

# Airline Industry Overview of Recent Trends



Prof. R John Hansman  
With help from the other Faculty  
and Students in the Global  
Airline Industry Study

[rjhans@mit.edu](mailto:rjhans@mit.edu)

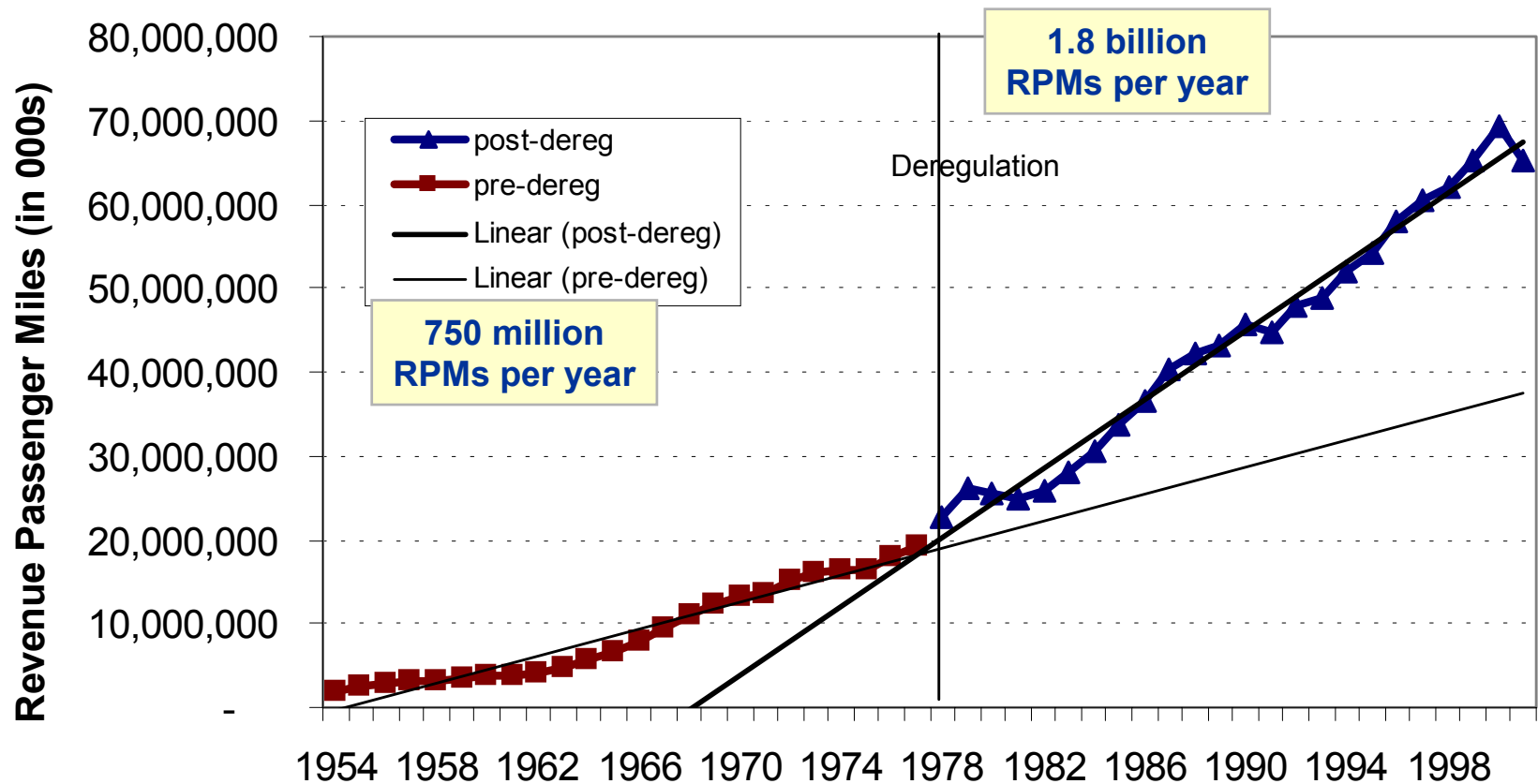
# Caution

- The News is Bad
- Small Children and Investors may wish to leave the room

# Long Term Macro Trends

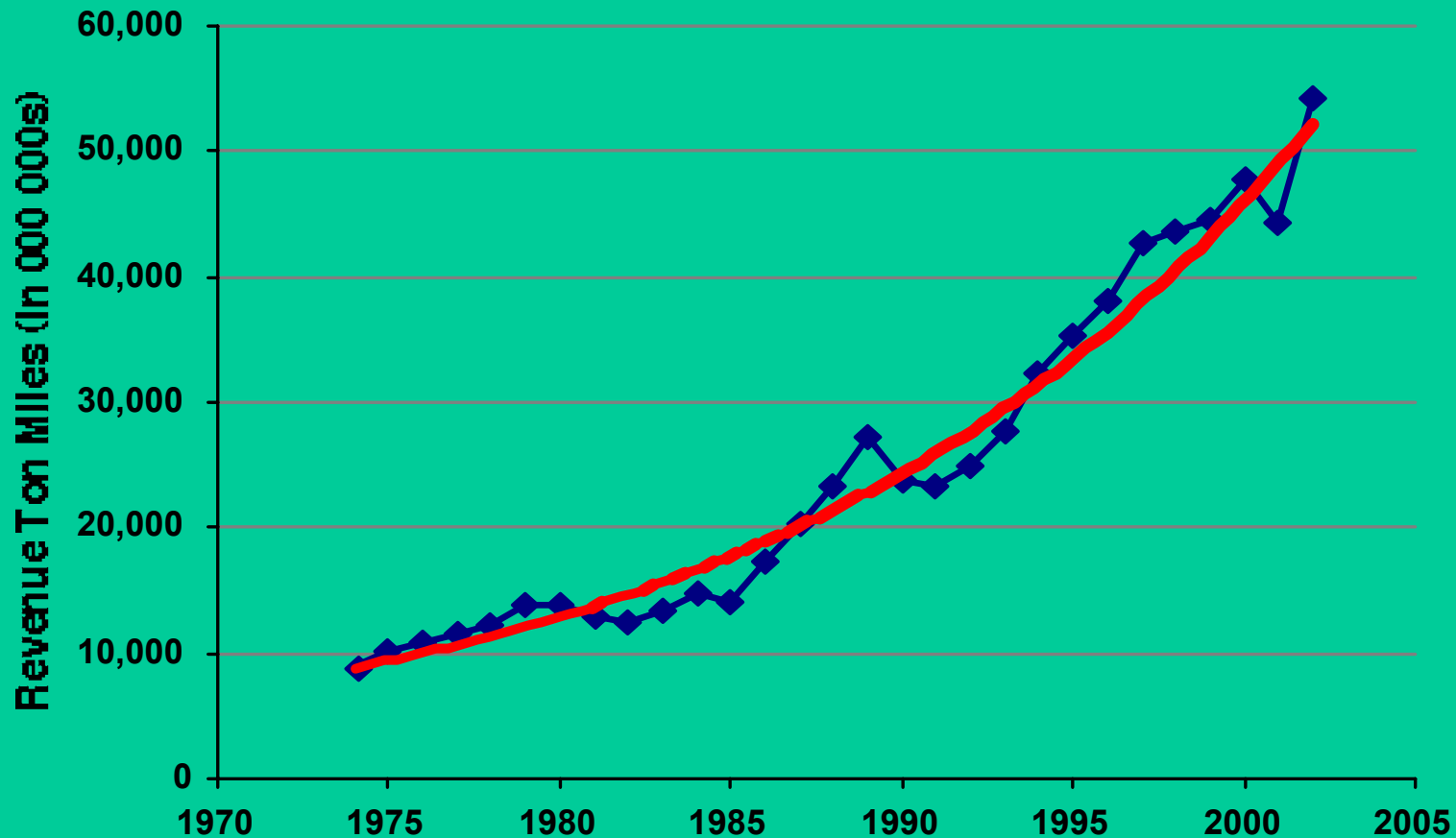
- Since Deregulation

# Passenger Growth Trends



Source: BEA and BTS OAI data

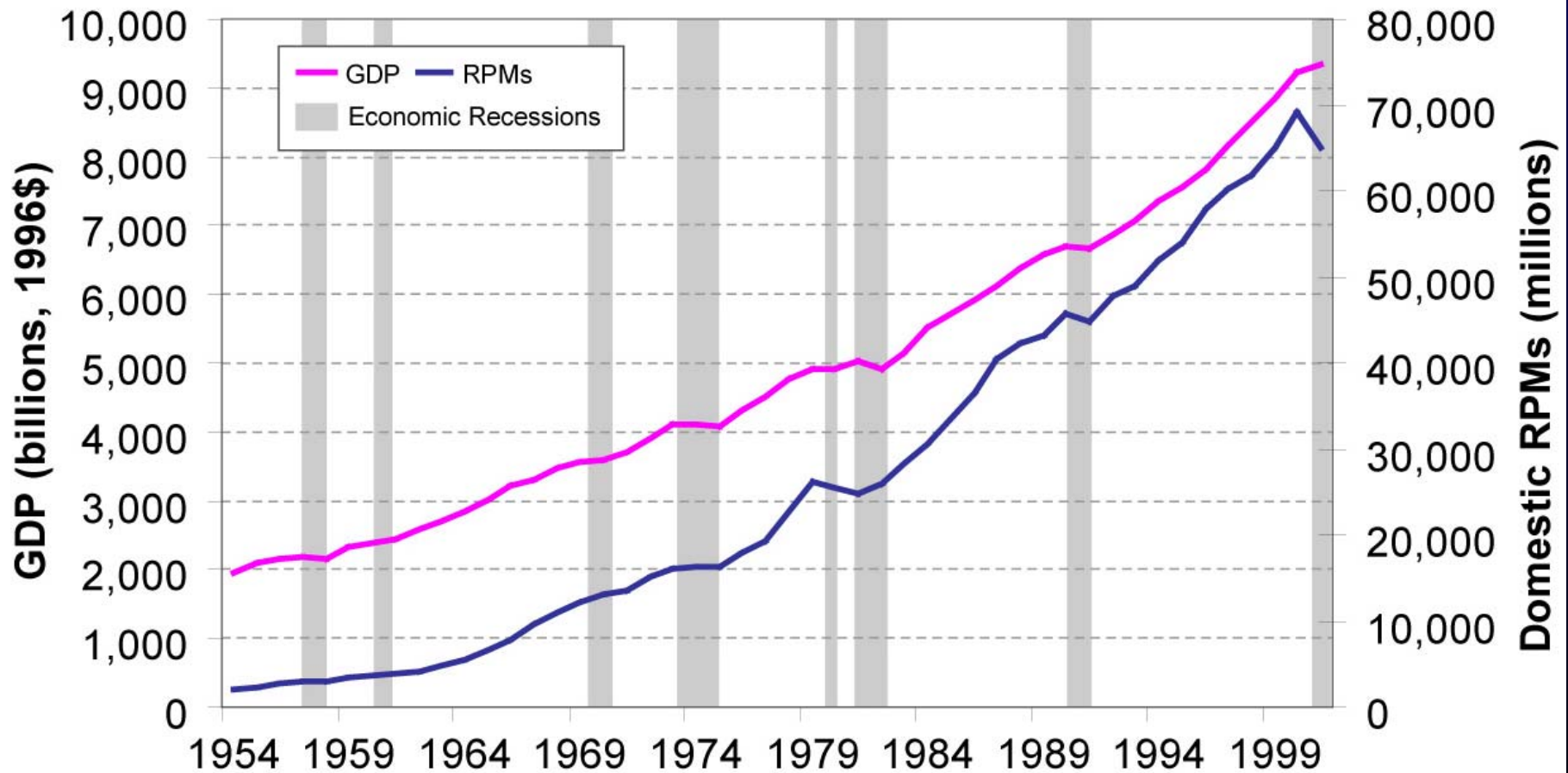
# Air Cargo Growth Trends



\* US carriers, source: BTS

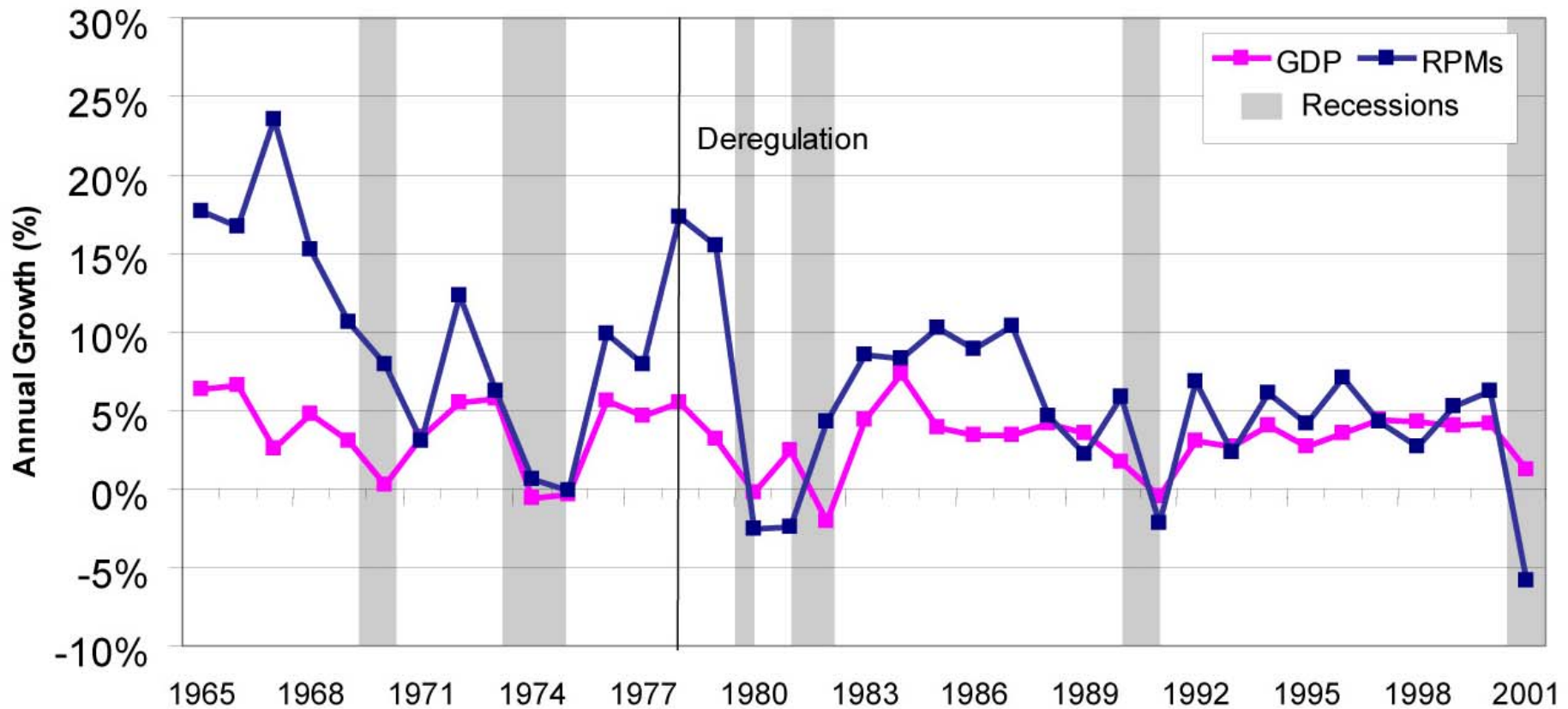
# Historical Demand Trends with Economy

## GDP vs. RPMs: 1954-2001



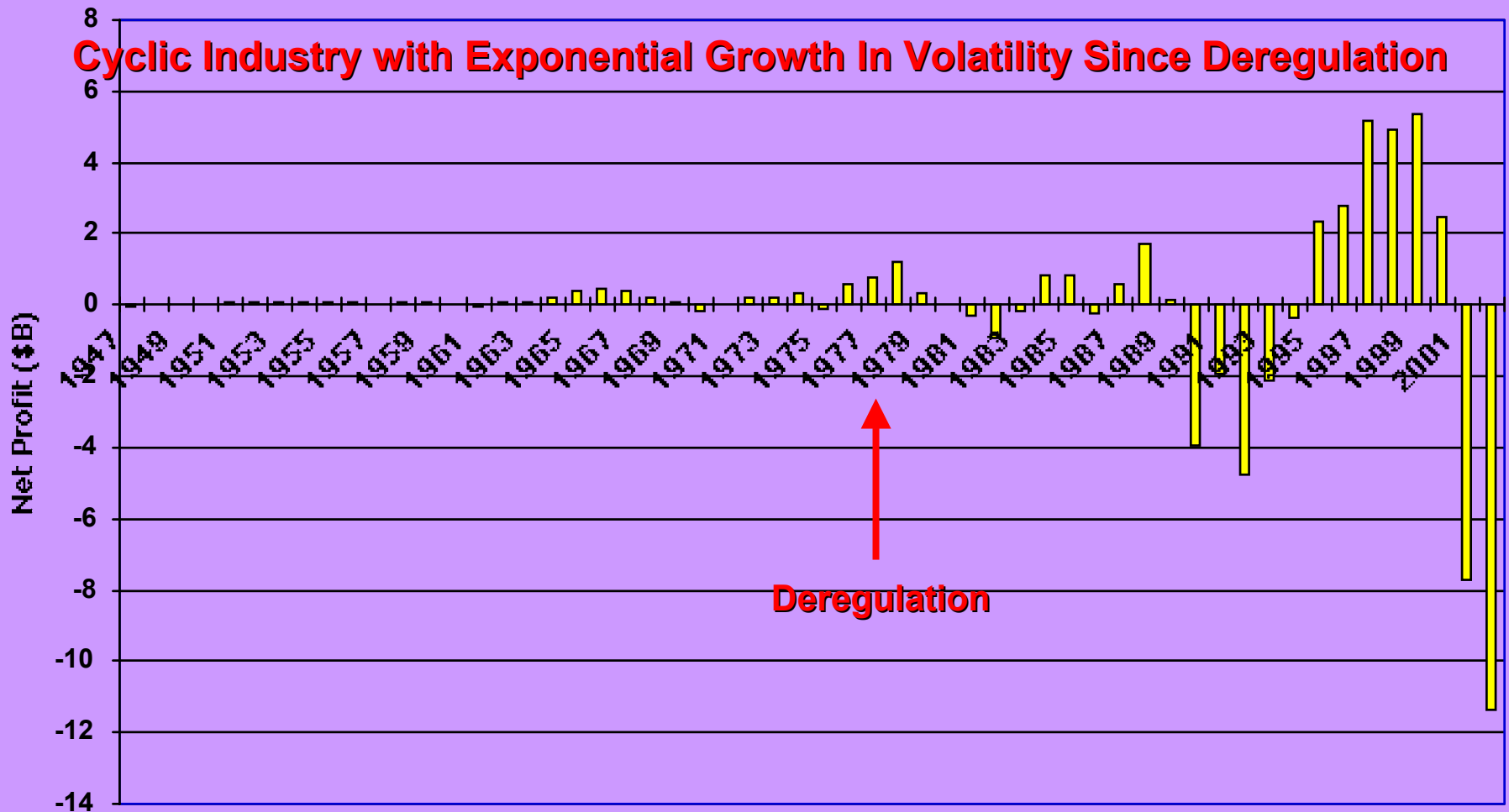
Source: US BEA and BTS data; Recession data from National Bureau of Economic Research  
Original plot by Charlie Keegan, FAA

# Correlation Between US GDP and RPM



Source: US BEA and BTS data; Recession data from National Bureau of Economic Research

