

# *Limited Slot Allocation*

- John F. Kennedy Airport
- LaGuardia Airport
- Newark Airport

**Presented by: Nan Shellabarger & Molly Smith,**  
*FAA Office of Aviation Policy and Plans*

**Date:** December 4, 2008



**Federal Aviation  
Administration**



# Points for Review

- I. Definition of “Limited Slot”
- II. Relevant dates & deadlines regarding “Limited Slot” allocation
- III. Summary of Limited Slot Allocation process
- IV. Details of Limited Slot Allocation process

***This presentation is intended to provide clarity on how FAA will select its 50% of Limited Slots***

## Summary of Final Congestion Management Rules at JFK, EWR & LGA

- FAA issued 2 Congestion Management Rules for the three New York-metro Airports: LaGuardia, John F. Kennedy & Newark Airports.
- The rules “grandfather” a majority of slots at the airports to current operators & reallocate a percentage of slots, via auctions over the first five years of the rules.
- A percentage of slots will also be retired at LaGuardia Airport.
- Slots that will be retired and reallocated by auction are called “Limited Slots.” Carriers designate 50% of their “Limited Slots” and the FAA selects the other 50% of “Limited Slots.”
- Limited Slots are selected at the outset of the rule, in December 2008.

# Definition

## “Limited Slot”

- Limited slot - “is a slot, the lease for which expires prior to the expiration of this rule for retirement or subsequent allocation by the FAA as an unrestricted slot.”
- All operators with more than 20 daily slots at JFK, EWR and LGA airports will have a percentage of slots designated as Limited Slots.
  - 10% of slots (above 20 baseline slots) will be designated “Limited Slots” at JFK and EWR.
  - 15% of slots (above 20 baseline slots) will be designated as “Limited Slots” at LGA.
- Limited Slots will expire over the first five years of the Rules and will be reallocated by auction.\*

\**Note*: 5% of Limited Slots will be retired (not auctioned) at LGA.

# Relevant “Limited Slot” Dates

- **December 9**

FAA will notify carriers (through their slot coordinator) of their base schedules and number of Limited Slots.

- **December 19**

Carriers select ½ of their Limited Slots & provide those details to FAA.

- **December 29**

FAA will select the remaining ½ of Limited Slots. FAA will inform affected carriers and information will be published on the FAA website.

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by hour.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by time. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by hour, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.

## JFK Step 1... Identify Carrier Holdings

Slot Time	Carrier 1 Base Week	Carrier 2 Base Week	Carrier 3 Base Week	All Other Carriers Base Week	TOTAL Airport
<b>600</b>	20	20	10	1	<b>51</b>
<b>700</b>	25	20	30	1	<b>76</b>
<b>800</b>	10	26	40	2	<b>78</b>
<b>900</b>	18	20	34	2	<b>74</b>
<b>1000</b>	10	14	14	2	<b>40</b>
<b>1100</b>	22	10	24	0	<b>56</b>
<b>1200</b>	18	20	32	1	<b>71</b>
<b>1300</b>	26	24	22	3	<b>75</b>
<b>1400</b>	22	26	30	2	<b>80</b>
<b>1500</b>	26	24	26	1	<b>77</b>
<b>1600</b>	35	20	24	1	<b>80</b>
<b>1700</b>	22	22	32	5	<b>81</b>
<b>1800</b>	26	30	18	5	<b>79</b>
<b>1900</b>	22	32	22	6	<b>82</b>
<b>2000</b>	28	22	28	1	<b>79</b>
<b>2100</b>	30	20	26	2	<b>78</b>
<b>2200</b>	<u>20</u>	<u>10</u>	<u>24</u>	3	<b>57</b>
<b>Total slots</b>	<b>380</b>	<b>360</b>	<b>436</b>	<b>38</b>	<b>1214</b>

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by hour.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by time. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by time, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.



