

NY State Rail Summit
Alstom Transportation Inc.

Chuck Wochele
06/14/2010



Two main activities – 19.7 Billion Euro's in Sales (2009 FY)

81,500 Employees 70 countries

Power Sector – 13 Billion Euro

Transport Sector – 6.7 Billion Euro



Equipment & services for
power generation and
distribution



Equipment & services
for rail transport

An extensive range of products and services

Rolling Stock: from trams to very high speed...



An extensive range of products and services

...signaling, services & maintenance and infrastructure

Infrastructure

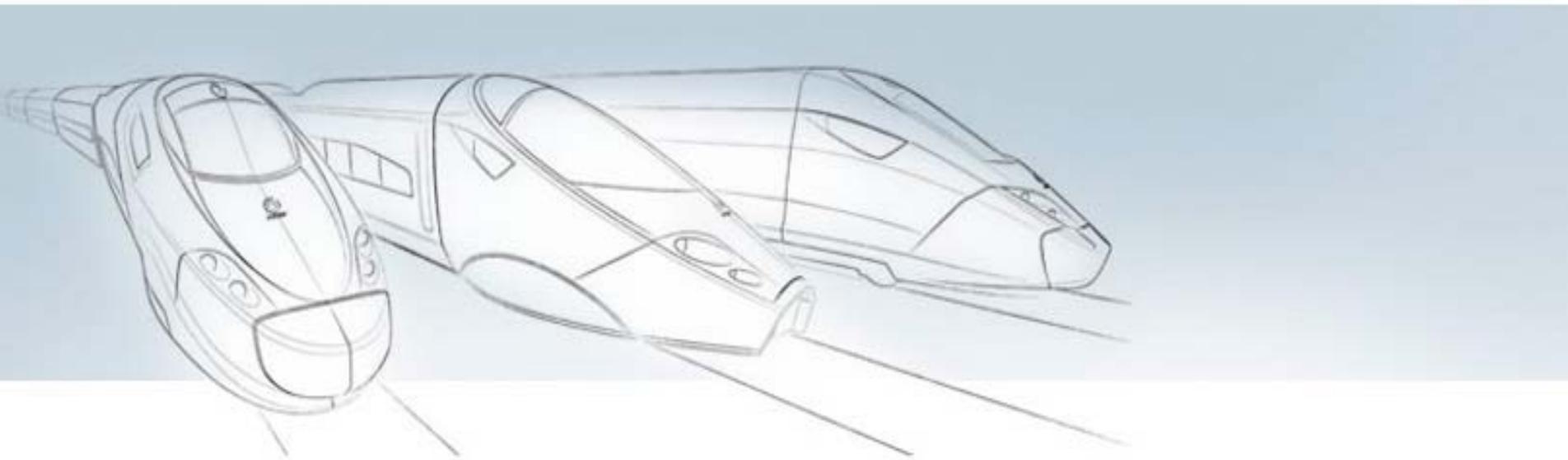


Signalling



Services and maintenance





Rolling Stock USA Hornell Facilities Overview/Capabilities

ALSTOM

Hornell Manufacturing Facilities



Plant 2 - ELECTRICAL SHOP
(75,000 sq.ft.)



Plant 3 - PARTS, SERVICE AND TRUCK SHOP (133,000 sq.ft.)



Plant 1 - CAR SHOP (420,000 sq.ft.)
New Car Facility (70,000 sq.ft.)

