16.72 ATC Funding and User Fees

R. John Hansman

Material from FAA ATO, Jerry Thompson, Philippe Bonnefoy

FAA Accounts

- Operations
- Airport Improvement Program (AIP)
- Facilities & Equipment (F&E)
- Research Engineering & Development (R&D)

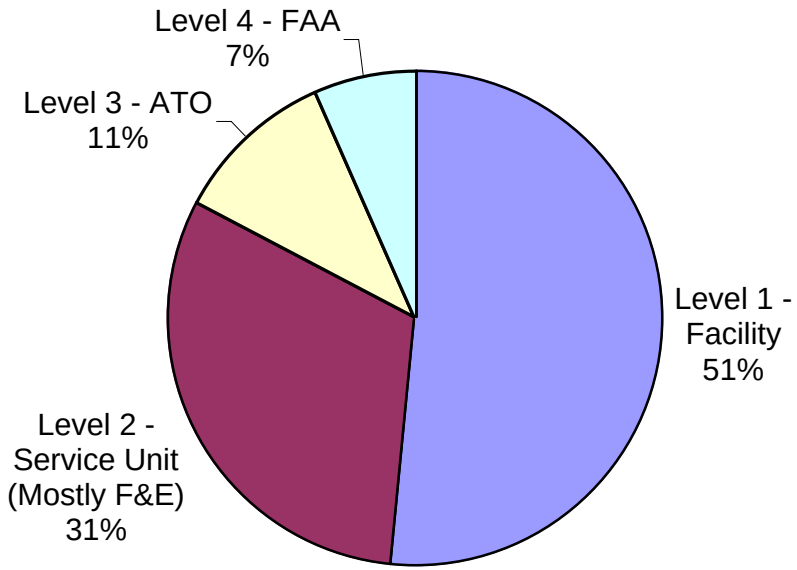
Federal Aviation Administration

FY 2007 Budget Request

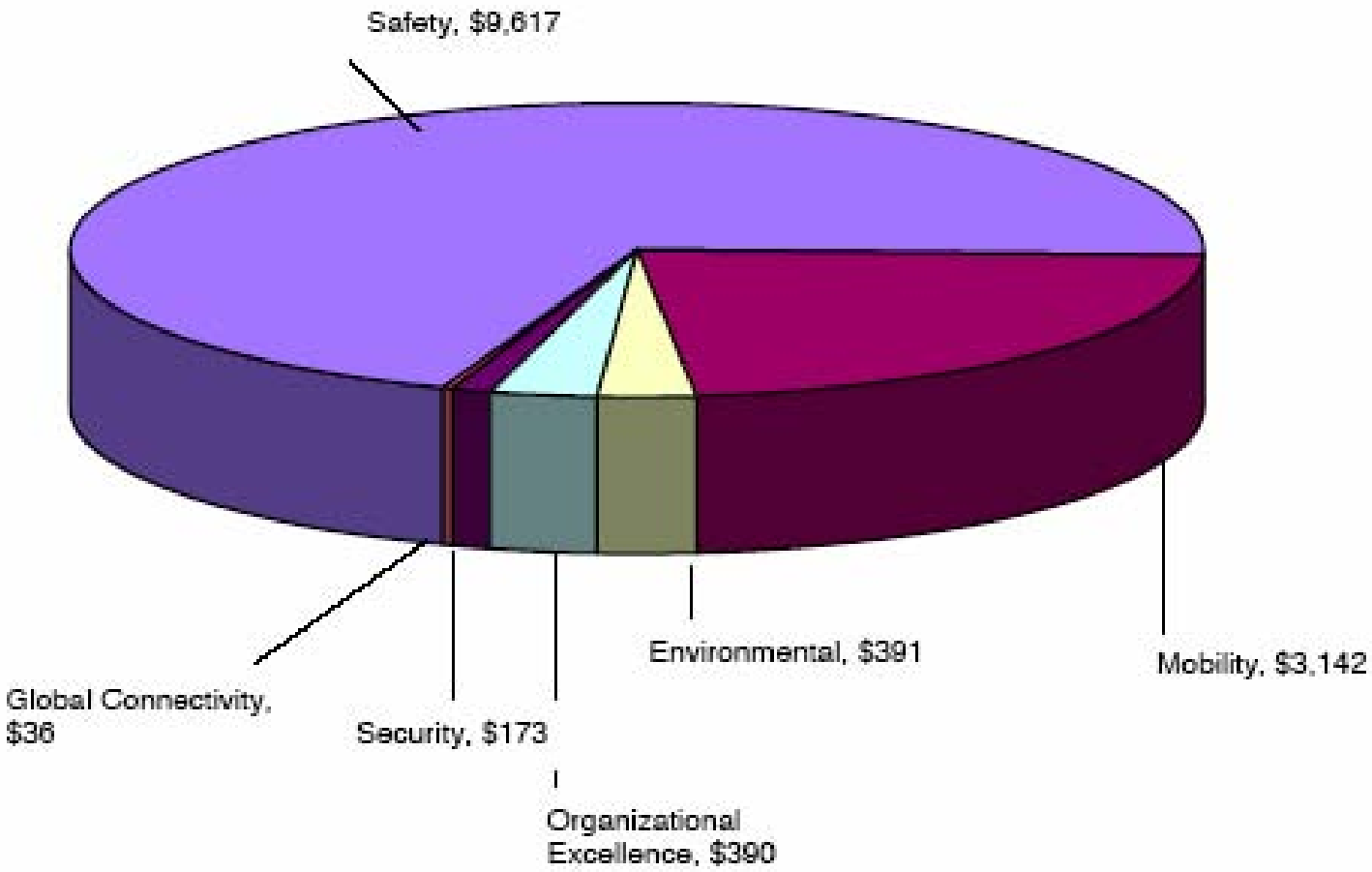
ACCOUNTS	FY 2005 ACTUAL[1]	FY 2006 ENACTED[2]	FY 2007 REQUEST	Change FY 2006 FY 2007 Request
Operations	$7,706,537	$8,104,140	$8,366,000	$+261,860
(General) (Non-Add)	(2,827,809)	(2,618,550)	(2,921,000)	(+302,450)
(Trust) (Non-Add)	(4,878,728)	(5,485,590)	(5,445,000)	(-40,590)
Facilities and Equipment (TF)	$2,524,780	$2,555,200	$2,503,000	$-52,200
Hurricane Supplemental (Non-Add)	($5,000)	($40,600)		($-40,600)
Research, Engineering and Development (TF)	$129,880	$136,620	$130,000	$-6,620
Contract Authority (Vision 100)	$3,500,000	$3,600,000	$3,700,000	$+100,000
Pop-up contract authority (49 USC 48112)	$473,320	$538,000	$607,000	$+69,000
Transferred to other accounts	($5,000)			
Rescission of contract authority	($296,787)	($1,068,000)	($1,557,000)	($+489,000)
Subtotal Grants-in-Aid	$3,676,533	$3,070,000	$2,750,000	($-320,000)
Small community air service pilot prog. (Non-Add)	($20,000)	($,9,900)		($-9,900)
Other Budget Authority	$25,000			
Obligation Limitation (Non-add)	$3,472,000	$3,514,500	$2,750,000	$-764,500
TOTAL. Federal Aviation Administration	$10,386,197	10,795,960	10,999,000	$+203,040
Contract Authority	$3,500,000	$3,600,000	$3,700,000	$+100,000
Pop-up contract authority	$473,320	$538,000	$607,000	$+69,000
Rescission on contract authority	($,296,787)	($1,068,000)	($1,557,000)	($+489,000)
Proprietary Receipts:				
Miscellaneous Recoveries & Refunds	[$49]	[$275]	[$275]	[$0]

ATO Costs By Facility Level 2004

- **Level 1 - ATC Facility**
  - Operations
- **Level 2 - Contract**
  - Equipment Acquisition
  - Contract Towers
  - Contract Weather
  - DUAT
- **Level 3 - ATO**
  - ATCSCC
  - Operations Control
  - Charting
  - RE&D
- **Level 4 - FAA**
  - HQ FAA-ATO
  - Regional FAA-ATO



FY 2007 Request by Goal
($ in millions)



Budget Justification

Operations: The FY 2007 budget requests $8.4 billion for FAA Operations. Most of the funds requested for FAA Operations in FY 2007 support the goal of maintaining and increasing aviation safety, reflecting the President's commitment in this area. Other significant amounts support mobility and security.

- **Safety** – The request includes $7.6 billion to inspect aircraft and ensure the safety of flight procedures. This includes an increase of $18.2 million to hire and train 1,136 air traffic controllers, resulting in a net gain of 132 controllers; $8 million to expand the Air Transportation Oversight System, $4.8 million for new aviation safety requirements; and $5.7 million for future aviation safety initiatives. The request supports continued development of the Air Traffic Organization (ATO), which was formed in FY 2004 to improve the delivery of air traffic services by adopting "best business-like" practices. It also includes funding for operating and maintaining the air traffic control system, developing a replacement air traffic data and telecommunications system, commercial space transportation, and a share of agency overhead support costs.

- **Mobility** - The request includes $480.9 million to improve air traffic efficiency by various means, including improving the flow of air traffic through better airspace design.

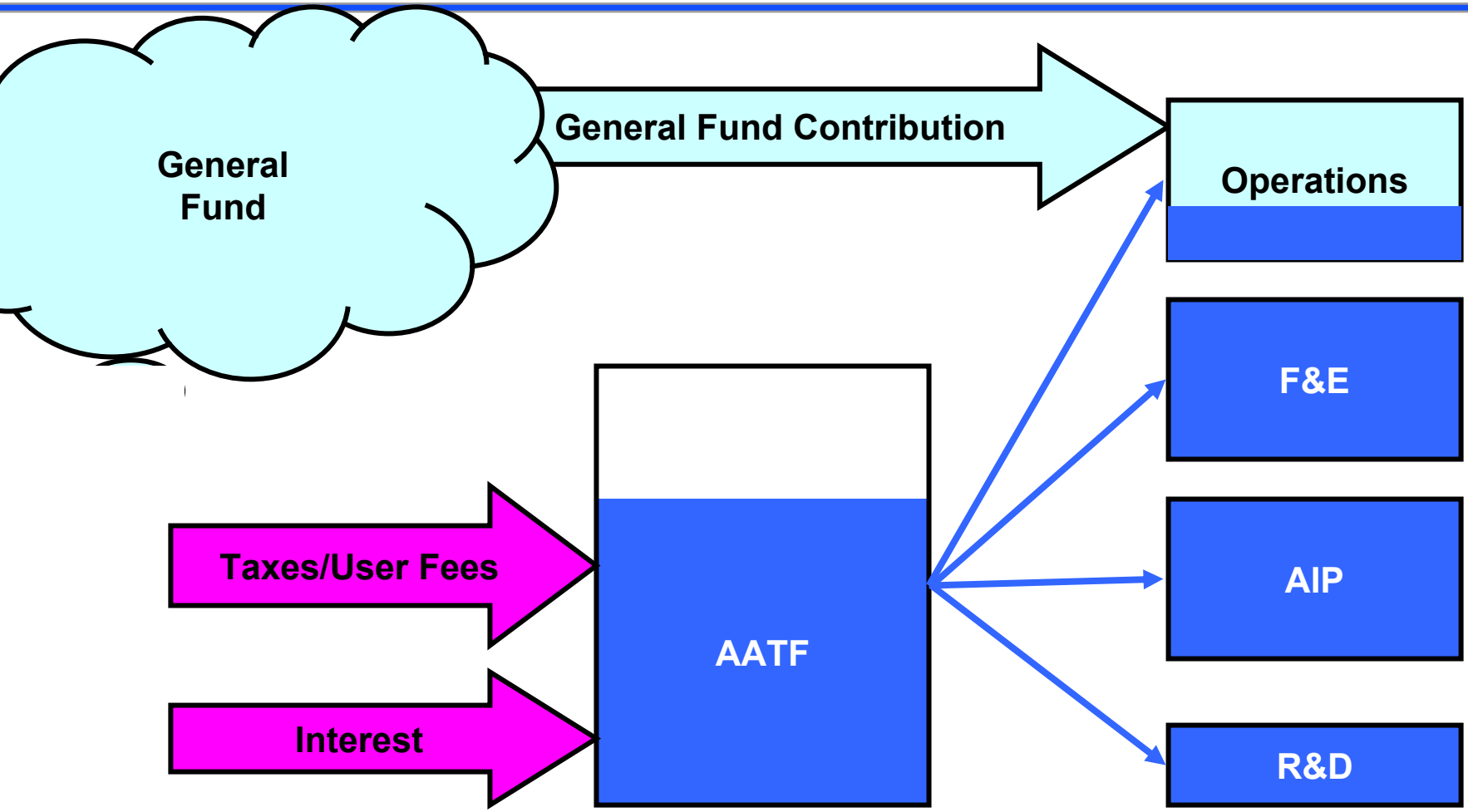
- **Global Connectivity** – The request includes $32 million to expand the agency's international leadership role and to help improve safety. FAA will expand its training and technical assistance programs that help civil aviation authorities meet international standards, as well as promoting seamless global operations.

- **Environmental Stewardship** – The request includes $5 million to continue the agency's commitment to manage aviation's growth in an environmentally-sound manner and has an aggressive plan to accomplish this through mitigation, operational measurements and standards.

FAA Accounts

- Operations
- Airport Improvement Program (AIP)
- Facilities & Equipment (F&E)
- Research Engineering & Development (R&D)

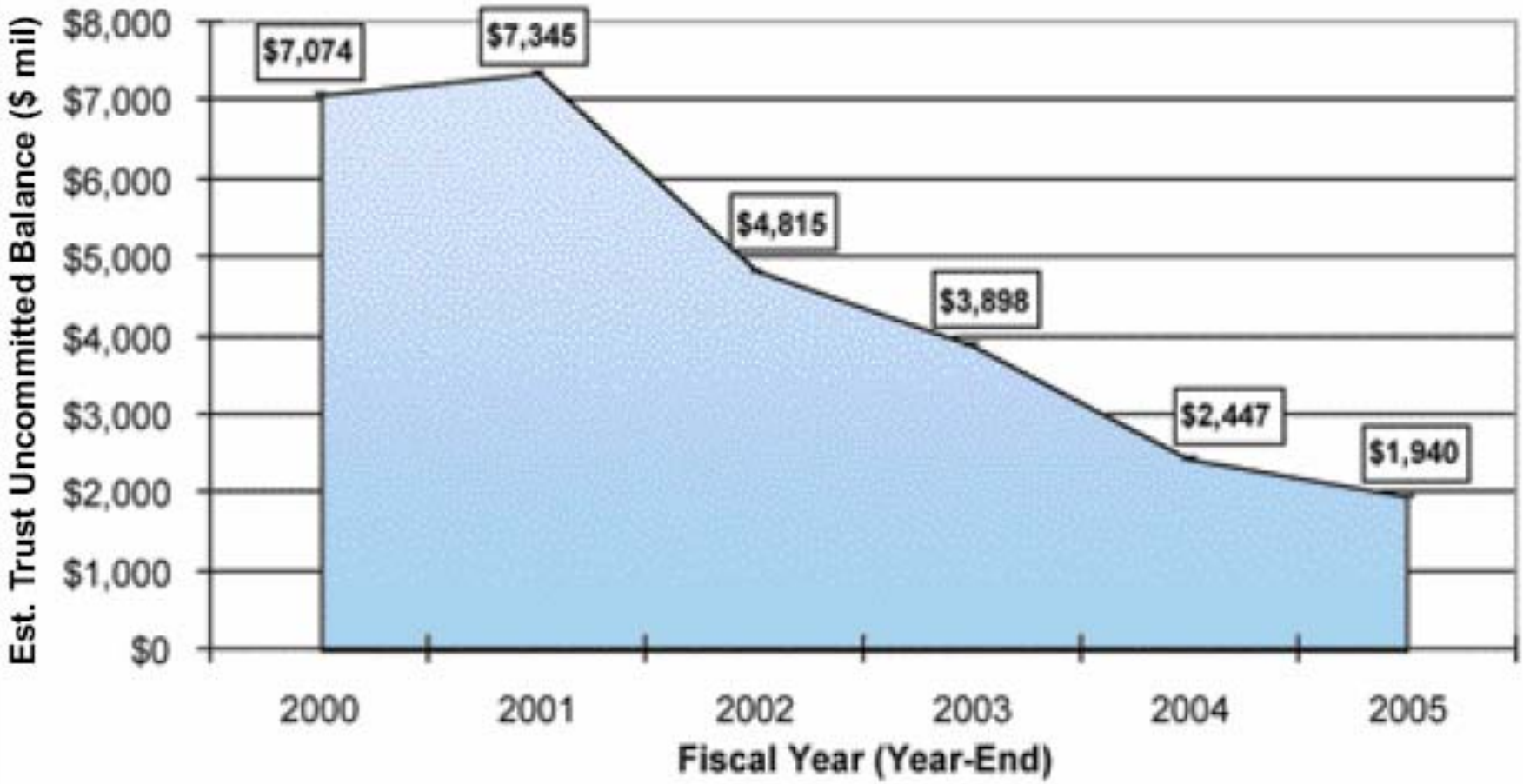
Funding Structure



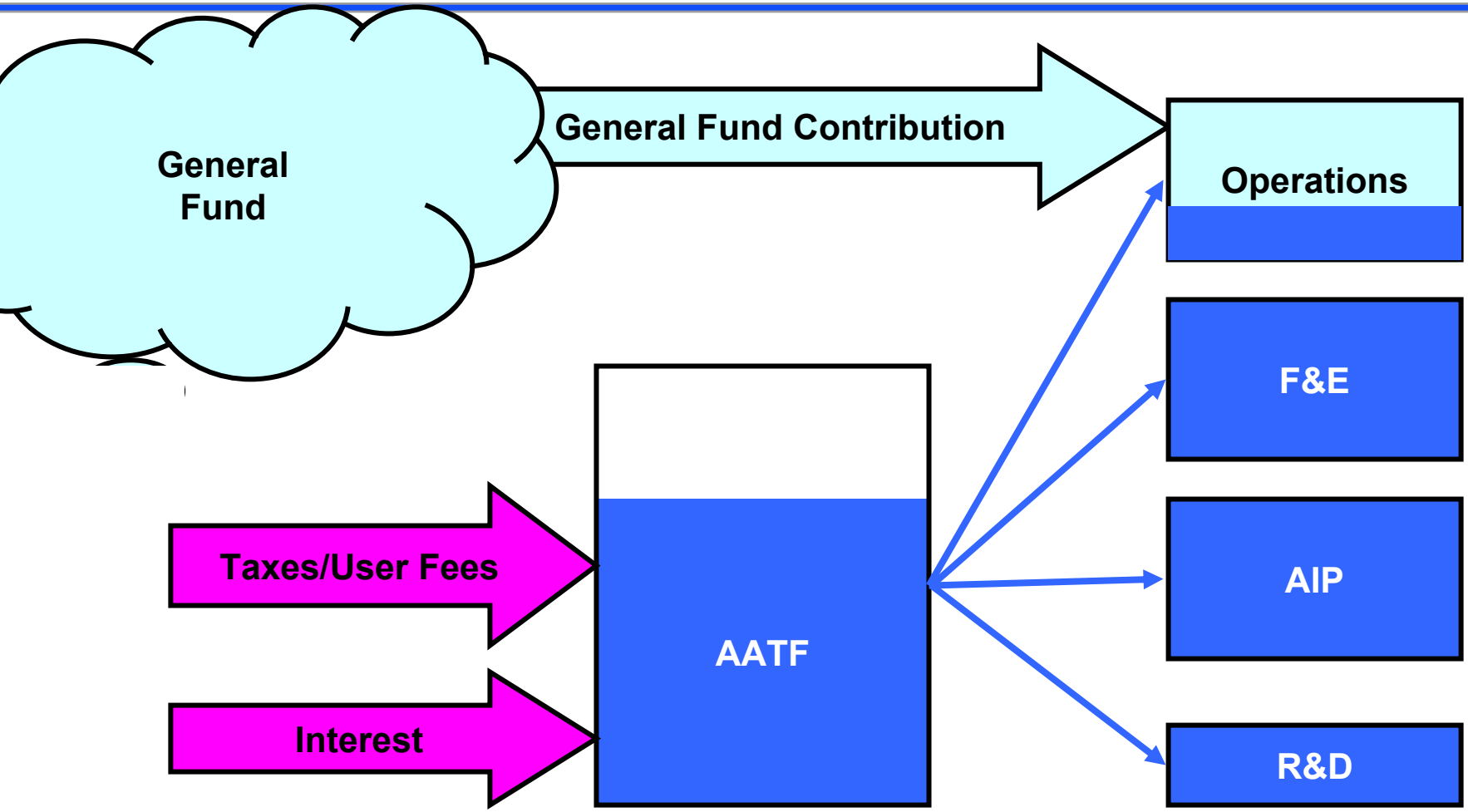
Airport and Airways "Trust Fund" (AATF)

- Statutory formula requires that Trust Fund revenues first be used to fully fund AIP, F&E and R&D at authorized levels before being used to fund Operations.
- The formula requires that the total amount appropriated from the Trust Fund each year must equal the FAA forecast revenue (tax receipts and interest) to be deposited into the Trust Fund that year.
- Forecasts have been overstated in most years hence the amount taken from the trust fund exceeds the income and the trust fund balance is decreasing.
- A more reliable method may be basing the level on the actual Trust Fund revenue in the previous year.

