

Creating Operations on the Louisville Southern Lines



NMRA Div. 7 meeting on
Sunday, February 1st, 2026

Today's Topic

Converting a layout that was not
designed for operations...

...into an operating layout.

Disclaimer #1:

This is not a comprehensive clinic on model
railroad operations.

Rather, this clinic will focus on how I
transformed my layout - which was not designed
for operations - into an operating layout.

Disclaimer #2:

I am not a master operator.

Any attempt to claim otherwise will be a
disservice to my audience.

First...a little background

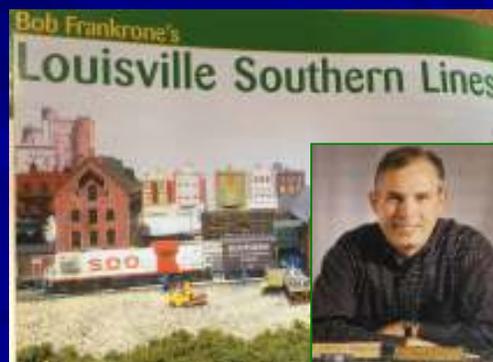
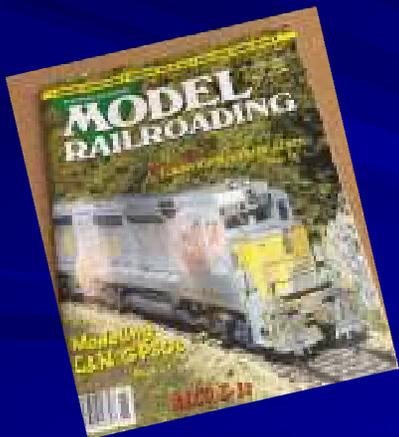
- I designed my layout in 1985
 - no thought given to operation
- Construction began in 1986
- First Expansion circa 1989
 - Added 225 square feet
 - Still no thought given to operation
- Second Expansion in 2005
 - Added 2' x 6' peninsula
 - By that time I had begun operating

Some Layout Specs

- Scale: HO (1:87)
- Size: 15' x 30', around the wall, walk-in
- Benchwork: Single deck, modular, 42" high, no grades
- Roadbed: Homasote over chipboard
- Track: Codes 100/83, 22" minimum radius, #4 and #6 turnouts
- Control: DC, dual cabs
- Theme: Industrial switching

Railroad Articles

- Layout was featured in Model Railroading magazine in November 2002...



Railroad Articles

- ...and again in the NMRA Magazine in September 2021



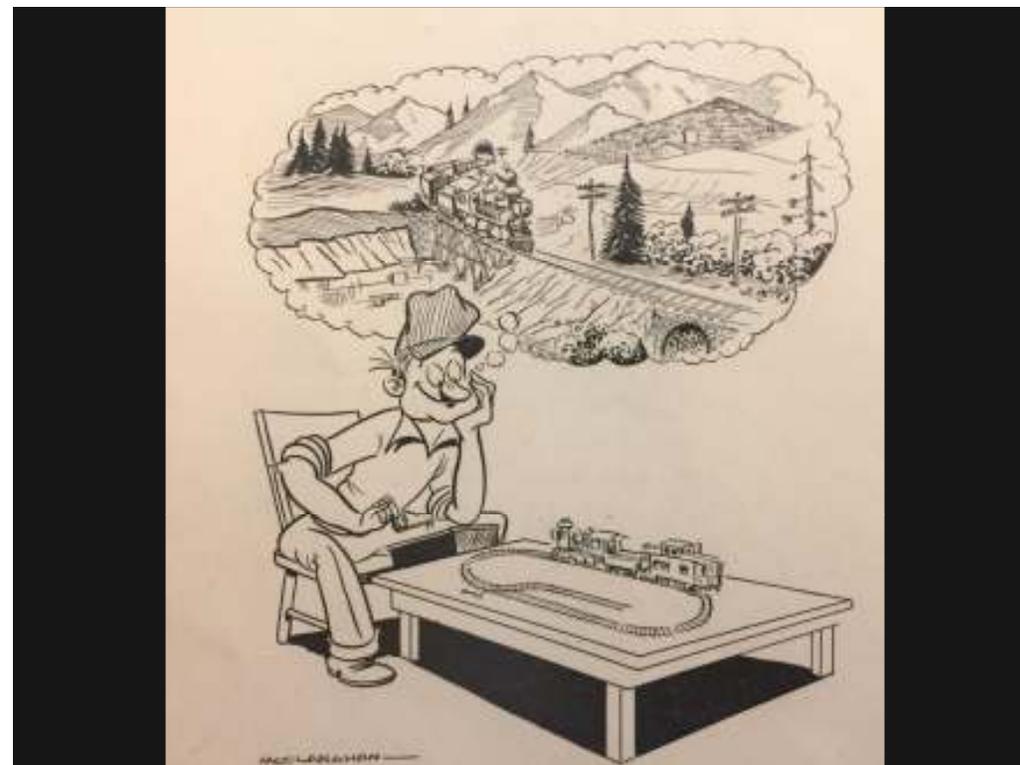
One day...I asked myself this question...

■ Why operate?

“...because running a train in a circle is fun for about two minutes...”

■ Whereas...

“...running a train with purpose can provide hours of enjoyment...”



What is required to operate a model railroad?

In its simplest form you need four things:

- Motive power
- A few cars
- A place (or places) to spot and retrieve cars
- Instructions on what cars to move and where to move them...i.e. the operating system.

To operate on a grand scale you may want to have some of the following elements (most of which need to be designed into the layout):

- Hidden staging tracks
- Classification yard
- Engine facilities
- Industrial sidings
- Run-around tracks
- Interchange track
- Passing sidings
- and the list goes on...

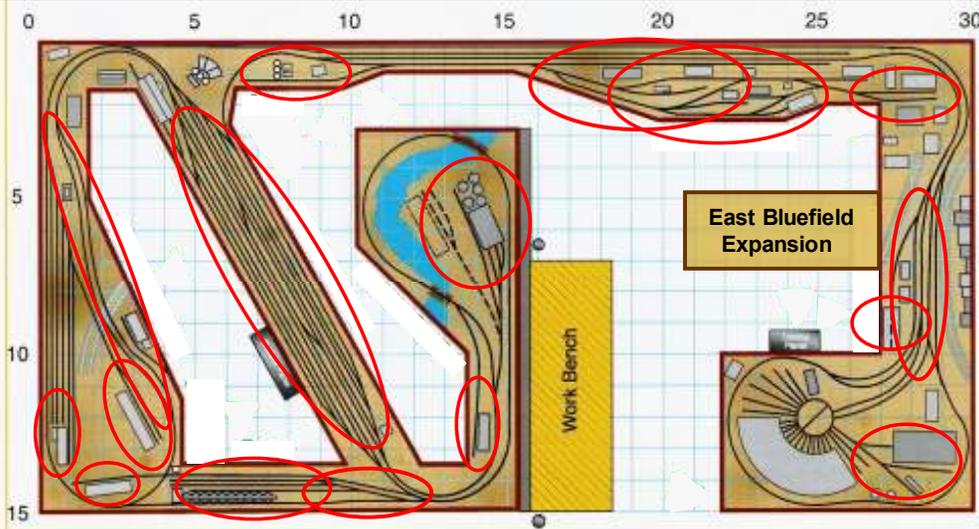
I asked myself another question...

- Can I operate my existing layout even though it was never designed to operate?

“...yes, because my layout has some essential elements necessary for operation...”

