

## HMMH

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December 19, 2019

Mr. Patrick Lammerding  
Deputy Executive Director  
Hollywood Burbank Airport

Subject: Southern San Fernando Valley Airplane Noise Task Force – December 4, 2019 Meeting  
Summary  
Reference: HMMH Project Number 310870

Dear Mr. Patrick Lammerding:

The following is a bullet point summary of the fourth meeting of the Southern San Fernando Valley Airplane Noise Task Force (Task Force) that occurred from 6:30 pm to 9:30 pm Wednesday, December 4, 2019.



- The Chair, Ms. Emily Gable-Luddy, called the meeting to order.
- The Facilitator, Gene Reindel, provided roll call, and determined there was a quorum.
- Following the Chair describing the rules of order, the agenda was approved.
- The HMMH letter dated for November 16, 2019 of the meeting convened on November 6, 2019 was consented to being received by the council.
- The Chair, Ms. Emily Gable-Luddy, announced that public comments on agenda item 5 will be at the end of the presentations.
- Three presentations were scheduled for this meeting: the FAA, Southwest Airlines and HMMH.
- The FAA gave the first presentation.
  - The Western-Pacific Regional Administrator Raquel Garvin introduced the two FAA speakers.
    - Mr. Clark Design – Director of the Western Service Center for the FAA’s Air Traffic Organization
    - Mr. John Nelson – District Manager for Operations of the Los Angeles District
- The FAA gave their presentation.

The following is a bullet point summary of what was included within the FAA’s presentation:

- When the San Fernando Valley Task Force submits their requests to the FAA, they will be analyzed on:
  - Technical Feasibility – Can the aircraft flight management system and pilots safely fly the proposed procedure
  - Operational Feasibility – Will the proposed procedure allow aircraft to fly safely through the airspace, considering traffic flows from other airports. This can be very time consuming process considering how complex and busy the SoCal airspace is.
  - Environmental Feasibility – Does the proposed procedure create an environmental concern? The FAA uses the National Environmental Policy Act (NEPA) as well as the FAA 1050.1 order environmental policy and procedures. Environmental work is completed on every new instrument flight procedure and on many of the amended procedures.
  - Financial Feasibility – What are the anticipated FAA costs associated with the proposed procedures? This included proposed environmental work, the amount of community outreach, amount of public concern, amount of procedures required to make the proposed procedure work.

Mr. Clark Desing presented a video “San Fernando Valley Air Traffic”

- This video shows a 24-hour period of operations on August 13, 2019.
  - 147 BUR Departures

- 167 BUR Arrivals
- 58 VNY Departures
- 79 VNY Arrivals
- The video begins with BUR Departures. As they come off BUR departures turn 210 heading, that is not by air traffic control this is part of the procedure. Aircraft are turned to the north once a controller can safely turn that aircraft.
- The video then adds BUR Arrivals. BUR departures must climb over the top of the arriving aircraft. When a departing aircraft is above the terrain and a controller gets 1000 feet or 3 nautical miles of separation from arrivals, they will turn the departing aircraft.
- The video then adds VNY Departures. BUR and VNY do not depart simultaneously, except for VNY departures to the west. BUR and VNY departures are controlled by Southern California TRACON (SCT), there is a release for departure that ensures separation for the two aircraft. VNY departures gain altitude and climb over BUR arrivals. The BUR arrivals go over the top of VNY and the departures come out and go over the top of BUR arrivals.
- The video then adds VNY arrivals.
- The video then adds Instrument Flight Rule (IFR) over flights. Aircraft departing BUR and VNY must join the stream as they climb up into IFR traffic. Sometimes sequencing is necessary to get the aircraft to fit in. Aircraft are sequenced by spacing either 1000 feet or 3 nautical miles.
- The video finally adds all flights including Visual Flight Rule (VFR) overflights. There are a lot of airplanes that fly over the San Fernando Valley.
- The video ends with a satellite view of all operations. There is very little of the San Fernando Valley that doesn't have an aircraft passing over it.
- Aircraft do not depart BUR Runway 33 because there is high terrain to the north and the aircraft would then be turning to the west into VNY arriving aircraft.



Mr. Clark Desing presented a video showing BUR and VNY arrivals and departures as they occurred on August 15, 2019.

- The video begins at 6am and runs till midnight.
- The video has been sped up to 8 speed.
- The tags on the aircraft are the aircraft type and then altitude.
- There are many reasons why the aircraft turns are made where they are. The controller will turn the aircraft when they can safely turn the aircraft. There are a lot of things that feed into that: the overhead traffic flow sometimes there is not room for them, weather and air temperatures, maximum take-off weight of the aircraft, even be as simple as frequency congestion on the part of the controller and being able to get to that aircraft as it comes off of BUR.
- The FAA only showed a small portion of the video, but the video in its entirety was given to the Task Force.


Mr. Clark Desing presented a video showing quarterly traffic at BUR starting with Q1 2006 and ending with Q3 2019.

Mr. Clark Desing presented a PowerPoint Presentation "San Fernando Valley Task Force Briefing"

- The FAA looked at BUR departures on the third Thursday of August 2014 and 2019.
  - The FAA found and marked the southerly most 2014 departure track. In 2019 there were four aircraft that flew further south than in 2014. This equates to 2.54% of the aircraft in 2019 flew further south than aircraft in 2014 (4 of 154 flights).
  - The FAA looked at August 21, 2014 BUR departures and determined a median point. 46 aircraft turned north and 45 aircraft turned south of the median point.
  - The FAA looked at August 15, 2019 BUR departures and determined a median point. 76 aircraft turned north and 75 aircraft turned south of the median point.

- The median point from 2014 to 2019 shifted .33 miles further south. Aircraft are turning on average .33 miles further south in 2019 than 2014. More analysis can be done as this is only showing one day.
- The FAA selected four locations under the BUR departure path to compare pre- and post-Metroplex altitudes. They compared track data from 2016 and 2018.
  - The post-Metroplex average altitudes are higher than pre-metroplex altitudes over each of the four points.
- The FAA selected a single comparable (same aircraft type, flying a similar route) flight track from August 21, 2014 and August 15, 2019.
  - A B737 flight was selected and it shows the 2019 flight track was higher.
  - Current flight tracks for SLAPP and OROSZ are shown. The procedures coming out of BUR are unchanged off the ground from pre-Metroplex, the PBN procedures do not start till waypoints TILLR and RAYVE.
    - Down at the airport aircraft are coming off of BUR at a 210 heading and then they are turned as soon as the controller can safely turn that aircraft.

