Modelers Guide to







Part 1

Using Timelines to Select Eras & Focus Your Modeling







By John Burchnall

Why Use Timelines?

- Offer guidance in deciding which era and locale to model
- Help focus your modeling and purchases
- Add interest and uniqueness
- Doesn't matter if "anything goes" on your model railroad

Typical Modeler Q's

- What era and locale to model?
- Which railroads existed then?
- Which railroads to model?
- What locos and cars existed?
- What other technologies and icons are valid for your era?
- Where to find all this info?

Timelines Part 1

- Rail Eras, Safety & Regulatory
- Railroad Technology Changes
- Steam Locomotives
- Automobile Companies
- Gas Stations / Oil Companies
- Road Signs & Markings
- Hamburger Chains

Timelines Part 2

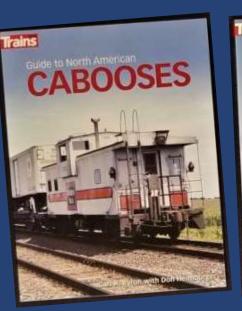
- Railroad Maps & Mergers
- Diesel & Electric Locomotives
- Railroad Bridges & Trestles
- Farm Tractors
- Soda Bottles and Advertising
- Grocery Stores & Trading Stamps
- Other Study Areas

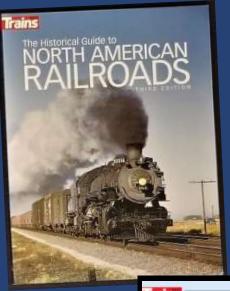
Information Sources

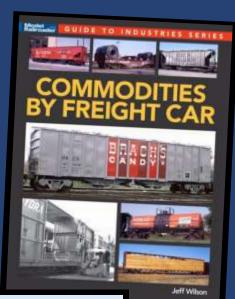
This work includes comprehensive original schematic visual presentations of historic events and interactions across timelines for a number of subject categories. The analyses, comparisons, derivations, modeling aids, enhancements and new representations and insights of these matters are by the presenter. Heralds, logos and graphical images from 3rd parties are used here under fair use doctrines for educational and research purposes. Data sources include -

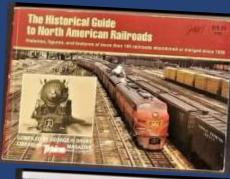
- Wikipedia
- Kalmbach Magazines & Books
- NMRA Data Sheets (current & archived)
- Other Internet Sources

Kalmbach References

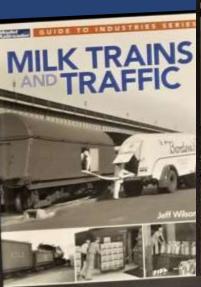


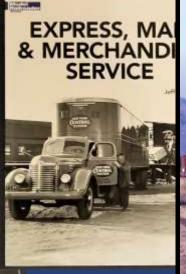


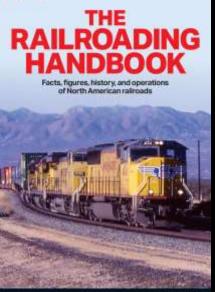




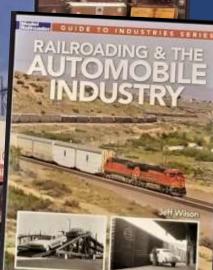










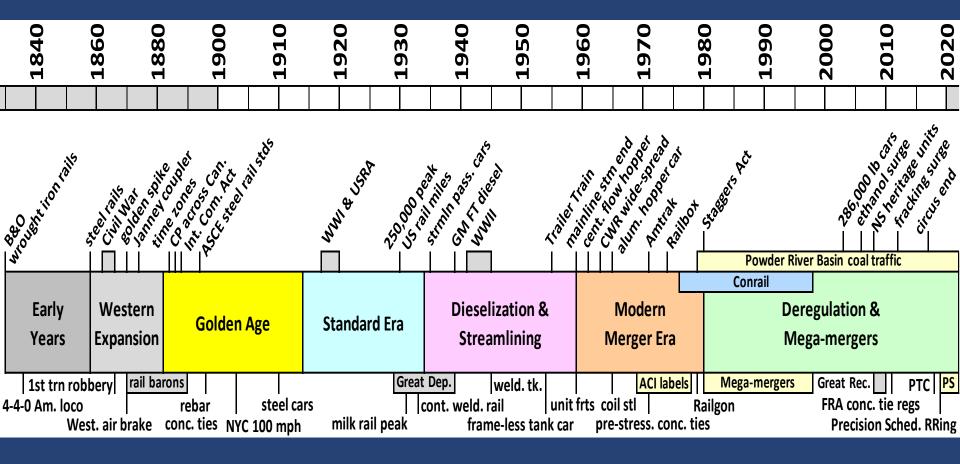


- When were roof walks & arch bars banned?
- How long was transition to roller bearings?
- What was used before the milk bottle?
- Which USRA loco class made the most?
- Which steam loco class made the longest?
- Who owns Chrysler now? Bentley?
- Which longtime car maker has same logo?
- What were first stop and yield sign shapes?
- · Which burger chain pioneered franchising?
- What colors dominate burger chain logos?

Timelines Part 1

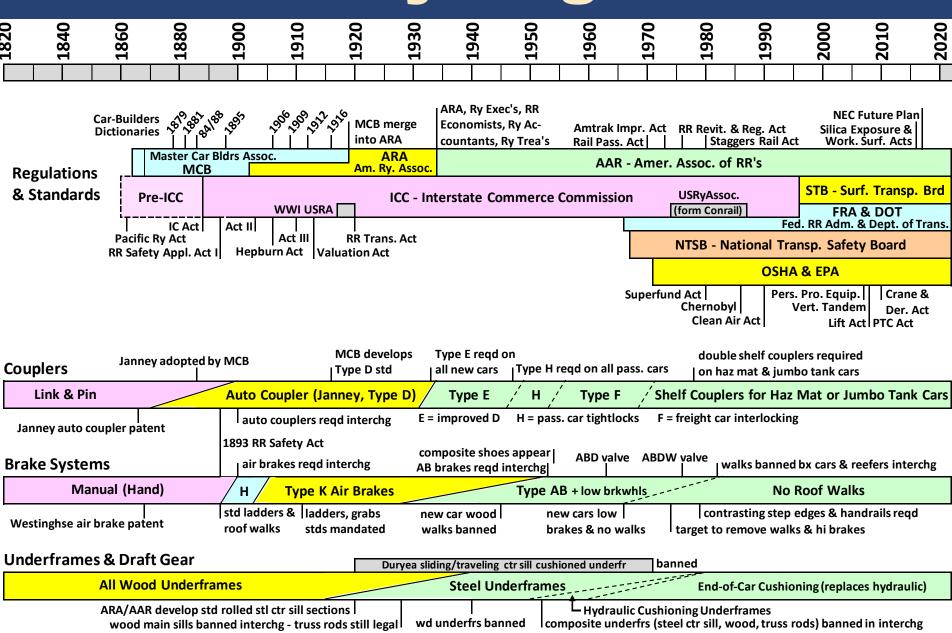
- Rail Eras, Safety & Regulatory
- Railroad Technology Changes
- Steam Locomotives
- Automobile Companies
- Gas Stations / Oil Companies
- Road Signs & Markings
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Rail Eras & Milestones

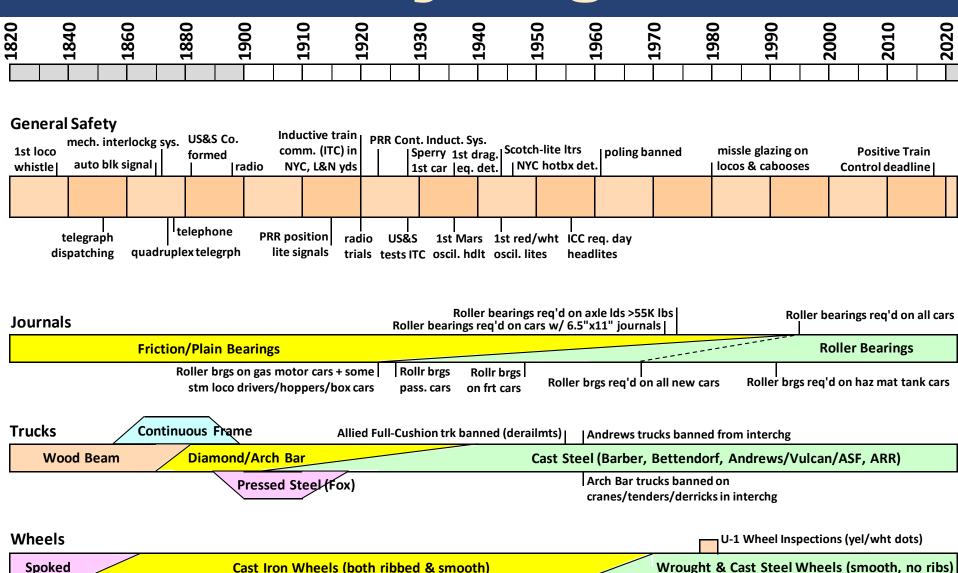


Each era has it's modeling pros and cons, with very different locomotives and rolling stock. Structures can span across several eras. Periods of economic depression may not be the most satisfying to model.

Rail Safety Regulations



Rail Safety Regulations



Timelines Part 1

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Rail Technology Changes

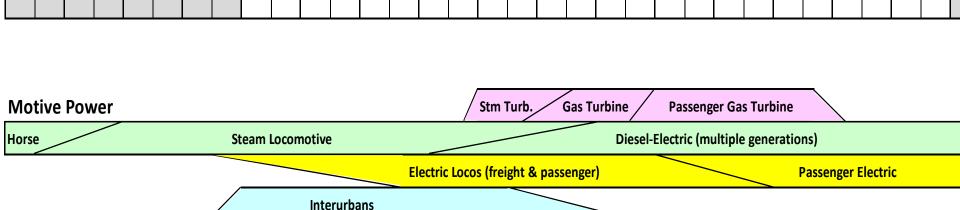
- Motive Power Types
- Box Cars
- · Cabooses / End-of-Train Devices
- Passenger Trains
- Mail and Express Cars
- Diary Shipments
- Reefers and Tank Cars
- Automobile & Intermodal Cars