# US Airline Net Profit 1947-2001 (Annual)

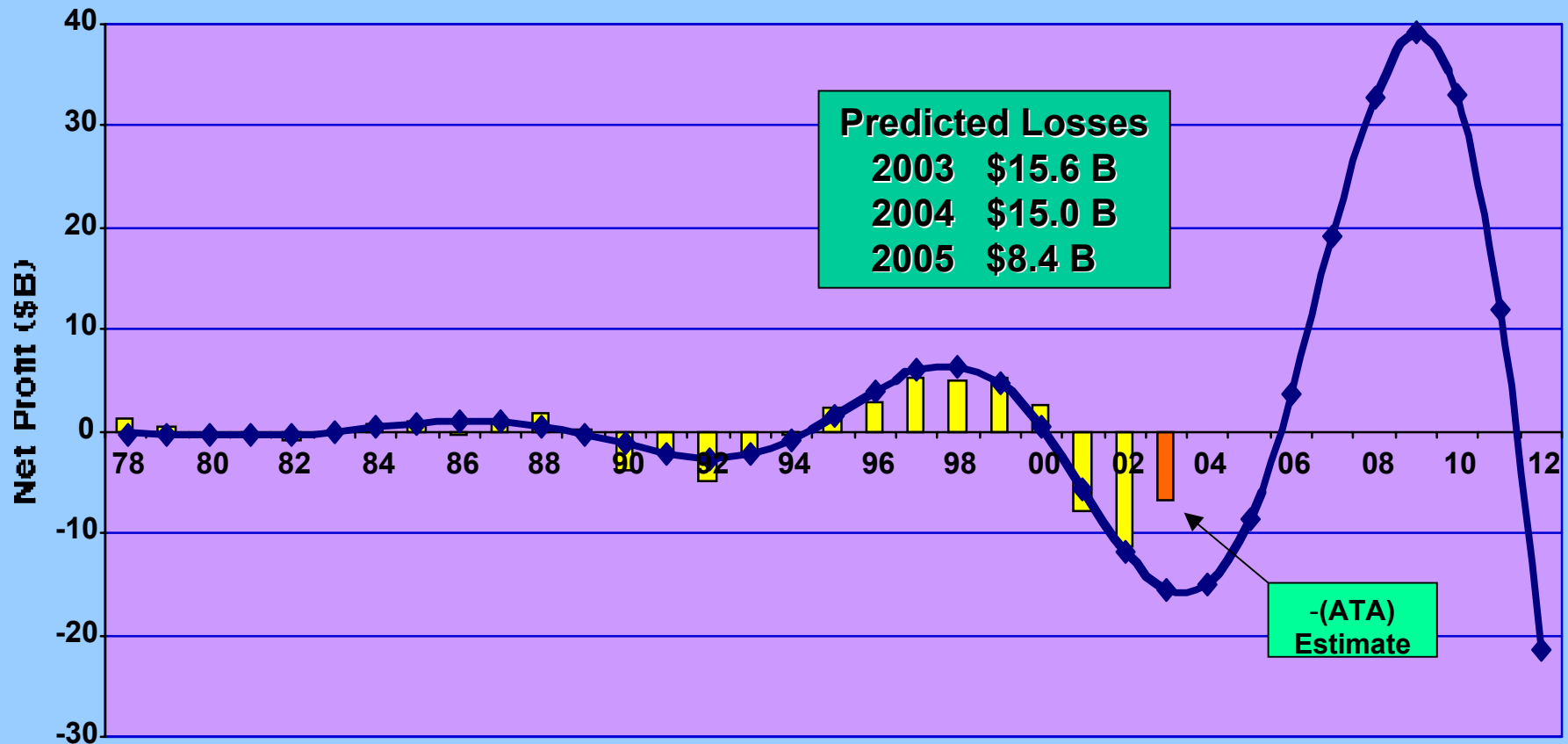




# US Airlines Net Profit Model

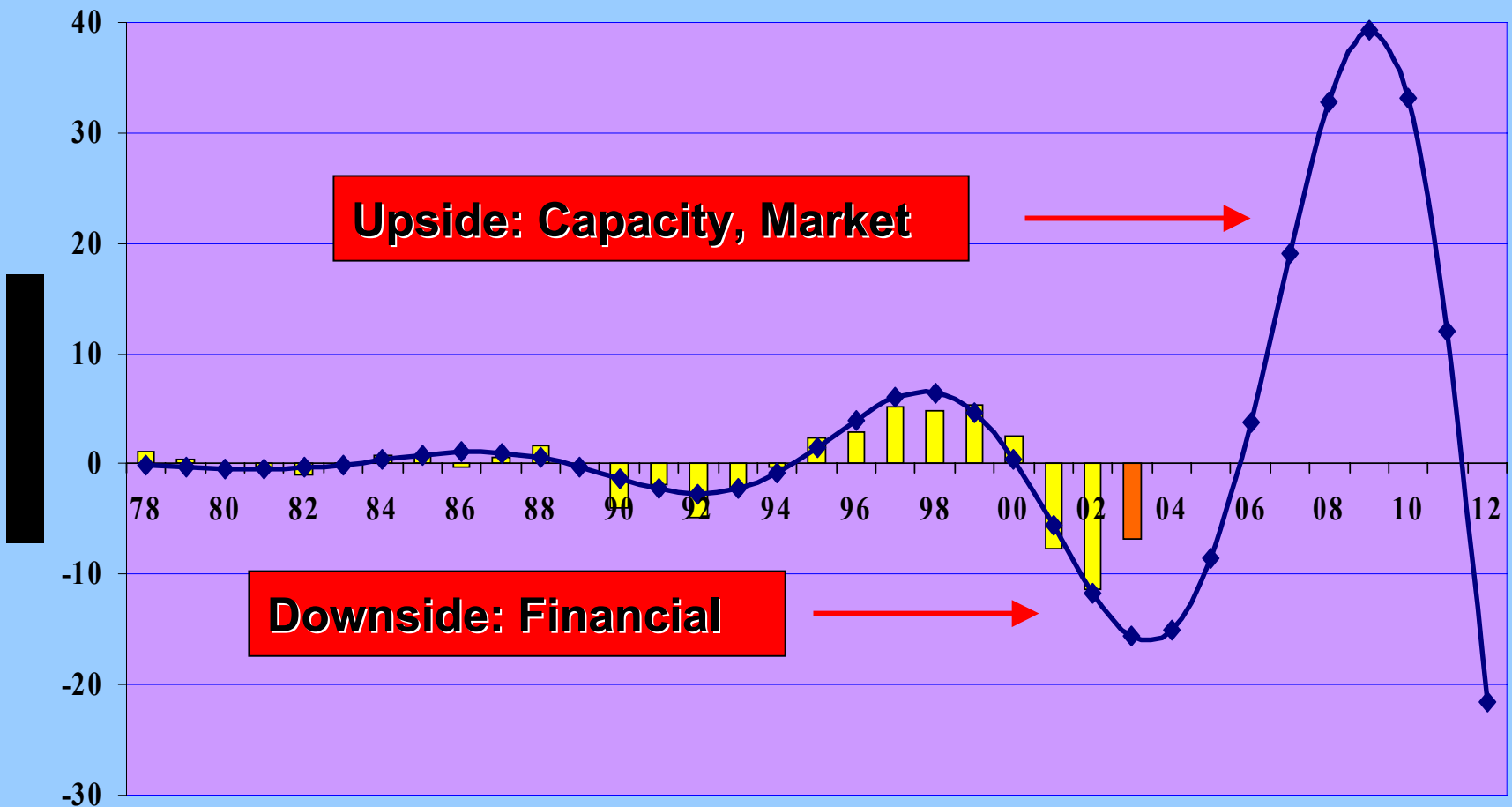
Best Fit of Undamped Oscillation

Cycle Period = 11.3 yr      eFolding Time = 6.3 yr



# Growth Limits

## Constraints vs Damping

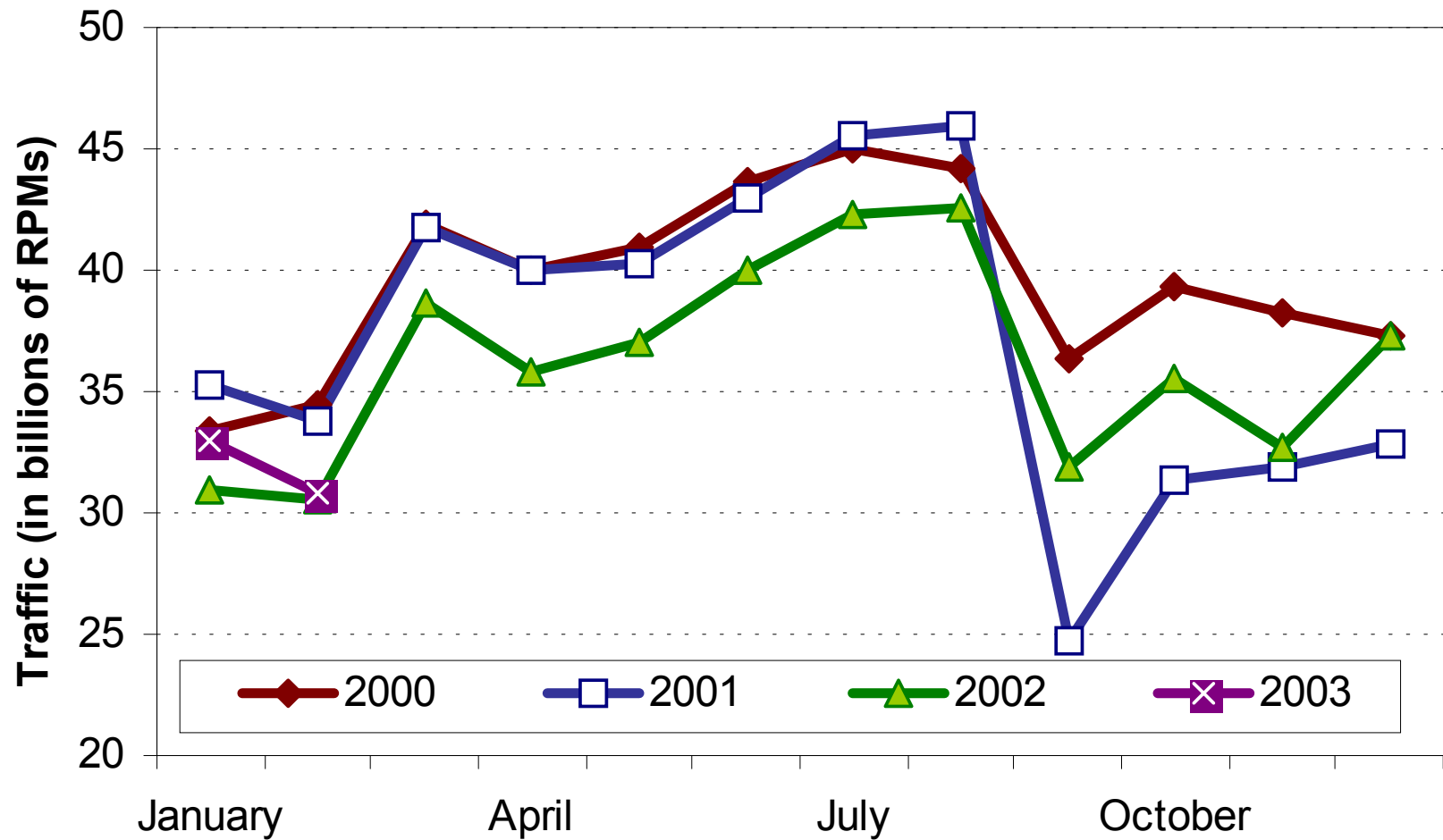


# Medium Term Trends

- Trends since Sept 11
- Economic Down Cycle
- Capacity Reductions
  - Rolling Hubs
  - Regional Jet Usage
- Web Effects
- Low Cost Carrier Envy
- Bankruptcies
- Labor Reductions and Givebacks

