

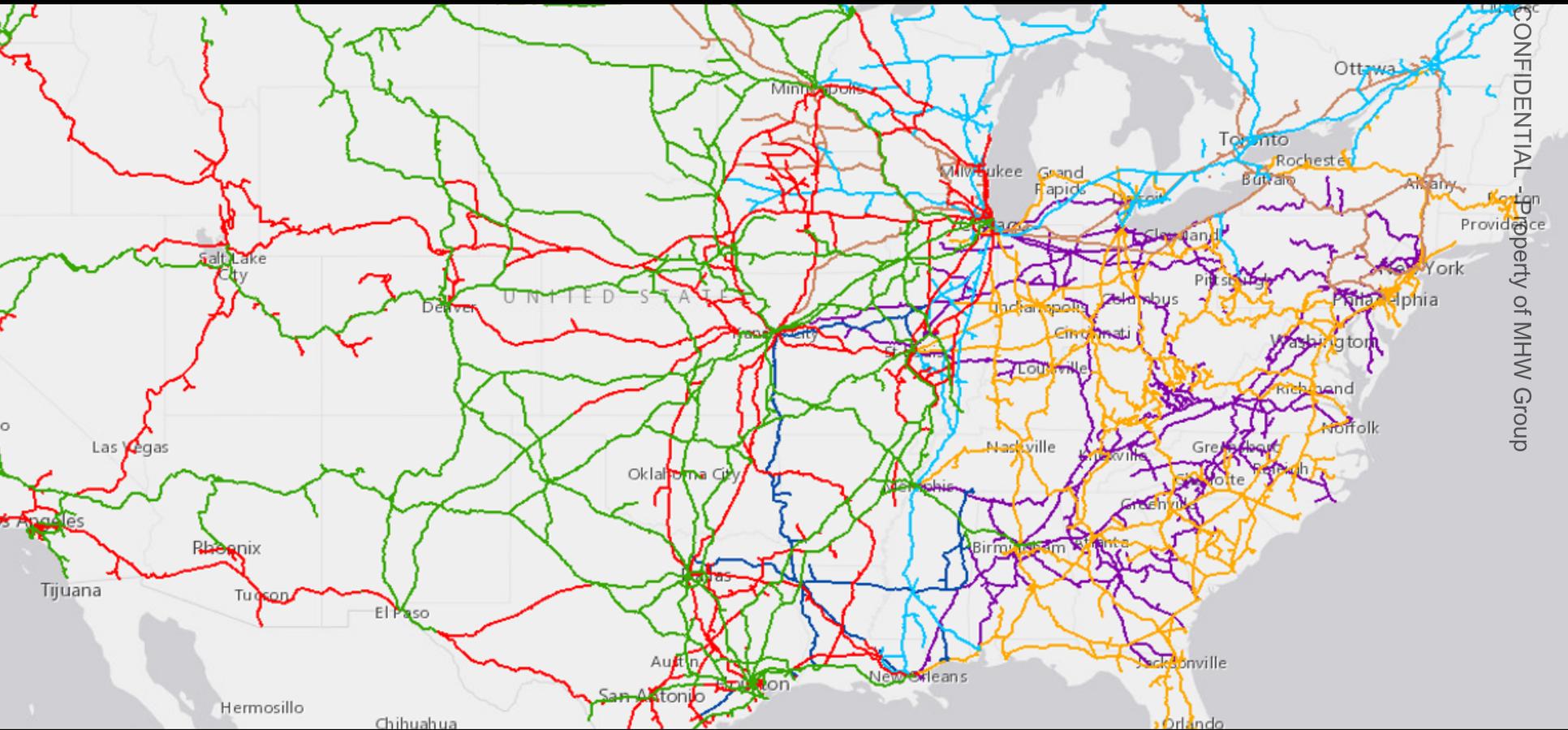
Rail in the Information Age

PRESENTED BY HERMAN HAKSTEEN

JUNE 2018

WASHINGTON, DC

North American Railroad Network



CONFIDENTIAL - Property of MHW Group

A hub & spoke network that joins 9 major railroads and over 550 short line and regional freight railroads to provide door-to-door rail service

- ▶ Every week 700,000 railcars are loaded in the North American rail network – an equivalent of 2.1 million truckloads
- ▶ This Rail Network is the single most important and valuable transportation infrastructure asset that America has.



But the Railroad
Networks in
America are
challenged...

