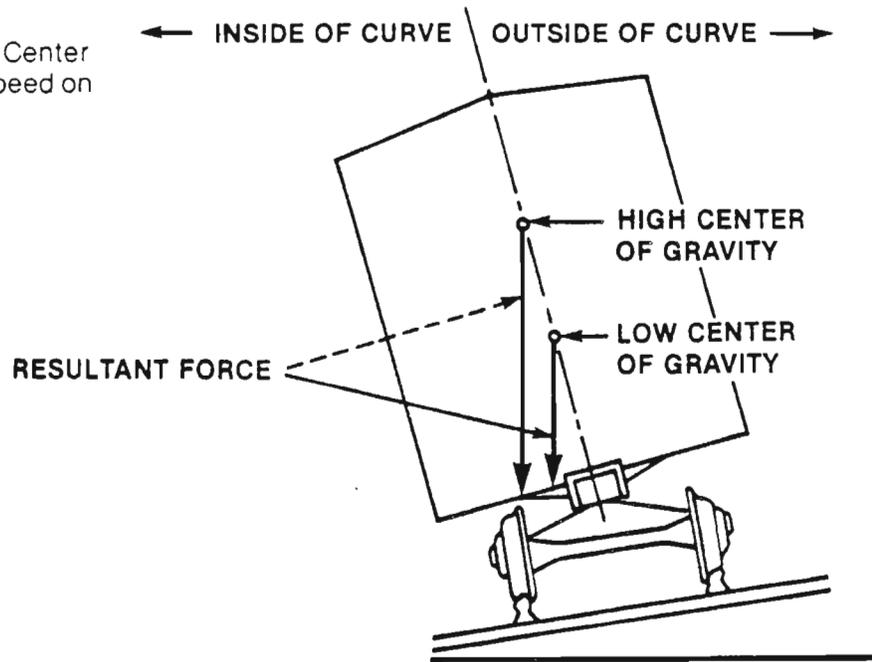


Figure 4-8
Effects of Centrifugal
Force

4.5.2 Centrifugal Forces

When a train travels at less than the equilibrium speed around a superelevated curve, there is an unbalance with the resultant force directed toward the inside or low rail, as illustrated in Figure 4-9. As more of the weight is carried by the low rail, there is an unloading of the outer or high rail. The extreme condition is for the low rail to carry the entire vertical load and the high rail to be completely unloaded, which may result in wheels lifting off the rail. Figure 4-9 also illustrates that as the height of the center of gravity of the car increases, the resultant force falls farther from the center line of track.

Figure 4-9
Effects of Height of Center
of Gravity at Low Speed on
Elevated Curves



4-7

In order to establish the proper amount of superelevation for a given degree of curve it is first necessary to determine the train speeds that are likely to occur at that location. Consideration must also be given to the frequency with which very slow train operations or stopping on the curve are likely to occur. If analysis shows that significant variations in train speeds through the curve can be expected, a superelevation must be selected that will not result in excessive unbalance during normal operations. It may be necessary to restrict the maximum permissible train speed through the curve to meet this requirement.

4-8

Where practical, superelevation shall be provided for equilibrium speed. Otherwise, the maximum speed of the 98-inch-high-center-of-gravity cars (maximum height center of gravity allowed in free interchange) should be restricted so that not more than 2-inch unbalanced elevation results. A curve must not be superelevated so much that unloading of the high rail might occur at very low speeds or when starting. Under no circumstances shall designed superelevation exceed 6 inches, but in many instances the maximum allowed must be less than 6 inches due to curvature, allowable center of gravity, or other factors.

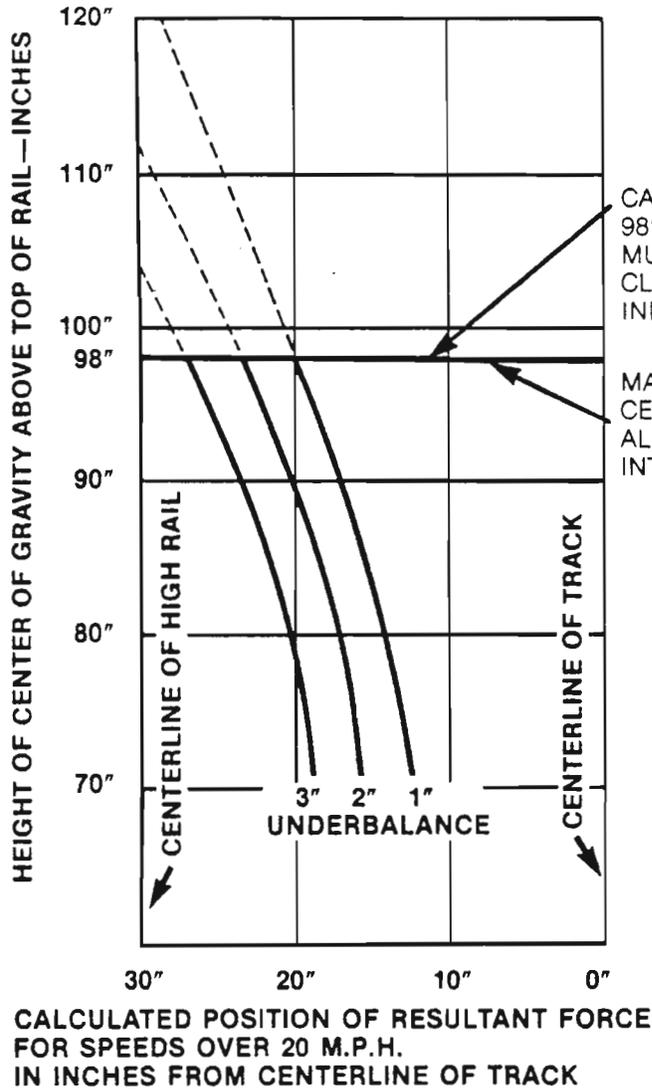
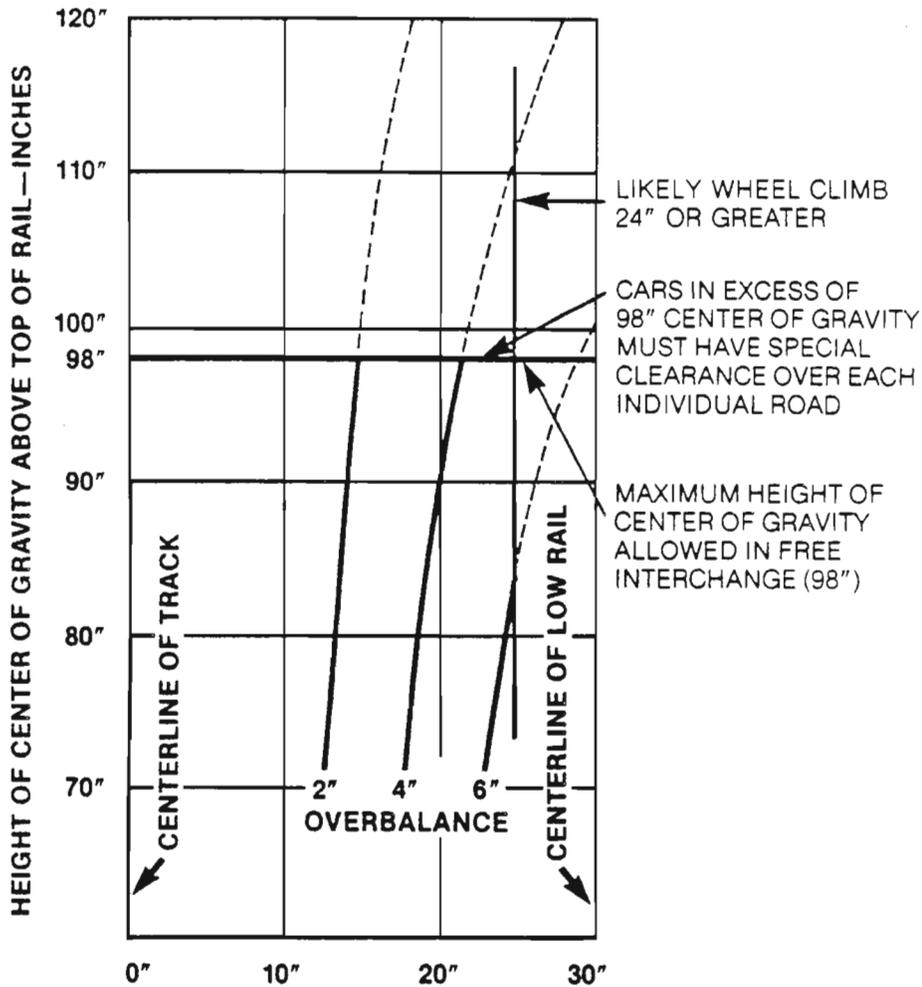


Figure 4-10
Effect of Unbalanced Super-elevations (Underbalanced) on Vehicle Stability

Reference:
American Railway Engineering Association, "Special Requirements of Track Construction and Maintenance Due to Operation of Equipment with High Center of Gravity", 1969 Proceedings Volume 70, Page 1029

Figure 4-11
 Effect of Unbalanced Super-
 elevations (Overbalanced)
 on Vehicle Stability



**CALCULATED POSITION OF RESULTANT FORCE
 FOR THE SPEED OF 15 M.P.H.
 IN INCHES FROM CENTERLINE OF TRACK**

Reference:
 American Railway Engineering
 Association, "Special Require-
 ments of Track Construction
 and Maintenance Due to
 Operation of Equipment with
 High Center of Gravity", 1969
 Proceedings Volume 70,
 Page 1029

4.6 Dynamic Forces

4.6.1 Longitudinal Forces

Longitudinal forces are transmitted throughout the train through the coupler pivot points. Longitudinal forces at the couplers between the cars and/or locomotives may be either tensile (draft) or compressive (buff). Theoretically, when the train is in draft and operating on tangent track, all drawbar forces act along the center line of the track.

Longitudinal forces are increased during braking and accelerating. When there is a difference in velocity between cars (slack action) due to non-uniform braking or accelerating, longitudinal force variations are likely to increase substantially. Longitudinal forces are also influenced by grade. As grade increases, the force of gravity acting on a train increases. Horsepower and braking requirements are greater, thereby increasing coupler forces.

4.6.2 Lateral Forces

The magnitude of lateral forces acting on the track is influenced by many variables. These include irregularities in track surface, cross level, alignment and gage, rail temperature, type of terrain, design of equipment, truck hunting, location of loads on cars, train make-up, coupler forces and train handling. In addition, on curves, lateral forces are influenced by track superelevation and rate of change of superelevation, train speed and location of center of gravity of equipment.

When a train is operating on curved track, the coupler forces and related coupler angles cause lateral forces at vehicle center plates, which are transmitted to the rails as lateral and vertical forces. The magnitude of the lateral and vertical forces at the rail increases with increases in coupler force, coupler angularity and degree of curvature.

Draft forces tend to stretch or string line the train, forcing the wheel flanges against the inside rail of the curve. Buff forces tend to cause the train to buckle outward, forcing the wheel flanges against the outside rail of the curve.

Slack action can cause high longitudinal forces in the train, and despite good track line and surface, high lateral forces can result. As the total free slack in a train increases, the locomotive engineer's ability to control the train decreases. Under certain conditions, heavy slack action can occur in the middle of a train and be undetected in either the engine or caboose.

A slack run-in can produce an increase in the lateral force sufficient to turn the rail over. Even on tangent track a heavy run-in can cause wheel climb or shifting of the track. In addition, the severe buff can damage equipment.

Avoid sudden heavy forces to start or abruptly increase the speed of a train in a curve, since the resulting string line effect could shift track, turn rail over or otherwise result in derailment.

4-9

If possible, avoid heavy braking forces when trains are being slowed or stopped, especially on curves, since the resulting longitudinal and lateral forces may be of sufficient magnitude to cause track shift, wheel climb or rail turnover.

4-10

Heavy draft and buff forces in a given instance may not initiate a derailment but, if repeated over a period of time at the same location may result in track deterioration, which could lead to a derailment if condition is not detected and corrective action taken.

4-11

The 85 and 89-foot cars usually have a long overhang beyond the truck bolster centers. In curves, this increases the coupler angle between cars and results in a greater lateral component of the coupler force. The coupler angle and lateral force are greatest when a long car is coupled to a short car.

4.6.2 Lateral Forces

The magnitude of dynamic lateral forces in track is influenced by abrupt changes in alignment, which are most likely to develop at turnouts, road crossings and when entering or leaving curves.

Wide track gage permits greater skewing of the truck, resulting in a larger angle of attack between the wheel and rail. This increases lateral forces and accelerates wheel and rail wear. Abrupt changes in gage, such as may occur at joints, result in hard wheel flange contact with the rail, and consequent high lateral forces of short duration.

Lateral track instability may occur in continuous welded rail territory due to thermal stressing. In hot weather, expansion of continuous welded rail increases its tendency to buckle, and lateral track instability may result from this thermal stressing. A similar condition may occur in jointed rail where there is inadequate allowance for expansion. Lateral forces due to dynamic loading will sometimes further affect the stability of the track structure. In cold weather the continuous welded rail will contract, which tends to increase the lateral stability of the track but could result in pull-aparts.

Longitudinal forces in track may also result from rail or ties "running" due to insufficient rail anchors or ballast and create lateral instability. At locations where track is more restrained than at others, a gradual transition must be provided between the two types of track to prevent misalignment or pull-aparts.

4.6.3 Truck Hunting

Truck hunting is wheel-set oscillation caused by the dynamic instability of a railroad car truck when operating above its critical speed. During some truck hunting, the truck oscillates between the rails with hard flange contact occurring at regular intervals of 30 to 50 feet.

Truck hunting occurs on tangent track and is more severe where track is stiff and where CWR is laid than on lighter track or on track having jointed rail. In special cases it may occur with empty cars at speeds as low as 35 m.p.h., but normally does not begin until around 45-50 m.p.h. with worn wheels and 55-65 m.p.h. with new wheels. The critical speed is much higher for locomotives and heavily-loaded cars. Empty cars with roller bearings and worn wheels are the most likely to hunt.

Truck hunting results in accelerated wheel and rail wear, fatigue and wear damage to car components such as center plates, bolsters and side frames, damage to lading of lightly-loaded cars, wide gage, loosening of track spikes, and disruption of ballast around tie ends causing increased difficulty in holding line and surface. In extreme cases, it can cause derailments.

4-12

Truck hunting can be controlled by limiting the speed of trains with empty cars, by the use of constant-contact side bearings and/or low-conicity wheel tread profiles.

To remain effective, the last two measures mentioned in the above Guideline require extensive maintenance and have the offsetting disadvantage of causing the trucks to resist turning in curves. This may result in higher L/V ratios, increased wheel and rail wear and more problems in maintaining track gage on curves.

4.6.4 Vertical Forces

The normal vertical wheel forces are influenced by irregularities in track surface, cross level and alignment, and by train speed. In curves, they are also influenced by the amount of superelevation, the rate of change in superelevation, and by the location of the center of gravity of the equipment operated. Under high buff or draft conditions weight transfer may occur due to the lateral component of the drawbar forces causing

an increase in vertical loading on the wheels on one side and a corresponding decrease on those on the opposite side.

Vertical irregularities in track surface allow vertical displacements of the truck suspension. This can result in variations of up to 300 per cent in the forces imparted to the rail from a single wheel within a distance of one rail length. As speeds increase, the maximum wheel load can reach levels in excess of twice that of the static wheel load. Contact pressures between rail and wheel will increase proportionately and may result in stressing the rail beyond its yield strength, causing corrugation, shelling, and/or progressive fractures.

4.6.5 Harmonic Roll

Harmonic roll is the side-to-side rocking motion that shifts car weight alternately from one rail to the other. It can cause load shift, wear of truck components or derailment due to wheel climb or lift.

4.6.5.1 Factors Contributing to Harmonic Roll:

- a) Truck center spacing similar to the length of rail laid with one-half stagger of joints, in combination with a series of low rail joints. When truck center spacing is the same as or close to that of the rail length, a car encounters rail joints alternately with all wheels on its right side and then on its left side as shown in Figure 4-12.