698,000 sq. ft. under roof on 52 acres at 3 separate locations within a 1 mile radius

Plant 1



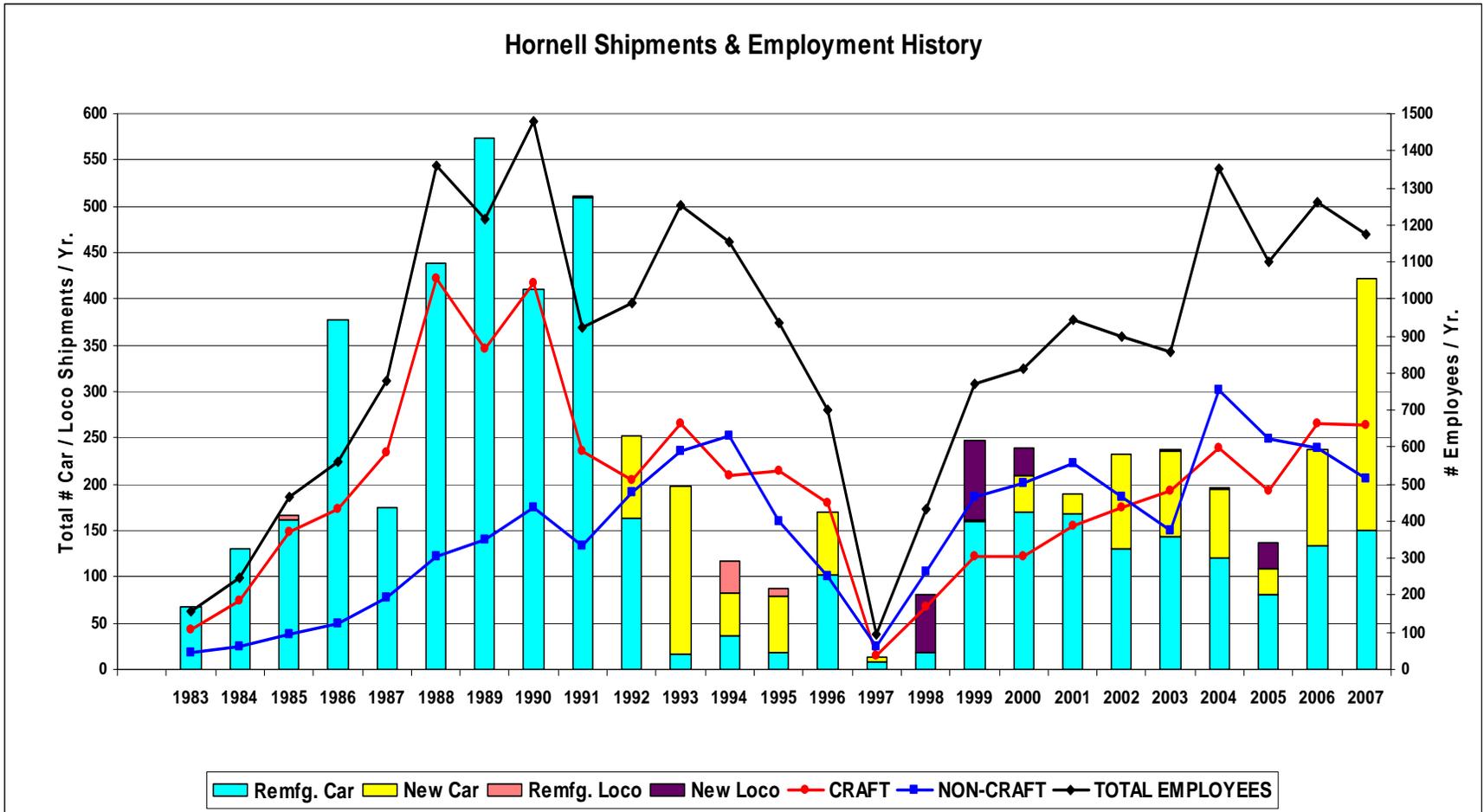
Fully Integrated Rolling Stock Project & Production Facility
(North View - 30 acre site – 420,000 sq. ft)

Plant 1



Fully Integrated Rolling Stock Project & Production Facility
(South View - 30 acre site – 420,000 sq. ft)

