High Speed Rail Seminar in Chicago

Kawasaki's High Speed Train Technology and Contributions to the US Society

June 28, 2010

1.Kawasaki Company Profile

1.1 Company Profile

Established: October 15, 1896

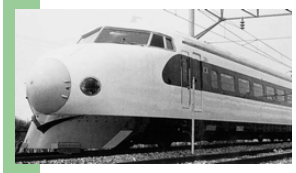
Capital: USD $3,042 million (as of March 31, 2010)

Net Sales: USD $12.6 billion (FY ending March 31, 2010)

Employees: 32,297 (as of March 31, 2010)

1.2 Chronicle of High Speed Train Development

Kawasaki's involvement in development of all Shinkansen trains



1964: 0 Series
(210km/h, 130mph)

1982: 200 Series
(220km/h, 137mph)

1985: 100 Series
(230km/h, 143mph)

1992: 300 Series
(270km/h, 168mph)

1992: 400 Series
(130 or 240km/h,81 or 149mph)

1994: E1 Series
(240km/h, 149mph)

1997: E2 Series
(275km/h, 171mph)

1997: E3 Series
(130 or 275km/h, 81 or 171mph)

1997: E4 Series
(240km/h, 149mph)

1997: 500 Series
(300km/h, 186mph)

1999: 700 Series
(285km/h, 177mph)

2000: 700-7000 Series
(285km/h, 177mph)

2004: 800 Series
Trucks and ventilation systems only
(260km/h, 162mph)

2007: N700 Series
(300km/h, 186mph)

E5 Series
(320km/h, 200mph,Scheduled)

Cumulative number of high speed train
Kawasaki supplied and is going to supply: 3,075(up to now)

1.3 Export Model High Speed Trains

Taiwan High Speed Rail Corp. 700T Series

- **Award/Service Commencement : 2000/2007**
- **Max. operating speed :186 mph(300km/h)**
- **Fully dedicated newly constructed track**
- **System-wide Contract**
- **Contractor: Taiwan Shinkansen Corporation**
- **Kawasaki supplied 360 cars**

Ministry of Railway,
People's Republic of China CRH2

- **Award/ Service Commencement : 2004/2007**
- **125mph(200km/h) EMU for upgraded existing lines with partially newly constructed tracks**
- **186mph(300km/h) class EMU for newly constructed dedicated passenger lines**
- **Kawasaki provided CRH2 with local partner Sifang:**
  - 125mph(200km/h) EMU 960 cars (including berth type)
  - 186mph(300km/h) class EMU 480 cars

2.Kawasaki's Contributions to the US Society

2.1 Kawasaki Built Rail Cars in the US

MTA New York City Transit R160

Port Authority Trans-Hudson Corp. PA-5

MTA Metro-North Railroad M-8

MTA New York City Transit R142A

Port Authority Trans-Hudson Corp. PA-4

Massachusetts Bay Transportation Authority

WMATA Washington Metropolitan Area Transit Authority Series 7000

MTA Long Island Rail Road C-3

Maryland Mass Transit Administration MARCIII

2.2 Kawasaki Rolling Stock Business Operation for the US

Organization	Rail Car Operation	Staff
Kawasaki Heavy Industries, Ltd., Hyogo Works	Since 1906	2,300
Kawasaki Rail Car, Inc., Yonkers Plant	Since 1986	502
Kawasaki Motors Manufacturing Corp., U.S.A., Lincoln Railcar Plant	Since 2001	440 (RC Plant only)

Kawasaki's basic philosophy is to provide "Made in the U.S.A." rail cars built by and for the American people.