Each successive low joint gives the car body a push which rocks it through greater and greater roll angles. *For wheel lift to occur it is necessary that cross level deviations at three or four consecutive rail joints (approximately two rail lengths) be at least $\frac{3}{4}$ inches low, as measured under load.*

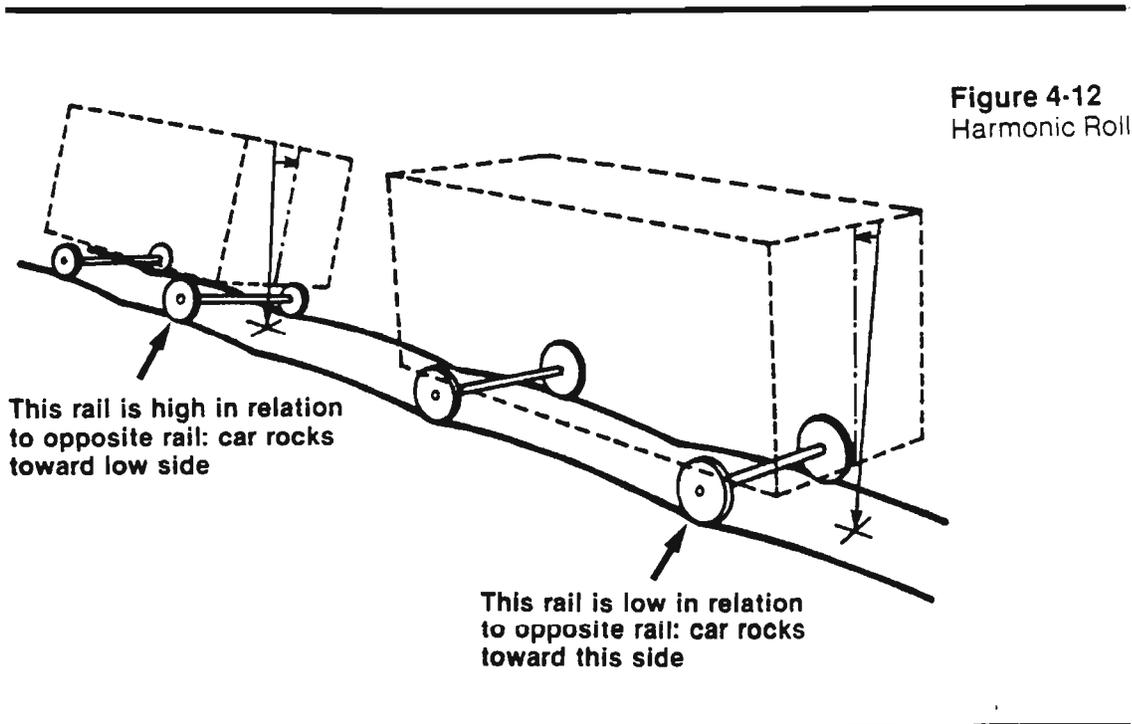


Figure 4-12
Harmonic Roll

4.6.5.1 Factors Contributing to Harmonic Roll

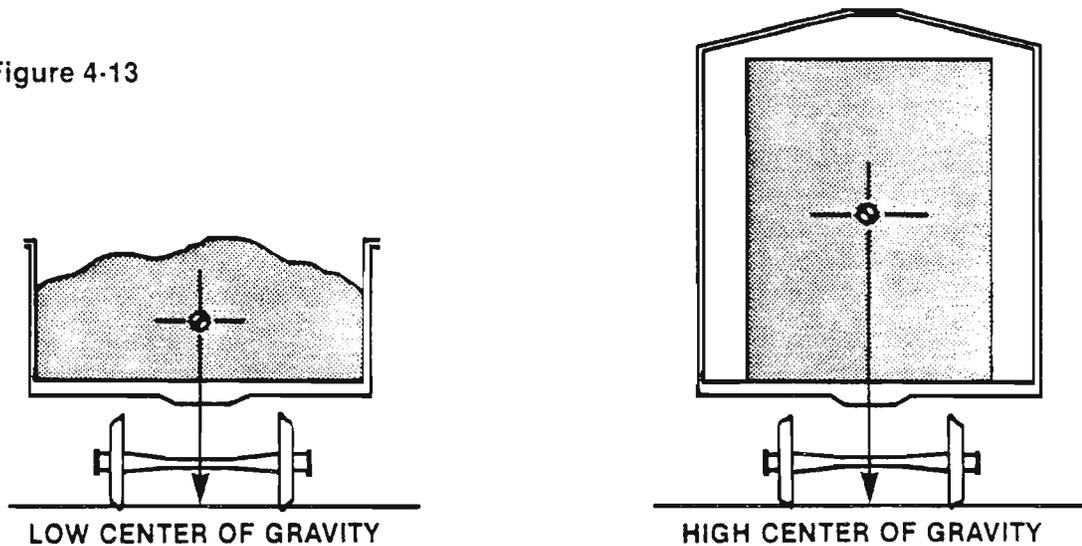
b) Critical Speed :

Like a clock pendulum, a rail car has a natural oscillation frequency at which harmonic roll occurs readily. On 39-foot rails, harmonic roll usually develops at speeds of about 12 to 18 miles per hour for loaded cars and about 16 to 26 miles per hour for empty cars.

c) Center of Gravity :

A car with high center of gravity accumulates more energy in its rocking motion and is therefore more likely to develop wheel lift.

Figure 4-13



d) Car Body Stiffness :

A car body that is stiff in torsion such as a new car is more prone to wheel lift than one that is flexible.

e) Missing or Worn Truck Components :

Missing springs or springs with improper stiffness and/or worn or broken harmonic roll damping devices change the suspension characteristics of the car and therefore can increase the severity of harmonic roll.

f) Change in Curvature :

Harmonic roll derailments will often occur in going from tangent track into a curve or vice versa. While the wheels are lifted, the alignment of the track under the car changes and the wheel flanges can come down on top of the rail.

g) Excess Superelevation :

Travelling at less than equilibrium speed on a steeply-superelevated track unloads wheels on the high rail and aggravates any wheel lift tendency being caused by harmonic roll.

h) Deceleration :

Harmonic roll is more severe when a car is decelerating through its critical speed range or operating within this range.

4.6.5.2 Remedies for Harmonic Roll:

- a) Surface a sufficient number of joints to prevent an occurrence of more than two consecutive low joints, particularly in spirals and curves. Care must be taken not to deliberately peak a series of joints in excess of $\frac{1}{4}$ inch since this could induce harmonic roll.
- b) Lay jointed rail with one-quarter or one-third joint stagger instead of one-half stagger.
- c) Lay rail welded in 60-foot or longer lengths.
- d) Do not post slow orders between 10 and 25 miles per hour on track that may cause harmonic roll.
- e) Ensure that field forces are aware that special high-load movements can be vulnerable to harmonic roll when travelling over cross level irregularities such as in yards or sidings or areas where 15-20 MPH operation is prevalent.
- f) Ensure that correct truck springs are applied to cars and that harmonic roll damping devices have not worn to the extent that they are no longer functioning properly.

4.6.6 Loads on Cars

Eccentric loading creates forces which, when combined with the dynamic forces of a moving train, can become hazardous.

Eccentric loads act upon the frame of the car and are transmitted to the wheels basically as two forces: first, the weight of the load acting vertically, and second, a rotational force which tends to rotate around the center axis of the car with a force equal to the weight of the load times the distance from the car's rotational axis. Figure 4-14-a illustrates a load concentrated on the side of a car and shows the action of this rotational force which tends to rotate the car and cause wheel lift on the side opposite the load.

A load of this nature seldom exerts sufficient force to cause wheel lift by itself but when combined with dynamic forces of train action, particularly on superelevated track, it may be sufficient to allow wheel climb or lift.

Concentration of loads on one end of a car tends to unload the wheels on the opposite end of the car, as illustrated in Figure 4-14-b.

Figure 4-14a

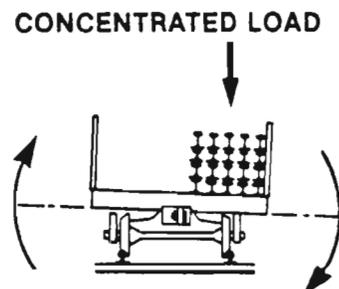
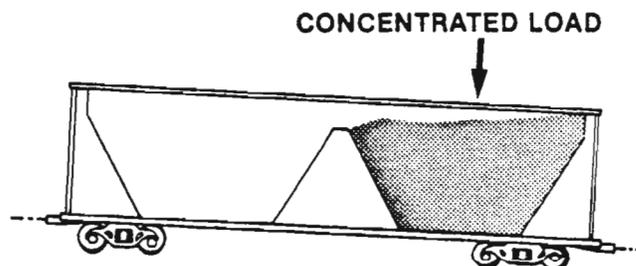


Figure 4-14b



4-14 Loads carried on a car should, wherever possible, be evenly distributed over both the length and the width of the car. Care must be taken to see that loads are distributed evenly on the car and that shifting of loads while in motion does not occur.

4-15 After partial unloading, cars to be moved in regular freight service to another point for further unloading must be carefully inspected to avoid possibility of an eccentric load created by the partial unloading.

4-16 Where equal truck loading is not possible, such as in the case of special shipments or cranes moving on their own wheels, the movement should be governed by special handling instructions.

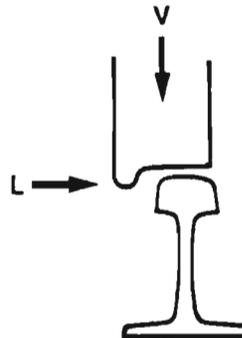
4.7 L/V Ratio

4.7.1 General

The ratio of lateral forces divided by the vertical forces is referred to as the L/V ratio.

Although it is necessary that the lateral and vertical forces, acting separately, be absorbed and restrained by the track structure, the effect of these two types of forces acting simultaneously, as illustrated in Figure 4-15, must be recognized.

Figure 4-15
Forces on Rail



Failure of some form may occur if the L/V ratio exceeds certain critical values. The ratio will increase if the lateral force increases and the vertical force remains constant, or if the vertical force decreases and the lateral force remains constant. High lateral forces are usually accompanied by high vertical loads which keep L/V ratios below critical levels. The highest L/V ratios most often occur because of a sudden reduction in vertical load.

The prevailing dynamic conditions associated with the vehicles, trucks and track will determine if a particular L/V ratio is critical. For example, L/V ratios that represent a problem in low-speed draft situations are not the same as those that may be a problem in high-speed buff situations.

L/V ratios are especially important in predicting wheel climb and rail turnover. The duration of the occurrence will determine if the ratio is critical. An accepted duration for wheel climb or rail turnover to occur is in the order of 0.3 seconds.

An L/V ratio in the order of 0.8 to 0.9 is generally considered a minimum for wheel climb to be likely. L/V ratios in excess of double these have been observed but because of their short duration, wheel climb did not occur.

The ratio of total lateral load on one side of a truck to total vertical load on the same side of the truck may cause rail roll-over at a lower L/V ratio than for an individual wheel to climb. On many common North American rail sections it can be shown that an unrestrained rail would overturn at a ratio of approximately 0.65. Of course, this figure can be exceeded in practice at a single wheel because the weight on adjacent wheels and the torsional stiffness of the rail helps hold the rail down, and also because of the hold-down power of the heads of the track spikes on the gage side. The lateral stability of the rail is further influenced by longitudinal forces that may be present, including tractive or braking forces imparted by the wheels and/or thermal stresses.

High L/V ratios of significant duration can occur when locomotives or cars bounce, pitch or roll. All vehicles have natural oscillation frequencies which, in combination with track irregularities, can cause vehicle instability at critical speeds. Bounce and/or pitch are vertical oscillations of the vehicle while roll or harmonic motion is a side-to-side rocking motion.

Although as already noted, harmonic roll occurs at relatively low speeds, vehicle instability due to vertical bounce and pitch are usually associated with speeds in excess of 50 miles per hour.

4.7.2 Effect of Variation in Surface

Vertical bouncing is initiated by abrupt sags or humps in track such as may occur at bridge ends, railroad crossings or soft spots in the track. The dynamic increases in vertical load due to bounce accelerate wheel and rail wear while the decrease of wheel loading may result in high L/V ratios.

To prevent possible uncoupling or binding of equipment and to minimize slack action, short, sharp vertical curves in the track structure should be avoided.

4.7.3 Effect of Variation in Cross Level

Variations in cross level may cause a side-to-side sway of a car which in turn results in transfer of weight from one rail to the other. If the vertical load on one rail is decreased in this manner while the lateral load remains constant, then the L/V ratio increases. Variation in cross level may cause reduced vertical loads on diagonally-opposite wheels of a truck, increasing the L/V ratio at those two wheels. In similar manner, abnormal variations in cross level within the limits of the distance between truck centers may result in high L/V ratios at the wheels on diagonally-opposite corners of the car.

4.7.4 Effect of Wide Gauge

It has already been noted in the discussion of lateral forces in Section 4.6.2 that wide gage allows greater skew of the truck. The resulting greater angle of attack between wheel flange and the rail increases lateral forces and the tendency for the wheel to climb the rail. This is especially so in curves, where the leading wheel of the truck normally is already exerting a heavy outward load on the outer rail. Although the lateral force may be abnormally high, the L/V ratio will remain within safe limits if the vertical wheel load is sufficiently high. If the vertical wheel load is significantly reduced for any reason while the high lateral force is occurring, and if the resulting high L/V ratio is maintained for a sufficient time period, wheel climb may occur.

On curves, if the outer rail is heavily worn the likelihood of wheel climb is increased, particularly if the wheel contour is in near new condition.

4.7.5 Effect of Variation in Alignment

Variations in track alignment, such as sharp spots in curves, increase wheel lateral forces, resulting in increased L/V ratios. Irregular alignment, accompanied by variations in cross level, will cause even higher L/V ratios if the lateral force increases at the same time the vertical force decreases.

4.8 Practices to Control or Minimize Forces

4.8.1 Track Inspection

Most track-train dynamics problems can be recognized by the ride quality of trains or by careful track inspection. Poor ride quality, abnormal rail wear, excessive tie plate cutting, bent spikes or elongated spike holes, track misalignment and/or gage irregularities may indicate track-train dynamics problems. To aid in the early identification of such problems, regular track inspections made by riding trains or track motor cars, or on foot, may be supplemented by the operation of track geometry cars to measure and record the quality of track surface, cross level, gage and alignment.

4-17

Ride quality reports by train crews and supervisors should be encouraged since such reports are useful in detecting conditions which may be apparent only under dynamic loading.

It is imperative that maintenance and operating officers analyze all indications of track-train dynamics problems, and where necessary take corrective action.

4-18

Lines of communication within the company should be established so that problems relating to the track, the equipment and the train handling can be mutually studied and effective solutions implemented.

4.8.2 Speed Restrictions

The magnitude of forces expended in train operations varies with the speed of the train, with some forces such as centrifugal forces increasing in proportion to the square of the speed. Most speed restrictions are imposed for the safety of train operations, so that the magnitude of the forces expended will not create an unsafe condition.

Every speed restriction is a special situation and each location must be studied to determine the requirements for safe train handling for trains approaching the restriction.

4-19

The limits of speed restrictions must be carefully selected, considering not only the specific structure or section of track to be protected, but also the difficulty experienced by the locomotive engineer in controlling the train as it approaches the restriction. In order to adequately protect curves and structures adjacent to the restricted area, it may be advisable to extend the limits of the restriction. Since all cars in the train must be brought through the restriction safely, the crew has the responsibility to observe the speed restriction for the entire length of their train unless otherwise specified; for example, the train speed being limited only until a grade crossing is fully occupied.

4-20

Where practicable, speed restrictions should be so placed that heavy braking will not begin in a curve, which may create high lateral forces in the equipment and track.

Speed restrictions associated with track profile are often dictated by the stopping distances required for the trains. The stopping distances and safe operating speeds for operations on grades vary with the equipment used, the length of trains, the tonnage handled, the brake pipe pressure used and presence or absence of remote control units.

Speed restrictions associated with track profile should be re-evaluated and updated as necessary when new equipment is introduced into service or operating practices are changed.

4-21

4.8.2.1 Placement of Signs

There are many different practices on placement of speed restrictions signs.

The signs used to establish speed restrictions must be placed so they can be clearly seen by the crew, and the train brought into conformity with the restriction before entering the restriction.

4-22

4.8.2.2. Zoning of Speeds

The engineer's train handling can be made more efficient by eliminating the need for too frequent braking and accelerating. Braking and accelerating causes slack to change within a train, and each time the slack is changed, dynamic forces result.

When a series of restrictions are close together, it is advisable to establish a uniform speed through the zone rather than attempting to fluctuate train speeds unnecessarily.

4-23

4.8.2.3 Graduated Speeds

Wherever experience has shown that there is difficulty in maintaining track or controlling a train approaching specific locations such as drawbridges and interlocking plants, the use of graduated speeds may be desirable. Locations where major changes of speed occur, such as 70 m.p.h. to 40 m.p.h., should also be considered as prime candidates for adoption of graduated speed decreases.

It may be desirable to establish graduated speed zones when approaching a speed restriction to reduce excessive longitudinal and/or lateral forces rather than relying solely on locomotive engineers' judgement to initiate braking at the proper locations.

4-24

4.8.2.4 Speed Restrictions on Bridges

It may be necessary to restrict speeds on bridges for various reasons. *Locomotive engineers should be made aware that additional stresses are caused by a train decelerating or accelerating on a bridge, and they should be aware of the effect these stresses have on the structure.* Bridges are particularly vulnerable when being repaired.

Speed restrictions and train handling must be carefully controlled over bridges. Wherever possible, restrictions should be so placed that braking or accelerating will be minimized on a bridge.

4-25

4.8.2.5 Fixed Signals

The spacing of signals must give locomotive engineers adequate distance to stop their trains without introducing excessive forces into the track.

4-26

4.8.2.6 Temporary Speed Restrictions

Out-of-face trackwork which disturbs the ballast section decreases the lateral stability of the track. The ability of the track to resist dynamic lateral forces imparted by trains is restored only after the track has been stabilized by the passage of up to several hundred thousand gross tons of traffic, depending on the type of ballast and amount of disturbance. Restoration of track stability can be accelerated by the use of a mechanical ballast compactor.

When track or structures require maintenance, it is sometimes necessary to place temporary speed restrictions over a portion of the track being worked on. The limits of the restriction should be changed as the work is progressed.

Temporary speed restrictions may cause high L/V ratios on curves since the train will be running at speeds lower than that for which the superelevation was established. The superelevation in such curves has a tendency to increase due to the overbalance of weight upon the low rail. This unloading of the high rail can lead to wheel climb, especially where track alignment is irregular.

Priority in the removal of temporary speed restrictions should be given to those which cause difficult train handling. Speed restrictions placed at isolated or individual locations such as rail defects should be given priority for removal over other locations where a series or group of temporary speed restrictions exist in a relatively short distance.

4-27

The limits of temporary speed restrictions must be carefully analyzed to ensure that the locomotive engineer can safely control the train without adversely affecting track and structures adjacent to the speed restriction. Slow order protection must be continued until the track or structure has been restored to a safe condition for normal speed.

Western Pacific
Road Conductor
Training Course

~ Mechanical ~



MECHANICAL

- 1. Time Table #9 , page 82 and 83
- 2. Operating Rule 1150 , page 219
- 3. Conductors Guide to Administration page 41 and 42
- 4. Operating Rules 111 and 112 page 84
- 5. Operating Rules 858 page 177
- 6. Yellow Notice 12-12
- 7. Operating Rules 109 and 110 , page 82 and 84
- 8. Operating Rule 302 page 137
- 9. Time Table #9 pages 71, 72, 48
- 10. Operating Rule 861 page 177
- 11. Form 10280 B
- 12. Operating Rule 894 page 183
- 13. Operating Rule 173 page 45

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

August 5, 1980

NOTICE NO. 12-12

ALL CONCERNED:

When picking up cars at locations where carmen have not inspected freight cars, train crews shall inspect freight cars for imminently hazardous conditions listed below:

1. Car Body:
 - (a) Leaning or listing to side.
 - (b) Sagging downward.
 - (c) Positioned improperly on truck.
 - (d) Object dragging below.
 - (e) Object extending from side.
 - (f) Door insecurely attached.
 - (g) Broken or missing safety appliance.
 - (h) Lading leaking from a placarded hazardous material car.
2. Insecure coupling.
3. Overheated wheel or journal.
4. Broken or extensively cracked wheel.
5. Brake that fails to release.
6. Any other apparent safety hazard.