## JFK Step 2...

### Calculate Number of “Limited Slots”

JFK Carrier	Slots Held	Base	Slots Eligible to Auction	10% Limited Slots	Carrier Pick	FAA Pick
Carrier 1	380	20	360	36	18	18
Carrier 2	360	20	340	34	17	17
Carrier 3	436	20	416	42	21	21
Carrier 4	21	20	1	0	0	0
Carrier 5	<u>17</u>	<u>17</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	<b>1214</b>	<b>60</b>	<b>1117</b>	<b>112</b>	<b>56</b>	<b>56</b>

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by time.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by time. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by hour, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.

## JFK Step 3... Form FAA will provide to Carriers for Identifying 50% Limited Slots

**Airport:** JFK  
**Carrier:** Carrier 1  
**# of Limited Slots:** 36  
**# of Limited Slots for Carrier to Select:** 18

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number.

Time	Slot #

## JFK Step 3...

### Sample of Filled out Form Carriers' will provide back to FAA by Dec. 19

**Airport:** JFK  
**Carrier:** Carrier 1  
**# of Limited Slots:** 36  
**# of Limited Slots for Carrier to Select:** 18

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number.

Time	Slot #
600	3051
700	3181
700	3012
900	3412
1900	3815
1900	3398
...	...

## JFK Step 3...

### Record Carriers' 50% Limited Slots

Slot Time	Carrier 1 Base Week	Carrier 1 Picks	Carrier 2 Base Week	Carrier 2 Picks	Carrier 3 Base Week	Carrier 3 Picks	TOTAL Carrier Picks
600	20	1	20	2	10		3
700	25	2	20	1	30	2	5
800	10		26		40	2	2
900	18	1	20	2	34		3
...	...	...	...	...	...	...	...
1900	22	2	32	1	22	1	4
2000	28	2	22		28	2	4
2100	30	1	20	0	26	2	3
<u>2200</u>	<u>20</u>	<u>1</u>	<u>10</u>		<u>24</u>		<u>1</u>
<b>Total slots</b>	<b>360</b>	<b>18</b>	<b>350</b>	<b>17</b>	<b>412</b>	<b>21</b>	<b>56</b>
<b>Total slot w/draw</b>	<b>36</b>		<b>34</b>		<b>42</b>		<b>112</b>
<b>Carrier Picks</b>	<b>18</b>		<b>17</b>		<b>21</b>		<b>56</b>
<b>FAA Picks</b>	<b>18</b>		<b>17</b>		<b>21</b>		<b>56</b>

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by hour.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by hour. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by hour, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.

**JFK Step 4...**  
**FAA Selects Limited Slots, by Hour**

- **FAA selects slots such that an even number of slots are available throughout the day.**
- **After evenly spreading FAA Limited Slot picks over all hours, then the remaining Limited Slots will be assigned to specific hours using a Random Number Generator.**

## JFK Step 4... FAA Selects Limited Slots, by Hour *Continued*

- FAA selects slots such that an even number of slots are available throughout the day.

*Round 1: FAA picks provide that an even number of slots are available throughout the day.*

Hour	6	7	8	9	...	19	20	21	22	Total	Remain
All Carrier Picks	3	5	2	3	...	4	4	3	1	56	
FAA Picks	3	1	4	3	...	2	2	3	5	49	
Total Round 1	6	6	6	6	...	6	6	6	6	105	7



## JFK Step 4... Select FAA Limited Slots, by Hour Continued

**Round 1:** FAA picks provide that an even number of slots are available throughout the day.

Hour	6	7	8	9	...	19	20	21	22	Total	Remain
All Carrier Picks	3	5	2	3	...	4	4	3	1	56	
FAA Picks	3	1	4	3	...	2	2	3	5	49	
<b>Total Round 1</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>...</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>105</b>	<b>7</b>

**Round 2:** If FAA still has slots to select and it is not evident which hour to assign the slots then the remaining Limited Slots will be assigned using a Random Number.

