SEATTLE - TACOMA INTERNATIONAL AIRPORT

DATA PACKAGE NO. 12

AIRPORT CAPACITY ENHANCEMENT PLAN UPDATE

June 1995

Prepared by
Federal Aviation Administration
Technical Center
Atlantic City, New Jersey

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Information in this document is subject to change as Design Team analysis progresses.

16. Abstract

This Data Package contains technical data pertaining to the Seattle-Tacoma International Airport Capacity Enhancement Plan Update. It provides detailed technical information in support of the Final Report.

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List of Exhibits

I. Introduction

This Data Package provides details on the information used during the Seattle-Tacoma International Airport (SEA) Capacity Design Team Update and detailed listings of results used to produce the Final Report.

Exhibit 1 is a diagram of SEA at the start of the Design Team Update.

A list of potential improvements to Seattle-Tacoma International Airport (SEA) analyzed during the Design Team Update is contained in Exhibit 2. Numbers are not contiguous because some of the item in the initial list were deleted or combined with others.

EXHIBIT 1

SEATTLE-TACOMA AIRPORT LAYOUT

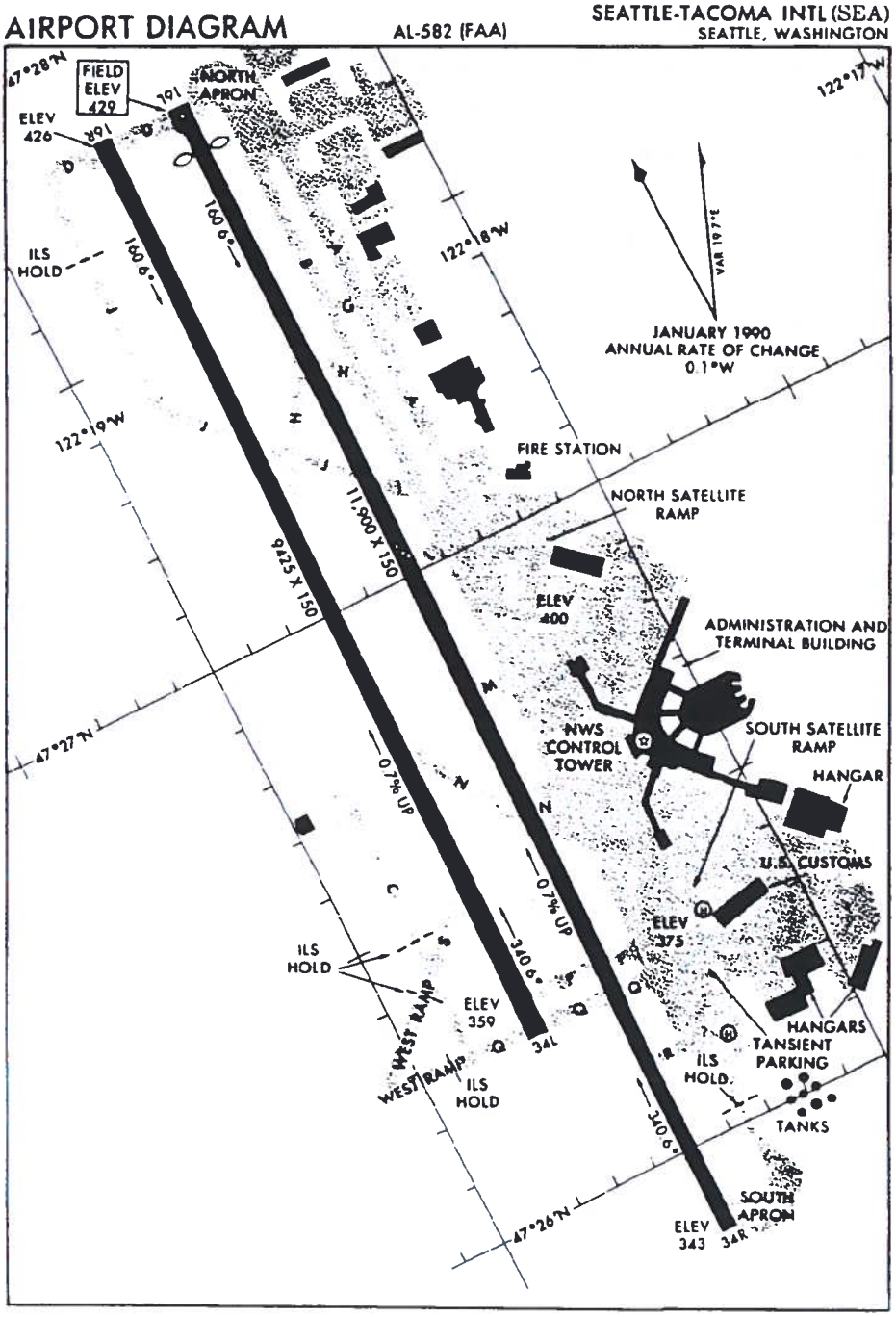


EXHIBIT 2

POTENTIAL IMPROVEMENTS[§]

Airfield Improvements

1. Basecase.
   - High speed exits on Runway 16R/34L
   - South Aviation Support Area
   - Expanded Concourse A
   - MLS
   - 34L as primary arrival runway in north flow
   - 16R/34L shortened by 325' off the north end
   - 16L/34R shifted 300' to the south
2. Class 3 & 4 Runway (16X/34X) 1500' from 16L/34R
3. Class 3 & 4 Runway (16X/34X) 2500' from 16L/34R
5. Full use Runway (16X/34X) 2500' from 16L/34R.
6. Full use Runway (16X/34X) 3300' from 16L/34R with Precision Runway Monitor.
7. Full use Runway (16X/34X) 3300' from 16L/34R without Precision Runway Monitor.
8. Modified Full Use Runway (16X/34X) 2500' from 16L/34R, except NO heavy aircraft on 16X/34X.

Facility & Equipment Improvements

10. Wake Vortex Detection and Avoidance System.
13. CAT III Approaches.

Operational Improvements

17. Reduce In-trail Separations in IFR to 2.5 nm.
18. FMS and GPS Approaches.

User Improvements

20. Demand Management Strategy.
21. Uniform Schedule within each hour.

[§] Improvements were modeled with and without interaction with Boeing Field as appropriate.

II. Model Inputs

The FAA Technical Center conducted a data collection at SEA during the weeks of October 25 and November 1, 1993. The SEA Airport Traffic Control Tower (ATCT) and the Port of Seattle provided the FAA Technical Center with information regarding operations at SEA. This data, along with the data from the data collection, are presented in detail in this section of the report. This information was used to prepare inputs to the SIMMOD simulation model to evaluate the proposed capacity enhance options.

Exhibit 3 defines the aircraft classes used in this study

Exhibit 4 lists the aircraft types observed during the data collection. Aircraft types are grouped by class as defined in Exhibit 3.

Exhibits 5 through 8 show the runway exit usage and the arrival runway occupancy times by class observed during data collection. It provides exit utilization data for each aircraft class and exit; the proportion of time the exit was used, the arrival runway occupancy time, and the number of occurrences.

At a meeting of the Design Team, a comparison of the separations input from report FAA-78-8A and field data collection showed general agreement between the two tables (see Data Package #2). Therefore it was agreed at the January 1994 meeting to use separations from report FAA-78-8A. The 78-8A separations and separations computed from data collection presented previously were computed using the same aircraft approach speeds. This assured that the comparison of the time between operations was consistent. However, the approach speeds used in both computations were different from those agreed to for this study (see Exhibit 13 of this Data Package). Exhibit 9 shows the 78-8A VFR separations and the separations from field data collection recomputed to reflect the approach speeds agreed to for this study. A recomparison of the 78-8A VFR separations and separations computed from data collection recomputed with the agreed to speeds will yield the same relative agreement between the two tables. Three days of IFR data was supplied by the Port of Seattle for examination of the arrival/arrival separations observed at SEA-TAC. This "field data collection" yielded results that did not warrant changes from the basic premise of report 78-8A. This report recommends using the ATC rules plus a buffer of 1.65 standard deviations of the interarrival time. This standard deviation of interarrival was judged to be 18sec. It was recommended and agreed that the IFR separations in Exhibit 10, recompute using this technique, be used for all scenarios where IFR separations are applied, i.e. VFR2, IFR1, IFR2, IFR3, IFR4.

Exhibit 11 describes the SEA weather definitions.

Exhibits 12 and 13 show the length of common approach paths and arrival aircraft approach speeds.

Exhibits 14 and 15 lists the aircraft gate service times and the arrival lateness distribution.

For each simulated arrival, the lateness distribution is sampled and the resulting time is added to the scheduled arrival time. This input varies the arrival time of an aircraft in each iteration of the model. If this arrival is scheduled as a subsequent departure, its departure time is the later of its scheduled departure time or its arrival time plus gate service time.

Exhibit 16 shows demands characteristics for the SEA Baseline, Future 1, and Future 2 schedules. Exhibit 17 shows demand applied to Boeing Field (BFI) for experiments where it is agreed to model the interaction between SEA and BFI.

Exhibits 18 through 23 summarize the estimates of direct operating costs used to translate delays from hours to dollars. Airline financial data was derived from FAA Form 41, Schedule P-5.2 (item # 70989, *Total Aircraft Operating Expenses*). Ramp-to-ramp blocks hours were derived from FAA Traffic Form 41, Schedule T-2 (Item # Z630, *Revenue Aircraft Hours, Ramp-To-Ramp*). The dollar per hours costs are calculated as the ratio of these two figures. The numbers in Exhibits 18 through 23 are for the quarter ending September 1994.

EXHIBIT 3
AIRCRAFT CLASSIFICATION

Class	Types of Aircraft[a]
A (4)	Single-engine and small twin-engine prop aircraft weighing 12,500 lb.[b] or less (e.g. PA31, BE20, BE90)
B (3)	Twin-engine aircraft weighing 12,500 lb.[b] or more (e.g., DH8, BA31, SHD6)
C (2)	All non-heavy jet aircraft (e.g. B757, B737, FK28, LR35)
D (1)	Heavy aircraft[c] (e.g., L1011, DC8, DC10, B747, B767, MD11)

Notes:
[a] For aircraft type designator, see FAA Handbook 7340.1E with changes.
[b] Weights refer to maximum certificated takeoff weights.
[c] Heavy aircraft are those capable of takeoff weights of 300,000 lb. or more whether or not they are operating at this weight during a particular phase of flight (reference FAA Handbook 7110.65 with changes).

These definitions have been used to generate all the data presented in this report by aircraft class. The critical factor in determining the aircraft class should be their approach speeds and how arrivals are separated at the point of closest approach (at threshold, except for a slower aircraft following a faster aircraft). For example, in previous studies the approach speed of a small jet (eg. Lear) better approximated that of a large aircraft, and therefore was considered a class 2 (large).

Agreed to by Design Team on 1 December 1993.