R. R. GENTRY
Division Superintendent
Eastern Division

C. A. AADNESEN
Division Superintendent
Western Division

CLASS OUTLINE
MECHANICAL (CARS)

C-1-4

I. RAIL CAR NOMENCLATURE:

II. TRAIN LINE:

III. CAR INSPECTIONS:

IV. HOT BOX DETECTORS:

V. DRAGGING EQUIPMENT INDICATORS:

VI. SETTING OUT BAD ORDER CARS ENROUTE:

VII. LOCOMOTIVES AND LIGHT FAILURE:

FIGURING JOURNAL SIZE
(AAR INTERCHANGE RULES)

RULE 70

- b. **Load Limit** — Maximum permissible weight that can be loaded into car. Calculated by deducting the lightweight of car from the total allowable weight on rail for applicable axle size shown below:

| Journal Size | Total Weight On Rail (4 Axles Per Car) | | Nominal Capacity | |
|--------------|---|---------|------------------|---------|
| | Lb. | Kg. | Lb. | Kg. |
| 4¼ x 8 | 103,000 | 46,700 | 60,000 | 27,000 |
| 5 x 9 | 142,000 | 64,400 | 88,000 | 39,500 |
| 5½ x 10 | 177,000 | 80,300 | 110,000 | 49,500 |
| 6 x 11 | 220,000 | 99,800 | 154,000 | 69,500 |
| 6½ x 12 | 263,000 | 119,300 | 200,000 | 90,500 |
| 7 x 12 | 315,000 | 142,900 | 250,000 | 113,000 |

- (1) When car owner chooses to reduce the Load Limit, a star symbol (*) must be applied immediately to the left of the "LD LMT" stenciling. This fixed Load Limit must only be altered by car owner, or with car owner's permission.
- c. **Nominal Capacity** — A capacity in name only, representing for the applicable axle size shown above, a general guideline as to the potential carrying capability of a car. Nominal Capacity is expressed in multiples of 1000 pounds (500 kilograms).
- (1) The calculated and stenciled Nominal Capacity:
- (a) Must never exceed the Load Limit
 - (b) May be equal to the Load Limit
- (2) When car owner chooses to reduce the Nominal Capacity from that shown in Section 3.b., a star symbol (*) must be applied immediately to the left of the "CAPY" stenciling. This fixed capacity must only be altered by the car owner or with the car owner's permission.

Western Pacific
Road Conductor
Training Course

~ Administration ~



ADMINISTRATION

- i. Conductors Guide to Administration
- j. BE Pamphlet #20
- k. Form 10280C
- l. C262 (Back of Form 10280B)
- m. Yehow Notices 11-8, 12-3, 12-7, 11-9, 11-10, 10-14, 14-15

PICUOC

FORM 10280B/C262
Revised 12/ /76

TYPE CODE
280

WESTERN PACIFIC
SACRAMENTO NORTHERN
TIDEWATER SOUTHERN

| SET OUT | STATION | TIME | DATE | TRAIN ID |
|---------|---------|------|------|----------|
| 1B | 1 | 1 | 1 | 1 |

| Car Identification | Commodity or X (Empty) |
|--------------------|------------------------|
| 1 | |

BAD ORDER
SHIFTED LOAD
HOT BOX REPORT

| | | |
|-----|-------------------------------------|------------------------|
| \$ | | |
| 1- | Type of Bad Order | |
| 2- | % New Break | |
| 3- | Cause of Bad Order | Required all cars |
| 4- | Yd track when not in train | (if known) |
| 5- | Reported to (Name) Time Reported | |
| 6- | Origin | |
| 7- | Shipper | |
| 8- | Destination | Required all loads |
| 9- | Consignee | |
| 10- | Route | |
| 11- | Train Delay | Required if set out |
| 12- | Disposition of Waybill | between terminals |
| 13- | Friction or Roller Bearing | Required for Hot Boxes |
| 14- | Journal number and side (N or S) | |

SIGNATURE _____ DATE _____ TIME _____

NOTE:

- 1-RPK should not be cut in
- 2-Train ID must be shown when applicable
- 3-Conductors must use this form on all bad order cars set out between stations
- 4-Yard forces must use this form on all bad order cars not covered by Form 10200 or 10201
- 5-More than one bad order may be reported under single header
- 6-Understandable abbreviation is acceptable

COPIES TO:

- Mech. Coord. (Mechanical Coordinator SFO)
- Car Foreman & Agt. (Note: In addition to teletype call listed above, copy must go to Car Foreman & Agt. in whose territory car is set out)

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - March 18, 1981

NOTICE NO. 11-8 (Revised)

ALL CONCERNED:

DELIVERY OF INTERLINE WAYBILLS PREPARED BY SAN FRANCISCO
RATE AND BILL CENTER TO WP TRAIN CONDUCTORS *

1. All interline waybills for cars originating west of Oroville and moving off-line east of Oroville will be delivered to Third and Fourth Subdivision Conductors at Oroville.
2. All interline waybills for cars originating within the Oroville-Portola-Bieber triangle, specifically the Greenville-Crescent Mills-Indian Creek-Grays Flat area, will be delivered to 2nd or 3rd Sub Conductors at Oroville, regardless of billed destination. This because these cars are all brought to Oroville with bills of lading prior to forwarding. (Former Keddie Agency business).
3. All interline waybills for cars originating east of Portola and moving off-line west of Portola (including BN) will be delivered to 3rd Sub Conductors at Portola.
4. All interline waybills for cars originating and moving off line east of Portola will be delivered to 7th Sub Conductors at Elko.
5. All interline waybills for cars originating at Oroville and moving off line east of Oroville will be delivered to 3rd Sub Conductors at Oroville.
6. All interline waybills for cars originating at Oroville or any station west of Oroville, and moving off line west of Oroville will be delivered to the off going junction station, where clerical forces will retain the waybill and match with the bill of lading prior to actual interchange.
7. All stations will advise waybill matching point by telephone and/or message of the cars moving from their stations on copies of bills of lading.
8. Train consists, both Conductor's list and wire consist, must designate cars moving on copies of bills of lading with two (2) ampersands (&&) in the first two spaces of the REMARKS section. After receipt and match up of the waybills, the ampersands must be deleted from subsequent consists.
9. Conductors picking up waybills are to match bill of lading copies on which the cars moved, to the waybills picked up at Oroville or other matching point, attaching copies of bills of lading (and all other attachments) to the back of waybills.

NOTICE NO. 11-8 (Revised)
Cont.

March 18, 1981

10. Conductors of eastbound trains out of Oroville will, in case of failure to receive all waybills for cars that are still traveling on bill of lading copies, contact Oroville. Oroville will notify Rate and Bill Center in San Francisco (Ext. 317 or 318) that cars are traveling on the bill of lading copies. Waybills for the BN will then be "over-headed" to Klamath Falls and UP/RG bills sent to Portola or Elko dedicated teletype for match up.

* Does not include cars moving on field prepared revenue or weight charge waybills.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

TRAINMASTER

OPERATING DEPARTMENT

San Francisco - November 16, 1981

File - 331.02 Spl. 6

NOTICE NO. 12-3 (Revised - Revised lines marked with an asterisk*)

ALL CONCERNED:

SUBJECT: High-Wide Shipments and Cars

Summary: Section 1: Procedures for authorizing movement of excess dimension shipments and cars.

Section 2: Special procedures and handling required for excess dimension shipments and cars destined San Francisco via SP bridge agreement.

Refer to Notice No. 12-4 for California PUC and Nevada PSC regulations regarding excess dimension shipments and cars.

Section 1 - Procedures for Dispatchers' office and Yard offices.

1.1 All excess dimension (High-Wide) shipments or loads must be authorized for movement on Western Pacific or subsidiaries by Vice President - Transportation and handled in compliance with all applicable regulatory agency requirements.

Except for excess dimension shipments or cars covered by standing, blanket clearances (on file with Assistant Chief Clerk-Operation, San Francisco), each High-Wide movement will be authorized by the Vice President - Transportation on a High-Wide (HW) wire. Each HW wire will be assigned a consecutive HW-number and will be addressed to Chief Train Dispatcher, Sacramento, all WP terminals in route, North Yard or Roper and connections, as appropriate.

1.2 With the concurrence of the Clearance Engineer, Assistant Chief Clerk - Operation (S.F. ext. 214) will issue HW wire upon receipt of dimensions of shipment and car from originating carrier or from WP Mechanical Department personnel.

HW wire will contain car initial and number, contents, route, origin, destination, measurements and will specify any additional restrictions which may apply.

Assistant Chief Clerk will maintain a file by HW number of all wires pending and issued. Each car will be covered by a separate HW wire except that idler cars or cars moving together handling a single load may be covered on the same wire.

November 16, 1981

1.3 Chief Train Dispatcher, Sacramento, will maintain a file of all HW wires pending by last digit of car number. Assistant Chief Clerk - Operation will issue a separate wire for each High-Wide car or shipment except that idler cars will be shown on same wire with loaded car. However, should an HW wire be received in Chief Dispatcher's office covering the movement of multiple cars, duplicate copies of wire must be made and a copy filed for each car number for easy reference.

- * When required by CPUC and Nevada PSC regulations (See Notice 12-4), Chief
- * Dispatcher will ensure that Train Dispatcher issues Form Z, Example 3,
- * train order, or, that Train Dispatcher determines that Conductor and
- * Engineer have been provided with Message Form T-5 on Blue Paper (Refer
- * to Operating Rule 228, Page 123, Operating Rules) to inform train and
- * engine crew of presence of excess dimension shipment in their train.
- * Additionally, Form Z, Example 3, Train Order or Message Form T-5 on
- * Blue Paper will be issued to all trains which may be affected by train
- * having car with lading in excess of 5 feet 5½ inches from center line
- * of car.

Trick Dispatchers will be notified by train crews setting out cars for any reason if set-out contains any High-Wide shipment or car. Chief Dispatcher's office will ensure that train making subsequent pick-up has appropriate HW wire and train order, if required.

If a bad order set-out is also a dimensional shipment or car, Conductor must notify Dispatcher. Chief Dispatcher will note HW number and High-Wide status of car on bad order wire sent to Mechanical Coordinator, San Francisco, and will make note of set-out on HW wire file kept in Chief Dispatcher's office.

When pick-up message is issued, it should incorporate High-Wide measurements and restrictions and carry appropriate HW file number along with usual pick-up information.

1.4 Chief Train Dispatcher's office must be notified in advance of movement of excess dimension shipment or car or of the presence of dimensional shipment(s) in a through train.

Chief Train Dispatchers of connecting roads will provide advance notice to WP Chief Train Dispatcher's office, Sacramento, of all dimensional shipments enroute to WP. BN Chief Train Dispatcher, Vancouver, or BN operator, Bieber, will advise of presence of excess dimension shipment or car prior to its departure from Klamath Falls. WP Chief Train Dispatcher's office will notify Chief Train Dispatcher's office on connecting carriers of excess dimension shipments destined to them.

WP stations, North Yard and Roper Yard, when originating excess dimension shipments, or when receiving such shipments or cars from connections, will notify WP Chief Train Dispatcher, Sacramento, of shipments's readiness to move or of its expected arrival in through train.

- 1.5 Yard offices will maintain an up-to-date High-Wide wire file easily accessible by car initial and number. Copies of each HW wire will be provided to Trainmaster, Yardmaster, and Car Foreman.

Yard office will check all outbound train lists, and inbound interchange cuts, against High-Wide file. Copy of HW wire must be attached to waybill or bill of lading for all excess dimension shipments or cars originated or received from connections. In addition, Message Form T-5 on Blue Paper, will be used as a waybill tag on excess dimension shipments and will be attached to the waybill.

Train Desk Clerks at terminals originating trains must provide a copy of outbound train list to operator indicating any excess dimension shipments. Operator will then notify Chief Train Dispatcher's office of train on which shipment will move. Copy of HW wire will be provided outbound Train Conductor along with Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper as required.

Train Desk Clerk will notify operator who will, in turn, notify Chief Dispatcher's office of the presence of High-Wide shipments or cars in pick-ups to be made by through trains or locals. Special attention must be paid at terminals such as Sacramento to determine if High-Wides are present when through trains set-out blocks for pick-ups by following trains. If no operator is on duty, Train Desk Clerk will notify Chief Dispatcher's office directly.

All originating terminals, such as Oakland, where no operators are on duty, Train Desk Clerk, will notify Chief Train Dispatcher's office of train in which excess dimension shipment will move sufficiently in advance of movement for Dispatcher to protect with Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper as required.

At intermediate terminals, such as Oroville, operators may not receive a copy of train list from Train Desk Clerk on through trains, especially those where only a crew change is involved. In this case, Chief Train Dispatcher's office will notify operator of High-Wide in train by issuing Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper. Operator will ensure that copy of appropriate HW wire is provided outbound Conductor.

High-Wide shipments or cars must be cleared for movement before release from any terminal. If no HW wire is on file, Train Desk Clerk must check with Operating Department's Assistant Chief Clerk, San Francisco, (Ext. 214) to determine if wire has been issued. If so, copies must be obtained and handled according to procedures above. If no HW wire has been issued and measurements are not on file with Assistant Chief Clerk, San Francisco, car or shipment must be measured by Mechanical Department personnel and HW wire issued. No dimensional shipment or car should be allowed to leave a terminal until HW and Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper, if required, have been issued.

- 1.6 Conductors determining that there are dimensional shipments or cars in their train and that such shipments are not covered by Train Order Form 2, Example 3, or by Message Form T-5 on Blue Paper, when such shipments will move through or are destined to Nevada or California points, and exceed 5 feet 5½ inches from center line of car, will notify Train Dispatcher of such condition and will be governed by Dispatcher's instructions in the further handling of such shipment or car.

Conductor will advise Train Dispatcher whenever setting out a High-Wide shipment or car for any reason and will not make such set-out without Dispatcher's authority.

- 1.7 Any High-Wide shipment or car moved without proper notification from connections should be reported by wire to Vice President-Transportation and Division Superintendent.

Section 2 - Special Procedures Re: Handling Excess Dimension Shipments and Loads Destined San Francisco.

- 2.1 Closed cars which exceed Plate C and any excess dimension shipment or car destined San Francisco for bridge movement via SP must be delivered to the SP at Oakland in accordance with procedures specified in Notice * No. WD-1. Excess dimension shipments and cars will not be delivered with other bridge traffic at Fremont.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - March 18, 1981

NOTICE NO. 11-9

ALL CONCERNED:

CONDUCTORS "WORK PERFORMED" REPORT - FORM 10280C-REV.

Effective January 3, 1977, a multipurpose form, 10280C-Rev., was implemented to serve as both a train consist/switch list and a non-agency setout, pickup, bad order report form. It replaced Forms 10280C and 10280D.

The right hand section of the form is called "Work Performed" and is to be used to record all setouts/pickups/bad orders made between two reporting stations, as well as any setout at the next reporting station. Each setout (Code S/O) pickup (Code P/U) or bad order (Code B/O) must include the proper code as well as the SSI, Time, Date, and Patron or Connecting Carrier Tip entries. Specifically:

CONDUCTORS

1. A separate "Work Performed" sheet must be prepared whenever any setouts/pickups are made enroute to the next reporting station. It is not permissible to use a copy of your outbound or inbound train list to record setouts/pickups, (even if only one setout/pickup is made) mainly because this option was abused, and "Work Performed" ended up in haphazard sequence many times with arrows/crossouts cluttering up the page.

Where Fremont provides a Carpenter pickup list, this list may be used as "Work Performed" sheet as long as work performed section is properly filled out and any other setouts/pickups made enroute are shown in sequential order on same sheet if possible. (See attached example of properly prepared "Work Performed" sheet).

2. When work is performed between reporting stations (such as Stockton-Sacramento) then any cars set out at the next reporting station (Sacramento) must be the last entry on the "Work Performed" sheet, per attached example of cars set out at South Sacramento.
3. All "Work Performed" sheets must show setouts/pickups in exact SSI/Date/Time sequence, or in the order the work was actually performed. Failure to do this makes it impossible for the computer to generate accurate consists from changes reported by the field. In other words, the first setout/pickup must be shown at the top of the sheet, and the second one immediately below the first, and so on to the bottom of the page.

March 18, 1981

4. All blind siding non-agency pickups must show the car ahead, or the car or engine immediately ahead of the car(s) picked up, on the "Work Performed" sheet as follows:

```
!GATX 98611 CAR AHEAD
!WP 65146 CN GDS !UPE !85 &&CNW P/U !114!2155!07/14
```

Note 1 - "Car ahead" must be clearly spelled out opposite car I.D. on car line immediately above first car picked up.

Note 2 - If head end pickup, then show engine number I.D. as car ahead.

Note 3 - If engine(s) added to point, show "ENGN" as car ahead. (Whenever no other engines ahead of one(s) picked up.)

Note 4 - Full car line information must be shown on each car picked up.
Example: ! WP 7001 ORE !766 !102 NN

5. Car(s) set out bad order at non-agency stations must be shown on "Work Performed" sheet as B/O along with SSI, Time, Date. This does not relieve you of responsibility to prepare a detailed 280-B Bad Order Report to be turned in at next reporting station.
6. Cars set out to or picked up from blind siding interchange locations (including Lyoth-SP, Clear Creek Jct.-AL, Quincy Jct.-QRR, 10th West-UP) must be shown on "Work Performed" sheet as either setout (S/O) or picked up (P/U) with proper connecting carrier TIP entered. Do not use codes "R" or "J". Agency personnel only are responsible for preparing "R" and "J" interchange receipt/delivery messages.
7. All symbol and local engine changes, whether made at blind sidings or at intermediate terminals, must be reported as a setout (S/O), pickup (P/U) or bad order (B/O). This includes cases where one train gives another train one or more of its units, or where complete engine swaps are made.

When reporting an engine as a pickup (P/U), the engine unit immediately ahead of the one(s) picked up must be shown as the "car ahead".

If, however, there is no engine ahead of the unit(s) picked up, use the letters "ENGN" as car ahead entry (no numbers should be entered opposite "ENGN").

Repeat - use letters "ENGN" as car ahead entry when picking up other engine(s) if there is no unit ahead of the one(s) picked up.

For example, if Oroville adds WP 3505 to the point of three other engine units on the GGM, then the "ENGN" literal would be used as follows on the teletype input of pickup (P/U):

```
P/U!203!1800!06/14!ENGN
!WP 3505 ENGINE!930 !125
```

March 18, 1981

8. Conductors of Local trains must show their entire train (by initial and number, L (Load) or X (empty), set out (S/O) at the final terminal, as the last entry on their "Work Performed" sheet.