My layout's operating elements:

- Industrial sidings
- Classification yard
- Run-around tracks



- My layout had the necessary track elements to be operated, but it also had constraints that limited operating potential.

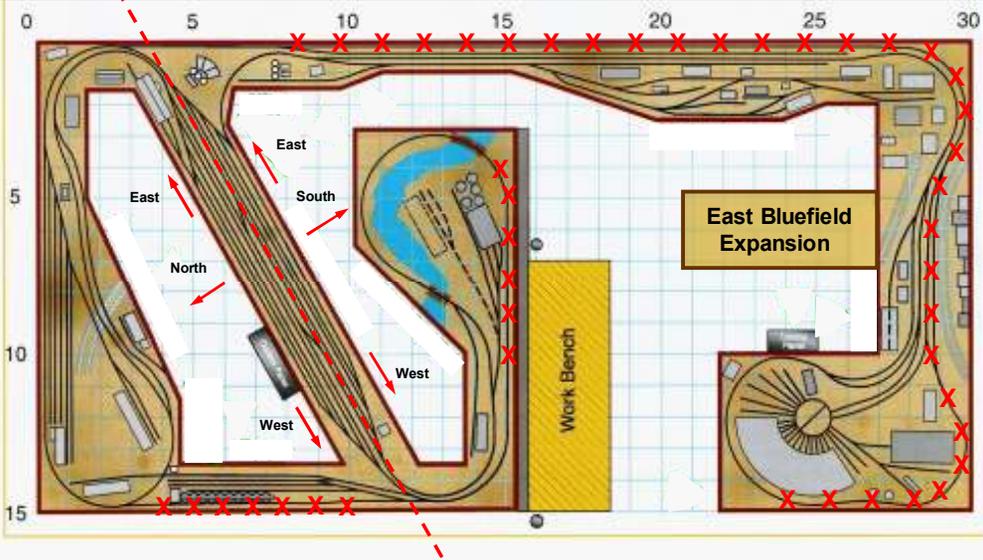
■ Constraints

- ~~No hidden staging yards~~
- Not point-to-point (continuous loop)
- Non-linear (passes through the scene more than once)
- ~~Non DCC (wired for two cab controls)~~
- ~~One 38 inch high "duck under"~~
- No clear "geography"

Step 1 - Establish a geography by naming cities and towns:

Step 2 - Set compass points:

Step 3 - Eliminate continuous loops thereby establishing point-to-point:

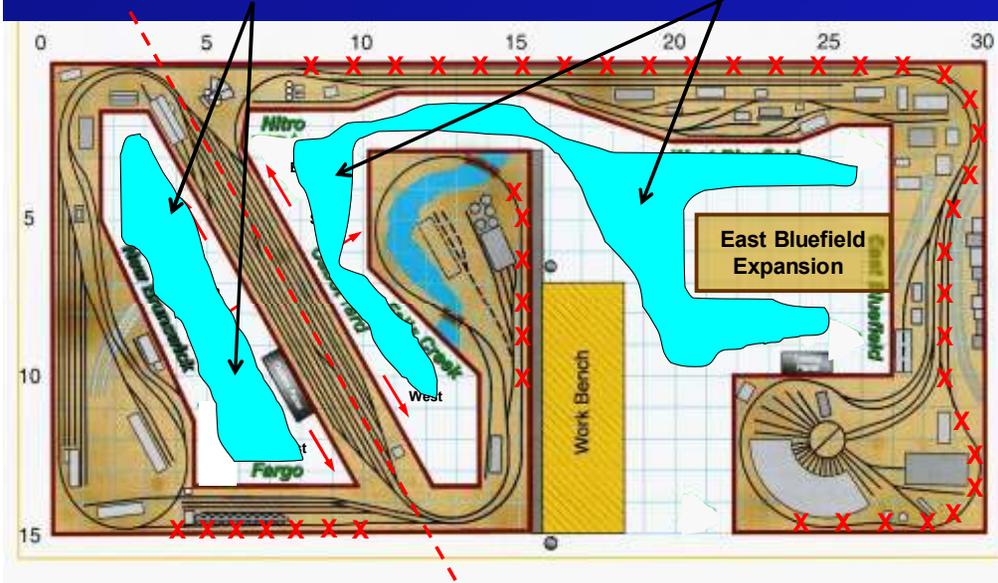


Step 4 - Eliminate the "duck under" during operating sessions:

- by keeping northern routes and southern routes separated

Northern routes crew area

Southern routes crew area



Layout Geography

■ Railroad is divided into two Divisions

– Northern Division

■ Fargo

■ New Brunswick

– Southern Division

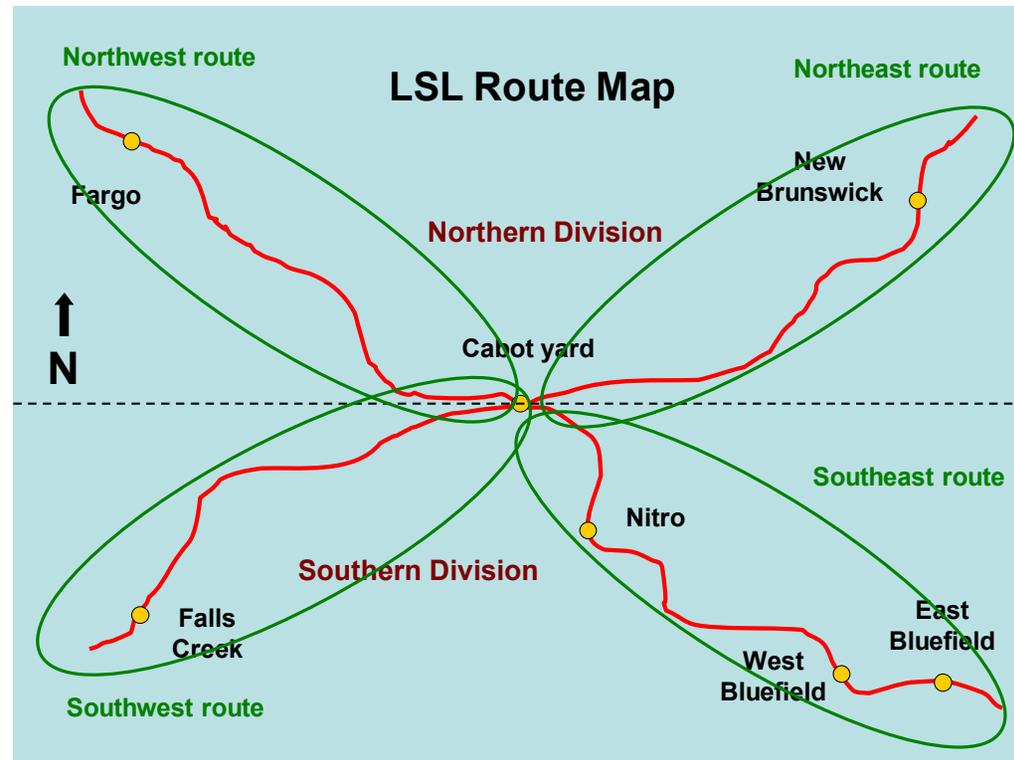
■ Falls Creek

■ Nitro

■ East Bluefield

■ West Bluefield

■ Cabot yard is the division point



Let's review...