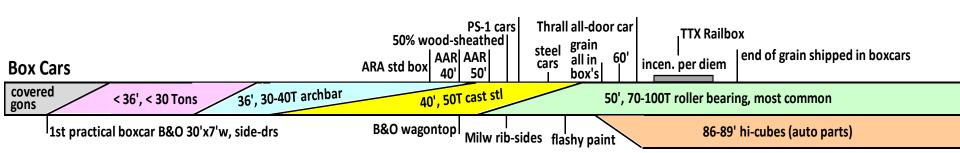
Railroad Technologies

Electric Streetcars & Trolleys

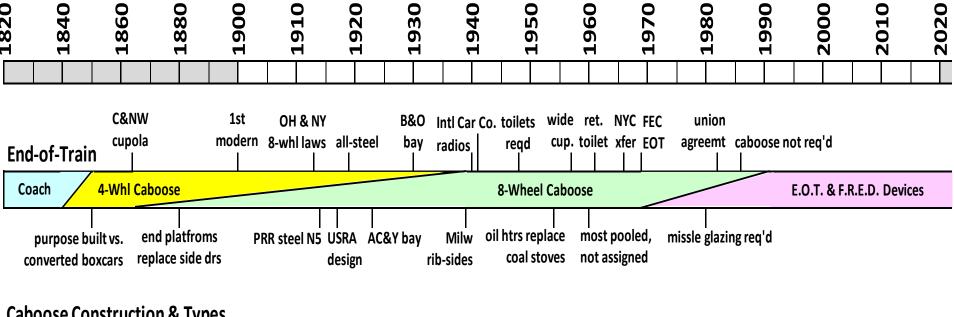
Modern Streetcars

Horse-drawn Trolleys

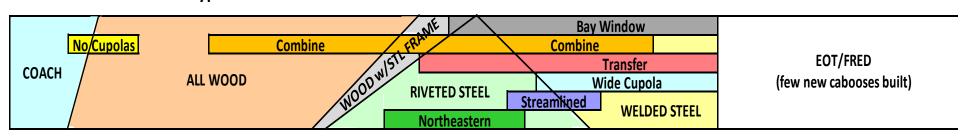




Railroad Technologies



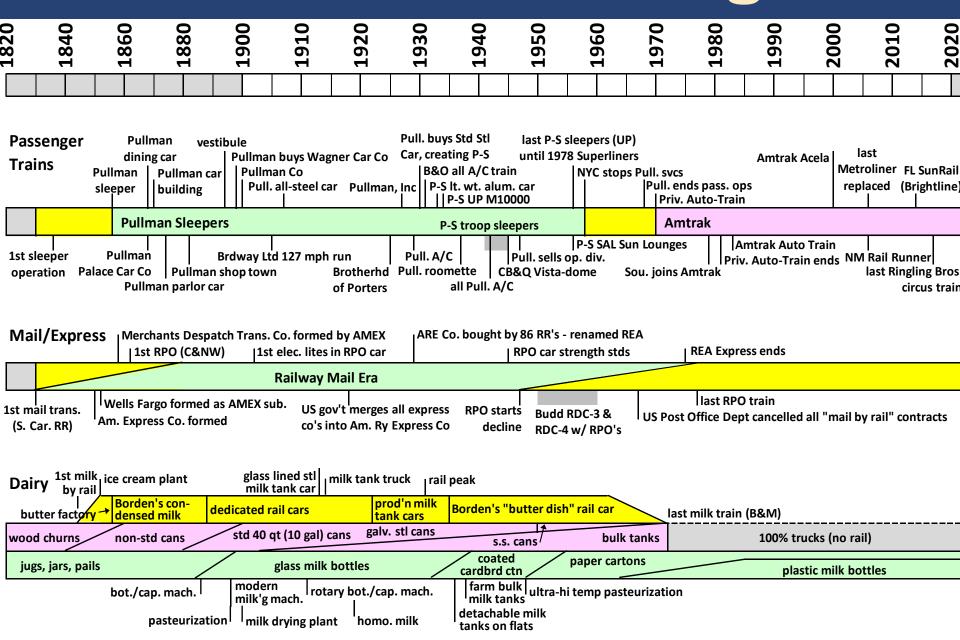
Caboose Construction & Types



Cabooses in Service

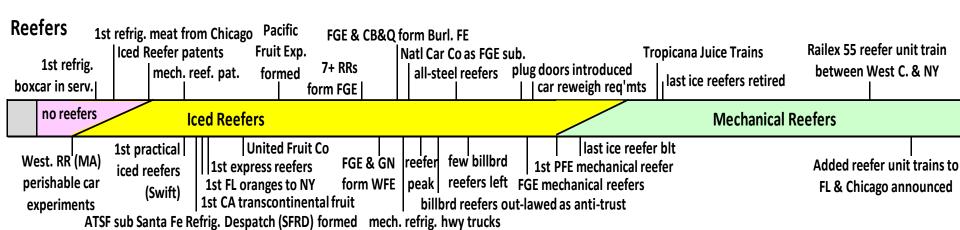


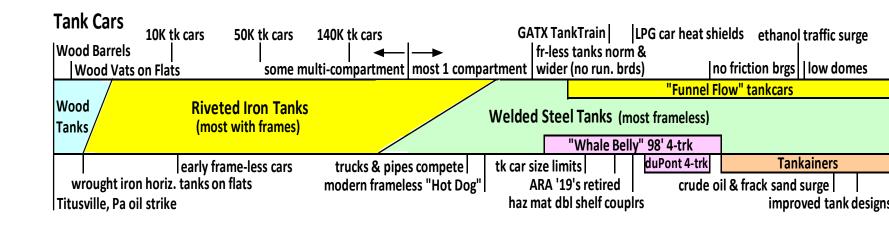
Railroad Technologies



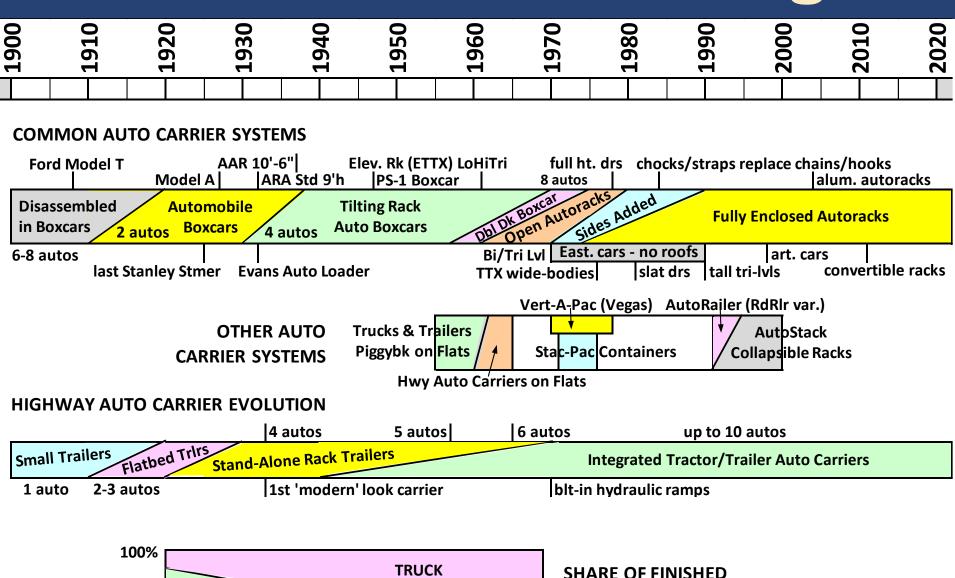
Reefers and Tank Cars







Auto Carrier Technologies

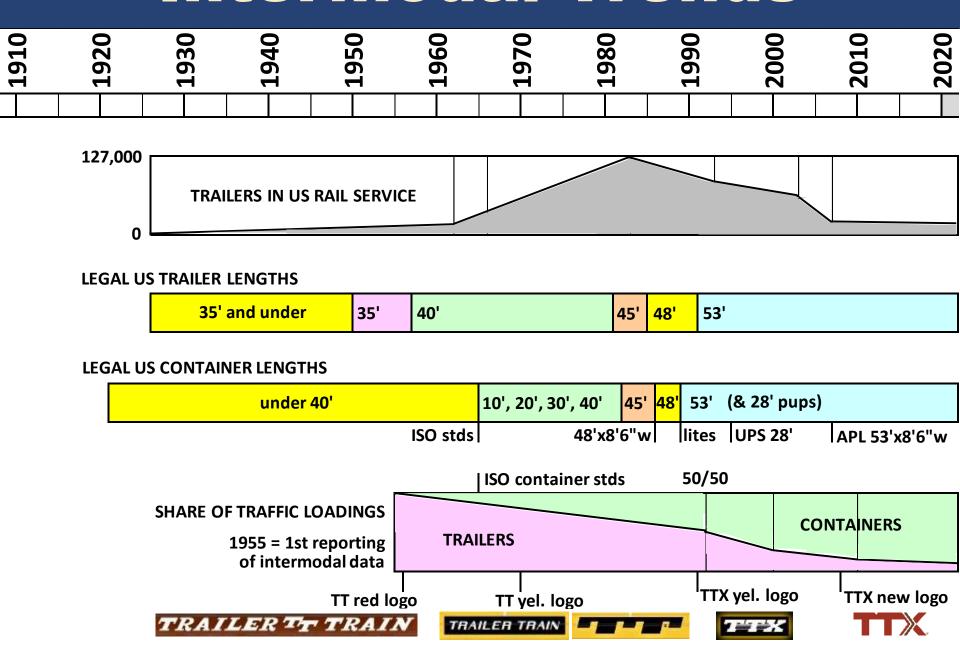


RAIL

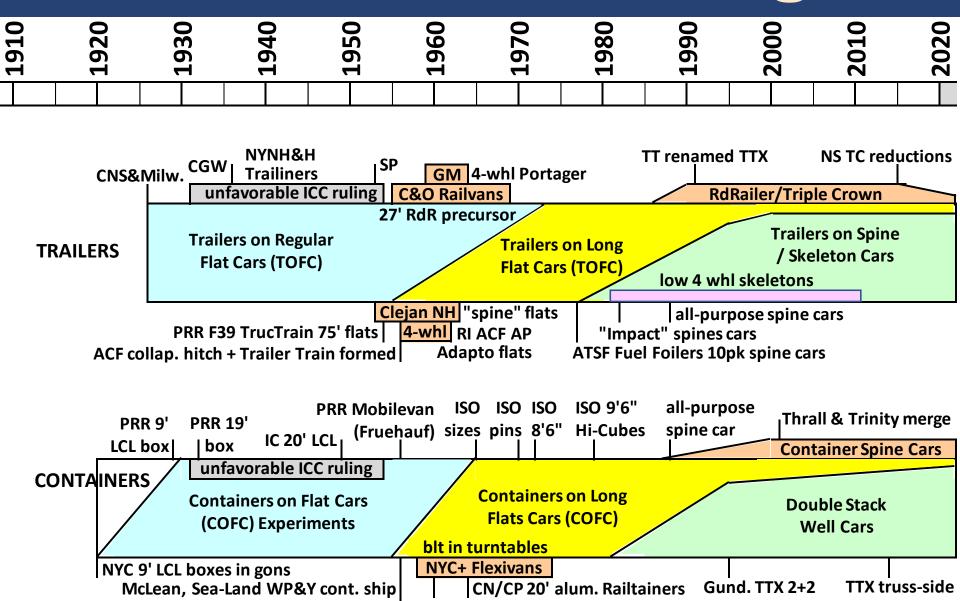
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AUTO SHIPPING

Intermodal Trends



Intermodal Technologies



REA Railliner & Morhaul cont's

UPS 28' pups

FCA 40' DvnaStk

RI Convert-A-Frate (ACF Adapto 4-whl flat)

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Steam Locomotives

Baldwin



Lima



· Alco





Canadian





Others



Railroad Shops







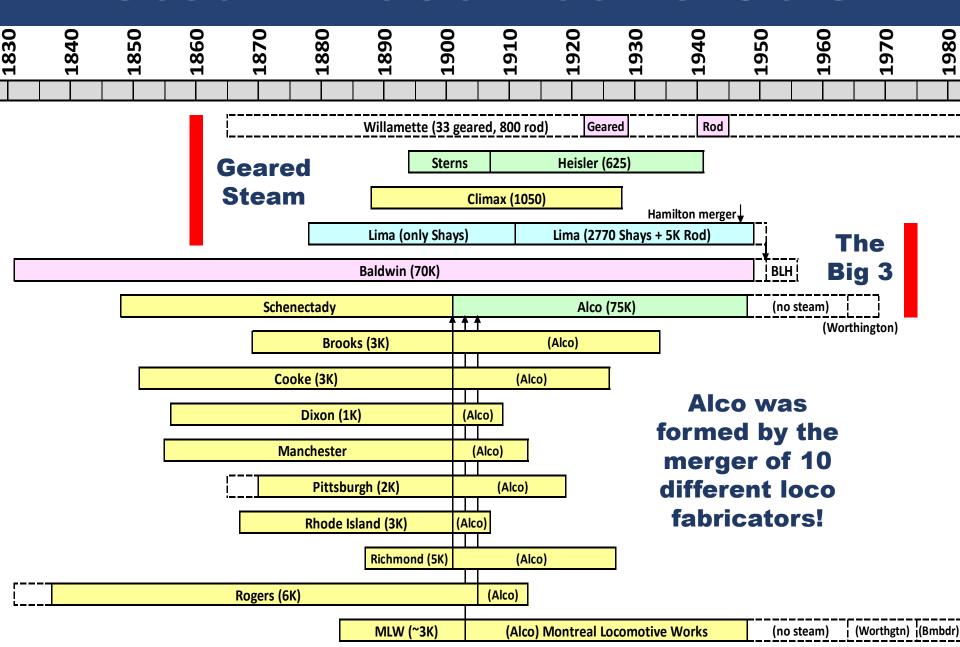
Steam Locomotives

USA Steam Loco Production

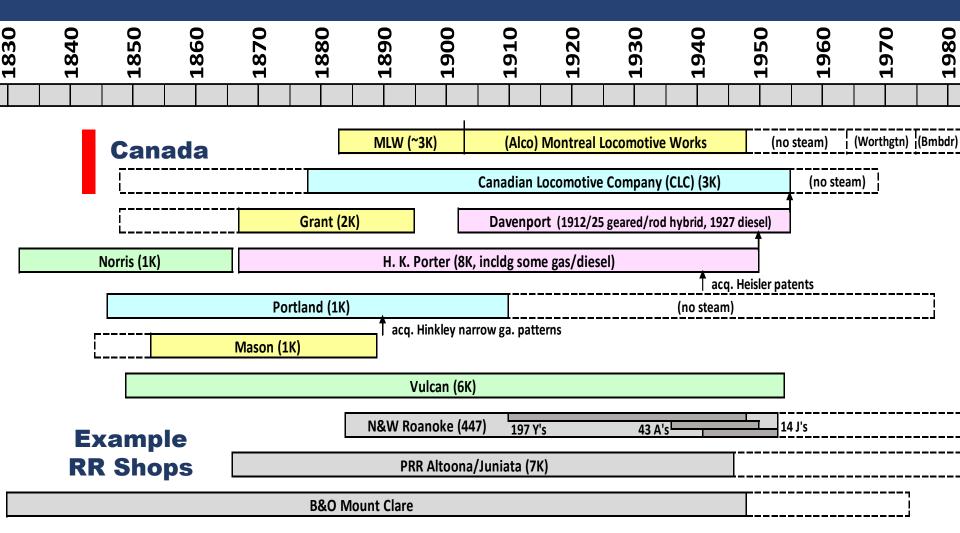
Class of Builder	# Builders	1831 - 1901	1901 - 1950	Total
> 100 units ea.	30	61,520	99,130	160,650
< 100 units ea.	63	1,350	0	1,350
Railroad Shops	70	7,130	5,870	13,000
Totals	163	70,000	105,000	175,000

Small builders largely disappeared with the 1901 mega-merger that formed Alco. Baldwin and Alco dominated steam loco production.