- ▶ Railroads keep an eye on these 700,000 railcars with a cutting edge tracking and tracing system. It is a technology format known as barcode reading, developed in the 1960s.



A MAJOR CHALLENGE

Other Challenges in the Network

- ▶ There are nine major and 550 smaller companies that own parts of the railroad network in North America.
- ▶ There are inconsistent weight restraints across the network.
- ▶ Speed restrictions are inconsistent across the network.
- ▶ There are track sharing issues, freight trains and commuter trains use the same infrastructure.
- ▶ Railroads do not share each other's assets, and don't allow reciprocal switching.
- ▶ The government manages or controls the railroad network through an agency known as the Surface Transportation Board. This agency has been completely ineffective at bringing change and modernization to the rail network.
- ▶ Railroads could be so much more efficient if they were driven by data and consumer demand, not railroad special interest or business interest or legislation.

Focus on Information

- ▶ The need for a national database is endless in today's rail industry.
- ▶ Some of the information required would include:
 - ▶ Location, ownership of rail lines
 - ▶ Access, services and resources on those lines
 - ▶ Speed and movement of trains
 - ▶ Network visibility of not just engines but all the cars in the trains and the commodity on those cars
 - ▶ Weather overlays for fuel planning, schedule adherence and rerouting requirements

Introduction to Cryo-Trans



The largest builder and lessor of refrigerated and insulated rail cars in the world.



We not only provide assets, we manage rail supply chains for some of the largest food and beverage manufacturers in North America.

- ▶ In order to be successful in managing Fortune 100 company rail supply chains, we needed to develop in-house systems based on GPS technology with real-time connectivity.
- ▶ Our systems track rail car location, security of the car, temperature interior and exterior, and impacts
- ▶ Our systems in a small way represent where the national database needs to go