CLERKS

1. All intermediate terminal pickups at your station must show the "car ahead" for each block of cars picked up. Also for each car line full car information must be shown. i.e. car int., car no., contents, SSI, weight, remarks.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - March 18, 1981

NOTICE NO. 11-10

ALL CONCERNED:

FORM 10280B/C262 - COMBINATION "BAD ORDER - SHIFTED LOAD - HOT BOX"
and
"REPORT OF REPAIRS AND MATERIAL APPLIED TO CARS BY TRAIN CREWS" REPORT

- A. Form 10280B, "Bad Order - Shifted Load - Hot Box Report" should be used to report bad order cars as follows: (Operators see attached example of teletype format for 280B message.)
1. All loads and empties bad ordered and set out between terminals.
 2. All loads and empties bad ordered and set out of trains at terminals.
 3. All loads and empties, not in trains, bad ordered at terminals except those empties reported bad order on Form 10200/10201.
 4. All reports of cars set out of train must show train I. D. number in header line. The necessary addresses are pre-printed on Form 10280B and the information required thereon is self-explanatory.
 5. Employees repairing cars between terminals must report "okay" to Chief Dispatcher, Sacramento, Ext. 226, or Transportation Center, San Francisco or Mechanical Coordinator, Ext. 360
- B. Form C262, "Report of Repairs and Material Applied to Cars by Train Crews", on the reverse side of 10280B, should be used to report:
1. Repairs made to cars by train crews including material used.
 2. Cars damaged between terminals.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

PI-CC

FORM 10280B/C262
Revised 12/01/76

TYPE CODE

WESTERN PACIFIC
SACRAMENTO NORTHERN
EUREKA PORTLAND

SET OUT STATION TIME DATE TRAIN ID

13 1548 11045 11/12 664110

Car Identification Commodity or X (Empty)

WP 7002 ORE

BAD ORDER
SHIFTED LOAD
HOT BOX REPORT

| | |
|-------------------------------|-------------------------------------|
| 1- HOT BOX | Type of Bad Order |
| 2- New Break | 2- New Break |
| 3- Cause of Bad Order | Cause of Bad Order |
| 4- Yd track when not in train | Yd track when not in train |
| 5- 6TH SUB DISPR 1400 | Reported to (Name) Time Reported |

Required all cars
(if known)

| | |
|-------------------------|-------------|
| 6- WINNEMUCCA NEU | Origin |
| 7- RANCHERS EXPLORATION | Shipper |
| 8- MCGILL NEU | Destination |
| 9- KENNECOTT COPPER | Consignee |
| 10- WP-NN | Route |

Required all loads

| | |
|----------|------------------------|
| 11- 50" | Train Delay |
| 12- EIKO | Disposition of Waybill |

Required if set out
between terminals

| | |
|--------------|----------------------------------|
| 13- FRICTION | Friction or Roller Bearing |
| 14- L-4(N) | Journal number and side (N or S) |

Required for Hot
Boxes

SIGNATURE V. ARZUAGA

DATE 11/12 TIME 1100

NOTE:

- 1-RPX should not be cut in
- 2-Train ID must be shown when applicable
- 3-Conductors must use this form on all bad order cars set out between stations
- 4-Yard forces must use this form on all bad order cars not covered by Form 10200 or 10201
- 5-More than one bad order may be reported under single header
- 6-Understandable abbreviation is acceptable

COPIES TO:

- Mech. Coord. (Mechanical Coordinator SFO)
- Car Foreman & Agt. (Note: In addition to teletype call listed above, copy must go to Car Foreman & Agt. in whose territory car is set out)

KN PI COI

1200 726 107909N 19:45 11/12/77

10154311045111/121004110

10P 7002 ORE

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1. HOT BOX
5. 6TH SUB DISPR 1400
6. WINNEMUCCA NEV
7. RANCHERS EXPLORATION
8. MOGILL NEV
9. KENNECOTT COPPER
10. WP - NN
11. 50"
12. ELKO
13. FRICTION
14. L-4(N)

SIG...V ARZUAGA CONDOR DATE...11/12 TIME...1100

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - January 5, 1976

NOTICE NO. 10-14 (Revised)

ALL CONCERNED:

I. Caboose Log Books

Section 19 of General Order 114, Public Utilities Commission of the State of California requires an equipment defect and repair register be maintained in each caboose and it shall be the responsibility of the conductor to make entries in this log book regarding any defect that exists on cabooses operating in the State of California.

In addition, Road Conductors are required to report to Train Dispatchers conditions arising after departure from terminals and prior to tie-up point, a failure of required equipment or supplies needed.

Dispatchers so notified will in turn make entry on train sheet and promptly notify proper authority at terminals before arrival of caboose so that repairs can be made or caboose supplied on arrival to avoid unnecessary delay to trains.

II. Union Pacific Caboose Form 434081

A check-off list, Form 434081 should be furnished out of Salt Lake when WP trains have UP cabooses which will be operated into California, and pertinent items must be checked. The completed forms should be turned in at Elko.

At Elko, A.) Two copies should be made (one should be forwarded to M. C. McManus, San Francisco, the second should be forwarded to F. M. Rankin, Salt Lake, and third should be kept on file at Elko;

B.) When equipment is missing or defective Dispatcher should be notified who in turn will make entry on train sheet and promptly notify proper authority at Stockton so repairs can be made.

January 5, 1976

When necessary, reports indicating missing or defective equipment will be handled by F. M. Rankin at Salt Lake with Union Pacific.

All Union Pacific cabooses arriving Stockton Yard must be placed on caboose servicing track, inspected, and put into fit condition prior to departure (unless deadheading back to Salt Lake).

III. Heating of Cabooses 426-475

During cold weather, when cabooses are unoccupied, stoves should be left burning high enough to prevent the water system from freezing and to keep the interior warm for the next crew using the car.

CAUTION - Under no circumstances should trainmen make any changes, modifications, or adjustments to carburetor or other component parts of stoves. Foreign materials such as rags, fuses, etc. must not be put into stoves. (A small amount of paper needed to light oil stoves is permissible.)

If stove is not functioning properly prompt report must be made and also noted in log book so that necessary repairs can be made by Mechanical Department.

IV. Indian Fire Pumps have been placed in retainers in cabooses Tockers.

When pump has been used it will be necessary for Conductor to note in caboose log and notify forces at next terminal so pump may be refilled.

V. First Aid Kit Resupplying.

Each caboose has been equipped with a First Aid Kit container, which is fastened to inside of caboose and each container will be kept supplied in accordance with CPUC General Order No. 126 or its equivalent.

Whenever any of these supplies have been used entry should be made in caboose log book. Supply points should check log book for any deficiencies and resupply.

VI. Cabooses Equipped with Electric Lights and Electric Markers.

Lights must be turned off before crew leaves the caboose at end of run and at any other time when caboose is not in use.

When tying up, the electric marker lights must be turned off.

Overhead tanks are not to be drained by train crews.

NOTICE NO. 10-14
(Revised)

January 5, 1976

VII. Pilferage of torpedoes, fuses and other supplies from cabooses occur when they are left unlocked. Upon arrival at terminal or when work is completed, it is the responsibility of the crew leaving the caboose to lock all doors and windows, if caboose is not going through in connection, so unauthorized parties cannot have access to the caboose.

J. C. Luser
Superintendent
Eastern Division

C. G. Yund
Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - September 28, 1981

NOTICE NO. 14-15

ALL CONCERNED:

ROAD CONDUCTORS' TIME RETURN AND DELAY REPORT

Road conductors, when accounting for time in delay section of Form 427008, Time Return and Delay Report, will break time down in detail. For example, rather than reporting "Gerlach - 2'15" pick up and eat", delay should be separated for each cause as "Gerlach 1'00" pick up, 1'15" eat".

Of course, it is permissible to report two concurrent events as at present. For example, if crew is involved in performing set out or pick up, inspecting for a bad order, or other activity, and the OME passes during this time, delay should be shown, for example -

"Floka 45" replace air hose and meet OME-22".

However, if replacing air hose only took ten minutes and train then waited thirty-five minutes for OME, delay should be broken down;

"Floka 10" replace air hose, 35" meet OME-22".

If more space is needed, conductors should use reverse side of timeslips.

At terminals, it is equally important to provide sufficient break down of time consumed. For example, a delay such as "1'15" air and meet TOF-23" is inadequate. It should be reported showing approximate break down of time. For example:

"45" air, 30" meet TOF-23".

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - November 1, 1976

NOTICE NO. 12-7

ALL CONCERNED:

RAIL SURVEILLANCE SERVICE

The Department of the Army, through the Military Traffic Management Command (MTMC), has instituted a requirement for Rail Surveillance Service (RSS) on certain shipments of military ordnance considered susceptible to theft.

Rail Surveillance Service (RSS) is defined as the observation of the rail car at least once each hour unless moving in a train.

If train is stopped at any location, including terminals, one hour or more, exterior inspection must be made, including checking seals to make sure intact. Inspections may be conducted by any officer, employee or agent of the carrier.

If necessary to set car out of train bad order, or if seals are not intact, immediate notification must be given to Chief Train Dispatcher, Sacramento.

Chief Train Dispatcher will notify Director or Superintendent-Train Operation, San Francisco.

Director or Superintendent-Train Operation will immediately notify the Chief Special Agent to protect.

On notification from Director Military Transportation Section of the AAR Car Service Division, Mr. Highland, of car(s) that require (RSS), the Chief Train Dispatcher will be advised by wire or phone from Director-Transportation the initial, number(s), destination, route and date departed or will depart from origination point.

The Chief Train Dispatcher will notify Terminal forces and train crews that there is a government shipment requiring Rail Surveillance Service. This information should include train and car initial and number(s) of shipment.

It will be the responsibility of the Director-Transportation to notify its connection or consignee if on Western Pacific, at what point the car will be interchanged or arrive at destination, and give immediate notification to the consignee upon delivery.

November 1, 1976

In the event of the violation en route of the integrity of a car on which this service is required, Director-Train Operation, on notification from Chief Train Dispatcher, will notify Chief Special Agent who will report it to the nearest office of the Federal Bureau of Investigation. Director or Superintendent-Train Operation will telephone Mr Highland, Director Military Transportation Section of the AAR Car Service Division, at (202)293-4047, who will advise the military.

J. C. Luser
Superintendent
Eastern Division

C. G. Yund
Superintendent
Western Division

TYPE CODE
280-204-304

TRAIN CONSIST & CARS HANDLED AT AGENCY
& NON-AGENCY STATIONS

WORK PERFORMED

S/O=Set Out B/O=Bad Order P/U=Pick

| DE | STATION SSI | TIME | DATE / | TRAIN NUMBER | TRAIN SYMBOL | TIP | S/O (304) | SSI | TIME | DATE | T |
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THE ADMINISTRATIVE REQUIREMENTS OF A CONDUCTOR

I. INTRODUCTION:

II. INITIAL TERMINAL:

III. FORMS PREPARED AND USED ENROUTE:

IV. FINAL TERMINAL:

Western Pacific
Road Conductor
Training Course

~ General Safety & Injuries ~



GENERAL Safety and injuries

1. Operating Rule 800 page 172
2. Operating Rule 802 page 173
3. Operating Rule, GENERAL Notice A page 6
4. Book of Safety Rules, Rules 7001 : 7002 page 3 ; Rules 7003, 7004 ; 7005 page 4 ; Rules 7030, 7031, 7032, 7033, 7034 page 7 ; Rule 7041 page 8 ; Rules 7035, 7036 page 7 ; Rules 7042, 7043, 7044, 7045, 7046, 7048, 7052, 7053 page 8
5. Operating Rules, Rule M page 23 ; Rule 747 page 166
6. Safety Rules 7130, 7131 page 16 ; 7135, 7133 page 17
7. Operating Rules 11 page 38 ; Rule 15 page 44 ; Rule 700 page 158 ; Rule 701 page 159
8. Safety Rules 7011, 7012 page 5
9. Operating Rules Page 29
10. Operating Rules 701 page 159 ; 730 page 162 ; 711 page 160 ; 856 page 174
11. Safety Rules 7113 page 15 ; 7071 page 10 ; 7077, 7079 7076 page 11 ; 7080 page 12
12. Conductors Guide to Administration Section 3
13. Operating Rule 763 page 168 ; 760 page 167 ; 764 page 169 ; 762 page 168 ; 709 page 160 ; 800 page 172 ; General Rule N page 24
14. Safety Rules 7002 page 3 ; 7003 page 4 ; 7031 page 7 ; 7043, 7044, 7045, 7052 page 8 ; 7035 page 7 ; Operating Rule M page 23 ; Safety Rule 7131 page 16, 7138 page 17 ; 7011 page 5 ; 7066 page 9 ; 7068 page 9

MONTHLY FREQUENCY REPORT

Fatality, Injury and Illness Report Covering
Lost Work Day Cases -- Employees on Duty

6 MONTHS ENDING June 1982

Page 1

| Rank/Road | Man-hours actually worked | Frequency data--number of casualties | | | |
|---|------------------------------|--------------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | Fatalities | Number of injuries & illnesses | Total casualties | Rate per 200,000 man-hours |
| 1 | 2 | 3 | 4 | 5 | 6 |
| TOTAL GROUP A RAILROADS | 330,896,104 | 31 | 5,575 | 5,606 | 3.39 |
| TOTAL GROUP B RAILROADS | 25,981,307 | 0 | 832 | 832 | 6.40 |
| TOTAL GROUP C RAILROADS | 16,812,427 | 3 | 507 | 510 | 6.07 |
| SUBTOTAL LINE HAUL ROADS (GROUP A+B+C) | 373,689,838 | 34 | 6,914 | 6,948 | 3.72 |
| TOTAL GROUP ST RAILROADS | 8,992,654 | 2 | 165 | 167 | 3.71 |
| GRAND TOTAL ALL ROADS | 382,682,492 | 36 | 7,079 | 7,115 | 3.72 |

COMPARISON DATA FROM REPORT OF JUNE 1981

| | | | | | |
|---|-------------|----|--------|--------|------|
| SUBTOTAL LINE HAUL ROADS (GROUP A+B+C) | 430,107,666 | 80 | 9,784 | 9,824 | 4.57 |
| TOTAL GROUP ST RAILROADS | 11,870,479 | 1 | 289 | 290 | 4.88 |
| GRAND TOTAL ALL ROADS | 441,978,145 | 81 | 10,073 | 10,114 | 4.58 |

MONTHLY FREQUENCY REPORT

Fatality, Injury and Illness Report Covering
Lost Work Day Cases -- Employees on Duty

6 MONTHS ENDING June 1982

RAILROADS IN REPORTING GROUP A

20,000,000 Or More Man Hours Annually

Page 2

| Rank/Road | Man-hours actually worked | Frequency data--number of casualties | | | |
|--------------------------------|------------------------------|--------------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | Fatalities | Number of injuries & illnesses | Total casualties | Rate per 200,000 man-hours |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1. ATSF | 25,501,327 | 1 | 239 | 240 | 1.88 |
| 2. SOU | 17,970,623 | 2 | 190 | 192 | 2.14 |
| 3. MP | 18,559,066 | 1 | 217 | 218 | 2.35 |
| 4. FLRS | 32,173,161 | 3 | 379 | 382 | 2.37 |
| 5. COBO | 33,815,840 | 1 | 454 | 455 | 2.69 |
| 6. CNW | 12,646,745 | 2 | 177 | 179 | 2.83 |
| 7. SP | 33,631,967 | 2 | 488 | 490 | 2.91 |
| 8. ICG | 15,310,481 | 0 | 232 | 232 | 3.03 |
| 9. UP | 20,204,277 | 1 | 360 | 361 | 3.57 |
| 10. BN | 44,233,132 | 7 | 830 | 837 | 3.78 |
| 11. N&W | 19,811,411 | 5 | 392 | 397 | 4.01 |
| 12. CR | 57,038,074 | 6 | 1,617 | 1,623 | 5.69 |
| TOTAL GROUP A RAILROADS | 330,896,104 | 31 | 5,575 | 5,606 | 3.39 |

MONTHLY FREQUENCY REPORT

Fatality, Injury and Illness Report Covering
Lost Work Day Cases -- Employees on Duty

6 MONTHS ENDING June 1982

RAILROADS IN REPORTING GROUP B

5,000,000 But Less Than 20,000,000 Man-Hours Annually

Page

| Rank/Road | Man-hours actually worked | Frequency data--number of casualties | | | |
|-------------------------|------------------------------|--------------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | Fatalities | Number of injuries & illnesses | Total casualties | Rate per 200,000 man-hours |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1. DRGW | 3,556,802 | 0 | 39 | 39 | 2.19 |
| 2. GTW | 4,079,293 | 0 | 73 | 73 | 3.58 |
| 3. B&M | 2,625,817 | 0 | 50 | 50 | 3.81 |
| 4. MKT | 2,828,159 | 0 | 68 | 68 | 4.81 |
| 5. MILW | 6,253,234 | 0 | 214 | 214 | 6.84 |
| 6. SOO | 3,684,149 | 0 | 192 | 192 | 10.42 |
| 7. KCS | 2,953,853 | 0 | 196 | 196 | 13.27 |
| | | | | | |
| TOTAL GROUP B RAILROADS | 25,981,307 | 0 | 832 | 832 | 6.40 |

Road Not Reporting: LIRR

MONTHLY FREQUENCY REPORT

Fatality, Injury and Illness Report Covering
Lost Work Day Cases -- Employees on Duty

6 MONTHS ENDING June 1982

RAILROADS IN REPORTING GROUP C

Less Than 5,000,000 Man Hours Annually

| Rank/Road | Man-hours actually worked | Frequency data--number of casualties | | | |
|-------------------------|------------------------------|--------------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | Fatalities | Number of injuries & illnesses | Total casualties | Rate per 200,000 man-hours |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1. FEC | 1,117,150 | 0 | 2 | 2 | 0.36 |
| 2. DT&I | 975,320 | 0 | 11 | 11 | 2.26 |
| 3. ARR | 845,616 | 0 | 12 | 12 | 2.84 |
| 4. DMIR | 1,122,637 | 0 | 20 | 20 | 3.56 |
| 5. CV | 382,240 | 1 | 6 | 7 | 3.66 |
| 6. EJ&E | 1,648,331 | 0 | 33 | 33 | 4.00 |
| 7. BLE | 975,832 | 1 | 21 | 22 | 4.51 |
| 8. DWP | 308,698 | 0 | 7 | 7 | 4.54 |
| 9. PLE | 1,521,491 | 0 | 35 | 35 | 4.60 |
| 10. BAR | 576,907 | 0 | 15 | 15 | 5.20 |
| 11. AA | 204,922 | 0 | 6 | 6 | 5.86 |
| 12. TPW | 360,373 | 0 | 12 | 12 | 6.66 |
| 13. WP | 2,147,153 | 1 | 81 | 82 | 7.64 |
| 14. RF&P | 830,587 | 0 | 36 | 36 | 8.67 |
| 15. MEC | 1,303,282 | 0 | 57 | 57 | 8.75 |
| 16. D&H | 1,610,128 | 0 | 74 | 74 | 9.19 |
| 17. GBW | 320,804 | 0 | 21 | 21 | 13.09 |
| 18. CIM | 279,659 | 0 | 28 | 28 | 20.02 |
| 19. TM | 281,297 | 0 | 30 | 30 | 21.33 |
| TOTAL GROUP C RAILROADS | 16,812,427 | 3 | 507 | 510 | 6.07 |

Average 6.07

Roads Not Reporting: FWD, IT and OKT

MONTHLY FREQUENCY REPORT

Fatality, Injury and Illness Report Covering
Lost Work Day Cases -- Employees on Duty