Steam Locomotive Co's



Steam Locomotive Co's



PRR made almost as many steam locos as Lima! N&W perfected 3 legendary classes – A, J and Y

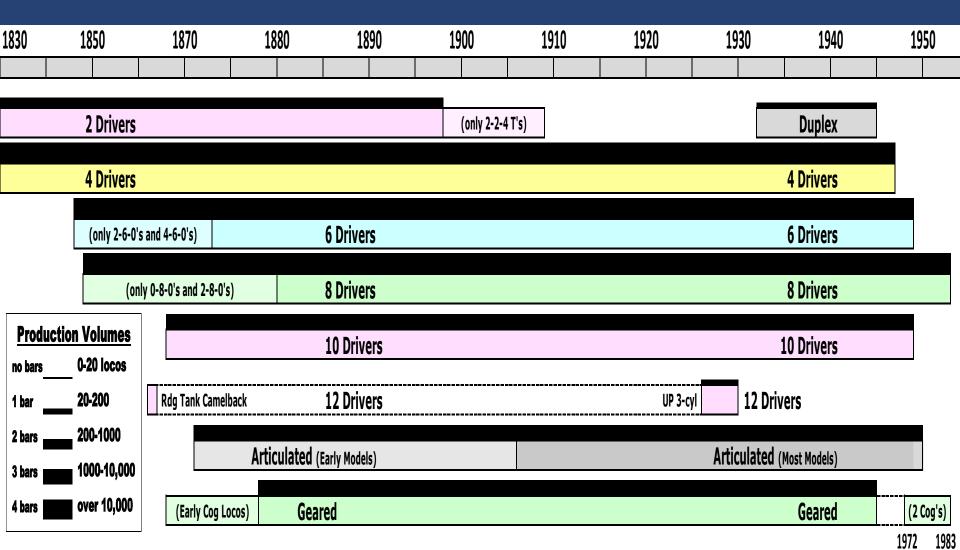
USRA Steam Locomotives

Common Name	USRA Type		USRA built	Total built	
Six-Coupled	0-6-0		255*	300+	
Eight-Coupled	0-8-0		175*	2,800	
Mikado	2-8-2	Light	625	10 200	
Mikado	2-8-2	Heavy	233	10,200	
Santa Fe	2-10-2	Light	94	2 200	
Santa Fe	2-10-2	Heavy	175	2,200	
Pacific	4-6-2	Light	81	6,800	
Pacific	4-6-2	Heavy	20	0,800	
Mountain	4-8-2	Light	47	2,204	
Mountain	4-8-2	Heavy	15	2,204	
Mallet Mogul	2-6-6-2		30	1,300	
Mallet Consolidation	2-8-8-2		106*	660	

^{*} many copies made after USRA dissolved

The United States Railway Administration (USRA) made 12 standard designs from 1917 to 1920

Steam Locomotive Classes



Variants of most loco class made throughout steam era, except Duplexes only in 1930's/40's, 12 drivers only in 1860's & 1920's, 2 drivers ended ~1900, and only 2 & 4 drivers made in the first 18 yrs

Simplex Rod Locos

Approximate all-time NA production volumes

00	0-2-2	Northumbrian	19
Oo	2-2-0	Planet	19
000	2-2-2T	Single	9
0000	2-2-4(T)	Aerolite	5
000	4-2-0	Jervis	205
0000	4-2-2(T)	Bicycle	5
00000	4-2-4(T)	Huntington	9
0000	6-2-0	Crampton	9

00	0-4-0(T)	Four-Coupled	1,500
000	0-4-2	Olomana	300
0000	0-4-4	Four-Coupled Forney	100
00o	2-4-0	Porter	300
0000	2-4-2	Columbia	200
00000	2-4-4T	Boston	100
00000	2-4-6T	-	13
0000	4-4-0	American	25,000
00000	4-4-2	Atlantic	2,400
000000	4-4-4	Reading	33
000000	4-4-6	Annawomscutt	1

USRA classes in yellow

Twelve-Coupled

Union Pacific

0-12-0T

4-12-2

000000

00000000

000	0-6-0(T)	Six-Coupled	300
0000	0-6-2T	Branchliner	40
00000	0-6-4T	Six-Coupled Forney	20
000000	0-6-6T	William Mason	10
0000	2-6-0	Mogul	11,000
0000	2-6-2(T)	Prairie	1,500
00000	2-6-4T	Adriatic	52
000000	2-6-6T	Suburban	70
00000	4-6-0	Ten-Wheeler	16,000
000000	4-6-2	Pacific	6,800
000000	4-6-4(T)	Hudson	525
0000000	4-6-6T	-	5
0000	0-8-0	Eight-Coupled	2,800
00000	2-8-0	Consolidation	23,000
00000	2-8-2(T)	Mikado	10,200
000000	2-8-4	Berkshire	750
0000000	2-8-6T	Mason Bogie	6
000000	4-8-0	Twelve-Wheeler	819
000000	4-8-2	Mountain	2,204
0000000	4-8-4	Northern	1,126
000000000	6-8-6	PRR S2 Stm Turbine	1
00000	0-10-0	Ten-Coupled	52
00000	0-10-2	Union	11
00000o	2-10-0	Decapod	4,100
000000	2-10-2	Santa Fe	2,204
0000000	2-10-4	Texas	393
0000000	4-10-0	Mastodon	1
0000000	4-10-2	Southern Pacific	60

Other Steam Locos

Approximate all-time NA production volumes

Articulated

00-00	0-4-4-0T	Double Fairlie	2
000-000	2-4-4-2	Skookum	3
0000-0000	4-4-6-2	(AT&SF)	2
000-000	0-6-6-0 (T)	Erie (Mallet)	80
000-0000	2-6-6-0	(VGN Class AA)	30
0000-0000	2-6-6-2 (T)	Mallet Mogul	1,300
0000-0000	2-6-6-4	(N&W A)	60
00000-0000	2-6-6-6	Allegheny	68
0000-00000	4-6-6-2	SP AM-2 Cab Fwd	12
00000-00000	4-6-6-4	Challenger	252
0000-0000	2-6-8-0	•	66
0000-0000	0-8-8-0	Angus Mallet	150
0000-00000	2-8-8-0	Bullmoose Mallet	176
00000-00000	2-8-8-2	Mallet Consolidation	660
00000-0000	2-8-8-4	Yellowstone	78
00000-000000	4-8-8-2	Cab Forward	194
00000-00000	4-8-8-4	Big Boy	25
000000-000000	2-10-10-2	Santa Fe Mallet	20
00000-0000-00000	2-8-8-8-2	Erie Triplex	3
000000-0000-00000	2-8-8-8-4	Virginian Triplex	1
00000-00000 00000-0000-00000	2-10-10-2 2-8-8-8-2	Santa Fe Mallet Erie Triplex	20

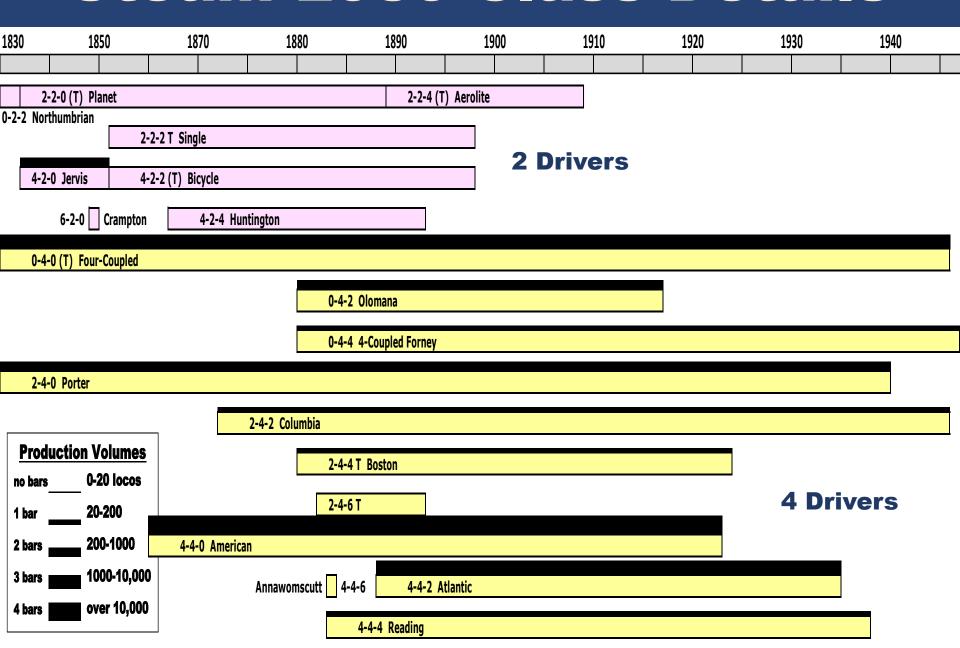
Duplex

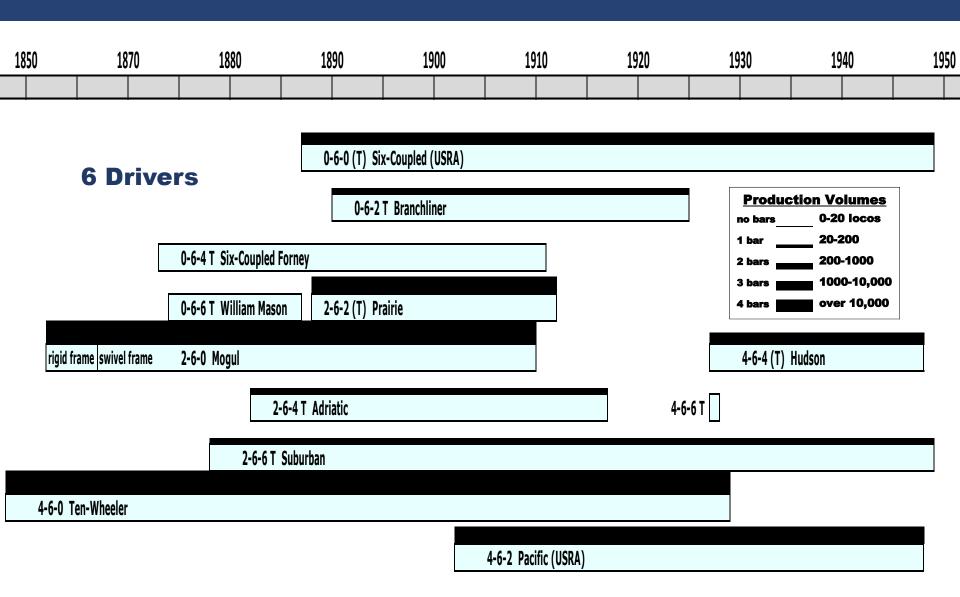
00 00	0-4-4-0T	Vulcan Duplex	7
0000 0000	4-4-4-4	(PRR T1 Duplex)	53
00000 00000	6-4-4-6	(PRR S1 Duplex)	1
0000 0000	4-4-6-4	(PRR Q2 Duplex)	26
0000 00000	4-6-4-4	(PRR Q1 Duplex)	1

