

Future of Aviation Advisory Committee
Subcommittee on Financing
Record of Meeting
August 17, 2010
General Aviation Manufacturers Association
Washington, DC

Public Announcement

The U.S. Department of Transportation (DOT), Office of the Secretary of Transportation, told the public of this Future of Aviation Advisory Committee (FAAC) Subcommittee on Financing meeting in a Federal Register notice published August 5, 2010 (75 FR 47344).

Subcommittee Members in Attendance

| Name | Affiliation(s) | |
|---|---|--|
| Jack J. Pelton, (<i>Subcommittee Chair</i>) | Chairman, President, and Chief Executive Officer | Cessna Aircraft Company (Cessna) |
| Severin Borenstein ¹ | Professor | Haas School of Business, University of California, Berkeley |
| Thella F. Bowens | President and Chief Executive Officer | San Diego County Regional Airport Authority |
| John Hennigan (<i>Designated Federal Official (DFO)</i>) | | Federal Aviation Administration (FAA) |
| Joseph Kolshak | Attended for Mr. Glenn Tilton | United Airlines |
| Steve Litty (<i>Alternate DFO</i>) | | DOT |
| Daniel McKenzie | U.S. Airlines Research Analyst | Hudson Securities, Inc. |
| Stan Van Ostran ¹ | Attended for Mr. Raul Regalado | Metropolitan Nashville Airports Authority |
| Christopher Williams | Chairman, Founder, and Chief Executive Officer | The Williams Capital Group, L.P. |

Committee Members Not in Attendance

| Name | Affiliation(s) | |
|---------------|---|---|
| Raul Regalado | President and Chief Executive Officer | Metropolitan Nashville Airports Authority |
| Glenn Tilton | Chairman, President, and Chief Executive Officer | UAL Corporation (United) |

¹ By phone.

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Other Persons Present

| Name | Affiliation(s) |
|-------------------------------|--|
| Chris Benich | Honeywell |
| David Berg ¹ | Air Transport Association of America (ATA) |
| Chris Bertram | DOT |
| Chris Brown | United |
| Patty Clark | Port Authority of New York and New Jersey |
| Dan Elwell | Aerospace Industries Association (AIA) |
| Christa Fornarotto | DOT |
| Steve Giles | MITRE Corporation (MITRE) |
| Jens Hennig | General Aviation Manufacturers Association (GAMA) |
| Jamie Hunter | GAMA |
| Susan Kurland ¹ | DOT |
| Kate Lang | FAA |
| David Lee ¹ | ATA |
| Debby McElroy | ACI-NA |
| Olga Ogban | Office of Governor Ted Strickland |
| Gabriel Okolski | DOT |
| Rick Pittaway | DOT |
| Lisa Piccione | National Business Aviation Association |
| Joseph Post | FAA |
| Chad Rheingans | FAA |
| Cortney Robinson | AIA |
| Mike Romanowski | FAA |
| Melissa Rudinger ¹ | Aircraft Owners and Pilots Association |
| Roger Schaufele | FAA |
| Ken Shapero | Naverus/General Electric (GE) Aviation |
| Nan Shellabarger | FAA |
| Michael Wells | FAA Air Traffic Organization |
| James Wetherly | FAA Chief Operating Officer Air Traffic Organization |

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BACKGROUND AND WELCOMING REMARKS

This is the record of the second meeting of the Subcommittee on Financing of the Future of Aviation Advisory Committee (FAAC), a federal advisory committee formed pursuant to and subject to the requirements of the Federal Advisory Committee Act (FACA).

Mr. Jack Pelton, Subcommittee Chair, Cessna, called the meeting to order at 9:02 a.m. He welcomed the subcommittee members and members of the public in attendance. Mr. Pelton opened the meeting by introducing the members of the subcommittee. He also expressed his appreciation to GAMA for hosting the meeting.

Mr. John Hennigan, FAA, read the formal statement required under FACA, and asked the subcommittee if there were any suggested edits or revisions to the June 29, 2010, subcommittee meeting minutes. There were none offered, and the meeting minutes were ratified after a motion to approve by Mr. Chris Williams, The Williams Capital Group, L.P., that was seconded by Mr. Daniel McKenzie, Hudson Securities, Inc. Mr. Hennigan reminded members of the public in attendance that comments may be submitted to the subcommittee for consideration, and that more information was available at the FAAC's Web site at <http://www.dot.gov/faac>. He then turned the meeting back over to Mr. Pelton to open substantive discussion.

DISCUSSION AND PRESENTATIONS

Mr. Pelton outlined the subcommittee's agenda for the meeting. He noted there would be several presentations to help the subcommittee gain a better understand of topics identified as potential issue areas at the first meeting, including a basic understanding of the Next Generation Air Transportation System (NextGen) and costs associated with equipping aircraft for NextGen. Mr. Pelton reminded the subcommittee that while the presentations were educational in nature, they would need to develop consensus topics to present to the FAAC at the August 20, 2010, meeting as potential actionable items for the Secretary of Transportation. He then introduced Dr. Michael Romanowski, Director, NextGen Integration and Implementation, FAA, for a presentation on NextGen, and encouraged the subcommittee to offer questions to Dr. Romanowski after his presentation.

NEXTGEN PRESENTATION

Dr. Romanowski stated his presentation would provide an overview of NextGen and the equipment needed for operation in the modernized air transportation system. He noted his presentation, titled "Business Case for NextGen," can be found at <http://www.regulations.gov>, docket number DOT-OST-2010-0074. Slide 2 of Dr. Romanowski's presentation noted the aviation industry's impact on the U.S. economy. Slide 3 stated that reducing the environmental impact of the aviation industry is a top priority. Dr. Romanowski noted this is a very visible issue that is not going away, and has the potential to limit the growth of aviation in the future. He added NextGen primarily will bring environmental benefits through greater system efficiency.

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Slide 4 highlighted NextGen as a tool for safety and security improvements to the aviation system. Dr. Romanowski stated most people focus on the benefits that NextGen will bring to the air traffic system. He added NextGen encompasses much more, including benefits for the airport infrastructure, aircraft, and a powerful new tool to the U.S. aviation system, known as Aviation Safety Information Analysis and Sharing (ASIAS). Dr. Romanowski noted other enhancements for security, such as the ability to monitor and track suspicious aircraft, environmental benefits through reduced emissions and noise, alternative fuels, and new engine technologies. Slide 5 showed dollar amounts budgeted to NextGen since fiscal year (FY) 2007, and included the budget requested for FY 2011. Dr. Romanowski pointed out NextGen is an effort that is very important to the President of the United States and Congress. He noted this fact is shown by the increased amount of funding that has been allocated each year.

Slide 6 highlighted the need to continue the development of NextGen, despite a present downturn in the economy and air traffic. Dr. Romanowski cautioned the subcommittee that NextGen consists of long-term improvements to the aviation system, rather than short-term implementation items and time will be needed for implementation. Slide 7 highlighted a number of near-term actions taken by the FAA in response to recommendations from the Radio Technical Commission for Aeronautics, Inc. (RTCA, Inc.) Task Force. Dr. Romanowski stated the task force identified multiple strategies that could be taken to accelerate implementation of NextGen using the existing technologies on many aircraft. He noted virtually all of the task force's recommendations have been integrated into the FAA's NextGen Strategic Plan.

Dr. Romanowski covered examples of the integrated nature of NextGen on slide 8. He highlighted it as a complete system beginning with the flight planning stage, continuing through all phases of flight, through completion of a flight at its destination. Dr. Romanowski covered potential challenges to NextGen implementation on slide 9, stating a mixed equipage environment (that is, some aircraft are equipped for NextGen while others are not) will likely exist for the foreseeable future due to economic pressures and the time required for new equipment installation. He noted the FAA could fully implement NextGen infrastructure, but the system may not realize full benefits if a high number of aircraft are not equipped to utilize the system. Dr. Romanowski added the FAA and U.S. government are considering a variety of incentives that could encourage aircraft operators to equip early for NextGen rather than wait for a mandatory deadline for installation in the case of ADS-B or when the operators believe the investment is justified. Mr. Joseph Kolshak, United, asked if Dr. Romanowski could expand on the topic of incentives. He stated it would be covered in more detail in a presentation given by Ms. Nan Shellabarger, FAA, in the meeting.

