TRANSPORTATION RESEARCH FORUM

47th Annual Forum

Accommodating Global Trade Growth

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The Economy: Implications for the air cargo business?

- **Trends:** global, sub-global regions, national, regional, state/local
- **Industrial patterns**
- **Transportation**

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U.S. Long Term Economic Forecasts

SOURCE: US Office of Management & Budget, November 2005. Extrapolated to 2017

FISCAL YEAR	GROSS DOMESTIC PRODUCT (billions 2005$)	CONSUMER PRICE INDEX (1982-84=100)	REFINERS ACQUISITION COST (AVG) (dollars)
Historical			
2000	9,762.8	107.74	26.70
2001	9,885.1	176.27	25.79
2002	10,002.4	178.86	21.98
2003	10,218.9	183.10	28.01
2004	10,657.0	187.34	33.65
2005	11,044.7	193.48	47.27
Forecast			
2006	11,418.5	199.93	54.34
2007	11,799.5	204.72	54.02
2012	13,773.9	230.82	50.92
2017	15,967.8	261.13	58.77
AVG 2005-17	3.10%	2.50%	1.50%

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS: JET FUEL PRICES (cents)

	Fiscal Year	DOMESTIC		INTERNATIONAL		SYSTEM	
		CURRENT	FY 2005 $	CURRENT	FY 2005 $	CURRENT	FY 2005 $
	2000	71.5	81.0	79.4	89.9	73.6	83.3
	2001	82.4	90.4	86.1	94.5	83.4	91.5
	2002	67.0	72.4	71.7	77.6	68.3	73.9
	2003	82.2	86.9	86.0	90.9	83.3	88.0
	2004	100.7	104.1	105.8	109.2	102.1	105.4
E	2005	149.4	149.4	157.3	157.3	151.6	151.6
F	2006	173.8	168.2	182.9	177.0	176.3	170.7
F	2007	175.1	165.5	184.4	174.2	177.7	167.9
F	2012	165.6	138.8	174.3	146.1	168.0	140.8
F	2017	183.4	135.9	193.0	143.0	186.1	137.9
	Avg 2005-17	*1.7%*	*-0.8%*	*1.7%*	*-0.8%*	*1.7%*	*-0.8%*

SOURCE: Form 41, U.S> Department of Transportation

State of the passenger airline industry "Too many wrong mistakes" [Yogi Berra]

- De-regulation in 1978
- The industry IS cyclical
- Capital intensive
- Market share strategy
- Weak market power
- No shame in bankruptcy
- Blame someone else
- Not too much capacity - just more seats than people who want to fly
- Shrinking legacy carriers → growing unit costs
- LCCs cost advantage is temporary
- Pensions

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US Airlines: Annual Revenue and Earnings (All Services) [ATA]

YEAR	Operating Revenues ($000)	ANNUAL PROFIT / (LOSS)	
		Operating ($000)	Net ($000)
1995	95,117,473	5,859,518	2,313,591
1996	102,443,738	6,209,069	2,803,915
1997	109,917,304	8,586,794	5,167,657
1998	113,810,206	9,327,810	4,903,203
1999	119,455,126	8,403,305	5,360,252
2000	130,838,619	6,998,931	2,486,298
2001	115,526,896	(10,325,852)	(8,274,866)
2002	106,985,463	(8,566,412)	(11,312,415)
2003	117,920,230	(2,108,254)	(3,658,109)
2004	131,509,850	(1,364,091)	(9,071,348)

Air Carrier Revenue Freight Ton-Miles and Passenger Miles: 1980-2004 (billions)

	1980	1990	2000	2001	2002	2003	2004	Change 1980-2004	Avge growth 1980-2004
Total freight ton-miles	**8**	**17**	**31**	**28**	**31**	**34**	**37**	**372.4%**	**6.7%**
Domestic freight ton-miles	5	9	15	13	14	15	17	**274.1%**	5.7%
International freight ton-miles	3	7	16	15	17	18	20	**505.7%**	7.8%
Total revenue passenger miles	**268**	**473**	**709**	**665**	**654**	**674**	**751**	**180.1%**	**4.4%**
Domestic revenue passenger miles	204	346	516	487	482	505	557	**172.4%**	4.3%
International revenue passenger miles	63	126	193	178	172	169	194	**206.2%**	4.8%

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *National Transportation Statistics 2005*, online version, available at www.bts.gov.