Mr. John Nelson presented a PowerPoint presentation "Air Traffic 101 Burbank Airport (BUR)"

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- The journey with air traffic control starts from when the plane pushes back from the gate.
  - The flight pushes back with the tower. There are three elements in the tower.
    - Clearance delivery
    - Ground
    - Local Control
  - The tower sequences aircraft to the runway and the final segment of approach and normally separate aircraft using visual separation.
  - Aircraft are then transferred to Terminal Radar Approach Control (TRACON). TRACON sequences aircraft on final approach and turn the aircraft from the Tower on course before entering Center's airspace.
  - Center provides safe passage at cruising altitude from departure to destination.
  - There are 5 types of airspace designations.
    - Class A – most restricted, all airspace above FL180, all aircraft must be on IFR flight plan, have a working transponder and be in direct communication with air traffic control.
    - Class B – this airspace is around major metropolitan airports like LAX, it is up to 10,000 feet, aircraft must have working transponders, and have air traffic clearance. Aircraft working in Class B airspace are normally landing or departing at the primary airport.
    - Class C – This is similar to Class B, aircraft must have working transponders and be in contact with air traffic control. This airspace is around air carrier airports like BUR, SNA, and ONT. It provides restrictions up to 4,000 feet.
    - Class D – This is airspace surrounding airports like VNY and WHP. It is up to 2,500 feet and aircraft must establish 2-way radio communication in order to operate in this airspace.
    - Class E – this is other controller airspace. VFR aircraft operate in this airspace and do not need to be in contact with air traffic control.
  - Runway Selection is made by air traffic control based on the following:
    - Wind – wind at BUR is normally east/southeast at approximately 7 knots.
    - Terrain – there is high terrain in the vicinity of the airport to the north and east.
    - Instrument Procedures - where are there instrument flight procedures developed. At BUR only and instrument flight procedure to Runway 08 arrivals.
    - Other Airports Operating Practices – VNY and WHP are in close proximity to BUR and their configurations are similar to BUR.
  - BUR has two pieces of concrete making up four runways. Runway 08/26 and Runway 15/33.
    - The numbers are the magnetic heading the aircraft would depart or fly inbound or outbound from that runway.
  - Aircraft cannot depart Runway 33 at BUR for the following reasons:

- Runway 33 is uphill and with the wind
- It lacks the same airspace protections as the normal configuration due to the airspace surrounding WHP.
- Opposite direction of operations at VNY and WHP. If aircraft depart Runway 33 it would have to turn west/northwest and that airspace is occupied by VNY arrivals.
- Airport layout at BUR. BUR doesn't have a full-length taxiway that accommodates most departures, so aircraft have to back taxi onto the runway.
- Significant increase to controller workload and introduces significant risk to the national airspace system.
- The FAA uses an Airport Capacity Metric which is determined by:
  - Fleet Mix
  - Runway Configuration
  - Runway Occupancy Time
- The Airspace Capacity is determined by:
  - Airspace complexity – Terrain and Volume of Traffic and Tasks
  - Number of air traffic controller positions open. They open/close positions based on known or projected traffic and the number of controllers available to open positions. This is also based on budgetary constraints.
- Prior to departure, the airline/pilot will file a flight plan. The items used to determine which route to fly are: fuel, traffic patterns, weather (between their departing and destination airports) and required routes (these are in and out of major metropolitan airports such as New York or Los Angeles).
- Once the aircrew is ready to departure, they will contact the Tower.
  - The first air traffic control they will speak to at the tower is clearance delivery. Clearance delivery approves or changes the route the aircraft or pilot has filed to their destination.
  - Next they will talk to the ground controller. This controller will issue pushback instructions, taxi the aircraft to and from the gate and sequence departures as they taxi out for departure.
  - The local controller's primary function is to ensure the runway is clear. They also work overflights in the airspace that is designated to them.
- Once the flight is airborne and turned to the 210 heading it is turned over to the approach control, which for BUR is the Southern California Terminal Radar Approach Control (TRACON). Southern California TRACON (SCT) handles airspace up to 23,000 feet.
  - SCT is the busiest TRACON in the world.
  - SCT breaks up their airspace into six areas: Burbank, Los Angeles, Del Rey, Empire, Coast and San Diego.
    - Within the Southern California Airspace there is a lot of military airspace, civilian aircraft cannot transit through this airspace they must go around.
  - BUR Area is broken up into six sectors: Fillmore, Woodland, Moorpark, Valley, Glendale and Pasadena.
    - Valley sector works BUR Runway 15 Departures, VNY Runway 16 southeast bound departures (60% of VNY departures), initial sequencing for BUR and VNY arrivals from the north, SMO arrivals, eastbound and westbound IFR overflights up to 13,000 feet, and all VFR traffic in Class C airspace.
- After SCT turns aircraft on course, the aircraft works with Los Angeles Center. They provide safe passage at altitude to your destination.
  - Over 50% of LA Center's airspace is occupied by military airspace. Civilian aircraft cannot normally fly through this airspace.
- In reverse SCT will sequence arrivals, hand them off to the tower, the tower will ensure there is a clear runway and taxi the aircraft to the gate.
- Aircraft fly prescribed routes in and out of the airspace. Each route affects another route.
- There are several factors that determine when an aircraft can be turned on course, one is minimum vectoring altitudes (MVA).



- Aircraft must be on an instrument flight procedure or above the MVAs to operate in the system.
- Air Traffic Controllers must provide 1000 feet or 3 nautical miles of separation. FAA rules require aircraft to be at least 3 nautical miles apart in airspace around airports.
- The vast majority of BUR Runway 15 departures must, for safety reasons fly south of the 101 before turning west. This has been the case for decades.
- The final approach from the west to BUR Runway 08 is 3 miles north of the 101 freeway.
- BUR Runway 15 and VNY Runway 16 departures cannot operate simultaneously, they must be staggered.