- Determined the layout had the necessary track elements for operation
- Established a clear geography for the railroad by naming cities/towns and identifying compass points
- Made the layout function as point-to-point, thus creating four distinct routes
- With the exception of one route, eliminated passing through a scene more than once
- Nullified the "duck under" during op sessions

Remaining tasks

- Identify the industries within the cities/towns that will be served during an operating session
- Determine type and numbers of cars that can be handled by each industry
- Create instructions on what cars to move and where to move them...i.e. the operating system
- Miscellaneous things to determine
 - Length of trains (number of cars)
 - Number of trains to run in a complete session
 - Number of trains for each route

Identify Industries

- Each town has at least one industry
- 15 total industries
 - All uniquely named
 - Utilizing 32 total sidings
- 2 industrial yard tracks
- 1 team track
- Total siding capacity roughly 100 cars

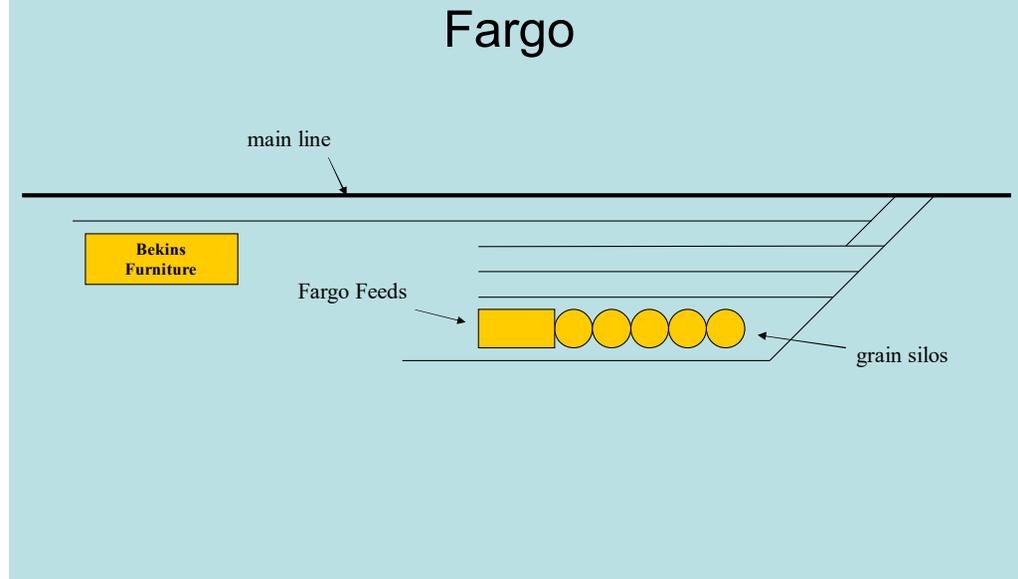
LSL Route Map



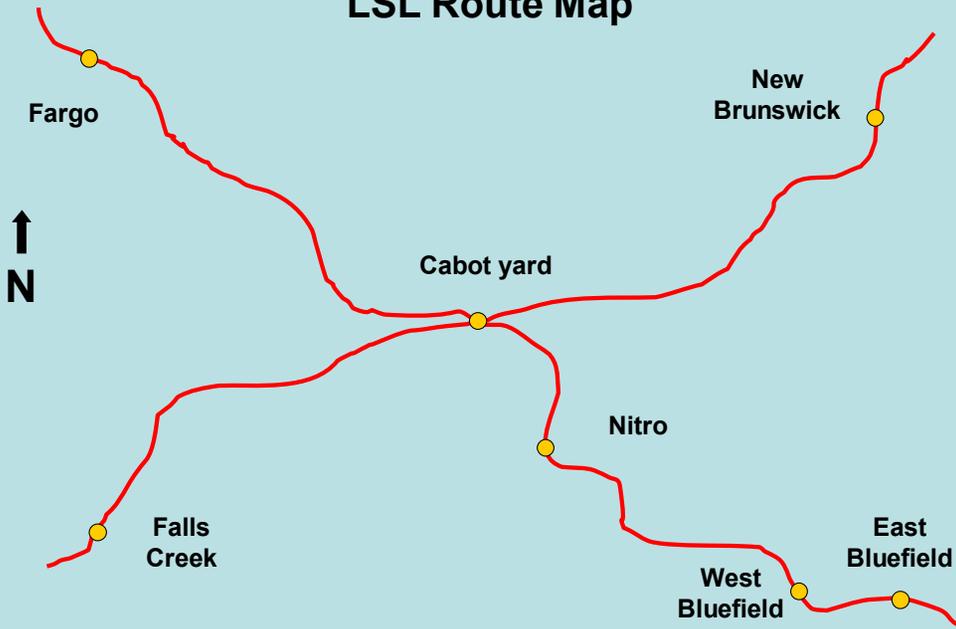
Industries

■ Fargo

- Bekins Furniture (1 track)
- Fargo Feeds (3 tracks)