6 MONTHS ENDING June 1982

RAILROADS IN REPORTING GROUP ST

Page

| Rank/Road | Man-hours actually worked | Frequency data--number of casualties | | | |
|--------------------------|------------------------------|--------------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | Fatalities | Number of injuries & illnesses | Total casualties | Rate per 200,000 man-hours |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1. MKC | 68,480 | 0 | 0 | 0 | 0 |
| 1. OURD | 260,052 | 0 | 0 | 0 | 0 |
| 1. PPU | 159,646 | 0 | 0 | 0 | 0 |
| 4. HBT | 894,377 | 1 | 4 | 5 | 1.12 |
| 5. MCRR | 169,661 | 0 | 1 | 1 | 1.18 |
| 6. RT | 297,533 | 0 | 3 | 3 | 2.02 |
| 7. ALS | 361,637 | 0 | 4 | 4 | 2.22 |
| 8. PTRR | 536,859 | 0 | 6 | 6 | 2.24 |
| 9. PBNE | 366,782 | 0 | 5 | 5 | 2.73 |
| 10. TRRA | 787,118 | 1 | 10 | 11 | 2.80 |
| 11. CUVA | 211,225 | 0 | 3 | 3 | 2.84 |
| 12. SB | 276,271 | 0 | 4 | 4 | 2.90 |
| 13. CBL | 125,313 | 0 | 2 | 2 | 3.192 |
| 14. KCT | 250,033 | 0 | 4 | 4 | 3.119 |
| 15. URR | 787,698 | 0 | 14 | 14 | 3.55 |
| 16. LT | 207,213 | 0 | 4 | 4 | 3.86 |
| 17. MFR | 48,123 | 0 | 1 | 1 | 4.16 |
| 18. PBR | 411,321 | 0 | 9 | 9 | 4.38 |
| 19. BS | 168,097 | 0 | 4 | 4 | 4.76 |
| 20. CUST | 276,464 | 0 | 7 | 7 | 5.06 |
| 21. IHB | 1,214,348 | 0 | 38 | 38 | 6.26 |
| 22. ALOS | 339,841 | 0 | 11 | 11 | 6.47 |
| 23. BRC | 774,562 | 0 | 31 | 31 | 8.00 |
| | | | | | |
| TOTAL GROUP ST RAILROADS | 8,992,654 | 2 | 165 | 167 | 3.71 |

GENERAL SAFETY & INJURY / INCIDENT REPORTING

I. INTRODUCTION:

II. SAFETY RULES:

III. INJURIES AND INJURY & INCIDENT REPORTING:

Western Pacific
Road Conductor
Training Course

~ General Operating Rules ~



GENERAL Operating Rules

1. Operating Rule 803 page 173
2. General Rule C page 21
3. Operating Rule 712 pg 161; 711 pg 160; A pg 21; B pg 21; E pg 21; G; H pg 22; 707, 710 pg 160; 713 pg 161; 734 pg 164; 706 pg 160; 701 pg 159; 800A pg 172; 885, 887, 888, 886 pg 182; 889 pg 183; 871 pg 180; 853 pg 176; 736 pg 164; GENERAL Rule F pg 121; 735 pg 164; GENERAL Rule L pg 23; 729 pg 162; GENERAL Rule H pg 22; 800 pg 172; 802 pg 173; 801 pg 172; 739 pg 165; 851 pg 176; 842 pg 175; 741 pg 165; Yellow Notice

| |
|------|
| 14-5 |
| 15-4 |

; Rule 778 pg 171A

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - April 12, 1982

File - 011.21 Spl (59)

NOTICE NO. 15-6 (Revised)

ALL CONCERNED:

1. It is the responsibility of trainmen, enginemen and switchmen to insure no unauthorized persons are on the engine or caboose of their train during tour of duty.
2. Refer to Operating Rules 741 and 842.
3. A yellow identification card issued by R. C. Marquis, Sr. V.P.-Operation, authorizing the holder to have access to and ride upon freight trains, cars and locomotives in the performance of his duties has been in use for some years and will be continued in effect.
4. In addition, new permits will be issued by the Division Superintendents to employees who are not holders of the Yellow I.D. card; these permits must be turned in at completion of final trip to conductor, or engineer in the absence of conductor, who will forward same to issuing office.

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
 SACRAMENTO NORTHERN RAILWAY
 TIDEWATER SOUTHERN RAILWAY COMPANY
 OPERATING DEPARTMENT

San Francisco - February 1, 1982

File - 077 Spl (7)

NOTICE NO. 14-5 (Revised)

TRAIN, ENGINE & YARD SERVICE EMPLOYEES:
TRAIN DISPATCHERS AND TRAIN ORDER OPERATORS:

FEDERAL HOURS OF SERVICE LAW

The amended Hours of Service Law (Public Law 91-169) applies to common carriers and railroad employees actually engaged in or connected with movement of trains.

A. TRAIN, ENGINE, AND YARD SERVICE

1. Employees subject to the Act who have been continuously on duty for 12 hours will not be required or permitted to go on duty until they have had at least 10 consecutive hours off duty.
2. (a) Time spent in deadhead and/or travel-time by an employee to a duty assignment is, for purposes of the law, time on duty. Time spent in deadhead and/or travel-time from an assignment to a point of final release is, for purposes of the law, not time on duty, nor time off duty, as far as "rest" is concerned. In other words, the 8 or 10 hour off duty time required by the law may not include any deadhead and/or travel time.
 - (b) Regardless of whether or not employees are compensated, be it termed either "deadhead" pay, auto mileage allowance, special allowances, etc., those unassigned or extra men filling vacancies or working extra jobs at outside points (stations where extra boards are not maintained) must consider deadhead and/or travel-times shown below in order to be in compliance with the law.
 - 1) Unassigned or extra employees protecting vacancies at outside points when entitled to "deadhead pay" will submit separate timeslips to record deadhead both to and from service.
 - 2) Unassigned or extra employees in train and/or engine service protecting vacancies at outside points when entitled to "allowances" in lieu of deadhead will record "travel-time" in appropriate field(s) on working timeslips, forms 427007 or 427008 (Rev. 12-1-81). Travel Time to Duty and Travel Time from Duty should be as indicated in table below or the "actual number of minutes between employee's residence and outside point" WHICHEVER IS LESS. In "remarks" portion on face of timeslip should be recorded departure time from residence and arrival time at outside point prior to going on duty; also record in "remarks" departure time after off duty and arrival time at residence. If because of diversions en route for personal reasons, waiting, or if for any other reason the elapsed times between residence and outside point are not the same as Travel Time to Duty and Travel Time from Duty the discrepancies should be fully explained. Mode of travel must be indicated in "remarks".

| <u>ONE-WAY TRAVEL-TIME BETWEEN -</u> | <u>MINUTES</u> | <u>OCCUPATION(S)</u> |
|--------------------------------------|----------------|----------------------|
| OAKLAND and SAN FRANCISCO - | 30 | ENGINEMEN |
| FREMONT - | 40 | ENGINEMEN |
| MILPITAS - | 50 | ENGINEMEN |
| SAN JOSE - | 60 | ENGINEMEN |
| SAN JOSE AND MILPITAS - | 20 | TRAINMEN |
| FREMONT - | 30 | TRAINMEN |
| STOCKTON and MODESTO - | 45 | ENGINEMEN |
| SO. SACRAMENTO - | 60 | ENGINEMEN |
| PORTOLA and NO. RENO - | 60 | ENGINEMEN & TRAINMEN |

3. (a) Interim periods available for rest at other than a designated terminal are TIME ON DUTY.

(b) Interim periods available for rest of less than four (4) hours at a designated terminal are TIME ON DUTY.

(c) Interim periods available for rest of four (4) or more hours at a designated terminal are TIME OFF DUTY.

Release periods of four (4) hours or more at a designated terminal are to be uninterrupted.

However, receiving a call to go on duty some time subsequent to the release period of four (4) or more hours is not to be interpreted as interrupting the release period.

4. Crew may be aggregated providing releases are of four (4) or more hours duration and are at a designated terminal. After aggregating to a total of twelve (12) hours on duty time, crew members must be given eight (8) or more hours off duty before they again go on duty.

5. Yard crews are not able to double straight through from one shift to another because of the twelve hour limitation.

6. Employees will be held responsible for correct registration of their service on the Rest Register and must strictly adhere to the requirements of the Act. Employees deadheading, as well as those working, into designated terminals will accurately record "arrival time" on Rest Register so that required 8 or 10 hour off-duty period (rest) may be verified. Proper employee in yard offices or stations who are designated to handle crews and calls must be notified when employees are working in the aggregate.

7. Employees calling crews will be held responsible for furnishing correct information to Train Dispatcher's Office as to whether or not crews are rested. When crews are not rested, the amount of time remaining available for services must be furnished.

NOTICE NO. 14-5 (Revised)
Cont.

February 1, 1982
File - 077 Spl (7)

8. Crews performing wrecker or relief service are considered subject to the Law. In emergency situations, however, an additional 4 hours (16 hours on duty) is permitted. Such emergencies permitting the additional on duty time "exists when the main line is obstructed; such emergency ceases to exist when the track is cleared and the line is open for traffic".
9. Employees required to attend Rules Classes, physical exams, or other such time paid, must consider the actual time on duty time and report such times to the proper employee in the yard office or station as well as on their Time Return and Delay Report.

B. TRAIN DISPATCHERS AND TRAIN ORDER OPERATORS

1. Employees handling train orders and clearances shall not be required nor permitted to remain on duty for more than nine (9) hours, whether consecutive or in the aggregate, in any 24-hour period.
2. Interim periods for rest must be one (1) hour or more.
3. Any time spent working for the railroad not involving on-duty time covered by the Law, must be included in computing on-duty time during any 24-hour period. This is referred to as commingled service, and it does not matter whether the service normally not covered is before or after normal covered service.
4. All employees except Train Dispatchers handling train orders and coming under the "9 hour" provision of the Act must record actual hours and minutes on duty on Form 427006, Support Forces Timeroll, and must sign reverse side.
5. In case of emergency, employees performing such duties may be permitted to remain on duty an additional four hours in any 24-hour period, but only for a maximum of three days in any period of seven consecutive days.
6. Employees required to attend Rules Classes, or other such time paid, must consider the actual time as on duty time and report such times to the proper supervisor as well as on their Support Forces Timeroll.

NOTICE NO. 14-5 (Revised)
Cont.

February 1, 1982
File - 077 Spl (7)

C. GENERAL

1. (a) No employee may "Work in Excess" of time allowed by the Federal Hours of Service Act (9, 12 or 16 hours as applicable) without authorization in advance from Division Superintendent or Chief Train Dispatcher.

(b) Whenever crews or employees are authorized to "Work in Excess", a report must be made and sent to Office of Manager-Transportation Payroll Administration, San Francisco.
2. It is imperative that we all cooperate to avoid non-compliance with the Hours of Service Law.

R. R. Gentry
Division Superintendent
Eastern Division

W. F. Schober
Chief Train Dispatcher

C. Aadnesen
Division Superintendent
Western Division

OPERATING RULES OF A GENERAL NATURE

I. RULES OF PERSONAL CONDUCT:

II. RULES GOVERNING RELATIONSHIPS WITH OTHERS:

III. OTHER GENERAL RULES:

IV. HOURS OF SERVICE:

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY
OPERATING DEPARTMENT

San Francisco - February 1, 1982

File - 077 Sp1 (7)

NOTICE NO. 14-5 (Revised)

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TRAIN DISPATCHERS AND TRAIN ORDER OPERATORS:

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NOTICE NO. 14-5 (Revised)
Cont.

February 1, 1982
File - 077 Spl (7)

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|--------------------------------------|----------------|----------------------|
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5. Yard crews are not able to double straight through from one shift to another because of the twelve hour limitation.

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NOTICE NO. 14-5 (Revised)
Cont.

February 1, 1982
File - 077 Spl (7)

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4. All employees except Train Dispatchers handling train orders and coming under the "9 hour" provision of the Act must record actual hours and minutes on duty on Form 427006, Support Forces Timeroll, and must sign reverse side.
5. In case of emergency, employees performing such duties may be permitted to remain on duty an additional four hours in any 24-hour period, but only for a maximum of three days in any period of seven consecutive days.
6. Employees required to attend Rules Classes, or other such time paid, must consider the actual time as on duty time and report such times to the proper supervisor as well as on their Support Forces Timeroll.

NOTICE NO. 14-5 (Revised)
Cont.

February 1, 1982
File - 077 Sp1 (7)

C. GENERAL

1. (a) No employee may "Work in Excess" of time allowed by the Federal Hours of Service Act (9, 12 or 16 hours as applicable) without authorization in advance from Division Superintendent or Chief Train Dispatcher.

(b) Whenever crews or employees are authorized to "Work in Excess", a report must be made and sent to Office of Manager-Transportation Payroll Administration, San Francisco.
2. It is imperative that we all cooperate to avoid non-compliance with the Hours of Service Law.

R. R. Gentry
Division Superintendent
Eastern Division

W. F. Schober
Chief Train Dispatcher

C. Aadnesen
Division Superintendent
Western Division

Western Pacific
Road Conductor
Training Course

~ Time Table ~



TIME TABLE

- . Operating Rule Book page 28:29 (Symbols)
- . Operating Rule 4 pg 26
- . Operating Rule Book page 12 (Schedules) page 13 (Definitions)
- . Operating Rule 540 pg 143; 99 section 3 pg 70; 186 pg 63; 540 pg 143; T82A pg 60; T87 pg 64; 204 pg 85
- . Time table pg 12
- . Operating Rule Book page 123 (Form Z)
- . Operating Rule Book page 111 (Form G)
- . Operating Rule T97 pg 66; Form H pg 112; 105 pg 82; 340A pg 139;
- . Time Table pg 12, 13, 41, 48
- . Operating Rule 1117A pg 204
- . Time Table pg 49
- . Operating Rule 552 pg 152; 14.6 pg 40;
- . Time Table pg 49, 30, 56, 21
- . Operating Rule 17.c pg 45; 21 pg 47
- . Time Table pg 56, 6, 7, 42, 8, 9, 45, 47, Front inside cover, Front cover, page A, B, C, D, 1 thru 5, 29, 41, 60, 61 thru 70, 71, 72, 72 thru 79, 80 thru 98, Back inside cover, Back cover.
- . Operating Rule 2 pg 5; 2A pg 25; 3 pg 25

TIMETABLE & TIMETABLE BULLETINS

I. DEFINITIONS:

II. RELATIONSHIPS:

III. SYMBOLS AND ABBREVIATIONS:

IV. USE OF TIMETABLE AND TIMETABLE BULLETINS:

V. STANDARD TIME:

Western Pacific
Road Conductor
Training Course

~ Blue Signals ~



Blue Signals

. Operating Rules 26 pg 48 ; 26A pg 48c ;
26B pg 48c ; 26Ca pg 48d ; 26Cb pg 48f ;
26d pg 48G ; 26E pg 48H ; 26F pg 48H

CLASS OUTLINE
BLUE SIGNAL RULES

C-2-3

I. DEFINITIONS:

II. CONDITIONS REQUIRING PROTECTION:

III. RULES 26, 26A, 26B & 26C:

IV. REMOVAL OF PROTECTION:

Western Pacific
Road Conductor
Training Course

~ Placement in Train ~



Placement in TRAIN

Operating Rules 1200 pg 228; 731 pg 162;
732 pg 163; 723 pg 1616; 1110 pg 199; 824 pg 174;
833 pg 179;

TimeTable pages 1, 2, 91, 4, 41, 3

CURRENT TimeTable Bulletins

Yellow Notices 12-1; 12-3; 12-4; 12-8; 12-11;
12-13; 12-15

Operating Rule 825 pg 174

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

AGENT

OPERATING DEPARTMENT

San Francisco - April 1, 1982

File - 626.56

NOTICE NO. 12-1 (Revised)

ALL OPERATING DEPARTMENT EMPLOYEES

HAZARDOUS MATERIALS

A. The Department of Transportation (DOT) regulates the transportation of hazardous materials by all modes - air, water, rail, and highway. These regulations are designed to provide only the minimum requirements necessary to insure the safe movement of these commodities. The DOT regulations are published in the Bureau of Explosives tariff to govern the handling of hazardous materials by rail. The Bureau of Explosives is an agency of the Association of American Railroads. Both the DOT and the Bureau of Explosives seek compliance with the regulations; however, the DOT will prosecute offenders when violations are detected. Failure to comply is punishable by civil penalties of up to \$10,000 in fines and willful failure is punishable by criminal penalties of up to \$25,000 in fines and/or five years in jail. For this reason and with the knowledge that compromise of these regulations could spell disaster, please insure that all DOT regulations are adhered to without deviation.

The Western Pacific Railroad has adopted several safety rules that are more restrictive than the minimum requirements established by the DOT. These safety rules are to be found in the Operating Rules current Timetable, and as may appear in this notice or other notices and bulletins. Employees should be conversant with company rules covering the handling of hazardous material: as they are designed to increase the level of safety based on local conditions.

In order to clarify the DOT regulations and Western Pacific rules concerning the proper handling of hazardous materials at all our stations, employees will be guided by the following:

1. DEFINITIONS:

- a. Department of Transportation - Regulatory agency of the Federal government that prescribes the hazardous materials requirements. The Federal Railroad Administration is the enforcement branch of this agency.
- b. Bureau of Explosives - Agency of the Association of American Railroads.
- c. Hazardous Material Regulations - For our purposes they are found in the current Bureau of Explosives Tariff.
- d. Hazardous Materials - Refers to articles that have been found harmful to people, property, or the environment.

e. Hazardous Substance - A material identified by the letter "E" in Column 1 of § 172.101 of the BOE tariff when offered for transportation in one package, or in one transport vehicle if not packaged, and when the quantity of the material therein equals or exceeds the reportable quantity (RQ). A hazardous substance can also be a hazardous material.

f. Hazardous Waste - Any material that is subject to the hazardous waste manifest requirements of the U.S. Environmental Protection Agency. A hazardous waste can also be a hazardous substance and/or a hazardous material.

g. RQ - Authorized abbreviation for "Reportable Quantity" of a hazardous substance. Use of the "RQ" is to denote that the material is damaging to the environment. If spilled, notification is required.

h. Train - Means one or more engines coupled with one or more cars, except during switching operations, or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains.

i. Train Placement - Means the positioning of hazardous material carloads in a train based on the type of car and the type of placard.

j. Switching - Means movement of cars other than in train service or when an operation does not require traveling over one mile without picking up or setting out cars.

k. Occupied Caboose - Means a rail car being used to transport non-passenger personnel. If the crew does not ride in the caboose and the heater is not in operation, the caboose would not be subject to train placement restrictions.