U.S. COMMERCIAL AIR CARRIERS: AIR CARGO REVENUE TON MILES

(Includes freight/express & mail on mainline air carriers and regionals/ commuters)

FISCAL YEAR	ALL-CARGO A/C RTMs (millions)			PASSENGER CARRIER RTMs			TOTAL RTMs		
	Domestic	Int'l	Total	Domestic	Int'l	Total	Domestic	Int'l	Total
2000	10,284	7,568	17,852	4,415	7,790	12,205	14,699	15,358	30,057
2001	9,992	7,370	17,363	3,942	7,177	11,118	13,934	14,547	28,481
2002	9,630	8,202	17,832	3,337	6,594	9,931	12,967	14,796	27,763
2003	11,153	11,767	22,920	3,819	6,775	10,594	14,972	18,542	33,514
2004	13,041	12,748	25,789	3,300	7,373	10,674	16,341	20,122	36,463
2005	12,998	14,751	27,749	3,082	8,355	11,437	16,080	23,106	39,186
F2006	13,490	15,826	29,316	3,145	8,829	11,974	16,635	24,655	41,290
F2007	13,995	16,962	30,956	3,207	9,321	12,528	17,201	26,283	43,484
F2012	16,648	23,747	40,394	3,488	12,088	15,575	20,135	35,834	55,969
F2017	19,652	32,879	52,531	3,743	15,473	19,216	23,395	48,352	71,746
AVG 2005-17	*3.5%*	*6.9%*	*5.5%*	***1.6%***	***5.3%***	***4.4%***	***3.2%***	***6.3%***	***5.2%***

SOURCE: Form 41, U.S. Department of Transportation

Pre-2003, did not include either Airborne Express or US contract services for foreign carriers

U.S. Air Freight - Domestic and International Revenue Ton-Miles: 1980-2004 [billions]

	1980	1990	1995	2000	2001	2002	2003	2004
Domestic freight ton-miles	4.5	9.1	12.5	15.0	13.1	13.9	15.2	16.9
Internat'l freight ton-miles	3.4	7.3	10.9	15.9	14.9	16.7	18.3	20.3
Total freight ton-miles	**7.9**	**16.5**	**23.4**	**30.9**	**28.0**	**30.6**	**33.5**	**37.3**

NOTE: The air ton-miles for U.S. imports and exports are from air cargo handled at U.S. airports by U.S. and foreign air carriers.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, based on Office of Airline Information data in *National Transportation Statistics 2005 online version*, available at http://www.bts.gov/publications/national_transportation_statistics/ as of September 2005.

Growth in U.S. Domestic Freight Ton-Miles by Mode: 1980-2004 [billions]

Year	Air		Truck		Railroad		Water		Pipeline		Total	
1980	4.8		628.8		932.0		921.8		865.5		3,353.0	
1985	6.7	38.6%	715.8	13.8%	876.2	-6.0%	893.0	-3.1%	781.9	-9.7%	3,273.6	-2.4%
1990	10.4	55.3%	854.2	19.3%	1,064.4	21.5%	833.5	-6.7%	821.8	5.1%	3,584.4	9.5%
1995	12.7	22.1%	1,041.7	21.9%	1,317.0	23.7%	807.7	-3.1%	882.0	7.3%	4,061.1	13.3%
2000	15.8	24.3%	1,203.1	15.5%	1,546.3	17.4%	645.8	-20.0%	874.2	-0.9%	4,285.2	5.5%
2001	13.3	-16.0%	1,223.6	1.7%	1,599.3	3.4%	621.7	-3.7%	858.8	-1.8%	4,316.7	0.7%
2002	13.8	4.1%	1,255.4	2.6%	1,605.5	0.4%	612.1	-1.5%	879.2	2.4%	4,366.1	1.1%
2003	15.1	9.1%	1,263.9	0.7%	1,603.6	-0.1%	606.1	-1.0%	868.0	-1.3%	4,356.7	-0.2%
2004	16.9	12.2%	1,308.2	3.5%	1,664.5	3.8%	591.0	-2.5%	873.2	0.6%	4,453.8	2.2%

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics: 1990 - 2003 data from the *Journal of Transportation and Statistics*, vol 8 no.1, 2005, Scott M Dennis, "Improved Estimates of Ton-Miles," pp 23-44; other data are special tabulations from BTS using the same methodology.

