The Pittsburgh CASE Program
(CAPACITY AND SERVICE ENHANCEMENT)

An Allegheny County Airport Authority White Paper

Pittsburgh International Airport

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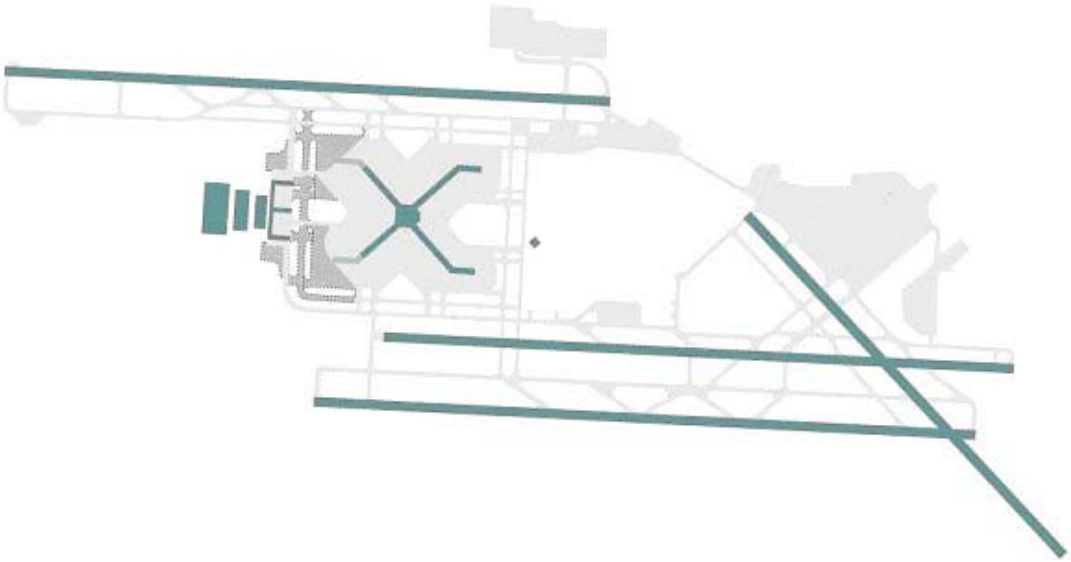

Resolving delays and congestion at PHL, JFK, EWR, and LGA with existing resources

September 2011

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Executive Summary

Aviation delays and congestion in recent years have produced public outcry and demands for improvement particularly in the Northeastern United States. Non-standard operations during adverse weather have produced terminals packed with thousands of passengers in multiple-day fiascos, often resulting in conflict and calls for security to maintain control of the situation. These situations have been evident in the media coverage placing a negative light on the Federal Government, airports, airlines, and those who utilize the aviation system. Additionally, delayed aircraft waste valuable and costly fuel and cause countless passenger service inconveniences.

The years 2006 and 2007 were the worst two years in terms of delays in the history of the aviation system. Delays pose an increased cost of equipment and personnel, expensive fuel burn and increase passenger frustration. These increased costs result in higher airfares for passengers, reduced profitability and productivity for airlines. Delays reached their tipping point with the creation of the DOT Tarmac Delay Rule, which fines airlines for delays to passengers and has seen operational challenges for airlines in terms of increased cancellations. As the economic recovery strengthens and the growth of aviation continues to see percentage growths, the capacity of the U.S. aviation system is at risk to remain competitive globally.

Congestion at the Philadelphia (PHL), Kennedy (JFK), Newark (EWR), LaGuardia (LGA) and other Northeast Corridor airports has gone from inconvenience to crisis. The airports and airlines are not motivated to take action that might threaten their monopoly position. The FAA response to congestion has been restriction of growth, increased regulation and rationing of airport capacity since its reinstitution of the prohibitive slots program in 2008.

In April 2010, the Airport Cooperative Research Program (ACRP) released Report 31*: Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-regions* examining the aviation capacity issues in the two coastal mega-regions located along the East and West coasts of the United States. To address these issues "new and innovative processes are needed if the aviation capacity issues in these congested coastal mega-regions are going to be successfully addressed."[1]

If these airports (PHL, JFK, EWR, LGA) were not handling connecting passengers, the existing airport capacity is sufficient to handle the O&D traffic or those beginning and ending their trip between two airports. *If connecting passengers were removed, and scheduled flights adjusted to meet only the O&D demand, existing capacity is sufficient.* These airports need to outsource their connections to match local traffic within airport capacity.

The Pittsburgh (PIT) CASE (Capacity and Service Enhancement) Program incorporates many of the concepts of Wayports. "WAYPORTS" is a high-capacity system providing opportunities to relieve delays at congested urban airports by utilizing existing infrastructure at other airports while lowering the financial and environmental costs of the operating aviation system (http://www.wayports.com).

In 1992, Congress directed the FAA to evaluate the use of Wayports to reduce congestion and delays. The evaluation was never conducted because:

- Airports are built by local governments with local priorities, not by the federal government with a systemic approach. It would be unlikely for a County or Port Authority to invest in a major airport that would benefit other areas or present a competitive threat.
- The cost of building a major airport or Wayport (multiple runways, terminals, and infrastructure) can approach billions of dollars, which no local government can justify on behalf of the national system.
- Existing airlines and airports see Wayports as a competitive threat to their established market positions.

Pittsburgh International Airport (one of the FAA's 35 Operational Evolution Plan "OEP" primary airports[2]) is only using 15% of its capacity. The three widely-spaced parallel runways at PIT, which support 160 aircraft operations per hour in optimal conditions, present an opportunity to evaluate the PIT CASE Program and reduce delays at minimal investment, using existing resources such as runways, terminals, FAA navigation and Air Traffic Control (ATC) assets.