Trust Fund Uncommitted Balance



Funding Structure

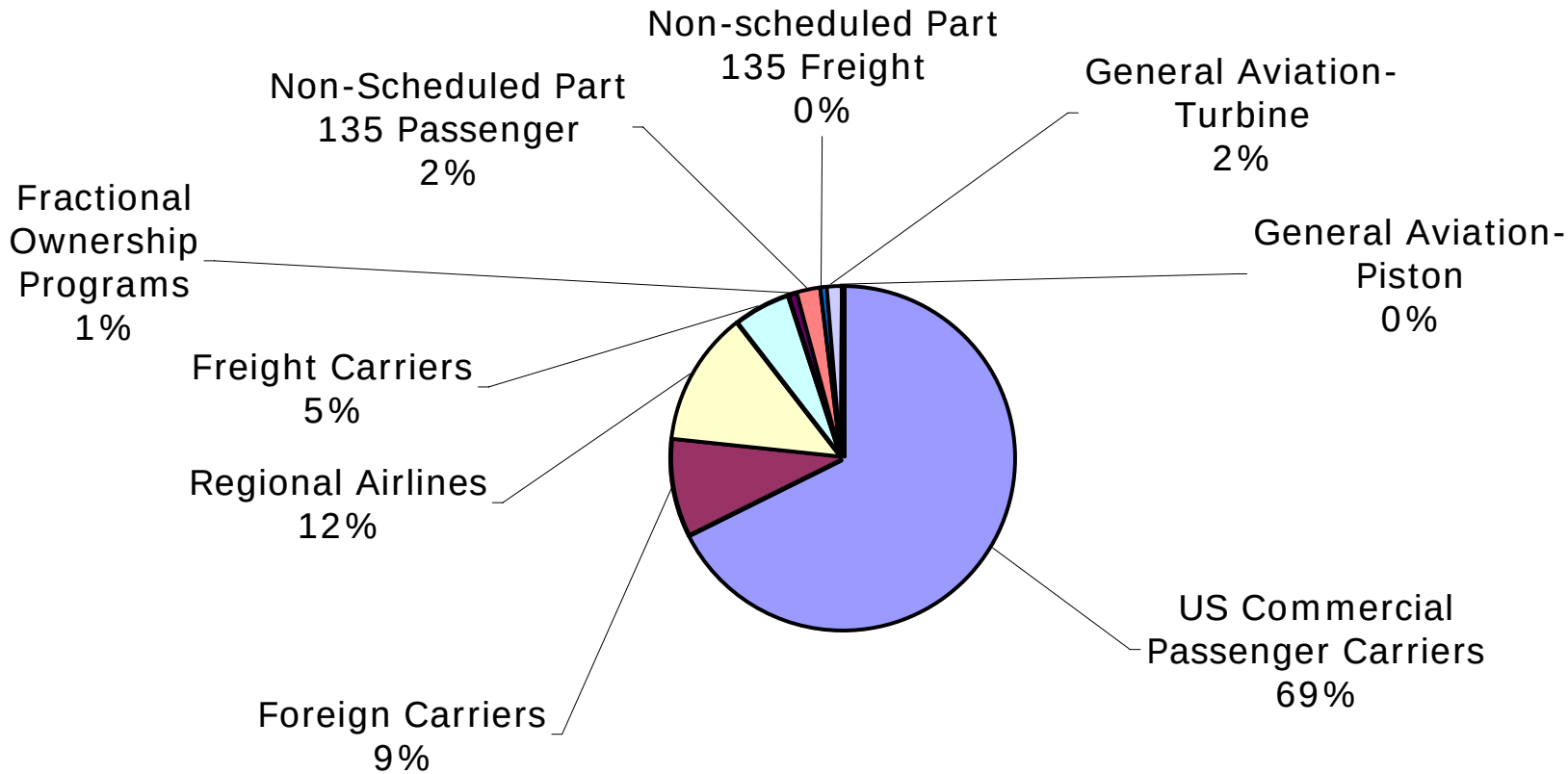


CURRENT AVIATION EXCISE TAX STRUCTURE

(Taxpayer Relief Act of 1997, Public Law 105-35)

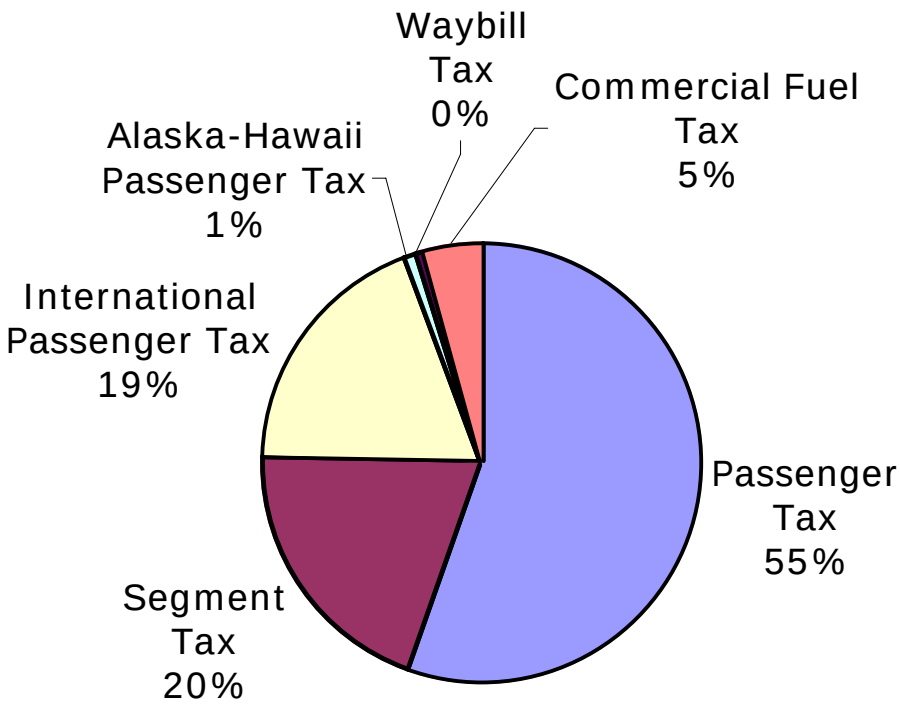
Aviation Taxes	Comment	Tax Rate
PASSENGERS		
Domestic Passenger Ticket Tax	Ad valorem tax	7.5% of ticket price (10/1/99 through 9/30/2007)
Domestic Flight Segment Tax	"Domestic Segment" = a flight leg consisting of one takeoff and one landing by a flight	Rate is indexed by the Consumer Price Index starting 1/1/02 $3.00 per passenger per segment during calendar year (CY) 2003 $3.10 per passenger per segment during CY2004. $3.20 per passenger per segment during CY2005. $3.30 per passenger per segment during CY2006
Passenger Ticket Tax for Rural Airports	Assessed on tickets on flights that begin/end at a rural airport.	7.5% of ticket price (same as passenger ticket tax) Flight segment fee does not apply.
	Rural airport: <100K enplanements during 2nd preceding CY, and either 1) not located within 75 miles of another airport with 100K+ enplanements, 2) is receiving essential air service subsides, or 3) is not connected by paved roads to another airport	
International Arrival & Departure Tax	Head tax assessed on pax arriving or departing for foreign destinations (& U.S. territories) that are not subject to pax ticket tax.	Rate is indexed by the Consumer Price Index starting 1/1/99 Rate during CY2003 = $13.40 Rate during CY2004 = $13.70 Rate during CY2005 = $14.10 Rate during CY2006 = $14.50
Flights between continental U.S. and Alaska or Hawaii		Rate is indexed by the Consumer Price Index starting 1/1/99 $6.70 international facilities tax + applicable domestic tax rate (during CY03) $6.90 international facilities tax + applicable domestic tax rate (during CY04) $7.00 international facilities tax + applicable domestic tax rate (during CY05) $7.30 international faciltiies tax + applicable domestic tax rate (during CY06)
Frequent Flyer Tax	Ad valorem tax assessed on mileage awards (e.g., credit cards)	7.5% of value of miles
FREIGHT / MAIL		
Domestic Cargo/Mail		6.25% of amount paid for the transportation of property by air
AVIATION FUEL		
General Aviation Fuel Tax		Aviation gasoline: $0.193/gallon Jet fuel: $0.218/gallon
Commercial Fuel Tax		$0.043/gallon

Aviation Tax Contribution 2004 ($9.579B)



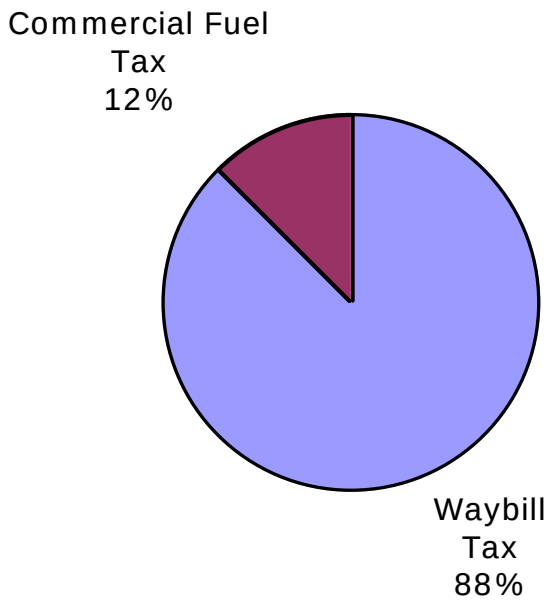
Source: FAA ATO Data Package Supporting Detail (Nov 2005)

Passenger Carrier Taxes 2004 ($8.26B)



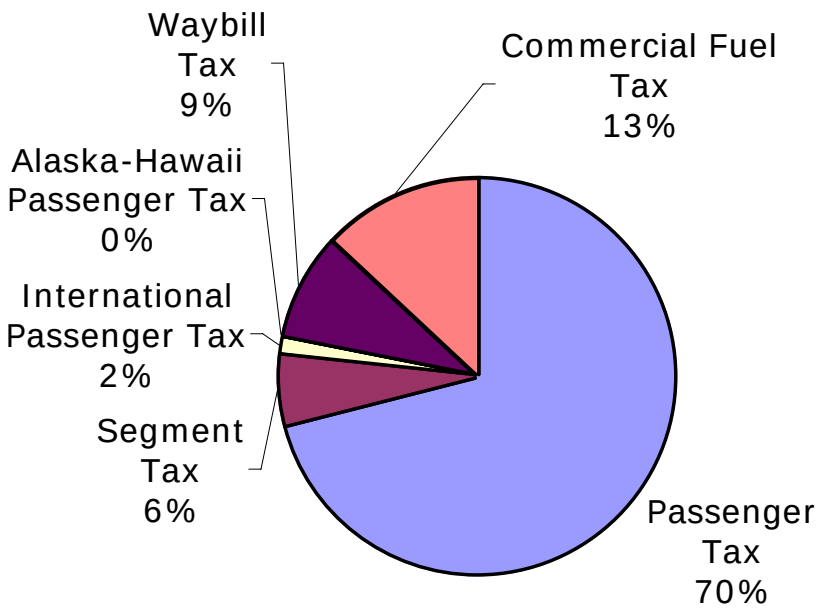
Source: FAA ATO Data Package Supporting Detail (Nov 2005)

Freight Carriers Tax 2004 ($488 M)



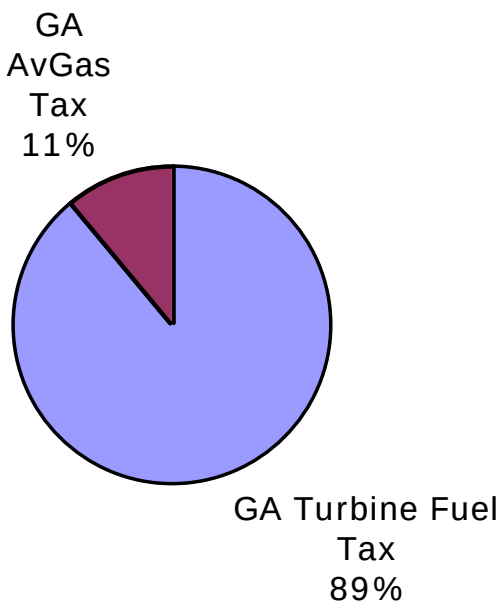
Source: FAA ATO Data Package Supporting Detail (Nov 2005)

Fractionals / Non-Sched Part 135 Tax 2004 ($327M)

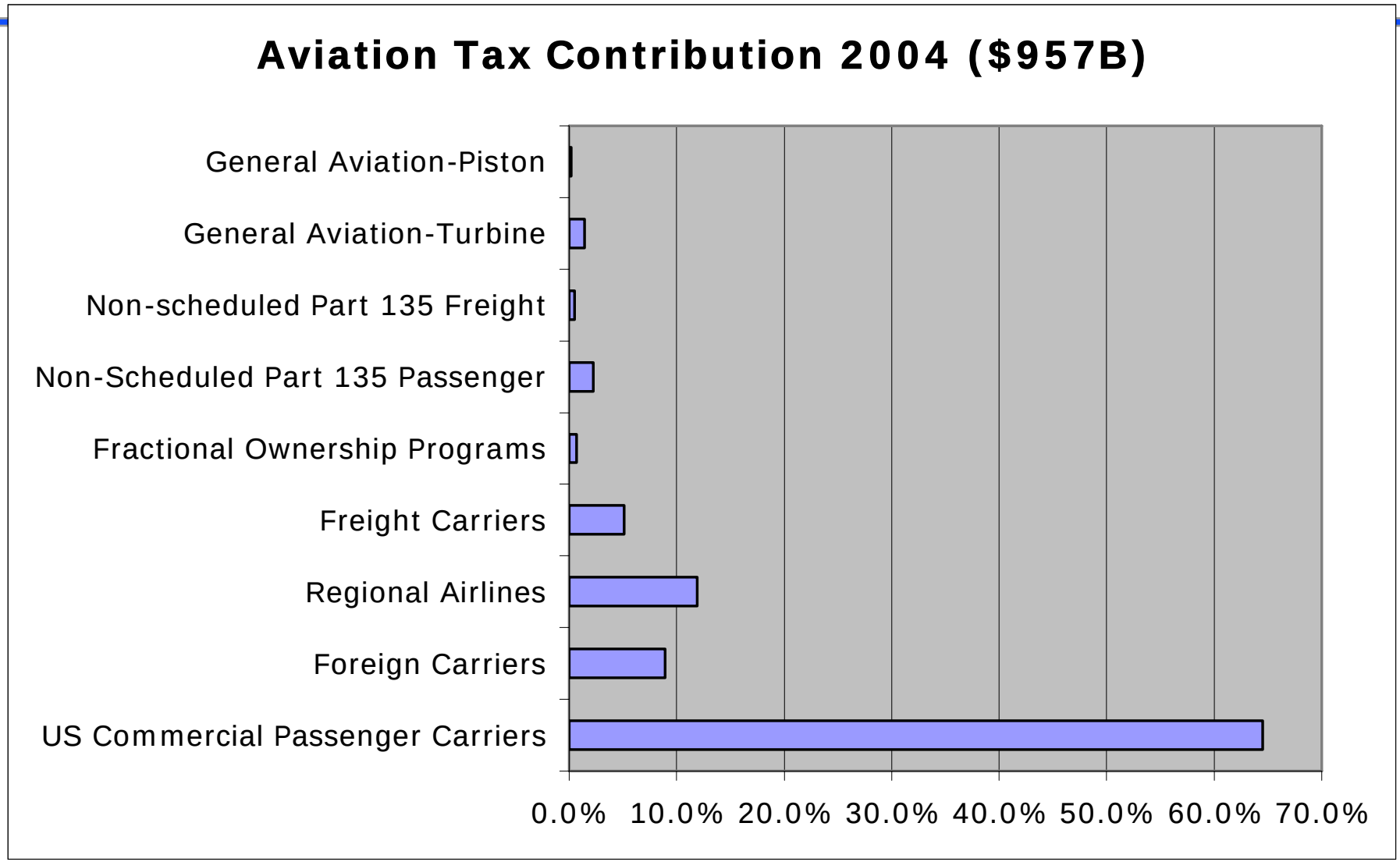


Source: FAA ATO Data Package Supporting Detail (Nov 2005)

General Aviation Tax 2004 ($158M)

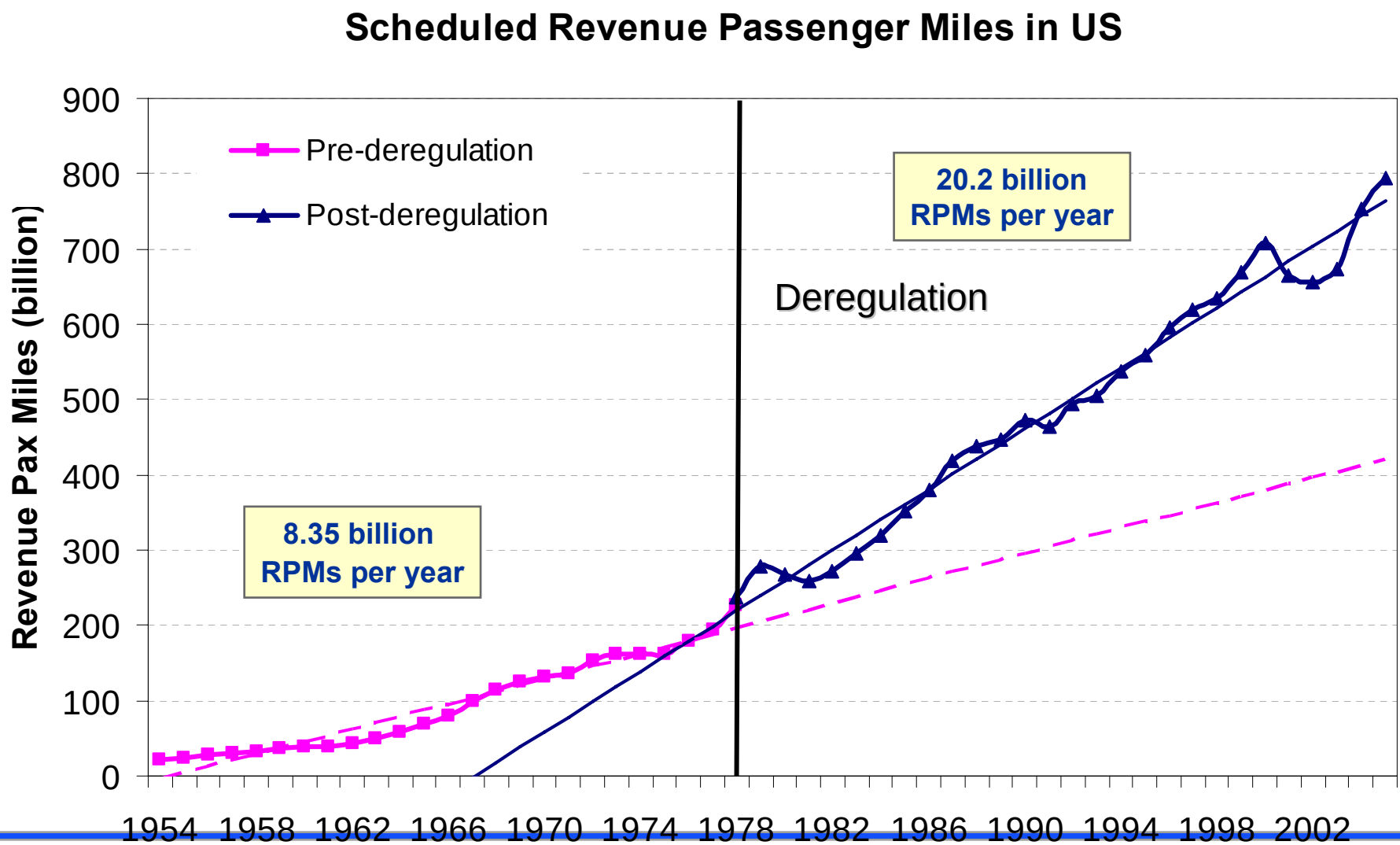


Source: FAA ATO Data Package Supporting Detail (Nov 2005)