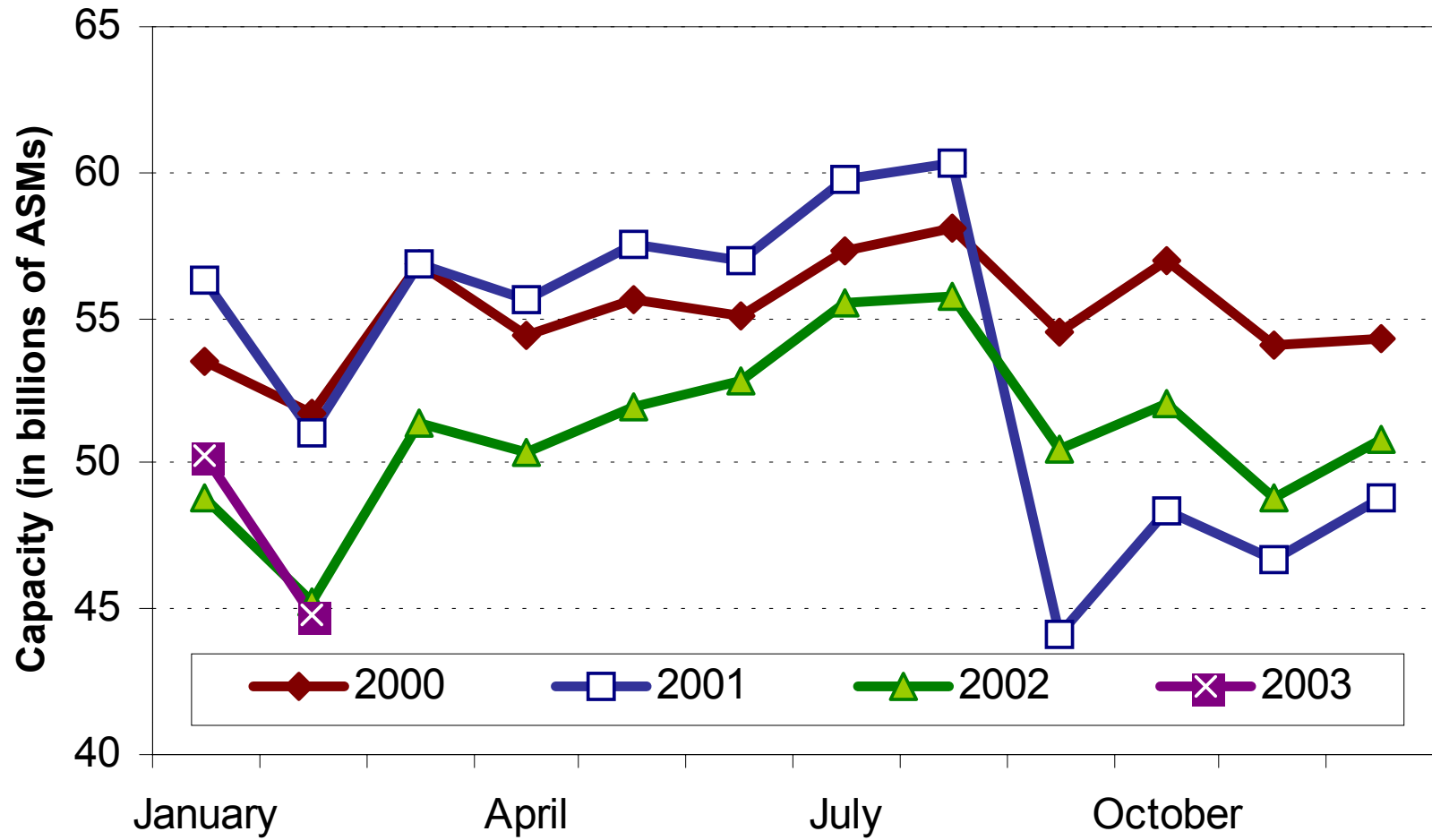
# US Airline Traffic 2000-2003

## Domestic RPMs

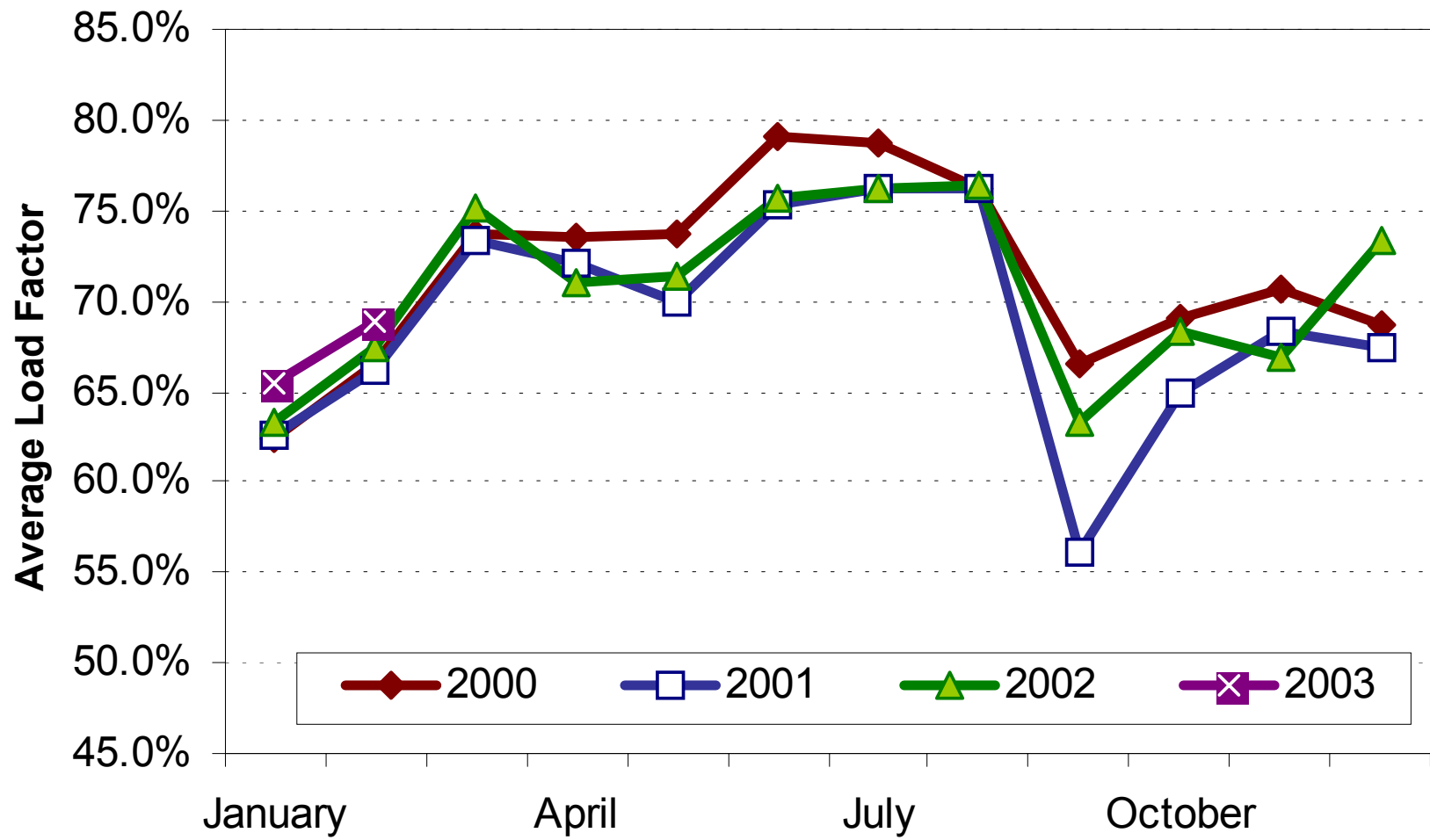


# US Airline Capacity 2000-2003

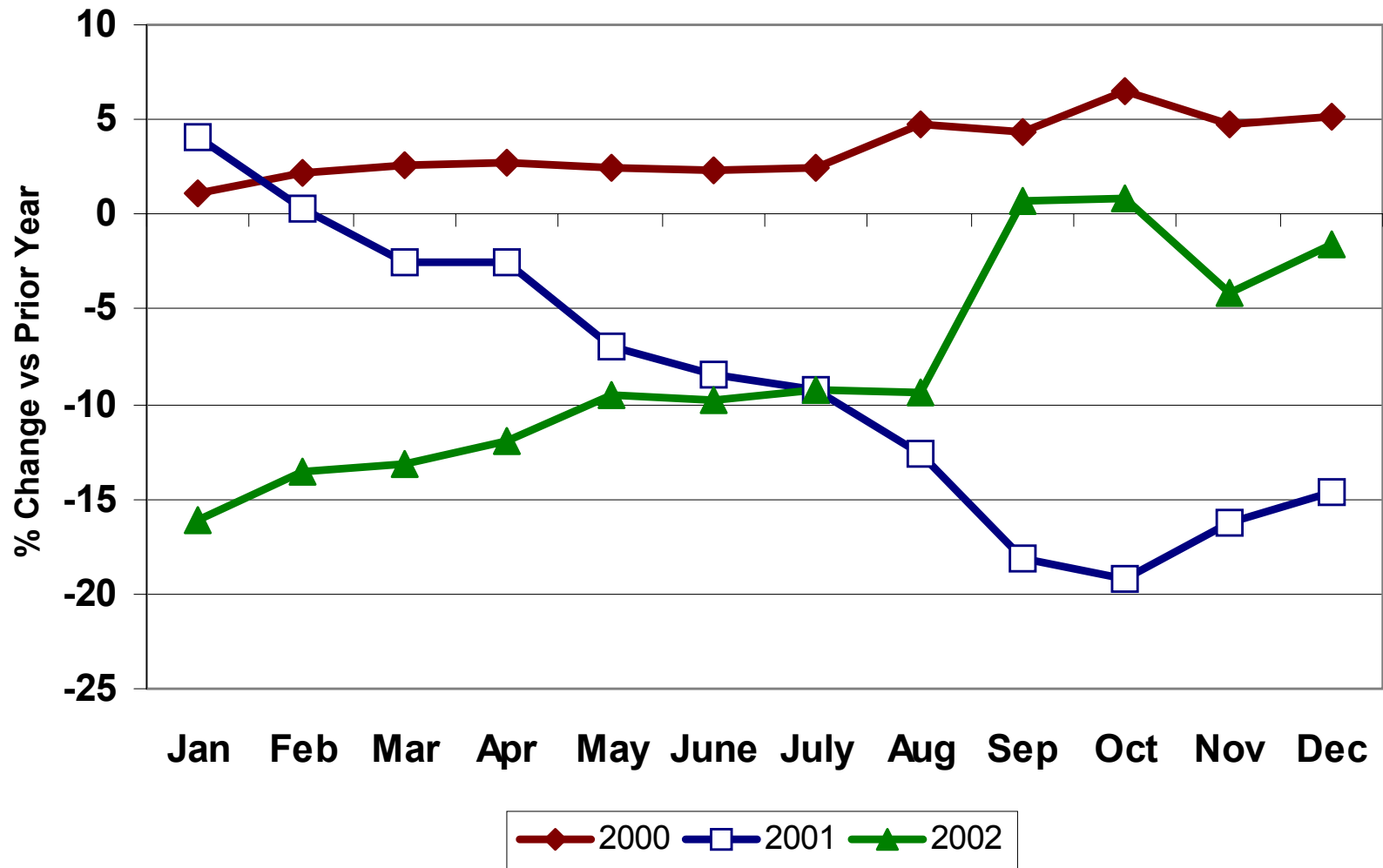
## Domestic ASMs



# US Airline Load Factors 2000-2003

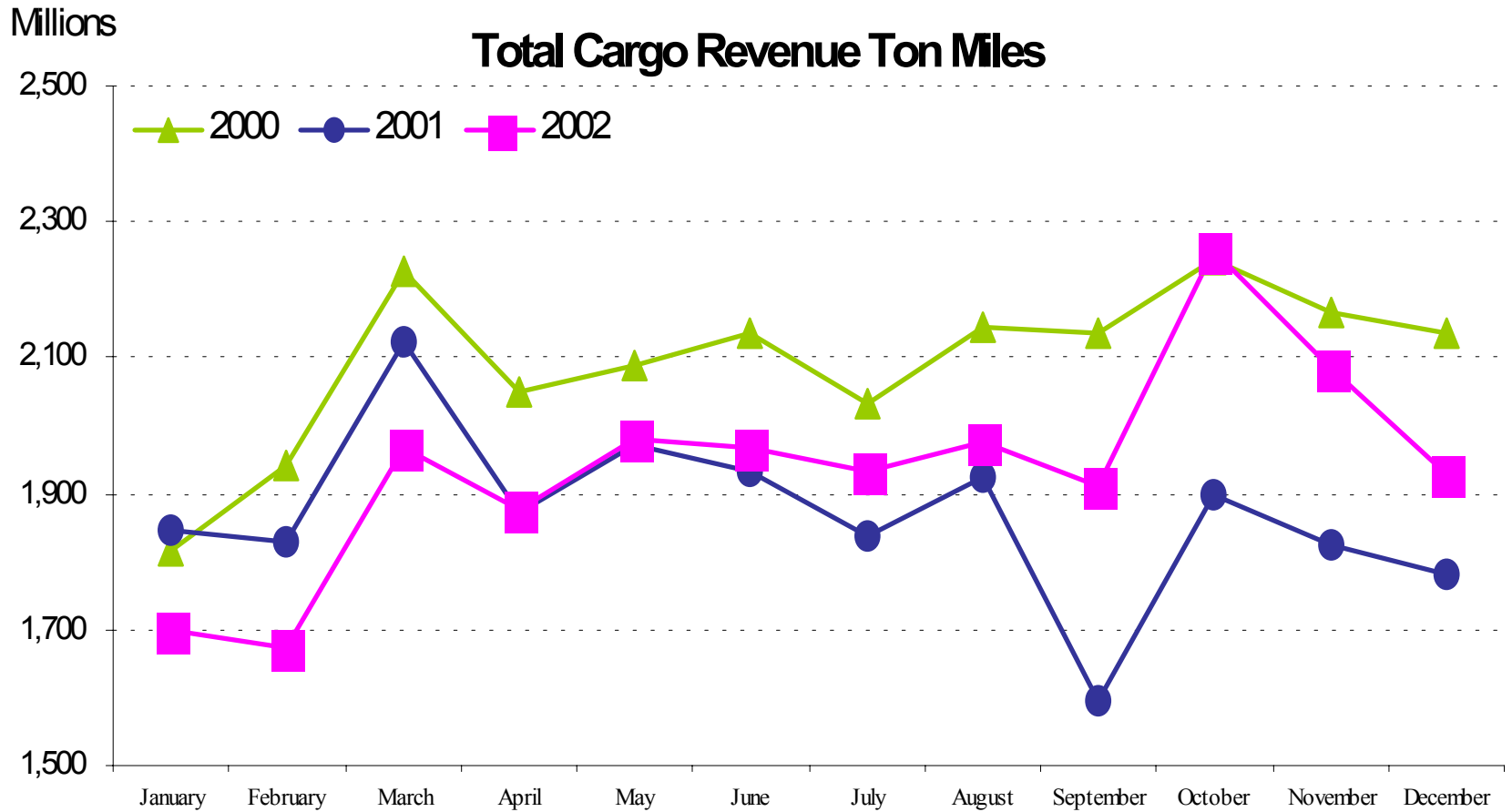


# Annual Change in Average Domestic Fare



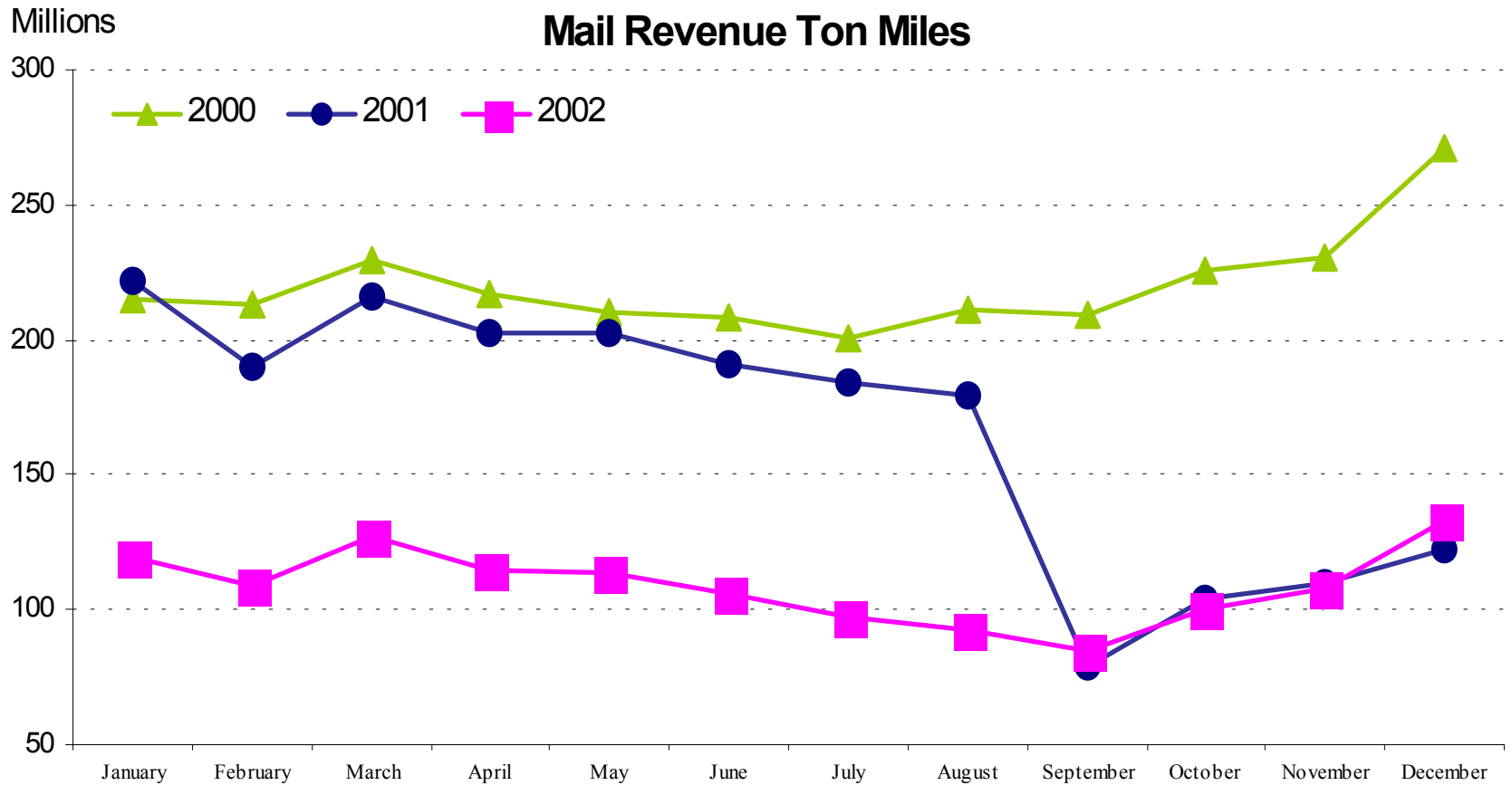
Source: ATA Monthly Airfare Report; 1000mi domestic trip (all classes); excludes WN