The immediate payoff of the PIT CASE Program will be reduced inbound, outbound and ground delays at four critical airports (PHL, EWR, LGA and JFK). Validation of the PIT CASE Program will provide proof-of-concept for reducing delays nationwide benefiting the flying public and the national economy while reducing fuel costs and improving the environmental footprint of aviation.

Four steps are required to establish the PIT CASE Program:

- Congressional approval of partial excise tax exemption for the participating airlines.
- FAA initiative to hold scheduled traffic at PHL, JFK, EWR and LGA to their hourly optimal capacity.
- Federal funding for approximately $24 million over five years to induce airlines to move their connecting traffic to the PIT CASE Program.
- Airline Participation.

No other minimal investment ($24 million over five years) holds the promise of reducing delays (arrival and departure) at PHL, JFK, EWR, LGA, and Northeast Corridor airports to the extent of this proposal. As a point of comparison, PHL is proposing to begin a $6.4 billion, 12 to 15 year expansion project to extend existing and construct new runways.[3] In a time of reduced federal spending, an investment such as this can lower the national deficit by saving billions of dollars in new construction project costs.

Taxiing at LGA
on Oct. 29, 2007 at 1202.[4]

1. ACA745 to YUL delay 1:22
2. CJC4806 to SYR delay :30
3. USA2173 to DCA delay :27
4. MIP YX4 to MKE delay :58
5. MES7209 to DCA delay 2:32
6. EGF839 to YYZ delay: 35
7. COM606 to SAV delay :29
8. PDT4251 to BUF delay: 46
9. NWA177 to MEM delay: 59
10. DAL1918 to BOS delay: 38
11. AAL321 to ORD delay: 31
12. COM462 to CMH delay: 1:10

2007 DELAYS	
PHL	33% delayed 15min.+
	14% delayed 45min.+
EWR	42 % delayed 15 min.+
	22 % delayed 45 min.+
JFK	41 % delayed 15 min.+
	17 % delayed 45 min.+
LGA	42 % delayed 15 min.+
	19 % delayed 45 min.+

Introduction

Pittsburgh (PIT) provides the ideal opportunity to evaluate the Wayports concept as directed by Congress in 1992.[5] Development of the PIT CASE Program leverages existing investments and facilities to reduce delays at four critical airports – PHL, JFK, EWR, and LGA - and will provide a real-world evaluation of the Wayports concept. If the Wayports concept is validated, this will provide an approach to reduce delays nationally.

Problem Statement

Airline scheduling has resulted in planned traffic loads that exceed capacity at the New York and Philadelphia airports during many hours of the day, even in ideal conditions. Delays at JFK, EWR, and LGA cause 75% of total system delays.[6] These delays cost the U.S. economy $32.9 billion with flights delayed totaling more than 28,000 years in 2007.[7]

The U.S. Congress and FAA have reviewed the delays in the New York region, particularly in their most recent report (AV-2011-007) in October 2010, citing the density of the New York airspace, limited airport capacity, and increased demand through the emergence of hubs at JFK by JetBlue Airways and Delta Airlines as primary reasons for delays.

The scheduled overcrowding and planned failure during bad weather resembles the "Tragedy of the Commons," in which a limited public resource is overwhelmed and ruined by people acting in their own self-interest.[8] The entrenched airlines and airports have more motivation to protect their market position than to seek broad systemic solutions. The costs of this situation are borne by the traveling public and the US economy.

During irregular operations or inclement weather, these four key airports are unable to accommodate scheduled demand. At times, airport gridlock results in thousands of stranded passengers. Current load factors and the discrete matching of aircraft types to expected passenger loads makes it very difficult for displaced passengers to continue travel.[9]

The combination of scheduled traffic at or above airport capacity in ideal conditions, the physical constraints of the airports, and the difficulty in rebooking passengers results in negative media attention, passenger disturbances, and calls for government intervention and re-regulation. On occasions, such as JetBlue at JFK[10], American's gridlock at Austin[11], or US Airways' aircraft stranded at PHL[12], the system is proven to be broken with costly delays.

Constraints

The problem is airport capacity, which is driven by runway capacity and weather constraints. Runway capacity is a matter of pavement and separation standards; a runway can only support a certain number of aircraft per hour.[13]

This is not a new understanding: as early as 1962 and 1963, FAA studies made with the cooperation of the Air Transport Association concluded that airport surface congestion was the principal cause of airport delays.[14] Weather also compounds the congestion problem at these airports. The chart below shows how the airport capacity benchmarks change depending on weather conditions (low ceilings, poor visibility, rain or snow, high winds).

Airport Capacity Benchmarks in Aircraft per Hour, and (*Frequency of Weather*)[15]					
	PHL	**JFK**	**EWR**	**LGA**	**PIT**
Optimal Weather	**116**, (*86%*)	**87**, (*86%*)	**92**, (*82%*)	**85**, (81%)	**160**, (86%)
Marginal Weather	106, (*6%*)	87, (*5%*)	81, (*9%*)	84, (10%)	150, (5%)
IFR Weather	96, (*8%*)	67, (*9%*)	66, (*9%*)	74, (9%)	150, (9%)

The overcrowding of the system has been attempted to be addressed by the FAA through the reintegration of the high-density rule JFK, EWR and LGA. However, these rules and flight limitations were placed on maximum airport capacity during optimum conditions, allowing carriers to exceed these caps during certain periods placing little improvement on New York delays. Not only is the system oversaturated, but also allows no room for growth greatly reducing the public benefit of adding any flights.