EXHIBIT 4
AIRCRAFT TYPES OBSERVED AT FIELD DATA COLLECTION

Class 1 - Heavy Jets

B747	Boeing 747	DC10	McDonnell-Douglas DC10
B767	Boeing 767	MD11	McDonnell-Douglas MD-11
L101	Lockheed L1011	DC8	Mcdonnell-Douglas DC-8

Class 2 - Non-Heavy Jets

A320	Airbus 320	DC9	McDonnell-Douglas DC-9
B727	Boeing 727	MD80	McDonnell-Douglas MD-80
B737	Boeing 737	FA28	Fokker Fellowship
B757	Boeing 757	G2	Gulfstream/Amer. Gulfstream II
HS25	Hawker-Siddeley HS/DH/BH125	LR35	Gates Learjet 35
WW24	Westwind 1124	DA50	Dassault Falcon
N265	Rockwell Int'l Sabreliner (265)	C650	Cessna III

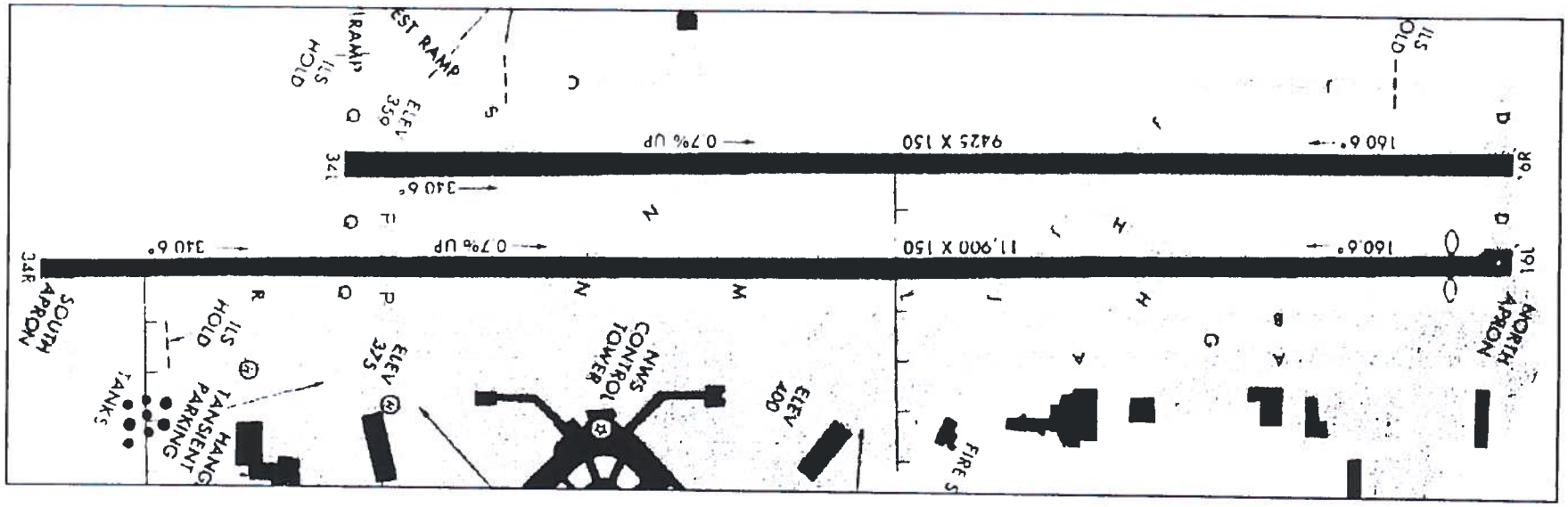
Class 3 - Large Twin-engine Propeller Aircraft

DH80	DeHavilland DASH-8	BA31	British Aerospace Jetstream 31
BE30	Beech Super King Air 300		
CV64	General Dynamics Convair 640	CV60	General Dynamics Convair 600
CV69	General Dynamics Convair	SHD6	Short 360
SW4	Swearingen Merlin (IV/Metro III)	BE20	Beech Super King Air 200

Class 4 - Single-engine and Small Twin-engine Propeller Aircraft

DC30	McDonnell-Douglass DC-3	AC68	Rockwell Int'l Super Commander
BE90	Beech King 90	PA31	Piper Navajo
C172	Cessna Skyhawk 172	C210	Cessna 210
C208	Cessna Caravan I	C310	Cessna 310
C340	Cessna 340	C402	Cessna 402
C404	Cessna Titan		

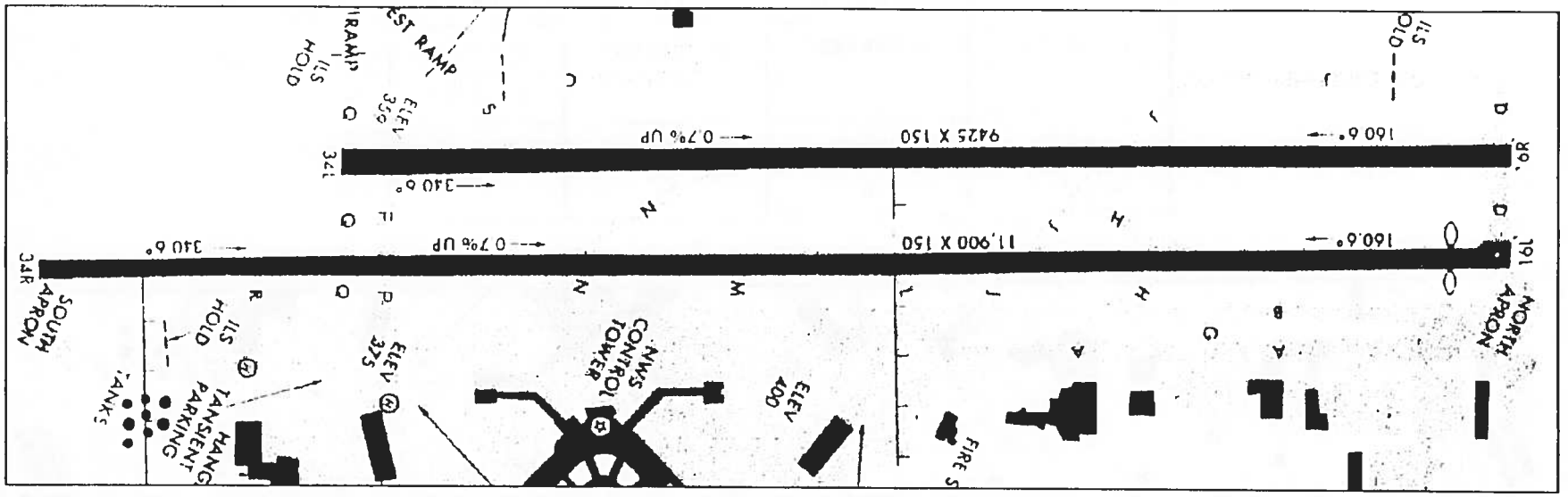
EXHIBIT 5
RUNWAY 16L EXIT UTILIZATION*



	H	J	L	M	N	P
16L	3100'	4200'	5000'	6500'	7350'	9050'
Class 1				.29/62/ 2	.57/63/ 4	.14/69/ 1
Class 2		.01/35/ 1	.03/44/ 2	.32/59/43	.56/59/43	.08/60/ 6
Class 3		.18/38/ 9	.14/45/ 7	.41/60/20	.27/62/13	
Class 4	.38/30/ 5	.31/44/ 4	.08/53/ 1	.21/55/ 3		

* Proportion of observations / runway occupancy time(sec)/no. of observations

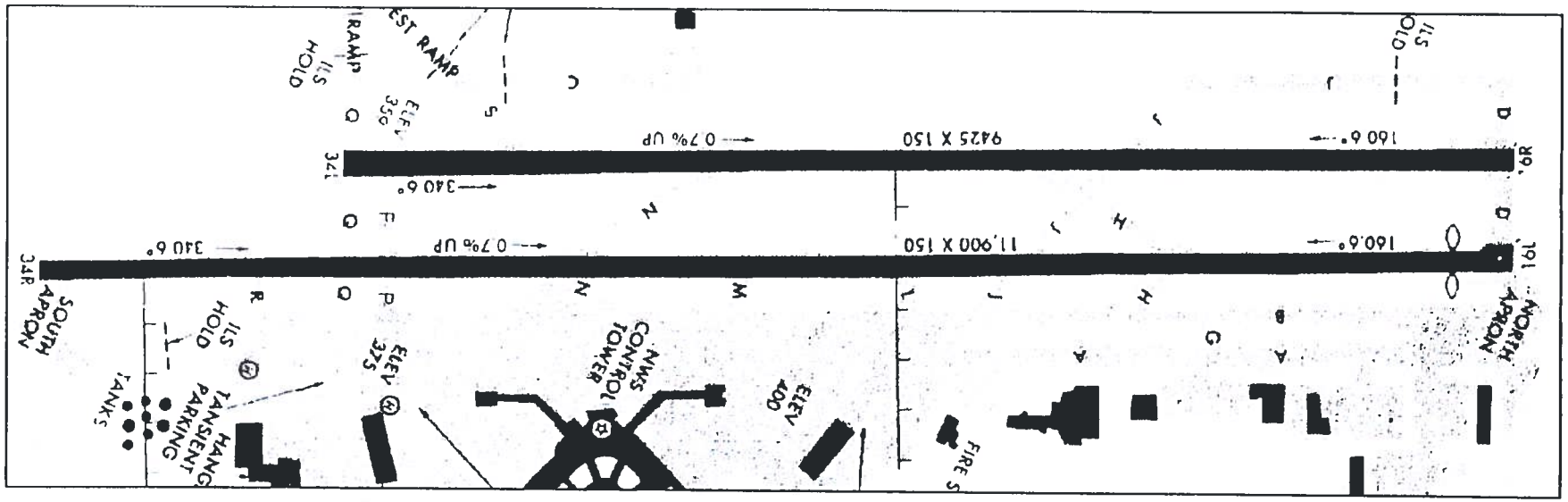
EXHIBIT 6
RUNWAY 16R EXIT UTILIZATION*



16R	J	H	N	S	Q
	3200'	4000'	6450'	7850'	9425'
Class 1			.72/47/18		.28/79/ 7
Class 2			.95/47/270		.05/73/13
Class 3	.06/35/10	.06/39/11	.88/52/154	.00/65/ 1	
Class 4	.32/40/11	.09/41/ 3	.56/57/19	.03/67/ 1	

* Proportion of observations / runway occupancy time(sec)/no. of observations

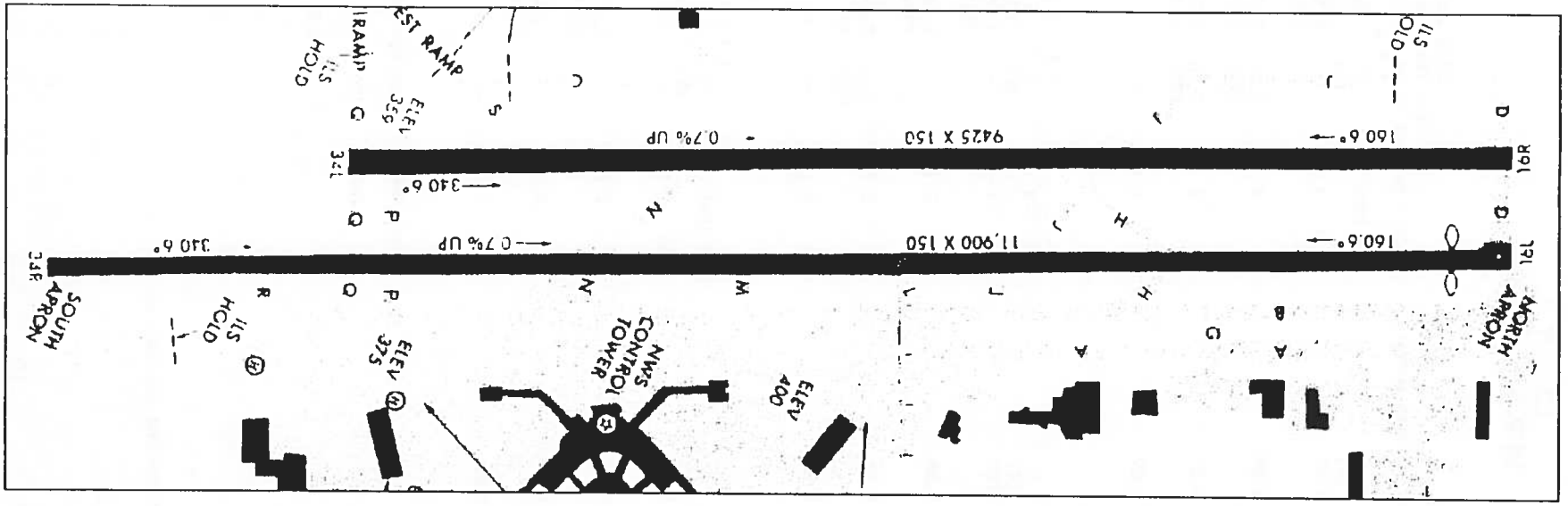
EXHIBIT 7
RUNWAY 34L EXIT UTILIZATION*



34L	N	H	J
	3000'	5450'	6250'
Class 1			
Class 2	.05/44/ 2	.92/44/34	.03/56/ 1
Class 3	.66/37/29	.34/53/15	
Class 4	.61/36/ 8	.39/54/ 5	

* Proportion of observations / runway occupancy time(sec)/no. of observations

EXHIBIT 8
RUNWAY 34R EXIT UTILIZATION*



34R	P	N	M	L	J
	2850'	4550'	5400'	6900'	7700'
Class 1			.09/50/ 2	.77/62/17	.14/65/ 3
Class 2		.21/43/30	.41/50/59	.37/58/53	.02/58/ 3
Class 3	.02/30/ 2	.79/46/72	.12/50/11	.07/66/ 6	
Class 4	.20/34/ 1	.60/56/ 1	.20/56/ 1		