# US Air Cargo Revenue Ton Miles

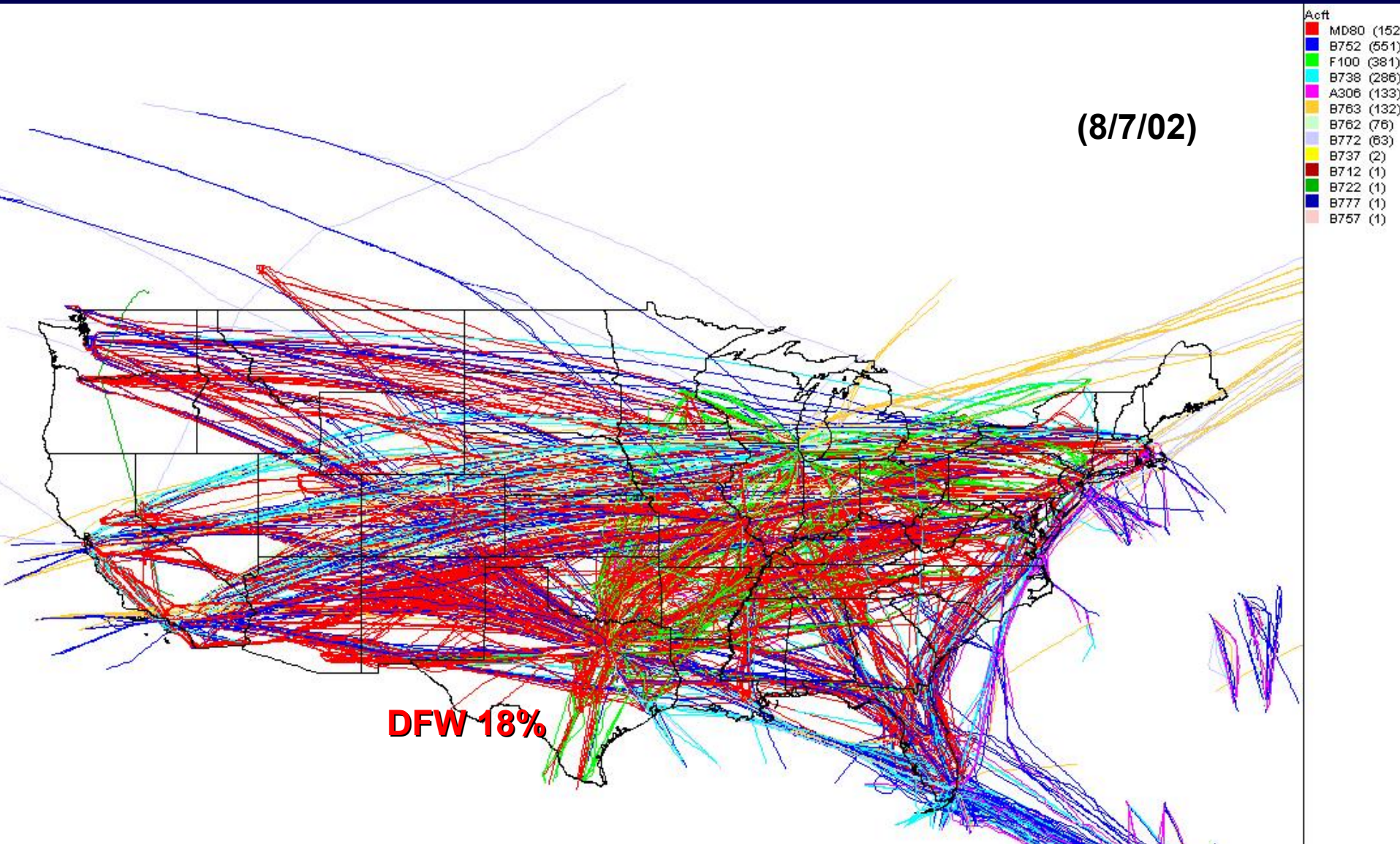




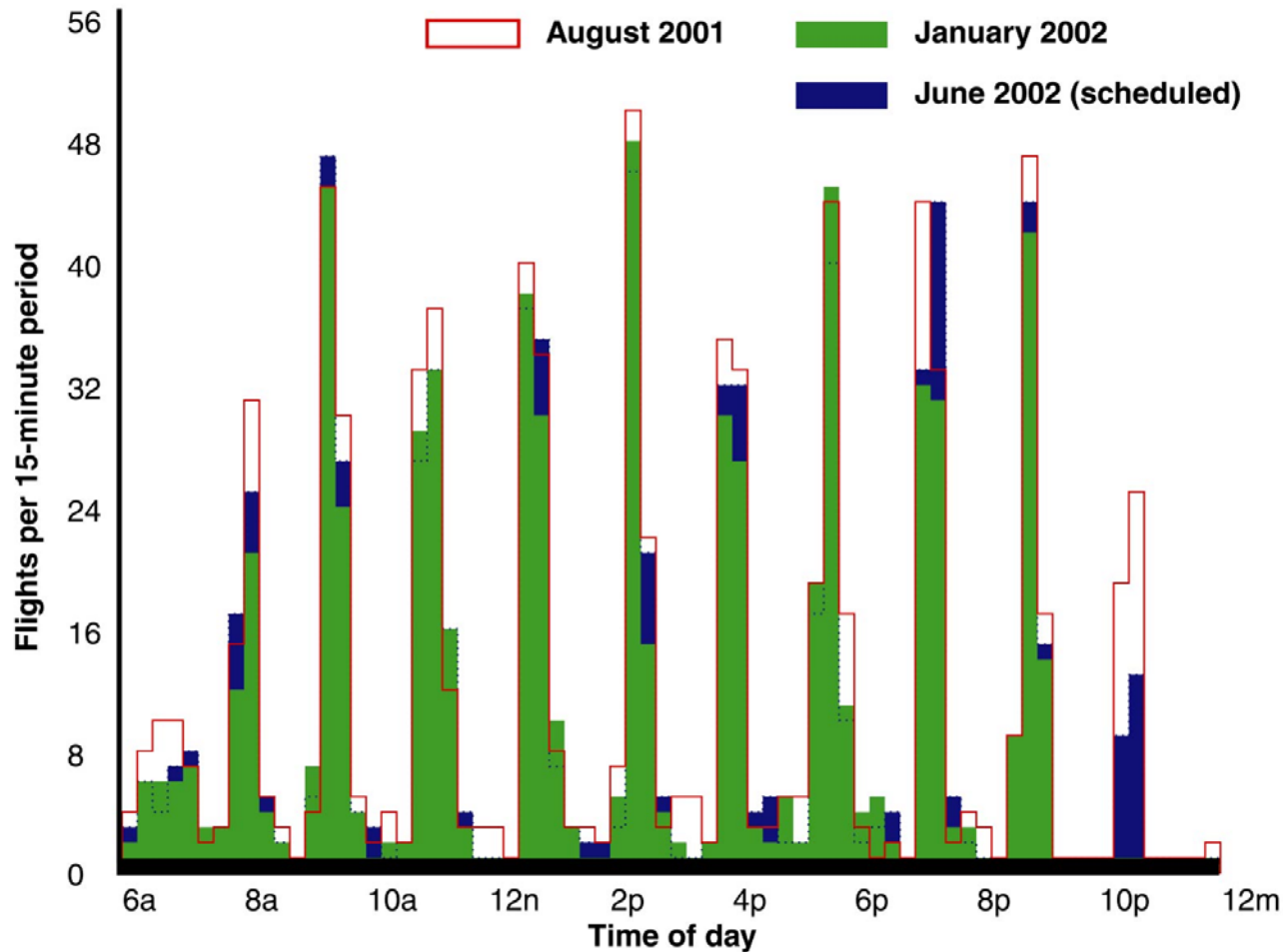
# Mail Air Cargo Revenue Ton Miles



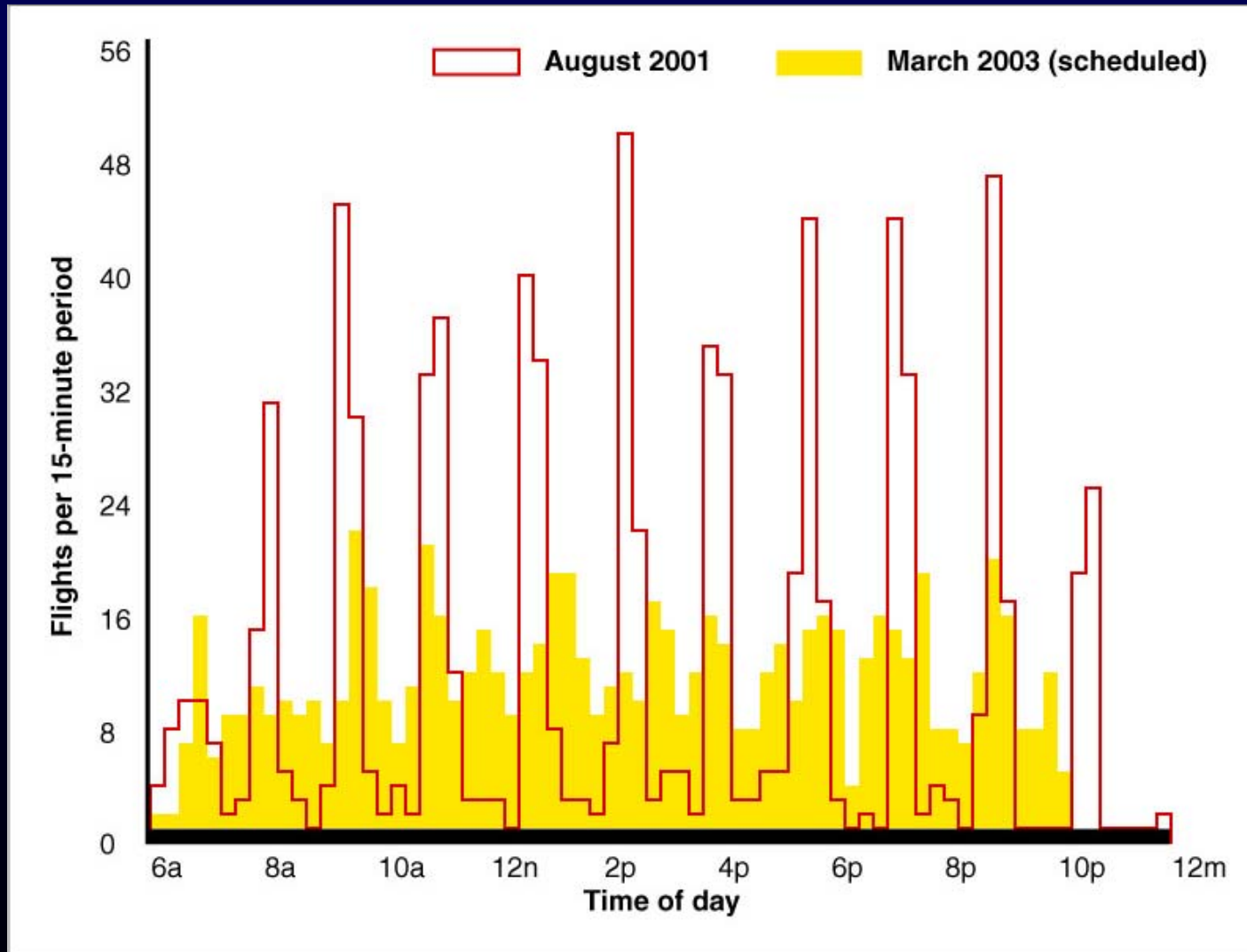
# Schedule Changes American Example



# AA Schedule Changes: DFW

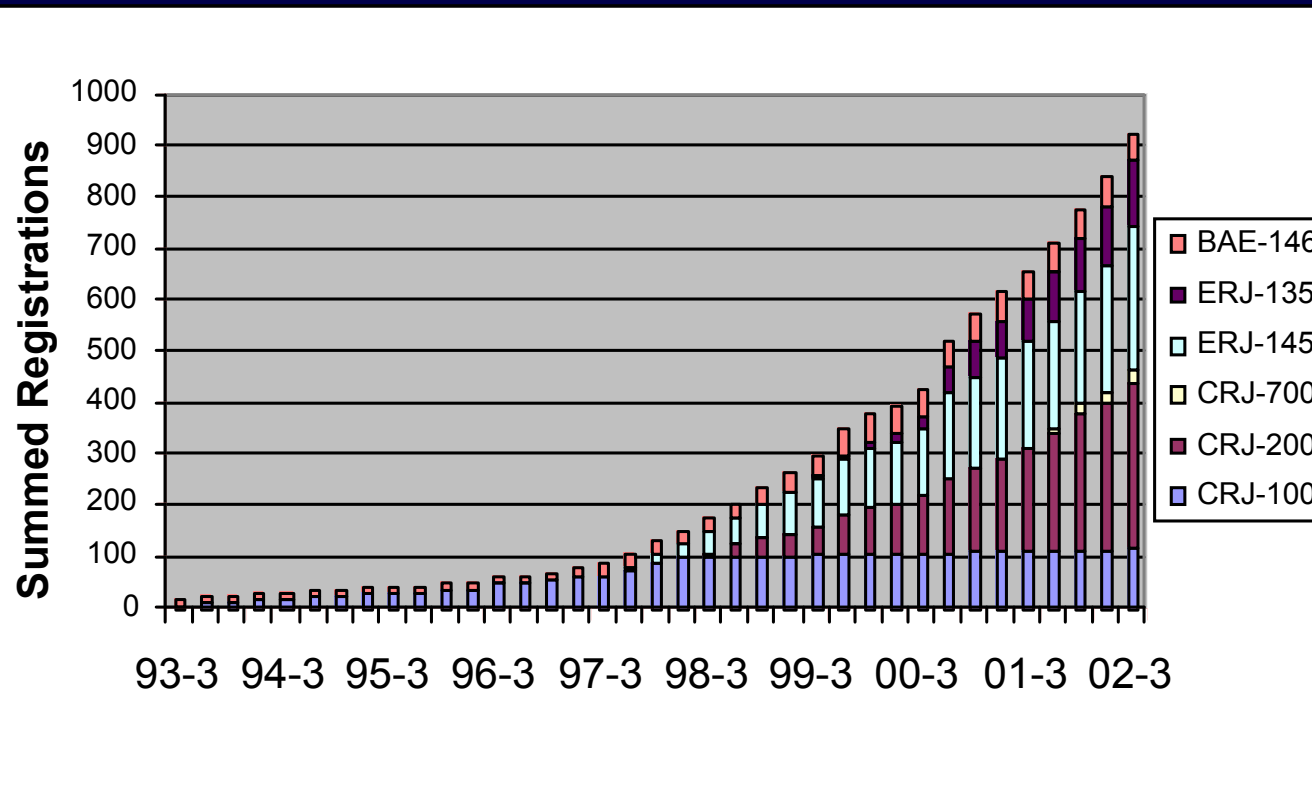


# AA DFW Shift to Rolling Banks



Reduced Market Penalty for Time: Web Listings by Price, Security, Robustness

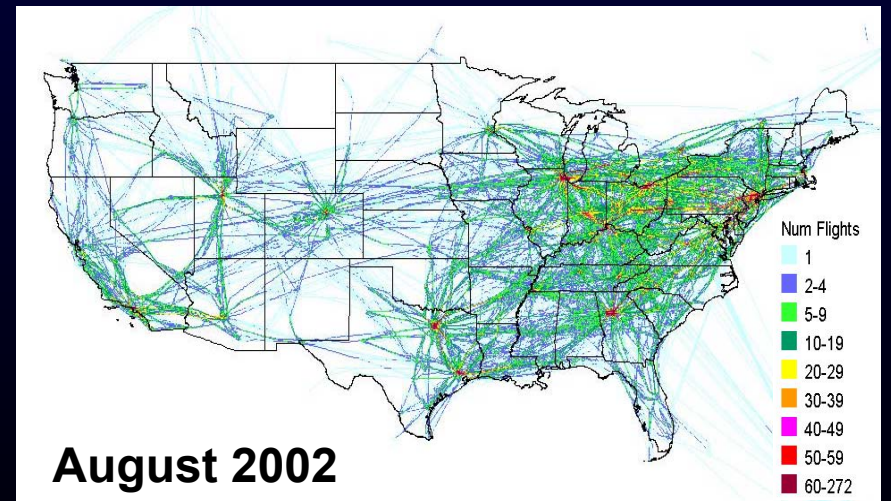
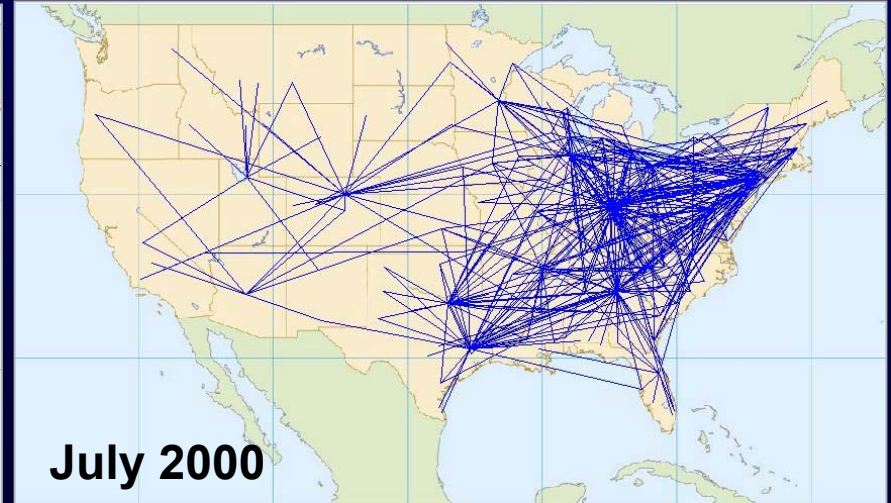
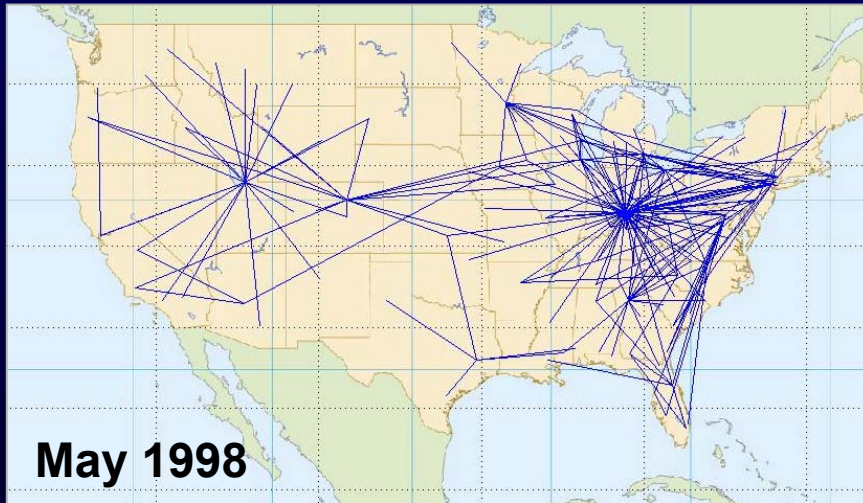
# Regional Jet Growth