Hour	6	7	8	9	...	19	20	21	22	Total	Remain
All Carrier Picks	3	5	2	3	...	4	4	3	1	56	
FAA Picks - Round 1	3	1	4	3	...	2	2	3	5	49	
FAA Picks - Round 2		1		1	...		1	1	1	7	
<b>Total</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>7</b>	<b>...</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>112</b>	<b>0</b>

Assigned by Random Number Generator

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by hour.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by time. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by hour, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.

## **JFK Step 5...**

### **Assign FAA Slot Picks, by Hour**

- **At this point all Limited Slots will have been selected *by hour, but not assigned to specific carriers.***
- **In this step, FAA assigns all Limited Slot hours that FAA selected in *Step 4* to specific air carriers.**
- **Limited Slots are assigned to carriers using Microsoft Excel “Random Generator” to randomly match eligible carriers to eligible slot times.**

## JFK Step 5...

### Assign FAA Slot Picks, by Hour cont.

➤ **Identification of Carrier Slots & Limited Slot Times for FAA Assignment**

Carriers	# Carrier Limited Slots	# FAA Limited Slots
Carrier 1	18	18
Carrier 2	17	17
Carrier 3	21	21
<b>Total</b>	56	56

Hour	#Slots Reallocated in Hr	All Carrier Picks in Hr	Remain # Limited Slots to assign in Hr
0600	6	3	3
0700	7	5	2
0800	6	2	4
0900	7	3	4
...	...	...	...
2000	7	4	3
2100	7	3	4
2200	7	1	6
<b>Total</b>	112	56	56

➤ *“Random Generator” will match the 56 FAA Limited Slot picks with the 56 remaining Limited Slot hours.*

**JFK Step 5...**  
**Assign FAA Slot Picks, by Hour cont.**

- **Carrier 1, which has 18 Limited Slots for FAA assignment will have 18 chances to match the times; Carrier 2, which has 17 Limited Slots for FAA assignment will have 17 chances etc...**
- **The Random Number Generator randomly matches the 56 eligible carrier slots with the 56 Limited Slot times. This solution is executed simultaneously.**
- **At the end of this step all Limited Slots will be assigned to specific carriers.**

## JFK Step 5...continued

(1) List all available Limited Slot Times & number of available carrier Limited Slots

(2) Apply Microsoft Excel "Random Generator" to randomly assign carrier Limited Slots to slots.

Remaining Slots for Allocation		Carrier Slot Retirements – List for Random Sort
0600-1		Carrier1-1
0600-2		Carrier1-2
0600-3		Carrier1-3
0700-1		Carrier1-4 ...
0700-2		Carrier1-18
...		... ..
2200-1		Carrier2-1
2200-2		Carrier2-2
2200-3		Carrier2-3...
2200-4		Carrier2-17
2200-5		Carrier3-1
2200-6		Carrier3-2 ....

**56 Slots**

**56 Carrier Slots**

Remaining Slots for Allocation	Carrier Assign Slot – by “Random Generator”	
0600-1	Carrier1-18	
0600-2	Carrier1-11	
0600-3	Carrier3-2	
0700-1	Carrier3-5	
0700-2	Carrier2-10	
...	...	
2200-1	Carrier3-1	
2200-2	Carrier1-4	
2200-3	Carrier3-20	
2200-4	Carrier2-6	
2200-5	Carrier3-9	
2200-6	Carrier2-4	

**56 Slots**

**56 Carrier Slots**

## Summary of “Limited Slot” Allocation Process for JFK & EWR Airports

<b>1</b>	Identify each carrier’s slot holdings, by hour.
<b>2</b>	Calculate each carrier's number of “Limited Slots”
<b>3</b>	Record carrier's selection of 50% Limited Slots, by hour.
<b>4</b>	Select FAA Limited Slots, by time. Slots will be selected such that an even number of slots are available throughout the day.
<b>5</b>	Assign all FAA Limited Slot picks, by hour, to carriers.
<b>6</b>	Assign limited life years to all Limited Slots.