Growth in U.S. Domestic Freight Ton-Miles by Mode: 1980–2004 (Index: 1980=100)

Year	Mode of Transportation					
	Air	Truck	Railroad	Water	Pipeline	Total
1980	100.0	100.0	100.0	100.0	100.0	100.0
1985	138.6	113.8	94.0	96.9	90.3	97.6
1990	215.3	135.9	114.2	90.4	95.0	106.9
1995	262.8	165.7	141.3	87.6	101.9	121.1
2000	326.7	191.3	165.9	70.1	101.0	127.8
2001	274.5	194.6	171.6	67.4	99.2	128.7
2002	285.9	199.7	172.3	66.4	101.6	130.2
2003	311.9	201.0	172.1	65.8	100.3	129.9
2004	350.0	208.0	178.6	64.1	100.9	132.8

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics: 1990 - 2003 data from the *Journal of Transportation and Statistics*, vol 8 no.1, 2005, Scott M Dennis, "Improved Estimates of Ton-Miles," pp 23-44; other data are special tabulations from BTS using the same methodology.

U.S. Mainline Air Carriers: Cargo Jet Aircraft

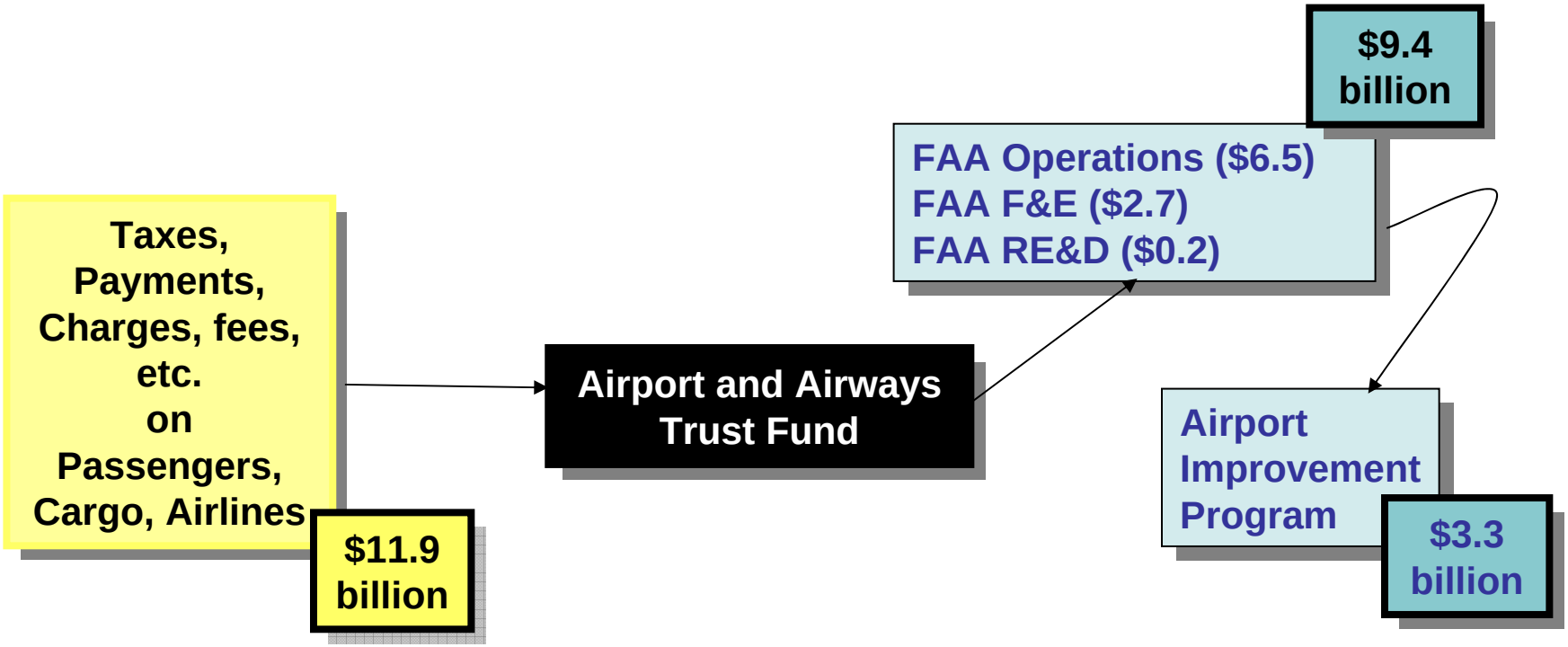
Calendar Year	Large Narrowbody				Large Widebody				TTL
	2 Eng	3 Eng	4 Eng	TOTAL	2 Eng	3 Eng	4 Eng	TOTAL	
2000	166	332	176	674	164	158	68	390	1064
2001	180	343	143	666	190	192	85	467	1133
2002	175	315	114	604	214	165	73	452	1056
2003	175	277	104	556	203	165	69	437	993
2004	174	277	102	553	202	163	65	430	983
2005	177	236	102	515	244	195	67	506	1021
t									
2006	177	228	98	503	256	201	67	524	1027
2007	177	222	89	488	273	211	68	552	1040
2012	177	207	59	443	385	235	98	718	1161
2017	177	209	41	427	528	260	130	918	1345
GE 2005-17	0.0%	-1.0%	-7.3%	-1.5%	6.6%	2.4%	5.7%	5.1%	2.3%

