

**AVIATION OPERATIONAL MEASURES FOR**  
**FUEL AND EMISSIONS REDUCTION**  
**WORKSHOP**



**Fuel Burn Study**  
**Domestic RVSM**

**Douglas Baart**


**FAA WJH Technical Center**

**Federal Aviation Administration**





**Air Traffic Management Panel**  
**Ottawa, 5-6 November 2002**

## Recent RVSM Fuel Benefit Studies Conducted by the FAA

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- **NICE** = **N**orth **A**tlantic **I**mplementation  
**M**anagement Group **C**ost **E**ffectiveness  
**S**tudy
  - Purpose of NICE:
    - ✧ Investigate the potential fuel benefits  
associated with changes to Separation  
Standards in the NAT airspace  
(including RVSM)
  - Participating groups included the  
Icelandic CAA, NATS Ltd (UK), US  
FAA, and IATA

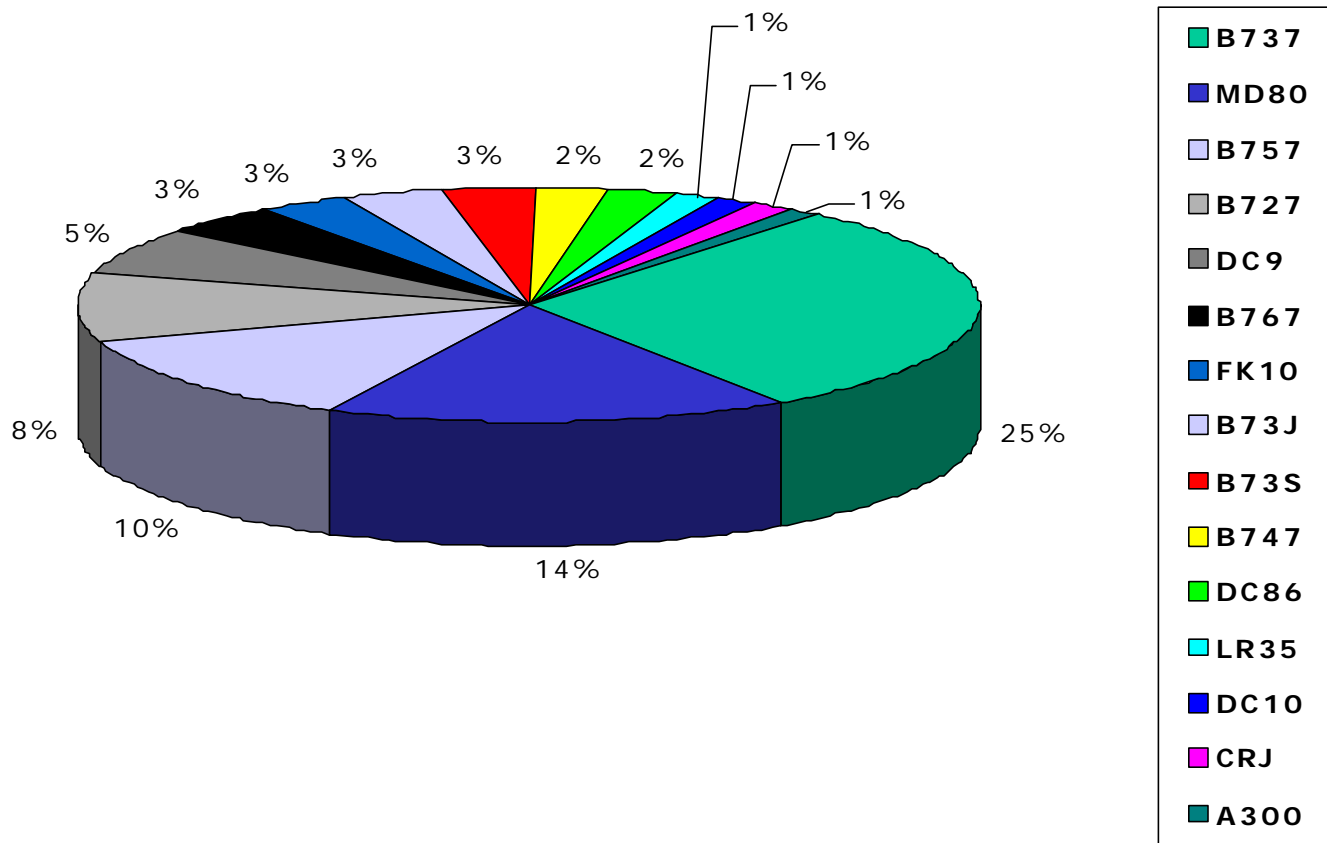


## Fuel Burn Models Available for Use in the NICE Study

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- ✈️ FAA fuel burn model and fuel tables provided by Lido GmbH (Lufthansa Aeronautical Services)
  - ✈️ Fuel burn models were available for the following aircraft types: A310, A340, B727, B737, B742, B744, B752, B762, B763, B777, DC8, DC9, DC10, L101, MD11, DASH-7, JETSTAR, CITATION II