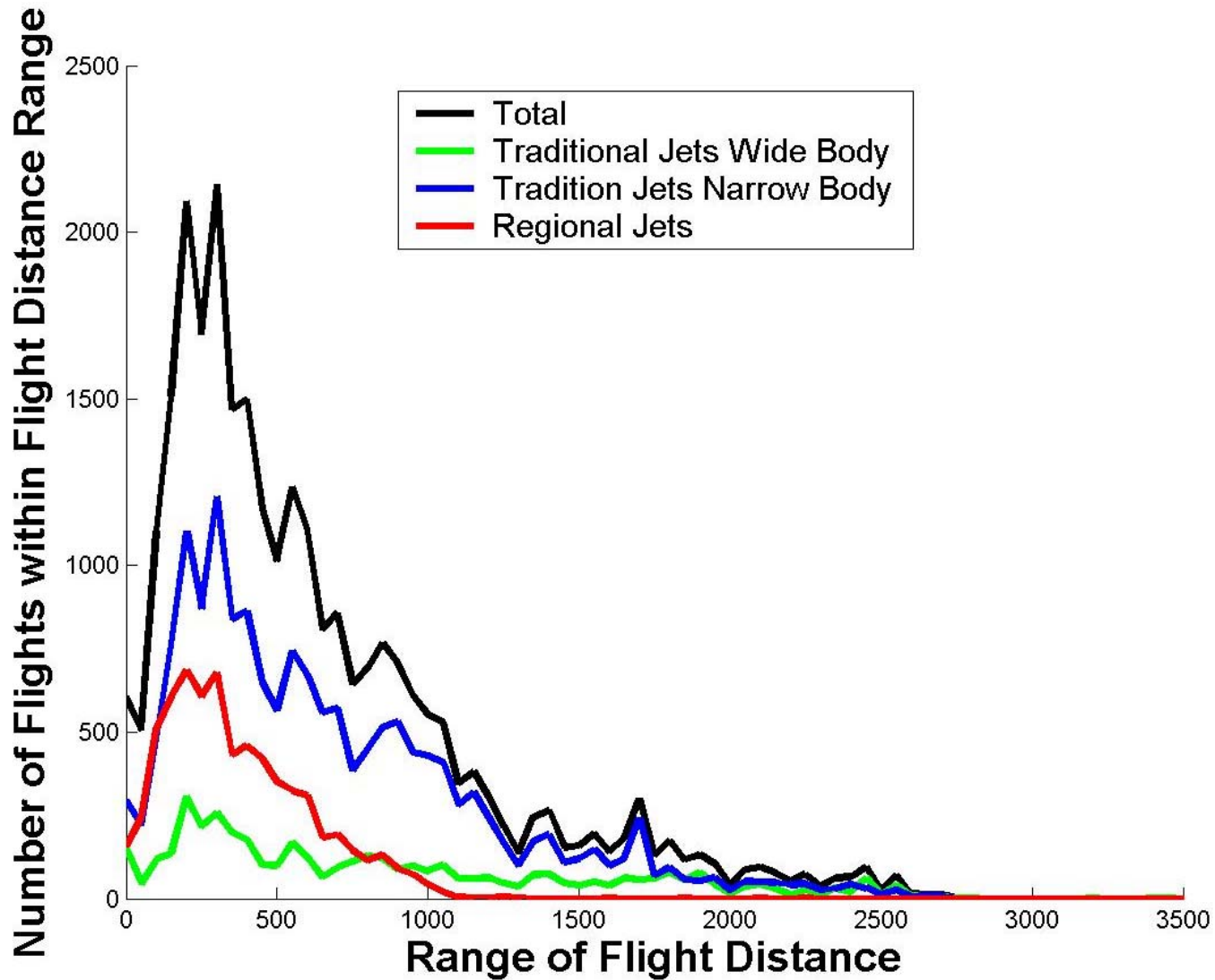
Based FAA registration data



# Regional Jet Deployments

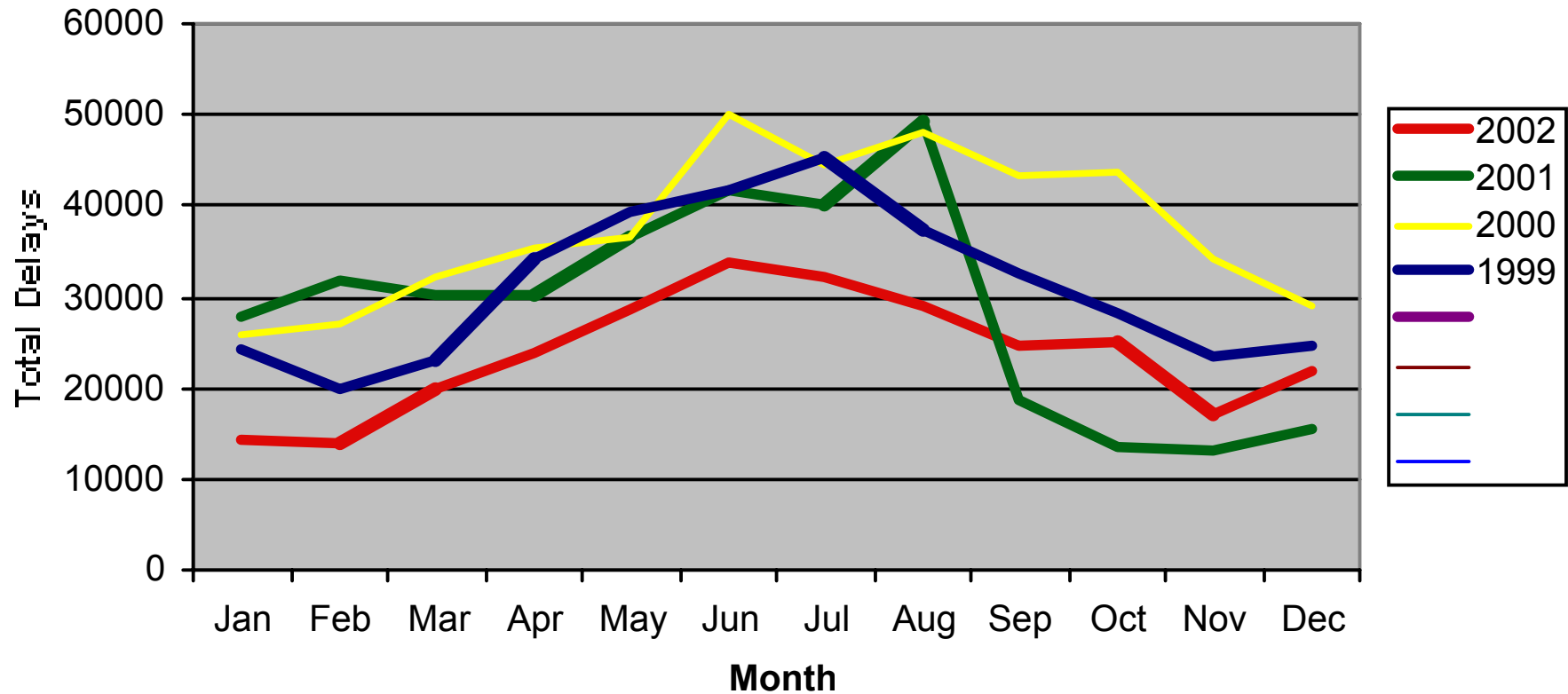


# Stage Length Histogram



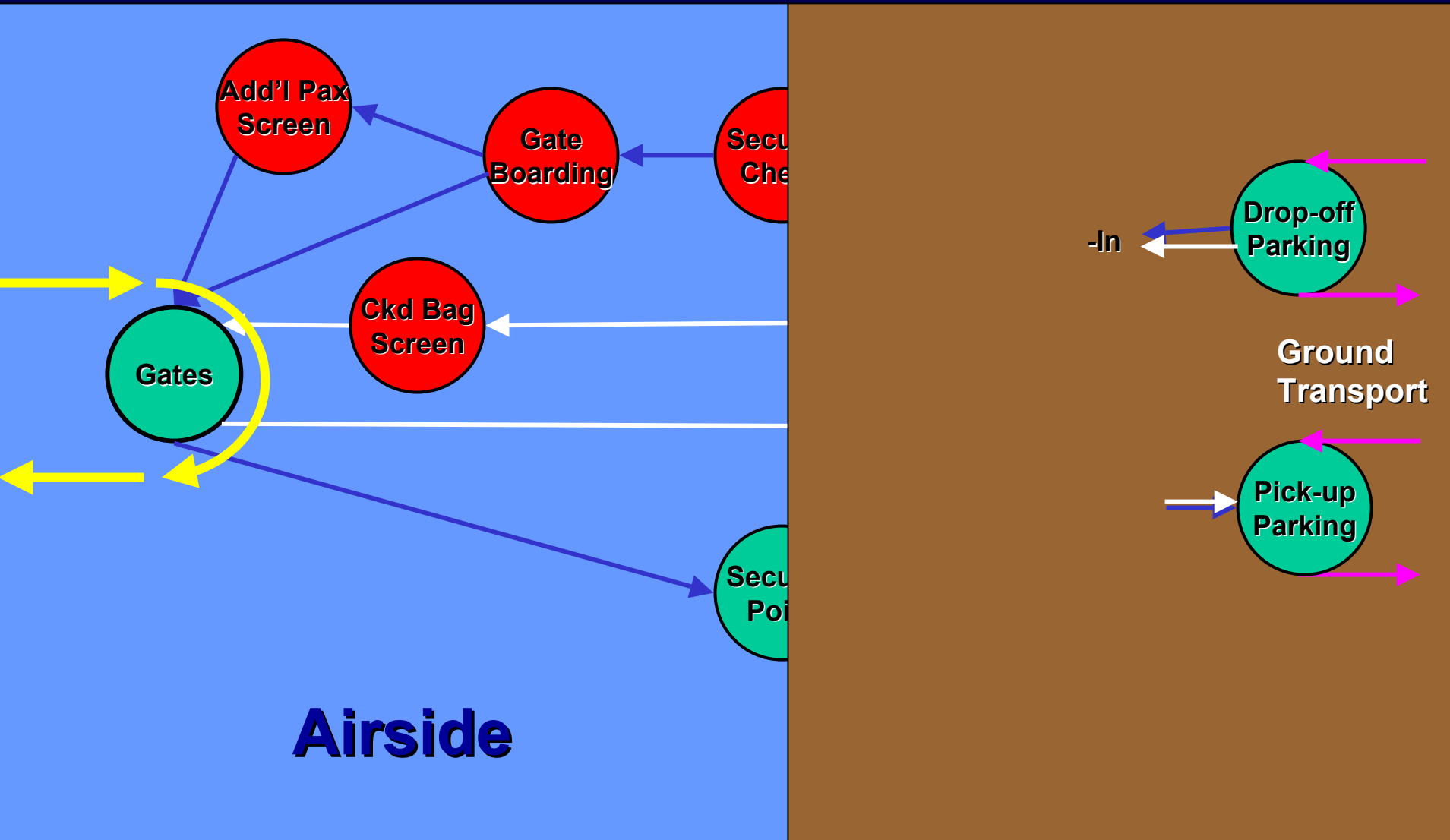
# Flight Delays Temporarily Improved

OPSNET National Delay





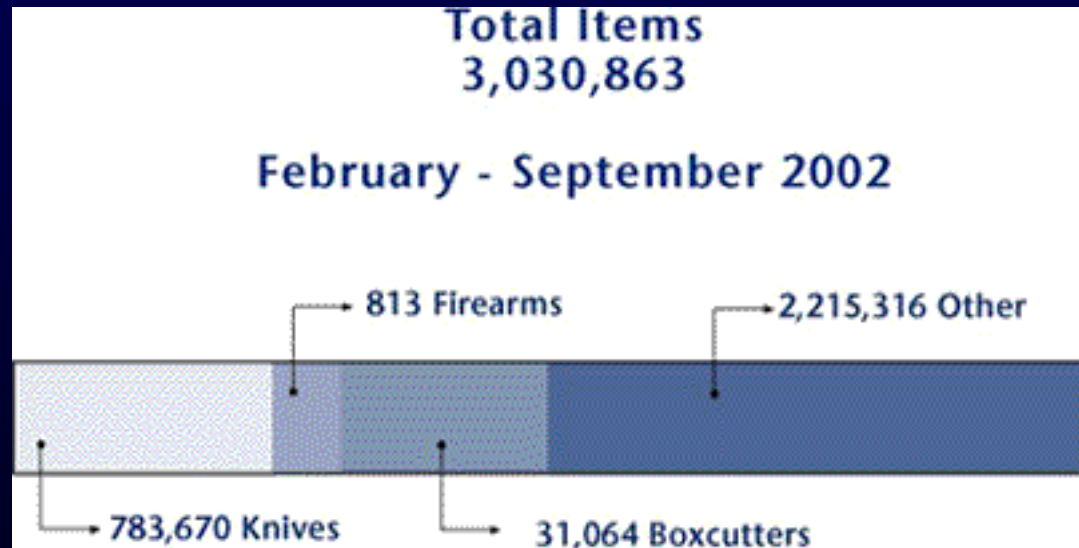
# Passenger Hassle Increased Delays Variable (Key Terminal System Flows)



# **Items Confiscated at Passenger Checkpoints 8 Months**

**Source:TSA**

# Items Confiscated at Passenger Checkpoints 8 Months



Since February 2002, TSA screeners confiscated 4.8 Million items 1.4 million knives, 2.4 million sharp objects, 1,101 guns, 15,666 clubs, more than 125,000 incendiary items and nearly 40,000 box cutters.