Dr. Romanowski briefly covered slide 10, noting NextGen will affect all users in the National Airspace System (NAS). He highlighted the incremental deployment of NextGen on slide 11, and stated all of the system's capabilities cannot be introduced simultaneously. Dr. Romanowski noted the FAA is partnering with private industry to introduce operational demonstrations on a number of NextGen technologies. He noted this will allow private industry to realize the benefits from NextGen technologies while providing the FAA with valuable feedback to further develop the system.

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Mr. Pelton asked how the FAA is collecting data and communicating the results from these operational demonstrations. Dr. Romanowski stated there is a need to better aggregate the results and communicate them to industry to illustrate the benefits of NextGen. Mr. Pelton responded if introduction of a portion of NextGen was going to be accelerated that the FAA needed to communicate the intent to do so and demonstrate what benefits it will bring to industry. Mr. McKenzie added the FAA needed to quantify the benefits of equipping early for NextGen, and the efficiencies that will be realized by operators that equip. Dr. Romanowski stated benefits would be covered later in the presentation, but noted that safety enhancements and a reduction in flight delays were the primary benefits being touted by the FAA.

Mr. Joseph Post, FAA, remarked the FAA is studying a number of NextGen benefits, including enhancements to aviation safety and cost savings to the FAA. He noted data was being collected on helicopter operations utilizing recently introduced Automatic Dependent Surveillance–Broadcast (ADS–B) navigation in the Gulf of Mexico, on airport surface movements at Memphis International Airport, and John F. Kennedy International Airport (JFK), and the FAA is working with MITRE in the realm of required navigation performance (RNP) airspace procedures.

Dr. Romanowski added the FAA needs to move toward aggregated metrics accepted by private industry and government. Mr. Pelton noted the data on ADS–B is compelling and asked which FAA office is responsible for aggregating, analyzing, and identifying the benefits of prioritization. Dr. Romanowski replied a new organization within the FAA was focusing on the metrics with the intent of identifying high-level areas for action. He added the areas for action should be shared with industry, and a new advisory committee was being formed on how to measure metrics and identify what should be tracked.

Dr. Romanowski continued to slide 12 and highlighted two international partnerships (the Asia and Pacific Initiative to Reduce Emissions and the Atlantic Interoperability Initiative to Reduce Emissions) underway to demonstrate NextGen benefits. He noted a 3 to 5 percent improvement in the efficiencies of international flights had been achieved, resulting in reduced fuel burn and fewer carbon emissions, which in turn, resulted in cost savings for operators. On slide 13, Dr. Romanowski highlighted tailored arrivals that were demonstrated at airports in Miami, Florida, Los Angeles, California, and San Francisco, California; optimized profile descents in Los Angeles, California; and the benefits realized from these procedures. He stated these procedures would be introduced nationwide next year, and a compounded benefit should be noted throughout the NAS when they become commonplace.

Mr. McKenzie inquired about the difference in fuel savings realized through the two different procedures being used at Los Angeles International Airport. Dr. Romanowski explained a tailored arrival was an optimized navigation procedure, whereas the optimized profile descent was essentially a standard descent with less time at intermediate altitudes. He noted an optimized profile descent can be performed by any aircraft, while a tailored arrival is dependent upon the navigation equipment in the aircraft.

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Dr. Romanowski continued to slide 14, which explained new navigation procedures as part of NextGen, including area navigation (RNAV), RNP, and Wide Area Augmentation System (WAAS)/localizer performance with vertical guidance (LPV). He highlighted the ability of RNP procedures to deconflict the airspace around airports in close proximity to each other, such as New York LaGuardia Airport (LGA) and JFK. Dr. Romanowski added the general aviation (GA) community was benefiting from the introduction of WAAS/LPV at a number of airports across the United States. He noted it added the capabilities of an instrument landing system (ILS) without the required ground infrastructure of an actual ILS installation, which can be cost-prohibitive for smaller airports.

On slide 15, Dr. Romanowski highlighted benefits from performance-based navigation (PBN) procedures implemented at the Dallas/Fort Worth International Airport and Hartsfield-Jackson Atlanta International Airport, which consists of both RNAV and RNP procedures. On slide 16, he noted PBN would be expanded to a number of U.S. cities with major airports and/or several busy airports within their airspace in a process known as “metroplexing.” Mr. Kolshak asked how cities selected for metroplexing are being prioritized. Dr. Romanowski responded the FAA has done internal modeling, but is also seeking assistance from the aviation industry through the previously mentioned new advisory committee that has been formed.

Mr. McKenzie expressed concern the FAA approval process for new navigation procedures takes 1 to 3 years. He questioned if some of the work involved with approving procedures for metroplexing could be outsourced to contractors. Dr. Romanowski replied the FAA currently has an internal team working to identify methods to streamline the FAA’s approval process. He also noted Naverus, a part of GE Aviation, was involved in metroplexing efforts. Mr. McKenzie asked if there was a limit to the amount of work that could be contracted out, and stated air carriers were experiencing delays in approval of procedures. Dr. Romanowski responded he was unaware of significant bottlenecks in the approval process, and noted these are complex navigation procedures and approval can take an extended amount of time. Mr. Kolshak asked if the measurement of environmental impacts was slowing the approval process. Dr. Romanowski replied it does, and noted it was a significant time constraint in the process, but must be undertaken.

Dr. Romanowski continued to slide 17, which showed the number of WAAS/LPV approaches that have been introduced across the United States. He noted over 20,000 aircraft are now equipped for WAAS/LPV and currently additional aircraft are being equipped. On slide 18, Dr. Romanowski highlighted a number of airport improvements completed during FY 2009–2010. He noted the FAA was leveraging airport surface detection capabilities with airport improvements, and stated one of the most visible projects involving this NextGen concept was a runway closure at JFK for a reconstruction project during the spring 2010. Mr. Romanowski cited the project as a good example of cooperation among the FAA, air carriers, JFK, and the sharing of airport surface data during a crucial project with the potential to cause extreme flight delays. He added building new runways helps reduce delays, and the FAA will continue to add new infrastructure to the aviation system.

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Dr. Romanowski covered surface surveillance and data sharing on slide 19. He explained air carriers can save 1 to 4 minutes per flight by receiving real-time surface movement information from Airport Surface Detection Equipment–Model X (ASDE–X) from FAA facilities. Mr. Romanowski stated this allows each individual air carrier to judge whether or not to dispatch their aircraft or hold them at the gate if an extended queue of aircraft are awaiting departure or otherwise experiencing taxi delays. He noted this technique is currently being used at JFK; the actual queue at the departure runways stay relatively low, even though a larger number of aircraft are awaiting departure at various points on the airport but elect not to taxi into a large queue. Mr. Kolshak asked if this was leading to a gate shortage at JFK, with inbound flights delayed because outbound flights did not depart their gates to avoid a long queue. Ms. Patty Clark, Port Authority of New York and New Jersey, replied it was happening at certain terminals at JFK, but generally was not a problem.

On slide 20, Dr. Romanowski covered airports that either have or will have ASDE–X installations. On slide 21, he discussed ADS–B, and provided a brief explanation of the system and benefits to users. Mr. Romanowski cited a 47 percent reduction in fatal accidents in Alaska for aircraft that are equipped with ADS–B. He showed areas of the United States that contain ADS–B coverage, including areas to be introduced in FY 2011. Dr. Romanowski discussed the types of aircraft equipment that will be needed for NextGen, the approximate number of aircraft in various segments of the U.S. aviation fleet, and the approximate costs for equipage in slides 22 through 25. He pointed out a wide variation of costs for equipage based on aircraft type, and noted installation of equipment in older aircraft can be quite expensive.