Nature of Demand at PHL, JFK, EWR, and LGA.[16]

PHL, JFK and EWR are airports with significant connection ratios. The PIT CASE Program strategy reduces delays in and out of these airports by reducing connecting passengers, thereby reducing scheduled flights. LGA (10.8% connections) is not as much a connecting airport as the others, but would still benefit directly.

O&D vs. Connecting Ratios, Passengers and Aircraft[17]				
	PHL	JFK	EWR	LGA
O&D % (see Glossary of Terms)	54.8%	77.2%	60.8%	89.2%
Connecting %	**45.2%**	**22.8%**	**39.2%**	**10.8%**
2010 Passengers	30.7 M	46.5 M	33.1 M	23.9 M
2010 Aircraft Operations	460,779	399,626	403,880	362,137
Primary Airlines	US Airways, Southwest	JetBlue, Delta	Continental	American, Delta, US Airways

To handle connecting traffic, a role new to airports that were not designed for, airports such as PHL are implementing a $6.4 billion expansion project to construct one runway and extend two others. While this project will add capacity, it is to cost the FAA $466.5 million and is expected to increase airline costs from the current $110 million per year to at least $500 million in the year 2011.[3] Carriers such as Southwest, US Airways and UPS have already experienced concerns over the impact on their operations in PHL.

Technology

Next generation technologies such as the NextGen[18] navigation structure will improve *airspace* capacity, but will not significantly change *airport* capacity in the immediate future. Therefore, an immediate technology fix to our capacity issue remains some years out, and is significantly tied to the availability of both FAA and aircraft operator-funding commitments. However, with FAA extensions continuing, the cost of NextGen continues to rise. The NextGen Joint Planning and Development Office finds that implementing all of the capability envisioned by NextGen by 2025 could increase the program's costs from $40 billion to $160 billion, says the Government Accountability Office in a letter report dated Nov. 22, 2010. With the large cost of NextGen and the implementation that will last over time, a more immediate solution is needed to relieve not only delays, but the burden on the Federal budget.

The Airport Cooperative Research Program (ACRP) Report #31, studying the Aviation Capacity issues on the coastal mega-regions, cites some of the challenges of NextGen implementation. According to the ACRP and the FAA FACT 2 report on airspace capacity into 2025, the demands of airspace go beyond the advancements of what NextGen can provide. The report states "many of the most congested airports in the coastal mega-regions will continue to need additional capacity to meet demand even with the capacity benefits of NextGen. Therefore, the innovations presented in this study, such as demand management, are vital, irrespective of the capacity gains promised by NextGen or airfield improvements." The ACRP report cites "the boosts in capacity from NextGen will not adequately meet all future demand at all airports in the National Airspace System (NAS)." For the NAS, efforts need to be focused on the utilization of existing infrastructure to solve long-term challenges.

New runways (at Atlanta, O'Hare, and a proposed runway at Detroit) will increase airport capacity at these locations, but they are individual bandages rather than a systemic solution to a cohesive system wide capacity due to their market control by select carriers.

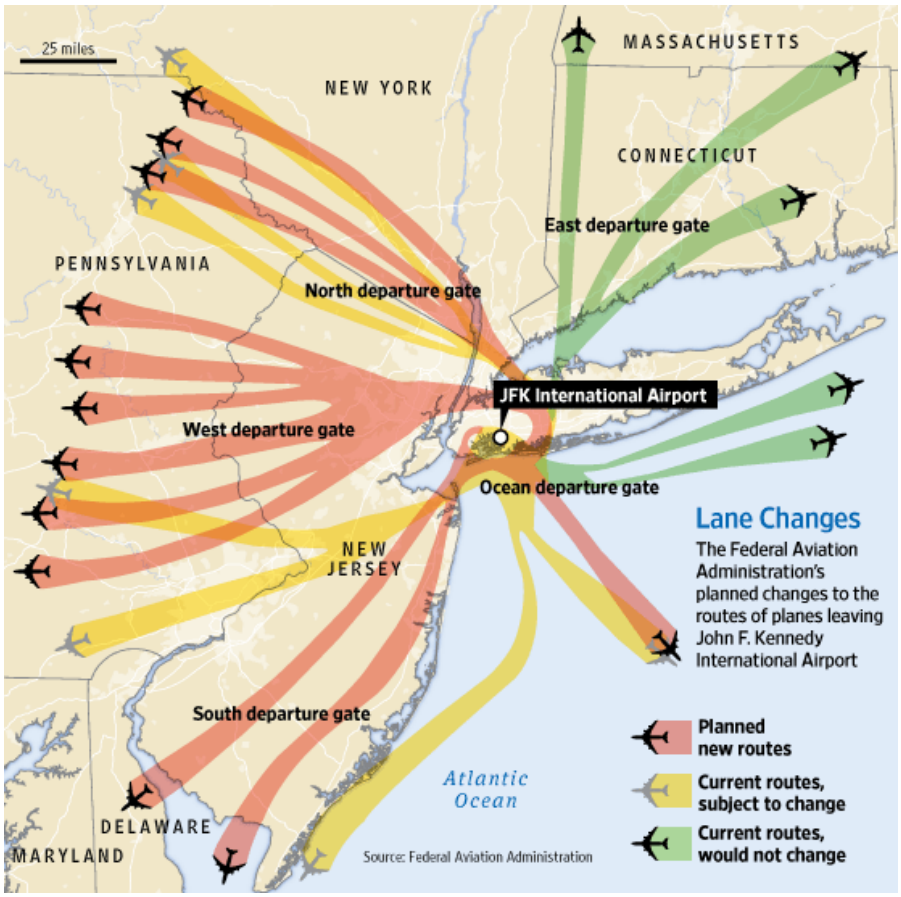
Pittsburgh International Airport is equipped with the latest in navigational, technical and safety equipment including CAT 2/3 ILS systems, simultaneous parallel approaches to runways, and ASDE/AMASS (runway surface detection equipment) to prevent runway incursions.