* Proportion of observations / runway occupancy time(sec)/no. of observations

EXHIBIT 9
VFR SEPARATIONS

Report FAA-EM-78-8A[5]

At Point of Closest Approach (with missed approach buffer)

A/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	4.27	5.04	4.67	5.49
	2 (C)	3.38	3.21	2.97	3.69
	3 (B)	3.38	3.21	2.97	3.69
	4 (A)	3.38	3.21	2.97	2.89

D/D(MIN)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	1.50	2.00	2.00	2.00
	2 (C)	1.00	1.00	1.00	0.83
	3 (B)	1.00	1.00	1.00	0.83
	4 (A)	0.83	0.75	0.58	0.58

D/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	1.87	1.64	1.52	1.09
	2 (C)	1.86	1.64	1.52	1.09
	3 (B)	1.86	1.64	1.52	1.09
	4 (A)	1.63	1.42	1.32	0.95

A/D (MIN)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)				
	2 (C)	BASED ON ROT FROM SEA FIELD DATA MAY 1992			
	3 (B)				
	4 (A)				

DATA COLLECTION

Observed Spacings at Threshold

20th percentile of spacings ≤ 3 minutes)

A/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	--	3.58 (30)	--	--
	2 (C)	3.44 (25)	3.19 (207)	3.14 (118)	2.11 (21)
	3 (B)	3.70 (20)	2.92 (113)	2.74 (75)	--
	4 (A)	--	--	--	--

D/D (MIN)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A
LEAD A/C	1 (D)	--	1.55 (23)	--	--
	2 (C)	--	0.98 (194)	0.82 (158)	--
	3 (B)	0.62 (22)	1.03 (107)	0.88 (68)	--
	4 (A)	--	--	--	--

D/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	--	--	--	--
	2 (C)	--	2.64 (43)	2.35 (26)	
	3 (B)	--	1.94 (35)	1.91 (38)	--
	4 (A)	--	--	--	--

AVG ARR RWY OCCUPANCY TIMES OF LEAD A/C

	1	2	3	4
(MIN)	(D)	(C)	(B)	(A)
	1.13	0.86	0.81	0.90

[5] As modified to reflect SEA class definitions and approach speeds.

EXHIBIT 10
IFR SEPARATIONS

Report FAA-EM-78-8A[5]
At Point of Closest Approach

A/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	5.28	6.16	6.07	6.99
	2 (C)	4.28	4.16	4.07	4.99
	3 (B)	4.28	4.16	4.07	4.99
	4 (A)	4.28	4.16	4.07	3.99

D/D(MIN)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	1.50	2.00	2.00	2.00
	2 (C)	1.00	1.00	1.00	1.00
	3 (B)	1.00	1.00	1.00	1.00
	4 (A)	1.00	1.00	1.00	1.00

D/A (NM)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)	2.00	2.00	2.00	2.00
	2 (C)	2.00	2.00	2.00	2.00
	3 (B)	2.00	2.00	2.00	2.00
	4 (A)	2.00	2.00	2.00	2.00

A/D (MIN)		TRAIL A/C 1 (D)	2 (C)	3 (B)	4 (A)
LEAD A/C	1 (D)				
	2 (C)	BASED ON ROT FROM SEA FIELD DATA MAY 1992			
	3 (B)				
	4 (A)				

[5] As modified to reflect SEA class definitions and approach speeds.

EXHIBIT 11
WEATHER DEFINITIONS AND MINIMA

WX	Runway Operating Configuration	Ceiling	Visibility	Total
VFR1	Ind. arr & dep with dual approach streams	> 5000'	> 5 sm	56.1
VFR2	Single Arrival stream with Additional A/C under ceiling	[2500'-4999']	> 3 sm	19.7
IFR1	Single approach stream	[800'-2499']	> 2 sm	17.0
IFR2	One appr. stream-protect glideslope area	N/A	[1800'- 2 sm]	5.4
IFR3	Same as IFR2 - NO arr to the north	N/A	[600'-1799']	1.5
IFR4	Low visibility plan-One runway	N/A	< 600'	0.3

Source: P & D Aviation - National Weather Service data from SEA-TAC Airport weather station from 1 Jan 82 through 31 Mar 92

EXHIBIT 12
LENGTH OF COMMON APPROACH (NM)

VFR	6 nm for classes 1, 2 and 3
	3 nm for class 4
IFR	6 nm for all classes

Agreed to by Design Team on 27 January 1994. Same numbers as used in 1989 Study.

EXHIBIT 13
APPROACH SPEEDS (KNOTS)

Speed	Class 1	Class 2	Class 3	Class 4
(Knots)	155	140	130	120

Agreed to by Design Team on 27 January 1994.

EXHIBIT 14
AIRCRAFT GATE SERVICE TIMES
(Minimum Turn-Around Times)

Class 1 (D)		Class 2 (C)		Class 3 (B)		Class 4 (A)	
Minutes	Cum. Prob.	Minutes	Cum. Prob.	Minutes	Cum. Prob.	Minutes	Cum. Prob.
45	0.12	25	0.25	20	0.25	10	0.40
50	0.31	35	0.59	25	0.59	15	0.80
60	0.43	45	0.80	30	0.80	20	0.90
65	0.55	55	0.89	40	0.89	25	1.00
85	1.00	60	1.00	45	1.00		

Agreed to by Design Team on 27 January 1994. Same numbers as used in 1989 Study.

EXHIBIT 15
ARRIVAL AIRCRAFT LATENESS DISTRIBUTION

To simulate more realistic conditions, a lateness distribution (arrival variability distribution) is added to the OAG scheduled arrival time. This accounts for any lateness NOT attributable to SEA.

Amount by which actual arrival time at threshold would exceed scheduled arrival time (minutes)	Distribution of aircraft lateness (cumulative %)
-15	4.7%
-2	31.5%
0	52.6%
5	70.3%
10	83.6%
15	94.3%
30	95.9%
45	98.4%
60	100.0%

Agreed to by Design Team on 27 January 1994. Same numbers as used in 1989 Study.

EXHIBIT 16
DEMAND CHARACTERISTICS SEA

Annual & Daily Demand

Year	Annual Operations	Daily Operations	Equivalent Days
Baseline	345,000	1040	332
Future 1	425,000	1280	332
Future 2	525,000	1581	332

NOTE: (Annual Operations) / (Daily Operations) = Equivalent Days
The 1989-91 SEA Capacity Design Team Study used 331 equivalent days.
Source: Baseline schedule based on 30 August 1993. Agreed to on 27 January 1994.

Fleet Mix

	Class 1	Class 2	Class 3	Class 4
Baseline	8.6%	54.2%	31.3%	5.9%
Future 1	8.6%	54.2%	31.3%	5.9%
Future 2	8.6%	54.2%	31.3%	5.9%

Source: Schedule Supplied by Port of Seattle.
Agreed to on 23 March 1994.

EXHIBIT 16 (con't)
BASELINE DEMAND CHARACTERISTICS SEA

	Arrivals[1]	Departures[2]	Totals
00:00 - 00:59	6	6	12
01:00 - 01:59	1	2	3
02:00 - 02:59	0	0	0
03:00 - 03:59	4	0	4
04:00 - 04:59	1	0	1
05:00 - 05:59	8	4	12
06:00 - 06:59	13	24	37
07:00 - 07:59	21	43	64
08:00 - 08:59	20	42	62
09:00 - 09:59	33	21	54
10:00 - 10:59	40	31	71
11:00 - 11:59	38	30	68
12:00 - 12:59	29	38	67
13:00 - 13:59	32	39	71
14:00 - 14:59	26	32	58
15:00 - 15:59	33	26	59
16:00 - 16:59	20	30	50
17:00 - 17:59	32	23	55
18:00 - 18:59	42	34	76
19:00 - 19:59	35	30	65
20:00 - 20:59	33	24	57
21:00 - 21:59	23	16	39
22:00 - 22:59	22	10	32
23:00 - 23:59	8	15	23
TOTALS	520	520	1040

[1] Arrival time is time at 30 nm for SEA-TAC
[2] Departure time is time at push-back from gate

Source: Port of Seattle
Note: The same hourly profile will we maintained in Future1 and Future 2 schedules

EXHIBIT 17
BASELINE DEMAND CHARACTERISTICS BFI - IFR

	Baseline			Future 1			Future 2		
	Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot
00:00 - 00:59	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0	0
05:00 - 05:59	8	6	14	10	7	17	12	9	21
06:00 - 06:59	9	5	14	11	6	17	14	8	22
07:00 - 07:59	8	15	23	10	18	28	12	21	33
08:00 - 08:59	3	7	10	4	9	13	5	11	16
09:00 - 09:59	2	8	10	2	10	12	3	12	15
10:00 - 10:59	2	9	11	2	11	13	3	13	16
11:00 - 11:59	7	5	12	9	6	15	11	8	19
12:00 - 12:59	4	2	6	5	2	7	6	3	9
13:00 - 13:59	4	3	7	5	4	9	6	5	11
14:00 - 14:59	4	2	6	5	2	7	6	3	9
15:00 - 15:59	4	3	7	5	4	9	6	5	11
16:00 - 16:59	9	8	17	11	10	21	13	11	24
17:00 - 17:59	6	4	10	7	5	12	9	6	15
18:00 - 18:59	8	0	8	10	0	10	12	0	12
19:00 - 19:59	1	5	6	1	6	7	2	8	10
20:00 - 20:59	6	3	9	7	4	11	9	5	14
21:00 - 21:59	4	3	7	5	4	9	6	5	11
22:00 - 22:59	0	1	1	0	1	1	0	2	2
23:00 - 23:59	0	0	0	0	0	0	0	0	0
TOTALS	89	89	178	109	109	218	135	135	270

Source: Baseline Schedule from "Impact of Boeing Field on the Benefit of a Proposed New Runway at SEA-TAC", July 1992. Increases in Future 1 and 2 schedules are the same percentage as for SEA-TAC.

EXHIBIT 18
CLASS 1 OPERATING COSTS

Airline	A/C	#	Class	Cost/Hr	Tot Cost	
Airborne Express	DC8	1	1	$ 4,108	$ 4,108	Industry Average
American	B767	4	1	$ 2,672	$ 10,686	
American	DC10	3	1	$ 3,961	$ 11,883	
American	MD11	2	1	$ 3,563	$ 7,126	
British Airways	B767	2	1	$ 2,949	$ 5,898	Industry Average
China Eastern	MD11	2	1	$ 4,491	$ 8,982	AA,DL
Continental	EA30	9	1	$ 2,686	$ 24,174	
Delta	B767	8	1	$ 2,746	$ 21,964	
Delta	L101	5	1	$ 3,531	$ 17,653	
Emory	DC8S	1	1	$ 3,954	$ 3,954	DHL
Federal Express	DC10	3	1	$ 6,946	$ 20,837	
Hawaiian	L101	1	1	$ 3,495	$ 3,495	Industry Average
Martinair	DC10	1	1	$ 4,339	$ 4,339	Industry Average
Northwest	B747	9	1	$ 5,575	$ 50,171	
Northwest	DC10	9	1	$ 3,914	$ 35,222	
Scandinavian	B767	2	1	$ 2,949	$ 5,898	Industry Average
TWA	L101	4	1	$ 3,424	$ 13,696	
U.S. Air Transit	DC8S	2	1	$ 4,108	$ 8,216	Industry Average
United	B767	2	1	$ 2,892	$ 5,783	
United	DC10	19	1	$ 5,142	$ 97,689	
		89			$ 361,772	Wt. Avg = $ 4,064.85