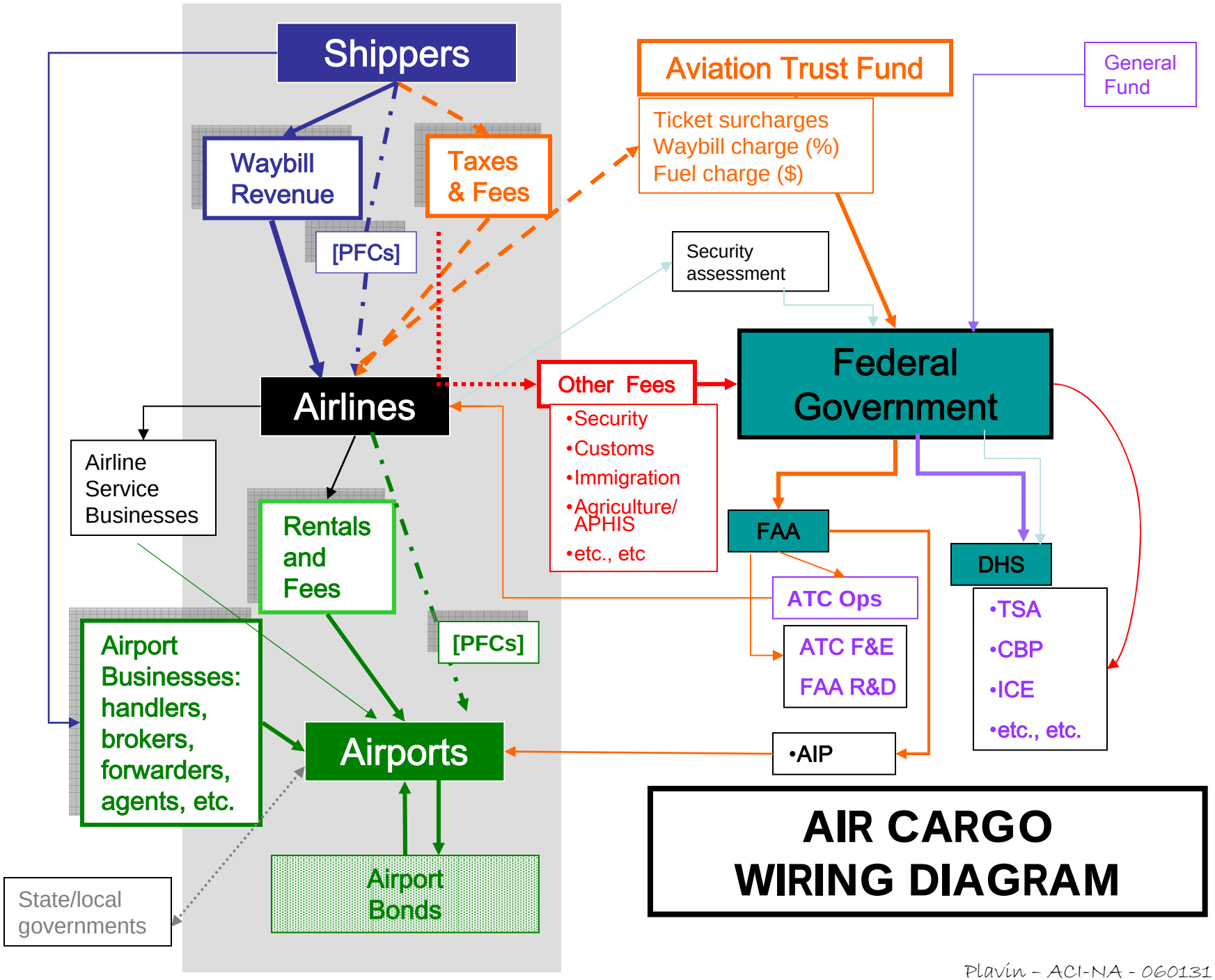
FEES & CHARGES PAID BY/THRU AIRLINES

	RATE	UNIT OF TAXATION
PASSENGERS		
Federal Ticket Tax (1)	7.5%	Domestic Airfare
Federal Flight Segment Tax (1)	$3.20	Domestic Enplanement
Federal Security Surcharge (2)	$2.50	Enplanement at U.S. A/P
Passenger Facility Charge (3)	<$4.50	Enplanement: Eligible US A/P
International Departure Tax (1,4)	$14.10	Intl Passenger Departure
International Arrival Tax (1,4)	$14.10	Intl Passenger Arrival
INS User Fee (5)	$7.00	Internat'l Passenger Arrival
Customs User Fee (6)	$5.00	Internat'l Passenger Arrival
APHIS Passenger Fee (7)	$4.95	Internat'l Passenger Arrival
SHIPPERS		
Cargo Waybill Tax (1)	6.25%	Waybill for Domestic Freight
SALES/OPERATIONS		
Frequent Flyer Tax (1,8)	7.5%	Sale of Frequent Flyer Miles
APHIS Aircraft Fee (7)	$70.00	International Aircraft Arrival
Jet Fuel Tax (1)	4.3¢	Domestic Gallon
LUST Fuel Tax (9)	0.1¢	Domestic Gallon
Air Carrier Security Fee (2)	Carrier -Confidential	CY2000 Screening Costs

Inside the Black Box

FY2006E, $billions





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Challenges: how does a cargo carrier decide on a hub locations?

- Size, infrastructure, community, nature of traffic
- Local traffic: market vs. congestion
- Financial condition of hub or dominant airline
- Competition from alternative hubs (market position)
- Airport cost structure (especially debt burden)
- Airport charges (CPE) in relation to “value added”
- Capacity in relation to demand (utilization)
- Effect of economic development objectives on airport development
- Financial flexibility

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Airport Classifications		Hub Type: Percentage of Annual Passenger Boardings	Common Name
Commercial Service:	**Primary:**	**Large:**	**Large Hub**
Publicly owned airports; > 2,500 passenger boardings each year &received scheduled passgr service	>10,000 passngr boardings each year	1% or more: >6.5M EP (**33 airports**)	17 airports (3%) = 49% 33 airports (6%) = 71%
		Medium:	**Medium Hub (6.8%)**
		At least 0.25% but less than 1%: <6.5M but >1.65M EP (**35 airports**)	68 airports (13%) = 89%
		Small:	**Small Hub**
		At least 0.05% but less than 0.25%: <1.65M but >340K EP (**168**)	
		Nonhub:	**Nonhub Primary**
		More than 10,000,but less than 0.05%: < 340K but >10K EP (**236**)	
	Nonprimary	**Nonhub:**	**Nonprimary Commercial Service**
		<0.05%	