Dr. Romanowski noted on slide 26 that a mixed equipage environment would exist for the foreseeable future, and that this is a global issue. He provided a summary of NextGen equipage needs and benefits on slide 27, and noted if more aircraft that equipped, the U.S. aviation industry will benefit as the NAS approaches an optimum performance level. Mr. Romanowski noted FAA estimated users would need to invest \$5 to \$7 billion in equipment to realize significant benefits from NextGen mid-term capabilities.

Mr. Severin Borenstein, Haas School of Business, University of California, Berkeley, questioned the \$5 to \$7 billion estimate for needed equipment, stating he has seen estimates as high as \$20 billion. Dr. Romanowski stated the \$20 billion estimate is from the Joint Planning and Development Office, and is an estimate for end state NextGen equipage, while the \$5 to \$7 billion estimate is for mid-term equipage. Mr. McKenzie asked if the estimate included general and commercial aviation, and military aircraft, and what percentage of the costs would be paid by commercial aviation users. Dr. Romanowski replied it did, though only a portion of the GA fleet, since not all aircraft in that segment would need to equip. He noted the majority of the estimated costs would be incurred by commercial aviation users.

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Dr. Romanowski continued to slide 28, which provided a yearly estimate of investment costs for users through 2018. He noted the smaller percentages for GA were due to equipage primarily being needed by turbine-powered aircraft, which represents a small portion of the GA fleet. Dr. Romanowski continued to slide 29, which provided estimates for reductions in flight delays, fuel consumption, and carbon dioxide emissions in 2018, and future forecasts to 2030. He noted NextGen would provide significant benefits to users in these areas.

Ms. Thella Bowens, San Diego County Regional Airport Authority, asked how airports fit into the estimate, because it seems they would have equipment needs. Dr. Romanowski replied airports would need infrastructure for ADS-B, particularly for approach procedures. Ms. Bowens asked about the number of ASDE-X installations planned, and also if the FAA was concerned about a lack of gate space at airports. Dr. Romanowski gave an approximate number of 35 ASDE-X installations that are currently in place and a near equal amount planned for installation. He agreed the lack of gate of space was a concern for the FAA.

Ms. Clark noted the lack of gate space at airports could become a factor as the U.S. aviation system expands. Dr. Romanowski agreed and stated the FAA is studying whether NextGen funding should be applied to ramp and gate areas at airports. He continued his presentation with slide 30, which estimated costs for NextGen through 2030, though he noted the estimates beyond 2018 were less certain. Mr. Pelton asked why there were continuing equipage costs in the estimates, and whether new aircraft were assumed to be already equipped upon delivery. Dr. Romanowski replied equipment installed in new aircraft was considered an indirect cost to keep estimates conservative.

Mr. McKenzie noted some air carriers have invested in equipment on their aircraft that is currently not needed. He questioned whether air carriers would be required to invest in replacement equipment. Dr. Romanowski clarified that Mr. McKenzie was referring to ADS-B equipment, and noted new standards were released in the spring of 2010. He added some ADS-B equipment will need modification or replacement, particularly if it was a very early version of ADS-B out equipment.

Mr. Kolshak asked if an assumption for cost savings from decommissioning older equipment was included in the estimates. Dr. Romanowski responded the estimates were purely cost. Mr. Post added the savings were accounted for elsewhere. Mr. Borenstein and Mr. Pelton further clarified continuing equipage costs with Dr. Romanowski. Dr. Romanowski continued to slide 31, which detailed the cost savings by category, and noted the vast majority of savings are a result of reduced flight delays and fuel consumption. He highlighted annual benefits from NextGen through 2030 on slide 32, and cumulative discounted costs and benefits of NextGen mid-term capabilities through 2030 on slide 33. This concluded Dr. Romanowski's presentation, and he solicited questions from the subcommittee members.

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Mr. Borenstein questioned by what method the discounting on slide 33 was accomplished. Mr. Post responded standard Office of Management and Budget principals were used. Mr. McKenzie asked for clarification if the original provider of the FAA's current air traffic control (ATC) equipment, which he believed was an IBM, had stopped supporting the product in the 1990s. Dr. Romanowski responded he was unsure if this was the case, but added the FAA gains tremendous capability from its present system, though obsolescence was a significant factor and a key driver for the need to modernize the air traffic system.

Mr. Williams asked how NextGen benefit estimates for passenger time savings were calculated. Mr. Post replied the DOT has a standard value that is used for passengers' time value that is multiplied by average flight delays, air carrier load factors, and other factors. Mr. Williams asked if the estimate included delays to air cargo being transported. Mr. Post responded it did not, but acknowledged it was an important factor that should be considered.

NEXTGEN EQUIPAGE FORECAST

Mr. Pelton introduced Mr. Chris Benich, Honeywell, and noted his presentation would focus mostly open equipage costs. Mr. Benich began his presentation by noting the flight deck on the cover slide was an example of a very well-equipped aircraft. He added that many aircraft in the U.S. fleet are not, which causes a great variation in costs to equip aircraft for NextGen. Mr. Benich covered organizations that participated in the study on slide 2. He noted some factors included in the study were covered on slide 3, and pointed out that aircraft equipment upgrades would be needed for ADS-B Out, RNAV/RNP, and Ground Based Augmentation System (GBAS)/Global Positioning System Landing System (GLS). Mr. Benich noted the first GBAS/GLS installation was completed at Newark Liberty International Airport (EWR) and that Continental Airlines is currently equipping its aircraft to conduct GBAS/GLS approaches. Other air carriers are also considering equipping their aircraft. He stated data communication applications and ADS-B In technologies were not included in the study, because clarification is needed on the requirements for these applications.

Mr. Benich continued to slide 4, and listed assumptions made for segments of the U.S. aircraft fleet that were studied. He noted adjustments that were made for aircraft lifespan and retirements, airspace and operational needs, and existing avionics capabilities. Mr. Benich covered estimated costs for the seven segments of aircraft on slide 5. He clarified the cost estimates included labor for installation and if they were not based on investment in new equipment alone. Mr. Borenstein asked if the costs were reduced over time, based on an assumption that equipment costs would lower as technology advances. Mr. Benich stated that he was uncertain, though the costs were estimates and not scientific. Mr. Borenstein asked if the cost estimates were predominately for equipment or the labor required for installation. Mr. Benich replied that costs were predominately for equipment, though he was unsure of an exact percentage, and added aircraft down time was not factored into the estimates. Mr. Pelton asked if it was assumed installation would occur during a regularly scheduled major maintenance event. Mr. Benich stated that was not taken into account.

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Mr. Borenstein asked for clarification on the varying numbers of the fleet size represented in the assumptions. Mr. Benich stated the assumptions were based on the FAA's forecasted fleet numbers for 2012, plus a 25-year lifecycle for aircraft. He noted aircraft planned for retirement in the next 3 years were assumed not to equip for ADS-B Out, those planned for retirement in the next 5 years were assumed not to equip for ADS-B In, and new aircraft would be delivered with NextGen equipment. Mr. Benich further explained the assumptions on slide 5.

Mr. Borenstein asked if the estimated costs were cumulative, citing it would cost approximately \$700,000 to equip an air transport aircraft if all of the columns were added. Mr. Benich confirmed the columns were cumulative.

Mr. Benich continued to slides 6 and 7 of the presentation, which covered normal spending profile assumptions for the aircraft segments through 2020, assuming the complete equipage by a 2020 deadline, and investment amounts for the various types of equipment needed.