Political Analysis

Delays and congestion in recent years have produced public outcry and demands for improvement. Non-standard operations during adverse weather have produced terminals packed with thousands of passengers in multiple-day fiascos, often resulting in conflict, with calls for security to maintain control of the situation, and significant passenger inconvenience and lost opportunities for the business traveler.

At the tactical level, FAA has implemented revised airspace plans and departure procedures[19], which have resulted in litigation by communities affected by new noise/flight patterns. Even with the additional airspace rules added, the Northeast market would only be able to see an increase of 5.4% in flight capacity – equivalent to adding two (2) takeoffs and two (2) landings at EWR during optimal conditions.[20]At the strategic level, FAA's response has been to call for traffic

limits and increased regulation, throttling back growth in the PHL, JFK, EWR, and LGA markets, thus restricting domestic air commerce.



At the same time, the Pittsburgh International Airport – with a noise program that is not a barrier to efficient operations and no community barrier to increased traffic – sits under-utilized because of the elimination of US Airways major hub operation.

The beneficiaries of this project will be the flying public (2007 NYC delays alone cost passengers $187 million in lost time[24]) and the national economy (Delays cost the U.S. economy $32.9 billion in delays with flights delayed more than 28,000 years in 2007[7]). No change is neutral, and the Wayports concept as proven by the PIT CASE Program will generate winners and losers. Just as President Eisenhower is recognized as the Father of the Interstate Highway System, *the leaders who improve the nation's airports will have earned the public's esteem.*

The airports and airlines that have profited from the status quo will resist the PIT CASE Program concept. For instance, the Port Authority of NY/NJ recently stated that proposed flight restrictions would cost them $200 million per year in passenger fees.[25] The Port Authority's recent report on eliminating delays identifies 77 action items, none of which does anything to encourage the use of alternative airports.[26] The CEO of Delta recently rejected proposals of a second supplemental airport to relieve the Atlanta area.[27]

The PIT CASE Program also takes into consideration the efficient airport design of Pittsburgh International Airport to compound the savings for the National Airspace System. While there are environmental savings with an in ground fuel hydrant system, a proposed water treatment plant, reduced cost of ground equipment with an automated baggage system and a concentrated terminal design, the largest savings relates to taxi time for aircraft and airlines. By designing a terminal building in the middle of the airfield rather than on the perimeter and aligning runways so each arrival and departure occurs next to the terminal regardless of wind direction, the amount of time for an aircraft to taxi is a fraction of other airports. The typical savings for commercial aircraft can be seen below.

Table 1. Comparison of 2007 Taxi Times at PIT, JFK, PHL

PIT	Cost per Gallon of Fuel (Jet-A): $6.79	Taxi-Out Time: 5 min	Taxi-In Time: 4 min	Total Taxi Time: 9 min
Aircraft	Taxi Fuel Burn Rate (gal/min)	Taxi-Out Fuel Cost	Taxi-In Fuel Cost	Total Taxi Cost
B734	3.73	$126.63	$101.31	$227.94
CRJ200	1.97	$66.88	$53.51	$120.39
E190	3.2	$108.64	$86.91	$195.55
A319	4.5	$152.78	$122.22	$275.00
A320	4.5	$152.78	$122.22	$275.00
A330	8.2	$278.39	$222.71	$501.10
MD-88	3.73	$126.63	$101.31	$227.94

PHL	Cost per Gallon of Fuel (Jet-A): $5.76	Taxi-Out Time: 25.5 min.	Taxi-In Time: 7.8min*	Total Taxi Time: 33.3 min		
Aircraft	Taxi Fuel Burn Rate (gal/min)	Taxi-Out Fuel Cost	Taxi-In Fuel Cost	Total Taxi Cost	PIT Saving Benefit (per day at 400 ops)	Total Yearly Savings (400 ops/day for 365 days)
B734	3.73	$547.86	$167.58	$715.44	$195,000.00	$71,175,000
CRJ200	1.97	$289.35	$88.51	$377.86	$102,988.00	$37,590,620
E190	3.2	$470.02	$143.77	$613.79	$167,296.00	$61,063,040
A319	4.5	$660.96	$202.18	$863.14	$235,256.00	$85,868,440
A320	4.5	$660.96	$202.18	$863.14	$235,256.00	$85,868,440
A330	8.2	$1,204.42	$368.41	$1,572.83	$428,692.00	$156,472,580
MD-88	3.73	$547.86	$167.58	$715.44	$195,000.00	$71,175,000