# US Domestic RVSM Year 2004 Major Aircraft Types (Above FL 290)



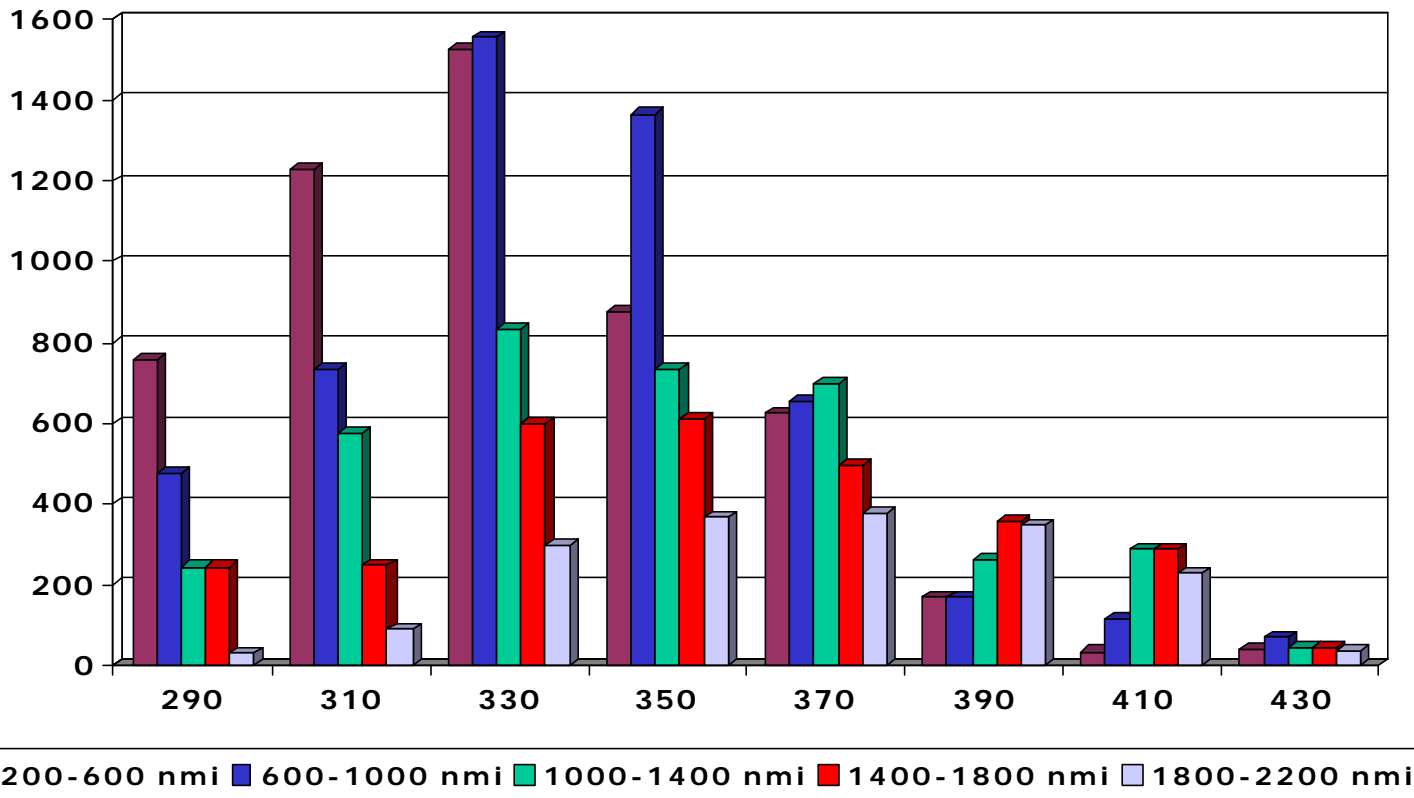
# Domestic RVSM Year 2004 Methodology

- August 18, 2000 ETMS Data used to build Traffic Profiles
- 2000 TAF used to build 2004 Traffic Growth
- 19000 Flights above FL 290
- 6750 flights move to more optimal flight levels
- Modified NICE Model used in Fuel Burn Calculations

