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The Parcel Delivery Business

Improving the Bottom Line Through Efficiency



Sid Gooch - Managing Director

Global Vehicles

Today's Issues

- Availability of energy resources and projected increasing demand
- Security of supply
- Rising fuel prices
- Climate change
- Urbanization, congestion and noise
- Emissions, regulated and unregulated

FedEx Present Response

- Best Practices for Rising Fuel Costs

FedEx Present Response

- Best Practices for Rising Fuel Costs
- Implementation of Future Vehicle Program

FedEx Express Fleet

US Fleet (Class 1 – 8): 42,000 vehicles

- 31,000 Pickup/Delivery Vehicles
- 2,750 Class 8 Tractors
- 1,150 Class 7 & 8 Straight Trucks
- 4,400 Trailers
- 2,700 Other Support Vehicles
 - (Vehicle Maintenance, Aircraft Maintenance, Facility Maintenance, IT Support)

International Fleet: 6,700 vehicles

Best Practices

Balance Vehicle Utilization

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Vehicle Selection

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Driver Behavior Management

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Maintenance Practices

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Advanced Technology Research

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Fuel Supply Management

Balance Vehicle Utilization

FedEx Express monitors route types and ensures that the appropriate vehicles are scheduled on the correct route

- Place Sprinters (@ 20 MPG) on high mileage routes (>125 miles day) and lower fuel economy vehicles on lower mileage routes
- Less fuel efficient gas vehicles are kept on inner city routes
- Vehicles in northern climates are not equipped with air conditioning thus reducing fuel consumption
- Fleet planning to purchase newer vehicles

Vehicle Selection

Vehicle Purchasing organization works with Operations to purchase the best mix of vehicle types for the different FedEx Express route operations

- Sprinters, W700s, and Panel Vans
- Majority of Fleet is diesel powered

Vehicle Selection

Engineering develops vehicle specifications to optimize the efficiency of the vehicle application

- Restrict amount of fuel carried by the vehicle (fuel tank sizing)
- Lightweight materials selection
- Gearing selections to maximize fuel economy
- Aerodynamic devices

Driver Behavior Management

Engineering works with vehicle manufacturer's to optimize fuel economy and tire wear by limiting the vehicle's rate of acceleration

FedEx Express corporate speed limit is local posted and no greater than 65 mph to optimize fuel economy and safety

Industrial engineers design routes to optimize the number of stops and load volume

- Routes are also designed to minimize left turns which cause longer stops at intersections (reduced fuel consumption)

Maintenance Practices

Maintenance Technicians check the tire pressure on every vehicle on a weekly basis

Couriers and drivers are required to monitor tire pressure on a daily basis

Maintenance inspections ensures optimum fleet efficiency

- Diesel: 120 days / 12,000 miles
- Gas: 90 days / 4,000 miles

Advanced Technology Research

Hybrid Electric Drive Systems

Alternative Fuel Studies

- BioDiesel
- CNG
- Hydrogen

Review and redesign of our delivery vehicles to improve efficiency

Electric-driven engine accessories and vehicle systems to be managed by on-board computers

Fuel Supply Management

Quantity discounts/negotiated pricing

Fuel management and delivery

Rebates

Fleet card program for lowest cost fueling point

FedEx Express®

FedEx Express Future Vehicle Program

Diesel-Electric Hybrid Parcel Delivery Vehicle



Global Vehicles

FedEx Hybrid Vehicle – Mission

Develop a replacement for the current FedEx W700 Pick-Up & Delivery Vehicle that is:

- **Environmentally Superior**
 - 90% Lower Emissions
 - 50% Better Fuel Economy
- **Cost-Effective** – cost the same or less over the lifetime of the vehicle
- **Meets All of FedEx's Operational Requirements** – maintains or enhances functionality
- **Non-Proprietary** – to accelerate the time to market of full production environmentally friendly vehicles

FedEx Hybrid Vehicle - Basics

Hybrid Electric Parcel Delivery Truck

- Freightliner MT-45 Chassis
- Utilimaster Body
- Mercedes-Benz 904 Diesel Engine – 4 Cyl, 170 HP
- Eaton Hybrid Electric Drivetrain, Parallel System
- Diesel Particulate Filter

SwRI Test Results

Pre-Production E700 improvement over

	<u>Baseline W700</u>	<u>2004 W700</u>
HC	- 100%	- 100%
CO	- 82%	- 77%
NOx	- 65%	- 12%
PM	- 96%	- 96%
CO2	- 37%	- 29%
MPG	+ 57%	+ 42%

On Road Testing

18 E700's in 5 FedEx Express stations

<u>Location</u>	<u>Number of Hybrids</u>
Sacramento, CA	2
Brooklyn, NY	6
Staten Island, NY	4
Tampa, FL	4
Washington, DC	2

On Road Testing

Data Summary Update

- Completed over 200,000 Test Miles to Date
- Cumulative Uptime for Hybrid Fleet is 99%
- Fuel Usage Measurements continue to support significant gains in Fuel Economy

FY 2006 Order

Purchased 77 Hybrids Vehicles for 2006

- A total of 75 production E700 Hybrid Trucks to be in service by June 1, 2006
 - US – 70 E700 units (NY, CA, FL, OR, CO, DC)
 - Canada – 5 E700 units (Toronto)
- Two Isuzu Hybrid Trucks for Tokyo to be in service by June 1, 2006

Environmental Commitment

“FedEx Express is proud to be the first company to make a long-term market commitment to develop and utilize hybrid electric delivery trucks. FedEx Express recognizes effective environmental management as a global corporate priority, and is actively involved in environmental innovations and technologies.”

David J. Bronczek

President

FedEx Express

Environmental Commitment



Winner of the
2004 Clean Air
Excellence Award

EPA's Clean Air Excellence Awards Program, established at the recommendation of the Clean Air Act Advisory Committee, annually recognizes and honors outstanding, innovative efforts that help to make progress in achieving cleaner air.

Environmental Commitment

Winner of the 2005 Roy Family Award



The Roy Family Award was established by the Environment and Natural Resources Program at the John F. Kennedy School of Government to recognize public-private partnerships that have attained exemplary achievements in the area of environmental protection and natural resources conservation. The Award is given to specific projects that demonstrate leadership, innovation, strategic planning, community focus, sustainability, and could be replicated in other geographic or programmatic areas.

Environmental Commitment



Winner of the 2005 Blue Sky Award

FedEx Express and Environmental Defense were awarded the 2005 Blue Sky Award for their nearly single-handed placement of commercial hybrid trucks on the map for corporate America. The FedEx and Environmental Defense joint effort led the commercial truck market's interest and efforts into the hybrid market. The Blue Sky Award selection committee concluded that "other fleet operators were influenced by one of the nation's most respected and sophisticated truck operators showing strong interest in hybrids," which in turn motivated those fleets to embrace the technologies themselves. FedEx has helped shape change in commercial trucks.

FedEx Express®

Thank You!



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