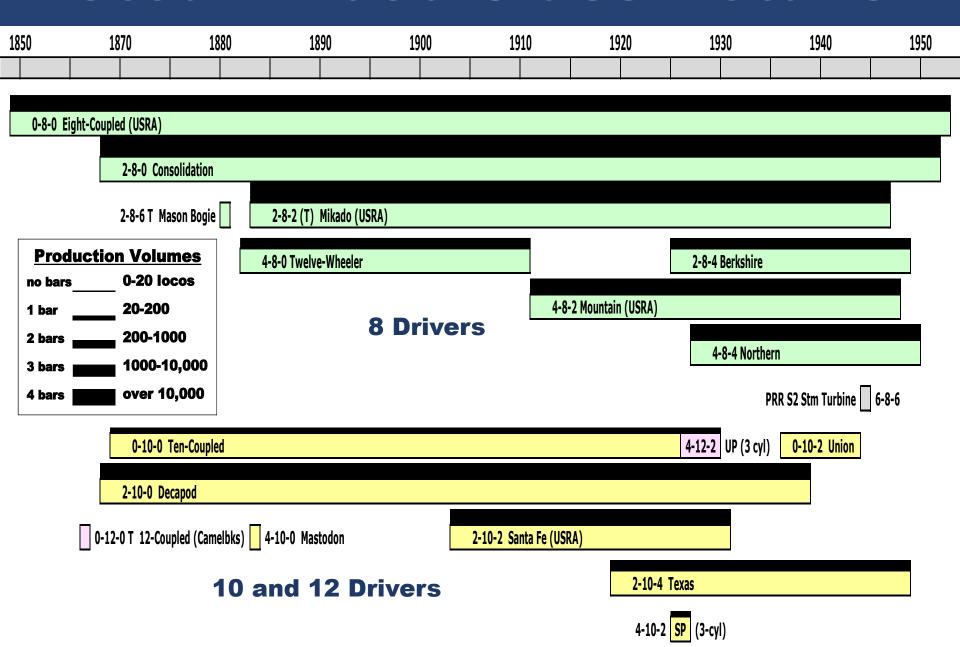
Geared

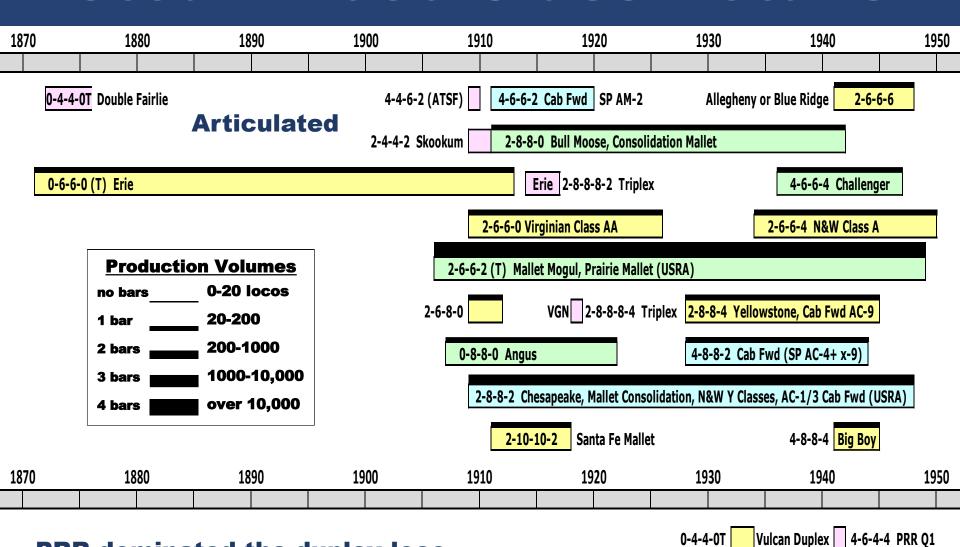
00-00 / 00-00-00	Shay	Shay	2,770
00-00 / 00-00-00	Climax	Climax	1,100
00-00 / 00-00-00	Heisler	Heisler	625
00-00 / 00-00-00	Willamette	Willamette	33
00-00 ?	Baldwin	Shay-like Geared	5
00-00	Byers	Geared	5
00 / 00-00	Davenport	Hybrid Geared/Rod	28
00-00	Dewey	Geared	43
00-00	Dunkirk	Gilbert Geared	50
several	Cog/Rack	Cog Locos	16

USRA classes in yellow







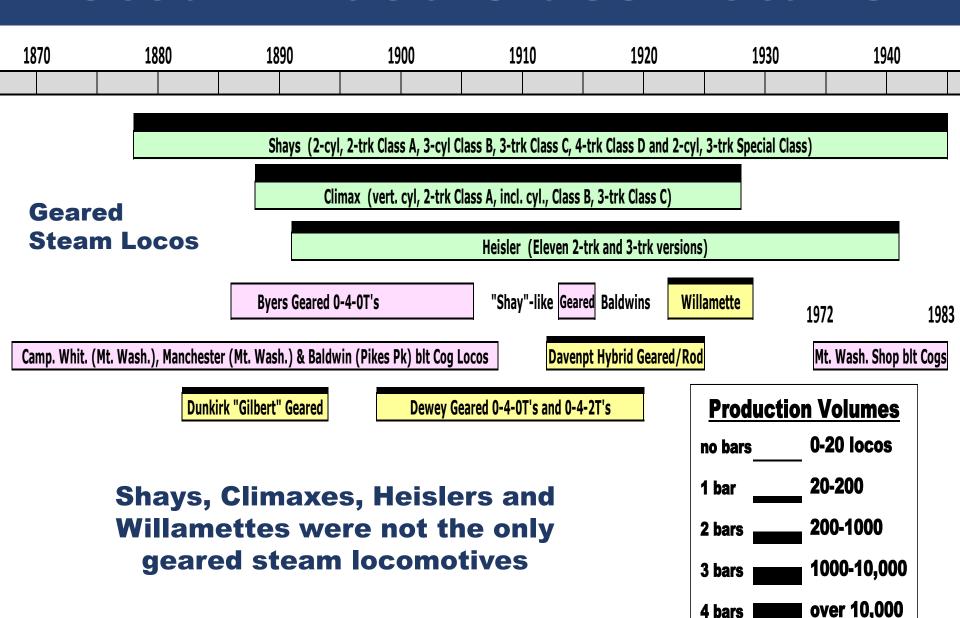


PRR dominated the duplex loco field, with the T1 and Q2 being the most successful versions

Duplex

4-4-4-4 PRR T1, B&O N-1

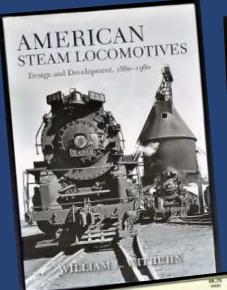
6-4-4-6 PRR S1 "Pennsylvania" 4-4-6-4 PRR Q2



Steam Loco Observations

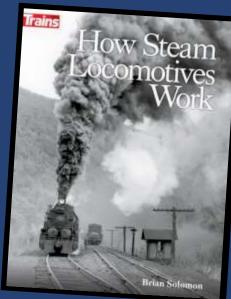
- Lima production << BLW or Alco
- PRR built similar numbers as Lima
- Class leaders: 4-4-0, 4-6-0, 2-6-0, 2-8-0,
 2-8-2, 2-6-6-2, 2-8-8-2, Shay
- Mikados, Pacifics = most made USRA's
- Longest production span: 0-4-0, 0-8-0
- PRR dominated Duplexes: 4 models
- Both Triplexes failed lack of steam
- Shay, Climax, Heisler, Willamette not the only geared loco types