#### Task Force Member Questions on FAA Videos and Presentations

- Why did the FAA make the metroplex flight path changes without much consideration if any to the people who would receive these new flight paths and what would stop us from returning to the original flight path and then looking at what we can do to reduce the impacts?
  - Response: FAA was tasked by congress to modernize the airspace and go to satellite based navigation system, largely that is the purpose of Metroplex across the United States. BUR flight procedures south of the waypoints NAME are unchanged. There could be a lot of reasons aircraft have drifted .33 nm south and the FAA is continuing to analyze it. We had the same situation at VNY when we looked at how are we getting .5 miles south, through a lot of analysis the FAA determined that the waypoint PPRY was a fly over. The FAA worked with LAWA to get the flight paths back to where they were. The FAA is willing to work with the Task Force to find a solution.
- The FAA's intention is to try and move this back further north and try and lessen the impacts in the hillsides?
  - Response: As far as the FAA can tell that is where your concern is. If there are other concerns, we need to hear them. The FAA has an Environmental Assessment out on the SLAAP and OROSZ that would move aircraft to the north. For every benefit there is always a trade-off, when we create the new path for SLAAP and OROSZ it will concentrate flight tracks off the airport as they come around. It will keep them further north and fix that southern drift we have been seeing, but it will concentrate tracks right over the Ventura Boulevard Area. What we find at airports with surrounding communities, every time we make a change there is going to be a benefit for some and a non-benefit for another.
- The Task Force submitted questions, is there going to be a session where the FAA goes through and answers all the questions?
  - Response: Believe the FAA will give you a written response to every question and we hope we answered a few tonight.
- Senator Kamala Harris sent several requests and letters to the FAA, there have been no responses, are you familiar with the November 26 letter?
  - Response: Let the FAA know whatever you need and we will give it to the Task Force right away. If you need SOPs for the task for we will get you SOPs. We just need to know what list of stuff you want and we will give it to the Task Force. The FAA has received the November 2019 letter and we are in the process of putting together a response.
- Has the 2018 FAA Reauthorization provisions related to community engagement and noise amendments been implemented?
  - Response: The office of environment and energy at head quarters is the office responsible for implementing a number of these. The office of the administrator met with a number of congressional representatives to address those questions so I believe the answers to those questions are in the process are getting provided and the work is underway.
- Can the FAA provide a detailed timeline of implementation prior the next Task Force meeting on January 15, 2020?
  - Response: Yes the FAA will get responses specifically to that request.



- Can you explain why the Senator and community trust the FAA's ability to prioritize the implementation of a feasible solution of this Task Force?
  - Response: Regarding the implementation of the 2018 Reauthorization we have a whole group of folks working on that request. The FAA office at head quarters are absolutely working all of those issues and would be able to provide the timeline. Reauthorization and Recommendations coming off the Task Force are two different things. Recommendations coming from the Task Force, first we have to check feasibility. A lot of times working with Round Tables we set up Technical Working Groups, there is a lot of quality control involved in building procedures, there is coding that goes into the flight management systems, multiple flight management systems all of those have to work correctly to maintain aviation safety. Like the FAA said before if you change one procedure sometimes it requires a domino affect and you are changing multiple procedures. Certainly, things can be sped up to a degree, largely the factor that it takes to put a procedure in place is safety.
- Can you commit to hosting a face to face town hall for these impacted communities with the current FAA Administrator with Steve Dixon in Southern California?
  - Response: The FAA will take that request.
- One of the slides you showed compared aircraft altitude in 2014 and currently, and you indicated in order to make a valid comparison you needed to have the same type of aircraft in the comparison, was there an analysis if there have been changes in the overall fleet flying out of BUR? Where there have been changes in the load of an aircraft? Whether there are changes in destinations of those aircraft which inherently requires more weight and so on? None of that was analyzed. It does not seem that the altitude is the same or higher, we need to have a more thorough detailed analysis.
- There has been a southern movement in departures at Burbank, I am disappointed we still don't have a clear answer from the FAA on why that is. The why is going to dictate what our solutions are.
- The layout of the airport Runway 33 departures are difficult because aircraft would have to back taxi, if the terminal replacement proposal is in fact implemented and taxiways are enables, that should solve that problem so we should be able to make east bound take-offs?
  - Response: Eastbound take-offs no, northbound take-offs it would solve that issue of the aircraft having to back taxi but it would not take away the primary reason that aircraft depart Runway 15, and that is into the wind, the wind still remains out of the E/SE and they need to depart into the wind.
- Are there ever departures eastbound on Runway 33?
  - Response: Eastbound, no. There are north and northwest bound departures off runway 33. Looking back on the MVA map the FAA showed, aircraft must be on an instrument flight procedure or above the MVA, the MVA to the east and north of the airport is 7000 feet. The field elevation is 872 at this time the FAA is are not aware of aircraft that have a performance level that would allow them to depart runway 33 and turn eastbound.
- The airport submitted a section 175 request to the FAA asking for interim steps that can be taken to help relieve some of the impacts. The FAA responded that there would be a response to the commission request as part of the EA is that correct?
  - Response: To the FAA's knowledge the Task Force has not passed on recommendations for us to do analysis on. Once we receive the recommendations we will be looking at feasibility in the four buckets. Once you come up with a list of recommendations you want the FAA to look at we will put together a technical working group with members of the task force, airlines, ATC. The FAA has an open Environmental Assessment on the amendments to SLAAP and OROSZ and we will consider any reasonable alternative to those procedure and are looking of that to come from the task force?
- Do we have a timeline form when we will get a completed Environmental Assessment?
  - Response: The FAA does not.
- There is a Post-Implementation Review Process as part of the FAA's procedure as part of the implementation of Metroplex and that process has been completed for LAX, VNY, ONT? As part of that process, is it true that the Lake Arrowhead community complained about noise impacts regarding



arrivals into ONT and the agency determined that it might be operationally feasible to use an alternative route into ONT as part of the post-implementation review?