## JFK Step 6...

### Assign Years of Life to Limited Slots

- Goal is to have an average life of 2 years for Limited Slots.
- Limited Slots are allocated life in the following cycle: 2, 0, 4, 1, 3 years of life.

Slot Time	Carrier 1 Limited Slots	Carrier 1 Yrs of Limited Life	Carrier 2 Limited Slots	Carrier 2 Yrs of Limited Life	Carrier 3 Limited Slots	Carrier 3 Yrs of Limited Life
600	1	2	2	2, 0	2	2, 0
700	2	0, 4	1	4	2	4, 1
800					2	3, 2
900	1	1	2	1, 3		
...	...	...	...	...	...	...
2000	2	3, 2	1	2	3	0, 4, 1
2100	1	0			2	3, 2
2200	1	4	2	0, 4		0, 4



## Form FAA will provide back to Carriers to Identify their Limited Slots

**Airport:** JFK  
**Carrier:** Carrier 1  
**# of Limited Slots:** 36  
**# of Limited Slots for Carrier to Select:** 18

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number.

Time	Slot #	Years of Life
600	3051	2
700	3181	0
700	3012	4
900	3579	1
1200	3210	3
1500	3397	2
...	...	...

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by time, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by time. At JFK and EWR assign all FAA Limited Slot picks to carriers.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 1... Identify Carrier Holdings

Slot Time	Carrier 1 Base Week	Carrier 2 base Week	Carrier 3 Base Week	All Other Carriers	TOTAL Airport
600	20	20	11	2	53
700	15	28	32	0	75
800	10	28	35	2	75
900	15	25	25	11	76
1000	15	28	24	8	75
1100	22	18	34	0	74
1200	18	20	28	8	74
1300	19	25	31	0	75
1400	22	26	25	0	73
1500	18	24	31	2	75
1600	35	20	19	1	75
1700	20	22	30	5	77
1800	26	30	18	0	74
1900	22	32	21	0	75
2000	28	22	20	0	70
<u>2100</u>	<u>20</u>	<u>23</u>	<u>21</u>	<u>1</u>	<u>65</u>
<b>Total slots</b>	<b>325</b>	<b>391</b>	<b>405</b>	<b>40</b>	

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by time. At JFK and EWR assign all FAA Limited Slot picks to carriers.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 2...Calculate Number of “Limited Slots”

LGA Carrier	Slots Held	Base	Slots Eligible to Retire or Auction	15% Limited Slots	Carrier Pick	FAA Pick
Carrier 1	325	20	305	46	23	23
Carrier 2	391	20	371	56	28	28
Carrier 3	405	20	385	58	29	29
Carrier 4	19	19	0	0	0	0
Carrier 5	21	20	1	0	0	0
	<b>1161</b>	<b>60</b>	<b>1062</b>	<b>160</b>	<b>80</b>	<b>80</b>

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 3... Form FAA will provide to Carriers for Identifying 50% Limited Slots

<b>Airport:</b>	LGA
<b>Carrier:</b>	Carrier 1
<b># of Limited Slots:</b>	46
<b># of Limited Slots for Carrier to Select:</b>	23

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number.

Time	Slot #

## LGA Step 3... Sample of Filled out Form Carriers' will provide back to FAA by Dec. 19

**Airport:** LGA  
**Carrier:** Carrier 1  
**# of Limited Slots:** 46  
**# of Limited Slots for Carrier to Select:** 23

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number

Time	Slot #
800	2205
900	2100
1000	2798
1300	1312
1400	4157
1400	3336
...	...