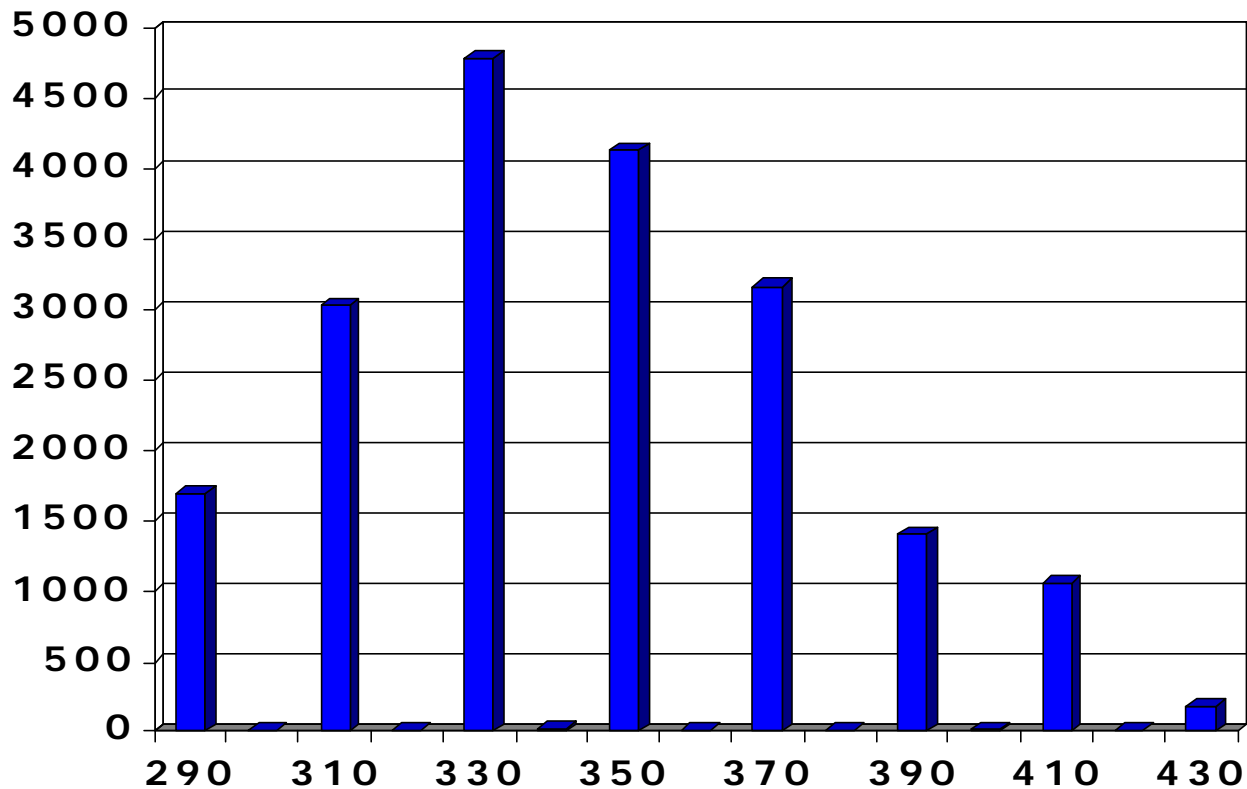




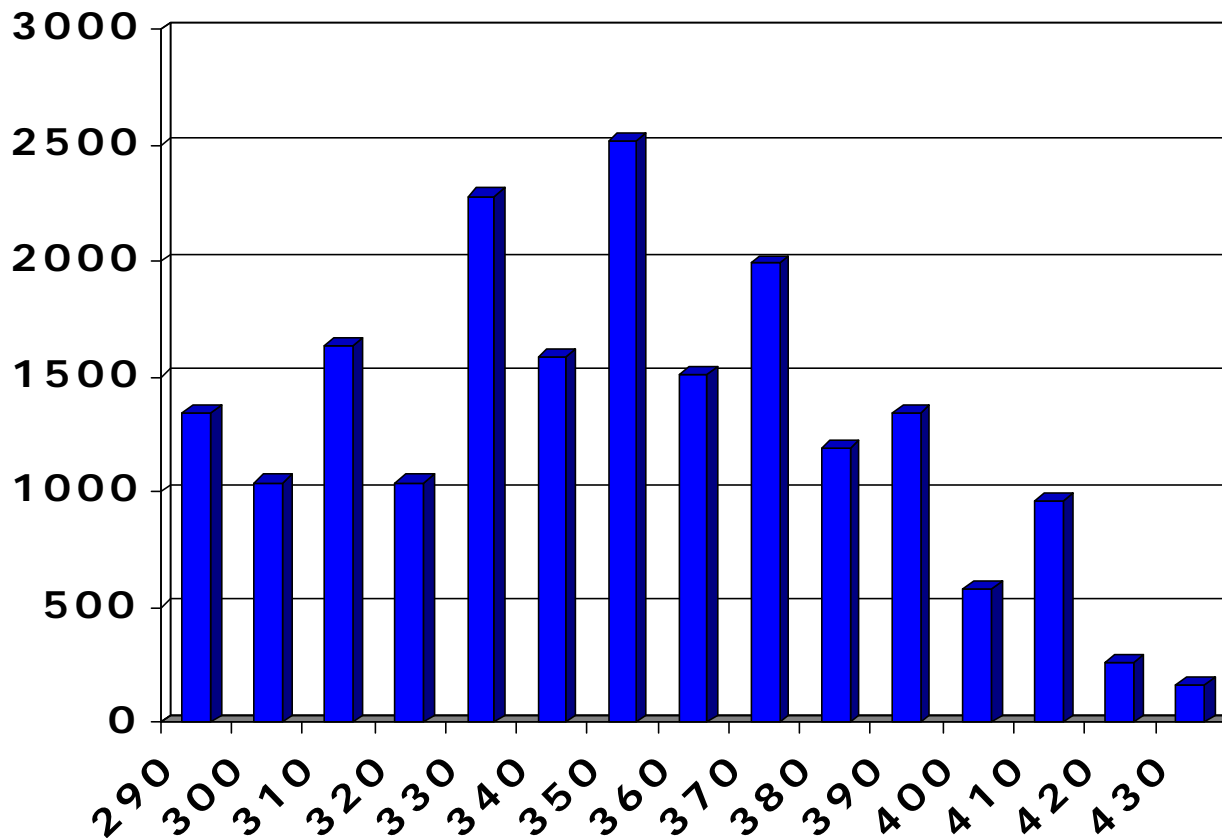
# US Domestic Airspace Flight Level Usage By Distance Flown Year 2004