- Response: Yes there is a post-implementation process and yes SoCal Metroplex post-implementation is complete. The FAA does not know if it was part of the post-implementation review, but it was closely in time approximation to that. When the FAA found out there was a way to mitigate that without having to change multiple procedures, we went forward with that. VNY was another one after implementation the FAA found out we were breaking the noise abatement that had been set up from years prior and we immediately went about establishing a waypoint so that aircraft would fly over the park there to the south of the airport before the turn. Yes there were changes that were made but they were not hugely significant enough it makes a difference and we do look at community concerns as well.
- As part of that post implementation review the FAA also determined that it could modify the JCKIE ONE to create a route that could be used twenty-four hours a day into ONT. These changes did not require environmental assessments to make these changes, which you are requiring to make changes here.
  - Response: Yes changes to the JCKIE ONE were made. Not environmental assessments, but Environmental Review work in both cases they were CATEXS. There are three levels of environmental review the first is a categorical exclusion (CATEX)- it is not really an exclusion it is just a level of review set forth in the National Environmental Policy Act (NEPA). Then there is Environmental Assessment (EA) which we are currently going through at BUR and then there are Environment Impact Statements (EIS). If you enact an EA or EIS you look at lengthen the time period to make a change significantly.
- What has happened in regard to post-implementation review of BUR procedures?
  - Response: The post-implementation review is a published document and we will provide that to the Task Force and it will answer all your questions on post-implementation.
- Runway 8/26 how often are there eastbound take-offs off this runway? Is one of the limiting factors for take-offs on that runway the proximity to the Trabuco Mountains? Is there a federal regulation or requirement that defines what that restriction is? The height of the mountains? The proximity of the mountains?
  - Response: Very rarely, there is a weight restriction, not sure on the exact weight but think it is around 12,500 pounds. So not aircraft weighing over 12,500 pounds can take-off on Runway 8 I am not sure of the mountain name range but yes the airports to the east and south of the airport. When there is an instrument procedure developed it goes through a process of review that Clark touched on earlier, feasibility and so forth. Aircraft that depart to the east are also restrict of the terrain to the north and arrivals/ traffic in and out of the LA basin.
- There are mountains to the north, east, west and south of the airport, what distinction there is between the two mountain ranges in terms of flight safely?
  - Response: Simply the height of the mountain. There is departure criteria in our 8000 series that gives you a certain climb gradient you must maintain to have a departure procedure. The document is very technical, and I do not know how to better explain it. The criteria is set forth from our flight standards division.
- In your initial video most departures banked to the west but many banked to the east, what percentage banked to the east? Why?
  - Response: Percentage, not sure. Aircraft that depart to the east are normally low performance aircraft, Cherokees, Cessna, aircraft that are like that which are flying at low levels that cannot fly at a high altitude. In order to depart to the east you must a final altitude of less than 10,000 feet. This is because of the flight paths into the LA Basin, aircraft would not be able to perform and climb to get above those tracks going into LA on that easterly heading. Some higher performing aircraft take off to the east, but they must land inside SCT airspace, like aircraft going from BUR to LAX and have a final altitude below 10,000 feet.



- 25 questions were submitted back in September, will there be a separate session were these questions will be answered and submitted to us?
  - The Facilitator Response: It is the intent that one way or another all those questions would be answered. It was our understanding in addition to the presentations the FAA made they would also provide written responses. Some of them have been answered, yes there would be more formal answers to the questions.
- Was there no BUR flight path change?
  - Response: There have been no changes to procedure coming off off the runway ends for departures. The procedures were made 11 and 17 miles north of the airport. These would not have an impact on why the tracks have shifted.
- One of your slides show that tracks have shifted .33 miles further south. Why have the flight tracks shifted?
  - Response: The FAA is still looking at why it has shifted, and we have narrowed it down to half a dozen reasons and are continuing to analyze it. It may be simply volume, but we do not know that.
- You had a slide where climb profiles of flights in 2019 were higher, is it possible to figure out what the flight altitudes are or ratios for the whole path? Can you also analyze the aircraft above ground level, not just the raw analysis?
  - Response: What the FAA would like to present in January is looking at the quarters and give the Task Force a median altitude to see where the shift happens.
- Could the RNAV temporary suspended and return to previous procedures during EA at BUR and the evaluation of PPRRY waypoint for flights departing VNY?
  - Response: No reason to suspend BUR departures., doing the exact same procedure as they were doing before Metroplex.
- Some residents have been informed by experts that it is possible to depart to the north and other directions at both airports on clam wind days? If it is true, would the FAA consider modifying departures form other airports so the runways are my equitable used so 50% N 50% S?
  - Response: If vacuum that would be true if the only aircraft we had operating in that airspace were BUR departures, but because of all the aircraft operating in and out of the San Fernando Valley and the LA Basin that is not a feasible solution. The FAA need to do some modeling on that to see what is possible.
- I wonder if the FAA has an opinion, is the injury being sustained by the community a consequence of an increased volume because we shut down of SMO, or is it the shifts we made due to metroplex? What would you be advocating for?
  - Response: What we have been seeing right now is not an effect of Metroplex. Yes it could be volume we don't know that yet, it could be other factors. The first thing we need to hear from the Task Force is what exactly would you like us to do? Move the tracks to the north? We can then focus on those desires and take a look at that. Put a technical working group together to analyze the solutions. We have not been able to figure out the problem at BUR yet.
- Back to the altitudes can you please prepare a map or presentation that is like the one that depicts the southernly shift? If we could see the comparison over time from 010 to 2018?
  - Response: The FAA will put a focused attempt to look at altitudes for the January meeting.
- ONT and the environmental review process is getting a CATEX, but BUR is getting an EA why are there different standards being applied?
  - Response: The FAA did community involvement workshops here at BUR about the proposed changes to SLAAP and OROSZ and there was a lot public comment and concern, because of that we decided to not do a CATEX but bump it up to do a full Environmental Assessment.





- The BUR arrivals and there is a 3 nm separation from departures has this regulation changed over the last decade?
  - Response: No it has not changed.
- You noticed a .33 nm shift to the south, we showed a similar shift over the years. If we can determine the why and you can figure a way to put it back what level of environmental review would it take? If it not a change to a procedure, because you said the procedure has not changed.
  - Response: Every single proposal recommendation, if we are going to move forward with it we would make an assessment at that point in time to determine what level of environmental review is needed. There are things we can do that are CATEX and things require an EA.
- Southwest Airlines gave their presentation.