## Step 3...Record Carriers' 50% Limited Slots

Slot Time	Carrier 1 Base Week	Carrier 1 Picks	Carrier 2 Base Week	Carrier 2 Picks	Carrier 3 Base Week	Carrier 3 Picks	Total Carrier Picks
...	...	...	...	...	...	...	...
800	10	1	28	4	35	2	7
900	15	1	25	2	25		3
1000	15	1	28	1	24	2	4
1100	22	0	18	1	34	1	2
1200	18	0	20	1	28	1	2
1300	19	1	25	1	31	1	3
1400	22	2	26	2	25	2	6
1500	18	1	24	1	31	2	4
...	...	...	...	...	...	...	...
<b>Total slots</b>	<b>325</b>	<b>23</b>	<b>391</b>	<b>28</b>	<b>405</b>	<b>29</b>	<b>80</b>
<b>Total slot w/draw</b>	<b>46</b>		<b>56</b>		<b>58</b>		<b>160</b>
<b>Carrier Picks</b>		<b>23</b>		<b>28</b>		<b>29</b>	<b>80</b>
<b>FAA Picks</b>		<b>23</b>		<b>28</b>		<b>29</b>	<b>80</b>

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by hour. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 4... Identify Slots to Retire

Slot Time	Carrier 1 Base Week	Carrier 2 Base Week	Carrier 3 Base Week	All Other Carriers	TOTAL Airport	Retire (71)
600	20	20	11	2	53	0
700	15	28	32	0	75	4
800	10	28	35	2	75	4
900	15	25	25	11	76	5
1000	15	28	24	8	75	4
1100	22	18	34	0	74	3
1200	18	20	28	8	74	3
1300	19	25	31	0	75	4
1400	22	26	25	0	73	2
1500	18	24	31	2	75	4
1600	35	20	19	1	75	4
1700	20	22	30	5	77	6
1800	26	30	18	0	74	3
1900	22	32	21	0	75	4
2000	28	22	20	0	70	0
<u>2100</u>	<u>20</u>	<u>23</u>	<u>21</u>	<u>1</u>	<u>65</u>	<u>0</u>
<b>Total slots</b>	<b>325</b>	<b>391</b>	<b>405</b>	<b>40</b>		<b>50</b>

*\*Note: Step 4 is only necessary at LGA*

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 5... Identify # of Slots to Retire by Carrier

LGA Carrier	Slots Held	Base	Slots Eligible to Retire or Auction	15% Limited Slots	Carrier Pick	FAA Pick	Retire	Auction
Carrier 1	325	20	305	46	23	23	14	32
Carrier 2	391	20	371	56	28	28	18	38
Carrier 3	405	20	385	58	29	29	18	40
Carrier 4	19	19	0	0	0	0	0	0
Carrier 5	21	20	1	0	0	0	0	0
	<b>1161</b>	<b>60</b>	<b>1062</b>	<b>160</b>	<b>80</b>	<b>80</b>	<b>50</b>	<b>110</b>

*\*Note: Step 5 is only necessary at LGA*

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## **LGA Step 6... Select FAA Limited Slots, by Hour**

- **FAA first selects Limited Slots in hours that need to be reduced to achieve cap of 71 ops/hour.**
- **FAA then distributes Limited Slots so that an even number of slots are available throughout the day.**
- **After evenly spreading FAA Limited Slot picks over the day, then the remaining Limited Slots will be assigned to specific hours using a Random Number Generator.**

## LGA Step 6... Select FAA Limited Slots, by Hour *cont.*

- FAA first selects Limited Slots in hours that need to be reduced to achieve cap of 71 ops/hour.

**Round 1 - FAA Selections:** *The first round consolidates all airline picks by hour. FAA picks to obtain cap of 71/hr.*

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
<b>All Carrier Picks</b>	...	7	3	4	2	2	3	6	4	...	80	
<b>FAA Picks</b>	...	0	2	0	1	1	1	0	0	...	5	
<b>Total Round 1</b>	...	7	5	4	3	3	4	6	4	...	85	75



## LGA Step 6... Select FAA Limited Slots, by Hour *cont.*

**Round 1 - FAA Selections:** The first round consolidates all airline picks by hour. FAA picks to obtain cap of 71/hr.

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
All Carrier Picks	...	7	3	4	2	2	3	6	4	...	80	
FAA Picks	...	0	2	0	1	1	1	0	0	...	5	
Total Round 1	...	7	5	4	3	3	4	6	4	...	85	75

**Round 2 - FAA Selections:** The second round distributes the remaining FAA slot picks so an even number of slots are available throughout the day.