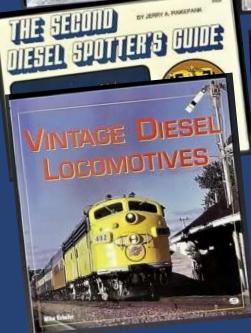
Locomotive References

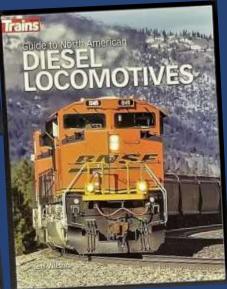


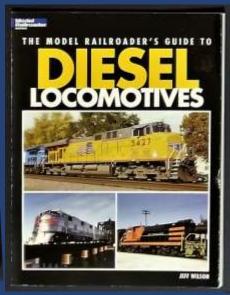


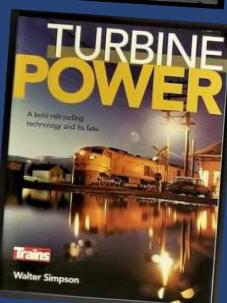








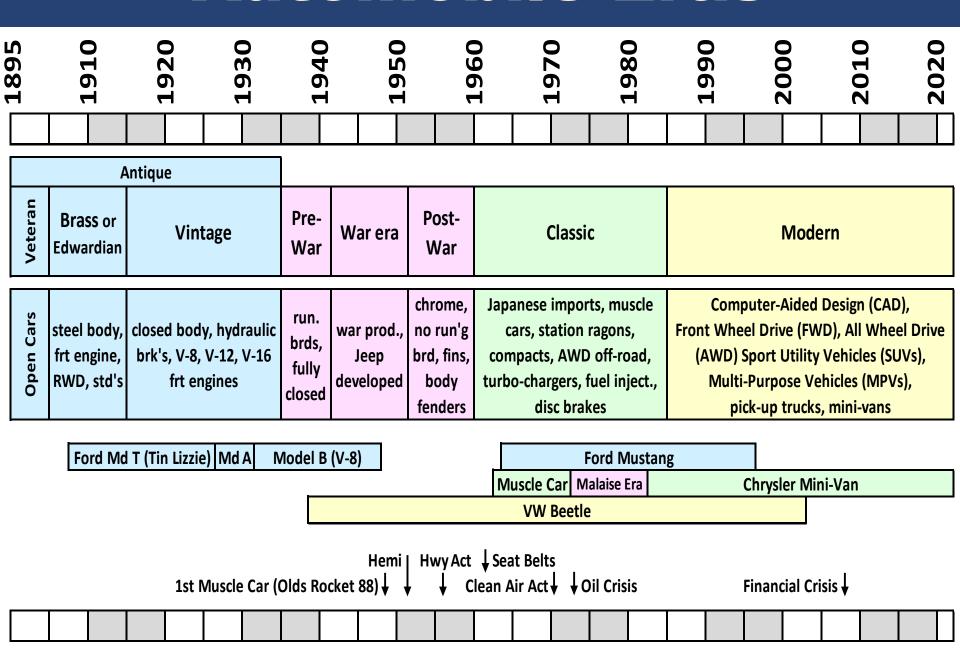




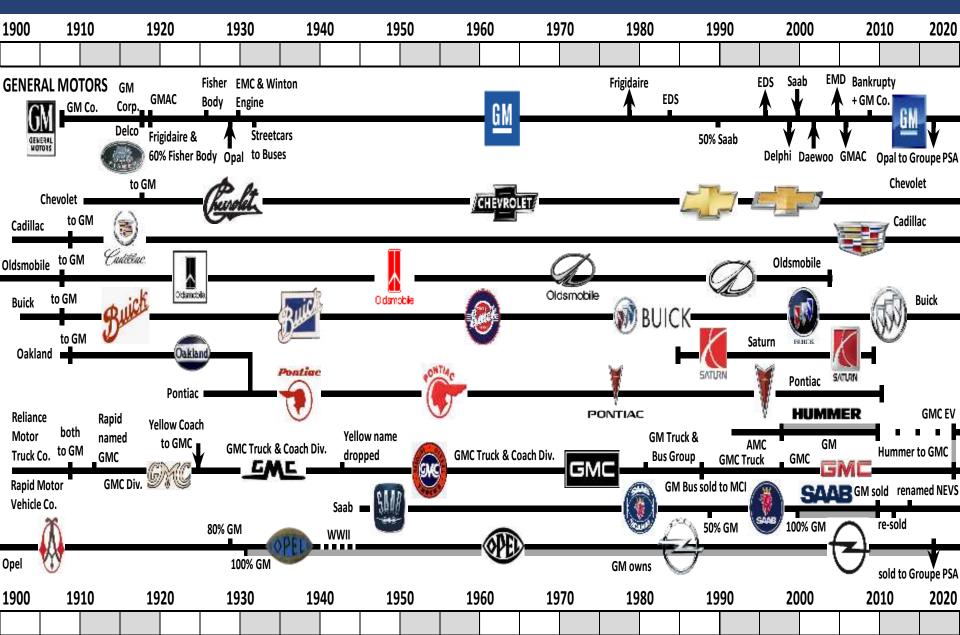
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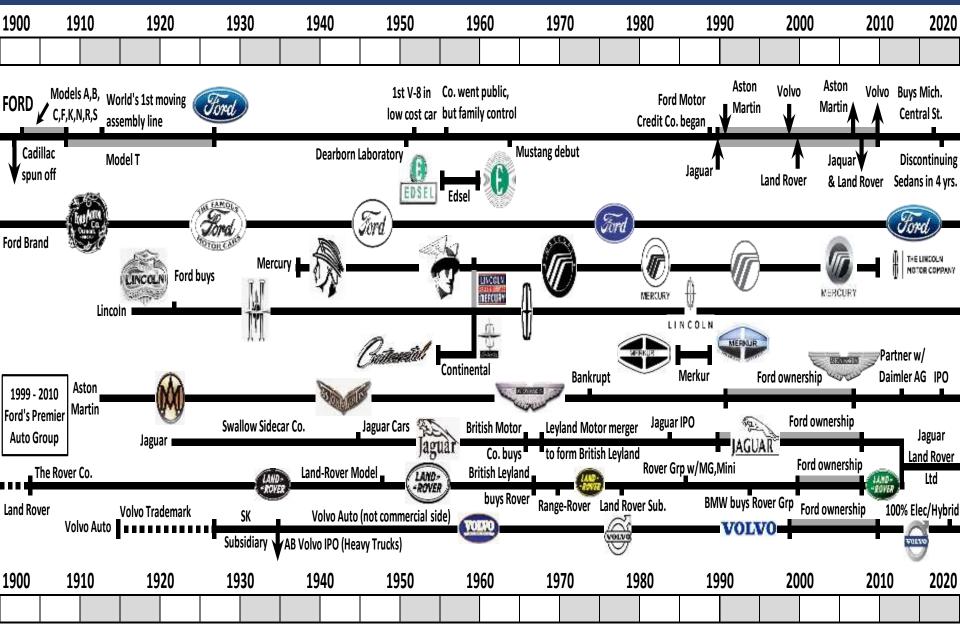
Automobile Eras



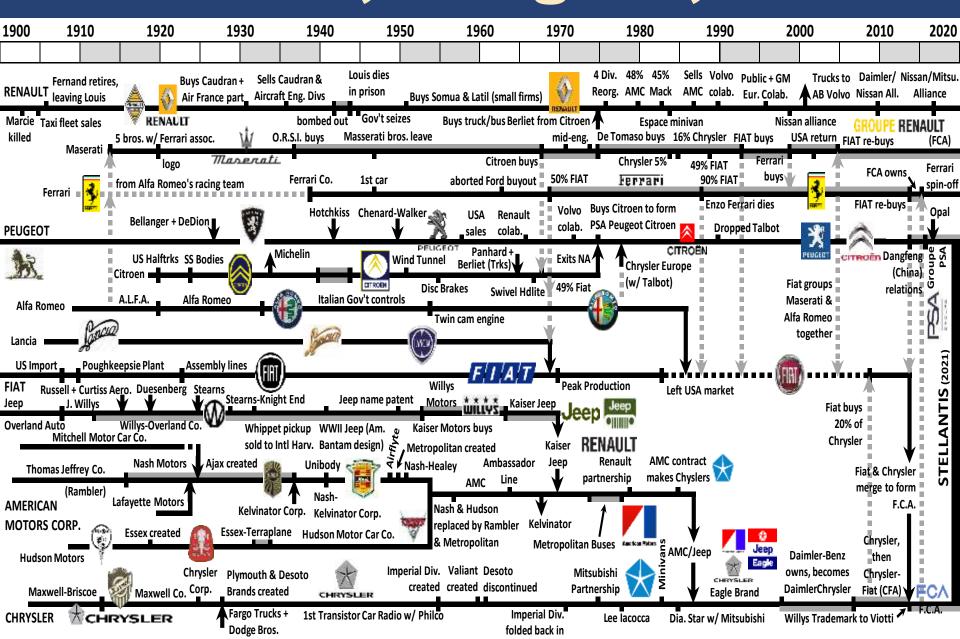
GM, Saab, Opal



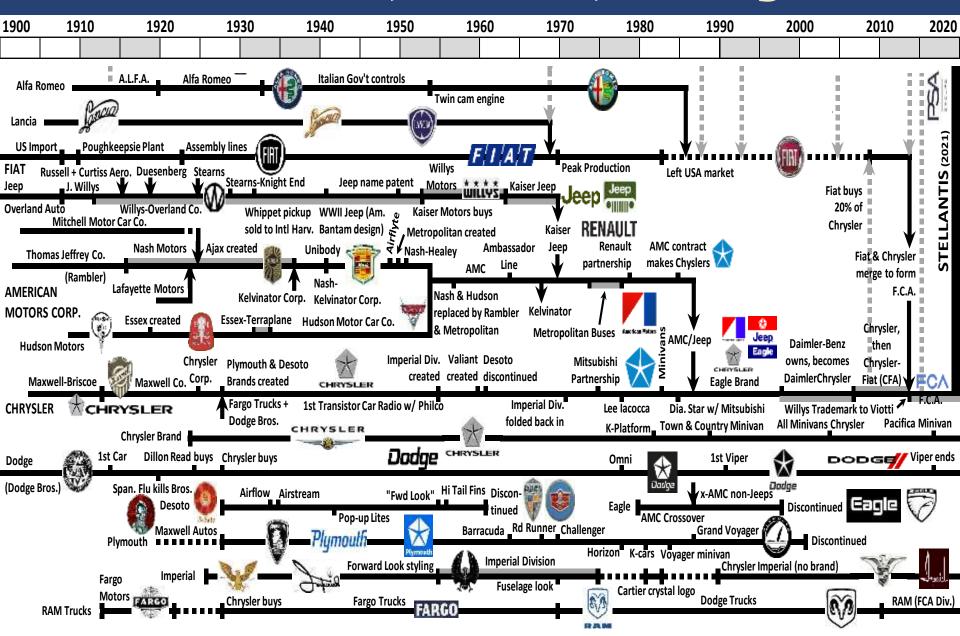
Ford, Jaguar, Rover, Volvo



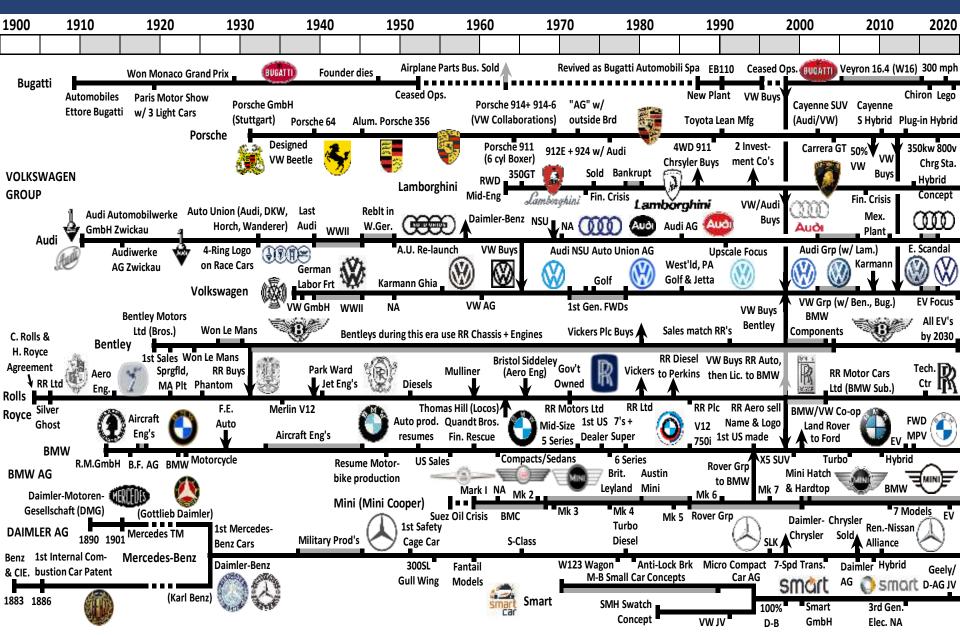
Renault, Peugeot, FCA



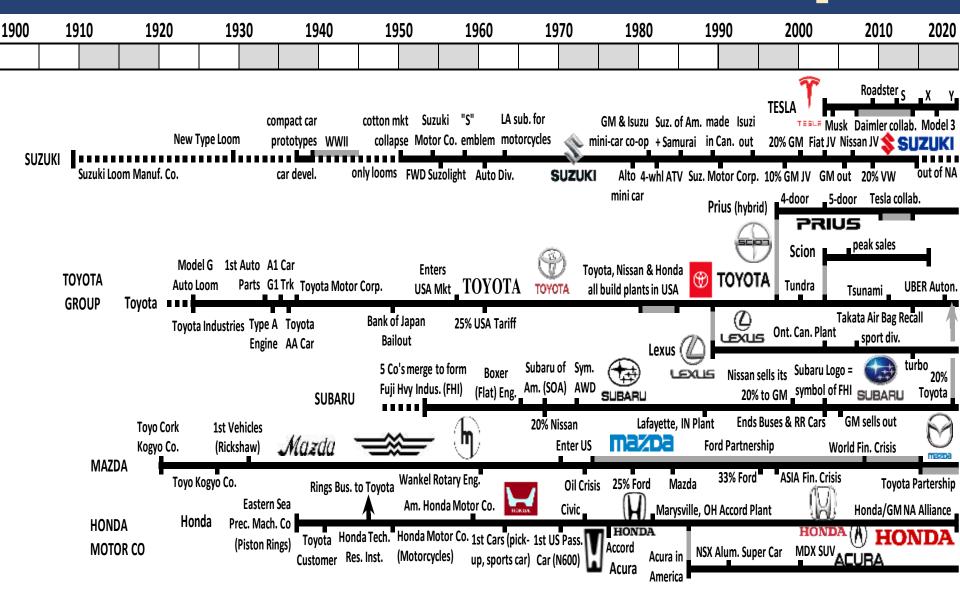
FCA - Fiat, AMC, Chrysler



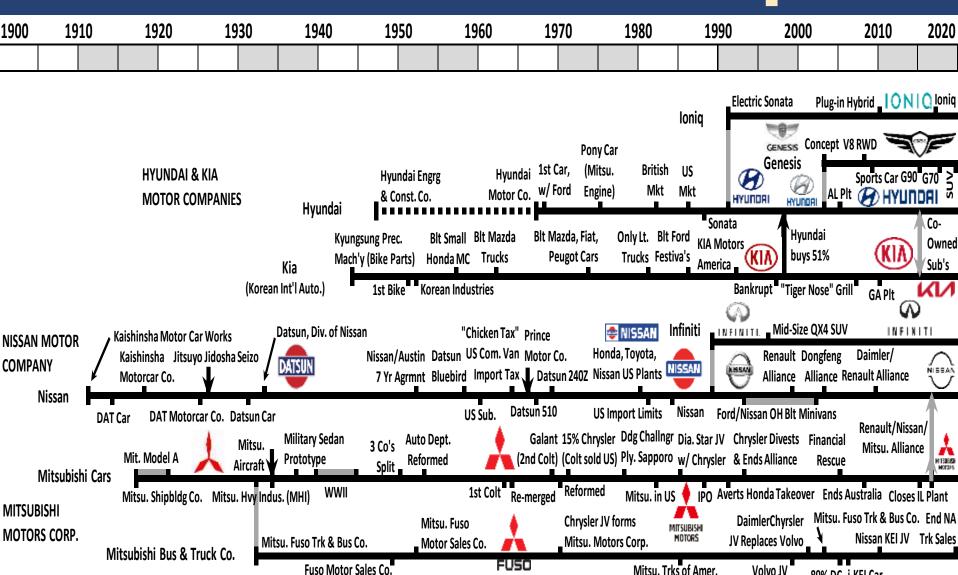
VW, BMW, Daimler Grps



Tesla, Suzuki, Toyota, Mazda and Honda Groups



Hyundai, Kia, Nissan and Mitsubishi Groups

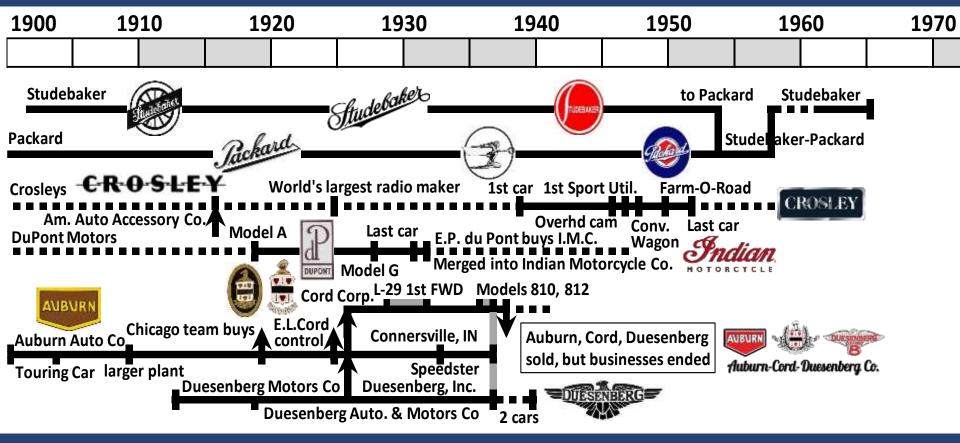


Mitsu. Trks of Amer.