The following is a bullet point summary of what was included within Southwest Airlines' presentation:

Captain Mr. Gary McMullin presented a PowerPoint Presentation "BUR Roundtable Presentation"



- Our goal is to show you real data coming out of our airplanes tonight.
- This data is based on Flight Operational Quality Assurance (FOQA) data.
  - The lateral tracks are accurate within 3 feet, because it is coming out of the aircraft.
  - This data is used for accident investigation.
- Safety is the highest priority for pilots and controllers. It is not efficiency.
- When we are assigned a procedure and clearance from air traffic, it is the role of our pilot to fly that in every detail with the highest of accuracy that we can. We cannot violate that procedure if we do we get an item called a pilot deviation.
- What we do after take-off we climb at a speed, its flaps up maneuvering speed. After we depart, we depart we clean the airplane up, bring the flaps up so that we can start accelerating. We hold flaps up maneuvering speed up to 3000 feet. The reason we do that is we get higher faster.
- We have removed B737-300s and B737-200s.
- I have been flying out of BUR since 1986, I have had the opportunity of flying business jets out of BUR as well.
- Southwest researched back into our navigation database as far back as we could find to 2010.
  - Looked through all historical records from the past years, the headings have not changed, the altitudes have not changed.
- Pre-Metroplex VNY 1 Departure, Post-Metroplex BUR-OROSZ Departure:
  - Pre-Metroplex. Climb Instructions - climb runway heading to 1,180 feet; turn right to 210 degrees
  - Post-Metroplex Climb Instructions – climb runway heading to 1,180 feet; turn right to 210 degrees.
  - There has been no change to the procedures we are flying out of BUR.
- Pre-Metroplex VNY 1 Departure, Post-Metroplex BUR-SLAPP Departure
  - Pre-Metroplex. Climb Instructions - climb runway heading to 1,180 feet; turn right to 210 degrees
  - Post-Metroplex Climb Instructions – climb runway heading to 1,180 feet; turn right to 210 degrees.
  - That procedure we fly has not changed.
- Image showing flight tracks form June 2015, added two yellow lines to show the constrains the we are working with.
- Image showing flight tracks from June 2016
- Image showing flight tracks form June 2017
- Image showing flight tracks from June 2018
- Images showing flight tracks from June 2019
  - Over the years very small differences in these.

- The atmospheric conditions have an effect on that. Temperature doesn't affect the airplane like everyone thinks it does.
- It could be wind.
- It could be several other things.
- The pilot is always manually flying these procedures it is not auto pilot driven. Following a flight director, which is giving us computer commands to put us on the 210 heading.
- How fast is the aircraft flying.
- How hard the pilot turns the airplane.
- The median is within feet.
- NextGen turbo jet aircraft use a climb power for take-off and a climb setting for climb, the aircraft automatically switches to climb setting after we get to 1000 feet.
- It provides us with enough power to get off the runway lose an engine and continue the climb. When get to 1000 feet switch to climb setting that provides us with a high rate of climb which allows us to clear all terrain and all obstacles.
- If the temperature is hotter or we are heavier it applies more thrust to the engine.
- If we are lighter or it is cooler it reduces the thrust a little bit.
- Climb rate of modern turbojet airplanes is not affected very greatly by temperature.
- We are climbing faster out of BUR at a higher rate of climb, not speed. We are getting higher faster today than we ever have been.
- Southwest airlines flight paths have not shifted south, because the Metroplex procedures are identical to what we flew before.
  - Captain Gary McMullin still has flight charts from 1986, the chart is the same. Heading of 210.
- Southwest Airlines is not flying south of the 101 Freeway and a higher rate than before.
  - It would be very difficult flying these large airplanes to turn that airplane that close to the airport. It can be done but it is a coordination us and air traffic. Safety is the key.
- When we taxi out we are talking to ground control, it is one controller. When we get to the end of the runway we switch to the tower controller, they are the ones that clear us for take-off. We depart, probably almost after that turn to heading 210 it is a very busy time and we switch to departure control; we have to change frequencies to do this.
- Turning north of the 101 freeway would require a lot of coordination with air traffic control.
  - There can't be anyone on the approach to runway 8.
  - There cannot be anyone in the way at VNY
  - There cannot be any WHP traffic
  - There cannot be any airplanes flying on the vector airway for small IFR aircraft flying through the area. Only ATC can see this.
- The departure procedures are BUR are open SIDs. If we were flying a procedure called RNAV off-the-ground once we get the aircraft flying the procedure really well it will get within the wingspan of the centerline of the guidance. This is concentrated, everyone would be flying over the same place at the every time on departure. The BUR tracks are dispersed.
- Southwest is working with Round Tables and Airports to work to reduce noise from departures and arrivals.
  - At BUR several years ago Southwest created RNAV Visual Arrival flight paths. This allows us to force the aircraft to fly the descent at ideal down to about 1000 feet. This substantially reduces the noise footprint we have.



#### Task Force Member Questions on Southwest Airlines Presentation

- If there were waypoints placed along the BUR Runway 15 departures, would that help the aircraft turn quicker? Or you know where you are and it's all these other things that you were talking about are the issues?

- Response: It would affect the flying to the airplane, the airplane would still turn at the at the same place. The flight tracks would still be somewhat the same during the turn, but they will get concentrated. The closer we get to that waypoint out there it will concentrate, all the airplanes will fly dead center over that waypoint.
- Both you and the FAA are saying no flight procedures have changed since Metroplex, put yourself in the position of the community, what would you advocate for to mitigate the injury they are clearing experiencing?
  - Response: Southwest is flying the same procedure we have been. The FAA has stated the best way to look at that is with a Technical Group that could look at options. It takes a lot of people to look at that.
- Did all aircraft use to turn north of the 101 Freeway? Why did some of the flights turn north of the 101 freeway? Could all flights turn north of the 101 Freeway?
  - Response: Southwest can go back and look it would take a lot of coordination with the FAA to see what all the FAA clearances were for those flights. I can guess, it is really difficult to make these large aircraft that far north. It requires a constant turn immediately of the ground to be able to make that turn, but more importantly it takes an ATC clearance to allow us to do that. If there is someone on approach to Runway 8 we cannot do that.
- Is Southwest Airlines fleet more sophisticated then the others at BUR?
  - Response: Most aircraft flying in and out of BUR are NextGen aircraft. All of our aircraft are highly equipped. Our lower equipped airplanes are gone. The other airlines flying Airbus, Embraer they are the same. Business jets are not as equipped. Some of them are and some of them are not. Some variance you are seeing is based on these airplanes. They do not command the same accuracy as our planes do.
- Did you say air temperatures does not affect the rate of climb?
  - Response: No, in the new airplanes it does not. The engines will assign a power setting based on the temperature and weight. Before we take-off we know everything that is coming on the airplane, all that information is sent electronically sent to the airplane. In the process of getting to the airplane it runs through a computer that does our performance calculations for us. That performance is critical, so it will assign us the performance we need to climb at the highest rate based on weight, temperature, altitude of the airport, all of that information. New aircraft are nearly unaffected by temperature, only extremely high temperatures (115-117) and extremely heavy weights.
- Does wind have more impact?
  - Response: Wind is a major portion of the performance calculations. We do have to take-off into the wind this is a critical piece. Airline operators and charter operators are required to go one further step with safety. Not only is it giving us the performance we need to get off the runway and climb at a good rate to clear all the obstacles and terrain, if we lose an engine right at rotation of take-off we have to be able to fly the airplane to get it away from those also.
- At what point does the pilot have the most control over the aircraft, when they have the ability to turn or rise in any capacity?
  - Response: I want to ensure we have control of the aircraft at all times, but really until 1000 feet above the ground things have settled down just enough. Southwest has to clean the airplane up, meaning we have to get the flaps up, get the slats up and get the airplane accelerated and flying correctly. At 1000 feet above the ground we will start an acceleration phase, the airplane will pitch over just a little bit we are following the flight director commands it gives us that and we will accelerator to speeds where we can start to raise the flaps and slats, this is the busy time a lot of things going on at the same times we are calling the departure controller. That last until about 2000 feet above the ground and we have accelerated to somewhere in the neighborhood of 205-230 knots depending on the airplane. We will hold that speed, we will not accelerate until we get to 3000 and our pilots will not accelerate until we turn north. Then they will accelerate the airplane to a faster climb speed.