Hornell Site - 25 Year Shipment & Census History



Hornell Experience New Build

➤ CTA	- 257 Cars	-- 3200 Series
➤ Metro-North	- 48 Cars	-- M6
➤ Amtrak	- 50 Cars	-- Viewliner
➤ Metra	- 173 Cars	-- Gallery
➤ BART	- 80 Cars	-- C2
➤ Caltrans	- 66 Cars	-- California Cars
➤ Amtrak	- 62 Cars	-- Surfliner
➤ NJ Transit	- 265 Cars	-- Comet V
➤ NJ Transit	- 33 Loco	-- PH 42
➤ WMATA	- 184 Cars	-- 6000 Series
➤ NYCT	- 1002 Cars	-- R160

Over 2000 New Cars

Experience – New Cars

NYCT R160



NJ Transit PL42



Experience - New cars



**CTA 3200 Transit Car
257 - 48' SS Cars - EMU**



**Metro North M6 Commuter Car
48 - 85' SS Cars - EMU**

Experience - New cars



AMTRAK/Caltrans Surfliner Intercity Cars 62 - 85' Bi-Level SS Cars - Coach



New Jersey Transit Comet-V Series Cars 265 - 85' SS Cars - Coach & Cab

Experience - New cars



WMATA 6K



Loco Painted & Tested for EMD

Experience - New cars



**BART Commuter Cars
Aluminum Cars- EMU**

**Amtrak Viewliner
SS Cars- Coach**



**Caltrans Intercity Cars
Bi-Level SS Cars Coach**



Hornell Facility Experience

Rehabilitated Cars

- NYCT - 3023 Cars -- Various Metro
- MNRR - 317 Cars -- M2 EMU Commuter
- NJT - 100 Cars -- Commuter Coach
- MBTA - 143 Cars -- Commuter Coach & LRV's
- SEPTA - 58 Cars -- EMU Commuter
- SF Muni - 17 Cars -- PCC Trolley
- CTA - 598 Cars -- 2600 Series Metro
- NJT - 124 Cars -- Comet II Commuter Coach
- MMTA - 96 Cars -- B-1 Metro
- MARTA - 238 Cars -- CQ 310 & 311 Metro
- WMATA - 364 Cars -- 2000 & 3000 Series Metro

Over 5,000 Cars Rehabilitated

Experience, Overhaul



CTA 2600 Series

WMATA 2000/3000 Series



Photo and scan (C) 1998 Wayne L. Whitehorn

Experience – Rehabilitated Cars



MBTA Pullman



SEPTA Silverliner



NYCT R46



MMTA - Baltimore

Experience, Overhaul



Metra Highliner

**San Francisco MUNI PCC
Historic Overhaul**



Manufacturing Capabilities

- New Metro, LRV and Commuter Passenger Rail Vehicles
- Complete Rehabilitation of Passenger Rail Vehicles
- New and Rehabilitation of Diesel Locomotives
- New AC Propulsion Systems and Equipment
- Truck assembly - New
- Truck rehabilitation
- ISO 2000 & ISO 14001 Certified

Engineering Capabilities

- Vehicle systems integration
- Vehicle systems engineering
- Vehicle mechanical design, 2D and 3 D
- Vehicle electrical design
- Propulsion design and integration
- Vehicle system acceptance testing
- Propulsion combine testing
- RAMS analysis and reporting

Product Test Capabilities

Testing: Plant 1-

- Water Test: Car Shells and Completed Vehicles
- DITMCO Test: Electrical Subsystems & Vehicles
- Static Test: Stand alone Inline Stations
- Dynamic Test: Traction wheel rotation
- Dynamic Track Test: Catenary, Third Rail Power and ATO
- Vehicles Weighing: On Track Scales
- Climate Chamber Test: Complete Vehicles

Testing Plant 2 and 3 -

- Combined test: Full range of Propulsion Equipment Testing - Motors, Control Units, including complete Car Propulsion Package

Interior View of New Build Facility



- 2ea 35 Ton Bridge Cranes
- 2ea 5 Ton Equipment Cranes
- 3 Tracks With 2 Pit Areas



Hornell - High Bay



Hornell - Car Shop, Strip & Wash



Hornell - Car Shop, Paint booth

- Vehicle Paint Booth
 - Well Lighted
 - Controlled Environment
 - Personnel lifts



