CH. 12
CLASSIFICATION AND BLOCKING
• Introduction flat & gravity (hump)

• Flat
  – World’s Largest – Bailey Rail Yard
  – North Platte, NE
• Yards, Subyards, Tracks, and Leads

• Switch List

• Station Order

• Batting (Pushing)
East-West System - J 77th St. Yard

(Condensed & shortened)
Tracks 1-4  "Forwarding" yard - Traffic from J-T RR to west.
Tracks 10-15  "Main yard" - Principal J classification yard.

- Car cleaning Tracks
- Rip Tracks
- West end switching leads
- Thoroughfare track
- Main (through) tracks
- Yard Office
- Diesel servicing tracks
- Wreck Train Track
- Diesel Shop
- E-W 77th St. Intermodal Terminal
- "Forwarder Ramp" Tracks
- Middle switching lead
- East end switching leads
- "Downtown"
- "To Downtown"
- To E-W Westside Industrial Park
- To EW-J Terminal RR Interchange yard

Tracks arranged to allow use of two leads to switch Tracks 10-13 and 14-16 simultaneously with two switch crews.
• Gravity (Hump)

Four sets of retarders control car speed at Burlington Northern Santa Fe’s Kansas City, Kan., Argentine Yard.
• Receiving (Arrival) Yard

• Retarders

• Trimming

• Departure Yard
• Local Yard

• Intermodal / Team / BIDS, Etc.
Mathematically, the railroad blocking problem is designing a network, called a blocking network, and routing shipments over this network so as to optimize the total shipment cost. Figure 1 gives a sample blocking network, where there are three types of nodes: origins (where shipments originate), yards (where shipments are reclassified), and destinations (where shipments terminate). We show here a simplified network as in practice yards can be origins as well as destinations, and nodes can send as well as receive shipments.) Each arc in the network represents a block with the origin at the tail of the arc and destination at the head of the arc.

Figure 1. An example of a blocking network.
CH. 13
LINE-HAUL OPERATION
• Introduction

• Scheduled, Advertised & Extra Trains

• Fast / Not-so-Fast Freights

• Keeping the Line Moving
<table>
<thead>
<tr>
<th>Station</th>
<th>Train Frequency</th>
<th>Main Line</th>
<th>Branch</th>
<th>Schedule (First Class)</th>
<th>Advertised Ftg. Service (Extras on Timecard)</th>
<th>Extras (Example)</th>
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</thead>
<tbody>
<tr>
<td>J</td>
<td>Daily</td>
<td>LV.</td>
<td>-</td>
<td>1800 0900</td>
<td>-</td>
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<td>LV.</td>
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<td>Coal Dock 0900 0330</td>
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<td>LV.</td>
<td>-</td>
<td>1915 1115</td>
<td>-</td>
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<tr>
<td>O</td>
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<td>LV.</td>
<td>-</td>
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<tr>
<td>L</td>
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<td>LV.</td>
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<td>AR.</td>
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</tr>
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<td>-</td>
<td>0040 Pass 0810 Pass 1330</td>
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<td>Run Thru</td>
</tr>
<tr>
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<td>Pass</td>
<td>0430 0900 Pass 1440 Pass 1800 Pass 2300</td>
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<td>Run Thru</td>
</tr>
<tr>
<td>T</td>
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<td>-</td>
<td>0645 1115 1750 2230 0300 0415</td>
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<td>D</td>
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<td>LV.</td>
<td>0700 1130 1830 0350 RR</td>
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<td>-</td>
<td>0700 1200 1500</td>
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</table>

- **Atlantic Division**: LV. 77th St., 2100, 1330, 0005, 0505, 0430, 0915, 1115, 1145, 1230, 1245, 1400
- **Allegheny Division**: LV. 1600, 2340, 0040, 0430, 0745, 0925, 2300, 0700, 1115, 1330, 1750, 2230, 0300, 0415, 1415, 2115, 0900, 1200, 1500
- **Western Division**: LV. 0900, 0700, 1200, 1500, 2050, 0100, 2250
• Balancing the Power
• Moving the Blocks
• Pre-Blocking
• Synchronized Arrival
• Assigning Motive Power
• Helpers and Doubling

• Locomotive Selection

• Computerized Scheduling

• Car Scheduling
CH. 14

UNIT – TRAIN OPERATION
• Introduction

• Multi-Car Rates

• The Unit-Train

• Specialized Equipment

• Equipment Utilization

• Mini-Trains