Mr. Benich explained the acceleration of NextGen implementation on slide 8, noting most aircraft operators are assumed to equip near the 2020 deadline. He highlighted benefits that could be realized by operators that voluntarily equip early. Mr. Benich also highlighted accelerated spending profiles on slides 9 and 10 and covered assumptions of how quickly aircraft could be equipped with available resources.

Mr. Kolshak noted approximately one-third of costs appeared to be for air carriers. Mr. Pelton added approximately half of the mandated equipage costs will be covered by aircraft operators. Mr. McKenzie asked if equipping aircraft by 2013 would be constrained by the amount of labor available. Mr. Benich acknowledged it was a concern, particularly for the GA segment. Mr. McKenzie asked, if the aviation industry was able to fully equip by 2013, would the benefits realized be approximately the 25 gallons per flight cited in the example of optimized profile descents at Los Angeles, California? Mr. Benich replied it was likely more, since a number of factors will be combined for what is currently in place 2013.

At the completion of his presentation, Mr. Benich solicited general questions from the subcommittee members. Mr. Borenstein asked if a matrix had been constructed showing various options for implementation speed among the segments and the resulting benefits. He added the aviation industry wants to move forward, but also is seeking value for its investment. Mr. Borenstein also noted the air carrier industry could be hampered if the rest of the sectors do not equip. He expressed his opinion that a significant policy issue seems to be how quickly to implement, and which segments should be included. Mr. Benich agreed the aviation industry is ready to implement, but noted there are policy issues that need to be determined by the FAA to facilitate implementation.

Mr. McKenzie asked if a 2013 target date for equipage was attainable, assuming that approval by the FAA could be achieved in time to reach it. Mr. Benich clarified the target date referred to equipment already approved, not navigation procedures requiring approval. Mr. Kolshak asked if the 2013 target date coincided with full installation of ground-based facilities, which Mr. Benich confirmed.

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PERFORMANCE BASED NAVIGATION

Mr. Ken Shapero, Naverus/GE Aviation, introduced himself and stated his presentation would cover the near-term benefit of PBN. He stated the presentation would explain how to obtain benefits out of aircraft that have existing equipment. Mr. Shapero moved to slide 2 and explained that the graph demonstrates the gap in aviation technology. He further explained the technology in aircraft has far surpassed the technology available with air traffic management. Mr. Shapero stated the universal concerns driving aviation change include flight delays, climate change issues, aircraft noise, and fuel prices as seen on slide 3.

Mr. Shapero continued to slide 4, and stated the technology available today can be compared to buying a new global positioning system (GPS) for a vehicle, but not being able to open the box. He stated the situation is the same with aircraft, that is, the technology is available but is unusable. Mr. Shapero explained his presentation would demonstrate how to take the technologies that are available today and implement them sooner to realize the benefits of NextGen.

Mr. Shapero continued to slide 5 and explained there is a need to transition from a ground-based infrastructure to performance-based infrastructure. He explained this transition may be difficult because it involves human factors, including air traffic controllers and flightcrews. Mr. Shapero stated PBN allows for more direct routes, fuel savings, and reduced carbon dioxide (CO₂) emissions through use of GPS, Inertial Reference Systems, and Aircraft Flight Management Computers. He noted the tailored flight paths and infrastructure for air traffic management are not available to take advantage of the current aircraft technology.

Mr. Shapero continued to slide 6 and stated the three elements of NextGen are communication, navigation, and surveillance. He stated PBN is made up of required navigation performance with authorization required (RNP AR); required navigation performance approach, which includes lateral navigation, vertical navigation, and WAAS/LPV; and RNAV. Mr. Shapero noted RNP can be taken to a higher level once the authorization is received, which will be explained later in the presentation.

Mr. Shapero explained the three categories that comprise PBN on slide 7. On slide 8, he explained that RNP AR protects a very narrow lane of airspace that offers more efficient flight paths. Mr. Shapero explained on slide 9 that an RNP path allows for a more optimized approach, saving fuel, time, and CO₂, compared to a ground-based navigation approach. As displayed on slide 10, Mr. Shapero stated optimized PBN can provide immediate benefit for arrivals and departures.

Mr. Shapero noted RNP technology is already being used today in countries outside of the United States, as displayed on slide 11. He moved onto slide 12, which stated that RNP is being used by WestJet in Kelowna, British Columbia, Canada. He explained the graphic representations show the flight paths before and after RNP. Mr. Shaper stated the flight paths after RNP display shorter routes, allowing for less fuel burn and lower emissions, as seen in the close up views on slide 13.

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Mr. Shapero explained how WestJet chose to implement RNP AR throughout their company. He read the statistics on slide 14, which display the distance, time, fuel, and emissions saved. Mr. Shapero explained that, in addition to these savings, WestJet now only flies two types of approach procedures, which is a safety benefit for the company.

Mr. Borenstein inquired about what coordination was required with the airports and what technology was required by WestJet in order to implement these changes. Mr. Shapero stated there was a lot of coordination with airports and the Canadian air navigation service provider. He stated the airports used were not the busiest airports, but his presentation will explain how to use the RNP AR technology in mixed-equipage environments.

Mr. Pelton explained Naverus/GE Aviation designed specific approaches, the regulator had to approve the approaches, the local airport had to agree to the procedures of these approaches, and WestJet had to train the flightcrew to fly the approaches. Mr. Shapero added the routes were all flown with Boeing 737s with a flight management system capable of RNP AR, contracted through Naverus/GE Aviation. He noted this specific example was unique to WestJet, but Naverus/GE Aviation is working with the FAA to start implementing similar procedures in the United States.

Mr. McKenzie inquired why the design approaches worked in Canada but not in the United States. Mr. Shapero explained WestJet paid for all of the expenses, putting the company at an operational advantage. He further explained the FAA had a negative reaction to one air carrier creating specialized operations for their own company. Mr. Shapero stated if one company has their own procedures, other companies will follow suit with their own procedures, leading to chaos. He noted in the United States, rather than creating specialized operations for each airline, there will be a public RNP procedure instead. Mr. Shapero stated the first public RNP will be implemented at Bradley International Airport (BDL) in Windsor Locks, Connecticut, on August 26, 2010.

Mr. Shapero stated the FAA is more deliberative than the Canadian air navigation service provider. He noted the FAA has a responsibility to manage air traffic and since this is a large transition, the FAA is choosing to implement changes at their pace. Mr. Pelton contrasted the conflict control issue in the United States vs. Canada. He stated that changes made at JFK will affect EWR and LGA, whereas the airports in Canada are spaced out enough to avoid that conflict.

Mr. Shapero continued to slide 15 and explained the magnitude at which the WestJet network was able to save miles, fuel, and emissions. On slide 16, he addressed the issue of airports with additional traffic and mixed equipage. He stated operations were tested at Brisbane Airport, a medium-density airport with about 80,000 operations per year. Mr. Shapero explained the magenta line on the slide displays the RNP path flown by QANTAS and the yellow line shows a traditional RNAV approach.

Mr. Shapero moved to slide 17, and explained RNP AR offers benefits beyond fuel and emission savings with reduced noise impact. Slide 18 displays the benefits seen at BNE, and Mr. Shapero explained the air traffic controllers were able to merge the RNP technology with legacy technology to see successful results. He stated these procedures are being implemented at all airports in Australia over the next 5 years.

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Mr. Borenstein requested a time period for the statistics in slide 18. Mr. Shapero stated these figures are for the first phase of the project, but he will send updated information to the subcommittee.

Mr. Kolshak asked Mr. Shapero if there is feedback regarding conflicts or issues from the mixed equipage environment. Mr. Shapero stated the air traffic controllers were initially skeptical, but Airservices Australia included the air traffic controllers in the early designs of the program. He stated once the air traffic controllers became familiar with the program, they did not experience problems. Mr. Shapero acknowledged it is a different way of thinking for the air traffic controllers, but they have learned to trust the procedures and the automation tools. He stated RNP AR-equipped aircraft experienced better performance and, as a result, other aircraft experienced better service since the RNP AR aircraft cleared up more airspace.