Hornell - Car Shop Water Testing

- State-of-the-art water test facility
- Adjustable nozzle velocities and water pressure
- Compliant with the Major US specifications



Hornell - Test Track



- Total length: 2,200 feet
- 3rd Rail: Up to 1,000 VDC @ 3,000 Amps DC

- Speed Supported up to 50 MPH

Hornell - Climate Chamber



- Dimensions: 140' X 28' X 23'
- Temp Range: -20 F to +140 F
- Maintains +/- 2 F Variance



- 200 Channels of data acquisition
- Heating 2 Natural Gas Boilers = 850,000 Btu/hr Capacity
- Humidity range 0-95% RH

Hornell Plant-2, Electrical Shop



- Electrical Equipment / Propulsion Equipment
- Land Area, 480,000 sq. ft.
- Covered Area, 6,000 sq. ft.

Plant 2 - Manufacturing

New and Remanufacture:

- Propulsion Equipment
- Auxiliary Equipment
- AC & DC Motors
- Trucks



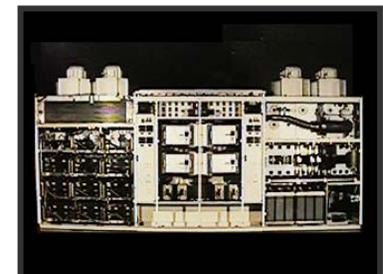
NYCT Metro Motors



CTA Aux Inverter



NYCT Metro Propulsion



NEC Locomotive Bloc



CTA DC Motor

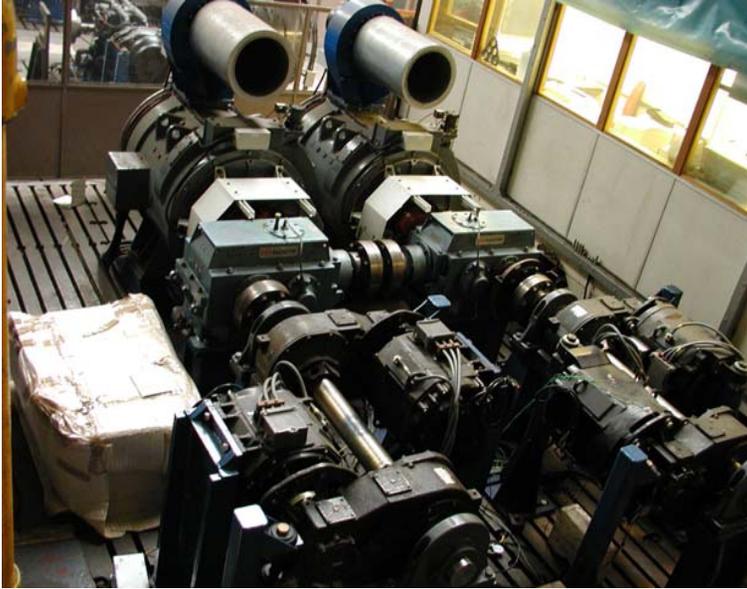


Roof Mount LRV Propulsion



Trolley Bus Propulsion

Plant 2 - Combined Test



- System integration testing
- Stability/Performance tuning
- EMC Validation
- Customer Validation
- Extreme / transient conditions
- Thermal Validation
- Fault Handling

- Can test 2 independent car sets of Propulsion and Auxiliaries

- The Facility is capable of providing the following Power
1000 kW at nominal 750V, 4MW peak



Hornell Plant-3, Truck Shop



- Truck New and Overhaul Final assembly
- Land Area - 400,000 sq. ft.
- Covered Area -133,000 sq. ft.