B. USE OF SHIPPING PAPERS (172.20)

1. No freight cars or TOFC (with vans, containers or trailers) containing a hazardous material shipment or an empty tank that last contained a hazardous material shipment or hazardous material will be placed in a train without the properly endorsed waybill or bill of lading to accompany that car. Each waybill or bill of lading covering a hazardous material shipment or empty must have attached a teletype or TIS printout of emergency handling information.

The only exception to a hazardous material car moving on a proper waybill will be a load moving on a "Bill of Lading Copy" to the waybill matching location. Such "Bill of Lading Copy" must contain all proper hazardous material information and endorsements - including STCC.

Each waybill for a hazardous material shipment must have the following information and endorsements:

- a. Number of items and type of container.
- b. Proper shipping name of commodity.
- c. Hazard class.
- d. Identification number (UN or NA).

- e. Total quantity by weight or volume.
- f. Reportable quantity (if applicable).
- g. Placard notation.
- h. Placard (waybill) endorsement.
- i. "49" Series STCC number.

Each bill of lading copy used to move a hazardous material shipment to the waybill matching location must have the signed shipper's certificate, in addition to all of the above information.

Each waybill for any empty tank car which last contained a hazardous material (other than combustible) must have the following information:

- a. Proper shipping name of commodity last contained in tank.
- b. Hazard class.
- c. Identification number (UN or NA).
- d. Reportable Quantity (if applicable).
- e. Placard notation.
- f. Placard (waybill) endorsement.
- g. "49" Series STCC in parenthesis below the above.

2. The train crew must have a document showing the position in the train of each loaded placarded car of hazardous materials, except when position is changed or car is placed in train by the crew. A train consist may be used to meet this requirement. Conductor must determine that head end crew has a copy of the consist and he must also determine that he is in possession of a waybill or bill of lading copy for each and every hazardous car shown on a consist or otherwise known to be in the train.

3. If a car containing a hazardous material shipment is found in a train not at a terminal, and is not accompanied by a waybill or bill of lading, it must be reported and removed from the train at the next reporting station. It will then be the responsibility of that station to trace for the waybill, and when received, input to ATS and attach a copy of hazardous material emergency handling printout before forwarding shipment.

4. In industry switching operations, it is required that a shipping paper or switching ticket with all information required on the waybill or bill of lading must be supplied to the Yard Crew, in addition to a copy of emergency handling instructions for the hazardous commodity involved.

5. a. Unless the car is placed in a train by the crew accompanying outbound movement, the train and engine crew must be given a consecutively numbered written notice [Use WP Form No. CS-804 (Rev.)] of each car placarded "Explosives A" or "Poison Gas". Copy of the Notice must be kept on file at the station which executed the Notice.
- b. At the first crew change station when the inbound crew has placed these cars in the train, the station will execute a notice for the outbound train and engine crew.
- c. At points where the train or engine crews are changed, unless consist is changed, the Notice must be transferred from crew to crew.
- d. WP Form No. CS-804(Rev.) must be completed with the following information:
 - 1) Station where prepared.
 - 2) Current date.
 - 3) Number of this Notice (consecutively numbered).
 - 4) Train number and symbol.
 - 5) Initial and number, contents, and number of cars from the engine for each "Poison Gas" and "Explosive A" car in the train. Do not execute this for Explosive Class "B" or "C" or "Poison B" placarded cars.
 - 6) Name of person preparing Notice and delivering to train crew.
 - 7) The conductors and engineer's names shall be noted on the form.
 - 8) The form shall be issued in triplicate with one copy delivered to the conductor, one to the engineer and one retained on file.

C. SWITCHING RESTRICTIONS:

1. A car placarded "Explosive A" or "Poison Gas", any placarded TOFC-COFC car, or any flammable Gas, Phosphorus or Chlorine car must not be cut off while in motion, nor may a car moving under its own momentum strike any such car. These cars must not be coupled into with more force than is necessary to complete the coupling.

2. When switching a car placarded "Explosive A", it must be separated by at least one non-placarded car from the engine at all times.

3. In yards and sidings, cars placarded "Explosive A" must be placed so as to be safe from all probable danger of fire, and may not be placed under a bridge or overhead highway crossing nor in or along the side of a passenger station or shed.

D. PLACEMENT OF CARS IN TRAINS: The following train placement restrictions may also be found in current Timetable, BOE Tariff, and posted in Yard offices.

1. Any car placarded "Explosives A" or "Poison Gas" must not be placed nearer than the sixth car from the engine and caboose if length of train permits. If length of train does not permit, such car must be placed as near the middle of the train as possible, but not less than the second car from the engine and occupied caboose. In addition, such car must not be placed next to:

a. A passenger car or combination car that may be occupied, except that if such placarded car is accompanied by guards or technical experts, the car occupied by those experts must be placed next to and behind the placarded car. If the "experts' car" contains a lighted heater or stove, it must be the fourth car behind a car placarded "Explosives A".

b. Any loaded placarded car, other than a car placarded "Combustible" or placarded with the same placard.

c. Any engine, occupied caboose, car occupied by any person, or any car containing lighted heaters, stoves or lanterns.

d. Any loaded flatcar except that loaded cars placarded "Explosives A" may be placed next to each other and bulkhead flats, which are considered to be an open top car.

e. An open top car with lading extending over the ends, or when any lading loaded above the car end is liable to shift so as to protrude beyond the car ends.

f. Any car with mechanical refrigeration apparatus in operation, or a car with any open flame heating apparatus in service.

2. Any car placarded "Radioactive" must not be placed next to a car displaying another type of placard (except combustible), an engine, occupied caboose, or carload of undeveloped film.

3. Cars other than tank cars placarded "Dangerous", "Explosives B", "Blasting Agents", "Non-Flammable Gas", "Flammable Gas", "Flammable", "Flammable Solid", "Flammable Solid (water reactive)", "Oxidizer", "Organic Peroxide", "Poison" or "Corrosive".

a. These cars carry no restriction other than that they may not be placed next to cars placarded "Explosives A", "Poison Gas", and "Radioactive".

4. Tank cars placarded "Combustible" carry no restriction and may be placed at any location in train.

April 1, 1982

5. Tank cars placarded "Non-Flammable Gas", "Flammable Gas", "Flammable", "Flammable Solid", "Flammable Solid (water reactive)", "Oxidizer", "Organic Peroxide", "Poison", "Chlorine", or "Corrosive" must be placed not nearer than the sixth car from the engine and occupied caboose, if length of train does not permit, then such car must be placed as near the middle of the train as possible, but not nearer than the second car from the engine or occupied caboose. In addition, such cars must not be placed next to:

- a. Passenger car or combination car other than a car occupied by authorized personnel accompanying the shipment.
- b. Any car placarded "Explosives A", "Poison Gas", or "Radioactive".
- c. An engine or occupied caboose.
- d. Loaded flat car other than TOFC-COFC, or a flat car loaded with vehicles secured by permanently installed tie down approved for interchange service. This exception does not apply to loaded flatbed TOFC trailers, loaded open top trailers, or loaded trailers without securely closed doors. Bulkhead flat cars are considered to be the same as open top cars.
- e. Open top car when any of the lading protrudes beyond the car end or when any lading which extends above the car end is liable to shift so as to protrude beyond the car end.
- f. Any car with mechanical refrigeration in operation, or with open flame heater in service.

6. Empty placarded tank cars, i.e., "Non-Flammable Gas-Empty", "Flammable Gas-Empty", etc., must be placed no nearer than the second car from the engine or occupied caboose. "Empty Combustible" cars are not placarded.

NOTE: Energy Research & Development Administration may move couriered shipments of Dangerous Commodities without placarding such shipments. All other provisions of these Regulations apply.

For reference in handling explosive and dangerous commodities, refer to the following chart: B. E. Poster No. 4.

E. INSPECTION:

1. "Explosive A" cars must receive a detailed inspection before and after loading by a qualified inspector. See Sec. 174.104 in Bureau of Explosives Pamphlet 20.

2. Yard or Train crews picking up loaded placarded tank cars must inspect for:

- a. Leaking conditions. Icing, fumes or liquids from the dome area, strange odors, or other obvious leaks dictate that the car must not be transported until the leak is corrected.

b. Running gear. All brakes, hand brakes, journal boxes and trucks are in condition for service.

c. Placards, as indicated on the shipping paper, must be displayed on each side and each end of the car.

Defects found at origin must be left with the shipper for correction.

F. DERAILMENTS:

1. Train & Engine Crews - Before members of Train and Engine crews approach derailed cars, Conductor will check waybills and ensure that no hazardous material is involved in cars derailed. Conductor will notify Chief Train Dispatcher.

If hazardous material is involved, Conductor will notify Chief Train Dispatcher and be governed by Chief Train Dispatcher or Superintendent's instructions before any close inspection of car will be made. Chief Train Dispatcher or Superintendent will make necessary inquiries concerning hazardous material and advise personnel in field necessary precautions to be taken before handling cars containing such materials or making close inspection of cars.

Conductor will pull waybills on derailed cars and leave at derailment site with officer in charge or where instructed by Chief Train Dispatcher.

2. Maintenance of Way, Signal and Mechanical Personnel - Maintenance of Way, Signal and Mechanical personnel summoned to derailment will contact Chief Train Dispatcher or Superintendent before approaching derailed cars and will be governed by their instructions if hazardous material is involved.

3. Yardmasters - Before allowing crews in yard, including Yard Trainmen, Maintenance of Way and Mechanical personnel, to approach derailed cars, have yard forces inspect waybills for cars derailed to ascertain if any hazardous materials are involved and so advise Terminal Supervisor and Chief Train Dispatcher. If hazardous materials are involved, all concerned be governed by instructions concerning handling of such from Chief Train Dispatcher, or Superintendent or his designated representative.

All other personnel summoned to derailment site must be governed by the same instructions.

G. UNINTENTIONAL RELEASES (SPILLS) OF HAZARDOUS MATERIALS:

1. In the event of a hazardous material spill, the same precautions and procedures as in Section F must be followed.

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

AGENT

OPERATING DEPARTMENT

San Francisco - November 16, 1981

File - 331.02 Spl. 6

NOTICE NO. 12-3 (Revised - Revised lines marked with an asterisk*)

ALL CONCERNED:

SUBJECT: High-Wide Shipments and Cars

Summary: Section 1: Procedures for authorizing movement of excess dimension shipments and cars.

Section 2: Special procedures and handling required for excess dimension shipments and cars destined San Francisco via SP bridge agreement.

Refer to Notice No. 12-4 for California PUC and Nevada PSC regulations regarding excess dimension shipments and cars.

Section 1 - Procedures for Dispatchers' office and Yard offices.

1.1 All excess dimension (High-Wide) shipments or loads must be authorized for movement on Western Pacific or subsidiaries by Vice President - Transportation and handled in compliance with all applicable regulatory agency requirements.

Except for excess dimension shipments or cars covered by standing, blanket clearances (on file with Assistant Chief Clerk-Operation, San Francisco), each High-Wide movement will be authorized by the Vice President - Transportation on a High-Wide (HW) wire. Each HW wire will be assigned a consecutive HW-number and will be addressed to Chief Train Dispatcher, Sacramento, all WP terminals in route, North Yard or Roper and connections, as appropriate.

1.2 With the concurrence of the Clearance Engineer, Assistant Chief Clerk - Operation (S.F. ext. 214) will issue HW wire upon receipt of dimensions of shipment and car from originating carrier or from WP Mechanical Department personnel.

HW wire will contain car initial and number, contents, route, origin, destination, measurements and will specify any additional restrictions which may apply.

Assistant Chief Clerk will maintain a file by HW number of all wires pending and issued. Each car will be covered by a separate HW wire except that idler cars or cars moving together handling a single load may be covered on the same wire.

1.3 Chief Train Dispatcher, Sacramento, will maintain a file of all HW wires pending by last digit of car number. Assistant Chief Clerk - Operation will issue a separate wire for each High-Wide car or shipment except that idler cars will be shown on same wire with loaded car. However, should an HW wire be received in Chief Dispatcher's office covering the movement of multiple cars, duplicate copies of wire must be made and a copy filed for each car number for easy reference.

- * When required by CPUC and Nevada PSC regulations (See Notice 12-4), Chief
- * Dispatcher will ensure that Train Dispatcher issues Form Z, Example 3,
- * train order, or, that Train Dispatcher determines that Conductor and
- * Engineer have been provided with Message Form T-5 on Blue Paper (Refer
- * to Operating Rule 228, Page 123, Operating Rules) to inform train and
- * engine crew of presence of excess dimension shipment in their train.
- * Additionally, Form Z, Example 3, Train Order or Message Form T-5 on
- * Blue Paper will be issued to all trains which may be affected by train
- * having car with lading in excess of 5 feet 5½ inches from center line
- * of car.

Trick Dispatchers will be notified by train crews setting out cars for any reason if set-out contains any High-Wide shipment or car. Chief Dispatcher's office will ensure that train making subsequent pick-up has appropriate HW wire and train order, if required.

If a bad order set-out is also a dimensional shipment or car, Conductor must notify Dispatcher. Chief Dispatcher will note HW number and High-Wide status of car on bad order wire sent to Mechanical Coordinator, San Francisco, and will make note of set-out on HW wire file kept in Chief Dispatcher's office.

When pick-up message is issued, it should incorporate High-Wide measurements and restrictions and carry appropriate HW file number along with usual pick-up information.

1.4 Chief Train Dispatcher's office must be notified in advance of movement of excess dimension shipment or car or of the presence of dimensional shipment(s) in a through train.

Chief Train Dispatchers of connecting roads will provide advance notice to WP Chief Train Dispatcher's office, Sacramento, of all dimensional shipments enroute to WP. BN Chief Train Dispatcher, Vancouver, or BN operator, Bieber, will advise of presence of excess dimension shipment or car prior to its departure from Klamath Falls. WP Chief Train Dispatcher's office will notify Chief Train Dispatcher's office on connecting carriers of excess dimension shipments destined to them.

WP stations, North Yard and Roper Yard, when originating excess dimension shipments, or when receiving such shipments or cars from connections, will notify WP Chief Train Dispatcher, Sacramento, of shipments's readiness to move or of its expected arrival in through train.

NOTICE NO. 12-3 (Revised)

Continued

November 16, 1981

- 1.5 Yard offices will maintain an up-to-date High-Wide wire file easily accessible by car initial and number. Copies of each HW wire will be provided to Trainmaster, Yardmaster, and Car Foreman.

Yard office will check all outbound train lists, and inbound interchange cuts, against High-Wide file. Copy of HW wire must be attached to waybill or bill of lading for all excess dimension shipments or cars originated or received from connections. In addition, Message Form T-5 on Blue Paper, will be used as a waybill tag on excess dimension shipments and will be attached to the waybill.

Train Desk Clerks at terminals originating trains must provide a copy of outbound train list to operator indicating any excess dimension shipments. Operator will then notify Chief Train Dispatcher's office of train on which shipment will move. Copy of HW wire will be provided outbound Train Conductor along with Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper as required.

Train Desk Clerk will notify operator who will, in turn, notify Chief Dispatcher's office of the presence of High-Wide shipments or cars in pick-ups to be made by through trains or locals. Special attention must be paid at terminals such as Sacramento to determine if High-Wides are present when through trains set-out blocks for pick-ups by following trains. If no operator is on duty, Train Desk Clerk will notify Chief Dispatcher's office directly.

All originating terminals, such as Oakland, where no operators are on duty, Train Desk Clerk, will notify Chief Train Dispatcher's office of train in which excess dimension shipment will move sufficiently in advance of movement for Dispatcher to protect with Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper as required.

At intermediate terminals, such as Oroville, operators may not receive a copy of train list from Train Desk Clerk on through trains, especially those where only a crew change is involved. In this case, Chief Train Dispatcher's office will notify operator of High-Wide in train by issuing Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper. Operator will ensure that copy of appropriate HW wire is provided outbound Conductor.

High-Wide shipments or cars must be cleared for movement before release from any terminal. If no HW wire is on file, Train Desk Clerk must check with Operating Department's Assistant Chief Clerk, San Francisco, (Ext. 214) to determine if wire has been issued. If so, copies must be obtained and handled according to procedures above. If no HW wire has been issued and measurements are not on file with Assistant Chief Clerk, San Francisco, car or shipment must be measured by Mechanical Department personnel and HW wire issued. No dimensional shipment or car should be allowed to leave a terminal until HW and Form Z, Example 3, Train Order or Message Form T-5 on Blue Paper, if required, have been issued.

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- 1.6 Conductors determining that there are dimensional shipments or cars in their train and that such shipments are not covered by Train Order Form Z, Example 3, or by Message Form T-5 on Blue Paper, when such shipments will move through or are destined to Nevada or California points, and exceed 5 feet 5½ inches from center line of car, will notify Train Dispatcher of such condition and will be governed by Dispatcher's instructions in the further handling of such shipment or car.

Conductor will advise Train Dispatcher whenever setting out a High-Wide shipment or car for any reason and will not make such set-out without Dispatcher's authority.

- 1.7 Any High-Wide shipment or car moved without proper notification from connections should be reported by wire to Vice President-Transportation and Division Superintendent.

Section 2 - Special Procedures Re: Handling Excess Dimension Shipments and Loads Destined San Francisco.

- 2.1 Closed cars which exceed Plate C and any excess dimension shipment or car destined San Francisco for bridge movement via SP must be delivered to the SP at Oakland in accordance with procedures specified in Notice No. 1-31. Excess dimension shipments and cars will not be delivered with other bridge traffic at Fremont.

R. R. GENTRY
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Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - November 16, 1981

File - 331.02 Sp1 (6)
331.02 Sp1 (8a)

NOTICE NO. 12-4 (Revised) (Revised lines
marked with asterick *).

ALL CONCERNED:

SUBJECT: PART I - California PUC requirements regarding High-Wide
shipments and cars.

PART II - Nevada PSC requirements regarding High-Wide
shipments and cars.

Utah PSC regulations regarding clearances are maintained on file in Engineering Department, San Francisco. Utah does not specifically require the issuance of a train order or message to protect the movement of excess dimension shipments or cars. However, it will be Western Pacific practice * to issue Form Z, Example 3, train order or message Form T-5 on Blue Paper at Salt Lake for excess dimension cars or shipments destined to Nevada or California points.

Part I - California PUC Requirements Regarding High-Wide Cars and Loads

General Order No. 26-D of the Public Utilities Commission of California which became effective February 1, 1948, prescribes clearance requirements, including the handling of High-Wide cars or loads. Subsections 2.5 and 7.4 of General Order 26-D have been revised by the Commission's Decision No. 74486 effective August 26, 1968, and subsection 7.8 by Decision No. 86809 effective * January 5, 1977 and decision No. 93702 dated November 3, 1981.