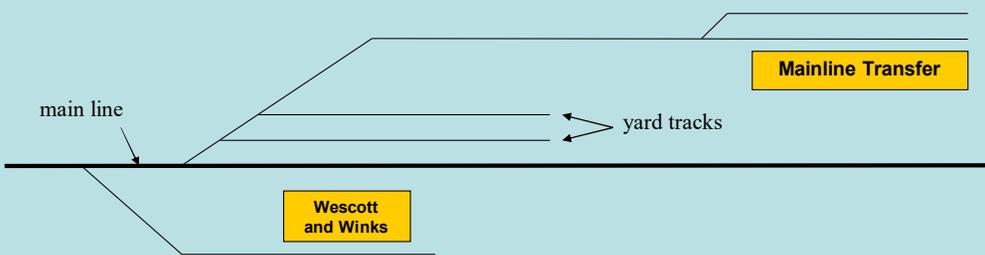
LSL Route Map

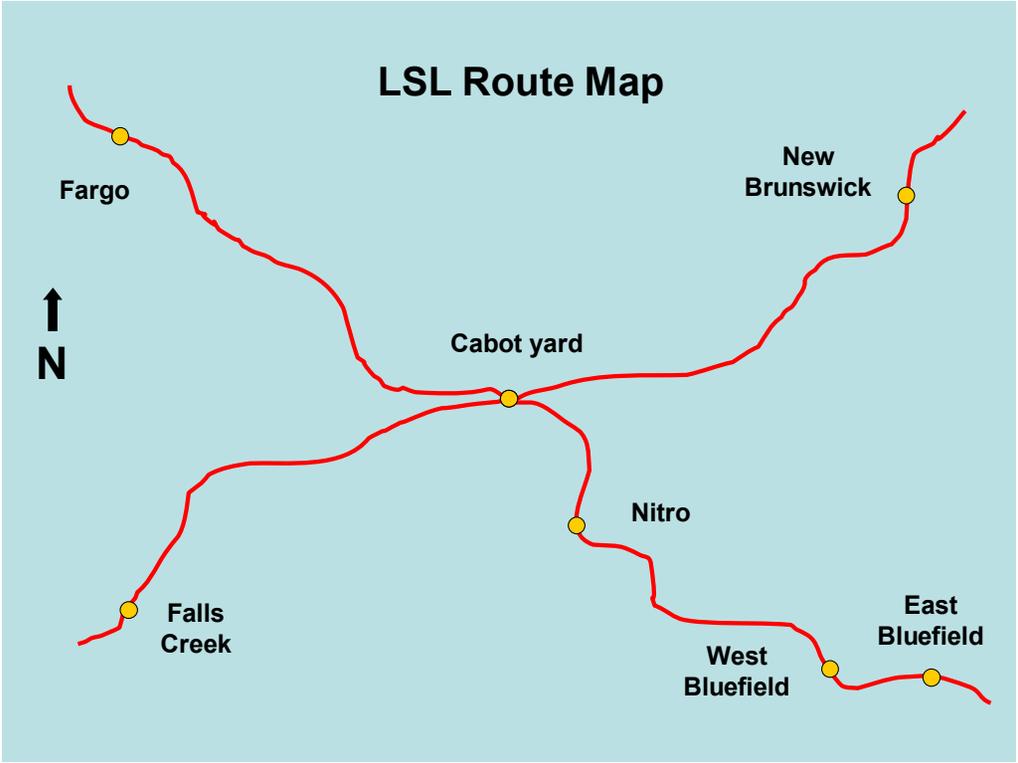
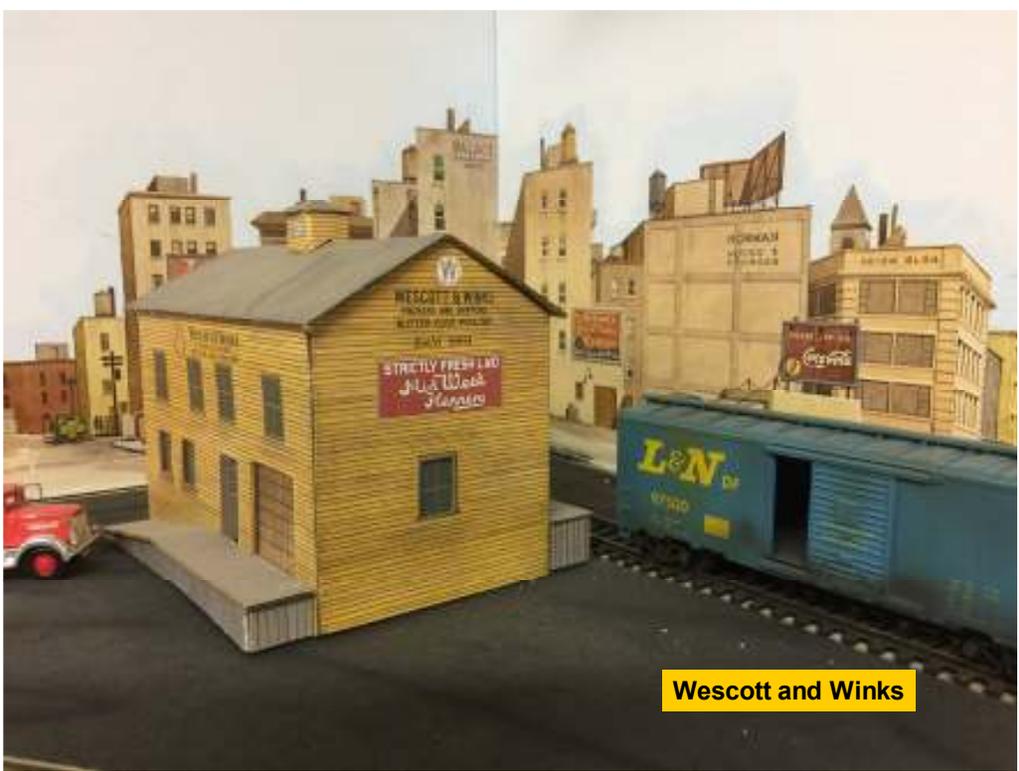


Industries

- New Brunswick
 - Mainline Transfer (2 tracks)
 - Wescott & Winks (1 track)
 - yard tracks (2 tracks)

New Brunswick

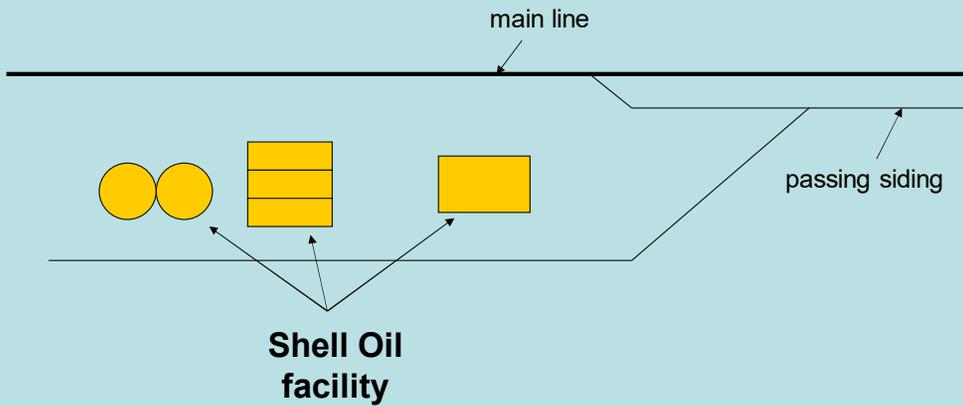




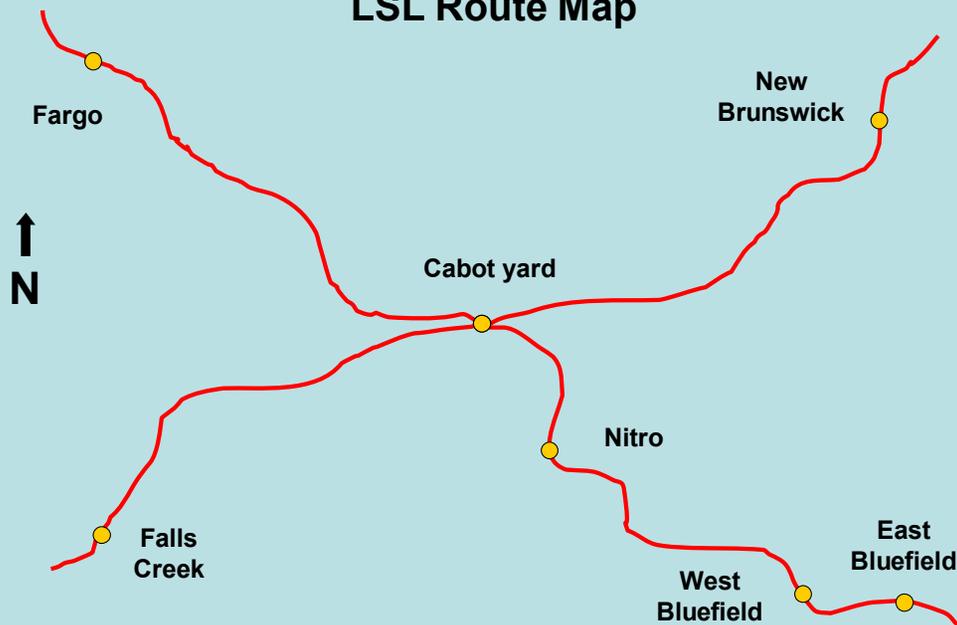
Industries

- Nitro
 - Shell Oil Company (1 track)

Nitro



LSL Route Map



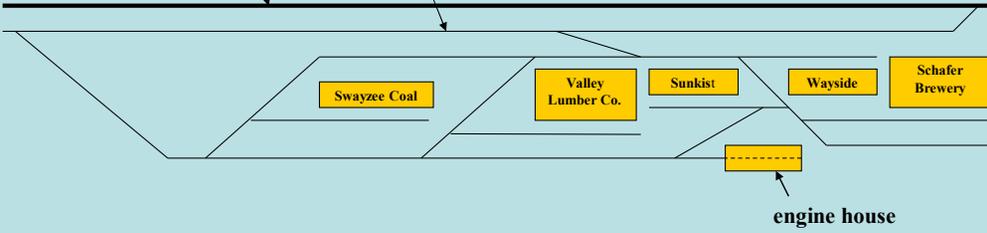
Industries

- West Bluefield
 - Swayzee Coal (1 track)
 - Valley Lumber (1 track)
 - Sunkist Citrus (1 track)
 - Wayside Freight (1 track)
 - Schaefer Brewery (2 tracks)