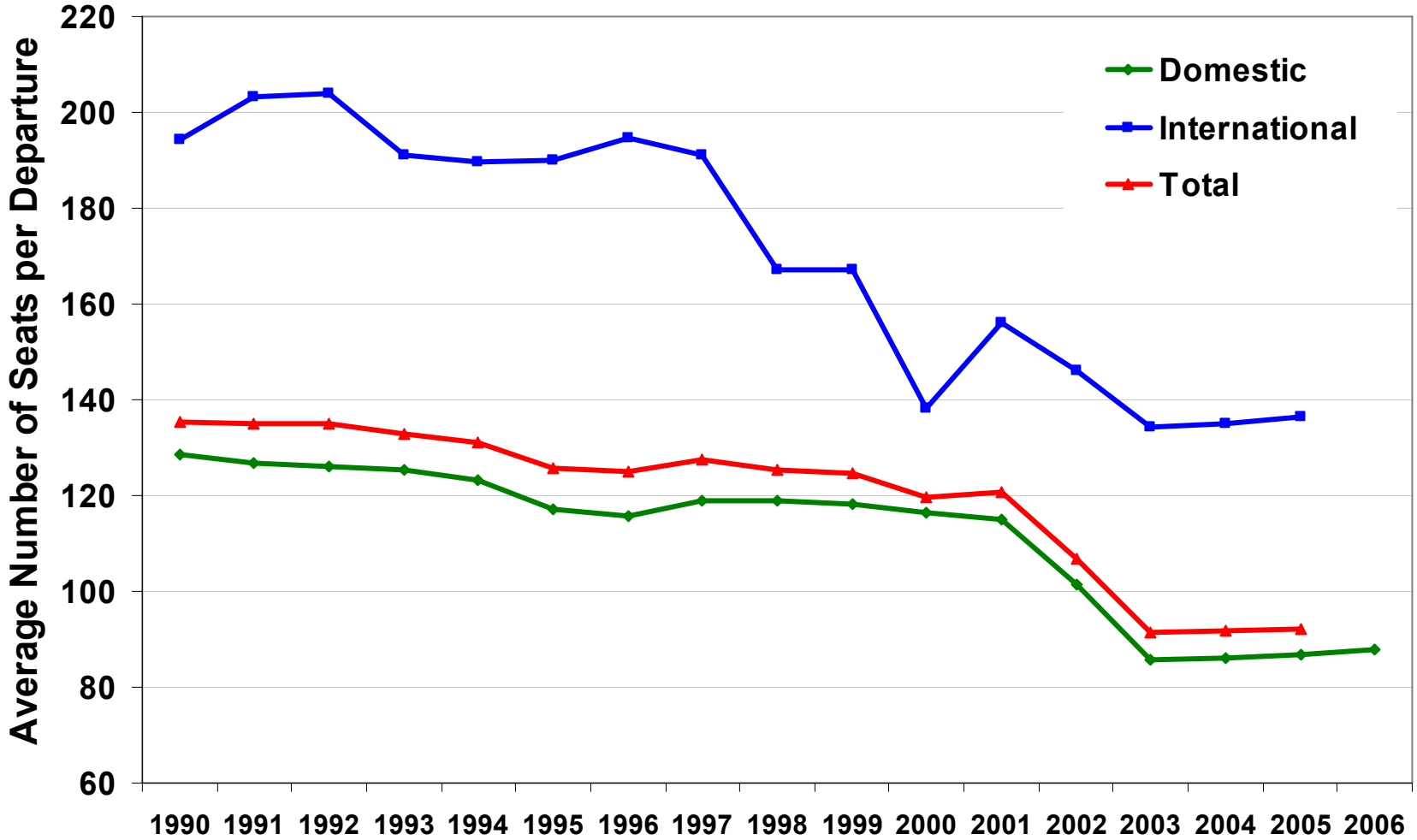
Source: FAA ATO Data Package Supporting Detail (Nov 2005)

US Passenger Growth Trends
Effect of De-Regulation



Data source: Bureau of Transportation Statistics

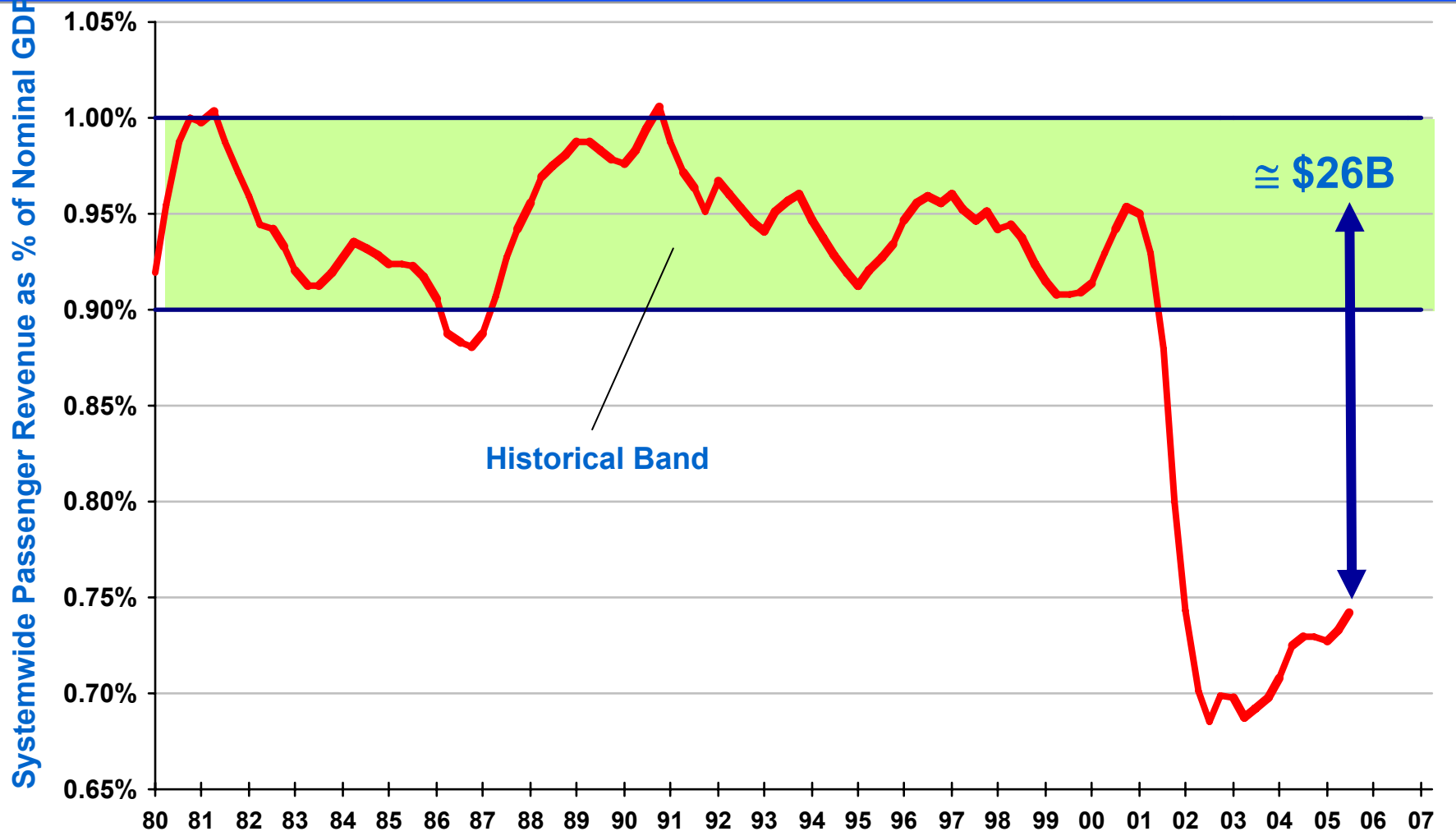
Trends in Aircraft Size



Data source: Form 41 Traffic data from Bureau of Transportation Statistics (includes Regional Jets and Turboprops)

Spending on Air Travel Has Fallen as % of U.S. Economy

Recent Quarters' Modest Recovery Still $26B Short of Historical Norm

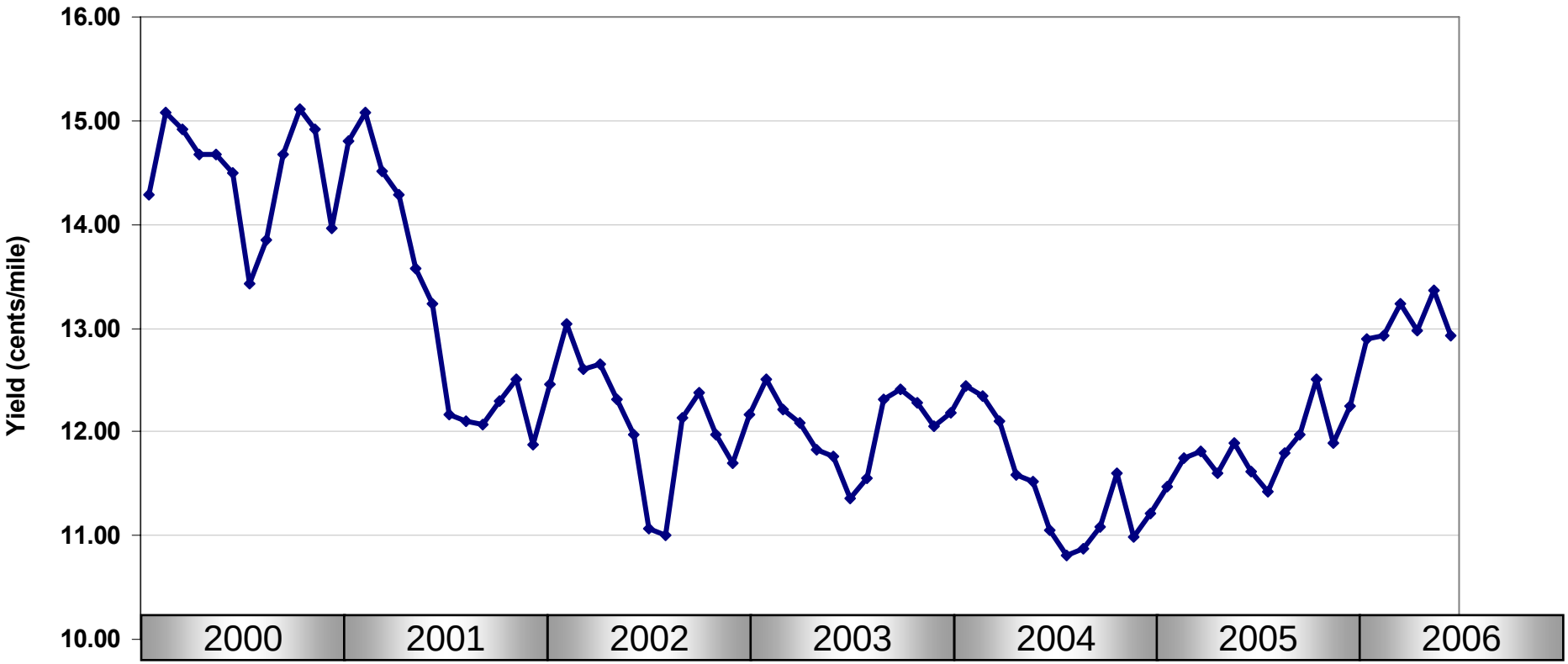


*Four-quarter rolling passenger revenue derived from government filings of passenger airlines whose annual operating revenues exceed $100 billion

Sources: ATA Airline Cost Index; Bureau of Economic Analysis; U.S. Department of Transportation

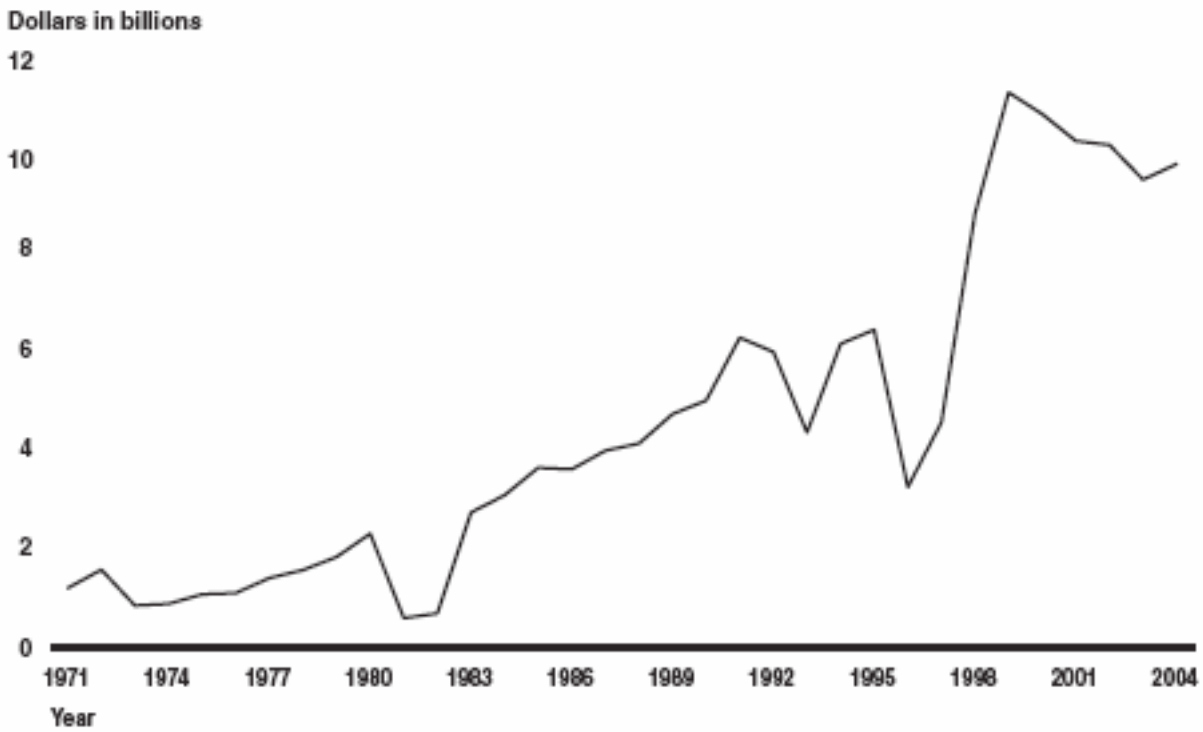
Data source: ATA.

U.S. Average Domestic Yield 2000-2006



Data source: ATA Monthly Airfare Report, 8 US major airlines excluding Southwest (WN).

Figure 2: Trust Fund Revenues Have Fluctuated but Generally Increased



Source: Congressional Budget Office and FAA budgets.

Airport and Airway Trust Fund Receipts

Updated on March 3, 2006

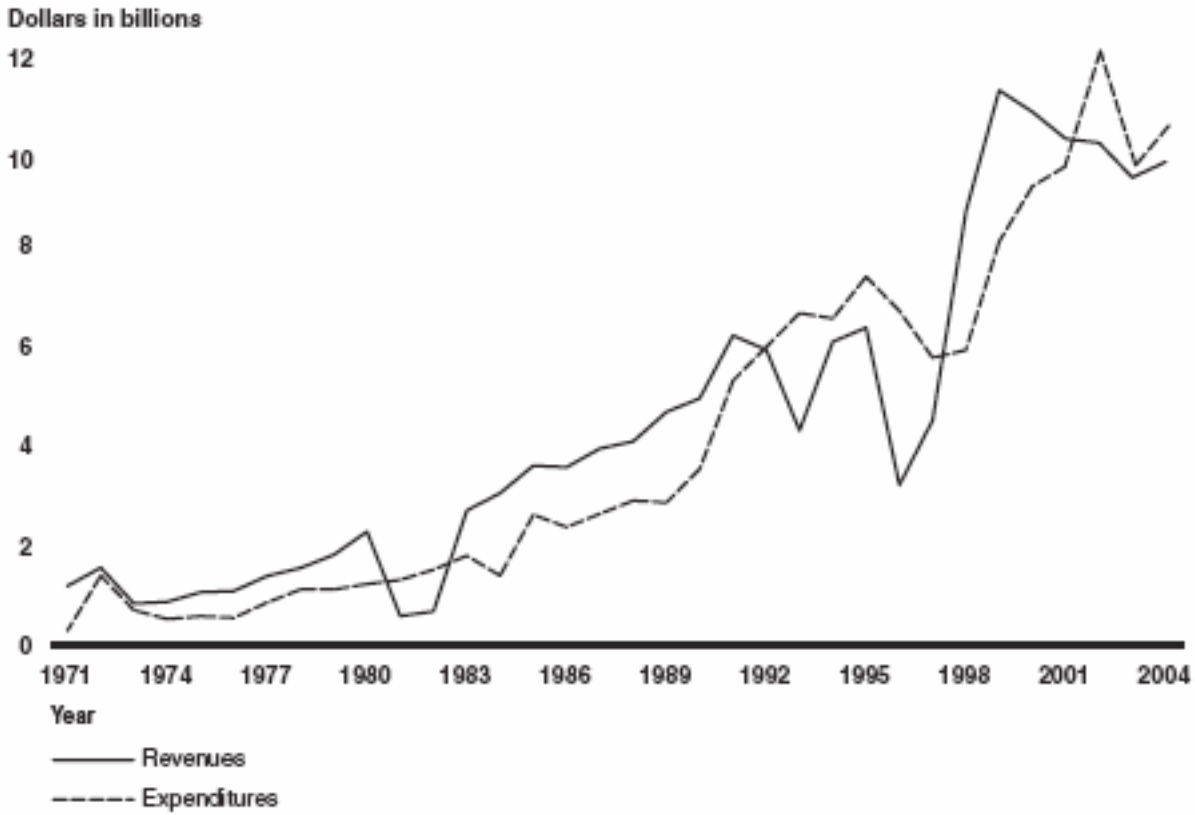
(All dollars in millions, for Fiscal Years, based on Treasury Income Statements)	1998[1]	1999[1]	2000	2001[2]	2002	2003	2004	2005[3]
Transportation of persons*	$ 6,190	$ 7,486	$ 7,003	$ 6,596	$ 6,415	$ 5,996	$ 6,501	$ 7,061
Transportation of property	314	412	500	442	368	397	499	461
Use of International Air Facilities**	948	1,484	1,349	1,351	1,495	1,484	1,456	1,922
Aviation Fuel - Commercial	501	727	651	623	506	444	434	354
Aviation Fuel Other Than Gas (non-commercial)	154	210	217	161	258	334	303	573
Aviation Gasoline (non-commercial)	47	76	64	71	49	73	37	44
Total Tax Receipts	**$ 8,154**	**$ 10,395**	**$ 9,784**	**$ 9,243**	**$ 9,090**	**$ 8,729**	**$ 9,230**	**$ 10,415**
Refund of Aviation Fuel Other Than Gas (non-commercial)	36	3	30	45	33	38	48	95
Refund of Aviation Gasoline (non-commerical)	7	0	16	7	27	6	8	6
Other Refunds/Credits	0	0	0	-	-	-	-	-
Total Refunds/Credits	**43**	**4**	**46**	**53**	**60**	**44**	**56**	**101**
Net Tax Receipts	**$ 8,111**	**$ 10,391**	**$ 9,739**	**$ 9,191**	**$ 9,030**	**$ 8,684**	**$ 9,174**	**$ 10,314**
Non-Add: Net Aviation Fuel Other Than Gas (non-commercial)	*118*	*206*	*188*	*116*	*225*	*296*	*254.7*	*478.1*
Non-Add: Net Aviation Gasoline (non-commerical)	*41*	*76*	*48*	*63*	*22*	*67*	*29.7*	*38.0*
Interest on Investments	578	734	818	907	778	571	447	440
Other Income	0	0	0	-	0	0	-	-
Total Trust Fund Receipts	**$ 8,689**	**$ 11,126**	**$ 10,557**	**$ 10,098**	**$ 9,808**	**$ 9,255**	**$ 9,621**	**$ 10,754**

* Transportation of persons includes domestic passenger ticket tax, domestic flight segment fee, rural airports ticket tax, and frequent flyer tax.