EXHIBIT 19
CLASS 2 OPERATING COSTS

Airline	A/C	#	Class	Cost/Hr	Tot Cost	
Airborne Express	DC9	1	2	$ 1,682	$ 1,682	Industry Average
Alaska Airlines	B727	30	2	$ 1,996	$ 59,880	
Alaska Airlines	B734	39	2	$ 1,948	$ 75,972	
Alaska Airlines	MD80	99	2	$ 1,701	$ 168,399	
America West	B73S	6	2	$ 1,513	$ 9,078	
America West	EA32	10	2	$ 1,924	$ 19,240	
American	B727	4	2	$ 2,021	$ 8,084	
American	B73S	1	2	$ 1,704	$ 1,704	Industry Average
American	B757	6	2	$ 2,105	$ 12,630	
American	MD80	16	2	$ 1,778	$ 28,448	
Continental	B73S	2	2	$ 1,541	$ 3,081	
Continental	MD80	16	2	$ 1,757	$ 28,112	
Delta	B727	17	2	$ 2,121	$ 36,057	
Delta	B757	22	2	$ 2,275	$ 50,050	
Great American	DC9	1	2	$ 1,682	$ 1,682	Industry Average
Horizon	FK28	33	2	$ 1,523	$ 50,259	
Markair	B73F	26	2	$ 1,589	$ 41,314	
Morris	B73S	35	2	$ 1,704	$ 59,640	Industry Average
Northwest	B727	4	2	$ 2,179	$ 8,716	
Northwest	B757	19	2	$ 1,777	$ 33,763	
Northwest	EA32	6	2	$ 1,742	$ 10,452	
Reno	MD82	19	2	$ 1,796	$ 34,124	Industry Average
Ryan Int'l	B727	1	2	$ 2,217	$ 2,217	Industry Average
Sun Country	B727	2	2	$ 2,217	$ 4,434	Industry Average
TWA	MD80	12	2	$ 1,733	$ 20,796	
United	B727	26	2	$ 2,767	$ 71,942	
United	B737	70	2	$ 1,765	$ 123,550	
United	B757	22	2	$ 2,535	$ 55,770	
USAir	B73S	13	2	$ 2,073	$ 26,949	
USAir	B757	4	2	$ 2,424	$ 9,696	
Viscount Air	B737	2	2	$ 1,924	$ 3,848	Industry Average
		564			$1,061,569	Wt. Avg = $ 1,882.21

EXHIBIT 20
CLASS 3 OPERATING COSTS

Airline	A/C	#	Class	Cost/Hr	Tot Cost	
Air BC	DH8	11	3	$ 812	$ 8,932	Horizan
Alaska Airlines	DH8	13	3	$ 812	$ 10,556	Horizan
Horizon	DH8	145	3	$ 812	$ 117,740	
Horizon	SW3	59	3	$ 490	$ 28,910	
United	J31	2	3	$ 476	$ 952	Trans State Air
West Air/United Ex.	BA31	86	3	$ 476	$ 40,936	Trans State Air
		316			$ 208,026	Wt. Avg = $ 658.31

EXHIBIT 21
CLASS 4 OPERATING COSTS

Airline	A/C	#	Class	Cost/Hr	Tot Cost	
Atlantic Aero	C208	1	4	$ 571	$ 571	Fed Ex
Empire Air	C208	5	4	$ 571	$ 2,855	Fed Ex
Airpac	PA31	1	4	$ 666	$ 666	HNTB - 7/15/93 data (airline)
Awood Air	PA31	4	4	$ 463	$ 1,850	HNTB - 7/15/93 BE1 data (airline)
Harbor	PA31	37	4	$ 463	$ 17,116	HNTB - 7/15/93 BE1 data (airline)
		48			$ 23,059	Wt. Avg = $ 480.39

EXHIBIT 22
SUMMARY OF AIRCRAFT IN SCHEDULE WITHOUT FORM 41 OPERATING COSTS

Airline	A/C	#	Class
Awood Air	SW4	1	3
Horizon	SW4	2	3
Time Air	SDH6	6	3
Viking Int'l	CV64	1	3
Airpac	C404	2	4
Alaska Airlines	BE90	1	4
Atlantic Aero	C172	1	4
Horizon	BE90	1	4
Sal Air	DC3	4	4
Time Air	C402	1	4
Western	C172	3	4

EXHIBIT 23
SUMMARY OF AIRCRAFT OPERATING COSTS

	%	Wt Cost/Class	
Class 1	8.6	$ 4,064.85	$ 350
Class 2	54.2	$ 1,882.21	$ 1,020
Class 3	31.3	$ 658.31	$ 206
Class 4	5.9	$ 480.39	$ 28
Weighted Cost per Aircraft / Hr			**$ 1,604**

III. Summary of Simulation Results

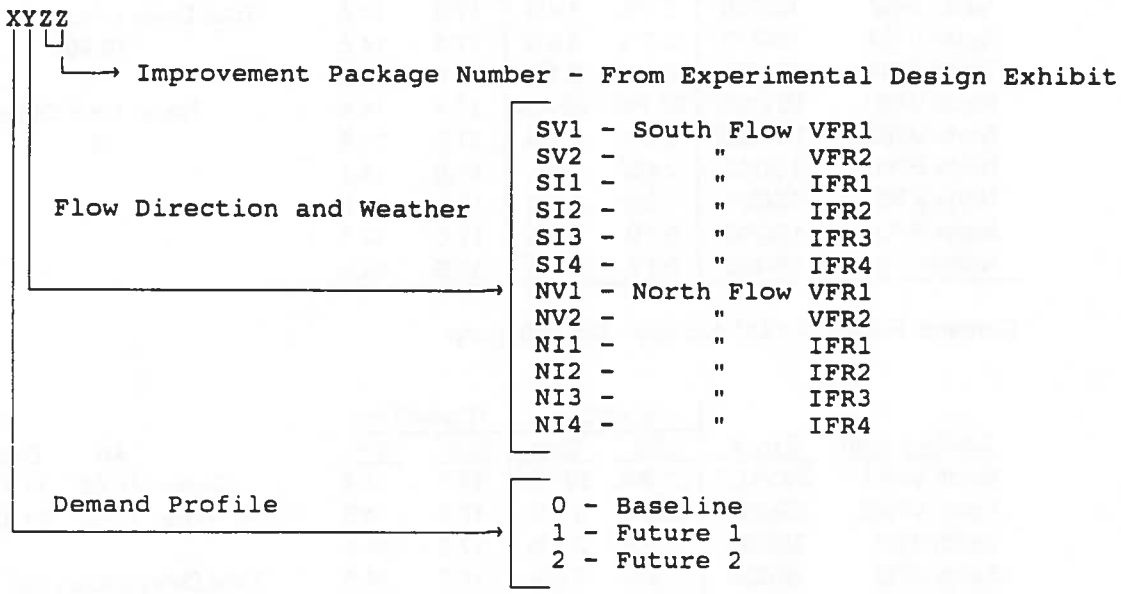
Proposed improvements were analyzed with the SIMMOD simulation model.

Exhibits 23 through 54 provide summaries of the average arrival and departure delays; travel time offsets; and total savings (in hours per year) for Basecase and each improvement. Exhibit 55 summarizes the savings in hours per year and dollars per year for each improvement.

It should be noted that results for Experiment #8 (Modified Full Use Runway) do not reflect all of the implications of restricting runway 16X/34X to non-heavy jets. There are considerable complications in controlling traffic to a limited use runway that were not fully modeled. It is felt that these simulation results underestimate the delays associated with this type of runway. Also, Experiment #10, Wake/Vortex Detection System, shows the savings possible if all wake/vortex turbulence dependencies among aircraft were elimninated. Therefore, this is the maximum possible savings and the actual savings would be less.

More detailed results for each SIMMOD experiment in contained in Appendix A.

Each experiment is assigned a number. The numbering scheme used for the SEA Capacity Design Team Update is :



Alternative: Basecase - #1

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	0SV100	28.0%	27.2%	17.4	14.5
South VFR2	0SV200	15.1%	15.4%	17.6	14.6
South IFR1	0SI100	12.9%	13.8%	17.6	14.6
South IFR2	0SI200	3.3%	3.5%	17.6	14.6
South IFR3	0SI200	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV100	30.1%	29.0%	17.4	14.5
North VFR2	0SV200	4.2%	4.3%	17.6	14.6
North IFR1	0SI100	2.6%	2.8%	17.6	14.6
North IFR2	0SI200	2.0%	2.1%	17.6	14.6
North IFR3	0SI200	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	7.67	1.32	4.50
Trav. Time	17.47	14.54	16.01

Total Delay (Hours per Year)
25,867

Travel Time Offset
0

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	1SV100	29.5%	27.8%	17.4	14.4
South VFR2	1SV200	14.4%	15.1%	17.6	14.5
South IFR1	1SI100	12.3%	13.5%	17.6	14.5
South IFR2	1SI200	3.1%	3.4%	17.6	14.5
South IFR3	1SI200	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV100	30.8%	29.4%	17.4	14.4
North VFR2	1SV200	4.0%	4.2%	17.6	14.5
North IFR1	1SI100	2.4%	2.7%	17.6	14.5
North IFR2	1SI200	1.9%	2.1%	17.6	14.5
North IFR3	1SI200	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	28.59	2.61	15.60
Trav. Time	17.49	14.48	15.99

Total Delay (Hours per Year)
110,490

Travel Time Offset
0

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	2SV100	31.8%	30.1%	17.5	14.4
South VFR2	2SV200	3.6%	4.1%	17.6	14.5
South IFR1	2SI100	2.3%	2.6%	17.7	14.5
South IFR2	2SI200	1.8%	2.0%	17.7	14.5
South IFR3	2SI200	0.7%	0.8%	17.7	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV100	31.3%	28.1%	17.5	14.4
North VFR2	2SV200	13.0%	14.8%	17.6	14.5
North IFR1	2SI100	11.8%	13.4%	17.7	14.5
North IFR2	2SI200	2.9%	3.2%	17.7	14.5
North IFR3	2SI200	0.7%	0.8%	17.7	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	70.05	11.79	40.92
Trav. Time	17.53	14.45	15.99

Total Delay (Hours per Year)
357,976

Travel Time Offset
0

Exhibit 24

Average Delay per Operation Computation

Basecase - #1

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.6%	1.25	0.34	1SV100	28.7%	2.21	0.63	2SV100	31.0%	9.11	2.82
	VFR2	0SV200	15.3%	6.33	0.97	1SV200	14.8%	33.10	4.89	2SV200	3.9%	96.42	3.72
	IFR1	0SI100	13.4%	11.38	1.52	1SI100	12.9%	51.26	6.61	2SI100	2.4%	111.12	2.70
	IFR2	0SI200	3.4%	11.94	0.40	1SI200	3.2%	52.55	1.69	2SI200	1.9%	115.13	2.14
	IFR3	0SI200	0.8%	11.94	0.09	1SI200	0.8%	52.55	0.39	2SI200	0.8%	115.13	0.88
	IFR4	0SI400	0.1%	252.85	0.24	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.43
North	VFR1	0SV100	29.6%	1.25	0.37	1SV100	30.1%	2.21	0.67	2SV100	29.7%	9.11	2.71
	VFR2	0SV200	4.3%	6.33	0.27	1SV200	4.1%	33.10	1.36	2SV200	13.9%	96.42	13.42
	IFR1	0SI100	2.7%	11.38	0.31	1SI100	2.5%	51.26	1.30	2SI100	12.6%	111.12	13.99
	IFR2	0SI200	2.1%	11.94	0.24	1SI200	2.0%	52.55	1.03	2SI200	3.0%	115.13	3.51
	IFR3	0SI200	0.8%	11.94	0.10	1SI200	0.8%	52.55	0.42	2SI200	0.7%	115.13	0.81
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.34	2SI400	0.1%	502.45	0.41
Weighted Avg Delay (Min per Operation)					5.11				19.66				47.53
Computed Avg Delay (Min per Operation)*					4.50				15.60				40.92

* Based on 10 year weather history

Alternative: Class 3&4 Runway 1500' from 16L/34R - #2

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.7%	27.1%	17.4	14.5
South VFR2	0SV202	15.7%	15.5%	17.6	14.5
South IFR1	0SI100	12.8%	13.8%	17.6	14.6
South IFR2	0SI200	3.2%	3.5%	17.6	14.6
South IFR3	0SI200	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV100	29.9%	29.0%	17.4	14.5
North VFR2	0SV202	4.4%	4.3%	17.6	14.5
North IFR1	0SI100	2.6%	2.8%	17.6	14.6
North IFR2	0SI200	2.0%	2.1%	17.6	14.6
North IFR3	0SI200	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	5.81	1.28	3.55
Trav. Time	17.47	14.52	16.00