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
All Carrier Picks	...	7	3	4	2	2	3	6	4	...	80	
FAA Picks - 1st Round	...	0	2	0	1	1	1	0	0	...	5	
FAA Picks - 2nd Round	...	3	5	6	7	7	6	4	6	...	69	
Total Round 2	...	10	10	10	10	10	10	10	10	...	154	6

## Step 6... Select FAA Limited Slots, by Hour cont.

**Round 1 - FAA Selections:** The first round consolidates all airline picks by hour. FAA picks to obtain cap of 71/hr.

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
All Carrier Picks	...	7	3	4	2	2	3	6	4	...	80	
FAA Picks	...	0	2	0	1	1	1	0	0	...	5	
Total Round 1	...	7	5	4	3	3	4	6	4	...	85	75

**Round 2 - FAA Selections:** The second round distributes the remaining FAA slot picks so an even number of slots are available throughout the day.

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
All Carrier Picks	...	7	3	4	2	2	3	6	4	...	80	
FAA Picks - 1st Round	...	0	2	0	1	1	1	0	0	...	5	
FAA Picks - 2nd Round	...	3	5	6	7	7	6	4	6	...	69	
Total Round 2	...	10	10	10	10	10	10	10	10	...	154	6

**Round 3 - FAA Selections:** If FAA still has slots to select - then by Random Number Generator.

Hour	...	8	9	10	11	12	13	14	15	...	Total	Remain
All Carrier Picks	...	7	3	4	2	2	3	6	4	...	80	
FAA Picks - 1st Round	...	0	2	0	1	1	1	0	0	...	5	
FAA Picks - 2nd Round	...	3	5	6	7	7	6	4	6	...	69	
FAA Picks - 3rd Round	...	1			1			1		...	6	
Total	...	11	10	10	11	10	10	11	10	...	160	0

Assigned by Random Number Generator

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by time, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by hour. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 7... Assign Retired Slots to Carriers

- In this step FAA will assign the number of hourly slots for retirement (as identified in Step 4) to carriers.
- Limited Slots selected by carriers will *first be applied toward retirements*, to the extent necessary in each hour.
  - Microsoft Excel “Random Generator” will be used to randomly select which carrier’s slots will be retired in each hour, *from the list of carrier(s) that selected Limited Slots in each particular hour which slots will be retired.*
- If not enough limited slots were selected by carriers to reach the cap of 71/hour in any given hour, slot retirements will be assigned to carriers using Microsoft Excel “Random Generator” to randomly match carrier Limited Slots with particular slot hours.
- The total number of retired slots per carrier will be equal to the number of retired slots assigned to each carrier in Step 5.

## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by time. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 8... Assign Limited Slots to Carriers by Hour

- In Step 8, Limited Slots not already assigned to carriers for retirement are allocated using Microsoft Excel "Random Generator" to randomly match carriers and slot times.
- A tally of Carrier designated Limited Slots and carrier Retired Slots is kept in order to determine how many Limited Slots remain, by carrier. A tally of eligible Limited Slot times is also conducted in order to determine the remaining Limited Slot times.
- After determining the remaining Limited Slot times and remaining carrier Limited Slots to assign, these remaining Limited Slots are matched to remaining carrier Limited Slots using Microsoft Excel "Random Generator".

**\*Note:** At the conclusion of this step, all "Limited Slots" will have been assigned by slot hour to carriers.

# LGA Step 8... Assign Limited Slots to Carriers by Hour *cont.*

**(1) Tally of Remaining Carrier Limited Slots for FAA to Assign**

Carriers	# Carrier Limited Slot Picks	#FAA Limited Slot Picks	Retired Slots- <u>NOT</u> Carrier Picked	Remaining Limited Slots for FAA to Assign Hours
Carrier 1	23	23	1	22
Carrier 2	28	28	2	26
<u>Carrier 3</u>	<u>29</u>	<u>29</u>	<u>3</u>	<u>26</u>
<b>Total</b>	<b>80</b>	<b>80</b>	<b>6</b>	<b>74</b>