** Use of International Air Facilities includes international arrival/departure tax and Alaska/Hawaii tax

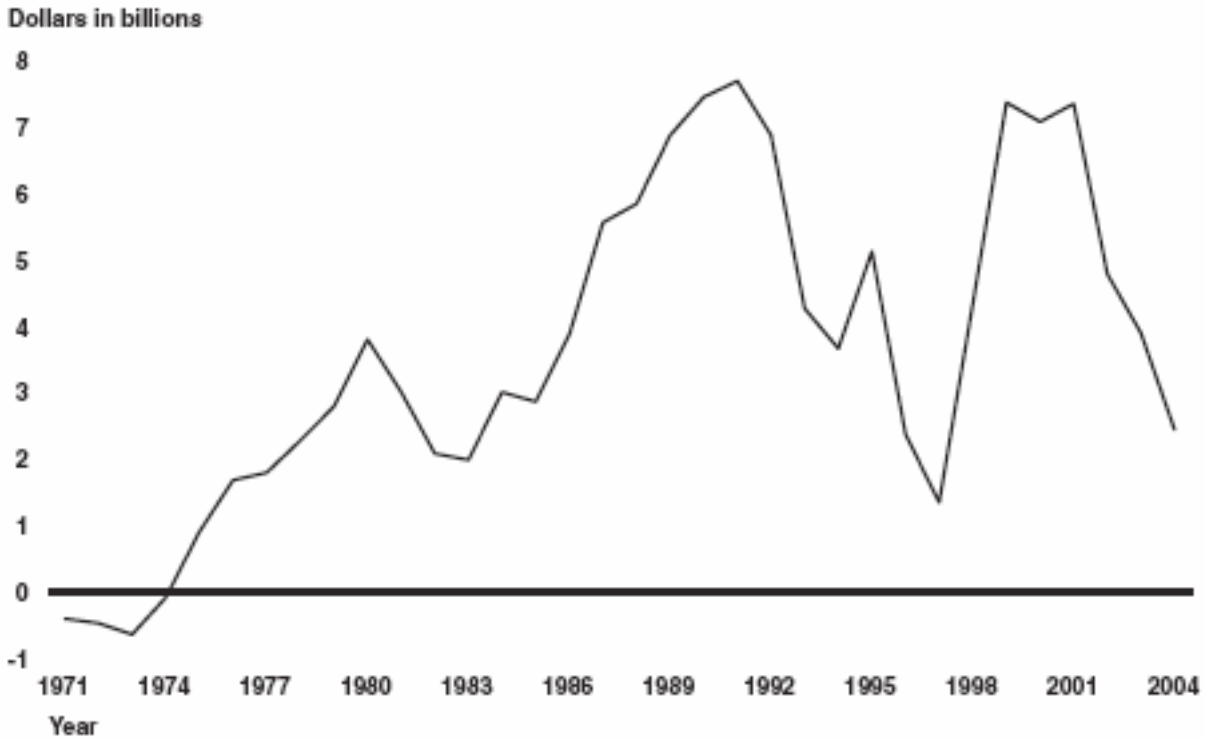
Source: FAA ATO Data Package Supporting Detail (Nov 2005)

Figure 3: Expenditures Exceeded Revenues in Some Years



Source: Congressional Budget Office and FAA budgets.

Figure 1: Trust Fund's Uncommitted Balance Has Recently Started to Trend Downward



Source: Congressional Budget Office and FAA budgets.

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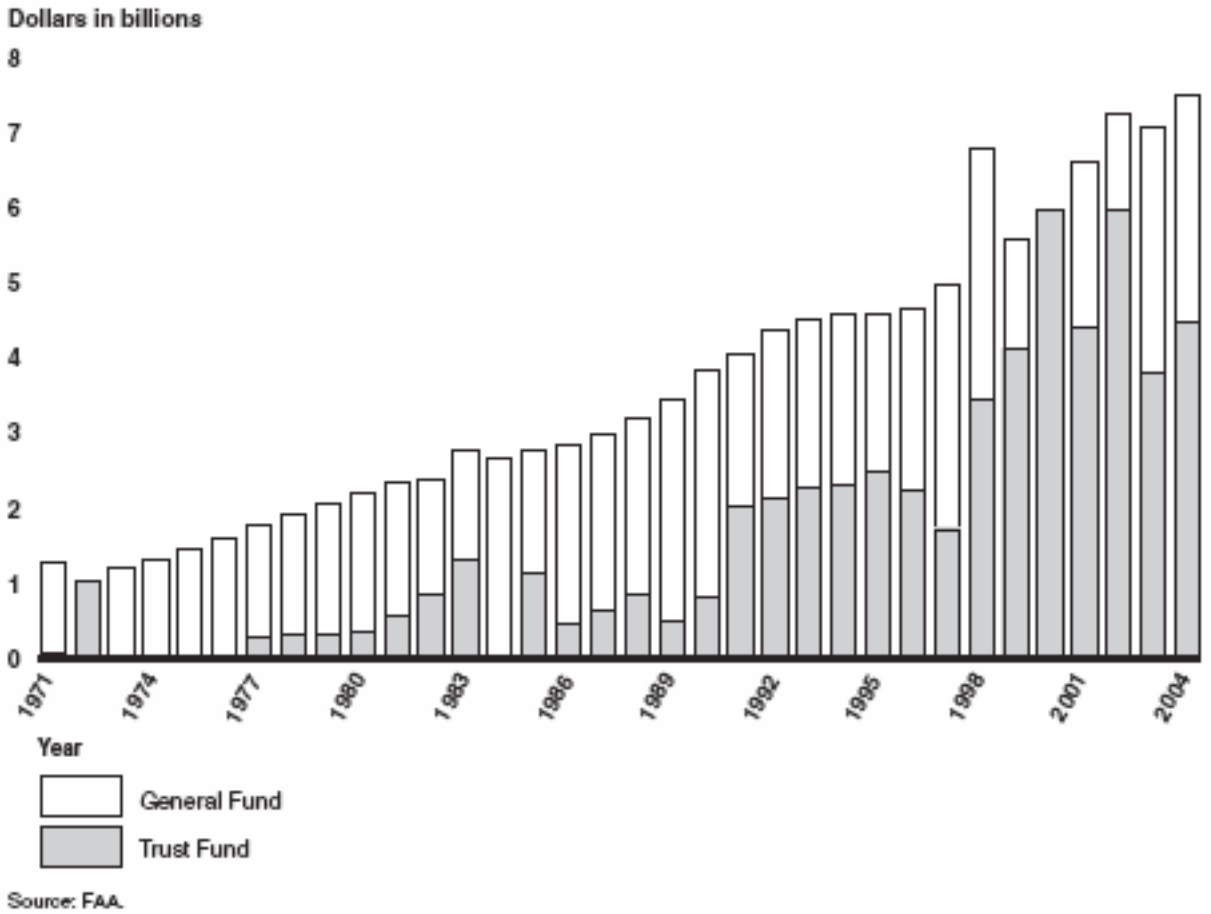
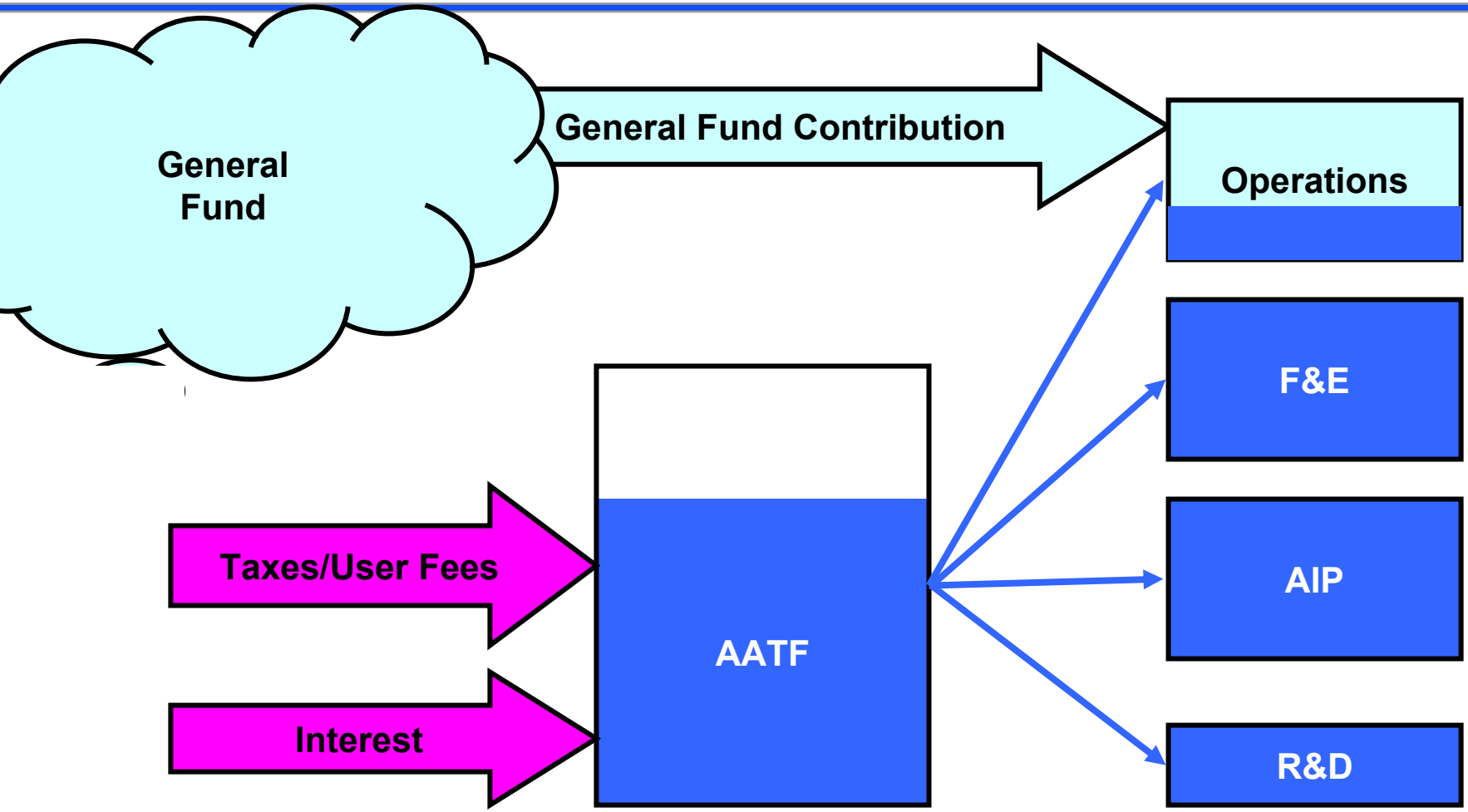
Figure 4: FAA Operations Cost Funded By Trust Fund and General Fund



Source: FAA.

Funding Structure



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- A more reliable method may be basing the level on the actual Trust Fund revenue in the previous year.

FAA Reauthorization '07

- **FAA Reauthorization bill: deadline Sept. 30, 2007**
- **Issues:**
  - Financing operations of the current system and investments for NGATS
  - Finding a stable and predictable revenue stream for the AATF
  - Share of the General Trust Fund in the AATF
  - Assessment by groups of stakeholders that "others" don't pay their share of the system
    - Airlines → GA: GA not pay their share of the system
    - GA → Airlines: "The system is designed around airlines operations and they should pay the system" "GA is a marginal user that should pay the incremental cost"
- **Two groups of stakeholders with opposed views:**
  - Pro user fees: Airlines represented by the Air Transport Association
  - Pro "current funding mechanisms": General Aviation community (including business aviation – NBAA)

FNGATSWG-Report Briefing Package

Financing the Next Generation

Air Transportation System Working Group

Jerry Thompson (FNGATSWG)

April 13, 2006

FNGATSWG approach:

1. **Establish in cooperation with the JPDO and other elements:**
   - a baseline 2006-2025 cost estimate for developing, implementing, and operating the planned NAS if the NGATS is not implemented (Called Status Quo Scenario)
   - a corresponding 2006-2025 cost estimate for developing, implementing and operating the NAS converting to NGATS in 2010 (Called NGATS Scenario).
   - opportunities to reduce costs through advanced technologies and techniques or outsourcing, but not issues such as labor contracts, privatization or major structural changes in the FAA.
2. **Identify the options for funding the resulting system cost through user fees or user taxes supplemented by a general fund contribution.**
3. **Develop a set of criteria for assessing these options.**
4. **Determine if a financing approach such as bonding based on a stream of user or other fees is needed; if so identify options for doing so.**
5. **Consider approaches to implementing the NGATS that the industry and Congress would support.**

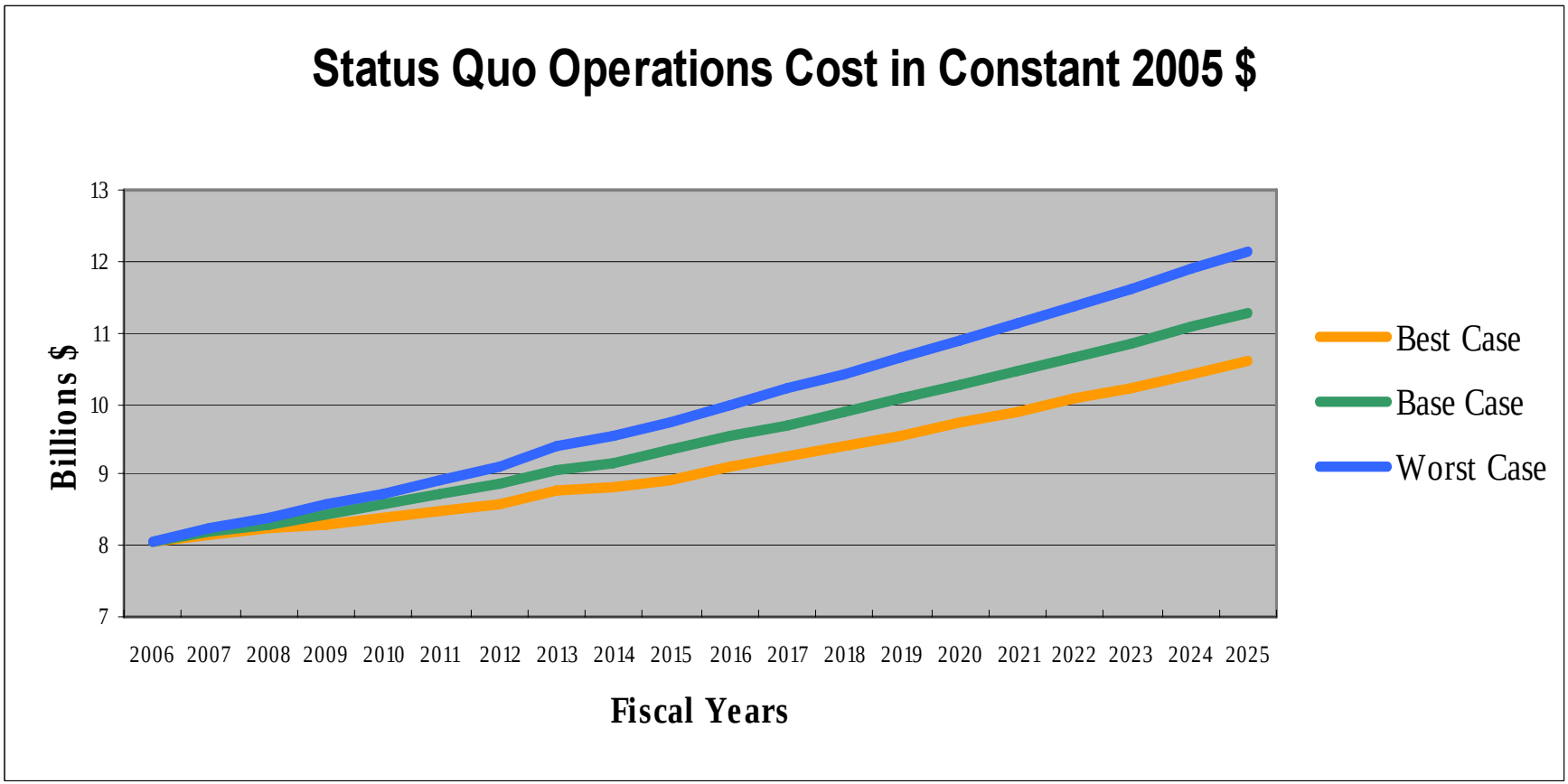
Status Quo Scenario

- **The Status Quo Scenario is based on the continuation of the OEP program over the 20-year period of 2006-2025**
- **This scenario is not believed to provide the system capacity needed beyond 2010-2015 time frame. Capacity constraints currently felt in New York and Chicago are expected to expand to major cities during the early years of this period and to the next tier of cities in the later years and then to the enroute airspace in general. The economic impact will be significant.**
- **The Status Quo Scenario is therefore considered here as the base line for analysis purposes only.**

Status Quo Operations Cost Assumptions

- **Worst Case assumes that cost will growth with FAA operations…enroute operations growth from FAA projections through 2016 are used and extended on a trend line through 2025 to form the basis for operations cost growth.**
- **Base Case assumes that cost will grow as in the Worst Case but be offset by an annual 0.5% productivity improvement.**
- **Best Case assumes that cost will grow as in the Base Case except that the annual productivity improvement is estimated at 1%.**