Volvo JV

89% DC i-KEI Car

Other Classic Autos



These classics have interesting stories and local connections. Crosley cars were all small and utilitarian. The Packard Museum is in Dayton, Ohio. Auburns and Cords were made in Ft. Wayne & Connersville. Duesenbergs and Stutz's were both made in Indy. E.P. duPont built automobiles, then bought Indian Motorcycles and merged duPont Motors into Indian.

Automobile Observations

- GM, Ford, Mercedes-Benz, BMW, Toyota, Honda, Mazda, Renault have fairly straight-forward lineages
- AMC, Chrysler, VW, Peugeot, Fiat have complex heritages
- Notable discontinuations: Nash, Hudson, Desoto, Eagle, Packard, Studebaker, Edsel, Merkur, Viper, Saturn, Oldsmobile, Pontiac, Suzuki

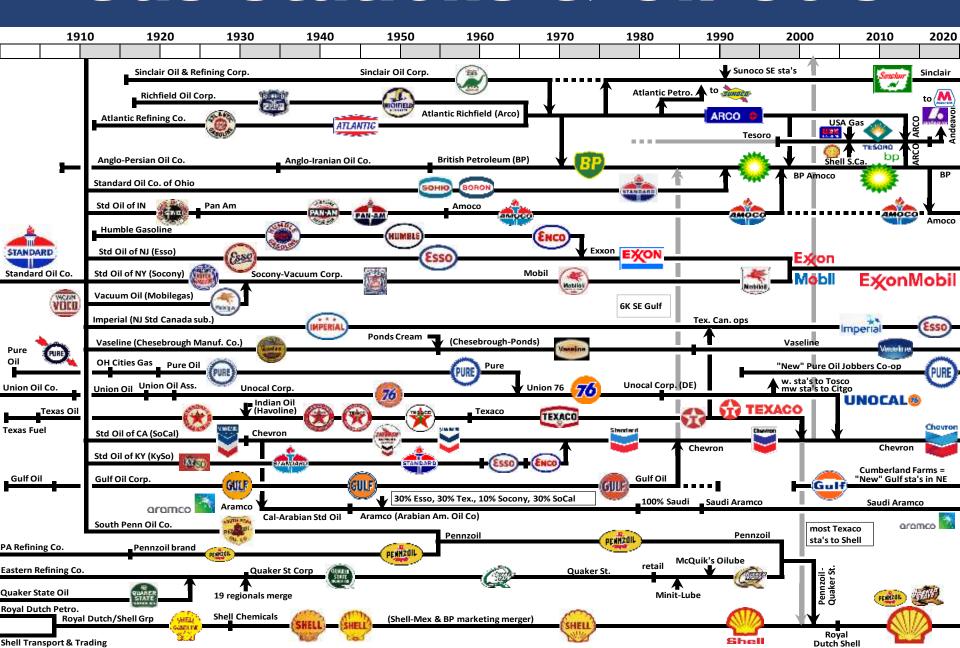
Automobile Observations

- Both Reliance & Rapid Truck Co's became GMC Truck & Bus, then bus division sold to MCI in 1988
- GM re-launching Hummer as an all electric vehicle line in 2020's
- Hyundai & Kia co-own each other
- Stellantis via Jan. 2021 mega merger -
 - Fiat Chrysler Automobiles (FCA)
 - Groupe PSA (Peugeot, Citroen, Opal)

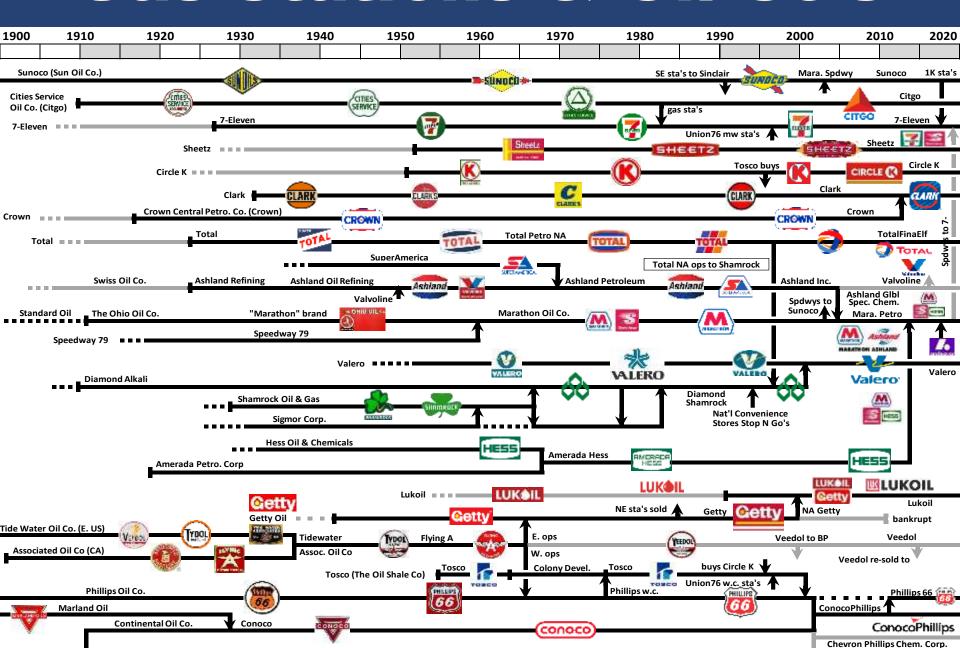
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Gas Stations & Oil Co's



Gas Stations & Oil Co's



Gas Station Observations

- Most oil companies came from 1911 anti-trust split of Standard Oil, with many re-merging later
- Notable non-Standard Oil firms:
 Ashland, Cities Service (Citgo), Conoco,
 Flying A, Gulf, Getty, Lukoil, Phillips, Pure,
 Marathon, Shell, Sinclair, Sunoco, Total
- Mergers & acquisitions rampant since 1985 – with many gas station and convenience store name changes

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US Highway Traffic Signs

1923 agreed on shapes -

- Octagon stop
- Rectangle directions or regulation info
 - Round railroad crossing warning
 - Diamond precautions in specific area
 - ★ Star unique shape to mark highways
 - Square care that needs to be taken

Shapes added later

Keystone



Triangle



Pentagon



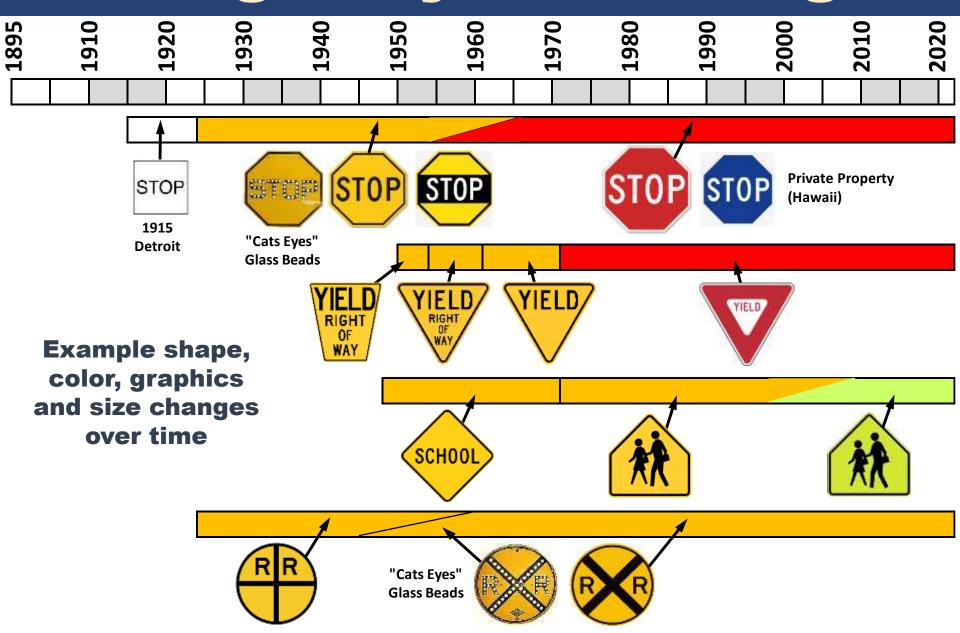
Official road sign <u>colors</u> today -

- White regulatory signs
- Red stop, yield and prohibition signs
- Blue road service, evacuation routes, tourist info
- Green direction guidance, permitted traffic moves
- Yellow general warning messages
- Fluorescent yellow or green pedestrians, schools
- Brown recreational or cultural interest areas
- Orange warnings and guides in work zones

US Highway Traffic Signs

- · 1899 clubs, colored bands, wood on iron columns
- 1915 1st stop sign Detroit, 2 ft sq, black-on-white
- 1922 octagonal stop signs
- 1923 1st standards shapes, emboss, 2 ft
- 1924 black-on-yellow warning signs
- · 1929 reflecting & luminous elements
- · 1935 block letters, floods or "cats eyes", 2 ft min.
- 1939 white reflectors, except red for stop
- · 1942 black-out low mounting, wood/composites
- · 1948 round letters, less words, illumination
- 1950 1st yield sign Tulsa, keystone shape
- 1954 wht-on-red stop sign, triangle yield-rt-of-way
- · 1961 symbols, delete rt-of-way, work zone signs
- · 1971 reds, wht-on-grn, orange, school pentagon
- · 1988 brown recreational & cultural interest signs

US Highway Traffic Signs



US Road Markings

Some pavement markings -

- Center lines
- Lane lines
- Stop lines

- Edge lines
- Curb markings
- Cross-walk lines
- No-passing-zone markings
- Railroad crossing approaches

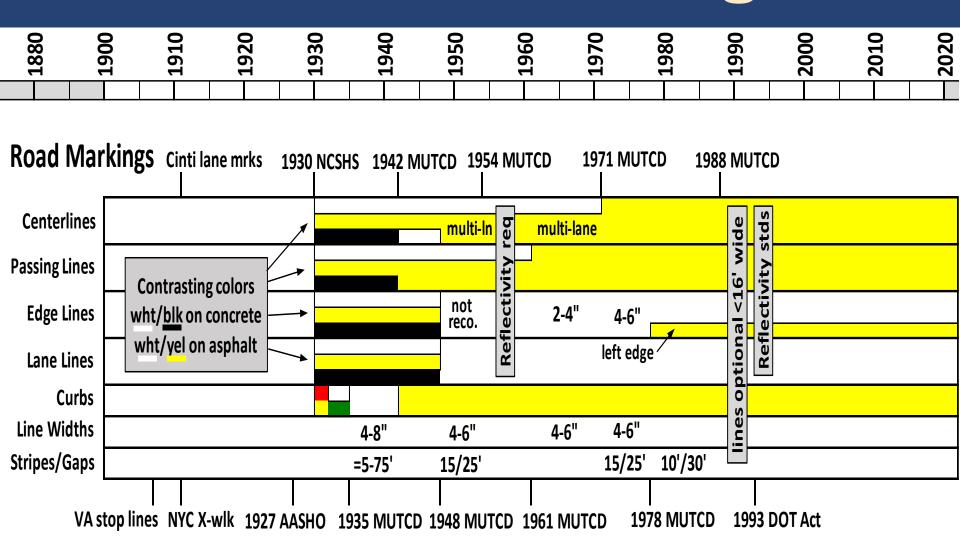
Applications varied by state and year

- Early Colors need only contrast w/ road
- Later black gave way to yellow & white
- Solid or Broken (Dashed) Lines