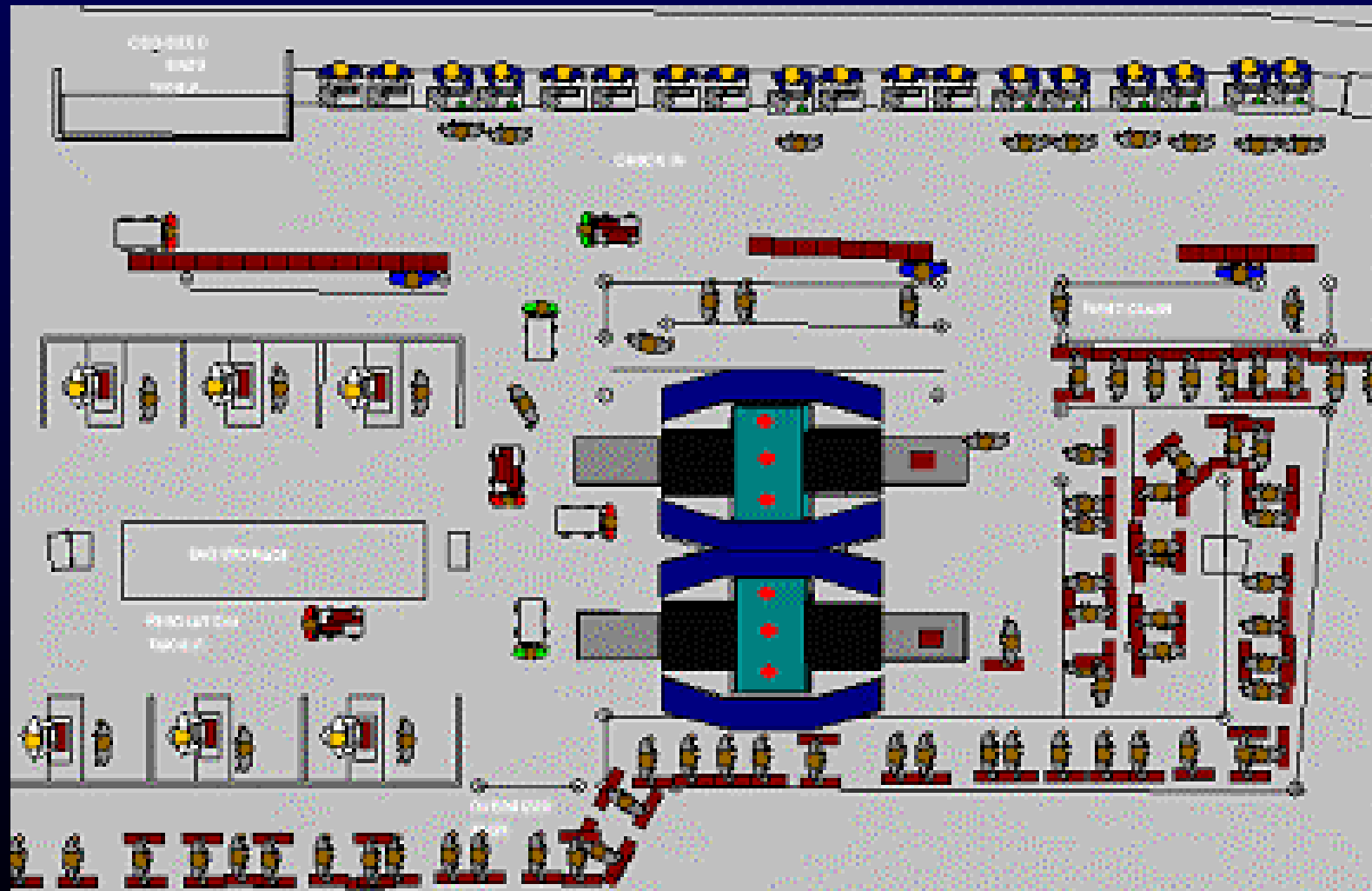
**Sources: TSA, CNN**

# CTX 9000 Explosive Detector



500 Bags/hr

# Example EDS Before Ticketing Check In



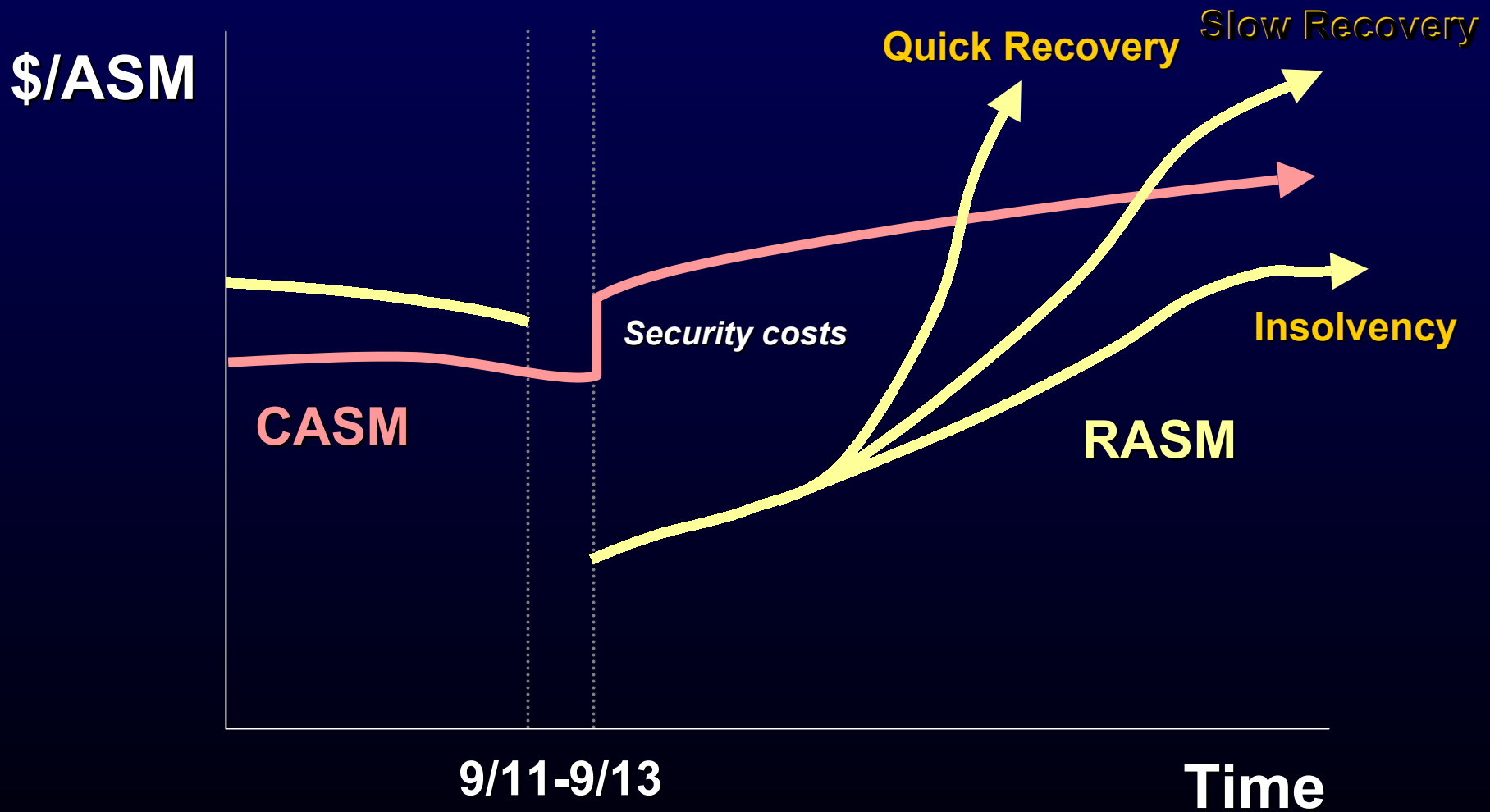
# Other Threats

## Portable SAMs

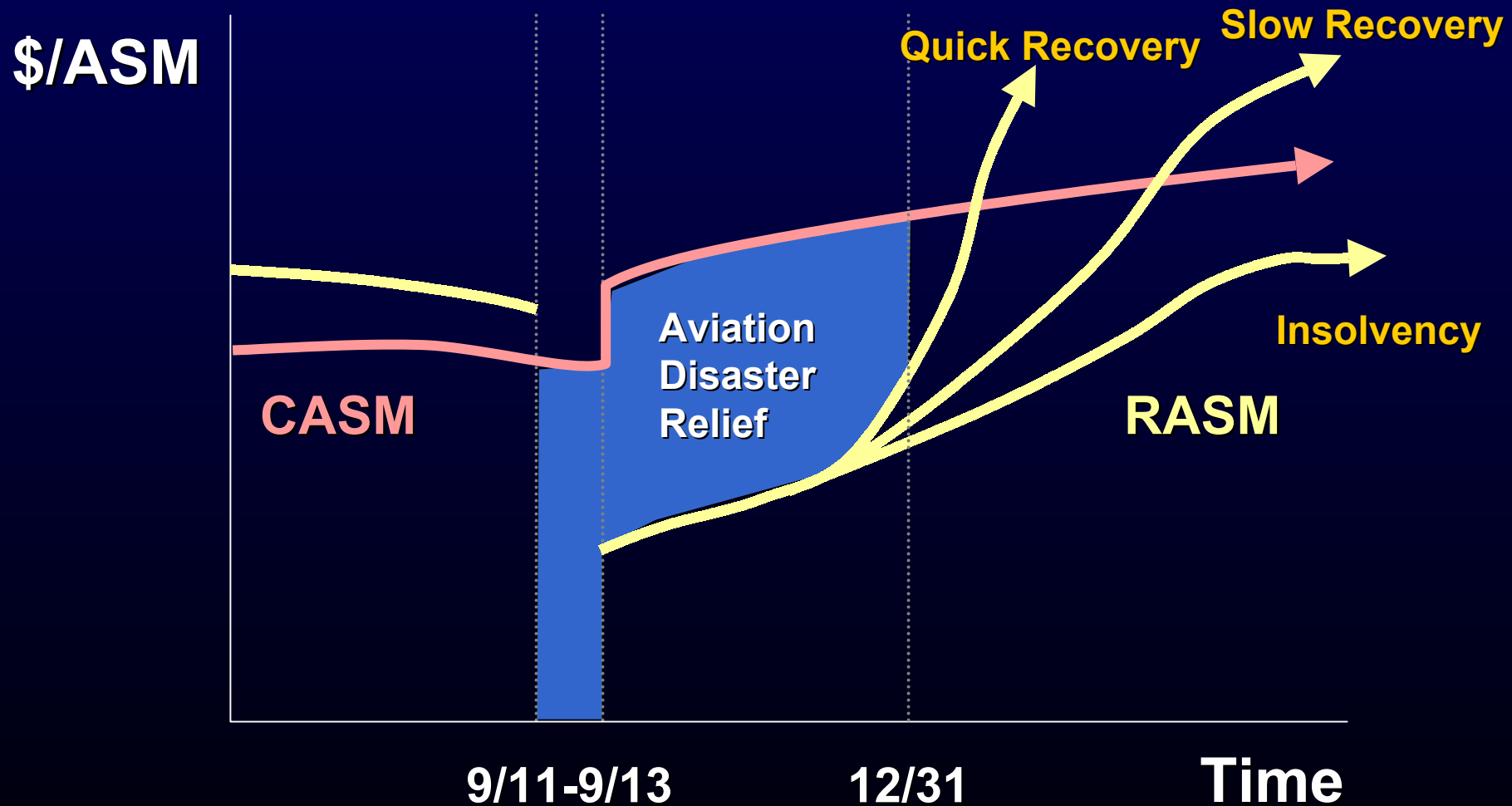
**SAM-7 Fired at Arkia Airlines B757-300 Mombassa Kenya, Nov 2002**