Below 2000 feet we can only accelerate to 250 knots. Above 10,000 feet we can accelerate up to 310 knots that is an indicated airspeed.

- An Air Traffic Controller can only speak to one plane at a time? What does that mean in terms of practical impact, what if you have three planes that are on a collision course how do you solve that problem when you can only talk to one at a time? That makes me concerned for the safety of the whole flight pattern and wonder whether we have enough air traffic controllers
  - Response: I am very happy with what the controllers and our pilots do on a daily basis, as an interaction between the two. We have rules we follow to safely fly the airplane and the FAA shared the rules they abide by to ensure they do not have two airplanes on a collision course. It is extremely rare that we see an error get two airplanes close together and even if they get to close together FAA can share with you what happens on their end on the radar screen, but our airplane starts talking to us too. It gives us guidance to steer clear of that airplane. That doesn't happen this is why we always follow the rules. This is one industry where you don't have rule breakers, because breaking a rule is pretty serious.
- If you want to make alterations in your plans that are less consequential it is more difficult because you can not always connect with the air traffic controller based on prioritization?
  - Response: Yes, there is just no way it is a radio. It is kind of like a walkie-talkie, if you are keying the mic and talking to somebody, they can't talk back to you., it is a one way communication. When we key something and talk to a controller, they can not talk back to us until we release the mic and worse lets say another airplane is trying to talk at the same time we both key the mic at the same time they hear a bunch of garbage and we are talking over the top of each other. It is a one way communication, one person at a time can only talk on the radio.
- Southwest is not flying any farther south, which is a significant number of flights out of BUR. Would the other airlines be likely to say the same thing? And if everyone is saying they are not flying farther south, how are all these airplanes showing up that are flying farther south?
  - Response: Southwest Airlines is here to show you our data coming from our airplanes. Southwest cannot answer the question for other airlines as we do not have their data. The FAA doesn't have the data we have. It is hard to analyze this. The procedures we are flying are the same, what is causing it, we do a lot of analysis on that, we have run an analysis on it and we are pretty close to where we have been for years. There are always going to be 1-2 aircraft that venture out so because things happen in the airplane and in the air traffic world. We have to abide by safety and their clearance. WE have to fly the airplane as safely as possible.
- People living in the hills are seeing more than just the occasional Southwest errant flight that would be described, why are they having a different experience then what you believe is happening on the Southwest side?
  - Response: All we can do is show the Southwest data, we are flying where we have been. That is important for us to show that to you and let you see our data. So our flights haven't really changed. It is seasonal so our flights will go up from somewhere around 55 to 75 during the seasons it moves. That is normal schedule through our entire system, everybody's schedule does that. All we can do is supply you with this data, it is all we have.
- Can you tell us how many flights have been departing BUR in 2015 vs 2019?
  - Response: I do not have the numbers for 2015 in front of me but I did look at them the other day. They went down in 2015 because of the economy but it wasn't that great 5-10 flights a day that 5-10 has come back because the economy has improved. Most of our trends are seasonal there will be less flights and the flights will come back during the season to comply with where people want to go.
- The FAA showed that in 2014 there were about 7,000-7500 flights and in 2019 it was about 11,500 so I am a little confused I am hearing you are saying it is the same amount of flights but there are more seasonally. I cannot image that Southwest is not having an increase in flights along with other airlines at BUR.