JFK	Cost per Gallon of Fuel (Jet-A): $7.55	Taxi-Out Time: 37.1 min	Taxi-In Time: 10.8 min	Total Taxi Time: 47.9 min		
Aircraft	Taxi Fuel Burn Rate (gal/min)	Taxi-Out Fuel Cost	Taxi-In Fuel Cost	Total Taxi Cost	PIT Saving Benefit (per day at 170 ops)	Total Yearly Savings (170 ops/day for 365 days)
B734	3.73	$1,044.79	$304.14	$1,348.94	$190,570.00	$69,558,050
CRJ200	1.97	$551.81	$160.63	$712.44	$100,648.50	$36,736,703
E190	3.2	$896.34	$260.93	$1,157.26	$163,490.70	$59,674,106
A319	4.5	$1,260.47	$366.93	$1,627.40	$229,908.00	$83,916,420
A320	4.5	$1,260.47	$366.93	$1,627.40	$229,908.00	$83,916,420
A330	8.2	$2,296.86	$668.63	$2,965.49	$418,946.30	$152,915,400
MD-88	3.73	$1,044.79	$304.14	$1,348.94	$190,570.00	$69,558,050

Fuel Prices as of 9/9/11

* Based upon US Airways July 2007 Avg. Taxi-In Time

Source: BTS, AirNav.com, Boeing, Embraer, Bombardier

Airlines and airports have a strong interest in maintaining their competitive position, and they are likely to resist the Wayports concept at the expense of the flying public. The current situation of high fuel costs (driving airlines out of business), gridlocked airports, and frustrated passengers requires an out-of-the-box solution.

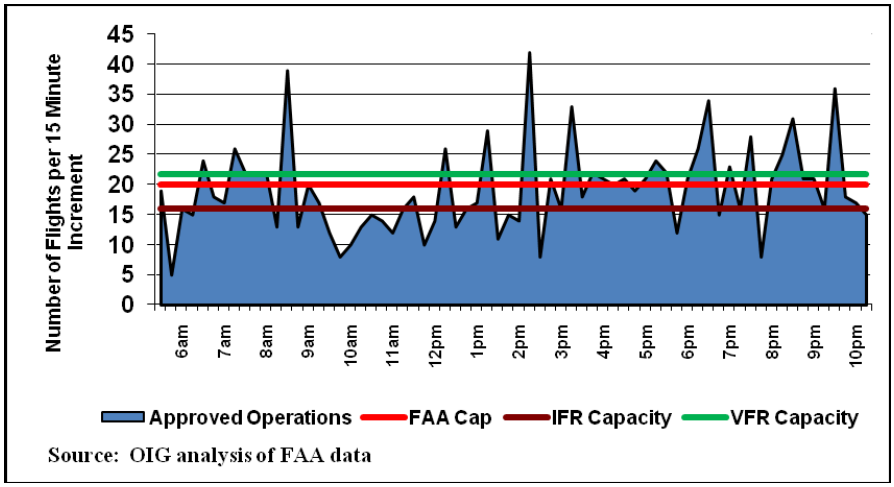
Previous Options

Previous approaches to over-scheduling have included schedule limits set by the federal government, traffic management initiatives that smooth peaks and valleys, and ground stop programs to ensure that inbound aircraft do not gridlock airports. All these factors cause missed connections, delays, and wasted fuel consumption.

The DOT has recently utilized a punitive approach to limiting the extensive frustrations of long taxi delays by fining airlines $27,500 per passenger on flights delayed longer than three hours on the tarmac. While this short-term solution has reduced the flight delays, the inconvenience to passengers has increased with 5,064 more flight cancellations during the summer of 2010 compared with the summer of 2009.[6]

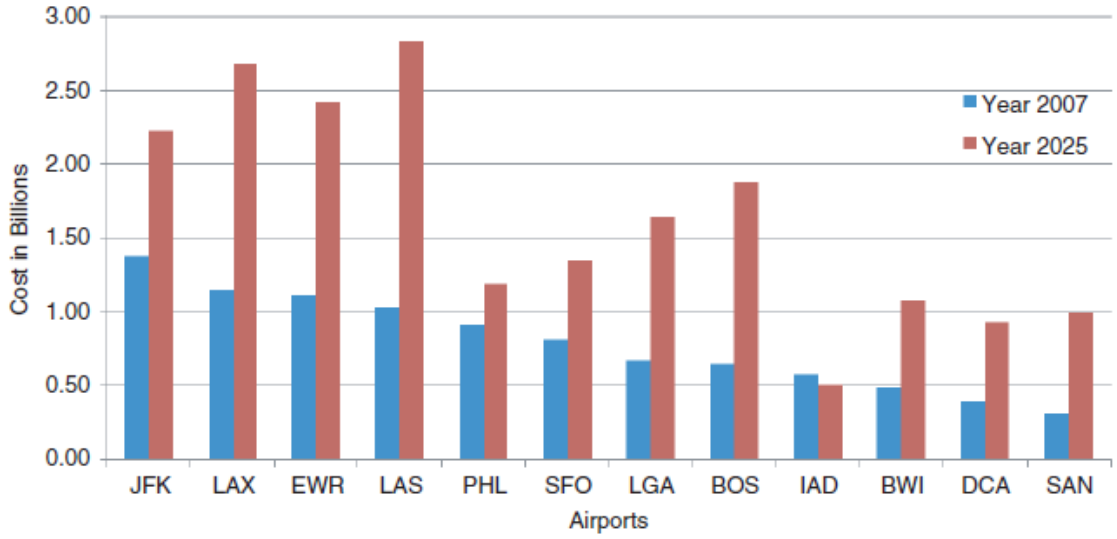
There have been discussions about imposing and/or changing slot restrictions at key airports. There are discussions of peak-schedule pricing in an attempt to ration the precious commodity of runways. However, no reason has had a more negative impact than the phase-out of high density rules (slots) at LGA and JFK airports which permits the system to run above allowable capacity based upon 2007 traffic numbers– the highest delayed year in New York aviation history. According to the FAA Report (AV-2011-007), the establishment of hubs by JetBlue and Delta at JFK as well as the high density rule has resulted in a 46% increase in the number of flights delayed demonstrating the ineffectiveness of slots and limited growth options. Additionally, this report cites the number of on time flights remaining constant at 100,000 per summer between 1999 and 2008 due to the lack of goal setting and permitting schedule peaks by the FAA as can be seen in Figure 1 below.