# Airline Profitability Impact

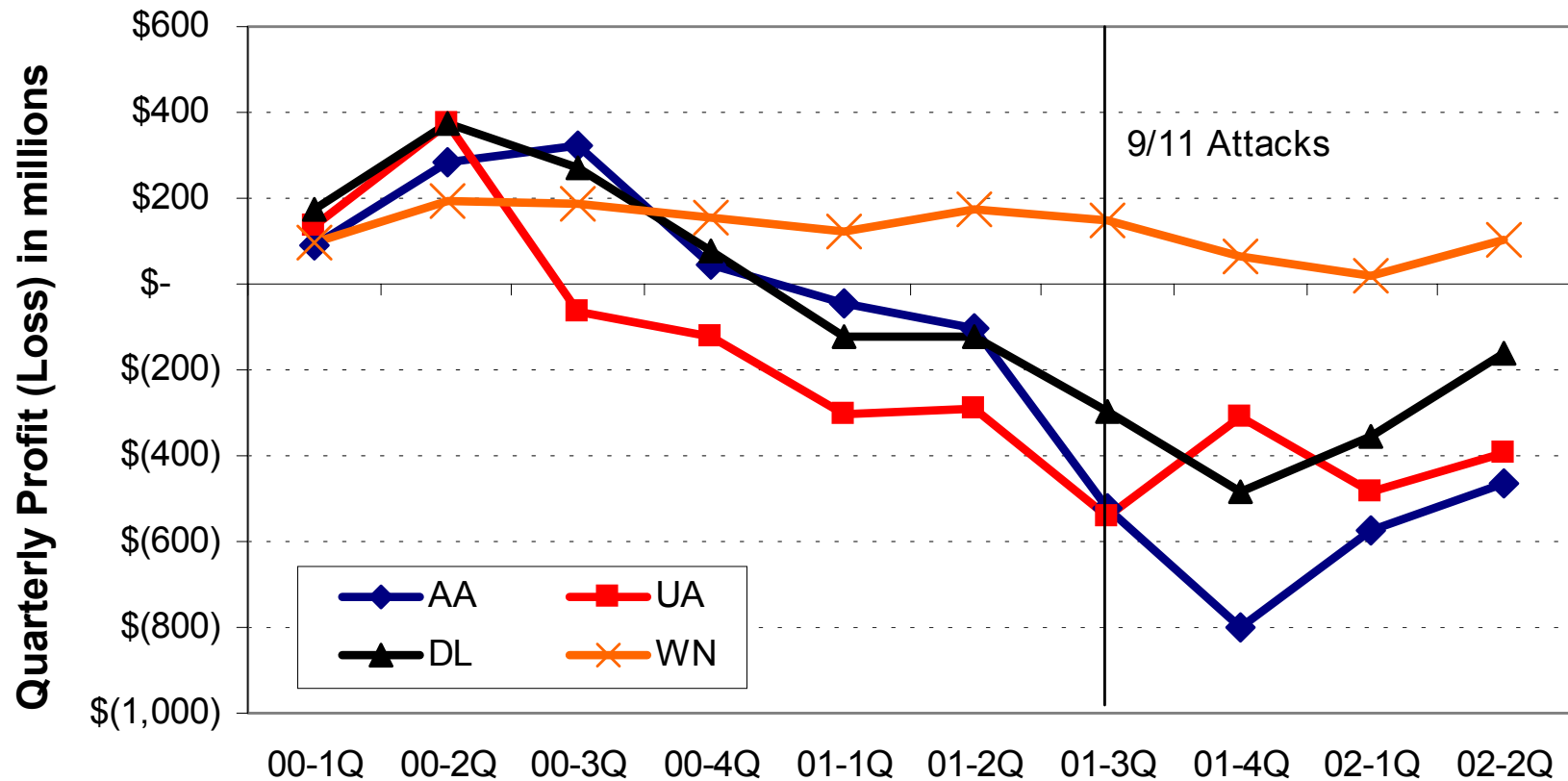


# Air Transportation Stabilization Act



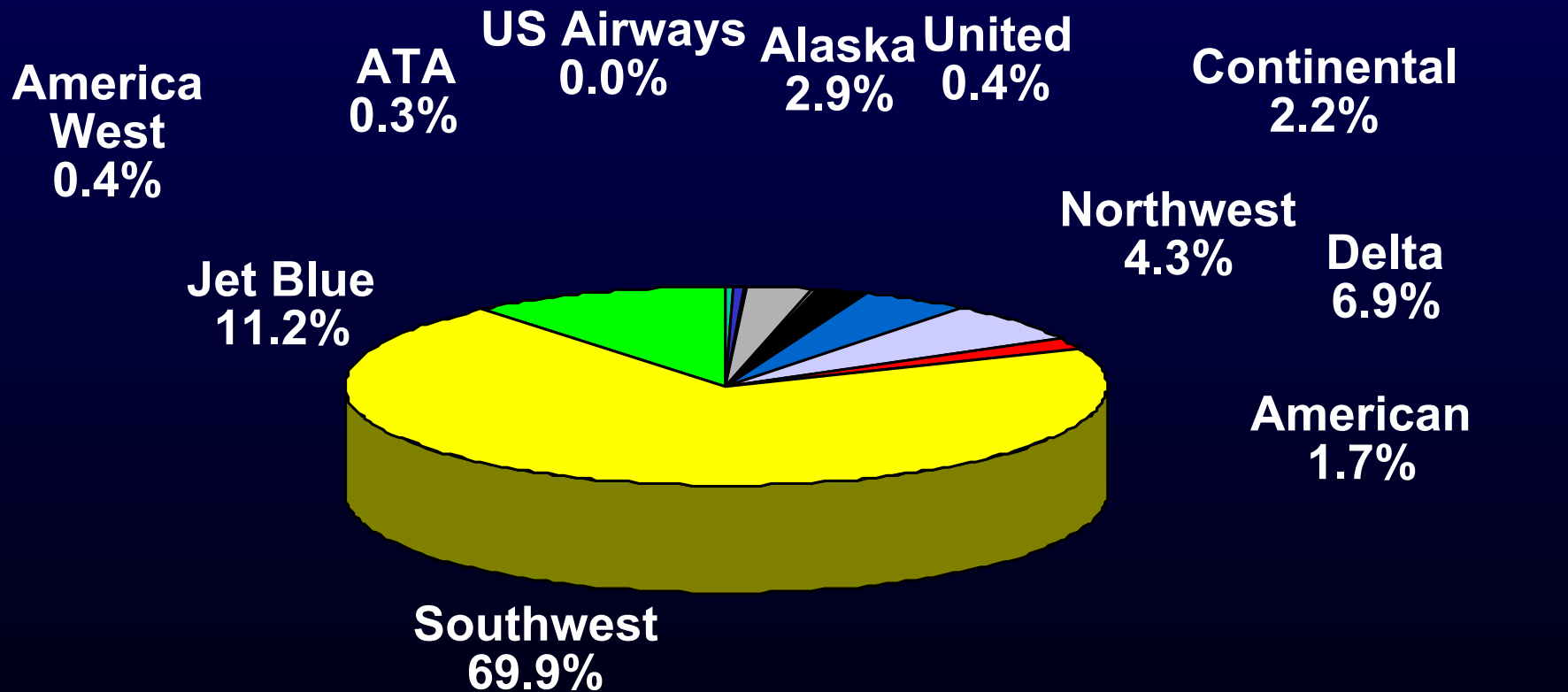


# All Major Carriers On “Slow Recovery” Trajectory Except Southwest



# Market Cap: US Majors, 3/18/03

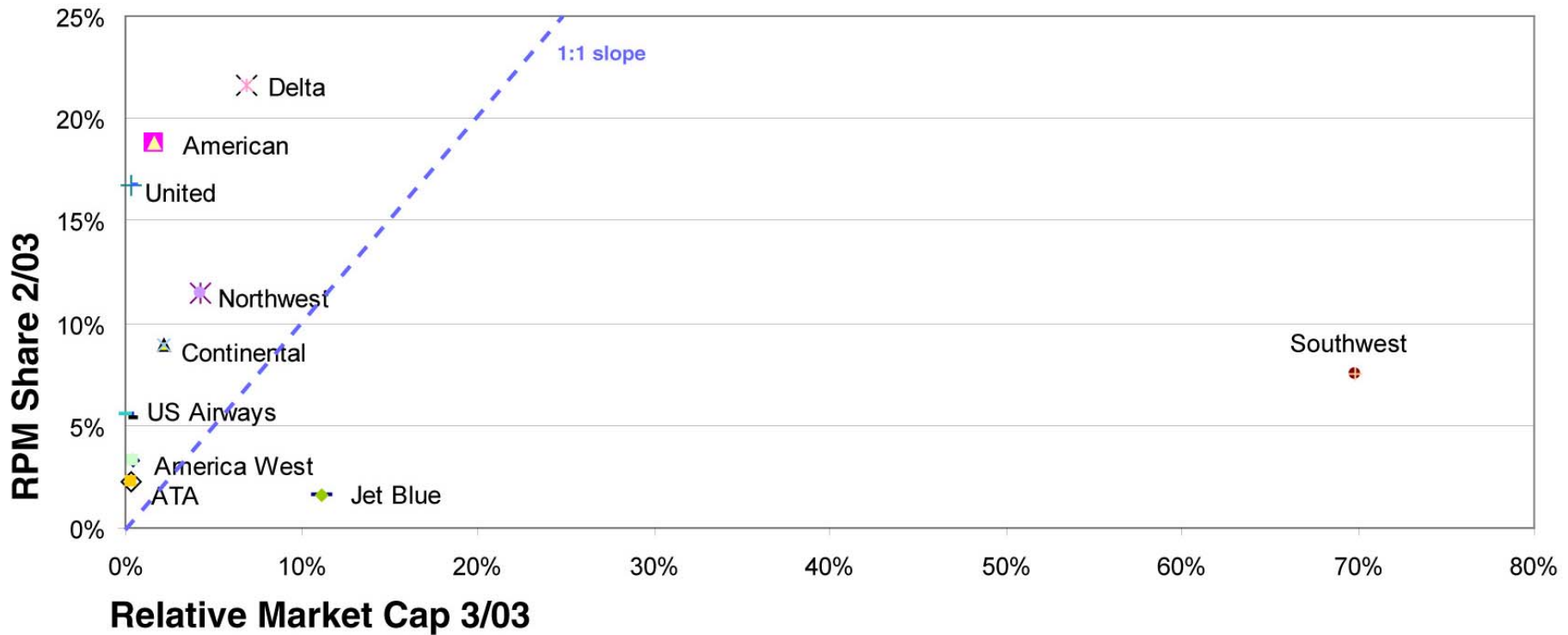
## With Jet Blue



**Total Market: \$15.7 billion**

# Current Market Cap vs. RPM Share

## US Majors and ATA

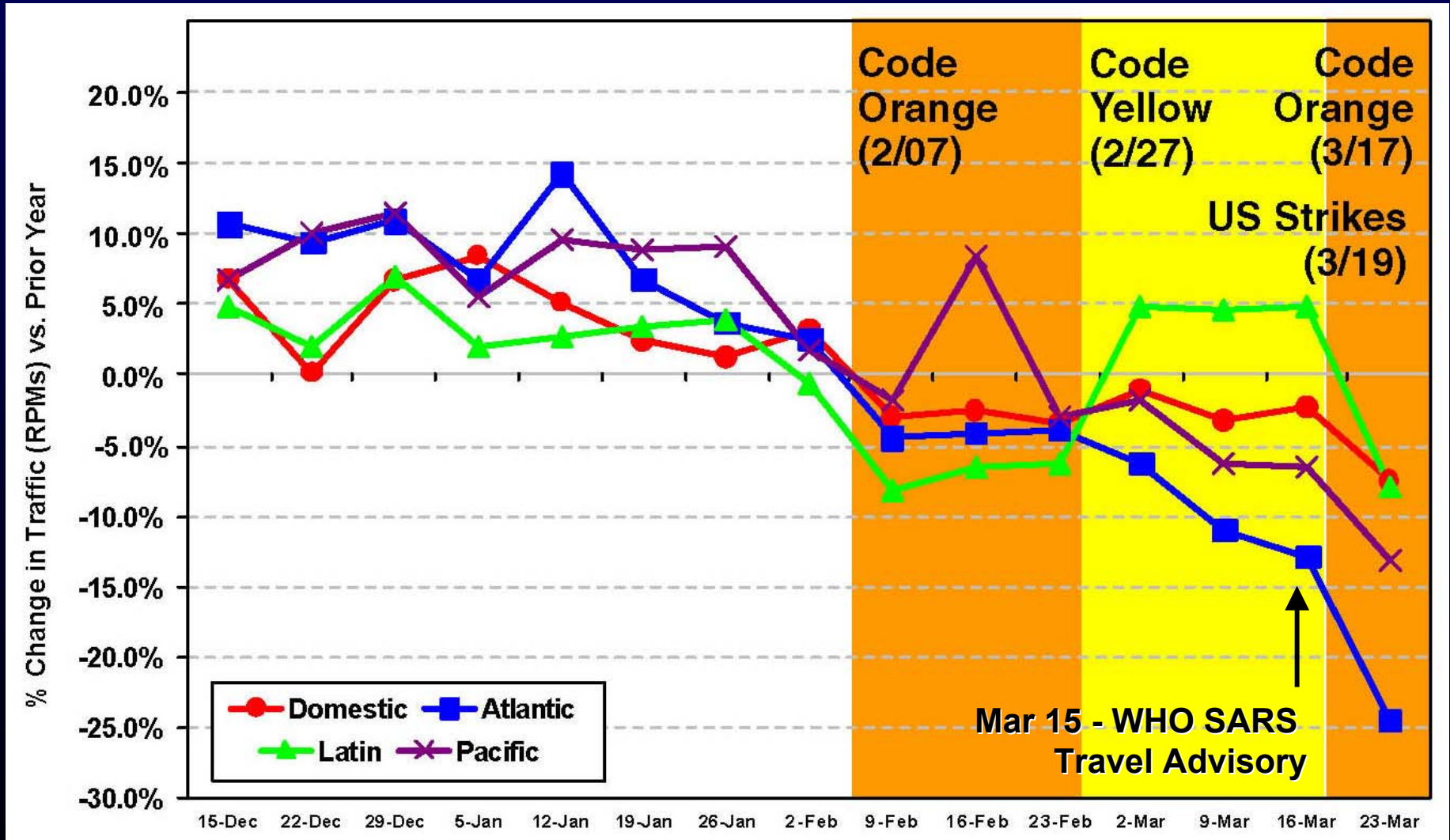


# Short Term Trends

- Trends Since Iraq War
  - Demand Reductions
  - Service Cutbacks
- SARS
- Potential Government Intervention?

# Weekly Traffic Growth Rates

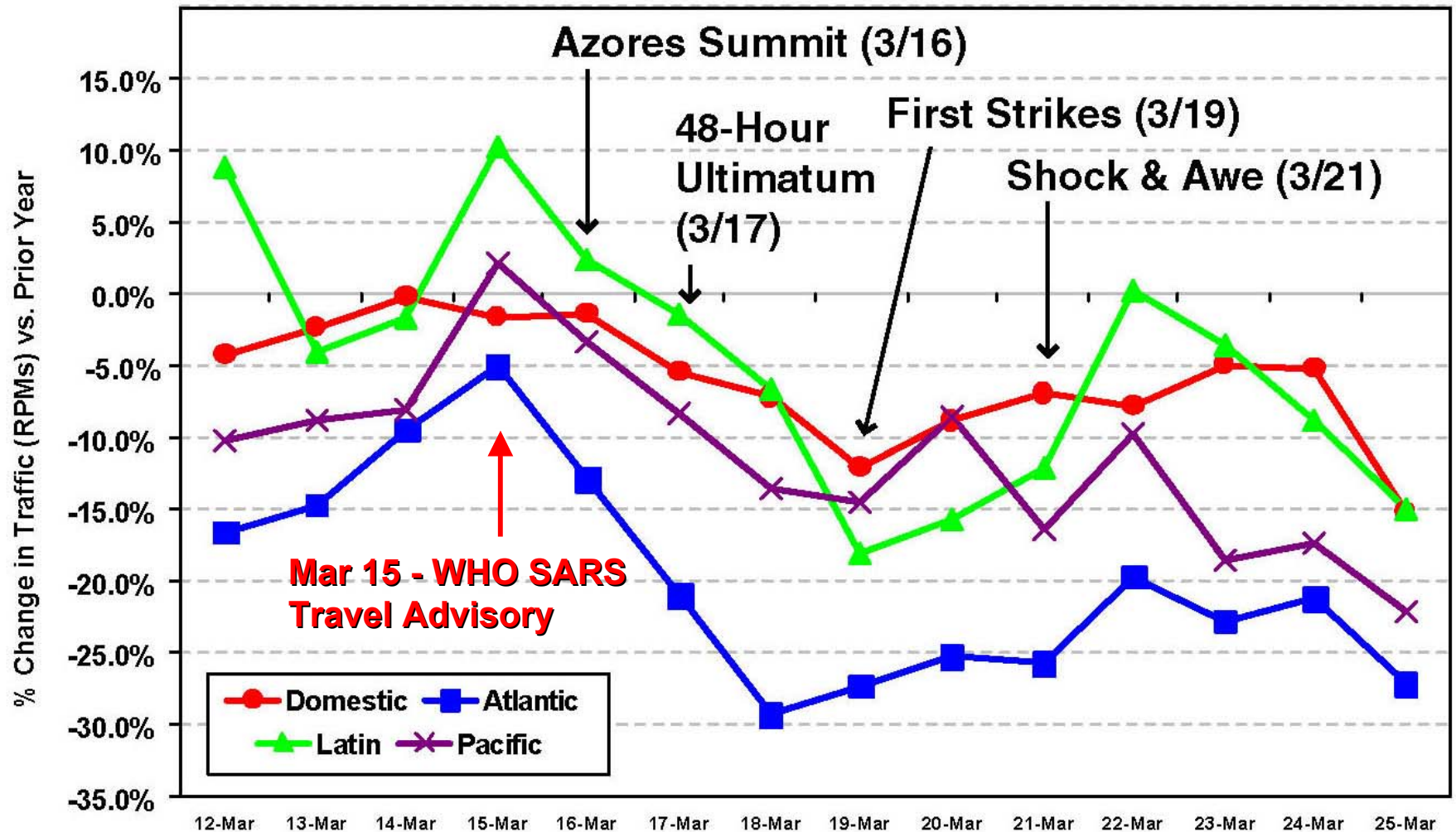
Source: ATA, December 15-Present



Weekly data adjusted for day of week; Includes HP, AA, CO, DL, NW, UA, US

# Daily Traffic Growth Rates

Source: ATA, March 12-Present



Daily data adjusted for day of week; Includes HP, AA, CO, DL, NW, UA, US

# Announced Recent Schedule Cutbacks

- Bookings Down (ATA)

- Domestic >20%, Atlantic >40%, Latin >15%, Pacific >30%

•US Airways	-4%	•Air Canada	-15%
•United	-5%	•BA	-4%, -6% int'l
•American	-6%, -7% int'l	•Qantas	-20%
•Delta	-12%	•JAL	-8%
•Northwest	-12%	•KLM	-20%
•Continental	-2%	•Virgin	-3%
		•Cathay Pacific	-14%
		•Singapore	-13.6%

# Recent Labor Announcements

- Wage concessions in exchange for equity, board seats, and profit-sharing plans