- Response: I would ask for you to get the numbers from the BUR airport. I can give you ours but ours haven't changed that much. But there have been a lot of other airlines serving BUR and a lot of corporate flights out of BUR. We do not know the other airlines flights we know ours and they haven't changed that much.
- In the Southwest Fleet, how many planes have the newer technology that is noise reduction vs the older planes that have older technology that are louder?
  - Response: 100% of our airplanes are the new generation airplanes. 100% of our airplanes are equipped with modern avionics.
- How many planes in your fleet out of BUR?
  - Response: Southwest has two, the B737-700 and B737-800. They are the two variants.
- Actual planes not the number?
  - Response: That would be the number of flights. Southwest has two types of airplanes flying through BUR and again our flights range from about 55 up to 75 on the seasonal day. We only have two types because one type is sitting on the ground right now. The MAX is grounded, we were flying those through BUR that is a much quieter airplane that is right now going through the process of being recertified. We should over the next couple of years about 70 of them, but it is quieter. It is a B737-800 with difference engines.
- When will the grounded planes be recertified?
  - Response: I wish I could tell you that. We can make a bet to see who wins. We don't know that yet. It is in the steps of going through recertification, the FAA is working and we are participating with them and we have taken the first steps to get them back in the air.
- Your slide from 2019 showed a slightly more of a southerly drift and you stated a reason. What do you think the reason is for that?
  - Response: Southwest can look at it, what we can say it is how the pilot is flying the airplane in different atmospheric conditions. If we look at every month what we see over the last 10 years you will see those tracks move based on atmospheric conditions. Winds, banking of the pilot flies the airplane with, how aggressive the pilot flies the airplane all of those are factors but as you saw when I looked at our tracks they didn't drift any further that 600 feet which is two city blocks from the median of those tracks. That is our data we do not have other airlines data.
- You indicated the airlines have data that the FAA does not have access to, if there is data available essentially that the airlines don't have access to can you tell us what those data sets are and which are relevant particularly to this task force? If so has there been a request from the facilitators or rest of the Task Force for that data?
  - Response: Other airlines have to have the data we do. It is mandated that we monitor all of our flights for safety. The ones that won't are the business jets. Southwest has methods and approval and that data is highly confidential because of our union contracts. Sharing the data is difficult, showing the data is easy. Sharing would be giving it to you, showing it is just showing you on the screen. Our contracts do not allow that data to be sent outside.
- What I am trying to clarify is the fact that what has kind of been presented in front of this task force is that there will be a certain necessary amount of technical understanding in order to provide a feasible solution that can be accepted by the FAA, what I am saying is if you are aware of various series of data that the airlines will have that the FAA doesn't have access to but only each individual airline will have that can be presented and because of the fact the Task Force will not necessary have an understanding of those technical parameters to ask for it, can you provide simply a recommendation as to what data sets we can ask for?
  - Response: When the FAA works on new procedures, we will participate with them to share performance data on what we can and can not do. Yes that data will be used to work with the FAA.
- What is the total market share of Southwest Airlines out of BUR airport?
  - Response: I think the number of flights out is over 200 and I believe right now we are at about 70 flights.



- Roughly 75 flights out of 200 is certainly a considerable percentage of the air traffic so I would agree with the mathematical assessment that the notion that there hasn't been any significant increase in the total number southwest flights even though you roughly have 40% of the amount of flights coming in and out of the airport doesn't seem to add up.
  - Response: It has been about that rate for quite some time. We do not have the statistics for the airport but we have our statistics and we would be happy to share with you the number of flights.
- Southwest is the big dog at BUR airport, the FAA acknowledged tonight there has been a southern shift in the median flight path, our consultant has confirmed that, certainly everyone in this room confirms that, since March 2017, but the FAA says that is not due to anything we have done, Southwest says that our procedures have not changed in that time, something changed in the middle of 2017 that caused an observable difference. It wasn't the weather, it wasn't Southwest's market share, it wasn't a change in aircraft, do you have any explanation for us as to what happened in 2017 that caused the people in this room to observe a dramatic change in air traffic noise in areas we have not experience before?
  - Response: I don't have an answer to that. All I can answer what our data represents. It would be very difficult for any of us to determine that answer to that.
- So you have flown in and out of BUR for decades and you reviewed all of the Southwest procedures going back 10 years, prior to 2012 what was the minimum rate of climb out of the airport as the aircraft crossed the Runway 15 threshold and made its right turn?
  - Response: We can never determine the rate of climb, but we can tell you an average climb rate in feet per nautical mile. The old 200s would actually climb out of BUR at somewhere in the range of 400 feet/nautical mile, the 300 would climb at about 500-550 feet/nautical mile, the 700 will climb between 700-800 feet/nautical mile and the 800 will also climb at about 600 feet/nautical mile. Before 2012 would have been 700s and 300s flying out of BUR. The climb rate of the 300s is slightly less, the 700 is a rocket it really climbs really well. The difference is almost 200-250 feet/nautical mile greater. The majority of aircraft we fly out of BUR are 700s.
- Before 2012 did the pilot in control manually fly and turn the aircraft or was a flight management system used? Was the flight management system being used prior to 2012?
  - Response: The pilot is always manually flying the airplane, it is never flown close to the ground on autopilot. The flight management system is giving the pilot guidance, in other words the 1180 feet, it tells the pilot to turn exactly at 1180 feet, it tells the pilot a climb rate to climb at for the best performance of the airplane. It is manually flown but the flight management computer is helping with guidance. Yes it was being used prior to 2012.
- Between 2012 and March 2017, is it your testimony there had been no change in the use of the flight management system during that period of time as well? Is the minimum rate of climb during this time not change as well?
  - Response: No there has been no change, that procedure I showed you out of our manual has not changed it is the same. That is correct.
- Following March 2017 what is the rate of climb Southwest inputs into the flight management system at that time?
  - Response: We do not input anything in, it is based on that performance calculation that I shared earlier that is sent to the airplane electronically. That hasn't changed. That information that comes through to the airplane that we use for take-off and climb has not changed.
- Is the fleet mix now capable of more rapid ascent than the fleet mix was in 2012?
  - Response: Yes.
- Is it feasible for Southwest to ascend at a more rapid rate now if that decision were made, would that be technically feasible to do?
  - Response: No, we are actually climbing at the maximum rate that we possible can today. We are applying the max power that we can and we are climbing at the slowest airspeed which



gets us to the highest altitude faster. We are climbing today very quickly, as fast as we possibly can in these airplanes.