Early line options besides paint

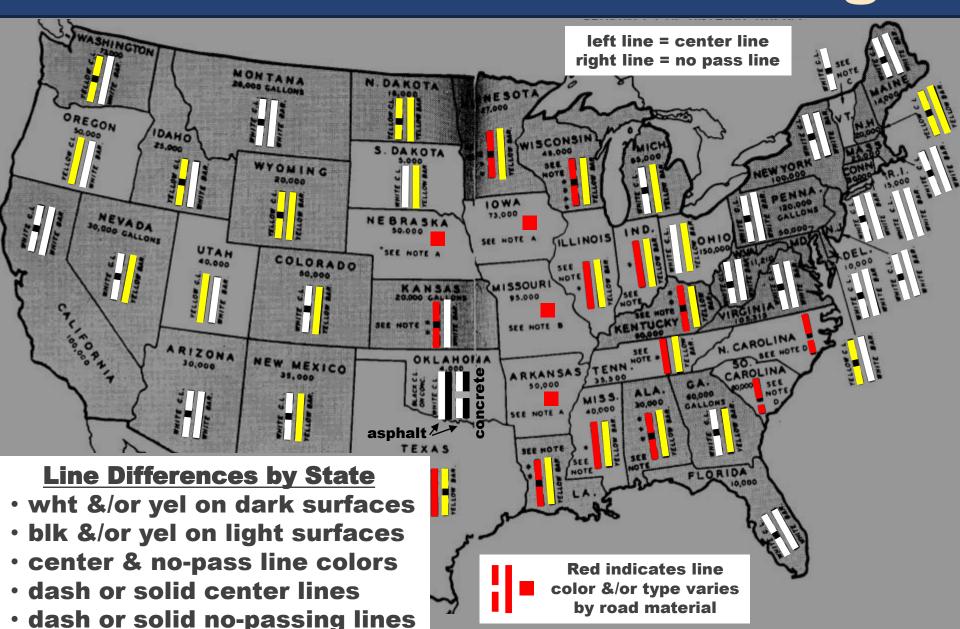
Joints or Inserts (rd or rect.) permissible

US Road Markings

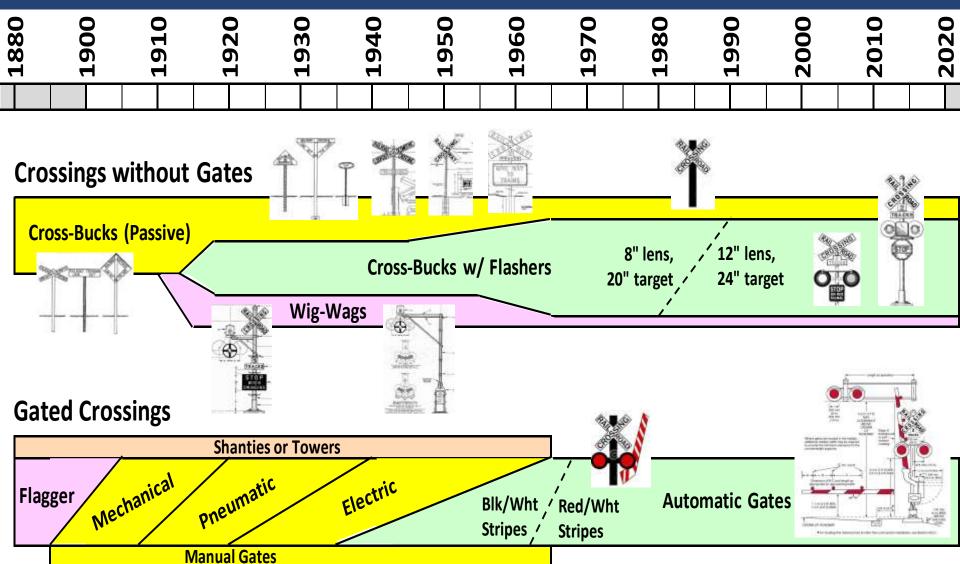


MUTCD = Manual on Uniform Traffic Control Devices

1949 2-Lane Rd Markings



Rail Crossings Protection



Timelines Part 1

- Rail Eras, Safety & Regulatory
- Railroad Technology Changes
- Steam Locomotives
- Automobile Companies
- Gas Stations / Oil Companies
- Road Signs & Markings
- Hamburger Chains

Burger Chains

- · McDonald's

- Wendy's
- Burger King





- White Castle / Tower
- Whimpy
- Kewpee 🚜
- · Hardee's
- · Carl's Jr
- In-N-Out Burger
- Jack-in-the-Box
- Sonic Drive-in























- **A&W Restaurants**
- Shake Shack
- **Fuddruckers**









































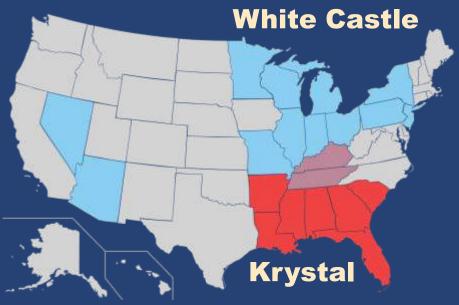


Burger Chains

- Some only regional, not national
- Some had regional variations
- Most grew via franchising (and subfranchising) with Big Boy prolific
- Bankruptcies and selloffs common
- Relatively few mergers
- Logos and building designs changed
- Nearly all had red or yellow logos
- Several model railroad versions sold

Regional Territories









Logo Evolutions









Logo Evolutions

DAIRY QUEEN



1940 - 1960

1960 - 2007





2001 - 2007

2007 - now



OLD









192 - 1948

1948 - 1958

1958 - 1961







1961 - 1968

1968 - 1995

1995 - 2007





2007 - 2018

2018 - now



Logo Evolutions







1941 - 1956

1956 - 1977

1977 - 1985







1985 - 2006

2006 - 2017

2017 - 2018



2018 - NOW











1951 - 1962

1962 - 1971

1971 - 1978







1978 - 1980

1980 - 1985

1985 - 1986





1986 - 2009

2009 - now

Culver's.











Big Boy Restaurants

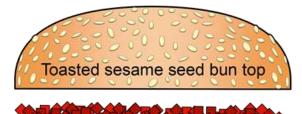
- Many Franchises and Sub-Franchises
- West vs. East Coast Big Boy Mascots
- Signature Double Decker Big Boy Hamburger had Regional Variations





Big Boy Burger Variations

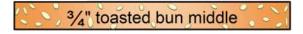
Wian's (Bob's)



Red relish and dash of salt



Mayonnaise



1/8 lb beef patty

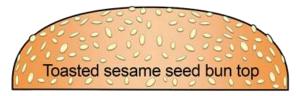
Slice of American cheese and 1½ oz shredded lettuce