Mr. McKenzie inquired how much ATC is required for RNP-based approach landing. Mr. Shapero stated it is sequencing and oversight. He explained the idea of ATC is changing from controllers vectoring in aircraft to aircraft following very specific paths with controllers monitoring separation.

Mr. Shapero returned to the presentation by reading slides 19 and 20, which display implementation at airports in the United States. He then moved to slide 21 and explained that in order to reap the benefits, RNP must be implemented. Mr. Shapero stated there are numerous benefits that NextGen will offer, but it must start somewhere. He noted RNP is the foundation of achieving NextGen technologies.

Mr. Shapero moved to slide 22 and explained 42 percent of the operations in the United States have traffic density less than or equal to Brisbane (BNE), and can implement RNP arrivals immediately. He stated the lessons learned at these airports can be used as tools to help implement RNP at the larger airports. Mr. Shapero explained slide 23 offers the conservative assumptions and resulting benefits that can be seen at the 42 percent of airports that are RNP capable.

Mr. Shapero moved to slide 23 and read the details regarding benefit assessment. He emphasized the inaccuracy of the phrase “RNAV everywhere, RNP where necessary.” Mr. Shapero suggested this mentality is a recipe for mediocrity and the RNP equipment should be used to its full advantage. Mr. McKenzie inquired where the phrase originated from. Mr. Shapero stated the origin is unknown, but it is a term that is commonly used at the FAA and offers a misguided approach to RNP.

Mr. McKenzie inquired if operators with older fleet types are resistant to the changes. Mr. Shapero stated it is not necessarily the case since operators are still able to operate without RNP. He noted it does help incentivize equipage since operators will be able to see the cost-benefit of RNP operations.

Ms. Bowens inquired if this system would work well with airports that are heavily impacted by military aircraft. Mr. Shapero stated this system would be beneficial in those types of airspaces, because RNP may be able to free up airspace for non-military use.

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Mr. Shapero noted slide 25 stated there is no time to waste in implementation because the trend of jet fuel prices continues to rise. Mr. Shapero read slide 26 and explained the difference between RNP .3 and RNP .1. He offered an example: RNP .1 allows for a decision height of 350 feet, while RNP .3 allows for a decision height of 800 feet. Mr. Shapero stated the RNP procedure allows for a greater benefit.

Mr. Williams asked about the implementation schedule at BDL. Mr. Shapero stated it is ready to deploy on August 26, 2010, and took approximately 3 years to complete. He stated future implementation will take significantly less time.

Mr. Shapero addressed the issue of environmental impact of noise. He stated when a flight path changes, an environmental impact statement must be completed for any new people affected by the changes. Mr. Shapero recommended when new airports are being designed, the environmental impact statement take into account all possible scenarios.

Mr. Borenstein inquired if the FAA has been conducting studies in Brisbane, Australia, and Kelowna, British Columbia, Canada. Mr. Hennigan stated the FAA is aware of the operations at these locations. He noted he was unable to answer the question but offered to find an answer.

EQUIPAGE INCENTIVES

Ms. Shellabarger stated she plans to walk through issues around incentives for equipage and will cover both operational incentives and financial programs that can help accelerate the equipage issue for NextGen.

Ms. Shellabarger began her presentation with a discussion of operational benefits. She stated the phrase “best equipped, best served” has become a prevalent issue with NextGen implementation. Ms. Shellabarger stated the theory of the statement has been discussed at length and the FAA is now addressing the issue of putting this phrase into practice. She noted the issue becomes defining what is better, how much better, and how can it be implemented without a negative impact on others.

Ms. Shellabarger explained the first theory is a non-interfering service improvement, which means an operator who is equipped can perform an operation others are unable to complete. She compared this service improvement to a high occupancy vehicle (HOV) lane on a highway. Ms. Shellabarger stated those with the new equipage would receive the benefits of the “HOV lane” without creating a disadvantage for non-equipped aircraft.

Ms. Shellabarger explained a second theory for “best equipped, best served” where there is a positive benefit to operators who equip, with a slight disadvantage to operators who do not equip. She described this situation as taking an existing lane on a highway and turning it into an HOV lane. Ms. Shellabarger stated in doing so, those who cannot use the HOV lane will be at a slight disadvantage but there will be an increase in the throughput in the system. She mentioned this situation requires a thorough cost-benefit analysis.

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Ms. Shellabarger explained a third theory where there is a benefit to society that is not net positive to the operators. She stated the surface analogy for this theory is allowing hybrid vehicles in the HOV lanes. Ms. Shellabarger noted although this model does not allow an increase in the throughput, it does allow for a decrease in emissions which is a benefit to society.

Ms. Shellabarger stated the forth, and last, theory is to encourage equipage by making a mandate. She noted that although there is a short-term hit, there is a long-term infrastructure shift. Ms. Shellabarger compared this theory to imposing a tax on private cars traveling into center city, London, England, which greatly reduces fuel consumption and congestion.

Ms. Shellabarger stated the FAA is looking at studying the operational financial incentive approaches for equipage. She noted there is a spectrum of options available, but none of the options have been approved by the Federal government. Ms. Shellabarger stated one option is government financial options, which includes grants, loans, loan guarantees, or tax credits. She also stated a number of considerations before implantation, including how much total money is needed, how much money is enough to make a difference to each operator, how to deliver the money from the government to the operators, how the financial incentives will effect on budget deficit, and how to be fair in the distribution of resources.

Mr. Borenstein inquired if it is appropriate for the government to finance equipage. Ms. Shellabarger stated this is a question that is underlying all the options available. She posed the question to the subcommittee as to what the public policy will be regarding funding. Mr. Kolshak replied aircraft are an extension of the airspace, rather than part of a private company, so from a public policy standpoint, it is an integral part of how the airspace will function. Mr. Borenstein argued the opposite case and stated the government does not pay for brake repair, yet cars drive on the highways.

Mr. McKenzie noted equipping an aircraft is really transferring the cost into that aircraft. He stated it is different than the brakes on a car analogy, in that the aircraft are absorbing cost for the whole structure to work effectively. Mr. Kolshak echoed this thought by referring to the Naverus/GE Aviation presentation. He stated the controller monitors the aircraft while the aircraft is receiving and sending information. Mr. Kolshak also stated that aircraft who equip help to reduce the overall cost to the FAA.

Mr. Kolshak stated the acceleration of equipage would bring the benefits sooner, otherwise, there may be an endless loop of operators who do not want to equip and the benefits of NextGen cannot be realized.

Mr. McKenzie inquired how the government is taking into consideration the economic costs of delays. Ms. Shellabarger stated the government takes these costs into consideration. She stated it is possible to calculate the measurable costs of the delay.

Mr. Borenstein stated the reason the delays exist is because the aircraft are already creating congestion. He noted the congestion problem is equivalent to paying people to reduce their electricity usage, rather than charging for the actual electricity use. He stated the operators that create a negative externality should be charged for the congestion.

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Mr. Borenstein inquired what the subsidizing situation will be for the GA side. Mr. Pelton responded there is a crossover point where the new aircraft coming out will have the NextGen equipment as standard features. He stated although it may raise the cost of new aircraft, the new equipment will also be replacing current technologies that are no longer useful. Mr. Pelton noted, with regard to existing GA aircraft, operators will have to find a way to equip. He stated the ADS-B mandate has to be absorbed by everybody, but the financing for future technologies has not been decided upon.

Mr. McKenzie asked for clarification about the phrase “best equipped, best served” and who will be disadvantaged. Ms. Shellabarger noted each situation is different. She stated there may be delays to non-equipped aircraft if the approaches do not allow for non-interfering operations. Ms. Shellabarger stated those who are equipped will receive priority; therefore, non-equipped aircraft will see a disadvantage.