Figure 1. Comparison of Flight Schedules with Various Capacity Measures at Kennedy (June 18, 2008)



For the National Air Space System (NAS), the cost of doing nothing is expensive for the United States economy. According to report number 31 by the Airport Cooperative Research Program (ACRP), the "cost" of air travel delay in the future would range from about $9 billion currently to about $20 billion, if none of the present capacity constraints were addressed—that is, the cost of doing nothing (2025).

Figure 2. The cost of doing nothing: increase in passenger delay costs 2007–2025, assuming no resolution of key issues (ACRP Report #31)



The Wayports Concept: Reducing Congestion by Reducing Connections

In 1992 Jim Sheppard, manager of the FAA's Orlando Airports District Office (ADO) developed the Wayports concept. An FAA-contracted study titled "Challenge 2010" recommended the development of Wayports as the solution to overcrowding at major airports.[28]

The study recognized that while many passengers need to be at the main urban airport (O&D traffic or international connections), a significant number of passengers have no need to be in LGA or EWR; they want to go from Buffalo (BUF) to Miami (MIA) and do not have a preference about where they change planes.

The Wayports proposal suggested that major OEP-level airports be developed as high-capacity passenger terminals with high Airport Acceptance Rates (AAR). These airports would serve as "utility connectors" that would relieve and offload the congested hubs. The original study proposed that Wayports come from three sources:

- Construction of new airports on the perimeters of mid-sized cities
- Use of under-utilized airports as supplemental fields (such as PIT)
- Use of abandoned military airfields

Additionally, Report Number 31 by the Airport Cooperative Research Program (ARCP) has also identified the challenge citing one of the congestions solutions is to "to gain better utilization of

existing underused capacity at smaller airports in the region, the aviation capacity planning system could benefit from becoming more multijurisdictional."

The Wayports strategy is to reduce delays by reducing the number of flights at the congested airports – effectively outsourcing the connections. If connecting passengers are removed from the mix at PHL, JFK, EWR, and LGA, and flight schedules are adjusted for the reduced passenger traffic, existing airport capacity will be sufficient to avoid most delays without additional financial investment.

Balancing O&D and connecting traffic, in a zero-sum market constrained by airport capacity, delivers a spectrum of airport profiles across the country. For instance, Orlando (MCO) is a 95% O&D airport – very few passengers connect at Orlando; passengers are just flying in and flying out. Las Vegas (LAS) is another 95% O&D airport. In these two cases, local assets are completely dedicated to local passengers. At the other end of the spectrum, Atlanta (ATL) has one of the highest connecting ratios (75%) in the country.[29] The ATL airport's assets are utilized largely by connecting passengers.

Since PHL, EWR, JFK, LGA have far less airport capacity than ATL – they are constrained by capacity – the way for them to accommodate local travelers without overloading the airport is to move to an O&D posture closer to that of an airport the size of Orlando. In other words, they need to outsource their connections to accommodate local traffic within airport capacity.

In spite of Congressional direction that the FAA experiment with Wayports, the concept has not been evaluated because of these fundamental issues:

- Airports are built by local governments with local priorities, not by the federal government with a systemic approach. It would be unlikely for a County or Port Authority to invest in a major airport that would benefit other areas or present a competitive threat.
- The cost of building a major airport (multiple runways, terminals, and infrastructure) can approach a billion dollars, which no local government can justify on behalf of the national system.
- Existing airports and airlines see Wayports as a competitive threat to their established market positions.

PIT: The Missing Testbed

In 1992, the Pittsburgh International Airport opened its new airport with a state-of-the-art passenger terminal, complete with a retail shopping mall. OAG Worldwide placed the facility on its short list of the world's best airports for four consecutive years. JD Power and Associates named PIT among the top five airports in its two most recent customer satisfaction surveys. Condé Nast Traveler's Magazine named PIT among the best in the United States and in the world in its People's Choice Award.[30]

PIT boasts four runways (triple parallels and an intersecting runway), each capable of supporting air carrier operations. Five full ILS systems provide all-weather capabilities, including two CAT 2/3 ILS systems compatible with simultaneous parallel approaches. The Airport Acceptance Rate

is 80 per hour, and the Airport Departure Rate is 80 per hour, resulting in a sustainable rate of 160 operations per hour.

Because of the airport's location, capacity and all-weather capabilities, PIT is among the FAA's 35 OEP airports. The airport layout minimizes the runway crossings (a key safety issue) that have bedeviled other major airports and reduces the opportunity for runway incursions, a major NTSB/industry initiative.

The airport has won the prestigious Balchen/Post Award for Excellence in the Performance of Airport Snow and Ice Control five times.[31] Pittsburgh International Airport is equipped with a staff of Customs and Border Patrol, an incineration facility for international flights, cargo facilities, and cargo buildings to support any type of aviation operation.

In the aftermath of September 11, 2001, two US Airways bankruptcies, and industry consolidations, Pittsburgh is profoundly underused. It is the only OEP airport in the United States operating at 15% of available capacity.