**(2) Tally of Remaining Slot Times for FAA Assignment to Carriers**

Hour	# Slots reallocated in Hr	Carrier Picks & Retired Slots in Hr	Remaining # Slots to Assign in Hr
...	...	...	...
800	11	7	4
900	10	5	5
1000	10	4	6
1100	11	3	8
1200	10	3	7
...	...	...	...
<b>Total</b>	<b>160</b>	<b>86</b>	<b>74</b>

## **LGA Step 8... Assign Limited Slots to Carriers by Hour *cont.***

- **Carrier 1, which has 22 Limited Slots for FAA assignment will have its name listed 22 times; Carrier 2, which has 26 Limited Slots for FAA assignment will have its name listed 26 times etc...**
- **The Random Number Generator randomly matches the 74 eligible carrier slots with the 74 Limited Slot times.**
- **At the end of this step all Limited Slots will be assigned to specific carriers.**



## Summary of “Limited Slot” Allocation Process for LGA

1	Identify each carrier’s slot holdings, by hour.
2	Calculate each carrier's number of “Limited Slots”
3	Record carrier's selection of 50% Limited Slots, by hour.
4	Identify number of slots to retire, by hour, to achieve new cap of 71/hr.
5	Identify number of slots to retire by carrier.
6	Select FAA Limited Slots, by hour. First do retirements by hour. Remaining slots will be selected such that an even number of slots are available throughout the day.
7	Retired slots will be assigned to carriers, by hour.
8	Assign remaining FAA limited slot picks at LGA to carriers, by hour. At JFK and EWR assign all FAA Limited Slot picks to carriers.
9	Assign limited life years to all Limited Slots.*

\*Note: All retired slots at LGA will have a 0-year life.

## LGA Step 9... Assign Years of Life to Limited Slots

- Goal is to have an average life of 2 years for Limited Slots.
- Limited Slots that are not being retired are allocated life in the following cycle: 2, 0, 4, 1, 3 years of life.

Slot Time	Carrier 1 Limited Slots	Carrier 1 Yrs of Limited Life	Carrier 2 Limited Slots	Carrier 2 Yrs of Limited Life	Carrier 3 Limited Slots	Carrier 3 Yrs of Limited Life
...	...	...	...	...	...	...
800	1	2	1	2	2	2, 0
900	2	0, 4	2	0, 4	1	4
1000	2	1, 3	2	1, 3	2	1, 3
1100	2	2, 0	3	2, 0, 4	3	2, 0, 4
1200	3	4, 1, 3	2	1, 3	2	1, 3
...	...	...	...	...	...	...

## Form FAA will provide back to Carriers to Identify their Limited Slots

**Airport:** LGA  
**Carrier:** Carrier 1  
**# of Limited Slots:** 46  
**# of Limited Slots for Carrier to Select:** 23

---

Please identify the slots by hour you would like to select as limited slots. Please also designate whether the slot is an arrival or departure slot and identify the associated slot number.

Time	Slot #	Years of Life
800	2205	2
900	2100	0
1000	2798	1
900	2105	4
1000	2587	3
1100	3397	2
...	...	...

## Timeline of Upcoming Deadlines/Events

- **December 5** – Auction Seminar
- **December 9** – FAA will notify carriers (through their slot coordinator) of their base schedules and number of Limited Slots.
- **December 15-30** – Application period to participate in Auction
- **December 19** - Carriers select ½ of their limited slots & provide those details to FAA.
- **December 29** – FAA to publish on FAA website list of all Limited Slots
- **January 8** – Mock Auction
- **January 12** - Auction

# ***Back-up Slides***

# Random Generator Product Info

- **Random Generator for Microsoft Excel,  
Version: 2.0.2.35**

- **Using the “Random Sort” function, the Random Generator will mix the values in rows, columns or in the entire range, and put them in a random order.**