Mr. McKenzie inquired about the level of approval in order to move forward with financing options. Ms. Christa Fornarotto, DOT, stated it is not an exact science. She stated the rulemaking process allows time for notice and comments to receive a broad spectrum of opinions to make a decision.

Mr. Dan Elwell, AIA, stated there is an analogous piece of equipment with trains called positive train control. He stated it is a display system that shows where trains are located, similar to the technology with ADS-B. Mr. Elwell noted this equipage for trains was funded through Federal grant money, so the financing situation is not unprecedented. He added there are many incentive packages available in addition to grants, including money given up front, and, at a point in the future when benefits are realized, the money is paid back.

Mr. Hennigan stated that in the RTCA Task Force 5 report, the response to the FAA questions regarding “best equipped, best served” was positive, but there was some reluctance from the industry. He stated the lack of a definition for “best equipped, best served” creates ambiguity. Ms. Shellabarger stated determining the definition is the next level of detail in the study and analysis process. She stated as stewards of the public interest, the subcommittee must look for the best solutions.

Ms. Shellabarger stated there has been some conceptual work done on the spectrum of financing options available. She noted grants come with a list of practical considerations, including: how much money is enough to be useful, what is the payback, how will the government account for the high cost, will it be a net increase in the deficit or will there be a payback, and what is the best way to implement the grants?

Ms. Shellabarger stated loan facilities also come with a list of considerations. She stated there must be some form of initial capitalization, favorable interest rates, and repayment mechanisms which should be tied to the realization benefits. She stated the FAA needs to know how much of a difference a lower interest rate would make to the industry to evaluate the attractiveness of these loan facilities.

Ms. Shellabarger stated all options are scored assuming some level of default. She noted budget scoring includes the consideration of the cost to the government, the time value of money, and the default rate.

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Ms. Shellabarger noted loan guarantees raise the same questions as grants and loan facilities. She stated from the Federal budget scoring angle, loan guarantees score more favorably than direct loans. Ms. Shellabarger mentioned the FAA is uncertain of how attractive these options are to operators.

Ms. Shellabarger changed the subject back to the option of tax incentives. She stated this option does not score well and is a very complicated process. Mr. McKenzie stated the airlines will not benefit from tax incentives.

With regard to GA, Ms. Shellabarger stated there are some options available to work with states. She noted the Alaska Capstone project was funded with state assistance.

Ms. Shellabarger stated it may be an option to design a more targeted and limited program geared for one technology issue or one regional area to solve one problem with equipage. She stated the issue could be solved and the project could move on. Ms. Shellabarger explained that since there are aircraft already equipped, there will be published information about the benefits of equipage. She stated this information will help operators build an internal case for equipage.

Ms. Shellabarger asked the subcommittee for feedback on which public policy case makes the most sense, which options should be excluded, and if there are any other options that need to be explored.

Mr. McKenzie inquired how the HOV lane analogy looks in a cost-benefit analysis. Ms. Shellabarger stated in the case of a new HOV lane, there is a net positive outcome. She stated response is a generic statement, and each case needs to be analyzed to determine the specific cost-benefit.

Mr. Kolshak stated with the HOV lane analogy, the on ramps and off ramps need to be taken into consideration as well, meaning from runway to runway. He stated this issue becomes complex with mixed equipage. Ms. Shellabarger noted the issue of mixed equipage comes with the issue of how much of a disadvantage will others receive regarding extra miles and restricted access. She stated each airport is different and the answer is dependent upon runway configuration, weather, and traffic volume.

Ms. Shellabarger asked if the subcommittee had any additional comments or questions. Mr. Kolshak asked if there have been any conversations with the air carrier industry regarding the involvement of capital markets. Ms. Shellabarger stated there is a need for Congressional action. She stated there is a pending reauthorization bill that has a couple of provisions for operational incentives.

Ms. Shellabarger stated there is also a topic of financial incentives on the Senate bill which would authorize the FAA to enter a cooperative agreement with states for loans for ADS-B.

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FAA BUDGET AND FINANCE

Mr. Chris Bertram, DOT, gave a presentation to the subcommittee on the FAA budget and finance (see attachment for a copy of this presentation). He began the presentation with an overview of FAA funding. Mr. Bertram explained slide 1, which showed a basic table of the FAA's FY 2010 budget. He noted the two sources of funding. Mr. Bertram first described the Airport and Airway Trust Fund (AATF) and highlighted the individual areas of spending. He explained the structure of the General Fund and how it is used to fund operations that are not covered under the AATF. Mr. Bertram provided a brief overview of the historical inception of both funds. He discussed slide 2, which showed a breakdown of how the FAA designates operations funding. He pointed out the vast majority of the funding goes to ATO and Aviation Safety. Mr. Bertram mentioned a small appropriation is used for commercial space and staff offices.

Mr. Bertram moved to slide 3 which displayed the financial breakdown of the Grant-in-Aid for Airports program. He continued to slide 5, which reflected Facilities and Equipment funding broken down by activity. Mr. Bertram briefly explained slide 6 which showed the funding that comes out of the Research, Engineering and Development (RED) budget. He noted that NextGen funding comes out the RED budget. Mr. Bertram proceeded to slide 7 to discuss the breakdown and evolution of aviation taxes and fees. He concluded the presentation with slide 8, which reflected FY 2009 taxes by user groups.

Mr. Bertram then opened the floor for questions. The subcommittee discussed the structures of the AATF and General Fund. Ms. Bowens inquired about the FAA's position on uncommitted balances and how the issue will be addressed. Mr. Bertram commented on how the AATF is not overcommitted like other funds and provided an example of the highway fund. Mr. Bertram assured Ms. Bowens when the FAA proposes the budget to Congress, the numbers are structured to ensure that AATF balance remains positive. There was a discussion about the volatility of aviation taxes and fees.

Mr. Borenstein asked for clarification of the Grants-in-Aid for Airports program. Mr. Bertram explained the grants to the airports are for capital improvements. He deferred further discussion on the topic to the next presentation on the Airport Improvement Program (AIP) and Passenger Facility Charge (PFC) Program. Ms. Bowens asked what percentage of AATF funding is applied to airports. Mr. Bertram explained that the airport program is usually 100 percent funded through the AATF. He noted the AIP percentage has consistently remained around 3.5 percent. Mr. Bertram further noted the overall FAA budget has grown.

Mr. McKenzie asked how the FAA determines revenue shortfall. Mr. Bertram replied there is usually a formula written into the law that tells the department how much can come from the AATF and the General Fund. He noted the formula was not renewed by Congress but explained that the expired formula is based on theory of capital priority. Mr. Bertram stated the formula was designed to keep the trust fund stable. Mr. McKenzie inquired about the potential need to increase sources of revenue. Mr. Bertram expressed his confidence in the FAA's funding structure and commented on the historical success and stability of the structure.

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Mr. McKenzie asked Mr. Bertram for his advice to the subcommittee regarding finance and focus. Mr. Bertram responded the funding is relatively stable in structure and of the policy issues the FAA has to confront; he would not consider funding as a top as problematic issue. Mr. Bertram concluded the discussion by noting the delicate balance of the funding structure. He cautioned that even small changes could disrupt balance and result in unintended effects.

AIRPORT IMPROVEMENT PROGRAM (AIP) AND PASSENGER FACILITY CHARGE (PFC) PROGRAM

Ms. Kate Lang, FAA, gave a presentation to the subcommittee on the AIP and PFC Program. Ms. Lang provided a high level overview of the FAA Office of Airports (Office of Airports). She stated the Office of Airports is first and foremost a safety organization. Ms. Lang listed some of the primary functions of the Office of Airports, including certification and regulation of all airports in the United States, design standards for airport development, and harmonizing U.S. standards with international standards.