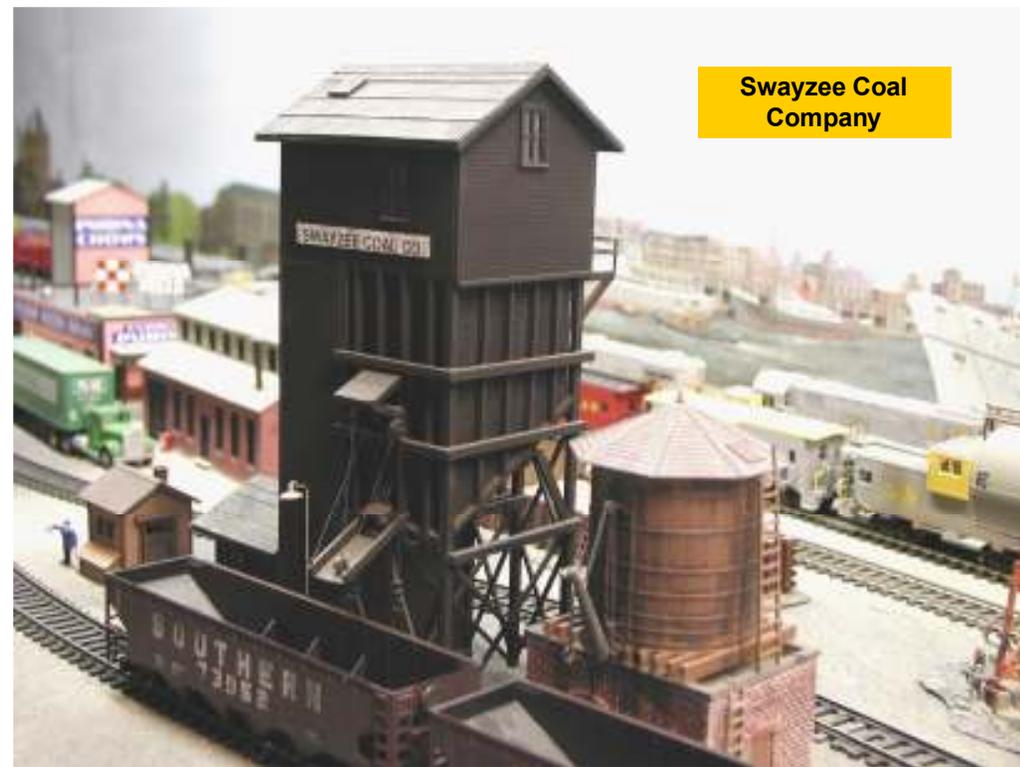
West Bluefield

main line

passing siding



Swayzee Coal Company

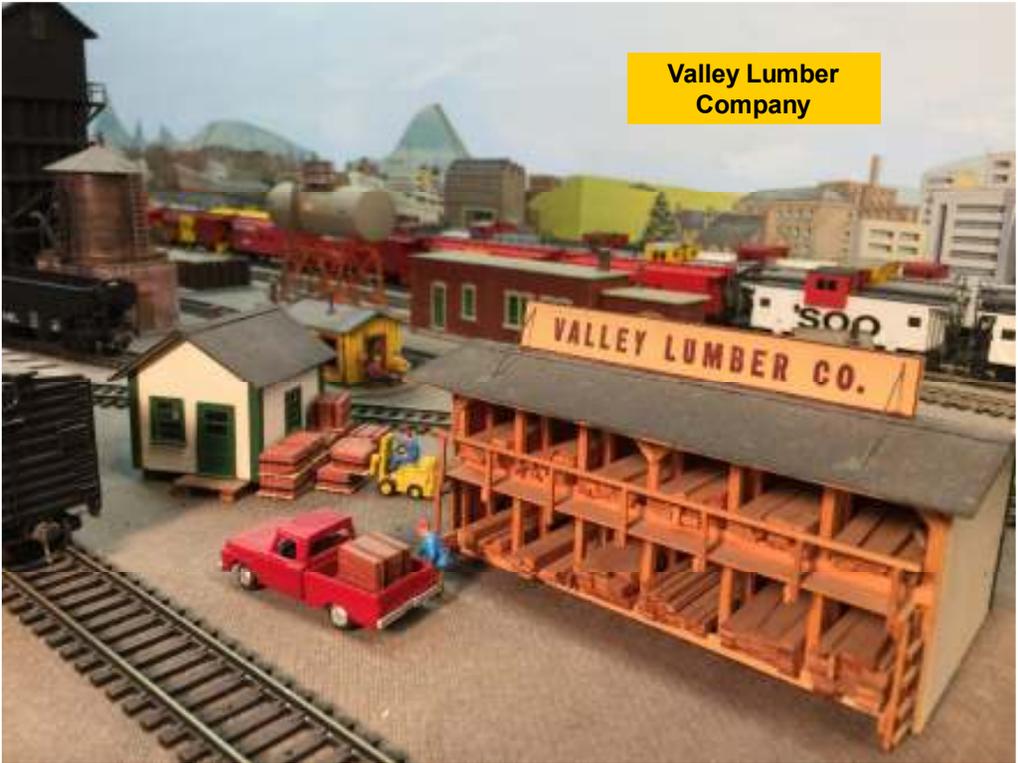


Schaefer Brewery



Wayside Freight Company

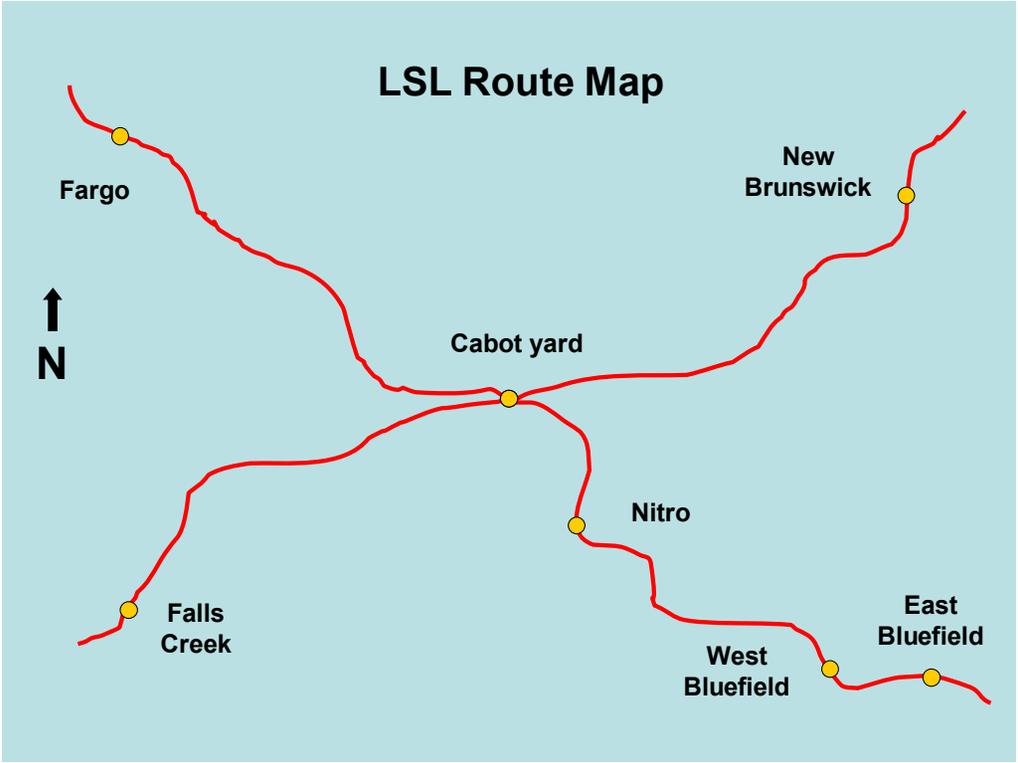




Valley Lumber Company



Sunkist Company

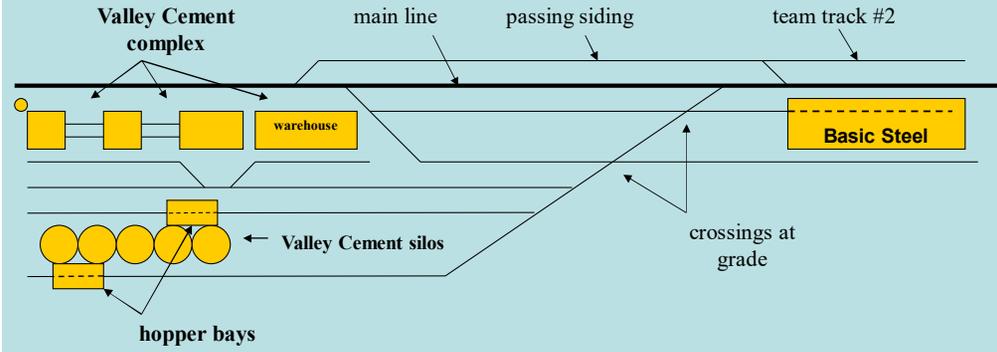


LSL Route Map

Industries

- East Bluefield
 - Valley Cement
 - silos (2 tracks)
 - warehouse (1 track)
 - yard tracks (2 tracks)