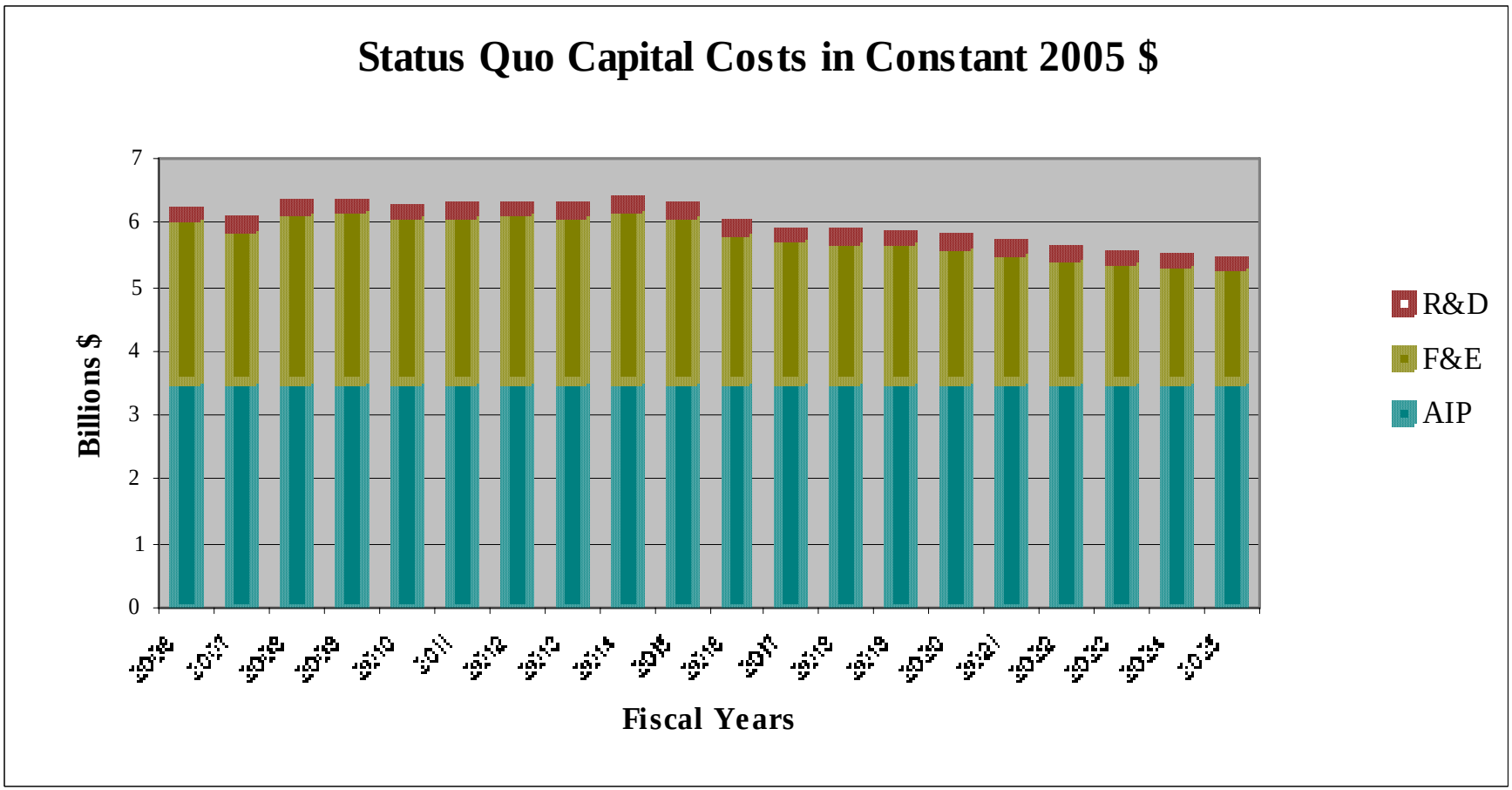
Status Quo Operations Cost



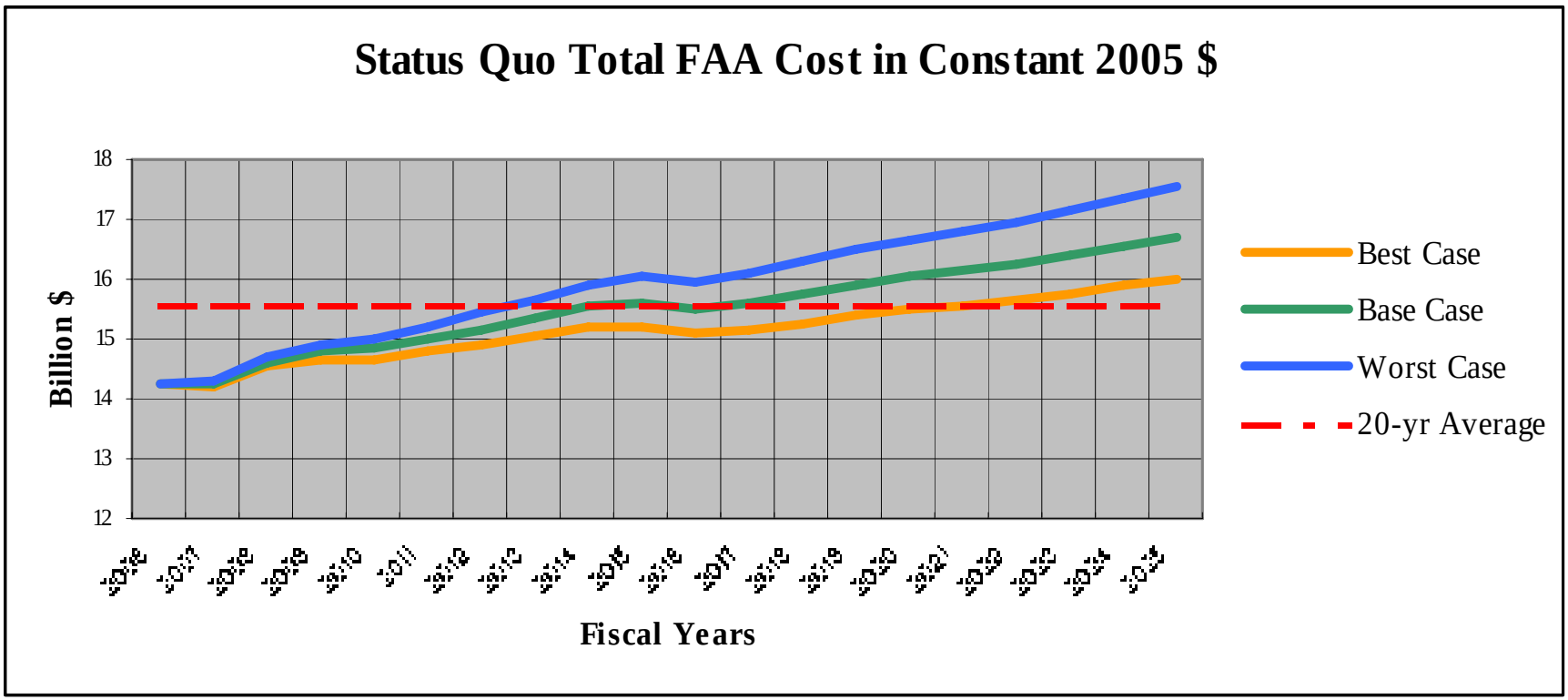
Capital Cost (including R&D) Assumptions

- **R&D cost assumed to remain constant at 2006 levels over the period**
- **AIP cost assumed to remain constant at 2006 levels over the period**
- **F&E cost is projected as negotiated between the FNGATSWG and ATO-P and ATO-F on a program and subject area basis. Details are shown in associated Cost Data Model**

Status Quo Capital (including R&D) Cost



Status Quo Total FAA Cost

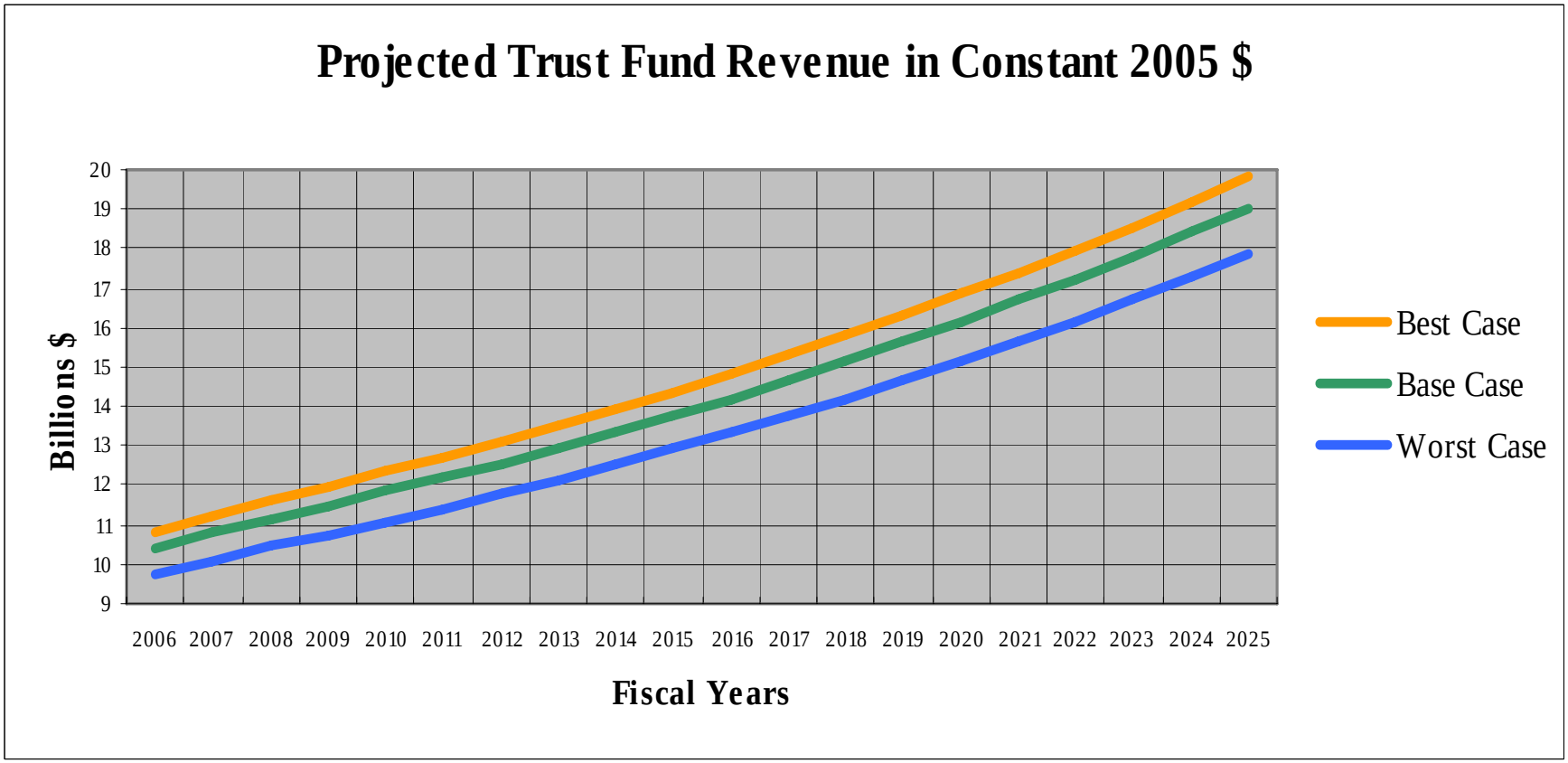


FAA Revenue Computation Assumptions

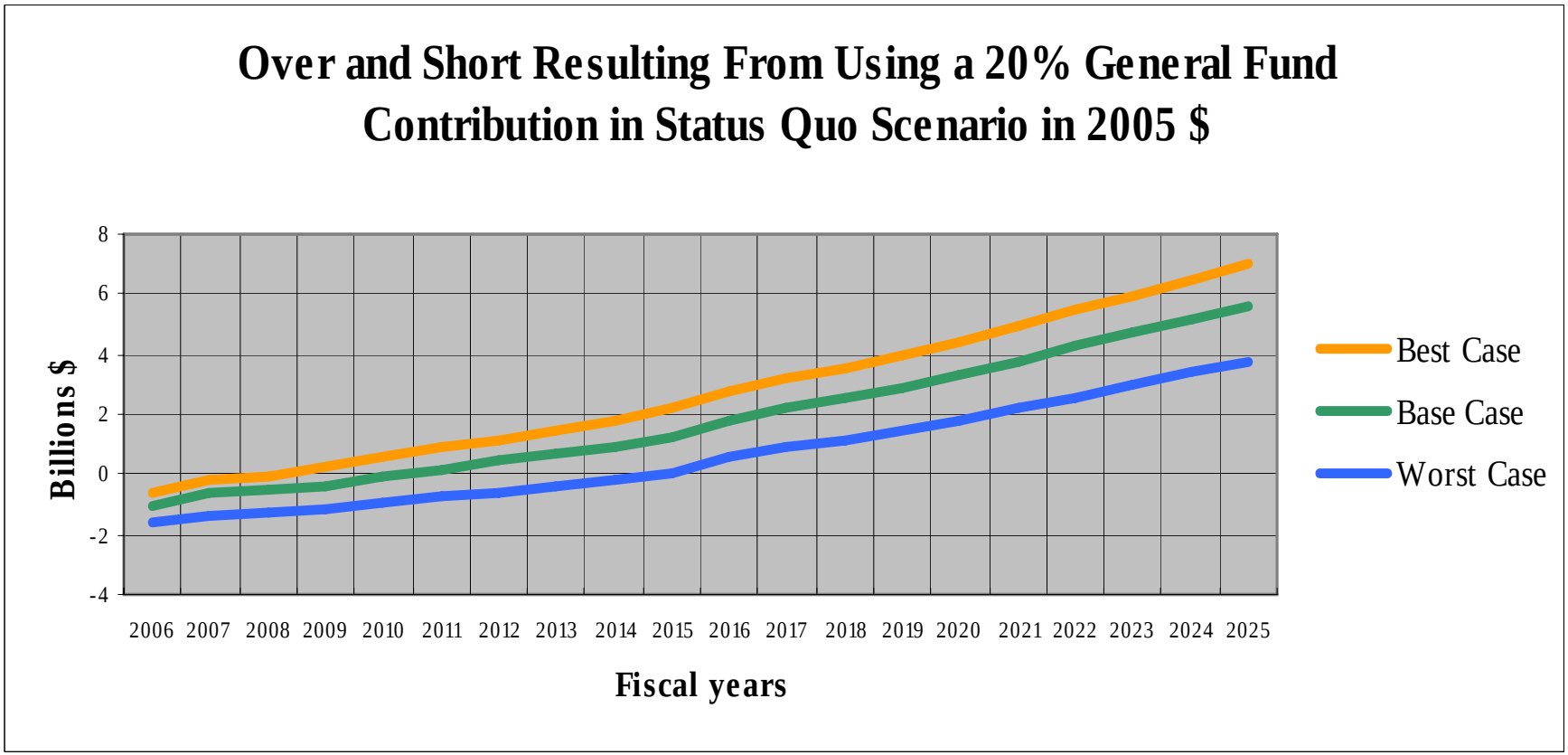
- **Best Case uses the FAA Revenue Projections through 2016 and extends them on a trend line through 2025.**
- **Base Case discounts Best Case by 4%**
- **Worst Case discounts Best Case by 10%**

The FAA trust fund revenue estimates published for the past several years have been optimistic given variations in ticket prices and the general estimating uncertainties. Therefore we use the FAA forecast as the Best Case and our Worst Case discounts the FAA forecast 10% per year (the average variance between the FAA's forecast and actual revenue in 2003-2004) over the period and the Base Case discounts the FAA forecast by 4% over the period (the average variance between 2000-2005, excluding 2002, which was an extreme case due to the effect of the 9/11 attacks).

Projected Trust Fund Revenue



Status Quo Over and Short With 20% General Fund Contribution



The NGATS Scenario

- **Changing the today's NAS the 2025 NGATS requires insertion over twenty years technologies that provide the required increase in capacity and lower operation cost that implement nine new capabilities that are build on the current NAS capabilities to create the NGATS capabilities.**

1. **Network Enabled Information Access**
2. **Performance Based Services**
3. **Advanced Air Traffic Automation Services**
4. **Aircraft Trajectory-Based Operations**
5. **Weather Assimilation Into Decision Loops**
6. **Broad-Area Precision Navigation**
7. **Equivalent Visual Operations**
8. **Super Density Operations**
9. **Layered Adaptive Security**

Capability 1 - Network Enabled Information Access

- **Network enabled** Ground-To-Ground Information Sharing **between the FAA and AOCs, FBOs and other federal, state and local agencies enhance capacity, productivity, and national security, reduces cost, and may enable consolidation of facilities. Network enabled integration of surveillance networks enhances national defense and reduces costs.**
- **Network enabled** Air-To-Ground Information Sharing **reduces FAA & user costs and enhances safety, security & efficiency. A transition CNS capability with digital radio, data link and ADS-B is installed early to establish early benefits and an Airborne Information Web follows that builds on and extends this capability and provides expanded** Air-To-Air Information Sharing**.**

Capability 2 – Performance Based Services

- Service Levels **based on user equipage and training capabilities enables negotiated contracts between the FAA and users, use of RNP approaches and departures at congested airports, and improved airspace use, increases capacity and reduces user costs**
- Data Link Equipage **enables system wide controller-pilot data link, data link clearance delivery, and 4-D trajectory negotiation and data link delivery which leads to increased FAA productivity and reduced user costs**
- SatNav Rule Making **facilitates implementation of RNP routes to and from congested and commercial airport runway ends and then time-metered RNP routes to these runways further increase capacity.**
- ADS-B And CDTI Equipage **facilitates integration of air-to-ground and air-to-air surveillance surveillance to increased oceanic capacity; ADS-B position and intent information shared between aircraft, between aircraft and major terminals, between aircraft and en route ATC increases safety and security.**
- **Proactive risk-based** Safety Management System (SMS) **enhances system safety data collection and analysis. Improved safety analysis provides enhanced basis for redefining NGATS en route, terminal, runway spacing separation standards**

Capability 3 - Advanced Air Traffic Automation

- Decision Support Tools (DST) And Traffic Flow Management (TFM). **Implementation of ongoing decision support tools TMA and URET increase capacity and productivity. Implementation of Traffic Flow Management modernization package reduces delays and increases capacity.**

- Air Traffic Control Automation. **The process of converting the air traffic controller to an air traffic manager proceeds in three steps:**

  1) Automation of routine separation and sequencing are developed from NASA baseline and implemented in enroute and terminal airspace facilitates sector size increases and increases capacity and productivity.
  2) An integrated package of advanced separation & sequencing, airspace management, and trajectory management techniques that further increase capacity and productivity.
  3) The Evaluator/Optimizer package of advanced separation and sequencing, airspace management, and trajectory management techniques on the NEO platform that yet further increase capacity and productivity.

Capability 4 - Aircraft Trajectory-Based Operations.

- Dynamic Airspace Reconfiguration **enhances access, reduce delays, prioritize security needs, increase efficiency, accommodate disruptions and potentially reduce facilities. Includes:**
  - Dynamic configuration of enroute and terminal facility airspace by demand/capacity balancing
  - Dynamic management of Special Use Airspace & Temporary Flight Restrictions.
- 4-D Trajectory **development enables:**
  - Time-based metering nationwide that will lead to increased capacity
  - Enroute and terminal 4-D trajectory management that will be the basis for reduced delay and increased capacity; and
  - Surface 4-D trajectory management based flight planning reduces surface delay and airport congestion. Use of 4-D flight paths reduces noise and emissions impact on environment.

Capability 5 - Weather Assimilation Into Decision Loops

- **Enhanced sensor development and deployment to enhance Observations and quality of data.**
- **Fusing sensors and models into a national database improves forecasts leads to reduced weather delays.**
- **Sharing of improved weather information with aviation users enhances flight planning & reduces weather delays.**
- **Inclusion of probabilistic and deterministic weather information into decision making process will reduce weather delays.**

Capability 6 - Broad-Area Precision Navigation

- Satellite Navigation **as the primary means of navigation enables:**
  - Reduced oceanic separation standards and increased capacity
  - Reduced domestic separation standards to increased capacity
  - CAT I and CAT II approaches available on all runway ends to reduce weather delays;
  - CAT III (augmented) approaches available at all runway ends to reduce weather delays
- Ground-Based Infrastructure **can be reduced to reduce sustainment costs by:**
  - NDB navigation aids shutdown
  - VOR/DME network reduced
  - ILS shut down at all but CATIII airports

Capability 7 - Equivalent Visual Operations

- During Low Visibility Air Operations**:**
  - CDTI enables reduced in-trail separation during approach increasing airport arrival capacity during IMC to VFR levels
  - CDTI enables independent operations on converging and closely spaced parallel runways increasing airport arrival capacity during IMC to VFR levels;
  - Self separation, merging and spacing using CDTI reduces controller workload and increases aircraft flight path flexibility under certain conditions and airspace;
  - Airborne separation assurance and sequencing automation increases operations at non-towered airports during IMC to VFR levels;
  - Airborne automatic collision detection and resolution increases safety.
- During Low Visibility Ground Operations **synthetic vision enables zero/zero or blind taxi capabilities reducing airport surface delays during IMC to VFR levels**

Capability 8 - Super Density Operations

- Reduced Terminal Area Longitudinal Separation **of arrival/departure spacing requirements for a single runway and dynamic longitudinal arrival and departure spacing based on wake vortex detection and prediction increases throughput at high-density hubs.**
- Reduced Terminal Area Lateral Spacing **of arrival/departure spacing requirements for closely spaced parallels increases throughput at high-density hubs.**
- Coupled Approaches to Very-closely-spaced Parallels **increases throughput at high-density hubs.**
- Situational Awareness of Nearby Aircraft **reduce runway occupancy time and increase throughput at high-density hubs and improved energy management during rollout.**
- Multiple Aircraft Operations on a Single Runway **increase throughput at high-density hubs.**

Capability 9 - Layered Adaptive Security

- People **security is enhanced and passenger-screening time is reduced with secure passenger programs.**
- Cargo **security is enhanced and shipper overhead reduced with next generation explosive trace detection screening technology and known/trusted shipper programs.**
- **Improved** Airport **perimeter surveillance and security checkpoint design reduce terrorist threats.**
- **Enhancements to vehicle tracking will improve** Aircraft **security.**

NGATS Research and Development

- **To implement the 9 capabilities outlined above 5 categories of R&D are required over the NGATS implementation period of 2006 through 2025 and one trailing category begins development of the next-next generation ATS system.**

  1. System Enabling Research & Development
  2. NGATS Platform, Network & Protocol Development
  3. 1st Generation NGATS Software (Operates on ERAM/STARS/ARTS Platform)
  4. 2nd Generation NGATS Software (Operates on NEO Platform)
  5. 3rd Generation NGATS Software (Operates on NEO Platform)
  6. Next-Next Generation ATS Development

  Note that this R&D work and the associated F&E work that follows has been subsequently organized into 7 Segments by the Joint Program and Development Office.