Ms. Lang mentioned the magnitude of the Research and Development (R&D) program, which is funded by AIP. She commented on the life-saving innovations such as Engineered Material Arresting System technology and avian radar developed by the R&D program. Ms. Lang noted the Office of Airports is well known because it manages the AIP and PFC Programs. She further explained the Office of Airports is also a planning and environmental entity responsible for actions associated with development at U.S. federally obligated airports.

Ms. Lang listed the compliance activities managed by the Office of Airports including Grant Assurances, airport privatization, and leases. She concluded her overview by mentioning the unit within the Office of Airports responsible for national planning. Ms. Lang discussed the significance of the National Plan of Integrated Airport Systems (NPIAS). She explained the document that catalogs the number of warranted developments at federally obligated airports in the United States. Ms. Lang noted identification in the NPIAS is a prerequisite to obtaining a Federal grant.

Ms. Lang discussed the historical background of the Federal Aid to Airports program and stated it is a mature program and a stable network. She briefly reviewed the airport utility in national defense, mail delivery, rural connectivity, and emergency readiness. Ms. Lang noted the density of public interest. She emphasized the importance of understanding the statutory structure as a prerequisite to understanding the AIP setup.

Ms. Lang commented on the great variance among airports. She stated only a limited number of airports are actually able to borrow from the capital markets, and noted even fewer airports are able to take advantage of another Federal subsidy in the form of tax exempt bonds. Ms. Lang commented on the importance of the Federal subsidies unique to the highest performing commercial service airports in the system. She stated almost all of these commercial service airports rely on AIP funding as the principal source of capital financing. She described the very dense network asserting that the AIP is the backbone of how the Office of Airports maintains the system. Ms. Lang conceded as a consequence, there are many rules associated with the Grants-in-Aid Program, because it is not a one size-fits all type of program. She noted it is a diverse and popular program that has been funded at very high levels.

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Ms. Lang highlighted key points in slides 4 through 7, which addressed the 12 general rules for the AIP. She discussed acceptable uses for AIP funding and stated AIP funds can be used to pay for equipment that is used by pilots, such as an ILS, but cannot pay for anything that generates a profit. Ms. Lang provided examples of unacceptable uses of AIP funds including aesthetic improvements and maintenance. She emphasized that against the 12 general rules, there are many exceptions.

Ms. Lang addressed the division of funding. She referred to slide 12, which showed AIP allocation rules. She explained the pattern and emphasized the importance of understanding how the funds are spent. Ms. Lang moved to slide 18, which showed AIP historical funding levels. She explained how U.S. airports have sustained a very stable period of high-level funding. Ms. Lang then referred to slide 19, which reflected a further breakdown of historical AIP funding.

Ms. Lang moved to slides 20 and 21, which provided an overview of the PFC program. She noted the PFC Program is almost identical in eligibility to the AIP with the exception of certain cases, including matching Federal grants, noise mitigation, terminal eligibility, and repayment of debt. Ms. Lang asserted that similar to the AIP, the PFC Program has many rules.

Ms. Lang corrected the misconception that there is high tension between airports and air carriers. She explained how airports must consult air carriers before applying to the Office of Airports for PFC Program funding. Ms. Lang noted there is little tension between the airports and air carriers. She further noted that the few disputes that do occur surround pro-competitive projects or projects that benefit operators that do not pay PFCs, such as GA and all-cargo operators.

Ms. Lang also corrected the misconception that the FAA does not turn down very many projects. She explained that the Office of Airports works with local governments and airports very closely and strongly advises which projects will be approved. She noted airports usually withdraw projects before they are rejected. Ms. Lang commented on how the PFC Program is a mature program that has proven to be very valuable.

Ms. Lang addressed slide 25 which showed a breakdown of PFC program funding. She continued to slide 26, which showed the contrast between the PFC Program and AIP activities. Ms. Lang highlighted the synergies between the two programs and commented on how the high level of activity demonstrates the programs are achieving the intended public interest.

Mr. Borenstein asked for clarification of the new Denver International Airport (DIA) segment of the pie chart on slide 25. Ms. Lang explained the segment represents the portion of PFCs that went to pay for the PFC eligible portion of the new DIA. She described the magnitude of the new DIA project. Ms. Lang explained, because the number of eligible uses for funding was so high, the Office of Airports decided it was not necessary to break out the DIA project by line items.

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Mr. McKenzie asked Ms. Lang to provide perspective on the complaint that air carriers do not get enough control over the funds they collect through PFCs. Ms. Lang clarified air carriers are invited to talk about how PFC funds are applied to projects. Mr. McKenzie also asked Ms. Lang for perspective on the relationship between air carriers and airports when discussing PFC program funded projects. Ms. Lang acknowledged that tempestuous conversations take place, but noted the infrequency of disputes. She commented on the low number of documented instances of air carrier disagreement with PFC program funded projects. Mr. Kolshak commented on how the air carriers would prefer to have greater governance over PFC funded project spending. Ms. Bowens commented on how many projects are not controversial, and Mr. Kolshak acknowledged that the topic will remain controversial.

Ms. Lang recognized the healthy tension in the interaction in the debate that surrounds the PFC-funded projects. She expressed her belief that governments who own and operate airports have a vested interest in the success of their air carriers, and noted the importance of tending to that relationship to maintain the greater welfare of the surrounding community. Ms. Lang provided the historical background on the structure of the PFC Program.

Ms. Lang addressed the Office of Airports' involvement in the Stimulus Bill. She noted the Office of Airports received approximately \$1.1 billion in stimulus funding. Ms. Lang commended the airport community for completing such a high number of projects despite the debate over stimulus spending. She commented on the great success of how airports benefitted from the Alternative Minimum Tax (AMT) being waived for the past 2 years.

Ms. Lang continued describing other functions of the Office of Airports. She explained how the Office of Airports maintains policies on rates and charges. Ms. Lang provided a brief overview of the Airport Privatization Pilot Program. She discussed the pitfalls of the program. She noted a renewed interest in airport privatization and further noted that the Office of Airports will safeguard the program.

Ms. Lang mentioned some of the challenges that surround the suite programs managed by the Office of Airports. She acknowledged the need for a better funding structure for GA airports. Ms. Lang stated the Office of Airports clearly needs to rethink hierarchy and how to optimize investments. She noted another challenge in maintaining rules to allow the airport portion of financing to contribute to NextGen.

Ms. Lang provided an example using Wide Area Multilateration (WAM). Ms. Lang posed the question of why states should not be allowed use state apportionment for technologies like WAM that improve predictability, reliability, and safety. She noted the inconsistency in why ILS is eligible for AIP or PFC Program funding but GBAS is not. Ms. Lang also noted the challenge posed by the inability of airports to incentivize equipment. She stated another challenge moving forward is how to harmonize and get out of legacy financing schemes to leverage an integrated platform of the future. Ms. Lang asserted it would take a change in law to overcome these challenges. There was a discussion of the rigid rules that conflict with funding eligibility.

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Mr. McKenzie agreed with the need to leave legacy financing systems and inflexibility. He asked Ms. Lang what the DOT's perspective is and what ways will the DOT overcome the challenges. Ms. Lang noted this topic is being addressed by an FAA policy team out of the FAA's NextGen management port. She assured the subcommittee the Office of Airports is actively working to overcome the challenges. Ms. Lang noted the last Reauthorization proposal was rejected, but affirmed the Office of Airports is trying to build a business case to add more approved uses for the AIP and PFC Programs.

The subcommittee further discussed the ways the AIP and PFC Programs limit airports and air carriers. Ms. Bowens invited the subcommittee to consider whether airports will be viewed as robust businesses with the ability to play a large part in local economies and communities. She noted the need to rethink the regulation. Ms. Bowens conceded airports might have to give up some protection. Ms. Lang reaffirmed the need for specific proposals. She suggested starting with a clear understanding of what airports and air carriers can do, and then determine what is limiting. She reaffirmed the Office of Airports supports flexibility as long as the public interest is at the forefront of the mission.

