About the Speaker

Ram Krisn

• From the State of Maryland. Received my MBA degree from Michigan State University. Mechanical Engineer

I researched the topic for this course.

Research Approach

Internet

• I am a retired transportation engineer & no expert!! The presentation is a mere intellectual understanding of summary readings for this lecture.

Discussions at end of presentation, please
TOPICS

• Detroit car show – 2009
• Cars – Gas, Diesel, Hybrids, Electric, Propane, CNG
• Future cars – Solar, Wind, Bio-fuel, Hydrogen, Manpower!
• Rail – Electric & steam
• Airplanes
• Bus – Diesel and CNG
• Ships
• Emissions & Pollution
• Security concerns
• Other Concepts
Detroit car show – 2009

• Visit Google and see details
• Recent magazines including FORTUNE
• Coming to Washington DC soon
• See new models and Hybrid/Electric cars
Cars – Gas, Diesel, Hybrids, Electric, Propane, CNG

• Gas & diesel cars are here to stay! Gas uses spark ignition – diesel uses compression – downsizing!

• Hybrids use gas engine, special battery, electric motors – Series or parallel operation

• The Chevy Volt electric EREV car with lithium – ion battery

• Propane & CNG conversions

• Boston/Seattle companies designed a “Road-able Aircraft” or aero-car
OTHER EREV’s – Extended Reach

- CA Tesla Roadster: 250 mile range slow charge
- UK Lightning GT with titanate fast charge
- Mega City / Truck
- Too pricey!!
- Nickel price impacts cost of $5000++!
- China BYD with Fe battery
Future Cars

• Solar
• Wind
• Bio-fuel
• Hydrogen Cell
• Manpower!
• Innovation
Rail – Electric & steam?

• Steam/Coal engines are obsolete – Some want revival!
• Amtrak
• Metros
• High speeds
• Light rail or street cars
• People movers
• CNG locomotives
Airplanes & Space

- Boeing & Airbus
- Weight reduction for fuel efficiency
- Blended wing body
- Grass, algae & bio-fuels
- Air Force 1 – Special features
- Space Shuttle & Crew Explore Vehicle-2010
- Mars Rover
- Drones
Bus – Gas, Diesel and CNG

- School buses
- Metro buses
- Inter-city buses
- Modular designs
- Technology common with cars
- Composite materials reduce weight
- Double Decker
Ships

• Tourism
• Navy
• Recreational boats
Emissions & Pollution

• On-going effort in reducing e & p
• Alternate fuel technologies
• World needs: Oil 34%, Natural gas 24%, Coal 29%, Nuclear 6% and Other 8%
• Solar & wind power are getting popular
Security concerns

- Security worries are high since (9-11)
- Energy security is critical
- Fuel & car costs effect economy
- Excessive imports effect jobs
Other Concepts

• Transportation safety
• Increasing luxury & electronics
• Rickshaw, bullock cart, mo-bikes, 3 wheelers, bicycle and small cars & walking!!
• Need for conservation
• Traffic Signal Technology
• Industry wage issues