# US Domestic Airspace CVSM Year 2004 Flight Level Usage

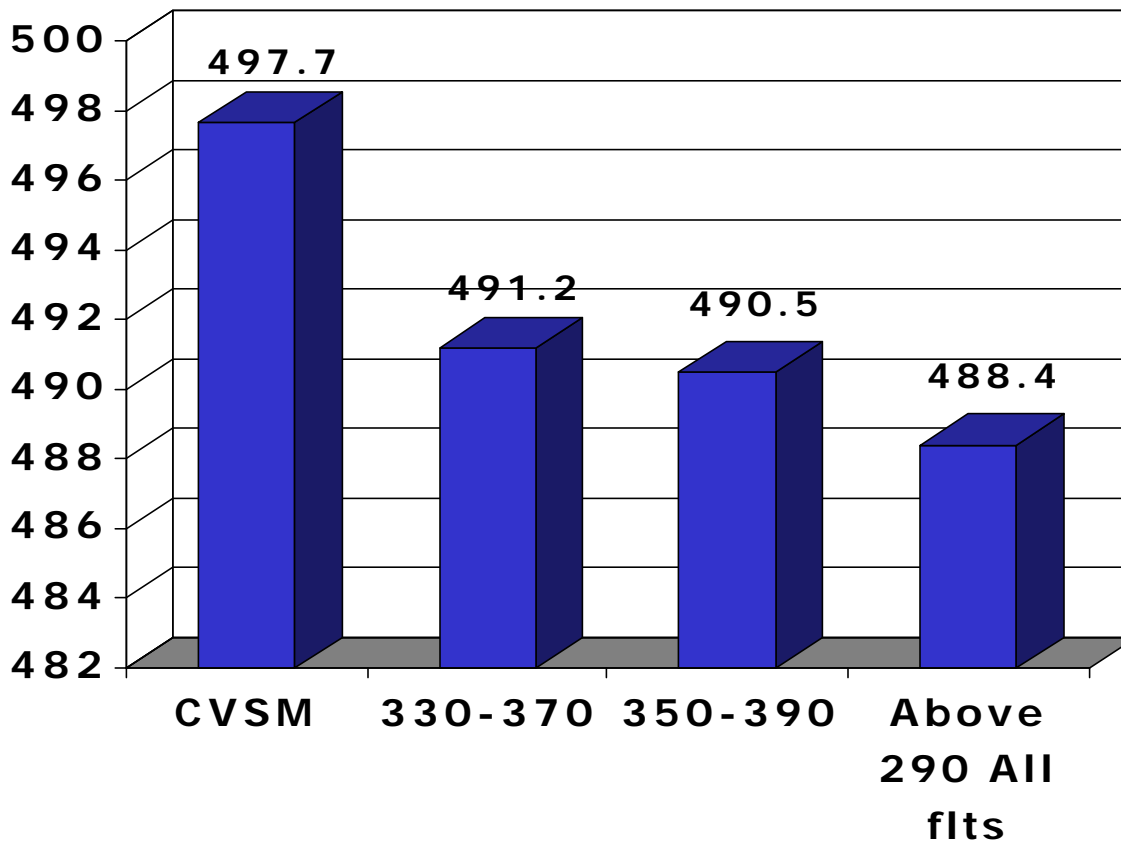


# US Domestic Airspace RVSM Year 2004 Flight Level Usage