 - Basic Steel Corporation (2 tracks)
 - team track

East Bluefield



Valley Cement Company



Valley Cement Company



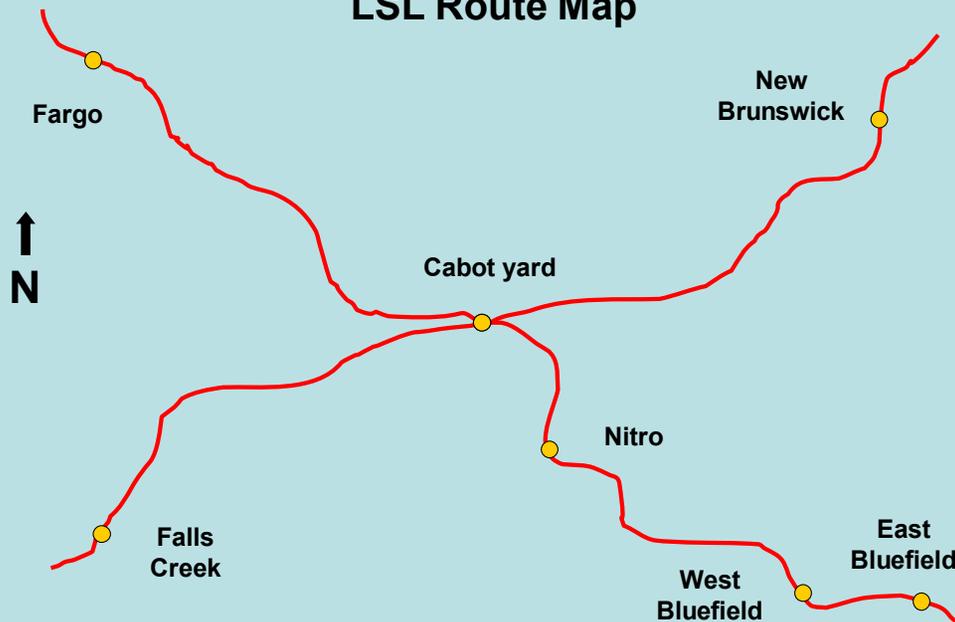
Valley Cement Company



Basic Steel Corporation



LSL Route Map



Industries

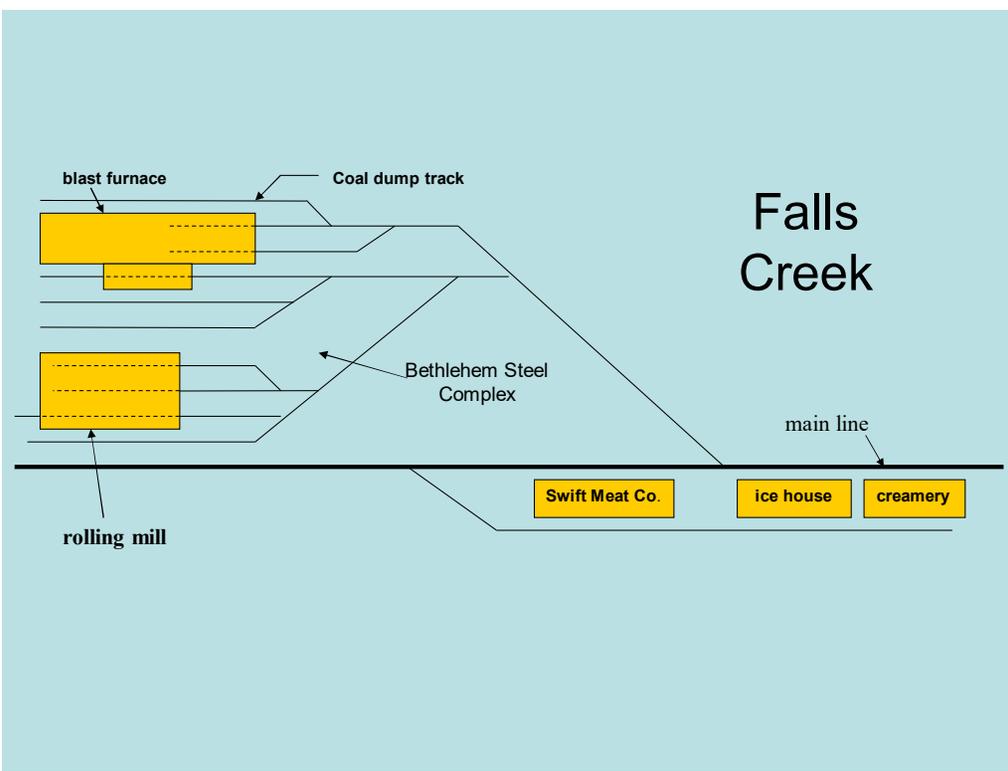
■ Falls Creek

– Bethlehem Steel

- Blast furnace (3 tracks)
- rolling mill (4 tracks)
- coal track
- yard tracks (2 tracks)

– Swift Meat Packing (1 shared track)

– Chauncey's Creamery (1 shared track)