## USAirways:

- X% wage cuts + 5% wage deferral last month
- PBGC Trustee of Pension Plan for Pilots (\$3.7B liab, \$1.2B assets)

## United:

- Filed motion to terminate labor contracts
- Tentative agreement with Pilots, 30% wage cuts

## American:

- Tentative agreements reached with all labor groups 6.6% to 19%
- Pilot wages cut 20% in first year, 15% in subsequent years

## Delta, Northwest, Continental waiting to see “benchmarks”

- Northwest and Continental agreed with pilots in 2002 to postpone contract talks until sometime this year



# Other Recent Announcements

- Chapter 11
  - Hawaiian in
  - AMR threatens
  - USAirways emerges
- Internal Low Cost Carrier Plans
  - “Song”
  - “Starfish”
- Potential Governmental Aid
  - House \$3.2 B, Senate \$3.5 B
  - Liability Insurance, Unemployment, Security Fees

# Key Questions

- How will the major network carriers emerge?
  - Significant fraction of national lift capacity at risk
- What are the new revenue/operating paradigms?
  - Market segmentation assumptions are failing
  - Is the LCC model broadly applicable?
- Can labor and management collaborate to reduce operating costs to competitive levels?
- What will be the impact on small markets?
  - “Cherry picking” competition for high-value routes
- Will government intervene?
  - How can the system be stabilized



# Macro Economic Effects of Loss of Air Service Unknown