Total Delay (Hours per Year)
20,400

Travel Time Offset (Hours per Year)
-64

Total Savings (Hours per Year)
5,531

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	28.5%	28.7%	17.4	14.4
South VFR2	1SV202	15.9%	12.0%	17.9	14.4
South IFR1	1SI100	11.9%	14.0%	17.6	14.5
South IFR2	1SI200	3.0%	3.5%	17.6	14.5
South IFR3	1SI200	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV100	30.4%	30.5%	17.4	14.4
North VFR2	1SV202	4.5%	4.5%	17.9	14.4
North IFR1	1SI100	2.3%	2.8%	17.6	14.5
North IFR2	1SI200	1.8%	2.1%	17.6	14.5
North IFR3	1SI200	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	19.35	2.54	10.95
Trav. Time	17.57	14.46	16.01

Total Delay (Hours per Year)
77,520

Travel Time Offset (Hours per Year)
194

Total Savings (Hours per Year)
32,775

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV102	30.0%	28.2%	17.7	14.4
South VFR2	2SV202	15.4%	15.5%	17.4	14.8
South IFR1	2SI100	11.0%	12.9%	17.7	14.5
South IFR2	2SI200	2.8%	3.1%	17.7	14.5
South IFR3	2SI200	0.6%	0.7%	17.7	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV102	31.2%	29.8%	17.7	14.4
North VFR2	2SV202	4.3%	4.3%	17.4	14.8
North IFR1	2SI100	2.1%	2.5%	17.7	14.5
North IFR2	2SI200	1.7%	1.9%	17.7	14.5
North IFR3	2SI200	0.7%	0.8%	17.7	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	45.30	4.93	25.12
Trav. Time	17.61	14.51	16.06

Total Delay (Hours per Year)
219,711

Travel Time Offset
636

Total Savings (Hours per Year)
137,629

Average Delay per Operation Computation

Class 3&4 Runway 1500' from 16L/34R - #2

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.4%	1.25	0.34	1SV100	28.6%	2.21	0.63	2SV102	29.1%	3.24	0.95
	VFR2	0SV202	15.6%	1.67	0.26	1SV202	13.9%	4.41	0.61	2SV202	15.4%	21.66	3.34
	IFR1	0SI100	13.3%	11.38	1.51	1SI100	12.9%	51.26	6.63	2SI100	12.0%	111.12	13.30
	IFR2	0SI200	3.4%	11.94	0.40	1SI200	3.3%	52.55	1.71	2SI200	2.9%	115.13	3.39
	IFR3	0SI200	0.8%	11.94	0.09	1SI200	0.8%	52.55	0.40	2SI200	0.7%	115.13	0.79
	IFR4	0SI400	0.1%	252.85	0.24	1SI400	0.1%	379.94	0.34	2SI400	0.1%	502.45	0.40
North	VFR1	0SV100	29.5%	1.25	0.37	1SV100	30.5%	2.21	0.67	2SV102	30.5%	3.24	0.99
	VFR2	0SV202	4.3%	1.67	0.07	1SV202	4.5%	4.41	0.20	2SV202	4.3%	21.66	0.93
	IFR1	0SI100	2.7%	11.38	0.31	1SI100	2.6%	51.26	1.31	2SI100	2.3%	111.12	2.60
	IFR2	0SI200	2.0%	11.94	0.24	1SI200	2.0%	52.55	1.04	2SI200	1.8%	115.13	2.07
	IFR3	0SI200	0.8%	11.94	0.10	1SI200	0.8%	52.55	0.43	2SI200	0.7%	115.13	0.85
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.34	2SI400	0.1%	502.45	0.41
Weighted Avg Delay (Min per Operation)					4.19				14.32				30.03
Computed Avg Delay (Min per Operation)*					3.55				10.95				25.12

* Based on 10 year weather history

Alternative: Class 3&4 Runway 2500' from 16L/34R - #3

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.4%	27.0%	17.4	14.5
South VFR2	0SV203	15.3%	15.4%	17.7	14.5
South IFR1	0SI103	13.5%	14.0%	17.4	14.9
South IFR2	0SI200	3.2%	3.5%	17.6	14.6
South IFR3	0SI200	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV203B	4.3%	4.3%	17.7	14.5
North IFR1	0SI103B	2.8%	2.8%	17.4	14.9
North IFR2	0SI200	1.9%	2.1%	17.6	14.6
North IFR3	0SI200	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	3.32	1.32	2.32
Trav. Time	17.47	14.58	16.03

Total Delay (Hours per Year)
13,351

Travel Time Offset (Hours per Year)
98

Total Savings (Hours per Year)
12,418

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.8%	27.2%	17.4	14.4
South VFR2	1SV203	15.3%	15.5%	18.1	14.4
South IFR1	1SI103	13.5%	14.0%	17.4	14.9
South IFR2	1SI200	2.9%	3.3%	17.6	14.5
South IFR3	1SI200	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV100	30.1%	29.1%	17.4	14.4
North VFR2	1SV203B	4.3%	4.3%	18.1	14.4
North IFR1	1SI103B	2.8%	2.8%	17.4	14.9
North IFR2	1SI200	1.8%	2.0%	17.6	14.5
North IFR3	1SI200	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	9.21	2.64	5.93
Trav. Time	17.56	14.52	16.04

Total Delay (Hours per Year)
41,965

Travel Time Offset (Hours per Year)
379

Total Savings (Hours per Year)
68,145

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV103	28.9%	27.7%	17.8	14.4
South VFR2	2SV203	14.7%	15.6%	17.9	14.5
South IFR1	2SI103	13.2%	13.5%	17.9	14.5
South IFR2	2SI200	2.6%	3.1%	17.7	14.5
South IFR3	2SI200	0.6%	0.7%	17.7	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV103B	30.7%	29.5%	17.8	14.4
North VFR2	2SV203B	4.2%	4.3%	17.9	14.5
North IFR1	2SI103B	2.7%	2.7%	17.9	14.5
North IFR2	2SI200	1.6%	1.9%	17.7	14.5
North IFR3	2SI200	0.7%	0.8%	17.7	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	24.57	5.67	15.12
Trav. Time	17.80	14.45	16.13

Total Delay (Hours per Year)
132,273

Travel Time Offset
1,215

Total Savings (Hours per Year)
224,488

Exhibit 28

Average Delay per Operation Computation

Class 3&4 Runway 2500' from 16L/34R - #3

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.2%	1.25	0.34	1SV100	27.5%	2.21	0.61	2SV103	28.3%	3.20	0.91
	VFR2	0SV203	15.4%	1.60	0.25	1SV203	15.4%	4.53	0.70	2SV203	15.2%	21.17	3.21
	IFR1	0SI103	13.7%	1.65	0.23	1SI103	13.7%	4.78	0.66	2SI103	13.4%	24.24	3.24
	IFR2	0SI200	3.3%	11.94	0.40	1SI200	3.1%	52.55	1.63	2SI200	2.8%	115.13	3.27
	IFR3	0SI200	0.8%	11.94	0.09	1SI200	0.7%	52.55	0.39	2SI200	0.7%	115.13	0.78
	IFR4	0SI400	0.1%	252.85	0.24	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.40
North	VFR1	0SV100	29.4%	1.25	0.37	1SV100	29.6%	2.21	0.65	2SV103B	30.1%	3.15	0.95
	VFR2	0SV203B	4.3%	1.52	0.07	1SV203B	4.3%	4.34	0.19	2SV203B	4.2%	20.88	0.89
	IFR1	0SI103B	2.8%	1.54	0.04	1SI103B	2.8%	4.55	0.13	2SI103B	2.7%	24.50	0.65
	IFR2	0SI200	2.0%	11.94	0.24	1SI200	1.9%	52.55	1.00	2SI200	1.7%	115.13	2.00
	IFR3	0SI200	0.8%	11.38	0.09	1SI200	0.8%	52.55	0.42	2SI200	0.7%	115.13	0.84
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.41
Weighted Avg Delay (Min per Operation)					2.60				7.02				17.54
Computed Avg Delay (Min per Operation)*					2.32				5.93				15.12

* Based on 10 year weather history

Alternative: Full Use Runway 2500' from 16L/34R - #5

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV205	15.3%	15.4%	17.6	14.9
South IFR1	0SI105	13.4%	14.1%	17.6	14.9
South IFR2	0SI205	3.2%	3.3%	18.4	14.8
South IFR3	0SI205	0.8%	0.8%	18.4	14.8
South IFR4	0SI405	0.1%	0.2%	18.7	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV205B	4.3%	4.3%	17.6	14.9
North IFR1	0SI105B	2.7%	2.8%	17.6	14.9
North IFR2	0NI205B	2.1%	2.2%	17.6	14.9
North IFR3	0SI205	0.8%	0.8%	18.4	14.8
North IFR4	0SI405	0.1%	0.2%	18.7	14.5

	Arr	Dep	Tot
Delay	1.95	1.62	1.79
Trav. Time	17.54	14.69	16.11

Total Delay (Hours per Year)
10,272

Travel Time Offset (Hours per Year)
607

Total Savings (Hours per Year)
14,988

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.4%	27.0%	17.4	14.4
South VFR2	1SV205	15.4%	15.5%	17.7	14.9
South IFR1	1SI105	13.6%	14.1%	17.7	14.9
South IFR2	1SI205	2.9%	3.2%	19.3	14.7
South IFR3	1SI205	0.7%	0.8%	19.3	14.7
South IFR4	1SI405	0.1%	0.2%	18.7	14.4
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV205B	4.3%	4.3%	17.7	14.9
North IFR1	1SI105B	2.8%	2.9%	17.7	14.9
North IFR2	1NI205B	2.2%	2.2%	17.7	14.9
North IFR3	1SI205	0.7%	0.8%	19.3	14.7
North IFR4	1SI405	0.1%	0.2%	18.7	14.4

	Arr	Dep	Tot
Delay	4.73	2.91	3.82
Trav. Time	17.61	14.63	16.12

Total Delay (Hours per Year)
27,056

Travel Time Offset (Hours per Year)
955

Total Savings (Hours per Year)
82,479

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105	27.9%	27.4%	18.1	14.4
South VFR2	2SV205	15.4%	15.5%	17.8	14.8
South IFR1	2SI105	13.6%	13.8%	17.8	14.9
South IFR2	2SI405	2.3%	3.1%	18.8	14.4
South IFR3	2SI405	0.5%	0.7%	18.8	14.4
South IFR4	2SI405	0.1%	0.1%	18.8	14.4
North VFR1	2SV105B	30.1%	29.2%	18.1	14.4
North VFR2	2SV205B	4.4%	4.4%	17.8	14.7
North IFR1	2SI105B	2.8%	2.8%	17.8	14.9
North IFR2	2NI205B	2.1%	2.0%	17.8	14.8
North IFR3	2SI405	0.6%	0.8%	18.8	14.4
North IFR4	2SI405	0.1%	0.1%	18.8	14.4

	Arr	Dep	Tot
Delay	13.31	3.24	8.28
Trav. Time	18.00	14.56	16.28

Total Delay (Hours per Year)
72,391

Travel Time Offset
2,505

Total Savings (Hours per Year)
283,080

Average Delay per Operation Computation

Full Use Runway 2500' from 16L/34R - #5

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.2%	2.21	0.60	2SV105	27.6%	2.54	0.70
	VFR2	0SV205	15.4%	1.42	0.22	1SV205	15.4%	2.33	0.36	2SV205	15.5%	5.31	0.82
	IFR1	0SI105	13.8%	1.11	0.15	1SI105	13.9%	2.61	0.36	2SI105	13.7%	7.68	1.05
	IFR2	0SI205	3.3%	10.08	0.33	1SI205	3.0%	49.53	1.50	2SI405	2.7%	141.70	3.87
	IFR3	0SI205	0.8%	10.08	0.08	1SI205	0.7%	49.53	0.35	2SI405	0.6%	141.70	0.89
	IFR4	0SI405	0.1%	22.64	0.03	1SI405	0.1%	67.98	0.09	2SI405	0.1%	141.70	0.18
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.4%	2.21	0.65	2SV105B	29.7%	2.31	0.69
	VFR2	0SV205B	4.3%	1.31	0.06	1SV205B	4.3%	2.21	0.10	2SV205B	4.4%	3.67	0.16
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.8%	2.19	0.06	2SI105B	2.8%	5.69	0.16
	IFR2	0NI205B	2.2%	1.72	0.04	1NI205B	2.2%	3.70	0.08	2NI205B	2.0%	23.39	0.47
	IFR3	0SI205	0.8%	10.08	0.08	1SI205	0.8%	49.53	0.37	2SI405	0.7%	141.70	0.99
	IFR4	0SI405	0.2%	22.64	0.03	1SI405	0.1%	67.98	0.10	2SI405	0.1%	141.70	0.18
Weighted Avg Delay (Min per Operation)					1.76				4.63				10.17
Computed Avg Delay (Min per Operation)*					1.79				3.82				8.28