Mayonnaise

11½" toasted bun bottom

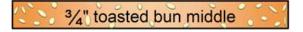
Big Boy System



Big Boy sauce

1/8 lb beef patty

Big Boy sauce



1/8 lb beef patty

Slice of American cheese and 1½ oz shredded lettuce



Big Boy sauce

1½" toasted bun bottom

Frisch's

Toasted plain bun top

1/8 lb beef patty

1½ oz shredded lettuce



Tartar sauce

3/4" toasted bun middle

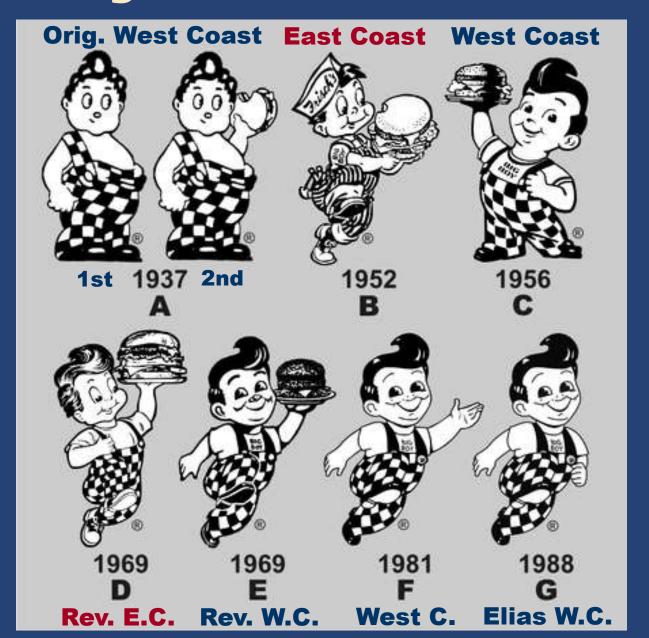
Slice of American cheese



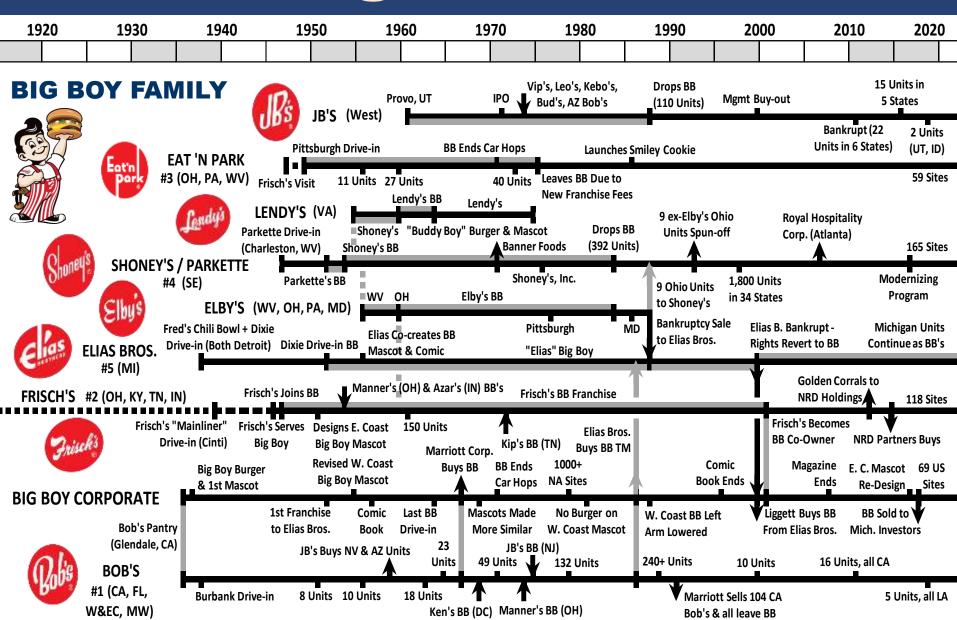
Dill pickles

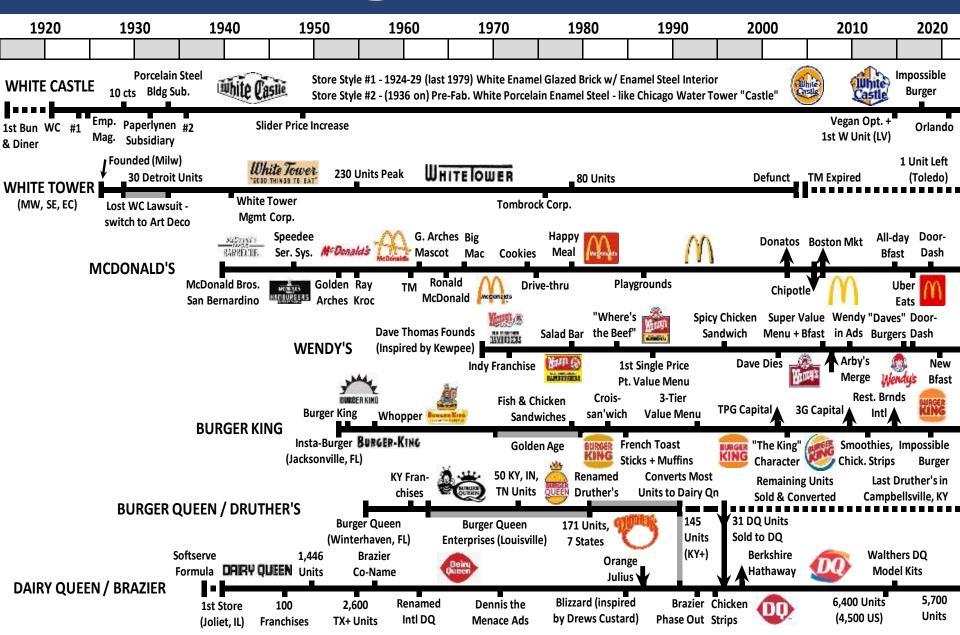
11/2" toasted bun bottom

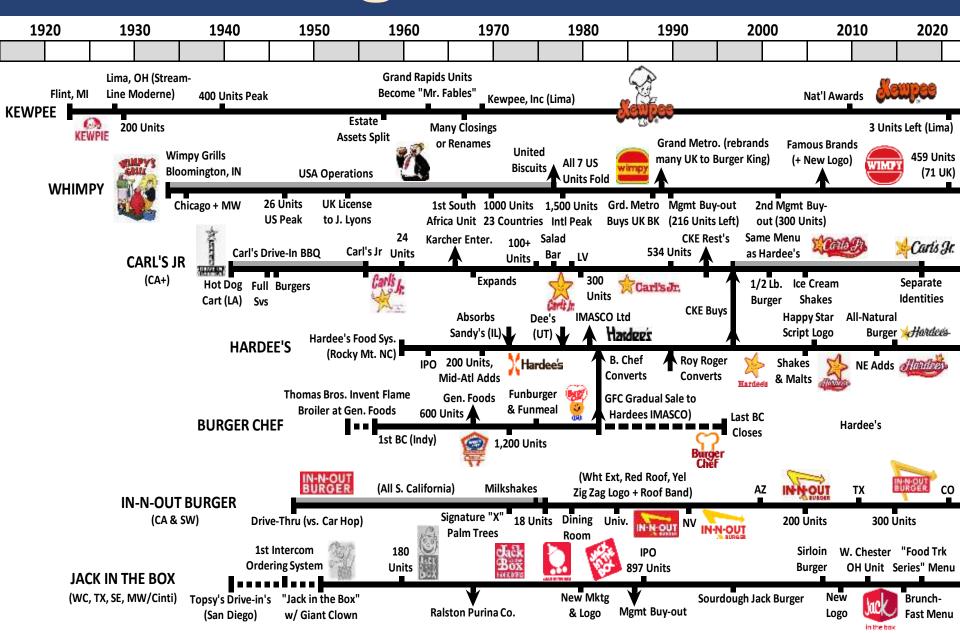
Big Boy Mascot Versions

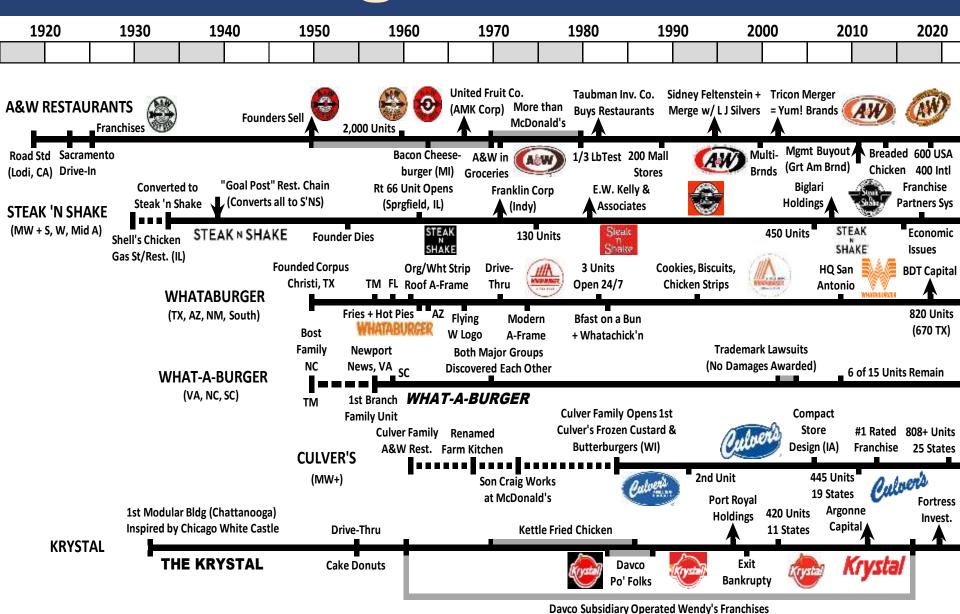


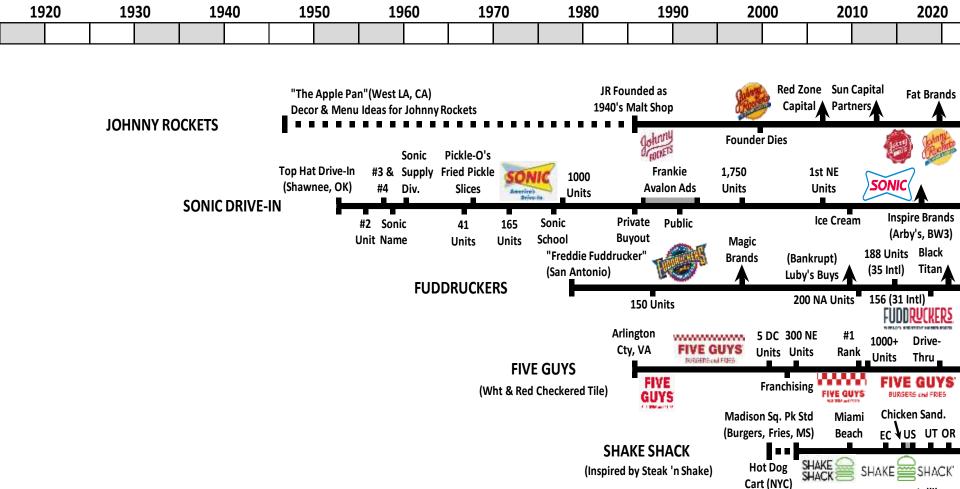
Burger Chains











SMASHBURGER

Denver, then 143 Turkey Jollibee Houston, Minn. Units Burger

SI Estaurge

380 Units

SMASH

BURGER

(37 States, 9 Countries)

Model Railroad Kits - 1

НО	Atlas	Refreshment Stand
HO, N	Bachmann/Plasticville	Drive-in Hamburger Stand
HO, N, O	Blair Line	Fred & Red's Café/Burgers
HO, N	Blair Line	Dari-King Drive-in
НО	Blair Line	Drive-in Restaurant
НО	JL Innovation	Vals Hamburgers
N	Life-Like	Burger King
НО	Menard's	Arby's
НО	Model Power	Bob's Hot Dog Stand
НО	Moebius Models	Mel's Drive-in Am. Graffiti
0	MTH	A&W Root Beer Fast Food Std
0	MTH	Burger Chef
0	MTH	McDonald's Restaurant
0	MTH	Mel's Drive-in Diner
0	MTH	Coney Island Fast Food Stand

Model Railroad Kits - 2

Diko

Tommy's Food To Go

cale Structures Ltd	White Tower
Twin Whistle	A&W Root Beer Stand
Twin Whistle	Twilite Drive-In
Vollmer	Burger King
Vollmer	McDonald's
Walthers	White Tower
Walthers	Arnold's Drive-in (Happy Days)
Walthers	Culver's
Walthers	Vintage Dairy Queen
Walthers	Modern DQ (DQ Grill & Chill)
Walthers	Donny's Drive-in
Voodland Scenics	Drive n' Dine
Voodland Scenics	D's Diner
Voodland Scenics	Miss Molly's Diner
	Twin Whistle Twin Whistle Vollmer Vollmer Walthers Walthers Walthers Walthers Walthers Walthers Voodland Scenics Voodland Scenics

Timelines Part 1

- Rail Eras, Safety & Regulatory
- Railroad Technology Changes
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- Automobile Companies
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Timelines Part 2

- Railroad Maps & Mergers
- Diesel & Electric Locomotives
- Railroad Bridges & Trestles
- Farm Tractors
- Soda Bottles and Advertising
- Grocery Stores & Trading Stamps
- Other Study Areas

More Timelines?

- Rail Car Builders pass. and freight
- Cranes & Construction Equipment
- Coaling Stations wood, steel, conc.
- Water Towers wood, steel, conc.
- Farm Silos wood, porcelain, Conc.
- Barn Types by era and region
- Heavy Trucks and Fire Engines
- Bicycles & Motorcycles
- Airplanes & Airline Companies

More Timelines?

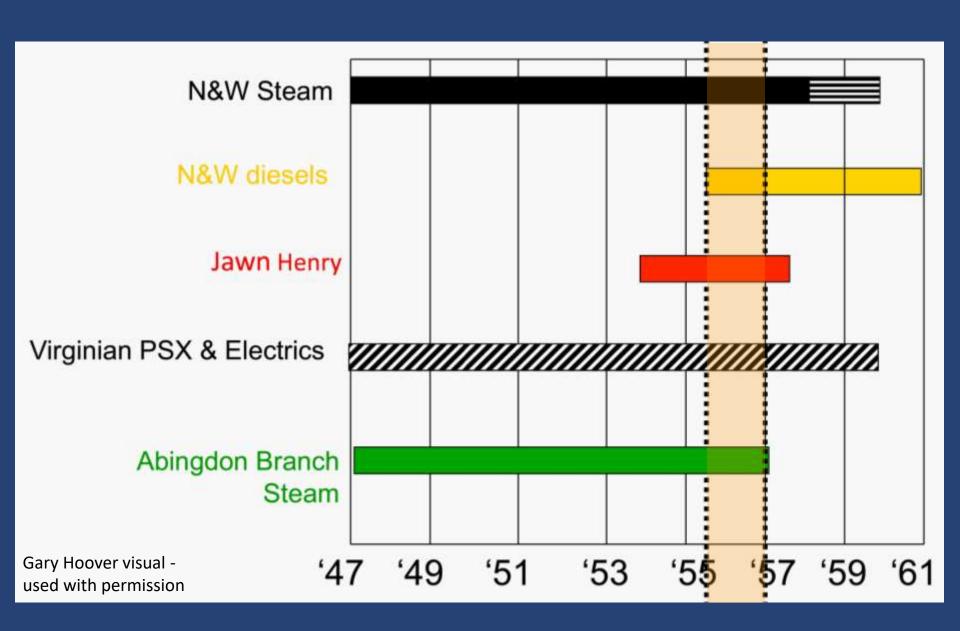
- Stoplights & Streetlights
- Sidewalk Details (Hydrant, Mailbox ...)
- Utility Poles & Lines
- Drug Stores (Rexall, SuperX ...)
- Hardware Stores (Sears, Ace ...)
- Automotive Parts Stores
- Clothing & Furniture Stores
- Consumer Electronics TV, Radio, ...
- Other Retail Stores

More Timelines?

- Fast Food Chicken, Pizza, Subs, ...
- Ice Cream (Good Humor, Sealtest, ...)
- Donut Shops
- Other Restaurants
- Coffee Brands
- Salted Snacks Pretzels, Potato Chips
- Candy/Chocolates (Hersey, Cadburys)
- Chewing Gum (Wrigley, Bazooka, ...)
- Cereal Brands Kellogg, Post, ...

Example Uses

Gary Hoover's N&W



The Eastern Loggers

- Why early 1920's?
- Near end of logging boom
 - diverse wood product industries
 - petrochemicals emerging
- All steam mostly geared locos
- 36 ft freight cars dominant
- Mix of horse & buggy, plus autos
- Minimal regulations (EPA, OSHA, ...)
- Roaring Twenties (pre-depression)

Why 1959 in Appalachia?

- Coal, cabooses, helpers still king
- Mostly 40 foot freight cars
- All 1st and some 2nd gen. Diesels
- Right before the mergers era
- Railroads still fairly healthy
- Passenger trains still running
- Mountains enable long runs on single level pike via parallel high-low mains
- Vertical scenery w/ bridges & tunnels

Why not Multiple Eras?

- Some modelers have locos, vehicles and rolling stock from multiple eras
- These charts could be used to divide equipment stashes into specific eras
- Then run different era-specific oper. sessions on different days using the appropriate group of rolling stock
- Most structures and scenery can pass for a wide range of time

Wrap-up

- Now all this valuable historical data is in one place
- Use it to focus your modeling and purchases, plus add interest and uniqueness to your layout
- All slides are on the Modelers Aid tab of Cincinnati Division 7, MCR website (www.cincy-div7.org)

Questions?