1. System Enabling Research & Development

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Establish mathematical safety basis for en route, terminal, runway spacing, in trail, et al separation standards			
(2) Define optimum roles for pilot, controller, and flight dispatcher as related to each other and their machines.			
(3) Determine the optimum size for a NGATS facility in			
(4) Define fault tolerant "network centered" automation network to support very high levels of ATC automation			
(5) Develop weather and wake vortex products that enable visual rules in IMC conditions and minimize approach spacing			

2. NGATS Platform, Network & Protocol Development

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Define Airborne Information Web	**(3) Develop Airborne Information Web**	**(7) Network sustainment research**	**(8) Network sustainment research**
(2) Define NGATS grd/grd network	**(4) Develop NGATS grd/grd network**		
	(5) Develop 2nd generation "Network Centered" NGATS architecture and associated 2nd generation automation platform (s) that maybe airborne, space or ground based or some combination.		
	(6) Define and develop the associated pilot work station (including avionics), controllers workstation, flight work station, and other workstations , if needed , to support the human roles for the future NGATS		

3. 1st Generation NGATS Software
(Operates on ERAM/STARS/ARTS Platform)

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Develop automated handoff software			
(2) Develop automated FAA/AOC auto-negotiation software			
(3) Develop Data link clearance delivery software			
(4) Develop 4-D trajectory data link delivery software			
(5) Develop terminal ADS-B position and intent application software			
(6) Development of automated separation and sequencing from prior NASA work on airborne and ground automation			
(7) Develop dynamic management of SUA/TFR airspace management software			
(8) Develop en route dynamically configured airspace software			
(9) Develop software for sharing weather information with users on the ground and airborne			
(10) Develop 4-D trajectory software			

4. 2nd Generation NGATS Software
(Operates on NEO Platform)

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1). Initiate research & development of Optimizer/Evaluator and associated dynamic realignment of airspace.	**(2) Develop Airborne Information Web Software**		
	(3) Develop 4-D trajectory negotiation software		
	(4) Develop enhanced ADS-B based position and intent software		
	(5) Continue development of automated separation and sequencing engines		
	(6) Continue Optimizer/Evaluator research & development		
	(7) Develop software for inclusion of probabilistic and deterministic weather information in decision making processes		

5. 3rd Generation NGATS Software
(Operates on NEO Platform)

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
		(1) Develop Air to grd information sharing software	
		(2) Continue development of automated separation and sequencing engines	
		(3) Continue the refinement of the Optimizer/Evaluator concept	
		(4) Develop dynamic longitudinal arrival and departure spacing software	
		(5) Develop coupled approach software for use with closely spaced parallel runways	
		(6) Develop software to support multiple aircraft on the same runway	

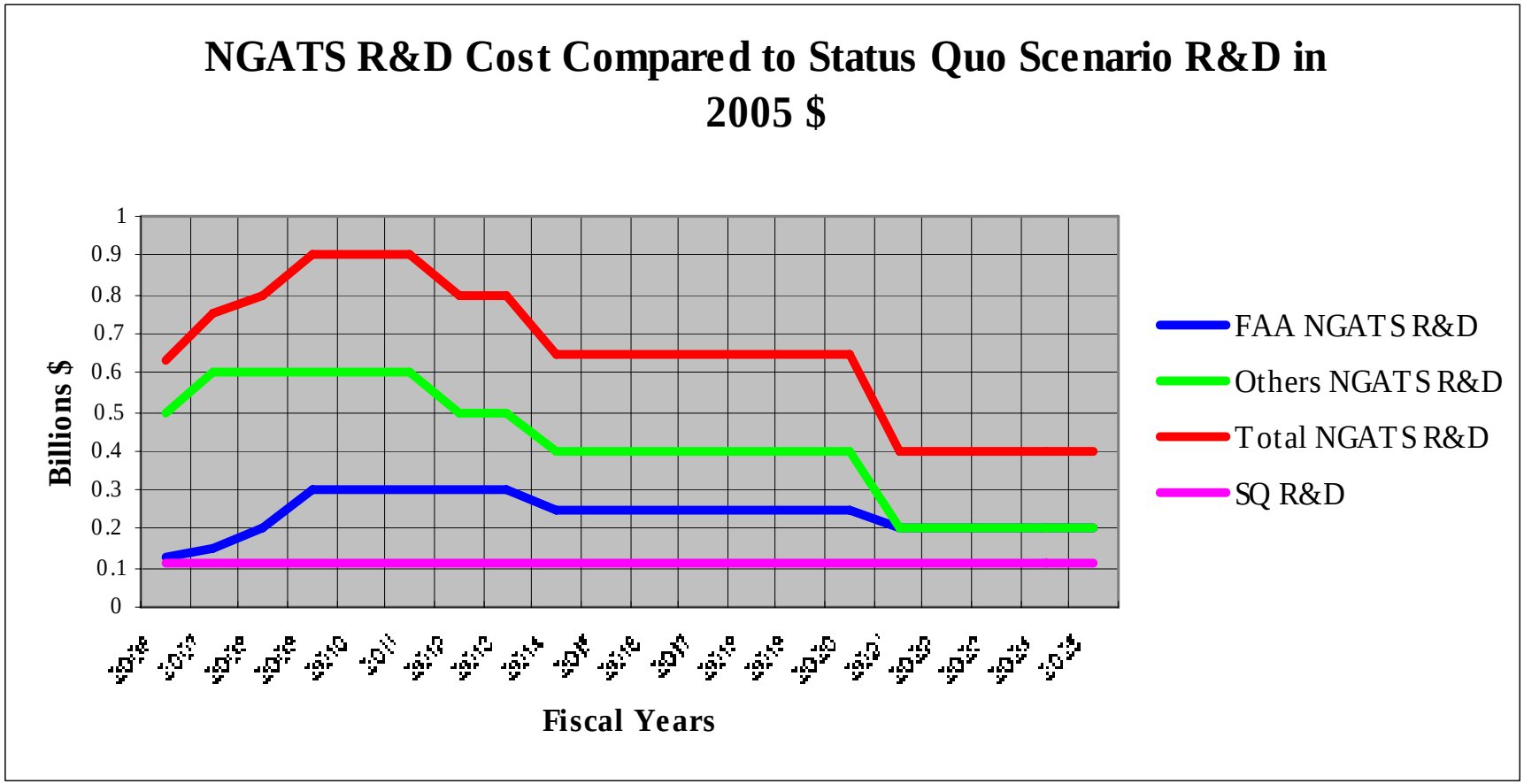
6. Next-Next Generation ATS

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
			(1) Begin work on the Next-Next Generation ATS System.

NGATS R&D Cost Assumptions

- FAA Costs assume that FAA will assume the tasks of bringing R&D products from NASA, Mitre and Others through the final maturity phases (above TRL Level 3) and prepare them for introduction into the F&E build process. This will entail reestablishing an FAA ATM R&D capability.
- NASA Costs assume that NASA will provide the research necessary to bring future technologies to TRL Level 3 and hand them over to the FAA as above. An exception to this policy on completion of the automation of airborne separation and sequencing work currently being developed at Langley and the ground based separation and sequencing work that is currently being accomplished at Ames needs to be completed with an objective of fielding the products in the 2010-2912 timeframe.
- Others Costs are continued as present.

NGATS R&D Cost



NGATS Facilities & Equipment Activities

- **Implementation of the nine NGATS capabilities results from implementation of six NGATS F&E Activities**
  1. Establish NAS/NGATS Operating Facilities
  2. NGATS Platform, Network & Protocol Implementation
  3. Implement Decision Support, Collaborative Decision Making, and Information Software Tools Operates on NAS/STARS/ARTS Platform
  4. 1st Generation NGATS Software Operates on ERAM platform
  5. 2nd Generation NGATS Software Operates on NEO platform
  6. 3rd Generation NGATS Software Operates on NEO platform

1. Establish NAS/NGATS Operating Facilities

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
	(1) Select 4 of existing ARTCCs and 50 TRACON/Towers to accommodate the ERAM platform that would drive the full complement of ARTCCs, TRACONs and Towers. Refurbish as required.		
	(2) Determine location and establish new NGATS operating facilities of appropriate size that will accommodate the NEO platform		

2. NGATS Platform, Network & Protocol Implementation

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Continue to develop and begin to implement ERAM automation platform	**(5) Complete implementation of ERAM, STARS, Micro-ARTS automation platform.**	**(7) Implement "Network Centered" Platform with associated pilot, controller, dispatcher, and other workstations in net NGATS facilities.**	
(2) Establish NGATS transition CNS transition platform that covers from MOCA up over entire U.S. airspace and to the ground at selected airports with digital radio, data link and ADS-B using selected ground locations with a space based overlay	**(6) Integrate NGATS CNS transition platform into ERAM platform**	**(8) Implement Airborne Information Web**	
(3) Integrate transition CNS into existing NAS, STARS, ARTS platform with FTI grd/grd system		**(9) Implement NGATS grd/grd network**	
(4) Implement integrated surveillance network			

3. Implement Decision Support, Collaborative Decision Making, and Information Software Tools Operates on NAS/STARS/ARTS Platform

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Implement interface with transition CNS w ABS-B position data			
(2) Implement Interagency information sharing software			
(3) Implement integrated surveillance network enabling software			
(4) Implement FAA/AOC information sharing software			
(5) Implement FAA/FBO information sharing software			
(6) Complete implementation of TMA and URET automation support tools into NAS, STARS, ARTS platform			
(7) Implement TFM modernization CDM tools on NAS, STARS, and ARTS platform			

4. 1st Generation NGATS Software

Operates on ERAM platform

Base Period FY-06 thru FY-10	Base Period FY-06 thru FY-10	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
	(1) Build (k) functionality of the 2010 NAS software.		
	(2) Build (k+1) 1st generation NGATS software		

5. 2nd Generation NGATS Software

Operates on NEO platform

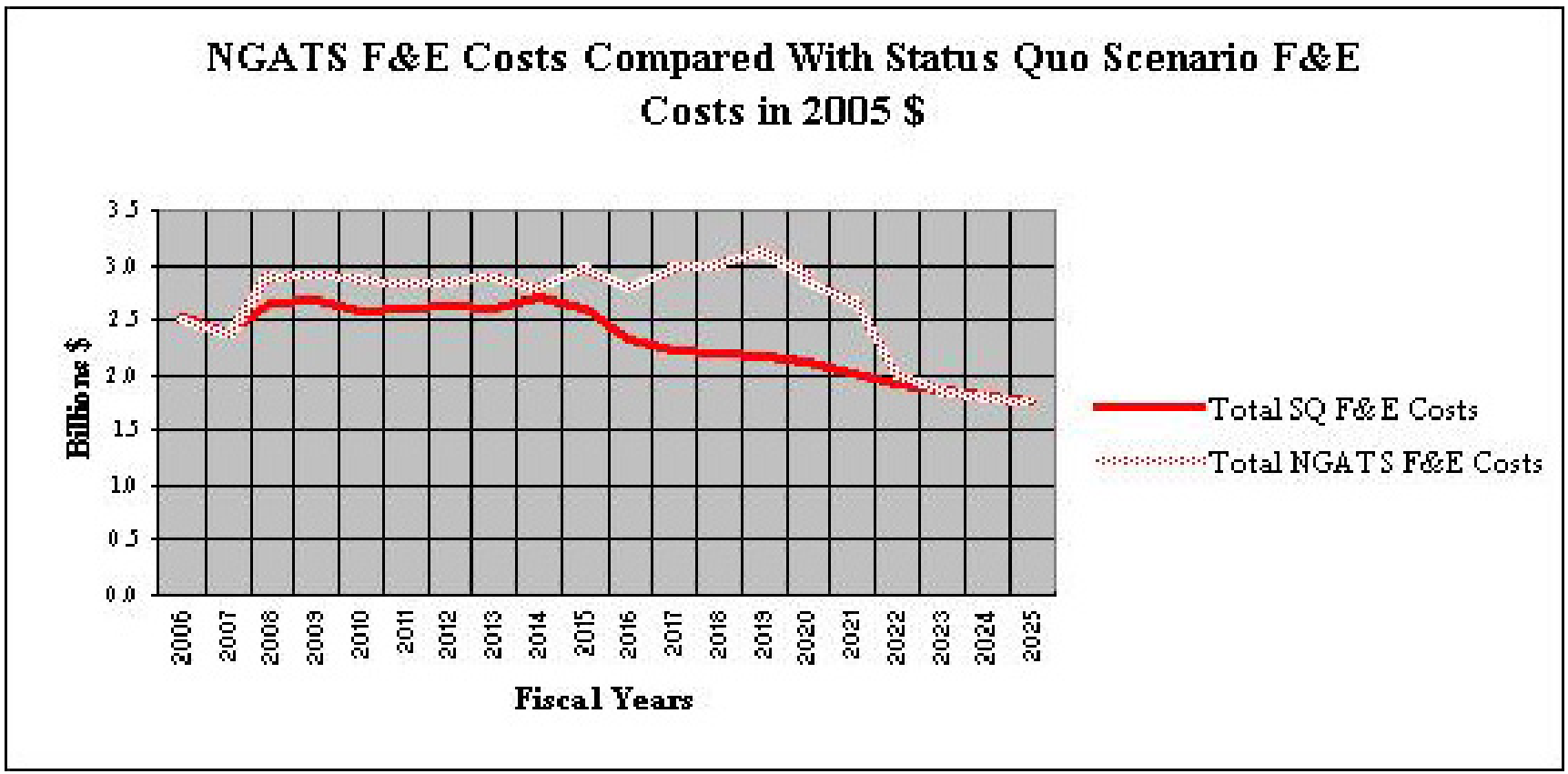
Base Period FY-06 thru FY-10	Base Period FY-06 thru FY-10	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
		(1) Build 2nd generation NGATS software	

6. 3rd Generation NGATS Software

Operates on NEO platform

Base Period FY-06 thru FY-10	Base Period FY-06 thru FY-10	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
			(1) Build 3rd generation NGATS software

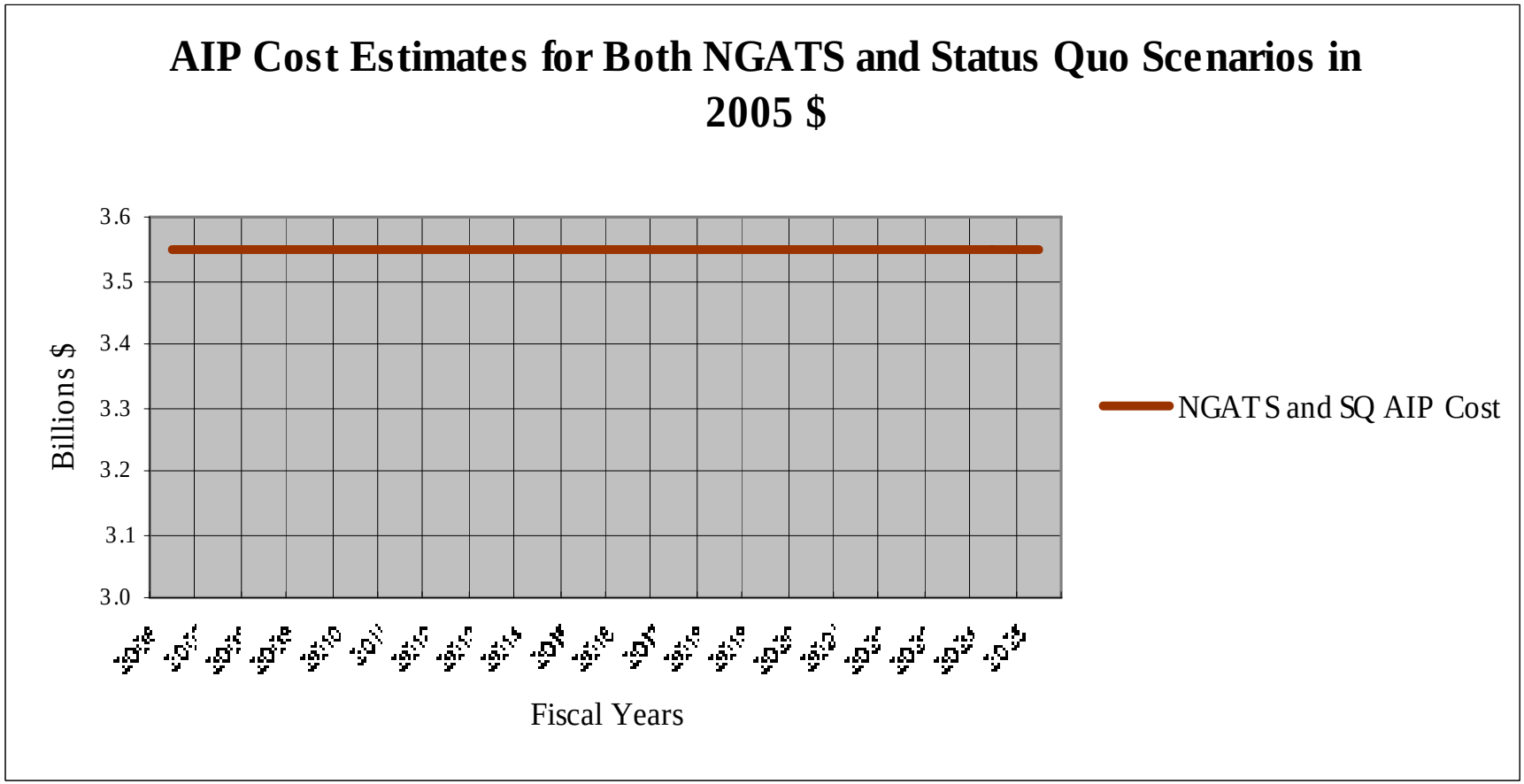
NGATS F&E Costs



NGATS AIP Cost Assumptions

- **The annual AIP Cost is assumed to continue at a 2006 level throughout the period.**

NGATS AIP Cost



NGATS Operations and Policy Tasks

Notices of Proposed Rule Making

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
Data link rule making			
SatNav rule making			
ADS-B rule making			
CDTI rule making			

NGATS Operations and Policy Tasks

RNP Route Establishment

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) RNP routes established between all congested airports	**(2) RNP routes established between all runway ends at congested airports**	**(3) Time metered RNP routes flown between all runway ends at congested airports**	**(4) RNP routes established between all airports served by commercial traffic**

NGATS Operations and Policy Tasks

Satellite As Primary Navigation Means

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
	(1) SatNav becomes primary means for navigation in oceanic airspace	**SatNav CAT I approaches available at all runway ends**	**SatNav Cat III (augmented) approaches available at CAT III airport runway ends**
	(2) SatNav becomes primary means for navigation in domestic airspace	**SatNav Cat II approaches available at CAT II airport runway ends**	

NGATS Operations and Policy Tasks

Safety Management System Implementation

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Proactive risk based SMS implemented			

NGATS Operations and Policy Tasks

Service Levels

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Service levels based on user equipage and training implemented	**(2) RNP approaches /departures required at congested airports**	**(3) Negotiated contracts between users and providers established**	