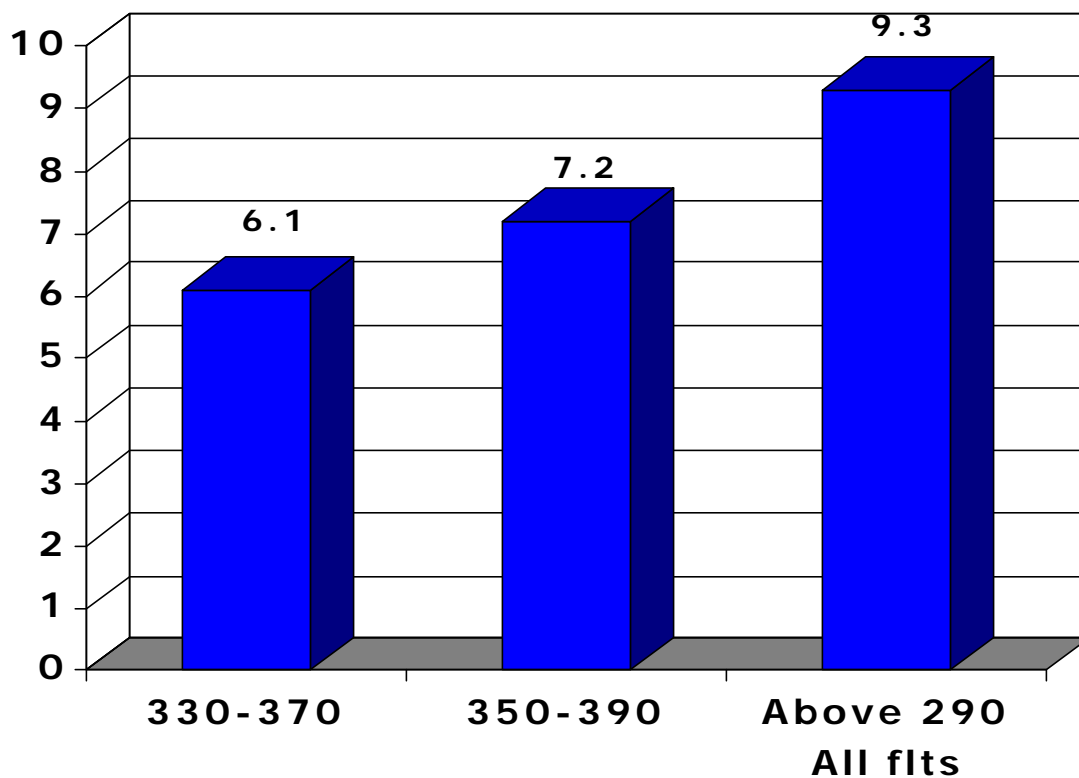




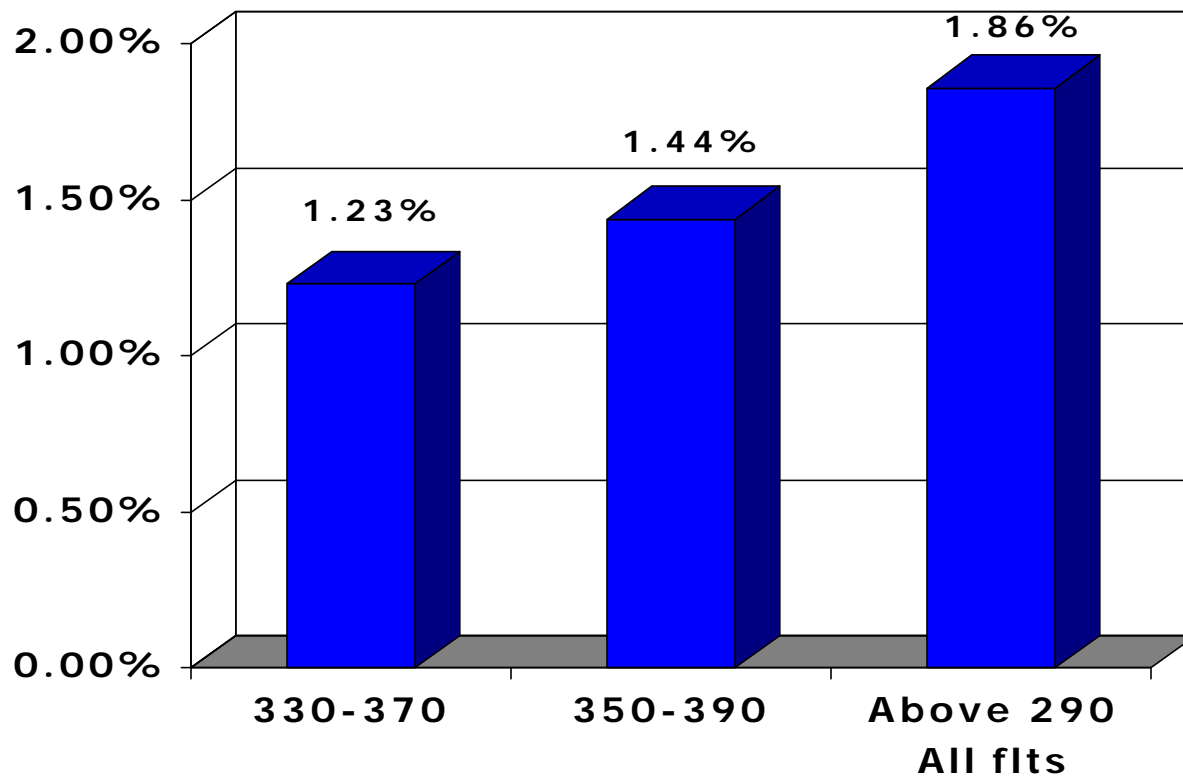
# US Domestic Airspace Daily Fuel Usage (millions of lbs) Year 2004