* Based on 10 year weather history

Alternative: - #5 (North Flow Preferred in VFR1 and VFR2)

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	21.4%	21.3%	17.4	14.5
South VFR2	0SV205	8.9%	9.1%	17.6	14.9
South IFR1	0SI105	13.4%	14.1%	17.6	14.9
South IFR2	0SI205	3.2%	3.3%	18.4	14.8
South IFR3	0SI205	0.8%	0.8%	18.4	14.8
South IFR4	0SI405	0.1%	0.2%	18.7	14.5
North VFR1	0SV100	35.6%	34.6%	17.4	14.5
North VFR2	0SV205B	10.7%	10.6%	17.6	14.9
North IFR1	0SI105B	2.7%	2.8%	17.6	14.9
North IFR2	0NI205B	2.1%	2.2%	17.6	14.9
North IFR3	0SI205	0.8%	0.8%	18.4	14.8
North IFR4	0SI405	0.1%	0.2%	18.7	14.5

	Arr	Dep	Tot
Delay	1.95	1.62	1.79
Trav. Time	17.54	14.69	16.11

Total Delay (Hours per Year)
10,272

Travel Time Offset (Hours per Year)
606

Total Savings (Hours per Year)
14,990

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	21.5%	21.3%	17.4	14.4
South VFR2	1SV205	8.9%	9.2%	17.7	14.9
South IFR1	1SI105	13.6%	14.1%	17.7	14.9
South IFR2	1SI205	2.9%	3.2%	19.3	14.7
South IFR3	1SI205	0.7%	0.8%	19.3	14.7
South IFR4	1SI405	0.1%	0.2%	18.7	14.4
North VFR1	1SV100	35.8%	34.7%	17.4	14.4
North VFR2	1SV205B	10.9%	10.6%	17.7	14.9
North IFR1	1SI105B	2.8%	2.9%	17.7	14.9
North IFR2	1NI205B	2.1%	2.2%	17.7	14.9
North IFR3	1SI205	0.7%	0.8%	19.3	14.7
North IFR4	1SI405	0.1%	0.2%	18.7	14.4

	Arr	Dep	Tot
Delay	4.69	2.91	3.80
Trav. Time	17.61	14.63	16.12

Total Delay (Hours per Year)
26,914

Travel Time Offset (Hours per Year)
955

Total Savings (Hours per Year)
82,620

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105	21.7%	21.5%	18.1	14.4
South VFR2	2SV205	8.8%	9.2%	17.8	14.8
South IFR1	2SI105	13.5%	13.8%	17.8	14.9
South IFR2	2SI405	2.3%	3.1%	18.8	14.4
South IFR3	2SI405	0.5%	0.7%	18.8	14.4
South IFR4	2SI405	0.1%	0.1%	18.8	14.4
North VFR1	2SV105B	36.3%	35.0%	18.1	14.4
North VFR2	2SV205B	11.1%	10.8%	17.8	14.7
North IFR1	2SI105B	2.8%	2.8%	17.8	14.9
North IFR2	2NI205B	2.1%	2.0%	17.8	14.8
North IFR3	2SI405	0.6%	0.8%	18.8	14.4
North IFR4	2SI405	0.1%	0.1%	18.8	14.4

	Arr	Dep	Tot
Delay	12.91	3.24	8.08
Trav. Time	18.00	14.56	16.28

Total Delay (Hours per Year)
70,642

Travel Time Offset
2,520

Total Savings (Hours per Year)
284,815

Average Delay per Operation Computation

- #5 (North Flow Preferred)

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	21.4%	1.25	0.27	1SV100	21.4%	2.21	0.47	2SV105	21.6%	2.54	0.55
	VFR2	0SV205	9.0%	1.42	0.13	1SV205	9.0%	2.33	0.21	2SV205	9.0%	5.31	0.48
	IFR1	0SI105	13.8%	1.11	0.15	1SI105	13.9%	2.61	0.36	2SI105	13.7%	7.68	1.05
	IFR2	0SI205	3.3%	10.08	0.33	1SI205	3.0%	49.53	1.50	2SI405	2.7%	141.70	3.87
	IFR3	0SI205	0.8%	10.08	0.08	1SI205	0.7%	49.53	0.35	2SI405	0.6%	141.70	0.89
	IFR4	0SI405	0.1%	22.64	0.03	1SI405	0.1%	67.98	0.09	2SI405	0.1%	141.70	0.19
North	VFR1	0SV100	35.1%	1.25	0.44	1SV100	35.2%	2.21	0.78	2SV105B	35.7%	2.31	0.83
	VFR2	0SV205B	10.7%	1.31	0.14	1SV205B	10.7%	2.21	0.24	2SV205B	10.9%	3.67	0.40
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.8%	2.19	0.06	2SI105B	2.8%	5.69	0.16
	IFR2	0NI205B	2.2%	1.72	0.04	1NI205B	2.2%	3.70	0.08	2NI205B	2.0%	23.39	0.47
	IFR3	0SI205	0.8%	10.08	0.08	1SI205	0.8%	49.53	0.37	2SI405	0.7%	141.70	0.99
	IFR4	0SI405	0.2%	22.64	0.03	1SI405	0.1%	67.98	0.10	2SI405	0.1%	141.70	0.18
Weighted Avg Delay (Min per Operation)					1.76				4.62				10.05
Computed Avg Delay (Min per Operation)*					1.79				3.80				8.08

* Based on 10 year weather history

Alternative: Full Use Runway 3300' from 16L/43R with PRM - #6

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV206	15.3%	15.4%	17.8	14.5
South IFR1	0SI106	13.5%	14.0%	17.8	14.9
South IFR2	0SI206	3.3%	3.5%	18.7	14.8
South IFR3	0SI206	0.8%	0.8%	18.7	14.8
South IFR4	0SI406	0.1%	0.1%	19.1	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV206B	4.3%	4.3%	18.0	14.5
North IFR1	0SI106B	2.7%	2.8%	17.8	14.9
North IFR2	0NI206B	2.1%	2.2%	17.8	14.9
North IFR3	0SI206	0.8%	0.9%	18.7	14.8
North IFR4	0SI406	0.1%	0.2%	19.1	14.5

	Arr	Dep	Tot
Delay	1.90	1.21	1.56
Trav. Time	17.62	14.61	16.11

Total Delay (Hours per Year)
8,949

Travel Time Offset (Hours per Year)
597

Total Savings (Hours per Year)
16,322

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	28.5%	27.0%	17.4	14.4
South VFR2	1SV206	16.0%	15.5%	18.1	14.4
South IFR1	1SI106	14.1%	14.0%	17.9	14.9
South IFR2	1SI206	3.1%	3.3%	19.6	14.7
South IFR3	1SI206	0.7%	0.8%	19.6	14.7
South IFR4	1SI406	0.1%	0.1%	19.1	14.4
North VFR1	1SV100	31.0%	28.9%	17.4	14.4
North VFR2	1SV206B	0.4%	4.3%	18.1	14.4
North IFR1	1SI106B	2.9%	2.8%	17.8	14.9
North IFR2	1NI206B	2.2%	2.2%	17.9	14.9
North IFR3	1SI206	0.8%	0.8%	19.6	14.7
North IFR4	1SI406	0.1%	0.2%	19.1	14.4

	Arr	Dep	Tot
Delay	4.21	2.37	3.29
Trav. Time	17.72	14.53	16.13

Total Delay (Hours per Year)
23,302

Travel Time Offset (Hours per Year)
988

Total Savings (Hours per Year)
86,199

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV106	27.8%	27.4%	18.3	14.4
South VFR2	2SV206	15.4%	15.6%	18.2	14.4
South IFR1	2SI106	13.7%	13.8%	18.0	14.8
South IFR2	2SI406	2.3%	3.1%	19.2	14.4
South IFR3	2SI406	0.5%	0.7%	19.2	14.4
South IFR4	2SI406	0.1%	0.1%	19.2	14.4
North VFR1	2SV106B	30.1%	29.1%	18.3	14.4
North VFR2	2SV206B	4.4%	4.4%	18.2	14.4
North IFR1	2SI106B	2.8%	2.8%	18.0	14.8
North IFR2	2NI206B	2.2%	2.0%	18.0	14.7
North IFR3	2SI406	0.6%	0.8%	19.2	14.4
North IFR4	2SI406	0.1%	0.1%	19.2	14.4

	Arr	Dep	Tot
Delay	12.29	3.09	7.69
Trav. Time	18.27	14.47	16.37

Total Delay (Hours per Year)
67,274

Travel Time Offset
3,304

Total Savings (Hours per Year)
287,399

Exhibit 34

Average Delay per Operation Computation

Full Use Runway 3300' from 16L/34R with PRM - #6

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.8%	2.21	0.61	2SV106	27.6%	2.74	0.76
	VFR2	0SV206	15.4%	0.73	0.11	1SV206	15.7%	2.34	0.37	2SV206	15.5%	5.11	0.79
	IFR1	0SI106	13.7%	1.38	0.19	1SI106	14.1%	2.33	0.33	2SI106	13.8%	6.36	0.88
	IFR2	0SI206	3.4%	6.17	0.21	1SI206	3.2%	35.89	1.15	2SI406	2.7%	141.73	3.87
	IFR3	0SI206	0.8%	6.17	0.05	1SI206	0.8%	35.89	0.27	2SI406	0.6%	141.73	0.89
	IFR4	0SI406	0.1%	22.63	0.03	1SI406	0.1%	68.01	0.09	2SI406	0.1%	141.73	0.18
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	30.0%	2.21	0.66	2SV106B	29.6%	2.25	0.67
	VFR2	0SV206B	4.3%	1.17	0.05	1SV206B	2.4%	2.09	0.05	2SV206B	4.4%	3.57	0.16
	IFR1	0SI106B	2.8%	1.31	0.04	1SI106B	2.9%	2.13	0.06	2SI106B	2.8%	5.00	0.14
	IFR2	0NI206B	2.1%	1.48	0.03	1NI206B	2.2%	2.82	0.06	2NI206B	2.1%	11.99	0.25
	IFR3	0SI206	0.8%	6.17	0.05	1SI206	0.8%	35.89	0.29	2SI406	0.7%	141.73	0.98
	IFR4	0SI406	0.2%	22.63	0.03	1SI406	0.1%	68.01	0.10	2SI406	0.1%	141.73	0.18
Weighted Avg Delay (Min per Operation)					1.50				4.04				9.74
Computed Avg Delay (Min per Operation)*					1.56				3.29				7.69

* Based on 10 year weather history

Alternative: Full Use Runway 3300' from 16L/43R - No PRM - #7

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV206	15.3%	15.4%	17.8	14.5
South IFR1	0SI107	13.4%	13.9%	18.0	14.5
South IFR2	0SI207	3.3%	3.6%	18.0	14.5
South IFR3	0SI207	0.8%	0.8%	18.0	14.5
South IFR4	0SI406	0.1%	0.1%	19.1	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV206B	4.3%	4.3%	18.0	14.5
North IFR1	0SI107B	2.7%	2.8%	18.0	14.5
North IFR2	0SI207B	2.1%	2.2%	18.0	14.5
North IFR3	0SI207	0.8%	0.9%	18.0	14.5
North IFR4	0SI406	0.1%	0.2%	19.1	14.5

	Arr	Dep	Tot
Delay	1.68	1.01	1.35
Trav. Time	17.64	14.50	16.07

Total Delay (Hours per Year)
7,740

Travel Time Offset (Hours per Year)
338

Total Savings (Hours per Year)
17,790

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.3%	27.0%	17.4	14.4
South VFR2	1SV206	15.3%	15.4%	18.1	14.4
South IFR1	1SI107	13.3%	14.0%	18.1	14.4
South IFR2	1SI207	3.3%	3.5%	18.1	14.4
South IFR3	1SI207	0.8%	0.8%	18.1	14.4
South IFR4	1SI406	0.1%	0.1%	19.1	14.4
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV206B	4.3%	4.3%	18.1	14.4
North IFR1	1SI107B	2.7%	2.8%	18.1	14.4
North IFR2	1SI207B	2.1%	2.1%	18.1	14.4
North IFR3	1SI207	0.8%	0.9%	18.1	14.4
North IFR4	1SI406	0.1%	0.2%	19.1	14.4