The general requirements, as amended, covering the handling of High-Wide cars or loads are briefly outlined below:

CPUC SECTION 2 - FREIGHT CAR HEIGHTS

2.3 and 2.4

Authorizes operation of cars having a height not exceeding fifteen (15) feet six (6) inches. Freight cars of height exceeding fifteen (15) feet four (4) inches but not greater than fifteen (15) feet six (6) inches shall be permanently marked, stenciled, or placarded as hereinafter required and such markings maintained in a legible condition reading as follows: "THIS CAR EXCESS HEIGHT". All such required markings and placarding shall be placed on the side and adjacent to the ladder or handholds near the floor line of the car at each of the four corners. Such placarding is not necessary when tracks over which cars transported have throughout an overhead clearance of twenty-two (22) feet six (6) inches.

Open top woodchip cars WP 5001 to 5070 inclusive, have a height of seventeen (17) feet above top of rail to top of car and cars are operated pursuant to Decisions No. 58174 and 60802 under the conditions of those decisions. Each end of these cars for their entire width is painted with white aluminum paint from a height of 15'0" above top rail to top of cars, and have a sign stenciled in three (3) inch letters at the upper edge thereof, reading "OPEN TOP CAR".

NOTICE NO. 12-4 (Revised)
Cont.

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File - 331.02 Sp1 (6)
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2.5

If freight cars of a height greater than fifteen (15) feet six (6) inches are transported or proposed to be transported, minimum overhead clearance shall be increased by an amount of not less than such additional height provided that box or other house cars sixteen (16) feet ten (10) inches or more in height are exempted from this subsection when the top running boards have been removed, ladders and hand brakes lowered, cars painted, stenciled, and otherwise modified in compliance with the provisions of Section 131.24 of part 131, U. S. Safety Appliance Standards (railroads) and provided that if train length permits any such cars shall be trained at least five (5) cars distant from the caboose.

SECTION 3 - FREIGHT CAR WIDTHS

3.19

Authorized operation of cars up to ten (10) feet ten (10) inches in width.

SECTION 7 - LADING ON OPEN TOP CARS

7.1

Prohibits movement of open top cars with lading over fifteen (15) feet six (6) inches in height above top of rail or extending laterally in excess of five (5) feet five (5) inches from center line of car; except as hereinafter provided.

7.2

The operation of cars, the lading of which extends laterally in excess of five (5) feet five (5) inches from the center line of car, shall be restricted to lading the size or dimensions of which cannot be reduced. (Airplane fuselage cars equipped with cradles loaded and returning empty between Renton, Washington and San Diego, California are declared to be loads as contemplated by Subsection 7.2 of General Order 26-D and movements may be made in the manner outlined in Section 7 of this General Order. Strap bracket on each side of car must be removed before empty return movement).

NOTICE NO. 12-4 (Revised)
Cont.

November 16, 1981
File - 331.02 Spl (6)
331.02 Spl (8a)

7.3

All open top cars with lading extending laterally in excess of five (5) feet five (5) inches from center line of car or in excess of fifteen (15) feet six (6) inches in height above top of rail, shall be placarded on the load itself in a conspicuous place when practicable, and the car shall be marked, stenciled, or placarded on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners.

7.4

All open top cars with lading extending laterally in excess of five (5) feet five (5) inches from center line of car shall, if train length permits, be trained at least five (5) cars distant from both the caboose and the engine.

7.5

A train order shall be delivered to every train containing any car the lading of which extends laterally in excess of five (5) feet five and one-half (5½) inches from center line of car or in excess of fifteen (15) feet six (6) inches in height above top of rail, informing the crew of the train that the train includes such car or cars, except that a message may be used for such notification on paper of a fixed distinctive color other than the color used for other messages and that the conductor and engineer shall be required to make such messages available to all other members of the crew and that such messages shall remain in the records of each railroad for a period of not less than 90 days. Western Pacific practice * will be to issue such messages on Form T-5 on blue paper.

7.6

A train order shall be delivered to every train the operation of which may be affected by the presence or movement of a train containing such wide loads, described in subsection 7.5 of this order, informing the crew of the train of that * fact, except that a message may be used for such notification on paper of a fixed * distinctive color other than the color used for other messages.

7.7

Yard supervisors shall be given notifications sufficiently in advance of the arrival of cars, the lading of which extends, laterally in excess of five (5) feet five and one-half (5½) inches from center line of car, to enable them to take necessary precautions to safeguard the employees in yard.

(When cars are to be interchanged to connections, the connecting railroads must be notified in advance of delivery to them of High-Wide loads, and in the reverse, connections should notify us in advance of the High-Wide loads being delivered to this railroad so appropriate instructions can immediately be given to our yard and train service employees before they start to handle such loads).

NOTICE NO. 12-4 (Revised)
Cont.

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7.8

Cars on which the lading exceeds fifteen (15) feet six (6) inches above top of rail if otherwise in compliance with these requirements as to width of lading and the nature of which precludes the probability of employees getting on top of or passing over them are exempt from the conditions of this section, provided, however, that if train length permits, any such cars except cars transporting highway trucks or trailers, multi-level freight cars either loaded or unloaded, automobile underframe cars, woodchip cars transporting woodchips when loaded and covered in such a manner so as to preclude any material from being dislodged en route, and double-stacked container on flatcar (COFC) * equipment when containers are precluded from shifting or movement while in transit, * shall be trained at least five (5) cars distant from the caboose. For the purpose of this section, automobile underframe cars are either special flat cars upon which automobile underframes are stacked and firmly secured in a horizontal position or gondola cars in which such underframes are placed on end and firmly secured to the gondola cars.

EXCEPTIONS:

16.2

If in any particular case, exemption is deemed necessary, the CPUC will consider the application of the railroad for such exemption when accompanied by a full statement of the conditions existing and the reason why such exemption is asked. Any exemption so granted will be limited to the particular case covered by the application.

Part II - Nevada PSC Requirements Regarding High-Wide Cars and Loads

Public Service Commission of Nevada General Order No. 11 (as Amended) effective May 19, 1976, prescribes clearances, including the handling of High-Wide cars or loads.

The general requirement of the Order, as now Amended, concerning the handling of High-Wide cars or loads, are outlined briefly below:

TRACKS UPON WHICH FREIGHT CARS ARE TRANSPORTED

Section 1 - Overhead Clearances:

"(a) The minimum overhead clearance above the top of rail or railroad tracks which are used or proposed to be used for transporting freight cars, for all overhead structures except as hereinafter prescribed, shall be twenty-two (22) feet.

"(b) The overhead clearance above top of rail of such tracks located inside of entirely enclosed buildings may be reduced to eighteen (18) feet, provided that this clearance shall apply only to tracks terminating within the building, and further provided, that when an overhead clearance of less than twenty-two (22) feet is established on tracks inside such entirely enclosed building, all cars, trains, motors, engines or other equipment shall be brought to a stop before entering such enclosed building.

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November 16, 1981
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" (c) Overhead clearances authorized in this section are applicable to tracks on which freight cars having a height to running board of fifteen (15) feet one (1) inch or less are transported. On tracks over which freight cars of greater height are transported or proposed to be transported, minimum overhead clearances shall be increased by an amount not less than such additional height, except where the nature of such cars precludes the probability of employees getting on top of or passing over them."

Sections 2 thru 6

Prescribes overhead and side clearances on railroads of platforms, poles, block signals, and switch stands. All other block signals and switch stands, water columns and oil columns, walkways on designated and newly-constructed bridges and trestles and parallel tracks.

Section 9 - Operation of Freight Cars and Loads

Authorized movement of cars up to 15 ft. 6 in. high, and up to 10 ft. 11 in. wide. Cars up to 15 ft. 4 in. high or 10 ft. 10 in. wide -- no action is necessary.

Section 9(a), 9(b) and 9(c)

"Cars more than 15 ft. 4 in. high up to 15 ft. 6 in. high, and more than 10 ft. 8 in. wide, up to 10 ft. 11 in. wide shall be permanently marked, stenciled, or placarded and such markings maintained in a legible condition to read, "This Car EXCESS HEIGHT", or "This Car EXCESS WIDTH", as applicable.

All such required markings and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners."

Section 10 - Open-Top Cars with Lading of Excess Height or Width: Exceptions:

Conditions.

"No movement of open-top cars containing lading extending in excess of fifteen (15) feet six (6) inches in height above top of rail or extending laterally in excess of five (5) feet five (5) inches from center line of car, shall be made except under the following conditions:

"(a) The operation of cars, the lading on which extends laterally in excess of five (5) feet five (5) inches from center line of car, shall be restricted to lading the size or dimensions of which cannot be reduced.

"(b) All open-top cars with lading extending laterally in excess of five (5) feet five (5) inches from center line of car or in excess of fifteen (15) feet six (6) inches in height above top of rail, shall be placarded on load in a conspicuous place and each such car shall be marked, stenciled, or placarded at locations described in subsection 9(c).

NOTICE NO. 12-4 (Revised)

Cont.

November 16, 1981

File - 331.02 Sp1 (6)

331.02 Sp1 (8a)

"(c) All open-top cars with lading extending laterally in excess of five (5) feet five (5) inches from center line of car, if train length permits, shall be trained at least five (5) cars distant from the caboose.

"(d) All members of the crew of each train containing cars the lading on which extends laterally in excess of five (5) feet five and one-half (5½) inches from center line of car or in excess of fifteen (15) feet six (6) inches in height above top of rail, shall be informed by appropriate train order or message that the train includes such cars. The information transmitted shall also include the total number of such cars and notice that no member of the train crew is required to ride on any such cars."

(When cars are to be interchanged to connections, the connecting railroads must be notified in advance of delivery of them of High-Wide loads, and in the reverse, connections should notify us in advance of the High-Wide loads being delivered to this railroad so appropriate instructions can immediately be given to our yard and train service employees before they start to handle such loads.)

"(e) All members of the crews of trains where operations may be affected by the presence or operation of other trains having loads as wide as those described in subsection 10(d) shall be informed by an appropriate train order or message advising them of that condition.

"(f) Yard supervisors must be notified sufficiently in advance of the arrival of cars the lading on which extends laterally in excess of five (5) feet five and one-half (5½) inches from center line of car to enable supervisors to take precautions necessary to safeguard employees in yard.

"(g) Cars on which the lading exceeds fifteen (15) feet six (6) inches in height above top of rail, if otherwise in compliance with requirements of this order as to width of lading, and the nature of which precludes the probability of employees getting on top of or passing over them, are exempt from the conditions of this section, provided, however, that if train length permits, any such cars except cars transporting highway trucks or trailers, without open-lading, multi-level freight cars either loaded or unloaded, and automobile underframe cars, shall be trained at least five (5) cars distant from both the caboose and the engine, and in any event a buffer car (i.e. any car not carrying trailer or semi-trailer with open-lading cargo) shall be placed immediately ahead of the caboose or immediately behind the locomotive. For the purposes of this section, automobile underframe cars are either special flat cars upon which automobile underframes are stacked and firmly secured in a horizontal position or gondola cars in which such underframes are placed on end and firmly secured to said gondola cars."

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - November 13, 1980

NOTICE NO. 12-8 (Revised)

ALL CONCERNED:

Entraining Open-Top Cars and Loaded Multi-Level Cars

Open-top cars loaded with ballast, rock, tinplate scrap, sand, coal, scoria, wood chips, and other commodities from which dust or chips may blow into trainmen's eyes must be entrained, if possible, at least ten cars ahead of caboose out of terminals. In addition, such cars should not be entrained ahead of multi-level cars loaded with automobiles or trucks, but when necessary to do so they must be separated from loaded multi-levels by at least one box car.

These instructions do not apply to entrainment of iron oxide concentrates in open-top cars, which are to be entrained next ahead of caboose so trainmen can watch them. This commodity is very susceptible to spontaneous combustion and such shipments must be wet down during hot, dry weather to prevent fires. Water will not harm this commodity, regardless of amount used.

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY CO.

OPERATING DEPARTMENT

San Francisco - September 14, 1978

NOTICE NO. 12-11

ALL CONCERNED:

ALL.....Yardmasters
Road and Yard Conductors
Train Dispatchers
Car and Mechanical Foremen
Car Inspectors
Agents

SUBJECT: Placing Loaded 20-Ft. Containers on 85' and 89' COFC Cars

Effective this date, where only one 20-foot container is to be loaded on 85' or 89' COFC cars, the container is to be loaded on either of the two center positions to preclude any doubt of half the load limit stenciled on car being exceeded on one truck. When two 20-foot containers are to be placed on car, they should be both loaded at the center two positions.

J. C. LUSAR
Superintendent
Eastern Division

C. AADNESEN
Superintendent
Western Division

cc: Mr. J. J. Gray

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - March 16, 1981

NOTICE NO. 12-13 (Revised)

ALL CONCERNED:

INSTRUCTIONS REGARDING TRAIN MAKE-UP BETWEEN KEDDIE AND BIEBER.

1. Trains exceeding 3,800 trailing tons will be made up with five loaded cars on headend. Loads will be maintained on headend as any pick-ups or set-outs are made en route.
2. No loaded car, 73 ft. or longer, nor any empty car, 65 ft. or longer, outside length, will be handled in head 20 cars of train.
3. Any car measuring less than 42 ft. outside length must not be coupled to any car exceeding 73 ft. in length. This restriction will not apply to rear 20 cars of train.
4. Empty tank cars 35 ft. or less in length must be handled in rear 20 cars of train.

Yardmasters and terminal officers must take into consideration the overall distribution of tonnage when making up a train. Trains which are largely empty cars should have blocks of loads entrained on headend.

Train make-up requirements will prevail when they conflict with standing blocking instructions.

C. Aadnesen
Division Superintendent
Western Division

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - June 10, 1981

NOTICE NO. 12-15

ALL CONCERNED:

Restriction on Train Handling Bulkhead Flat Cars

Trains departing Salt Lake City, the train list given to the Conductor will show the following Car Kind Code Identification for bulkhead flat cars:

From the UP, North Yard:

FB-5 (Bulkhead flat - 50 feet long or less)

FB-7 (Bulkhead flat - 70 feet long or less)

From the DRGW, Roper Yard

BHF (All Bulkhead flats regardless of length)

Trains departing Bieber from BN, the train list given to the Conductor will show the following Car Kind Code for bulkhead flat cars:

FB-4 (Bulkhead flat less than 50 feet)

FB-5 (Bulkhead flat 50 feet and less than 59 feet)

FB-6 (Bulkhead flat 59 feet and less than 80 feet)

FB-8 (Bulkhead flat 80 feet or longer)

FS (Bulkhead flat with Special Equipment - A Frame
Chain tie downs, etc.)

Car Kind Code is the third column on train lists out of both Salt Lake and Bieber.

Conductors from these three yards will be responsible to check train list and identify any bulkhead flats and notify all crew members and the Chief Train Dispatcher. Crew members will comply with the speed restrictions shown in Timetable.

These conductors also must turn in a copy of their train list from Salt Lake City and Bieber to the Train Desk Clerk on arrival at Elko, NV or Oroville, CA.

Train Desk Clerks at Elko or Oroville will be responsible to see that when trains are entered into "ATS" or "TIS", the notation "BHF Rest" is entered in remarks on train consist for all bulkhead flat cars.

Interchange clerks at all terminals when checking inbound interchange should note each bulkhead flat car, and when input to "ATS" or "TIS", the notation "BHF REST" must be entered in remarks for these cars.

NOTICE NO. 12-15

June 10, 1981

The only remarks column entries with higher priority than "BHF REST" are "HAZMAT" and "HIWIDE".

Conductors at terminals other than Salt Lake City or Bieber are responsible to check remarks column for all special instructions. When "BHF REST" is shown, all crew members should be notified so train can be handled in accordance with Timetable restriction.

Anyone that finds a bulkhead flat car in train that does not have notation "BHF REST" should notify crew members, Chief Train Dispatcher and nearest yard office so list can be corrected and train can be handled in accordance with Timetable restriction.

Anyone that finds a bulkhead flat car in train yard that does not have notation "BHF REST" should notify the Yardmaster or Train Desk Clerk, who will be responsible for correcting yard list before car is entrained.

In the Official Railway Equipment Register, bulkhead flat cars are identified under AAR Mechanical designation "FBS" and AAR Car Type Code "F" and the second number 8.

R. R. Gentry
Division Superintendent
Eastern Division

C. Aadnesen
Division Superintendent
Western Division

CLASS OUTLINE
PLACEMENT OF CARS IN TRAIN

C-2-4

I. RULES AND INSTRUCTIONS ON PLACEMENT:

II. TRAIN MAKE-UP:

III. TIMETABLE BULLETINS:

IV. YELLOW NOTICES:

V. TRAIN ORDERS:

V. OTHER INSTRUCTIONS:

Western Pacific
Road Conductor
Training Course

~ Air Brakes ~



AIR BRAKES

Operating Rules 1101 pg 196; 1102 pg 196;
1104 pg 197

. Yellow Notice 13-2

. Operating Rules 1104A pg 197; 1111 pg 199; 1112, 1113,
1114, 1115 pg 200; 1116 pg 201; 826 pg 174;
12-5, 12-6 pg 39; 14-1, 14-2 pg 40; 1117 pg 201;

Time Table pg D

. Operating Rules 1117A pg 204; 1118 pg 204A;
1119 pg 206; 1170 pg 223; 1171 pg 223; 1173 pg 224;
1175, 1176 pg 226; 1177, 1178 pg 227

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

San Francisco - May 1, 1974

NOTICE NO. 13-2

ALL CONCERNED:

Air Brake Rule 1104

During freezing weather, in addition to provisions of Air Brake Rule 1104, freight trains will stop at points indicated below long enough to permit trainmen to blow out air connections at rear of locomotive and on five head cars in train:

*EASTWARD - Halls Flat - Gerlach - Winnemucca - Shafter -
Wendover - Low

*WESTWARD - Low - Wendover - Shafter - Winnemucca - Gerlach
Norvell - Almanor - Rich Bar -
Belden, or Camp Rogers

(*) And at any point where engine is detached from train.

While this operation is being carried out, trainmen will see that provisions of 1st paragraph of Operating Rule 103C are observed.

When using dynamic brake descending grades, occasional use of the automatic air brake must be made to permit free flow of air throughout train, thus insuring that air brakes will be in working order should emergency arise or when necessary to use them to stop.

In case trouble develops with air, such as air brakes sticking or engine unable to pump up or keep up required brake pipe pressure, train must be brought to a stop promptly, securing with hand brakes where necessary, and no attempt made to move train until proper working pressure is attained.