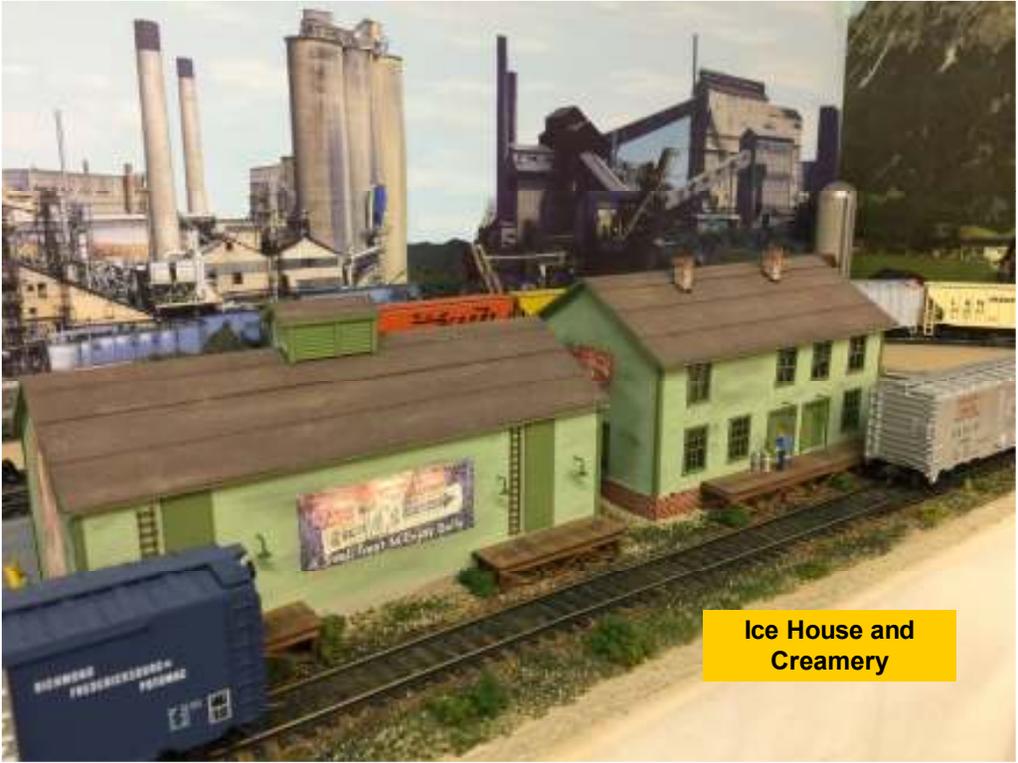




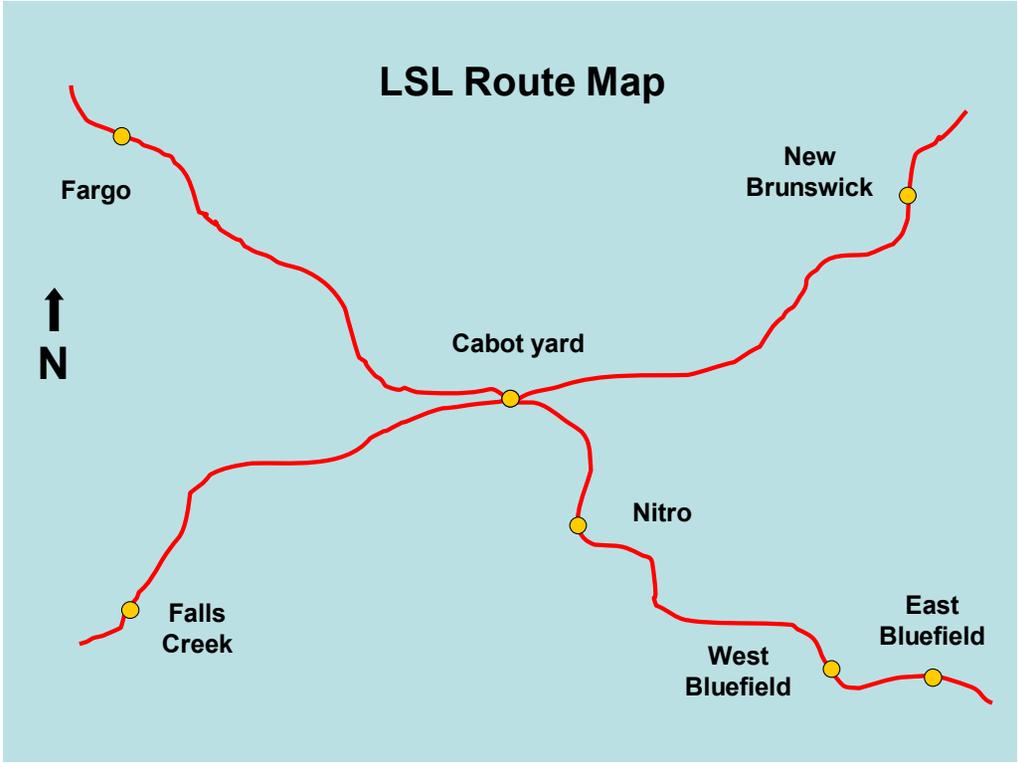
Bethlehem Steel Rolling Mill



Swift Meat Packing

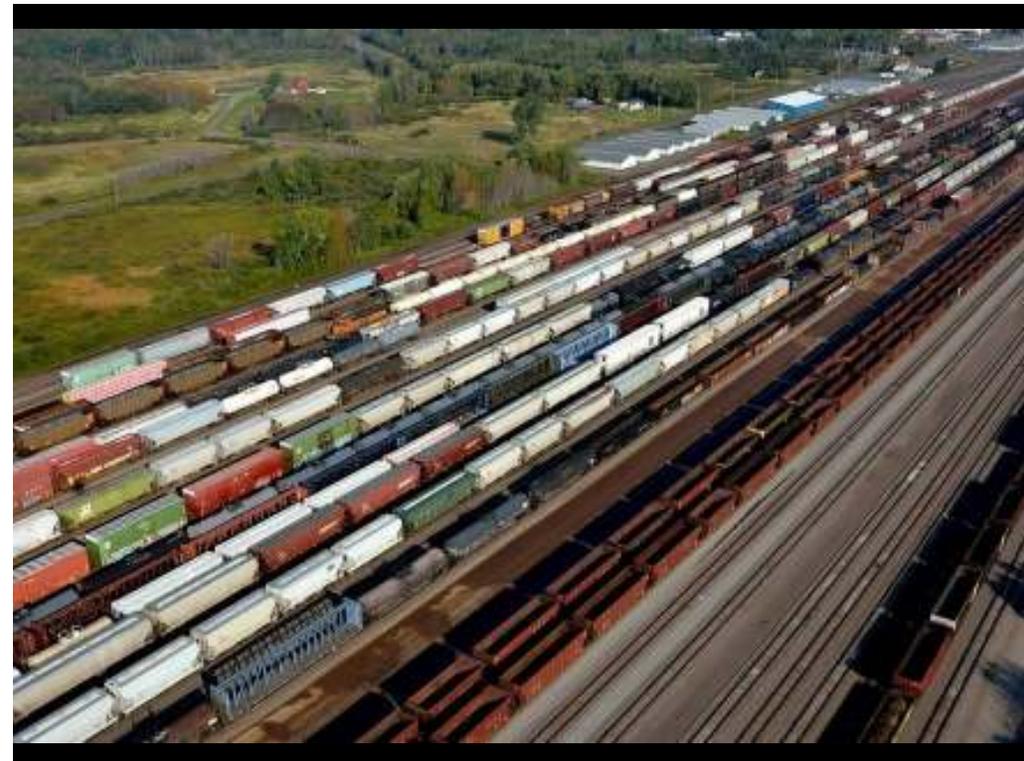
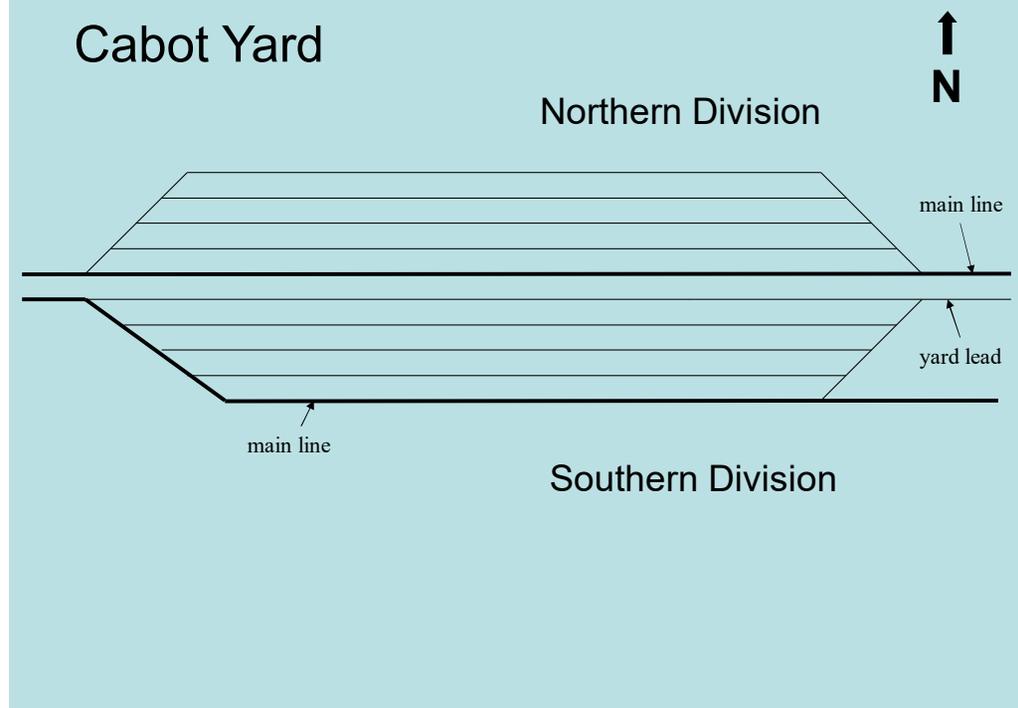