- The FAA is studying revisions to its departure procedures based on the waypoints that have been set JAYTE and TEGAN waypoints, has Southwest been involved in the planning and location of waypoints and the revisions to the procedures?
  - Response: We have reviewed them and that is about it.
- With regard to departures from Runway 15/33 is it ever the case that Southwest banks to the east off of those runways? Why?
  - Response: No, we again have to follow what air traffic instructs us to do. I can ensure you if we take-off and turn left off Runway 15 there is a mountain sitting right there. If we turn left and we lost an engine, we wouldn't have an escape. Our engine out performance at that point would be null and void, we couldn't do that. So that is what precludes us, keep in mind that we have to plan for contingences. It is a normal take-off with a normal procedure but if we lose an engine, we have to be able to get the airplane out of the terrain. There is a pretty steep hill that sits right there. There are other factors that air traffic would have give you some guidance on what is occurring in that piece of airspace, but when I am taking out of there, I can actually see the ONT aircraft coming right through there. So there is a lot going on in this little bitty piece of airspace. We can see the airplanes with the lights on and where they are going but we don't have the big picture.
- Are you familiar with ELMOO NINE departure procedure out of BUR? Is that not one that Southwest Utilizes? Why?
  - Response: Yes I am familiar, but Southwest does not fly that. We fly the procedures the FAA needs us to fly. The airspace in a given area and the procedures put us in those areas. I would have to let the FAA explain that.
- There is a procedure in place, and I am wondering who uses that procedure when, under what circumstances, and why it is not utilized more than it is?
  - Response: It is not an RNAV procedure, but if you looked at it the climb off the ground would be identical. We it takes you after that isn't in the right location to be able to match up with all the pieces of airspace as we try and exit the BUR area. So again, I would have to let you talk to air traffic and the FAA the consequences of that, it's severe. We don't use those. New aircraft are RNAV based, we used the RNAV procedures to be able to comply with what we need to, to comply with air traffic and the ELMOO is not one of those. I have not used the ELMOO since 1986, I have always flown the VNY ONE.
- At BUR there was a previous procedure called VNY ONE, can you describe what it does?
  - Response: The VNY ONE departure was the old conventional, non-RNAV, it has the same guidance after departure as the new one did.
- The controller tells the pilot to hit a certain point north of the VNY runway and turn?
  - Response: No. Again after departure if I were going to fly the VNY ONE departure I would fly it exactly as I would the OROSZ or SLAPP. I would climb the aircraft to 1,180 feet, I would turn right to 210 degrees. That's the instructions in the procedure.
- Is VNY ONE still being used? But it is the exact same thing as OROSZ and SLAPP?
  - Response: No. The off the ground instructions are identical, there is no change.
- If it is identical it(VNY ONE) is being used but being called by a different name?
  - Response: No it is not being used by Southwest. It is possible that someone else with a non-equipped airplane could use it. We are flying the OROSZ and SLAPP departures. The instructions the pilots must follow in those procedures are identical to VNY ONE pre-Metroplex.
- If the SLAAP and OROSZ procedures are identical VNY ONE, it's the same procedure with a different name?
  - Response: Off the ground that is correct.
- The VNY ONE name is not being used but the same pattern is still being used?
  - Response: The same off the ground guidance.



- There is not change whatsoever, hypothetically the VNY ONE was exactly done the same and you added it OROSZ and SLAPP, wouldn't it make the plane turn faster?
  - Response: No if we were flying the VNY ONE departure today you would be seeing the same flight tracks that you are for post-Metroplex procedures. The pre-Metroplex procedure climb off the runway is identical to the post-Metroplex. So the VNY ONE conventional departure off the ground was climb 1180 feet, turn right to a 210 degree heading. OROSZ and SLAPP are climb 1180 feet, turn right to a 210 degree heading.

#### Facilitator Questions on Southwest Airlines' Presentation

- Based on the flight track data you showed earlier, your contention is that the dispersion of those tracks have not changed, is that correct?
  - Response: That is correct.
- There is a proposal out there that the FAA is looking into, where they have created a couple of waypoints and you said you have review that, can you describe briefly how that would change the tracks from existing today and what they would be if they went into place?
  - Response: That would be what we call an RNAV departure off the ground, but it opens up again after departure. So it would tightly constrain the departure flights tracks after departure. It would move them north a little bit but highly concentrated, but after we pass the last waypoint the dispersion is going to start again. That is the consequences of that, you can have the dispersion you are seeing today or a high tight constrained flight track that is flying the same place every time.
- You also contended, and I believe rightfully so, that your procedures have not changed as to when you get on the 210 heading, but I didn't see anywhere in your procedures any changes after the 210 heading, so have you changed your procedure as you to how you get off that 210 heading and turn north?
  - Response: Nothing has changed, the procedure is the same. That is why it is called an open SID, the VNY ONE was open too. The final instruction for us after take-off was to climb a 210 heading on pre-Metroplex and post-Metroplex, what gets us off that 210 heading is ATC clearance to turn north. We cannot turn north until we clear the arrival traffic, that has not changed from pre- or post-Metroplex. So that is what it is, it is an open SID, we fly the RNAV off the ground to a 210 heading, and we do exactly what we did pre-Metroplex when they let us turn we turn.
- The procedure is the same to turn onto the 210 heading and it also hasn't change, but to turn off of the 210 heading it requires air traffic control direction?
  - Response: It always has.
- You were talking about the efficiency of the engines and that you put in the weight of the aircraft, the winds and the temperature and all that and it determines how best to climb out?
  - Response: That is correct.
- That means you climb out, regardless of weight, temperature and winds, on a very similar climb gradient?
  - Response: That is correct, but it can vary very slightly based on how the pilot flies the airplane.
- If you change the settings or ignored some of the settings and used max climb out procedures, could you actually climb out at a higher climb gradient? How about after the 210 heading?
  - Response: No, it wouldn't help us that much and that close to the ground it already so close to max that it wouldn't help hardly at all. After we are on the 210 heading, it automatically applies the power. Max thrust is really close to where we are at so applying just a little bit more it's going to affect the climb that greatly.
- The Chair motioned to continue HMMH's presentation at our next meeting.





- The next meeting will be January 15<sup>th</sup>, 6:30pm-9:30pm at the Burbank Marriott Hotel.
- That meeting will have a continuation of HMMH and additional community presentations
- Mr. NAME
  - Will we have the responses in writing from today's questions at the next meeting?
- Ms. Raquel Garvin
  - We have jotted down all questions, but need to confer with HMMH to make sure we got them right. We already have the questions we received from HMMH on the previous set of questions.
- The facilitator
  - For the questions posed to HMMH we are undertaking analysis those are going to require more details of the flight track data so we will not be prepared at the next meeting to have written responses. Those responses will be coming at the meeting after the rest of the community group presentations. As to the FAA it is dependent on them on how quickly they can turn around their responses to questions.
- Ms. Sharon Springer
  - What percentage of the plane are corporate vs commercial out of VNY and BUR?
- The facilitator
  - We can look into that; I do not have the answer right now.
- The Chair Ms. Emily Gabel-Luddy reiterates that we are now past 9:30 and will not have time for public comment.
- Please submit any comments to [taskforce@bur.org](mailto:taskforce@bur.org)



Sincerely yours,

**Harris Miller Miller & Hanson Inc.**

A handwritten signature in black ink that reads 'Heather Bruce'. The signature is written in a cursive, flowing style.

Heather A. Bruce  
Senior Consultant

cc: Sarah Paulson Sheehy, Senior Director, Government & Public Affairs, Hollywood Burbank Airport  
Gene Reindel, HMMH Vice President and Task Force Facilitator