J. C. Luser
Superintendent
Eastern Division

J. A. Terhorst
Superintendent
Western Division

CLASS OUTLINE
AIR BRAKE RULES & TESTS

C-2-5

I. RESPONSIBILITY:

II. STANDARDS:

III. GENERAL RULES:

IV. TESTS:

V. PASSENGER AIR BRAKE RULES:

Western Pacific
Road Conductor
Training Course

~ Locomotive Rules ~



Locomotive Rules

1. Time Table page 3
2. Operating Rules 1200 pg 228 ; 1204 pg 228 ;
1210 pg 228A ; 1107 pg 198 ; 30 : 30A pg 49 ;
17 pg 45 ; T90 pg 64 ; 17E pg 46 ; 17A : 17c pg 45 ;
17D : 18 pg 46 ; 14c pg 43 ; 84A pg 62 ; 1202 pg 228

CLASS OUTLINE
LOCOMOTIVE RULES

C-2-6

I. LOCOMOTIVES (GENERAL):

II. FLAT SPOTS ON WHEELS:

III. ENGINE BELL:

IV. HEADLIGHT RULES:

V. LOCOMOTIVE RESTRICTIONS:

VI. LONG REVERSE MOVES - LITE ENGINES:

VII. UNATTENDED LOCOMOTIVES:

VIII. LOCOMOTIVE WHISTLE:

Western Pacific
Road Conductor
Training Course

~ Switches & Derails ~



Switches & Derails

1. Definitions Operating Book pg 8, 13, 12, 8
2. Safety Book pg 27 ; Rule 7210 thru 7216 pg 27 thru 31
3. Operating Rules 104 pg 78; 341 pg 139 ; 104A pg 78 ;
104B, 104C pg 79; T340 pg 139 ; 551 ; 551A pg 152 ;
550 pg 151 ; 104D pg 80 ; 104F pg 81 ; 552 pg 152 ;
545 pg 144 ; 509 pg 140A ; 546, 546A, 547 pg 146 ;
550, 550A pg 151 ; 551A pg 152 ; 104B pg 82 ;
343 pg 140 ; 105 pg 82 ; 264 pg 128 ; 340A pg 139 ;
105A pg 82

SWITCHES AND DERAILS

I. DEFINITIONS:

II. RULES FOR THE USE OF SWITCHES:

Western Pacific
Road Conductor
Training Course

~ Signals ~



SIGNALS

1. Operating Rules 7 pg 29 ; 7A, 7B pg 30 ; 10, 10G, 10H pg 31 ;
10I pg 33 ; 10J pg 37 ; 11 pg 38 ; 12, 12A pg 39 ;
13 pg 39 ; 14 pg 40 ; 14A, 14B, 14C pg 43 ; 14d, 15 pg 44 ;
17, 17A, 17B, 17C pg 45 ; 17d, 17E, 18 pg 46 ; 19A, 20,
21 pg 47 ; 22, 23, 24 pg 48

2. Operating Rules Book pg 12
Definitions ; (speed)

TRACK

Limited

Medium

Restricted

Turnout

YARD

- . Operating Rules 93 pg 65 ; 302 pg 137
- . Time Table pgs 71 ; 48
- . Operating Rules 723 pg 161b ; 9 pg 30 ; 15 pg 44 ; 11 pg 38 ;
281 pg 132 ; 282, 283, 284, 285 pg 132 ; 286, 287, 288 pg 134 ;
- . Time Table pg 48
- . Operating Rules 288A, 291, 292 pg 134 ; 330 pg 137 ; 509 pg 140A ;
663 pg 156 ; 292A pg 136 ; 505 pg 140
- . Operating Book pg 12 (Definitions)
- . Operating Rules 509A, 509B, 509 pg 140A ; 510 pg 142 ;
544 pg 144 ; 547c pg 150 ; 516 pg 143 ; 338 pg 138 ;
663.2 pg 157 ; 509 pg 140A.

SIGNALS: ABSS; TCS; INTERLOCKING

I. FIXED SIGNALS OTHER THAN ABSS, TCS & INTERLOCKING:

II. HAND SIGNALS, TORPEDOES & FUSEES:

III. SIGNALS - GENERAL:

IV. SIGNAL ASPECTS:

V. ABSS:

VI. TCS:

VII. INTERLOCKING:

Western Pacific

Road Conductor

Training Course

~ Train Handling ~



TRAIN HANDLING

Operating Rules 1130 pg 210; 1131 pg 211; 1108 pg 199;
1147 pg 217; 1148, 1149 pg 218; 1152 pg 220; 1165 pg 221;
1143 pg 216; 1137, 1138 pg 214; 1134 pg 212; 1141 pg 215;
84A pg 62; 548 pg 151; 511 pg 143; 547 pg 146; 548 pg 151;
670 pg 158; 344 pg 140; 102, 102A pg 74; 542 pg 144

TRAIN HANDLING

I. FREIGHT TRAIN HANDLING:

II. HELPER SERVICE:

III. INSTRUCTIONS PERTAINING TO TRACK CONDITIONS:

IV. FUEL CONSERVATION MEASURES:

Western Pacific
Road Conductor
Training Course

~ Train Inspection ~



TRAIN INSPECTION

1. Operating Rules 109 pg 82; 110, 111, 112 pg 84; 858 pg 177;
1115 pg 200; 894 pg 183; F pg 21; 830 pg 174; 1030 pg 77;
893 pg 183; 853 pg 176
2. Yellow Notices 12.12

TRAIN INSPECTIONS

I. TRAIN INSPECTIONS:

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY

OPERATING DEPARTMENT

August 5, 1980

NOTICE NO. 12-12

ALL CONCERNED:

When picking up cars at locations where carmen have not inspected freight cars, train crews shall inspect freight cars for imminently hazardous conditions listed below:

1. Car Body:
 - (a) Leaning or listing to side.
 - (b) Sagging downward.
 - (c) Positioned improperly on truck.
 - (d) Object dragging below.
 - (e) Object extending from side.
 - (f) Door insecurely attached.
 - (g) Broken or missing safety appliance.
 - (h) Lading leaking from a placarded hazardous material car.
2. Insecure coupling.
3. Overheated wheel or journal.
4. Broken or extensively cracked wheel.
5. Brake that fails to release.
6. Any other apparent safety hazard.

R. R. GENTRY
Division Superintendent
Eastern Division

C. A. AADNESEN
Division Superintendent
Western Division

Western Pacific
Road Conductor
Training Course

~ Flag Protection ~



Flag PROTECTION

Operating Book pg 12 (Definitions)

OPERATING Rules 35, 35A pg 51 ; 40 pg 51 ; 41 pg 51 ; 800,
800A, 801 pg 172 ; 850 pg 175 ; 509 pg 140A ; 99 pg 67 thru
70B ; 102 pg 74 ; 102A, 103 pg 74 ; 99 pg 68; 69 ; 102 pg 74 ;
84A pg 62 ; 548 pg 151 ; 100, 101 pg 71 ; 80 pg 60 ; 340A pg 139 ;
101 pg 71 ; 101A, 101B, 101C pg 73 ; 101D pg 74

CLASS OUTLINE
FLAG PROTECTION

C-3-3

I. INTRODUCTION:

II. DEFINITIONS:

III. RULES FOR FLAGGING:

Western Pacific
Road Conductor
Training Course

~ Switching Operations ~



Switching Operations

1. Operating Rule 103A pg 75
2. Operating Book pg 12 definition (YARD)
3. Operating Rules 103 pg 14 ; 103A pg 75
4. Timetable pg 81 (coupling speed)
5. Operating Rules 103c pg 77 ;
6. Copy of Bulletin 32 118
7. Operating Rules 104 pg 78 ; 104b/c pg 79 ; 105 pg 82
8. Operating Book pg 12 ~~D~~F (YARD)
9. Operating Rules 819 pg 173 ; 824 pg 174 ; 1175 pg 226
10. Safety Book Rules 7119 pg 16 ; 7140 thru 7146 pg 18 ;
7147 thru 7149 pg 19 ; 7165 thru 7168 pg 21 ; 7171 thru
7173 pg 21 ; 7174 pg 22 ; 7176, 7177, 7180 pg 22 ;
7191 pg 26

SWITCHING OPERATIONS

I. SWITCHING OPERATIONS:

II. SWITCHING PRACTICES:

Western Pacific
Road Conductor
Training Course

~ Radios ~



RADIOS

1. Operating Rules 40 thru 54 pg's 51 thru 59d
2. Safety Book Rule 7025 pg 6
3. Operating Rules 7B pg 30; T90A pg 65; 99.2F pg 69;
102 pg 74; 109 PARS pg 83; 266 pg 129; 708 pg 160

CLASS OUTLINE
USE OF RADIOS & RADIO RULES

C-3-5

I. GENERAL DISCUSSION OF RADIO RULES:

II. RADIO USAGE:

Western Pacific
Road Conductor
Training Course

~ Train Orders ~



TRAIN ORDERS

1. OPERATING BOOK page 59d thru 71 (Superiority of trains)
2. OPERATING BOOK page 85 thru 123 (Movement by train orders)
3. Operating Rule T82A pg 60 (Clearance)
4. Operating Rules 20 pg 47; 21 pg 47; 14-7 pg 41;
23 pg 48; T83, T83A pg 61; T83c pg 62

CLASS OUTLINE
TRAIN ORDERS

C-3-6

I. INTRODUCTION:

II. TRAIN ORDERS:
(GENERAL)

COPY ORDER No 1

Eng. 272 Run extra schedule to Bitter
with right over west end service

WTE

COPY ORDER No 2

*See copy 2 of 2nd copy of order at
out*

COPY ORDER No 3

*See copy 3 of 2nd copy of order at
out*

COPY ORDER No 4

*See copy 4 of 2nd copy of order at
out*

(WORK ORDERS)

COPY ORDER No 1

*See copy 1 of 2nd copy of order at
out*

COPY ORDER No 2

*... at ... until 2:00 ... 1:1 PM
... two ... 190 PM*

COPY ORDER No 1

*... with ... protect ...
... trains ...
... until ...*

III. CLEARANCES:

IV. CLASSIFICATION SIGNALS:

V. TRAIN REGISTER:

CLASS OUTLINE
TRAIN ORDERS

C-3-6

I. INTRODUCTION:

II. TRAIN ORDERS:
(GENERAL)

COPY ORDER No 1

*Eng. 3001 Run Extra Lodgepole to Bieber with right over
Westard Trains*

WFS

COPY ORDER No 2

Ex. 3001 East meet No 5 Eng 3542 at Hall Flat

COPY ORDER No 3

Np. 5 Eng 3542 meet Ex. 3001 East at Little Valley instead of Halls Flat

COPY ORDER No 4

Order No 3 is annulled

Order 5

Extra 3001 East take siding meet No 5. Eng 3542 at Halls Flat.

(WORK ORDERS)

COPY ORDER No 1

*Eng 3010 works Ex. Sid one 601 AM until six one 601 P.M.
Between Halls Flat and Bieber not protecting against Ex.
Trains
Protect against regular trains
Except protects against Ex. 3501 East after 301 PM.*

COPY ORDER No 2

No 9 wait at Bieber until two one 201 PM Little Valley two fifty 250 PM

COPY ORDER No 2

Extra 3062 East will not protect against following trains between Robbers Creek and Bieber until none one 901 AM

III. CLEARANCES:

IV. CLASSIFICATION SIGNALS:

V. TRAIN REGISTER:

Western Pacific
Road Conductor
Training Course

~ Miscellaneous Rules &
Weather Hazmat ~



Miscellaneous Rules

1. Operating Rule F pg 21
2. Operating Rule 99.4b pg 70a
3. Operating Rules 101 pg 71 ; 101A, 101B, 101C pg 73; 101D pg 74;
104F pg 81 ; 108 pg 82 ; storm order v pg 120;
221.1 pg 96; 935 pg 185 ; 19, 19A pg 47

CLASS OUTLINE
MISCELLANEOUS RULES & WEATHER

C-3-7

I. WEATHER RULES:

II. MARKER ON REAR OF TRAINS:

CLASS OUTLINE
HANDLING HAZARDOUS MATERIALS

C-3-8

I. NEW REGULATIONS & CHANGES IN LAWS:

II. TIMETABLE INSTRUCTIONS:

III. BUREAU OF EXPLOSIVES HAZMAT FILM:

IV. UNION PACIFIC FILM (GETTING NUMBERS STRAIGHT: UN):

V. EMERGENCY HANDLING FORM:

Western Pacific
Road Conductor
Training Course

~ Critique ~



COURSE SURVEY QUESTIONNAIRE
ROAD CONDUCTOR TRAINING COURSE



NAME _____

PLACE _____

DATES _____

WOULD YOU TAKE A FEW MINUTES TO GIVE US SOME OF YOUR IMPRESSIONS OF THE TRAINING YOU HAVE JUST COMPLETED? ALL REPLIES WILL BE HELD IN CONFIDENCE AND WILL BE USED TO IMPROVE THE CURRENT PROGRAM AS WELL AS TO HELP IN THE DESIGN OF FUTURE INSTRUCTION. COMPLETED FORMS SHOULD BE SENT AS SOON AS POSSIBLE AFTER COURSE COMPLETION VIA COMPANY MAIL TO:

A. P. Schuetz
Manager-Personnel
Personnel Department
526 Mission Street
San Francisco, Ca. 94105

SECTION I. GENERAL IMPRESSIONS

(Each of the instructional segments are listed in order of presentation. Please mark the appropriate category and include your comments.)

| <u>Instructional Segment</u> | <u>Impressions</u> | | |
|--|--------------------------|---------------------|------------------|
| | <u>Needs Improvement</u> | <u>Satisfactory</u> | <u>Excellent</u> |
| 1. The Conductor as a Supervisor / Employee Assistance | | | |

Comments: _____

| | | | |
|-------------------------------|------|-------|------|
| 2. Track Structure & Switches | (NI) | (SAT) | (EX) |
|-------------------------------|------|-------|------|

Comments: _____

Road Conductor Course Survey (Cont.)

Name _____

3. Administrative Requirements (NI) (SAT) (EX)
Comments: _____

4. General Safety & Injuries (NI) (SAT) (EX)
Comments: _____

5. Operating Rules of a General Nature (NI) (SAT) (EX)
Comments: _____

6. Timetable & Timetable Bulletins (NI) (SAT) (EX)
Comments: _____

7. Blue Signals (NI) (SAT) (EX)
Comments: _____

8. Placement of cars in train (NI) (SAT) (EX)
Comments: _____

Road Conductor Course Survey
(Cont.)
Name _____

9. Air Brake Rules & Tests

(NI)

(SAT)

(EX)

Comments: _____

10. Locomotive Rules

(NI)

(SAT)

(EX)

Comments: _____

11. Switches & Derails

(NI)

(SAT)

(EX)

Comments: _____

12. Signals

(NI)

(SAT)

(EX)

Comments: _____

13. Train Handling

(NI)

(SAT)

(EX)

Comments: _____

14. Train Inspection

(NI)

(SAT)

(EX)

Comments: _____

Road Conductor Course Survey
Name _____

15. Flag Protection (NI) (SAT) (EX)

Comments: _____

16. Switching Operations (NI) (SAT) (EX)

Comments: _____

17. Use of Radios & Radio Rules (NI) (SAT) (EX)

Comments: _____

18. Train Orders (NI) (SAT) (EX)

Comments: _____

19. Miscellaneous Rules & Weather (NI) (SAT) (EX)

Comments: _____

20. Hazardous Materials Handling (NI) (SAT) (EX)

Comments: _____

SECTION IV. SPECIFIC IMPRESSIONS

Please take a moment to give us the benefit of any opinions about specific segments of this instruction. _____

SECTION V. FUTURE TRAINING NEEDS

We would like to have your opinions as to specific subject matter you would like to see included in future training for this craft.

SECTION VI. DO YOU BELIEVE THAT THIS INSTRUCTION SHOULD BE MADE PART OF THE PROCESS FOR PROMOTION TO CONDUCTOR? YES () NO () (Please explain)

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY
OPERATING DEPARTMENT

San Francisco - October 31, 1982

TIMETABLE NO. 10

BULLETIN NO. 1

ALL CONCERNED:

At 2:00 AM, Sunday, October 31, 1982, in compliance with the Uniform Time Act of 1966, standard time will be set back one hour and The Western Pacific Railroad Company, Sacramento Northern Railway and Tidewater Southern Railway Company will operate on the new standard time until April 24, 1983.

At 2:00 AM, Sunday, October 31, 1982, all clocks and watches in the train dispatcher's office, and in other open telegraphic offices, must be set back one(1) hour to indicate 1:00 AM. Telegraph offices must compare times with dispatcher as soon as the change has been made. In other offices that are not open but have standard clocks, the clocks and watches must be changed to conform to the new time after the office is open, then time must be compared with the train dispatcher before assuming duty.

At 2:00 AM, Sunday, October 31, 1982, watches in use by trainmen, enginemen, yardmen and all other employees subject to time service regulations must be set back one(1) hour to indicate 1:00 AM. Clocks and watches of all other employees coming on duty thereafter must be set back to conform to the new standard time. Trainmen, enginemen and yardmen who are on duty at the time watches are changed must, after setting back their watches, compare time as follows:

Conductor with rear brakemen and, at the first opportunity, with the engineer.

Engineer must compare time with all members of the crew on the engine and, at the first opportunity, with the conductor.

On yard crews, all members of the crew must compare with each other.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

POSTED _____

TIME _____ DATE _____

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY
OPERATING DEPARTMENT

San Francisco - October 31, 1982

TIMETABLE NO. 10

BULLETIN NO. 2

ALL CONCERNED:

Refer to Operating Rules Book, Pages 3 and 4: These pages should state, "Revised October 31, 1982" at bottom. Book of Rules in every employee's possession must conform with revisions summarized on Pages 3 and 4 as revised October 31, 1982.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

POSTED _____

TIME _____ DATE _____

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY COMPANY
OPERATING DEPARTMENT

San Francisco - October 31, 1982

TIMETABLE NO. 10

BULLETIN NO. 3

ALL CONCERNED:

Refer to Page 34, SIXTH SUBDIVISION, SPURS AND COMMERCIAL TRACKS. Below table of stations --

ADD: Knight Spur spiked and out of service account
frog removed.

ADD: Tonka Spur spiked and out of service account
frog removed.

Refer to Page 50, RENO BRANCH. Below table of stations --

ADD: Switch to track 871 (MP 31.7) out of service account
dirt fouling track.

Refer to Page 53, ELLERBECK BRANCH. Below table of stations --

ADD: East leg of wye out of service; bumper installed from
220 feet east of west wye switch.

R. R. GENTRY
Division Superintendent
Eastern Division

C. AADNESEN
Division Superintendent
Western Division

POSTED _____

TIME _____ DATE _____