With its four runways, five ILS systems, efficient air traffic facilities, fully developed/environmentally compliant deice pads, and world-class passenger terminal, the under-utilized Pittsburgh International Airport provides the airport no one dared to build to evaluate the Wayports concept in 1992. Pittsburgh's location in the northeast United States makes it an effective Wayport for PHL, JFK, EWR, LGA, and other Northeast Corridor airports. Pittsburgh is only a 90-minute flight time from 75% of the population in the United States. Participating air carriers and traveling passengers will benefit with more dependable and cost effective airport facilities.

PIT CASE Program Proposal

The Allegheny County Airport Authority proposes using the Pittsburgh International Airport as a test bed to evaluate the Wayports concept to relieve congestion and delays at PHL, JFK, EWR, LGA, and other Northeast Corridor airports. The Pittsburgh runways, terminal, and facility can handle another 120 aircraft per hour in addition to the current schedule.

PHL, JFK, EWR, LGA, and other Northeast Corridor airports have flights that could not be effectively shifted offsite; for instance, key flights feed international wide bodies, and identified O&D markets fly into those airports. However, a significant number of connections can be routed through the Wayport, providing relief for the remaining traffic that cannot be realized in any other way. Pittsburgh would be able to solve the continued growth of the regional jet that has plagued the New York region for the past decade.

In order to encourage the airlines currently using PHL, JFK, EWR, and LGA to use the PIT airport as an outsourced connection facility, two key steps are required:

- Government subsidies will incentivize the PIT CASE Program operation for five years – a year of buildup, two years of full operation, and two years of reduced subsidy. The anticipated subsidy could be in the form of tax exemptions for participating flights.

- Hold scheduled traffic to known airport capacity at these four airports: PHL 104/hour, JFK 70/hour, EWR 84/hour, LGA 78/hour. (These numbers represent the lower end of the range of optimal condition airport rates. In each case, they exceed the airport capacity in marginal or instrumental conditions.)

These two key steps – *hold scheduled traffic to known airport capacity* (in ideal conditions), and *providing incentives to relocate connections to the PIT Airport*, will resolve delays without restricting and possibly increasing the opportunity for O&D passengers to use PHL, JFK, EWR, and LGA.

When we say *hold scheduled traffic to known airport capacity*, this does not mean allowing airlines to over-schedule the airport and then metering traffic. This means that at PHL, for instance, airlines can only schedule 104/hour. They cannot schedule 120 per hour and roll the overflow into the next hour.

During the five years of subsidized PIT CASE Program operation, the benefits of reducing delays at PHL, JFK, EWR, and LGA will be demonstrated, after which market costs will support continuation of the PIT CASE Program. The financial plan calls for a one year rollout, two years of subsidized PIT CASE Program operation, and two years of subsidy reduction.

PIT CASE Program Implementation

The incentive structure and operational costs must make utilization of the PIT CASE Program economically rational for the carriers involved. The PIT CASE Program does not encourage establishment of a new hub at PIT, but rather rewards an airline's decision to remove 10 flights an hour from any one of the four airports and run those connections through PIT.

Protection of the airline's competitive position will require that no other carrier will be able to schedule new flights into the four key airports to replace those going to PIT; the goal is to reduce flights at PHL, JFK, EWR, and LGA. For instance, if JetBlue moves 80 flights per day out of JFK to PIT, schedule limits must ensure that no airline fills the space of those 80 flights. In this way, PIT CASE Program implementation will require enforcing schedule limits at PHL, JFK, EWR, and LGA.

For example, XYZ Airlines decides to move 100 flights per day from EWR to PIT using the PIT CASE Program. Audits will ensure the flight reduction. No airline can move flights into those 100 slots removed from EWR. At PIT, XYZ Airline's 100 flights will pay 50% of the landing fee they would have paid at EWR or PIT, whichever is less.

In another example, a startup low-cost carrier announces new service from PIT to SFO and MIA. There is no associated reduction of flights at PHL, JFK, EWR, and LGA. These new flights are not participating in the PIT CASE Program and will not receive any benefits associated with the PIT CASE Program, but could benefit from other incentive programs available.

If the PIT CASE Program proposal is successful, a second phase can be offered for traffic at Chicago's O'Hare airport, which is only slightly further away than the New York/New Jersey/PHL airports.

Implementation Considerations: Flow Control

When airlines move connecting flights from PHL, JFK, LGA and EWR to PIT, we should consider the possibility that the airlines may need to add shuttle flights from PIT to those four airports.

Within the PIT CASE Program concept, PIT will be reducing congestion at the four key airports. To encourage airlines to move flights to PIT, and recognizing they may need to schedule some shuttles from PIT to PHL, JFK, LGA and EWR, the following tradeoff is part of the PIT CASE Program implementation plan:

A ratio will be established allowing one aircraft to be released to those airports without delay for every (# to be determined) aircraft that PIT removes from the four airports.

To provide an example, for every four aircraft (daily) that the PIT CASE Program removes from PHL, JFK, EWR and LGA, PIT will be allowed to release one aircraft to those airports without a delay.

Funding

Airlines moving flights from PHL, JFK, EWR and LGA to PIT will pay landing fees equal to 50% of their landing fee at the previous airport, or 50% of the PIT landing fee, whichever is less. The amount of the incentive will be the major project expense in evaluating the PIT CASE Program over a five-year period.

A one-time subsidy in start-up costs (personnel, technology, etc.) will be provided for carriers bringing in 200 CASE Program operations per week. Government subsidies will incentivize the PIT CASE Program operation for five years- one year of buildup, two years of full operation and two years of reduced subsidy. Additionally, as the PIT CASE Program lowers government spending in the multi-billion range by utilizing current federal investments, congressional approval to partially exempt participating airlines from the excise tax (7.5%) would further incentive airlines to participate in the PIT CASE Program while bolstering airline demand with lower fares from the tax exemption.