	Arr	Dep	Tot
Delay	2.71	2.38	2.55
Trav. Time	17.72	14.42	16.07

Total Delay (Hours per Year)
18,025

Travel Time Offset (Hours per Year)
593

Total Savings (Hours per Year)
91,871

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV106	27.5%	27.2%	18.3	14.4
South VFR2	2SV206	15.3%	15.5%	18.2	14.4
South IFR1	2SI107	13.1%	13.8%	18.2	14.3
South IFR2	2SI207	3.3%	3.3%	18.2	14.3
South IFR3	2SI207	0.7%	0.8%	18.2	14.3
South IFR4	2SI406	0.1%	0.1%	19.2	14.4
North VFR1	2SV106B	30.0%	29.0%	18.3	14.4
North VFR2	2SV206B	4.3%	4.3%	18.2	14.4
North IFR1	2SI107B	2.7%	2.8%	18.2	14.3
North IFR2	2SI207B	2.0%	2.0%	18.2	14.3
North IFR3	2SI207	0.8%	0.8%	18.2	14.3
North IFR4	2SI406	0.1%	0.2%	19.2	14.4

	Arr	Dep	Tot
Delay	6.30	4.13	5.22
Trav. Time	18.28	14.39	16.34

Total Delay (Hours per Year)
45,622

Travel Time Offset
3,023

Total Savings (Hours per Year)
309,331

Average Delay per Operation Computation

Full Use Runway 3300' from 16L/34R - No PRM - #7

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.1%	2.21	0.60	2SV106	27.4%	2.74	0.75
	VFR2	0SV206	15.4%	0.73	0.11	1SV206	15.4%	2.34	0.36	2SV206	15.4%	5.11	0.79
	IFR1	0SI107	13.6%	1.50	0.20	1SI107	13.7%	2.62	0.36	2SI107	13.5%	7.86	1.06
	IFR2	0SI207	3.5%	1.79	0.06	1SI207	3.4%	4.53	0.15	2SI207	3.3%	23.02	0.75
	IFR3	0SI207	0.8%	1.79	0.01	1SI207	0.8%	4.53	0.04	2SI207	0.8%	23.02	0.18
	IFR4	0SI406	0.1%	22.63	0.03	1SI406	0.1%	68.01	0.09	2SI406	0.1%	141.73	0.17
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.3%	2.21	0.65	2SV106B	29.5%	2.25	0.66
	VFR2	0SV206B	4.3%	1.17	0.05	1SV206B	4.3%	2.09	0.09	2SV206B	4.3%	3.57	0.15
	IFR1	0SI107B	2.8%	1.39	0.04	1SI107B	2.8%	2.23	0.06	2SI107B	2.8%	6.42	0.18
	IFR2	0SI207B	2.1%	1.73	0.04	1SI207B	2.1%	4.18	0.09	2SI207B	2.0%	22.15	0.45
	IFR3	0SI207	0.9%	1.79	0.02	1SI207	0.9%	4.53	0.04	2SI207	0.8%	23.02	0.19
	IFR4	0SI406	0.1%	22.63	0.03	1SI406	0.1%	68.01	0.09	2SI406	0.1%	141.73	0.18
Weighted Avg Delay (Min per Operation)					1.30				2.61				5.51
Computed Avg Delay (Min per Operation)*					1.35				2.55				5.22

* Based on 10 year weather history

Alternative: Modified Full Use R/W 2500' from 16L/34R with PRM - No Hvy - #8

(see note below)

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV208	15.3%	15.5%	17.6	14.9
South IFR1	0SI108	13.4%	14.1%	17.6	14.9
South IFR2	0SI208	3.3%	3.3%	18.3	14.8
South IFR3	0SI208	0.8%	0.8%	18.3	14.8
South IFR4	0SI408	0.1%	0.2%	19.4	14.8
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV208B	4.3%	4.3%	17.6	14.9
North IFR1	0SI108B	2.7%	2.8%	17.6	14.9
North IFR2	0NI208B	2.1%	2.3%	17.6	14.9
North IFR3	0SI208	0.8%	0.8%	18.3	14.8
North IFR4	0SI408	0.1%	0.2%	19.4	14.8

	Arr	Dep	Tot
Delay	1.85	2.01	1.93
Trav. Time	17.53	14.69	16.11

Total Delay (Hours per Year)
11,107

Travel Time Offset (Hours per Year)
575

Total Savings (Hours per Year)
14,186

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.4%	27.1%	17.4	14.4
South VFR2	1SV208	15.4%	15.5%	17.7	14.9
South IFR1	1SI108	13.5%	14.3%	17.7	14.9
South IFR2	1SI208	3.0%	3.0%	19.2	14.7
South IFR3	1SI208	0.7%	0.7%	19.2	14.7
South IFR4	1SI408	0.1%	0.2%	19.4	14.7
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV208B	4.3%	4.3%	17.7	14.9
North IFR1	1SI108B	2.8%	2.9%	17.7	14.9
North IFR2	1NI208B	2.1%	2.2%	17.7	14.9
North IFR3	1SI208	0.7%	0.8%	19.2	14.7
North IFR4	1SI408	0.1%	0.2%	19.4	14.7

	Arr	Dep	Tot
Delay	4.22	3.69	3.96
Trav. Time	17.60	14.63	16.12

Total Delay (Hours per Year)
28,012

Travel Time Offset (Hours per Year)
935

Total Savings (Hours per Year)
81,542

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV108	27.9%	27.5%	18.1	14.4
South VFR2	2SV208	15.4%	15.6%	17.7	14.8
South IFR1	2SI108	13.5%	14.0%	17.7	14.9
South IFR2	2SI408	2.3%	2.9%	19.4	14.7
South IFR3	2SI408	0.6%	0.7%	19.4	14.7
South IFR4	2SI408	0.1%	0.1%	19.4	14.7
North VFR1	2SV108B	30.2%	29.2%	18.1	14.4
North VFR2	2SV208B	4.4%	4.3%	17.7	14.8
North IFR1	2SI108B	2.8%	2.8%	17.7	14.9
North IFR2	2NI208B	2.1%	2.0%	17.8	14.8
North IFR3	2SI408	0.6%	0.7%	19.4	14.7
North IFR4	2SI408	0.1%	0.1%	19.4	14.7

	Arr	Dep	Tot
Delay	14.03	4.32	9.18
Trav. Time	17.99	14.57	16.28

Total Delay (Hours per Year)
80,265

Travel Time Offset
2,530

Total Savings (Hours per Year)
275,181

Note Delays and savings for this alternative are not considered reliable

SYN 0018893

Average Delay per Operation Computation

Modified Full Use Runway (No Heavy A/C) 2500' from 16L/34R - #8 (see note below)

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.2%	1.25	0.34	1SV100	27.2%	2.21	0.60	2SV108	27.7%	2.53	0.70
	VFR2	0SV208	15.4%	1.45	0.22	1SV208	15.5%	2.34	0.36	2SV208	15.5%	5.57	0.86
	IFR1	0SI108	13.8%	1.65	0.23	1SI108	13.9%	2.60	0.36	2SI108	13.7%	8.48	1.17
	IFR2	0SI208	3.3%	15.78	0.52	1SI208	3.0%	56.26	1.69	2SI408	2.6%	139.08	3.61
	IFR3	0SI208	0.8%	15.78	0.12	1SI208	0.7%	56.26	0.40	2SI408	0.6%	139.08	0.86
	IFR4	0SI408	0.1%	23.57	0.03	1SI408	0.1%	70.28	0.10	2SI408	0.1%	139.08	0.18
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.4%	2.21	0.65	2SV108B	29.7%	2.40	0.71
	VFR2	0SV208B	4.3%	1.40	0.06	1SV208B	4.3%	2.17	0.09	2SV208B	4.3%	5.00	0.22
	IFR1	0SI108B	2.8%	1.57	0.04	1SI108B	2.8%	2.33	0.07	2SI108B	2.8%	7.50	0.21
	IFR2	0NI208B	2.2%	1.76	0.04	1NI208B	2.2%	3.66	0.08	2NI208B	2.1%	23.08	0.47
	IFR3	0SI208	0.8%	15.78	0.13	1SI208	0.7%	56.26	0.42	2SI408	0.7%	139.08	0.92
	IFR4	0SI408	0.2%	23.57	0.04	1SI408	0.1%	70.28	0.10	2SI408	0.1%	139.08	0.18
Weighted Avg Delay (Min per Operation)					2.13				4.92				10.09
Computed Avg Delay (Min per Operation)*					1.93				3.96				9.18

* Based on 10 year weather history

Note: Delays and Savings for this alternative are not considered reliable.

Alternative: Wake/Vortex Detection System - #10

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	0SV110	27.9%	27.1%	17.4	14.5
South VFR2	0SV210	15.2%	15.4%	17.6	14.6
South IFR1	0SI110	13.0%	13.8%	17.6	14.6
South IFR2	0SI210	3.3%	3.5%	17.6	14.6
South IFR3	0SI210	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV110	30.0%	29.0%	17.4	14.5
North VFR2	0SV210	4.3%	4.3%	17.6	14.6
North IFR1	0SI110	2.6%	2.8%	17.6	14.6
North IFR2	0SI210	2.0%	2.1%	17.6	14.6
North IFR3	0SI210	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	6.23	1.11	3.67
Trav. Time	17.48	14.54	16.01

Total Delay (Hours per Year)
21,120

Travel Time Offset
23

Total Savings (Hours per Year)
4,725

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	1SV110	29.3%	27.7%	17.4	14.4
South VFR2	1SV210	14.5%	15.2%	17.6	14.5
South IFR1	1SI110	12.4%	13.6%	17.6	14.5
South IFR2	1SI210	3.1%	3.4%	17.6	14.5
South IFR3	1SI210	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV110	30.7%	29.4%	17.4	14.4
North VFR2	1SV210	4.1%	4.2%	17.6	14.5
North IFR1	1SI110	2.4%	2.7%	17.6	14.5
North IFR2	1SI210	1.9%	2.1%	17.6	14.5
North IFR3	1SI210	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	25.01	2.16	13.59
Trav. Time	17.48	14.54	16.01

Total Delay (Hours per Year)
96,218

Travel Time Offset
182

Total Savings (Hours per Year)
14,089

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	2SV110	31.1%	28.2%	17.5	14.4
South VFR2	2SV210	13.1%	14.9%	17.6	14.5
South IFR1	2SI110	11.9%	13.3%	17.6	14.5
South IFR2	2SI210	2.9%	3.2%	17.6	14.5
South IFR3	2SI210	0.7%	0.8%	17.6	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV110	31.7%	30.0%	17.5	14.4
North VFR2	2SV210	3.6%	4.1%	17.6	14.5
North IFR1	2SI110	2.3%	2.6%	17.6	14.5
North IFR2	2SI210	1.8%	2.0%	17.6	14.5
North IFR3	2SI210	0.7%	0.8%	17.6	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	63.41	7.46	35.44
Trav. Time	17.48	14.54	16.01

Total Delay (Hours per Year)
309,992

Travel Time Offset
191

Total Savings (Hours per Year)
47,793

Average Delay per Operation Computation

Wake/Vortex Detection System - #10

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV110	27.5%	1.11	0.31	1SV110	28.5%	1.93	0.55	2SV110	29.6%	6.17	1.83
	VFR2	0SV210	15.3%	4.68	0.72	1SV210	14.8%	28.83	4.27	2SV210	14.0%	88.56	12.42
	IFR1	0SI110	13.4%	8.47	1.14	1SI110	13.0%	44.51	5.77	2SI110	12.6%	100.82	12.71
	IFR2	0SI210	3.4%	8.95	0.30	1SI210	3.2%	45.71	1.48	2SI210	3.1%	104.63	3.20
	IFR3	0SI210	0.8%	8.95	0.07	1SI210	0.8%	45.71	0.35	2SI210	0.7%	104.63	0.75
	IFR4	0SI400	0.1%	252.85	0.23	1SI400	0.1%	379.94	0.33	2SI400	0.1%	711.89	0.58
North	VFR1	0SV110	29.5%	1.11	0.33	1SV110	30.0%	1.93	0.58	2SV110	30.8%	6.17	1.90
	VFR2	0SV210	4.3%	4.68	0.20	1SV210	4.1%	28.83	1.19	2SV210	3.9%	88.56	3.43
	IFR1	0SI110	2.7%	8.47	0.23	1SI110	2.6%	44.51	1.14	2SI110	2.4%	100.82	2.46
	IFR2	0SI210	2.1%	8.95	0.18	1SI210	2.0%	45.71	0.90	2SI210	1.9%	104.63	1.95
	IFR3	0SI210	0.8%	8.95	0.08	1SI210	0.8%	45.71	0.37	2SI210	0.8%	104.63	0.80
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.33	2SI400	0.1%	711.89	0.59
Weighted Avg Delay (Min per Operation)					4.04				17.26				42.62
Computed Avg Delay (Min per Operation)*					3.67				13.59				35.44