Nonprimary (Except Commercial Service)		Not Applicable	**Reliever**
			General Aviation

Repayment of Bonds: Operating Revenues

Large Hubs		Small Hubs	
1. Airline rentals	33%	1. Airline Rentals	28%
2. Landing fees	24%	2. Landing fees	18%
3. Parking	17%	3. Parking	20%
4. Concessions	11%	4. Rental cars	13%
5. Rental cars	8%	5. Concessions	7%
6. Other	7%	6. Other	14%

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Airline Revenues 57%

Airline Revenues 46%

How DO we pay for all that's needed?

1. "Other peoples' money" cannot be relied upon to address these issues

2. Capital project funding is becoming more challenging

3. Airports can do more to address the challenges if Federal restrictions are reduced (if other funds materialize, all the better)

4. Airport bonds are the key source of capital, but inefficiencies and tax-limitations need improvement

5. PFCs and other internal revenue sources need to be enhanced to facilitate capital development

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The Role of the Federal Government: THE PLAYERS

- Administration, Congress, the courts
- Legislation
- Regulation – Federal regulatory view of airports
  - "Airports have 'legal obligation to accommodate all qualified airlines [and others] that wish to serve their airport'"
  - "Airports prefer financial security to competitive access"
  - "DOT's "best business practices" are universally applicable"
- DOT/FAA
  - International & domestic regulation
  - Grant-making and regulation
  - Safety oversight
  - ATC operations
  - Operations, management, governance, finance
- EPA: air & water quality, not yet noise
- DHS: CBP/ICE/TSA/FEMA……. Public Health/CDC
  - Transportation security
    - Dubai Ports flap put focus on cargo
    - Bad case of sticker shock – typical of governmental role

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Strategic Issues for Airports: Services/Operations/Environmental

- Environmental
  - Noise
  - Clean air
  - Clean water
- Airport businesses
- Airport access: roads, rail

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Strategic Issues for Airports: Governance

- Governance models
  - Traditional: governmental
  - Canadian: quasi-private, not-for-profit
  - Privatized
  - Government-owned, private corporations
  - Hybrids
  - “Airports as monopolies” or “competition among airports”
- Who’s in control?

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