Ice House and Creamery



Cabot Yard

- Main classification yard
 - 10 tracks (5 per Division)
 - Flow through design
 - Can accommodate 135 cars
- Origin of all trains
 - All trains are staged (unblocked)
- Used for “blocking” operations
 - Cars are grouped per destination



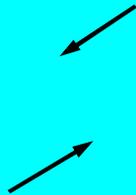
Creating an Operating System

■ My philosophy

- Easy to understand
- Minimal paperwork
- Provide a challenge
- 30 to 45 minute shifts
- Automatically resets for next session

Northern Division

Southern Division



Creating an Operating System

- Set operating parameters
 - Based on constraints
 - Personal preferences
- Select cars to operate
 - Types of cars at each industry
 - Number of cars at each industry
- Draft the paperwork
 - Keep it simple (half sheet of paper)

Set Operating Parameters

- Maximum of two operating crews
 - One crew per division
 - One or two people per crew
- Outgoing trains are limited to eight cars
- All trains are locals
 - Originate and terminate in Cabot yard
 - Service all four routes
 - No through trains

Set Operating Parameters (cont.)

- Use a work order for each local run
 - Must fit on a half sheet of paper
 - 11 work orders per session
- Maximum 16 cars per work order
 - 8 set outs
 - 8 pickups
- Move a maximum of 176 cars per session
 - 11 work orders times 16 cars

Set Operating Parameters (cont.)

- Number of trains for each route
 - 2 Falls Creek locals
 - 3 East Bluefield locals
 - 1 East Bluefield extra
 - 1 East Bluefield special
 - 2 Fargo locals
 - 2 New Brunswick locals

Select Cars to Operate

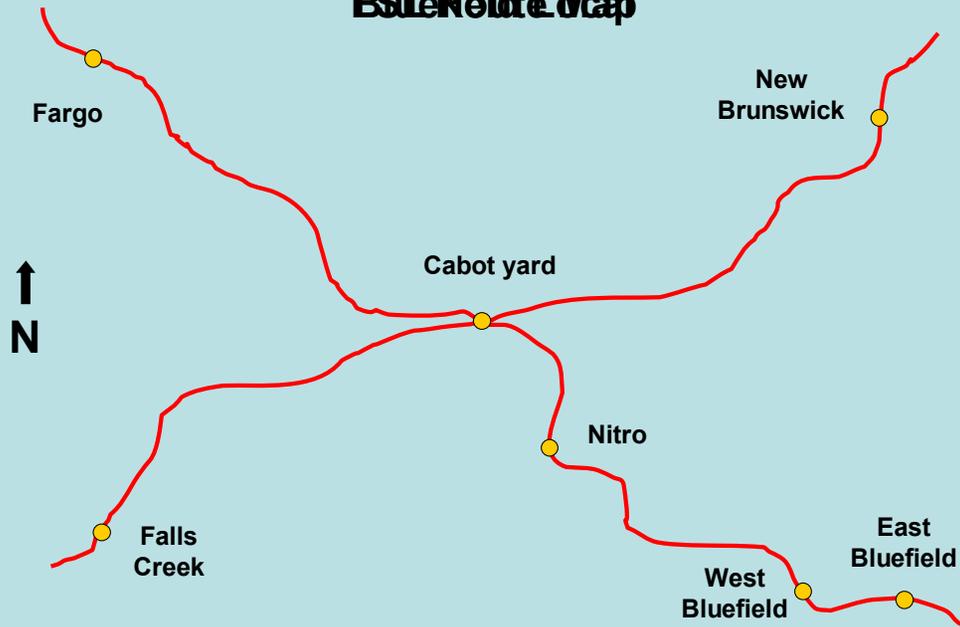
- Type of industry determines type of cars
 - Tank cars to a refinery
 - Box cars to a warehouse
 - Gondolas to a scrap yard, etc.
 - Interchange tracks can accept any type car
- Capacity of sidings determines number of cars at a location
 - Car length is a factor
 - Leave space for switching maneuvers

Draft the Necessary Paperwork

...i.e. the work orders

- Information contained in each work order
 - Route to be traveled
 - Cities and towns to be served
 - Industries to be switched
 - Cars to be set out
 - Cars to be picked up

Bluefield Local Map



Typical work order

Bluefield Local
June 17th, 1978
2nd Shift

Set-outs:			location	Pick-ups:	
reporting numbers	car type			reporting numbers	car type
SCCX 2010	tank car		Shell Oil, Nitro	EBAX 6008	tank car
SCCX 2000	tank car		Shell Oil, Nitro	UCOX 10171	tank car
ATSF 93302	flat car		Valley Lumber, W. Bluefield	L&N 40773	box car
SOO 47480	box car		Valley Lumber, W. Bluefield	UP 104436	box car
L&N 92368	box car		Wayside Freight, W. Bluefield	L&N 8221	box car
SOU 26491	box car		Wayside Freight, W. Bluefield	L&N 93584	box car
CNW 350017	gondola		Basic Steel, E. Bluefield	SOO 67650	gondola
CSX 964278	hopper		Basic Steel, E. Bluefield	CSX 290811	hopper

The final ingredient required for successful operation...

...people.

Bob Dawson operating at Cabot Yard



**Bruce Goreham
working the Falls
Creek local**



**Jim Schmidt and Bob Dawson
contemplating switching
maneuvers at West Bluefield**



**Jim Schmidt
operating Cabot Yard**



**Bruce Goreham
switching cars at the
New Brunswick yard**



The End

Any questions?