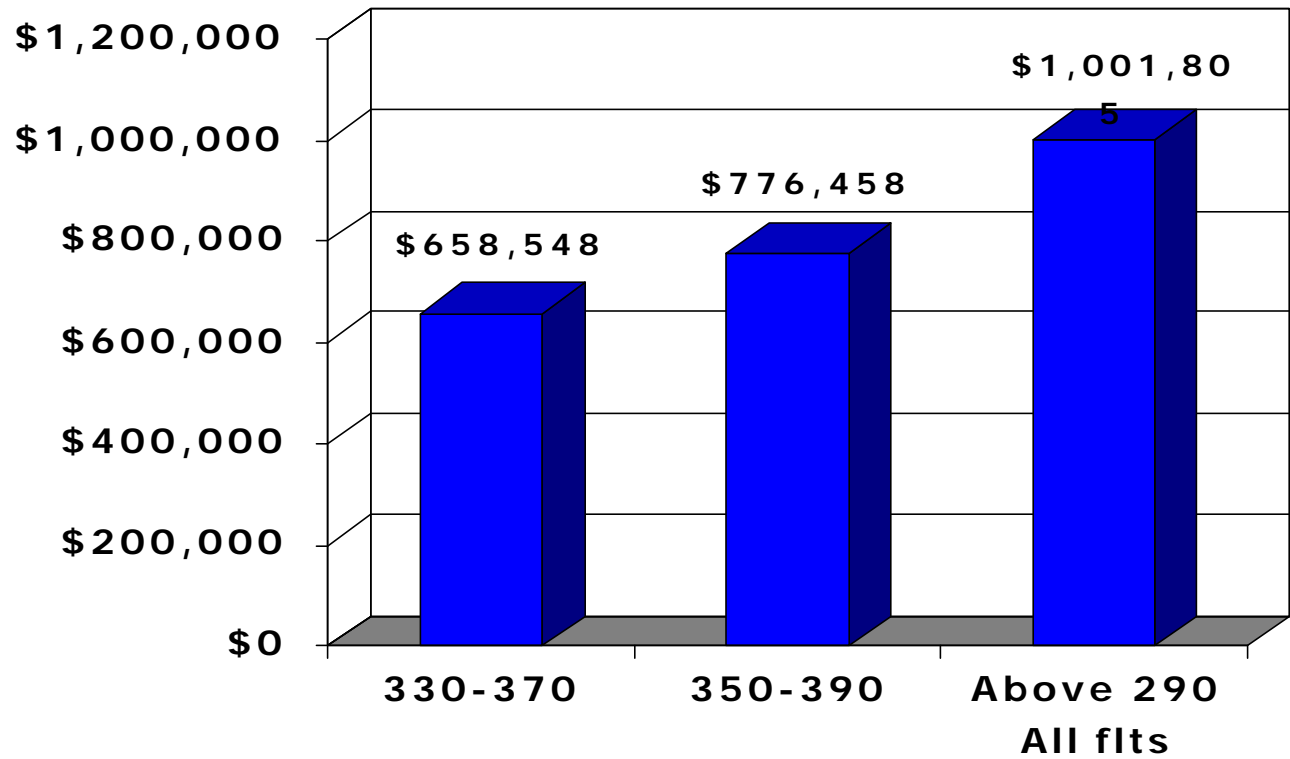
# US Domestic Airspace Daily RVSM Fuel Savings (millions of lbs) Year 2004



# US Domestic Airspace Daily RVSM Fuel Savings (Percent %) Year 2004



# US Domestic Airspace Daily RVSM Fuel Savings (\$0.73 US per Gallon) Year 2004



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**Thank you !**