Hornell Plant-3, Truck Shop



Material Storage and Assembly Area – (WMATA 6K wheels and frames shown)



Component Installation Station for frames – (WMATA 6K shown)



WMATA 6K completed truck in truck press for simulated height adjustments prior to shipping



AC Rotation and Inspection Station – (NJT Loco on test)

Experience – Over 2000 New Cars

NYCT R160 – 1002 Cars



WMATA 6K – 184 Cars



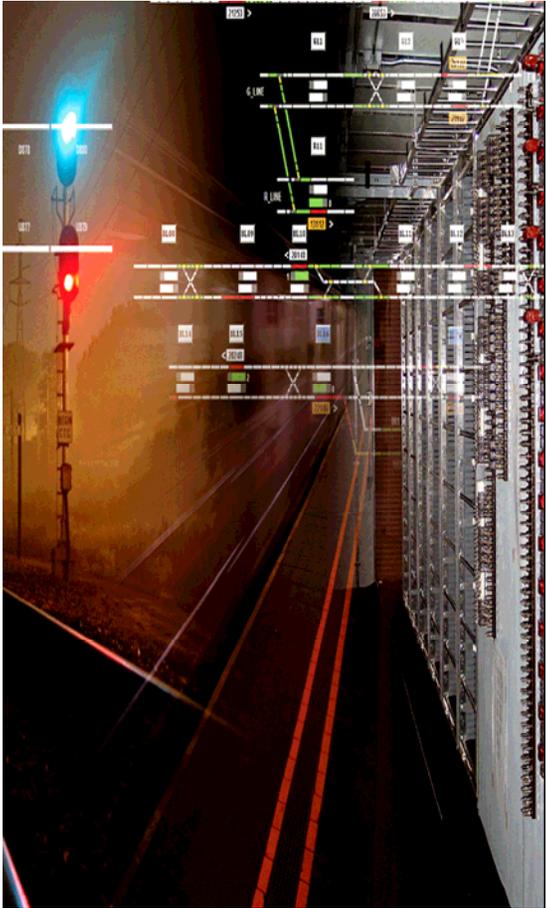
Experience – Over 5000 Remanufactured Cars

NYCT – 3023 Cars

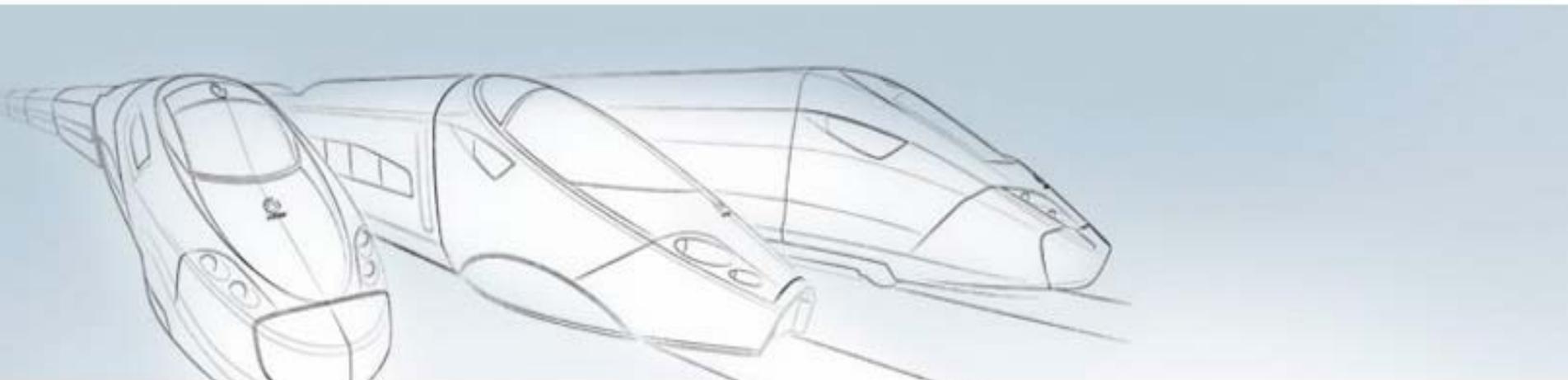


CTA – 598 Cars

Rochester, NY Signaling Manufacturing Facility



150,000 sq. ft. under roof – 500 Employees



Thank You



ALSTOM