NGATS Operations and Policy Tasks

Airspace and Procedures Review

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(1) Realign airspace and procedures to capture benefits of enhanced CNS and automation tools.	**(2) Repeat realignment of airspace and procedures to capture benefits of enhanced CNS and auto tools.**	**(3) Repeat realignment of airspace and procedures to capture benefits of enhanced CNS and auto tools.**	**(4) Repeat realignment of airspace and procedures to capture benefits of enhanced CNS and auto tools.**

NGATS Operations and Policy Tasks

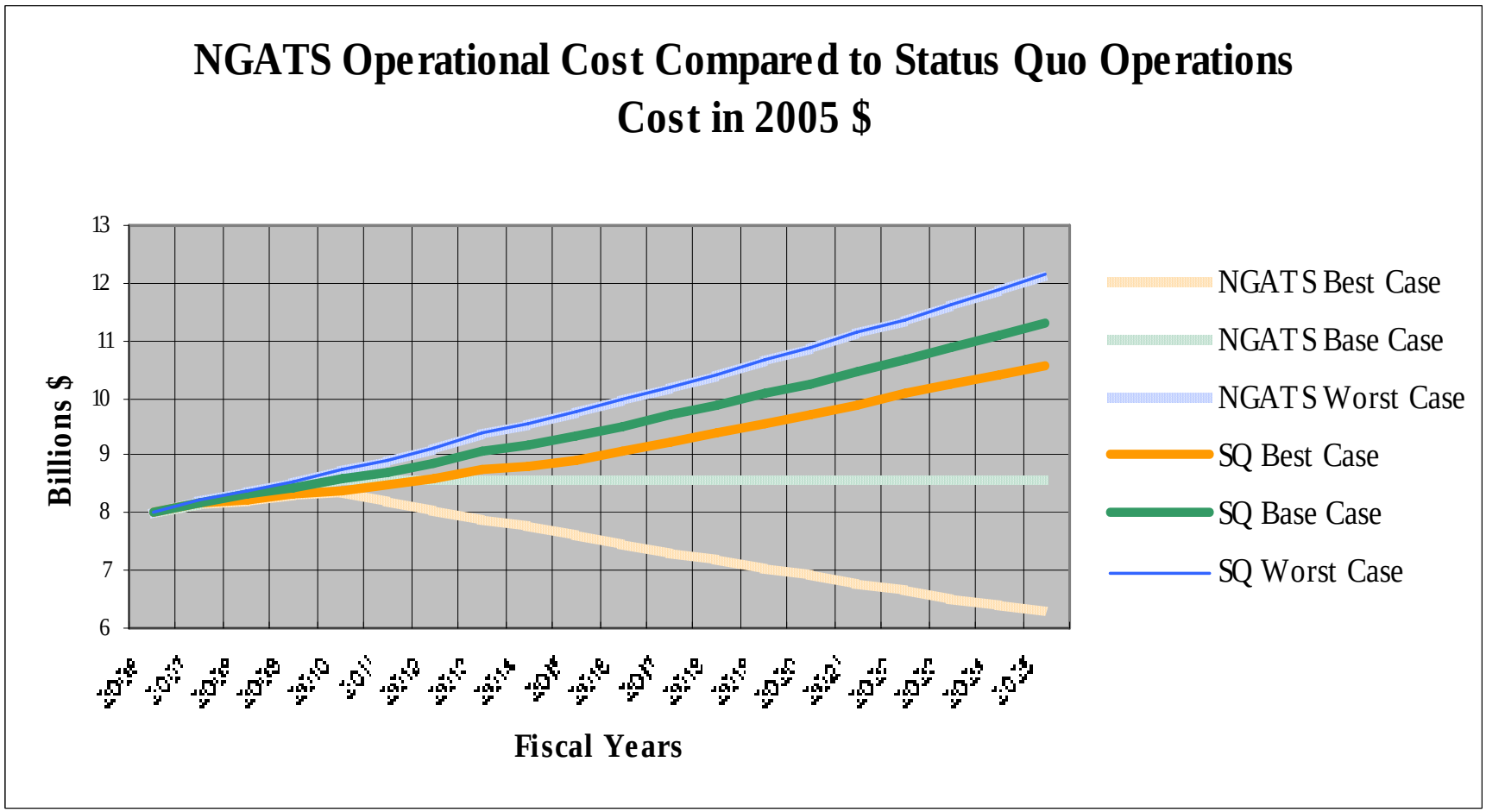
Cost Control Activities

Base Period FY-06 thru FY-10	Initial NGATS FY-11 thru FY-15	NGATS FY-16 thru FY-20	Final NGATS FY-21 thru FY-25
(2) NDB Navigation Aids Shutdown	**VOR/DME network reduce from ~1000 facilities to ~400 facilities**		**ILS shut down at all but CATIII airports**
(1) Survey the NAS to identify opportunities to eliminate or modify existing obsolete facilities, equipment, and procedures to reduce costs	**(1) Survey the NAS to identify opportunities to eliminate or modify existing obsolete facilities, equipment, and procedures to reduce costs**	**(1) Survey the NAS to identify opportunities to eliminate or modify existing obsolete facilities, equipment, and procedures to reduce costs**	**(1) Survey the NAS to identify opportunities to eliminate or modify existing obsolete facilities, equipment, and procedures to reduce costs**

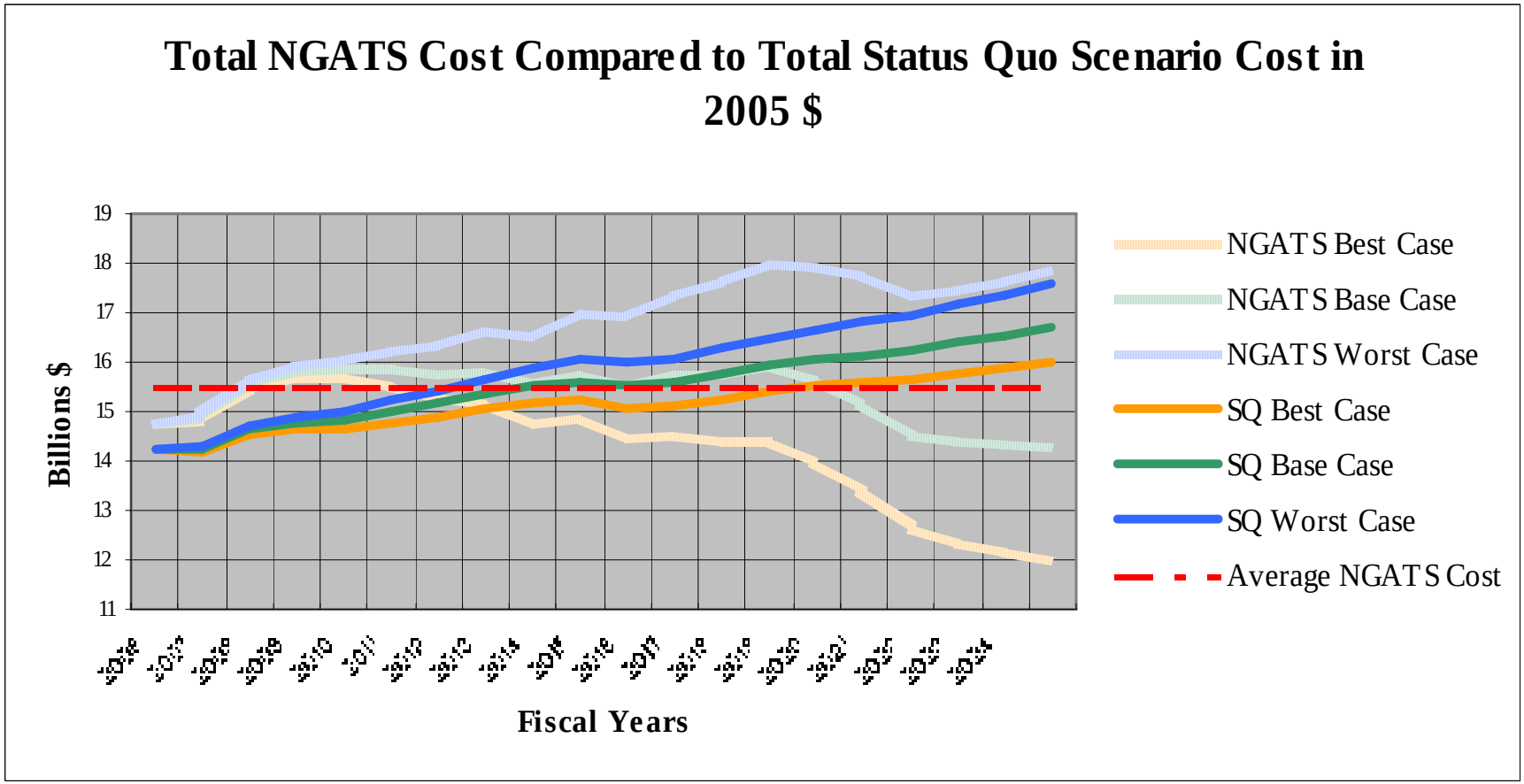
NGATS Operations Cost Assumptions

- **As in the Status Quo Scenario the Worst Case assumes that cost will growth with FAA operations…enroute operations growth from FAA projections through 2016 are used and extended on a trend line through 2025 to form the basis for operations cost growth.**
- **Base Case assumes that cost productivity increases enabled by technology can maintain the cost constant after 2010 except for inflation.**
- **Best Case assumes that productivity enabled by technology can reduce cost by 25% by 2025 (approximately 2% per year) after 2010**

NGATS Operations Cost



NGATS Total Cost



NGATS Total Cost Assumptions

- **Note that the average NGATS cost is nearly identical to the average Status Quo cost. NGATS is front loaded but productivity savings in later years balance the scale.**

NGATS Funding

NGATS Funding

- **There are an infinite number of variations of four or five basic user fee/tax models with or without a General Fund contribution.**
- **The base problem is the distribution of taxes or fees among user groups and the General Fund. Each user group has a different model for determining the share they should pay. Once the shares are determined, the method of tax or fee collection may vary from user-group to user-group at a level to meet their allocated share.**
- **The working group has chosen four options and makes a preliminary assessment of the consequences of choosing one. None of them is expected to be acceptable by itself to the entire community.**
  1. **Extension of the Current Ticket Tax Scheme**
  2. **Flat Fuel Tax Option**
  3. **The Weight Distance Rate Option**
  4. **Rate Distance User Fee Option**

1. Extension of the Current Ticket Tax Scheme

- **The current taxing scheme with rates adjusted proportionally to generate the requisite revenue. The following rates (which are approximately 10% higher than the current rates) were derived assuming that the base on which the tax is applied is 10% higher than FY'04:**

Ticket tax	8.25%
Segment tax	$3.50
International head tax	$15.50
Airfreight tax	6.875%
Jet fuel tax (non-commercial operations)	$0.24/gal
Av gas tax (non-commercial operations)	$0.2125/gal
Fuel tax on commercial operations	$0.0475/gal

- **Each element is increased over current rates. The fuel tax on non-commercial operations might appropriately increase to $0.50 to $1 per gallon.**

2. Flat Fuel Tax Option

- **Under this option, all domestic operations are charged a fuel tax, and no other taxes. International operations are charged an International Head Tax, at the same rate as in option 1. Based on extrapolation of FY'04 fuel usage, a fuel tax of about $0.65 per gallon (jet fuel and aviation gas) would raise the requisite revenue.**

3. The Weight Distance Rate Option

- **Under this option, all turbine operations (and probably also the relatively few commercial piston operations) would be charged a fee based on the aircraft MTOW and the distance flown.**
- **As is common in most other countries, the fee would have two components, one based on weight only for terminal-area services, and one based on weight and distance for en route services. (Typically, the en route charge is based on distance times square root of the weight.)**
- **Non-commercial piston operations (primarily light GA) would be charged a fuel tax, probably in the range of $0.50 to $1 per gallon.**

4. Rate Distance User Fee Option

- **Same as option 3 without the weight factor. All turbine aircraft, regardless of size, would be charged the same for the same operation.**
- **As in option 3, non-commercial piston operations would be charged a fuel tax, probably in the range of $0.50 to $1 per gallon.**

NGATS Funding Revenue Analysis Assumptions

- **For this analysis, each option was normalized to raise $11B in fees/taxes based on estimated 2005 traffic. ($11B+$3B from General Fund ~$14B required FY-06/07 revenue)**

- **Light (piston) GA is charged an aviation gas tax, but no other fees in all of the options.**

NGATS Funding Revenue Analysis

User Group	Option 1 Current Tax Structure		Option 2 Flat Fuel Tax		Option 3 Weight-Distance-Based Fee		Option 4 Distance-Based-Fee	
Commercial Passenger	$10.02B	91.1%	$9.70B	88.2%	$9.53B	86.6%	$8.89B	80.8%
Commercial Cargo	$0.62B	5.6%	$0.77B	7.0%	$0.99B	9.0%	$0.61B	5.5%
Turbine GA	$0.32B	2.9%	$0.50B	4.5%	$0.45B	4.1%	$1.47B	13.4%
Piston GA	$0.04B	0.4%	$0.03B	0.3%	$0.03B	0.3%	$0.03B	0.3%
Totals	$11.00B		$11.00B		$11.00B		$11.00B	

Privatized System Examples

Fee Structures

All countries have structures in place across various organizations to collect a broad range of fees.

	AIR NAVIGATION SERVICES	AIR REGULATORY	AIRPORT COMPANIES/ ASSOCIATIONS
AUSTRALIA	*Airservices Australia* Proposal in 2004 to increase fees for towered airfields and terminal navigation charges; en route and oceanic charges also levied	*Civil Aviation Safety Authority (CASA)* Fees have not increased since CASA was formed in 1995; fees include pilot licensing fees, AME, student flight engineer license	*Regional Aviation Association of Australia (RAAA)* Structure in place to collect runway charges based on MTOW, terminal facility charges, time-based aircraft apron parking charges, passenger security screening charges
CANADA	*NAV Canada* Funded through air navigation fees levied on aircraft operators; charges based on metric units and have base and variable rate components	*Transport Canada – Civil Aviation Directorate* Fee structure in place to collect licensing fees for pilots, fuel tax, airport rent revenue, international air traffic facility use tax	*Local Airport Authority (LAA)* Airport Authorities collect fees including airport improvement fees, land and space rentals, aircraft parking charges, utility and capital cost recoveries
FRANCE	*Direction de Services de la Navigation Aérienne (DSNA)* Route and terminal charges levied; French unit rate below EUROCONTROL average and most EU country rates, terminal service charges have increased	*Direction Générale de l'Aviation* Charges licensing fees for pilots and other airmen, as well as fees for medical certificates, inspection representatives and aircraft registration	*Union des Chambres de Commerce et Établissements Gestionnaires d'Aéroport* Fees based on size and location of airport, number of passengers, size and weight of aircraft
GERMANY	*Deutsche Flugsicherung GmbH (DFS)* Funded through user fees from aircraft operators and revenue from aeronautical information services and consulting services	*Federal Office of Aviation (LBA)* Wide range of fees collected for pilot licenses, permits, examinations, operation of airports and airfields	*German Airports Association (ADV)* Collects fees from ordinary members (airports) and extraordinary members (Bundesländer, chambers of commerce, municipalities)
UK	*National Air Traffic Services, Ltd. (NATS)* Fees calculated based on Chargeable Service Units (CSU derived from weight and distance formula); in 2005, NATS charged £45.04 per CSU	*Civil Aviation Authority (CAA)* Fees calculated based on Chargeable Service Units; in 2005, CAA charged £3.43 per CSU	*British Airport Authority (BAA)* Fees include passenger charges, aircraft parking charges, minimum departure charge

Navigation Fees

SELECTED NAVIGATION USER FEES FROM PROFILED COUNTRIES					
User Fee	Australia	Canada	France	Germany	UK
	Airservices Australia	NAV Canada	Directione Deo Servicee de la Navigation Aerienne (DSNA)	Deutsche Flugsicherung GmbH (DFS)	National Air Traffic Services, Ltd. (NATS)
Terminal Charge	1. For aircraft with MTOW less than 5.7 tonnes: Charge ranges from A$4.03 to A$11.43 per tonne varying by airport. 2. For aircraft with MTOW equal to or exceeding 5.7 tonnes: Charge ranges from A$2.89 to A$12.21 per tonne varying by airport.	For aircraft over three metric tonnes: Charge = R x W R = unit rate composed of base rate of C$16.38 plus adjustment of C$0.28 W = weight = MTOW^0.9	DSNA bills and collects terminal charges for services and facilities for aircraft during take-off and landing at French airports. Charge (R) = unit rate (t) x no. of service units (N) N = 1.247 x MTOW^0.9 R = t x 1.247 x MTOW^0.9 t = €4.48 t (overseas) = €11.44	DFS bills and collects terminal charges for services and facilities for aircraft during take-off and landing at German airports. Charge = (MTOW/50)^0.5 x unit rate Unit rates published in relevant regulations.	Per-tonne basis charge varies by airport and is wrapped into en route charge
En Route Charge	1. For aircraft with MTOW less than 20 tonnes: Charge = Rate x Distance (km)/100 x MTOW 2. For aircraft with MTOW greater than or equal to 20 tonnes: Charge = Rate x Distance (km)/100 x MTOW^0.5 Rate for MTOW less than 20 tonnes = A$0.98 Rate for MTOW greater than or equal to 20 tonnes = A$4.37	For aircraft over three metric tonnes: Charge = R x W x D R = unit rate composed of base rate of C$0.03589 plus adjustment of C$0.00065 W = weight = MTOW^0.5 D = distance in km	EUROCONTROL collects en-route charges on behalf of contracting states for en-route air navigation services and facilities which are used by aircraft in the airspace of the flight information regions of France. En-route unit rates increased 58% from 2001-2003 and decreased 3.2% in 2004. Charge (ri) = ti x Ni i = Contracting State ti = unit rate Ni = no. of service units Ni = di x p di = distance factor p = weight factor = (MTOW/50)^0.5 ti = €60.58	EUROCONTROL collects en-route charges on behalf of contracting states for en-route air navigation services and facilities which are used by aircraft in the airspace of the flight information regions of Germany. En-route unit rates increased 58% from 2001-2003 and decreased 3.2% in 2004. Charge = (MTOW/50)^0.5 x (distance in km/100) x unit rate	EUROCONTROL collects en-route charges on behalf of contracting states for en-route air navigation services and facilities which are used by aircraft in the airspace of the flight information regions of the UK. En-route unit rates increased 58% from 2001-2003 and decreased 3.2% in 2004. CAA regulates charge increases using RPI – x RPI = retail price index percentage x = efficiency gain percentage set by CAA
Oceanic Charge	Included in En Route Charge	1. North Atlantic En Route: C$97.12 per flight plus C$3.35 adjustment 2. Intl. Communications (one of two levied): A. C$52.33 using voice B. C$26.44 using data link	Collected by EUROCONTROL	Collected by EUROCONTROL	£56.44 collected by EUROCONTROL