There was a discussion of whether to add more airports or modernize existing airports. Ms. Lang asserted a solution to the challenge is to think strategically and increase airport throughput. Mr. Kolshak expressed his agreement with Ms. Lang and commented on how stability and predictability will solve a lot of problems. Ms. Lang noted the need to redefine the infrastructure of the future to be more technology driven. She concluded the presentation and thanked the subcommittee.

POST PRESENTATION DISCUSSION

Mr. Pelton began the discussion to reach a decision regarding recommendations the subcommittee will make. Mr. Kolshak acknowledged that NextGen took up a major portion of the presentations and he suggested the subcommittee recommend acceleration of the capabilities that are already mature.

Mr. Pelton stated the acceleration of NextGen is followed by the subset issue of funding. Mr. McKenzie inquired if funding is really the issue. Mr. Pelton explained that funding is accounted for on the path to 2020 on today's current profile, making the assumption that equipage will occur; the question then becomes how to implement the changes. He questioned if it would be implemented like ADS-B as a mandate in the next notice of proposed rulemaking.

Mr. Kolshak stated there is currently a time discrepancy since the infrastructure will in place by 2013, but the equipage mandate does not follow until 2020. Mr. Kolshak noted the benefits with accelerating the equipage of ADS-B so that the benefits of NextGen can be realized sooner. Mr. Pelton acknowledged the financial burden of the operators must be taken into consideration. Mr. Kolshak offered the suggestion to incentivize the equipage.

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Mr. McKenzie proposed creating a new definition for airport infrastructure. Ms. Bowens noted the need is for expanding AIP eligibility. She explained there are infrastructure needs at airports that must be attended to so that airports can support NextGen. She expressed concern about NextGen increasing air traffic in airports that are already constrained. Ms. Bowens stated without the appropriate infrastructure, the goal of NextGen cannot be realized and the congestion issue will persist.

Mr. Stan Van Ostran, Metropolitan Nashville Airports Authority, expressed concern about rolling out NextGen to congested airports. He believed the equipage issue will progress naturally if NextGen is introduced to airports in a reasonable fashion.

Mr. Pelton made the recommendation to define airport infrastructure as opposed to defining the eligibility requirements. He suggested the subcommittee look at the current definition and see what is included. Mr. Pelton explained the intent is to ensure national priority at airports is enhanced and create a funding source for equipage for both airports and aircraft.

Mr. Pelton reviewed the two major issues open for discussion: (1) overall acceleration of NextGen, and (2) determining the priority regarding PBN and its associated equipage.

Mr. Van Ostran inquired about the strategy for aircraft coming into an airfield. He questioned if there will be restrictions for aircraft not equipped during peak hours. In response, Mr. Kolshak suggested adding to the definition of “best equipped, best served,” to include how it will be deployed at major airports.

Mr. Williams inquired about funding for the equipage on aircraft. He understood that the equipage on the ground would be considered part of infrastructure and could be funded through AIP, but equipage on the aircraft would not. Mr. Pelton stated the decision would be made locally. He explained that if an airport decides to upgrade to a GBAS, operators and airports would need to decide together how to fund the changes. Mr. Pelton implied that most likely, if the operators want to take advantage of the equipment at airports, it will be their responsibility to equip.

Mr. McKenzie offered a summary of the three topics that were discussed: (1) use of grants, loans, and loan guarantees as options for accelerating NextGen; (2) expanding AIP eligibility; and (3) defining “best equipped, best served” and how to deploy the definition in practice.

Mr. Van Ostran speculated that several operators will line up for monetary grants given by the Government for NextGen equipage. He suggested that because there will be limited funding, priority for distribution of these grants needs to be determined based on a cost-benefit analysis. Mr. Borenstein stated the subcommittee must first investigate the appropriateness of loans versus simply mandating equipage. Ms. Bowens inquired if the subcommittee was attempting to accelerate the 2020 mandate date. Mr. Pelton explained only a piece of NextGen, ADS-B Out, has been mandated so far. He stated there are other significant pieces of equipage that are coming that have not been addressed yet. Mr. Pelton explained operators will need to be advised of the benefit, so that implementation will not be delayed due to financial questions from the operators. He advised operators will have questions regarding use and cost of the next piece, ADS-B In.

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Mr. Pelton recommended defining “best equipped, best served” as a method of solving equipage problems around hub airports. Mr. McKenzie stated there will be potential pushback from air carriers unless there is a way to quantify the benefit of equipping their aircraft. Mr. Kolshak referenced the Reduced Vertical Separation Minimum as an example. He recounted aircraft not equipped were unable to fly over 29,000 feet. With this restriction, Mr. Kolshak demonstrated that air carriers were able to quantify the benefit and suggested that a similar comparison could be made for NextGen equipage.

Mr. Williams stated there is irony in the “best equipped, best served” model. He stated in the beginning of equipage, the small number of air carriers will receive the best service. Mr. Williams noted the larger the group of equipped aircraft, the less advantage each carrier would experience. Mr. Kolshak countered the argument by stating the more operators who equip, the better the benefit. He noted the greater the throughput of the system, the greater the available capacity. He further noted this should reduce delays throughout the system. Mr. Borenstein stated the incentive to equip grows even greater due to the disadvantages of not equipping.

Ms. Fornarotto suggested the subcommittee focus on making a case for providing funding. She stated if there should be funding, the subcommittee must lay out the case and state why grants are needed. She stated the funding question must be answered before moving to the next phase of equipage. Mr. Pelton stated that figuring out the benefit of equipage would help make the case.

Mr. McKenzie referred to statistics regarding the cost of delays to consumers. He stated if NextGen can reduce the cost by 20 percent, then there may be a case for loan guarantees. Mr. Borenstein indicated that would be a tough case to make. He stated the real issue is who should pay for the equipage, not what the impact of equipage will be.

Mr. Elwell offered information regarding a program encouraging carbon neutral growth for the aviation industry. He stated the milestone date is 2020 and companies who commit to the carbon neutral growth receive grants. Mr. Elwell stated companies who do not meet the requirements by 2020 are required to pay the grants back. He offered this example as a potential solution to financing equipage with NextGen.

Mr. Pelton summarized the four recommendations made, which include: (1) redefining infrastructure for AIP eligibility; (2) broadening the scope of AIP and PFC to allow for the accelerated infrastructure to support NextGen; (3) answering the public policy question around the possible mechanisms for funding equipage; and (4) defining “best equipped, best served.”

Ms. Fornarotto asked for clarification on the issue of AMT relief from the airport community. Ms. Bowens stated it is something that airports want, but she is not sure of the current status.

Ms. Debby McElroy, ACI-NA, stated the FAA reauthorization bill has been passed by the house with a 1-year extension of the current AMT relief. She stated ACI-NA was planning on putting together a paper on the benefits of extending AMT relief, which would highlight the benefits for both airports and airlines with funding infrastructure and refinancing debt. Mr. Van Ostran expressed his agreement with making the AMT relief permanent.

**Future of Aviation Advisory Committee
Subcommittee on Financing
Record of Meeting**

August 17, 2010

General Aviation Manufacturers Association
Washington, DC

CLOSING REMARKS/NEXT MEETING

Mr. Pelton reiterated the subcommittee had identified the following four topics as issue areas for presentation to the FAAC: (1) redefining infrastructure for AIP eligibility; (2) answering the public policy question concerning funding opportunities; (3) making AMT relief permanent; and (4) defining the "best equipped, best served" as an incentive mechanism for equipage.

The subcommittee briefly discussed the date for the next meeting. There was no set date decided upon.

ADJOURNMENT

Mr. Pelton solicited a motion for adjournment. On motion, duly seconded and approved by the majority of the subcommittee members present, the meeting was adjourned.

The meeting adjourned at 4:14 p.m.

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.

Approved by: 
John Hennigan, Designated Federal Official

Dated: September 29, 2010