



*President's Commission
on
Critical Infrastructure Protection*



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Commissioner**

*Physical
Distribution
Sector*

Transportation Components

Highways

- Tunnels
- Bridges
- Trucked HAZMAT

Pipelines

- Control Systems
- Pumping Stations
- Above Ground Pipes
- River Crossings
- Control Centers
- Storage Facilities

Rail

- Train Control Systems
- Rails & Switches
- Bridges & Trestles
- Rail HAZMAT
- Intercity Passenger
- Control Centers

Physical Based

Mass Transit

- Tunnels
- Stations
- Trains & Buses
- Train Control Systems
- Control Centers

Civil Aviation

- Planes
- Airports
- National Airspace System (NAS) Components

Ports & Waterways

- Locks & Dams
- Cargo Vessels
- Passenger Vessels
- Terminals
- Bridges
- Offshore Terminals
- VTS

Physical Distribution Sector

Transportation Components

Highways

- GPS
- Intelligent Transportation Systems
- Package Tracking
- On Road Tracking & Reporting
- Communications
- Electronic Commerce

Pipelines

- Pipeline Control Systems (SCADA)

Rail

- GPS
- Train Control Systems
- UMLER Files
- Car Repair Billings
- HAZMAT
- Communications
- Electronic Commerce

Information Based

Mass Transit

- GPS (Bus Tracking)
- Train Control System
- Communications
- SmartCard

Civil Aviation

- GPS
- National Airspace System
- Maintenance Records
- Airline Reservation System
- Electronic Commerce

Ports & Waterways

- GPS
- Vessel Traffic Systems
- Electronic Commerce

Physical Distribution Sector



Outreach Physical Distribution Sector

Federal Government

- Department of Transportation
- Corps of Engineers
- Department of Defense

Miscellaneous

- Public Hearings
- Council on Competitiveness
- Prosperity Game
- Booz Allen Game
- NSTAC

Associations

- Association of American Railroads
- American Association of Port Authorities
- American Waterway Operators
- American Trucking Association
- National Industrial Transportation League
- American Petroleum Institute
- Interstate Natural Gas Association of America
- American Gas Association
- American Association of State Highway Transportation Officials
- Air Transport Association
- American Association of Airport Executives



Physical Distribution Overall Conclusions & Findings

The sector in general

- ◆ System is vulnerable but robust
- ◆ Little industry or government awareness and appreciation of information-based threats
- ◆ Information sharing and threat dissemination within industries and between industry and government is inadequate to address the emerging threats
- ◆ Critical key nodes do exist
- ◆ Identification of critical assets must be considered





Physical Distribution Conclusions and Findings

The sector in general

- ◆ Vulnerability and risk assessments of critical systems must be conducted
- ◆ Contingency and response plans for most of the sector are essentially nonexistent
- ◆ Standards and guidelines do not exist
- ◆ Lack of data on sector assurance issues
- ◆ Roles, missions and responsibilities are not clearly defined





Physical Distribution Conclusions and Findings

The National Airspace System

- ◆ Low threat today
- ◆ Modernized system (V 2.0) is vulnerable
 - Open system architecture
 - Internet connectivity
 - Shared operational and administrative systems
 - Lack of backup systems





Physical Distribution Conclusions and Findings

Global positioning system

- ◆ Increasingly critical to all transportation systems, particularly the NAS
- ◆ Sole radionavigation source by 2010
- ◆ Vulnerabilities not well recognized by civil users





Physical Distribution Draft Recommendations

The sector in general

- ◆ Improve and test dissemination and information sharing process
- ◆ Develop joint industry - government contingency plans
- ◆ Increase R&D
- ◆ Develop ITS security standards
- ◆ Mandate DOT roles, missions and responsibilities in assurance
- ◆ DOT and DOE must clarify respective roles in pipelines
- ◆ Fully assess risks to GPS





Physical Distribution Preliminary Draft Recommendations

The National Airspace System

- ◆ Minimize connectivity between operational and administrative systems
- ◆ Minimize connectivity to the Internet
- ◆ Backup communication links, landing guidance systems and WAAS uplinks
- ◆ Use dedicated circuits





Physical Distribution Preliminary Draft Recommendations

The National Airspace System

- ◆ Implement security standards
- ◆ Fund security at 2-4% of subsystem cost
- ◆ Develop countermeasures
- ◆ Establish red team & emergency response team
- ◆ Provide surveillance backup





Summary

- ◆ Share information
- ◆ Plan for contingencies
- ◆ Increase R&D
- ◆ Define roles, missions, and responsibilities
- ◆ Secure the NAS
- ◆ Conduct a GPS risk assessment