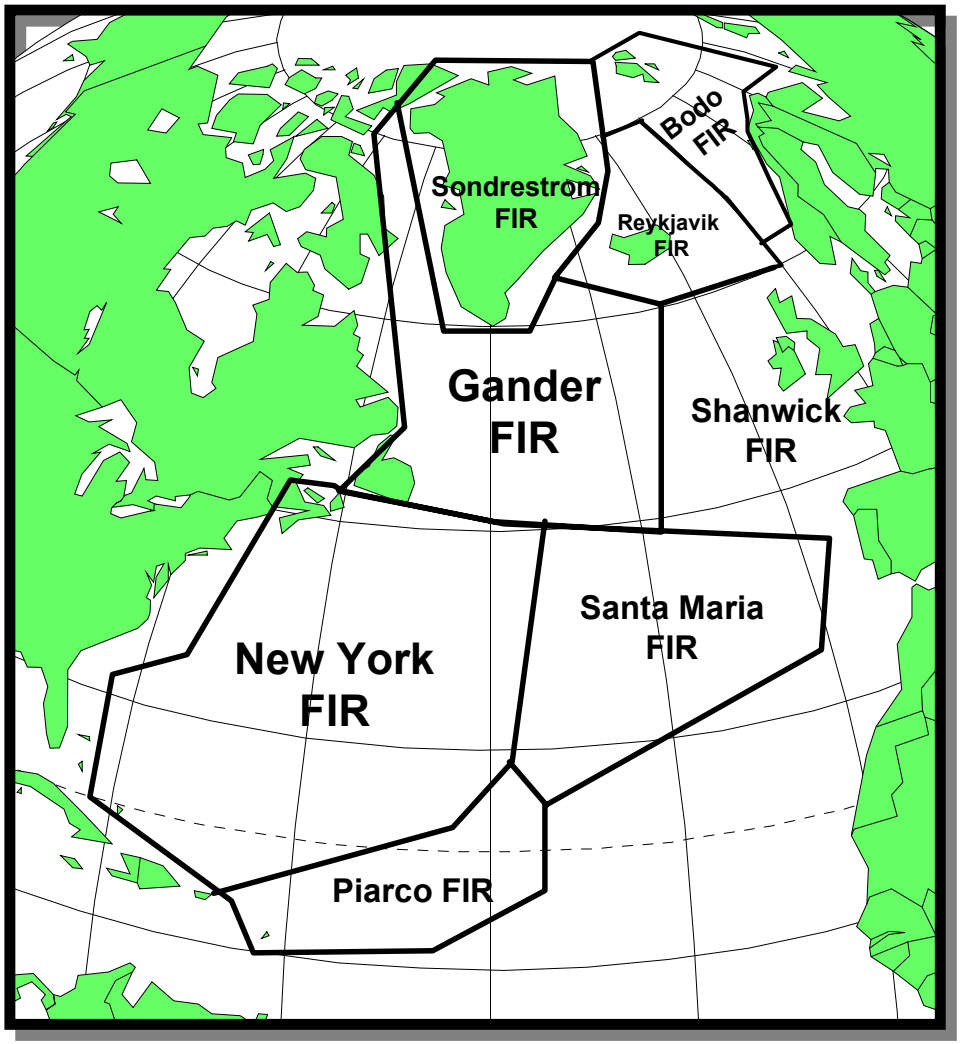
Notes:
- MTOW = maximum take-off weight. For the UK, the CAA sets caps on prices that NATS (En Route) plc (NERL) charges for en route business (both Eurocontrol and Oceanic).
- Current caps run until 31 December 2005 and 1 April 2006 respectively. The CAA is currently working on setting new price caps.
- 1 US$ = A$1.40, C$1.27, €0.81, £0.55 (September 30, 2004)

Certification Fees

SELECTED CERTIFICATION USER FEES FROM PROFILED COUNTRIES					
User Fee	Australia Civil Aviation Safety Authority (CASA)	Canada Transport Canada – Civil Aviation Directorate	France Direction Générale de l'Aviation Civile (DGAC)	Germany Federal Office of Aviation (LBA)	UK Civil Aviation Authority (CAA)
Air Operators Certificate	A$130/h per issuance, renewal, or variation	C$30,000 for commercial operator	Formula in place by January 2006; will be one-time fee; no renewals	€205 - €5,113	Grant: £5,480 - £18,196 for first aircraft type included in certificate; £1,096 - £5,480 for additional types Variation: £3,070 - £10,085 by weight Renewal: £834 - £4,793 by weight
Flight Crew License	Commercial License A$55 - A$100 one-time fee	Commercial License C$80	One-time fees / no renewals: Commercial (CPL) €253 Practical Exam €56 Theoretical Exam Airline (ATPL) €753 Practical Exam €610 Theoretical Exam	Commercial License €140 Practical Exam; €440 Theoretical Exam	Commercial License valid for 10 years: £328 Five-year renewal: £110 Ten-year renewal: £215
Licensing for Airmen Other Than Pilots	Flight Engineer A$55 one-time fee	Flight Engineer C$80 Air Traffic Controller C$75	Cabin Crew Member (€75 for exam); will be one-time issuance fee in January 2006	Flight Engineer €100 Practical Exam €350 Theoretical Exam	Air Traffic Controller £312 for initial certification or renewal
Airmen Medical Certificate	Physician specific	C$40 per issuance C$50 per extension	Physician specific	€50 per issuance	£83 - £422 for application, £83 - £101 for renewal
Designee Programs (airworthiness, manufacturing inspection reps.)	Aircraft Maintenance Engineer A$45 per issuance, A$75 per renewal	Aircraft Maintenance Engineer C$115 per issuance, C$40 per renewal	None	Aircraft Certification Staff €60 - €120	Aircraft Maintenance Engineer £180 per application, £84 for extension
Type Certificate	A$130/h per issuance, renewal, or variation	C$40/h capped at C$504,680 per issuance C$40/h capped at C$307,945 for amendment	Levied by European Aviation Safety Agency[T] Initial application: Fixed fee of €21,000 times a fixed fee coefficient varying by aircraft size, plus €99/h Annual renewal fee for large airplanes ranges from €6,333 - €120,000 by MTOW		
Airworthiness Certificate	A$130/h per issuance or renewal	C$180 per issuance non-commercial C$1,250 per issuance commercial	€185.04 minimum per inspection for issuance and renewal every three years, after which fee varies by engine horsepower	€60.86 - €1,227.10 by weight per issuance	£70 for each 500 kg not exceeding 2,730 kg for each year of certificate's validity, £109 for renewal
Aircraft Registration	None	C$45 - C$140 per issuance	€91 per issuance	€60 - €2,400 by weight per issuance	£50 for aircraft not exceeding 15 tonnes; £100 if exceeding 15 tonnes

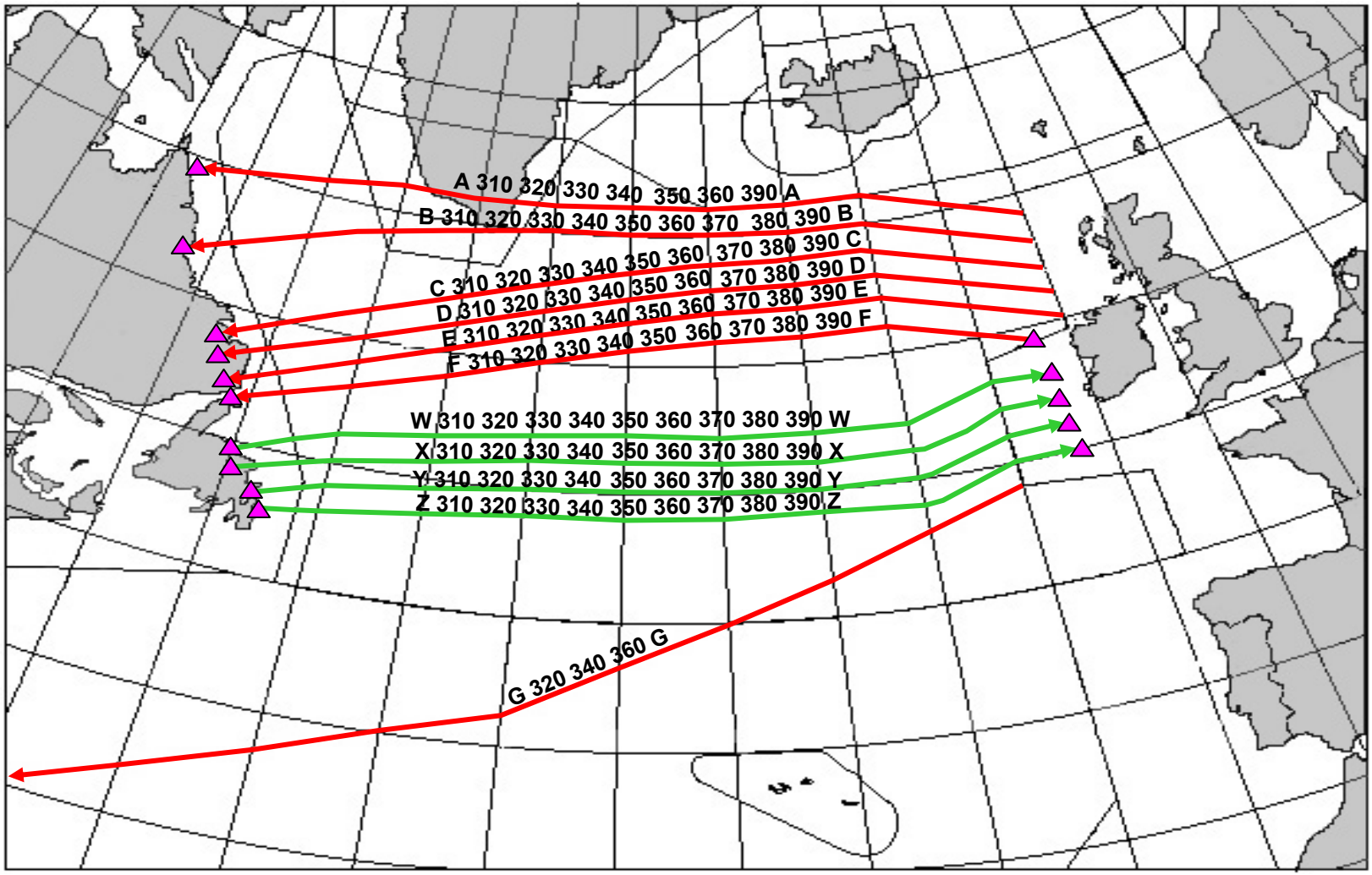
Notes: [T] As of 1 July 2005 the European Aviation Safety Agency has issued type certificates for all European countries using a single pricing structure.
[T] 1 US$ = A$1.40, C$1.27, €0.81, £0.56 (September 30, 2004)

ATLANTIC OCEANIC FLIGHT INFORMATION REGIONS (FIR'S)



Adapted from "Implementation Plan for Oceanic Airspace Enhancements and Separation Reductions". FAA. 1998

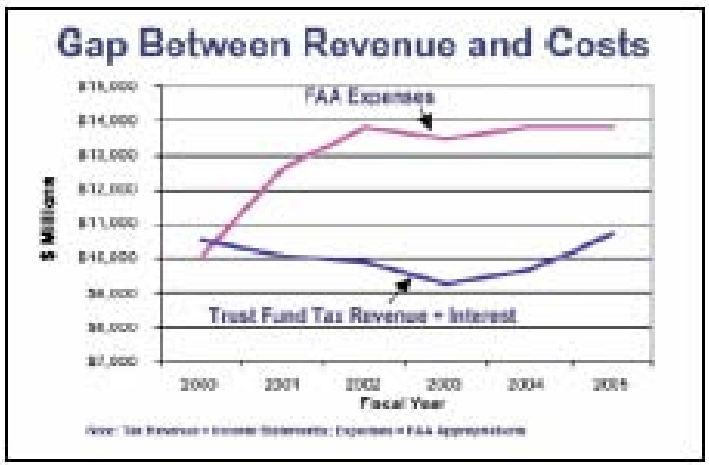
NORTH ATLANTIC TRACKS

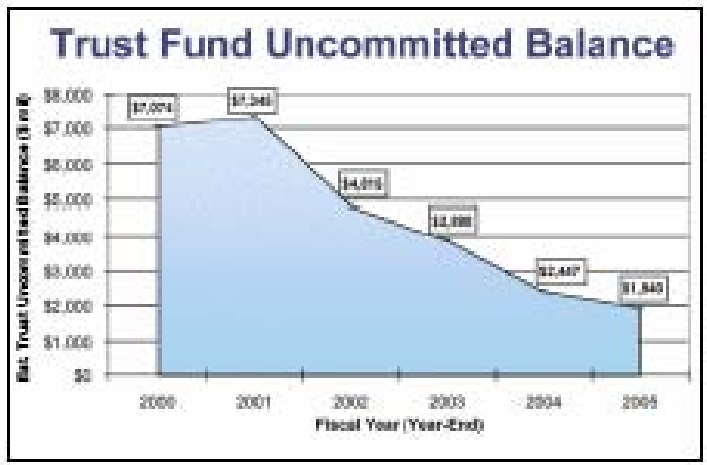


MIT ICAT

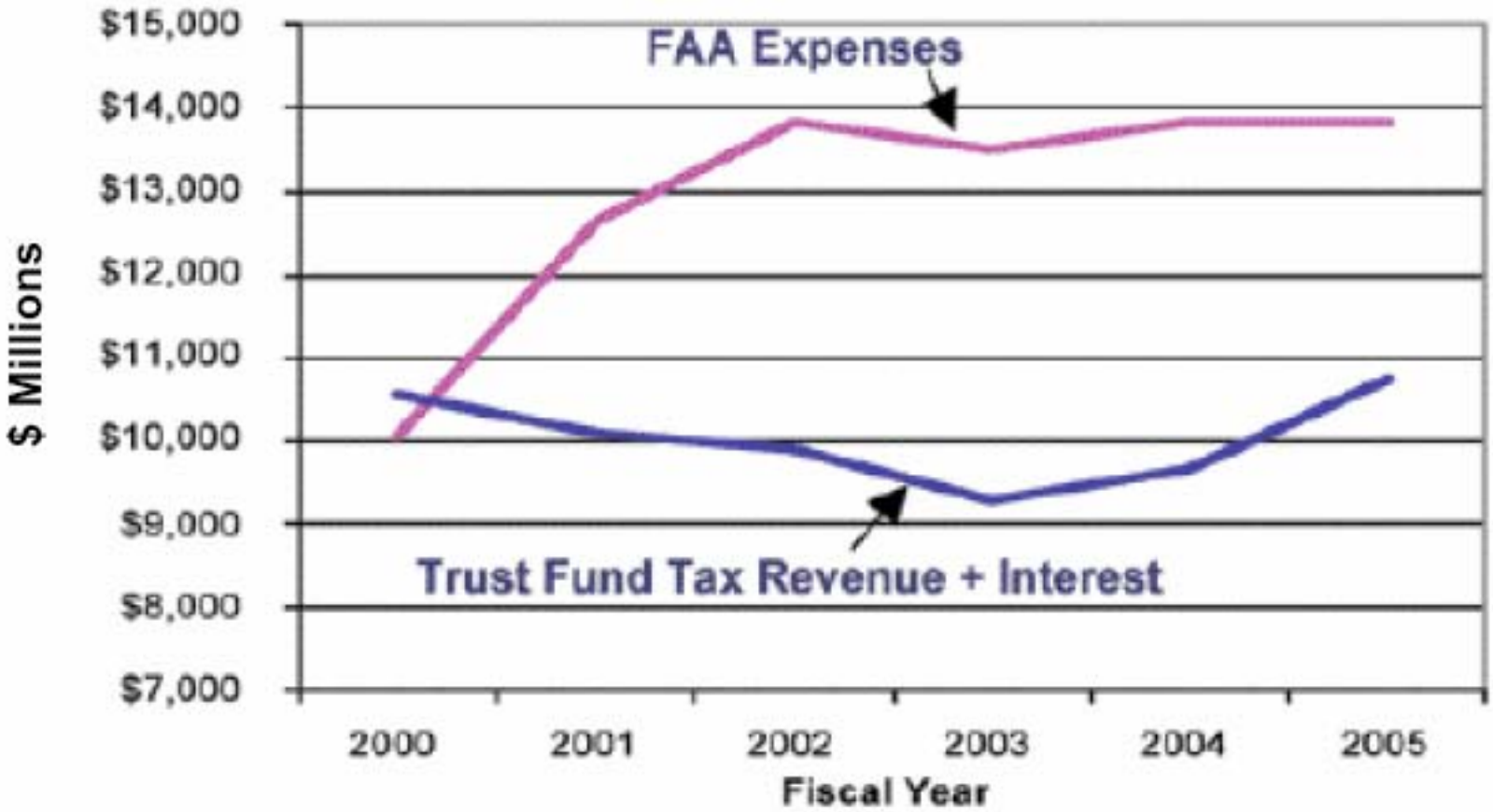
There is a problem with the aviation trust fund.

- The trust fund pays a large share of the bills for the FAA to operate the national airspace system.
- A troubling gap has grown between the revenue that comes in and what it costs to run the FAA.
- This has sharply driven down the Trust Fund's uncommitted balance.





Gap Between Revenue and Costs



Note: Tax Revenue = Income Statements; Expenses = FAA Appropriations

Status of Funds (in millions of dollars)

Identification code: 20-8103-0-7-402		FY 2005 Actual	FY 2006 Estimate	FY 2007 Request
	Balance, start of year:			
0100	Uninvested balance	11,669	11,290	10,199
0199	Total balance, start of year	11,669	11,290	10,199
	Cash Income during the year:			
	Current law:			
	Receipts			
1280	Aviation excise taxes [021-00-810310-0]	10,314	10,651	11,341
	Offsetting receipts (intragovernmental):			
1200	Interest: Airport and airway trust fund [021-00-810320-0]	429	438	446
	Offsetting collections:			
1281	Grants-in-aid for airports [021-12-8106-0]	1	1	1
1282	Facilities and equipment [021-12-8107-0]	84	135	193
1283	Research, engineering and development(021-12-8108-0)	2	16	16
1299	Income under present law	10,830	11,241	11,997
3299	Total cash income	10,830	11,241	11,997
	Cash outgo during year:			
	Current law			
4500	Payments to air carriers [021-12-8304-0]	-53	-55	-24
4501	Trust fund share of FAA operations [021-12-8104-0]	-4,883	-5,490	-5,445
4502	Grants-in-aid for airports [021-12-8106-0]	-3,531	-3,799	-3,706
4503	Facilities and equipment [021-12-8107-0]	-2,600	-2,802	-2,806
4504	Research, engineering and development [021-12-8108-0]	-142	-186	-186
4599	Outgo under current law (-)	-11,209	-12,332	-12,167
6599	Total Cash outgo (-)	-11,209	12,332	12,167
	Unexpended balance, end of year:			
8799	Total balance, end of year	11,290	10,199	10,029
	Commitments against unexpended balance, end of year			
9801	Obligated balance (-)	-7,974	-7,564	-6,398
9802	Unobligated balance (-)	-1,376	-913	-925
	Total commitments	-9,350	-8,477	-7,323
	Uncommitted Balance, end of year	1,940	1,722	2,706

Commercialized Air Navigation Service Providers
(not comprehensive list)

Table 1: Summary Information on Five Commercialized ANSPs Reviewed

	Australia	Canada	Germany	New Zealand	United Kingdom
Agency	Airservices Australia	NAV CANADA	Deutsche Flugsicherung GmbH (DFS)	Airways Corporation of New Zealand, Ltd.	National Air Traffic Services, Ltd. (NATS)
Year of commercialization	1988	1996	1993	1987	2001
Type of ownership	Wholly government-owned	Privately owned company	Wholly government-owned	Wholly government-owned	Partially government-owned
Approximate number of employees (Number of controllers)	2,900 (1,100)	5,400 (2,300)	5,400 (2,098)	680 (340)	3,758 (1,380)
Approximate number of aircraft movements handled (Year)	2,723,828 (2004)	6,000,000 (2003)	2,720,000 (2004)	1,004,161 (2004)	2,000,000 (2004)

Source: GAO presentation of data from ANSPs.

US 2004 : 48.1 M Instrument Tower Ops, 46.8 M Tower Ops, 46.1 Enroute Ops

Transition Issues By Country

Key transition issues across the profiled countries vary and yield no significant trends.

CANADA
NAV Canada

- Mitigated impacts of revenue shortfalls related to sharp declines in air traffic volume
- Rate stabilization account minimized impacts of annual revenue fluctuations and offset need to increase customer service charges

AUSTRALIA
Airservices Australia

- Recognized people as greatest asset
- Included succession planning and tapped specific personnel for career progression
- Consulted frequently with owners, industry and community stakeholders to align business strategies, initiatives and investment programs with expectations and to build strong relationships

FRANCE
Direction des Services de la Navigation Aérienne (DSNA)

- New organization is still going through transition period

GERMANY
Deutsche Flugsicherung GmbH (DFS)

- A perceived setback became an advantage when the Bundestag vetoed the first attempt to create a legal basis for business operations
- The Bundestag later approved a constitutional amendment mandating that civil and regional military air traffic control be integrated and provided by one single organization, resulting in the creation of DFS

UNITED KINGDOM
National Air Traffic Services, Ltd. (NATS)

- Achieving financial benefits required patience; NATS suffered losses in its first two years after the creation of the PPP, followed by three consecutive years of profits