An example is:

- Year One: Start up costs and 50% discount of landing fees
- Years Two and Three: 50% discount of landing fees
- Years Four and Five: 25% discount of landing fees
- No incentives after year Five

Based on the example below the annual incentive would average $4.8 million and the total incentive over 5 years would be $24 million.

A PIT CASE Program example:

The following chart provides a traffic estimate and cost projections based on the number of feeder aircraft (offset connections moved into PIT) and the number of shuttles (between PIT and PHL, JFK, EWR and LGA).

	SHUTTLE (B737)	FEEDER (CRJ-200)
Number of flights per day	32	120
Number of flights per year	11,680	43,800
Number of seats per flight	150	50
Load factor	90%	80%
PIT O&D	10%	20%
Max. Gross Landing Wt.	117,000	47,000
Landing Fee(per 1,000 lbs of MGLW)	$3.00	$3.00
Landing fees per day	$11,232.00	$16,920.00
Landing fees per year	$4,099,680.00	$6,175,800.00
One time subsidy per airline	$1,000,000.00	$250,000.00
Number of airlines participating	1 (one)	9 (nine)
Total start-up subsidy	$1,000,000.00	$2,250,000.00

Based on this example, the PIT CASE Program would remove over 32,000 flights per year from critical airspace without reducing the O&D passenger count at the four airports. Note: Although this estimate shows the incentives to program participants, all airlines at PIT will benefit by distributing fixed costs over a greater number of flights.

The following is the incentive break down per year:

Year One - $8.45 million
Year Two & Three - $5.2 million
Year Four & Five - $2.6 million

Total overall - Approximately $24 million over five years.

If the potential of the PIT CASE Program can be realized, the rewards would include:

- Resolution of the intractable problem of delays at PHL, JFK, EWR and LGA
- Validation of the concept and possible extension of the program
- Improved financial viability of airlines threatened by fuel costs
- Improved efficiency and reliability of air travel
- Improvement of the aviation environmental footprint with reduced aircraft emissions
- Increased public satisfaction through a reliable travel schedule
- Higher airline profitability, employment, and taxable income

Benefits

The immediate benefit will be relief from the arrival and departure delays affecting the PHL, JFK, EWR, and LGA airports. Passengers will stop booking around known chokepoints and will be able to travel more reliably. Passengers will be able to plan their trips around realistic schedules again.

The second benefit (which affects the entire national airspace system) is validation of the Wayports concept. The study done by the ACRP Report #31 validated positions similar to the PIT CASE Program at San Francisco International Airport (SFO). It has been shown through the report analysis that changing the schedule at SFO, whether by eliminating short-haul flights, consolidating flights, or diverting very small aircraft, can reduce delays and often does so at a reasonable cost. This approach will extend to Chicago, Los Angeles, and other congested urban airport markets.

Airlines that choose to route connecting flights through the PIT CASE Program will benefit from having a more robust and dependable operational schedule, particularly in the event of non-standard operations due to weather. With an alternative structure available, airlines will be able to route passengers away from anticipated weather or delays.

This project should be considered patriotic because the primary benefits will go to the flying public, United States air carriers and the United States economy. Also, national savings in fuel conservation, a reduction in green house gases, and an improved economic situation for the airlines will result.

One of the most significant impacts results in reduced federal expenditures through lowered capitals projects and increased federal revenues via increased airline profitability and U.S. productivity savings.

Summary

The Wayports concept has been recognized by many aviation experts as the way to improve America's air travel system by reducing gridlock at key airports. It has not been implemented because it changes the status quo which airlines and airports are invested in and operate.

The essential statement of the Wayports concept is that if connecting passengers are removed and scheduled flights adjusted to meet only the O&D demand, existing capacity is sufficient to meet demand.

The Pittsburgh International Airport (CASE Program), with high under-utilized capacity and proximity to the NY/NJ/PHL airports, presents an opportunity not only to quickly lower delays at those airports, but to reduce airline operating cost through a more reliable route schedule, greatly increase passenger/customer service, and significantly reduce environmental emissions associated with the reduced fuel burned. It will also provide a real-world evaluation of the Wayports concept (with national implications) while supporting the analysis of ACRP Report 31.

Four steps are required to establish the PIT CASE Program:

- Congressional approval of partial excise tax exemption for the participating airlines.
- FAA initiative to restrict scheduled traffic at PHL, JFK, EWR and LGA to their hourly optimal capacity.
- Federal funding for approximately $24 million over five years to induce airlines to move their connecting traffic to the PIT CASE Program.
- Airline Participation.

No other minimal investment holds the promise of reducing delays (inbound and outbound) at PHL, JFK, EWR, LGA, and other Northeast Corridor airports to the extent of this proposal.

Glossary of Terms

AAR: Airport Acceptance Rate. The number of aircraft per hour that can be expected to land at the airport if everything goes well. The AAR varies with weather and runway configurations.

O&D: Origin and Destination, a term used for passengers who are flying to (or from) an airport intentionally, rather than simply connecting at the airport to another flight which goes to their destination. [21] If the O&D rate for an airport is 30%, then 70% of the passengers are connecting.

OEP: Operational Evolution Plan, an FAA plan to identify 35 primary airports (OEP airports) and prioritize them as keystones of the national airspace system. The OEP also contains the plan for introducing NextGen program features into the National Airspace System.

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