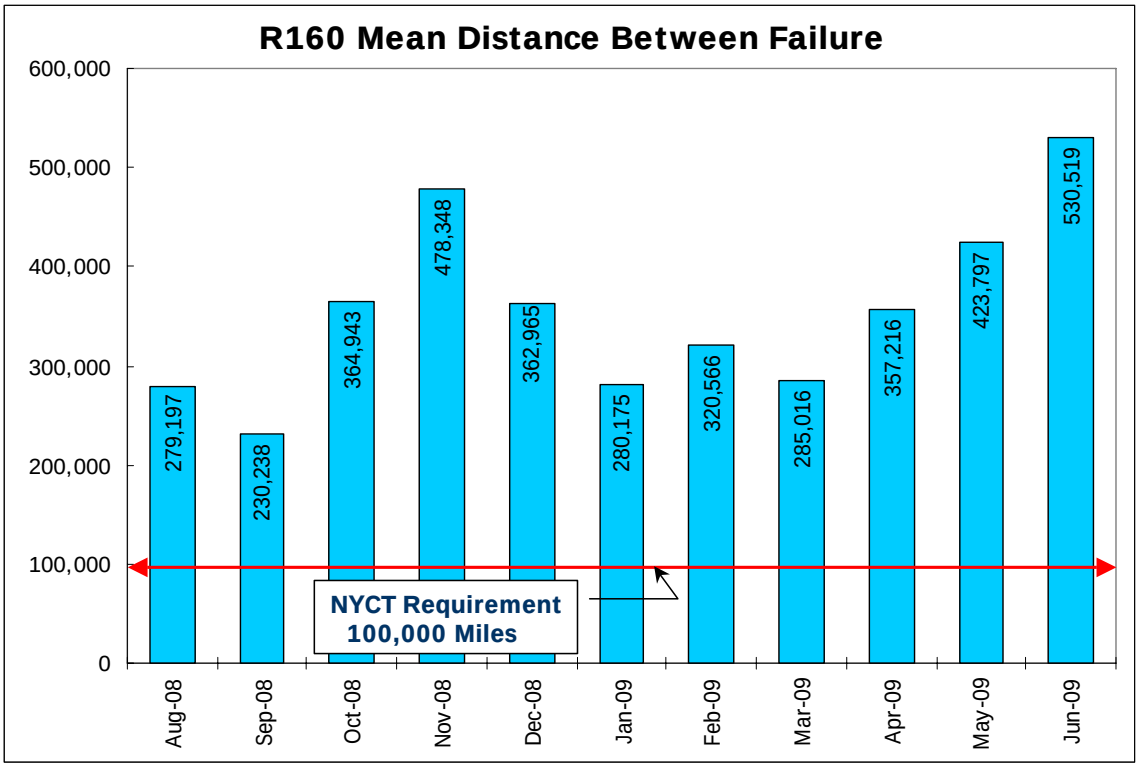
Kawasaki Rail Car, Inc. Yonkers, NY

Kawasaki Heavy Industries, Ltd. Kobe, JAPAN

Kawasaki Motors Mfg Corp, USA Lincoln, NE

2.3 Kawasaki's Advantages (1)

-Delivers reliable cars, with quality built-in



2.4 Kawasaki's Advantages (2)

- **Provides "Made in the USA" product**

  The only manufacturer in the US to mass produce heavy rail/subway cars from scratch.

- **Expertise and resource capability**

  Kawasaki, as a group, maintains its own technical research and development institute. Flexible mobilization according to the world market demands.

- **Design flexibility**

  Design development considering the customer's operating condition.

- **Customer oriented business philosophy**

  Problem solving is our first priority.

3.Kawasaki's Solutions for US High Speed Projects

3.1 Kawasaki's Solutions (1) US Economy Enhancement

- **Increase of Production Line in KMM/KRC**
  - ➔Employment of additional people
- **Utilization of Automobile Parts Supplier**
  - ➔Restructuring of Automobile Industry
- **Promotion of Technology Transfer**
  - ➔Growing American Rolling Stock Business
  - ➔Compliance with "Buy American"
- **Final Assembly at HSR Site (Utilization of Depot facility)**
  - ➔Pre-training of Maintenance Staff

3.2 Kawasaki's Solutions (2) Technical Advantages

1) Light Weight Train ⇒ Low Energy Consumption

Weight Comparison of High Speed Trains

Series	Japanese HSR	ICE3	TGV-R	Acela
Train Weight / Passenger (tons / person)	0.48-0.54	0.97	1.02	1.86
Required Compression Load (tons)	Japanese Standard 100tons	UIC 200tons		49CFR Tier Ⅱ 360tons (Coach) 945tons(Power Car)
Track	Fully Dedicated Track	High Speed Section-Dedicated Track Low speed Section-Conventional Track		Conventional Track

2) High Reliability ⇒ proven by R160 data

3) Environmentally Friendliness

⇒ Low noise and vibration

4) Passenger Comfort

3.3 Proposed Solutions

1995: Maryland Mass Transit Administration (MarcⅢ)
Qualified by FRA for 125mph operation

High Speed Train

Medium High Speed Train

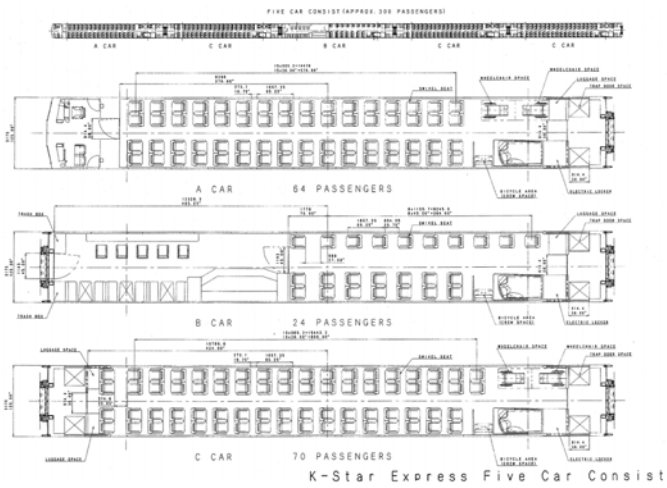
"efSET"
(Environmentally Friendly Super Express Train)
Max. Operating Speed:220mph(350km/h)

"K-Star Express"
Push-Pull Coaches
Max. Operating Speed:125mph(200km/h)

The principle designs of two new trains are completed.

3.4 K-Star Express

- Kawasaki's new locomotive hauled single deck coaches that operate either in push pull or pull only mode
- Most suitable as USDOT high speed rail network coaches and Amtrak's next generation coaches
- Full conformance to CFR TIER-I and ADA requirements
- Fully utilize Maryland MARC-III proven technologies for conformance to rules and regulations and high speed running stability in USA



K-Star Express Five Car Consist

4.Conclusion

4.1 Response to Expectations in the US

Job Creation and Reduction of Greenhouse Gas Emission

1.By Kawasaki's Strategy

Revive railway related industry and encourage new job opportunities in the United States.

2.By Kawasaki's Technology

Contribute to the significant reduction of greenhouse gas emission in the United States.

Kawasaki can contribute to the US society through the high speed rail projects!

Thank You Very Much for Your Attention