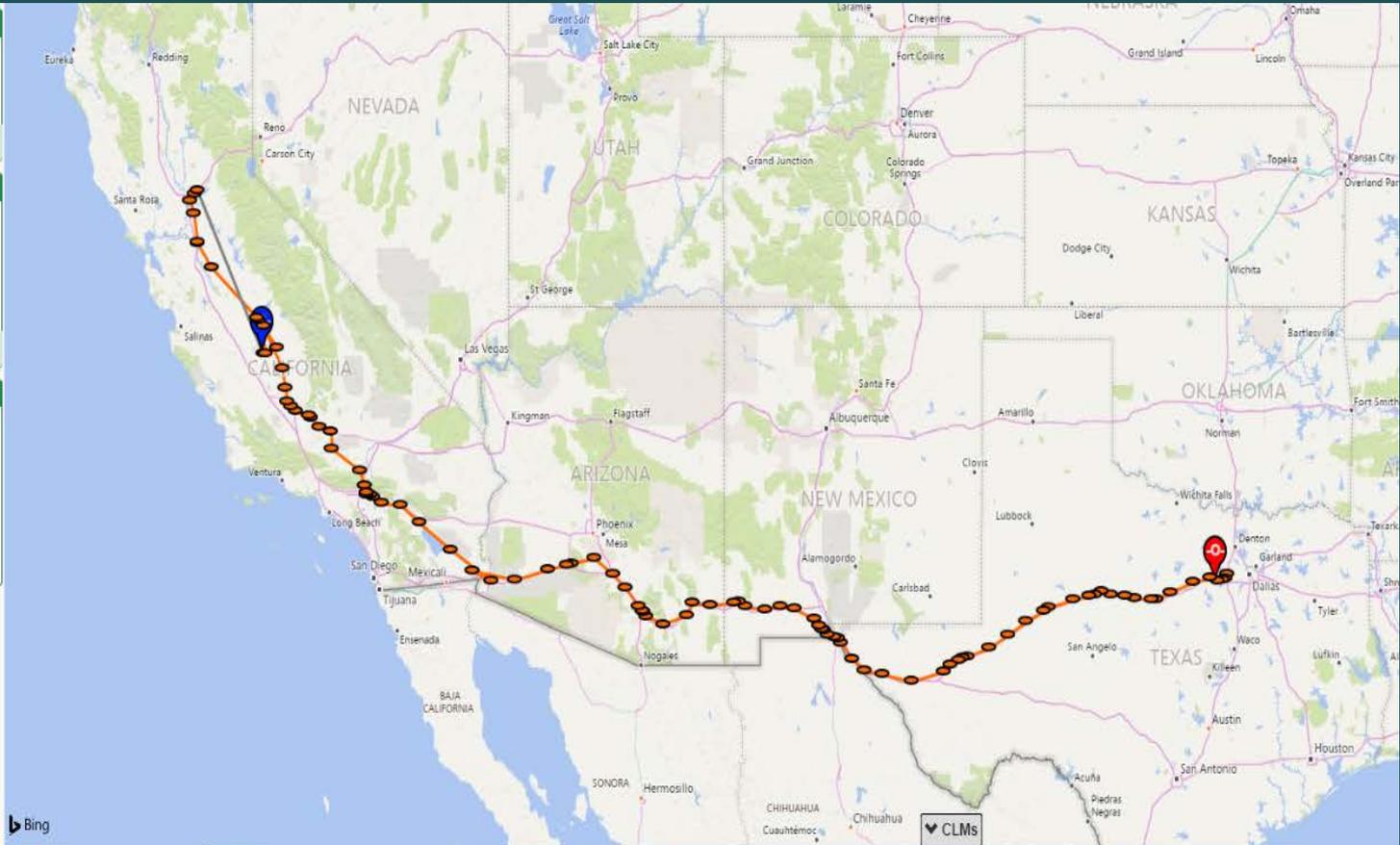
Single Car Route

Car Search
 Car Mark: CRYX 003057
 Ship Date: 04/05/2017 00:00
 [Resubmit]

Trip Controls
 Leg Plan: Round Trip
 Current Leg: Complete
 Mapped Leg: Outbound Inbound
 [Update Results]

Legend

- Origin
- Trip CLM
- Current Position
- Projection
- Destination



CLM Code	Location	State	CLM Date	L/E	RailRoad	Train
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By Car Information Detail

06/07/2018 00:00 (CRYX005980)

Trip Details

Problems: None

Car Mark: [CRYX 005980](#) Trip Leg: Outbound

Ship Date: 06/07/2018 00:00 Leg Plan: Round Trip

Fleet Name: [MB ATLANTA](#) Gross Weight: 170,316

BOL #: 3373555 Net Weight: 170,316

PO #: [/](#)

Origin: [LINEAGE COLUMBIA LLC](#) OTHELLO, WA [/](#)

Destination: [THE MARTIN-BROWER COMPANY LLC](#) EAST POINT, GA [/](#)

Return: [LINEAGE COLUMBIA LLC](#) OTHELLO, WA [/](#)

Product: CASE POTATOES, FRESH FROZEN (2037315) [/](#)

CLMs for CRYX 005980

Location	State	Code	L/E	RailRoad	CLM Date	Train	Dest Loc	Dest St
NORTHTOWN	MN	A	L	BNSF	06/14/2018 09:10	HPASNT	EPT	GA
COORAPIDS	MN	P	L	BNSF	06/14/2018 08:40	HPASNT	EPT	GA
STCLOUD	MN	P	L	BNSF	06/14/2018 06:04	HPASNT	EPT	GA
RICE	MN	P	L	BNSF	06/14/2018 05:50	HPASNT	EPT	GA
RICE	MN	P	L	BNSF	06/14/2018 05:43	HPASNT	EPT	GA
LITFALLS	MN	P	L	BNSF	06/14/2018 05:19	HPASNT	EPT	GA

[Edit CLM](#)
[New CLM](#)
[Copy CLM](#)
[+ Dest Key Loc](#)
[+ Return Key Loc](#)

Other Information

Summary Companies Route Original ETAs Rates Custom Other Waybill History

	Delivery	Release	Return
Actual			
Estimate (50%)	06/21/2018 12:10	07/01/2018 21:10	07/17/2018 01:10
Confidence (90%)	06/23/2018 05:10	07/07/2018 12:10	07/27/2018 22:10
Std. Days	14.04	10.38	15.17
Variance	0.47		

[Recalc Trip Dates](#)
Last Calc Date: 06/14/2018 07:48

[Force Complete Trip](#)

Trip Notes

Trip Notes Key Locations

No notes found for this Trip.

[Add Note](#)

Lat-Lon Data

Could not find LatLon data for car.

Star Track Data

Power State: **ON(L)** Return Temp: 3.60

Last Reading Date: 06/13/2018 22:23 Discharge Temp: -6.30

Set Point: 0.00 Last Maintenance Date: 06/13/2018 22:23

Fuel Level: 378.00