* Based on 10 year weather history

Alternative: CAT I on 16L/16X and CAT II/III on 16R - #13

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.4%	27.0%	17.4	14.5
South VFR2	0SV205	15.3%	15.4%	17.6	14.9
South IFR1	0SI105	13.5%	14.0%	17.6	14.9
South IFR2	0SI200	3.2%	3.5%	17.6	14.6
South IFR3	0SI200	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV205B	4.3%	4.3%	17.6	14.9
North IFR1	0SI105B	2.8%	2.8%	17.6	14.9
North IFR2	0SI200	1.9%	2.1%	17.6	14.6
North IFR3	0SI200	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	3.14	1.37	2.26
Trav. Time	17.50	14.67	16.08

Total Delay (Hours per Year)
12,977

Travel Time Offset (Hours per Year)
438

Total Savings (Hours per Year)
12,452

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.5%	27.1%	17.4	14.4
South VFR2	1SV205	15.4%	15.5%	17.7	14.9
South IFR1	1SI105	13.6%	14.1%	17.7	14.9
South IFR2	1SI200	2.9%	3.3%	17.6	14.5
South IFR3	1SI200	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV100	30.0%	29.0%	17.4	14.4
North VFR2	1SV205B	4.4%	4.3%	17.7	14.9
North IFR1	1SI105B	2.9%	2.9%	17.7	14.9
North IFR2	1SI200	1.8%	2.0%	17.6	14.5
North IFR3	1SI200	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	7.12	2.65	4.89
Trav. Time	17.53	14.62	16.08

Total Delay (Hours per Year)
34,599

Travel Time Offset (Hours per Year)
632

Total Savings (Hours per Year)
75,259

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105	27.9%	27.5%	18.1	14.4
South VFR2	2SV205	15.4%	15.6%	17.8	14.8
South IFR1	2SI105	13.6%	13.9%	17.8	14.9
South IFR2	2SI200	2.5%	3.0%	17.7	14.5
South IFR3	2SI200	0.6%	0.7%	17.7	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV105B	30.3%	29.3%	18.1	14.4
North VFR2	2SV205B	4.4%	4.4%	17.8	14.7
North IFR1	2SI105B	2.9%	2.8%	17.8	14.9
North IFR2	2SI200	1.6%	1.9%	17.7	14.5
North IFR3	2SI200	0.7%	0.8%	17.7	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	15.19	4.14	9.67
Trav. Time	17.95	14.56	16.26

Total Delay (Hours per Year)
84,551

Travel Time Offset
2,319

Total Savings (Hours per Year)
271,106

Average Delay per Operation Computation

CAT I on 16L/16X and CAT II/III on 16R - #13

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.2%	1.25	0.34	1SV100	27.3%	2.21	0.60	2SV105	27.7%	2.54	0.70
	VFR2	0SV205	15.4%	1.42	0.22	1SV205	15.5%	2.33	0.36	2SV205	15.5%	5.31	0.82
	IFR1	0SI105	13.8%	1.11	0.15	1SI105	13.9%	2.61	0.36	2SI105	13.7%	7.68	1.06
	IFR2	0SI200	3.3%	11.94	0.40	1SI200	3.1%	52.55	1.63	2SI200	2.8%	115.13	3.20
	IFR3	0SI200	0.8%	11.94	0.09	1SI200	0.7%	52.55	0.39	2SI200	0.7%	115.13	0.77
	IFR4	0SI400	0.1%	252.85	0.24	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.39
North	VFR1	0SV100	29.4%	1.25	0.37	1SV100	29.5%	2.21	0.65	2SV105B	29.8%	2.31	0.69
	VFR2	0SV205B	4.3%	1.31	0.06	1SV205B	4.4%	2.21	0.10	2SV205B	4.4%	3.67	0.16
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.9%	2.19	0.06	2SI105B	2.9%	5.69	0.16
	IFR2	0SI200	2.0%	11.94	0.24	1SI200	1.9%	52.55	0.99	2SI200	1.7%	115.13	1.96
	IFR3	0SI200	0.8%	11.94	0.10	1SI200	0.8%	52.55	0.41	2SI200	0.7%	115.13	0.83
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.40
Weighted Avg Delay (Min per Operation)					2.49				6.22				11.15
Computed Avg Delay (Min per Operation)*					2.26				4.89				9.67

* Based on 10 year weather history

Alternative: 2.5 nmi Intrail in IFR - #17

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	0SV100	27.8%	27.1%	17.4	14.5
South VFR2	0SV217	15.2%	15.4%	17.6	14.6
South IFR1	0SI117	13.2%	13.9%	17.6	14.6
South IFR2	0SI200	3.2%	3.5%	17.6	14.6
South IFR3	0SI200	0.7%	0.8%	17.6	14.6
South IFR4	0SI400	0.1%	0.1%	17.6	15.0
North VFR1	0SV100	30.0%	29.0%	17.4	14.5
North VFR2	0SV217	4.3%	4.3%	17.6	14.6
North IFR1	0SI117	2.7%	2.8%	17.6	14.6
North IFR2	0SI200	2.0%	2.1%	17.6	14.6
North IFR3	0SI200	0.8%	0.9%	17.6	14.6
North IFR4	0SI400	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	5.76	1.26	3.51
Trav. Time	17.48	14.54	16.01

Total Delay (Hours per Year)
20,199

Travel Time Offset
10

Total Savings (Hours per Year)
5,658

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	1SV100	29.0%	27.6%	17.4	14.4
South VFR2	1SV217	14.7%	15.3%	17.6	14.5
South IFR1	1SI117	12.5%	13.6%	17.6	14.5
South IFR2	1SI200	3.0%	3.3%	17.6	14.5
South IFR3	1SI200	0.7%	0.8%	17.6	14.5
South IFR4	1SI400	0.1%	0.1%	17.6	14.9
North VFR1	1SV100	30.6%	29.3%	17.4	14.4
North VFR2	1SV217	4.1%	4.2%	17.6	14.5
North IFR1	1SI117	2.5%	2.7%	17.6	14.5
North IFR2	1SI200	1.8%	2.0%	17.6	14.5
North IFR3	1SI200	0.7%	0.9%	17.6	14.5
North IFR4	1SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	22.18	2.59	12.39
Trav. Time	17.49	14.48	15.99

Total Delay (Hours per Year)
87,719

Travel Time Offset
12

Total Savings (Hours per Year)
22,759

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	2SV100	30.9%	28.0%	17.5	14.4
South VFR2	2SV217	13.7%	15.1%	17.6	14.5
South IFR1	2SI117	11.6%	13.3%	17.7	14.5
South IFR2	2SI200	2.9%	3.2%	17.7	14.5
South IFR3	2SI200	0.6%	0.8%	17.7	14.5
South IFR4	2SI400	0.1%	0.1%	17.6	14.9
North VFR1	2SV100	31.7%	30.0%	17.5	14.4
North VFR2	2SV217	3.8%	4.2%	17.6	14.5
North IFR1	2SI117	2.2%	2.6%	17.7	14.5
North IFR2	2SI200	1.7%	2.0%	17.7	14.5
North IFR3	2SI200	0.7%	0.8%	17.7	14.5
North IFR4	2SI400	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	63.66	11.63	37.65
Trav. Time	17.53	14.45	15.99

Total Delay (Hours per Year)
329,326

Travel Time Offset
5

Total Savings (Hours per Year)
28,646

Average Delay per Operation Computation

2.5 nmi Intrail in IFR (including VFR2) - #17

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.4%	1.25	0.34	1SV100	28.3%	2.21	0.63	2SV100	29.5%	9.11	2.68
	VFR2	0SV217	15.3%	3.95	0.60	1SV217	15.0%	22.06	3.31	2SV217	14.4%	83.71	12.04
	IFR1	0SI117	13.5%	6.08	0.82	1SI117	13.1%	36.39	4.76	2SI117	12.4%	92.14	11.46
	IFR2	0SI200	3.4%	11.94	0.40	1SI200	3.2%	52.55	1.67	2SI200	3.0%	115.13	3.47
	IFR3	0SI200	0.8%	11.94	0.09	1SI200	0.7%	52.55	0.39	2SI200	0.7%	115.13	0.81
	IFR4	0SI400	0.1%	252.85	0.24	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.41
North	VFR1	0SV100	29.5%	1.25	0.37	1SV100	30.0%	2.21	0.66	2SV100	30.8%	9.11	2.81
	VFR2	0SV217	4.3%	3.95	0.17	1SV217	4.2%	22.06	0.92	2SV217	4.0%	83.71	3.34
	IFR1	0SI117	2.7%	6.08	0.17	1SI117	2.6%	36.39	0.94	2SI117	2.4%	92.14	2.22
	IFR2	0SI200	2.0%	11.94	0.24	1SI200	1.9%	52.55	1.02	2SI200	1.8%	115.13	2.12
	IFR3	0SI200	0.8%	11.94	0.10	1SI200	0.8%	52.55	0.42	2SI200	0.8%	115.13	0.87
	IFR4	0SI400	0.1%	252.85	0.25	1SI400	0.1%	379.94	0.33	2SI400	0.1%	502.45	0.43
Weighted Avg Delay (Min per Operation)					3.80				15.40				42.66
Computed Avg Delay (Min per Operation)*					3.51				12.39				37.65

* Based on 10 year weather history

Alternative: GPS (w/o BFI Interaction & Glide Slope Interference) - #18

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV205B	15.3%	15.4%	17.6	14.9
South IFR1	0SI105B	13.4%	13.9%	17.6	14.9
South IFR2	0SI218	3.3%	3.5%	17.6	14.9
South IFR3	0SI218	0.8%	0.8%	17.6	14.9
South IFR4	0SI405B	0.1%	0.1%	18.7	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV205B	4.3%	4.3%	17.6	14.9
North IFR1	0SI105B	2.7%	2.8%	17.6	14.9
North IFR2	0NI205B	2.1%	2.2%	17.6	14.9
North IFR3	0SI218	0.8%	0.9%	17.6	14.9
North IFR4	0SI405B	0.1%	0.2%	18.7	14.5

	Arr	Dep	Tot
Delay	1.54	1.19	1.37
Trav. Time	17.50	14.69	16.10

Total Delay (Hours per Year)
7,855

Travel Time Offset (Hours per Year)
519

Total Savings (Hours per Year)
17,493

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.3%	27.0%	17.4	14.4
South VFR2	1SV205B	15.3%	15.5%	17.7	14.9
South IFR1	1SI105B	13.4%	14.1%	17.7	14.9
South IFR2	1SI218	3.4%	3.3%	17.7	14.8
South IFR3	1SI218	0.8%	0.8%	17.7	14.8
South IFR4	1SI405B	0.1%	0.1%	18.7	14.4
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV205B	4.3%	4.3%	17.7	14.9
North IFR1	1SI105B	2.7%	2.8%	17.7	14.9
North IFR2	1NI205B	2.1%	2.2%	17.7	14.9
North IFR3	1SI218	0.8%	0.8%	17.7	14.8
North IFR4	1SI405B	0.1%	0.2%	18.7	14.4

	Arr	Dep	Tot
	2.33	2.85	2.59
Trav. Time	17.54	14.64	16.09

Total Delay (Hours per Year)
18,344

Travel Time Offset (Hours per Year)
741

Total Savings (Hours per Year)
91,405

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105B	27.1%	27.2%	18.1	14.4
South VFR2	2SV205B	15.2%	15.6%	17.8	14.7
South IFR1	2SI105B	13.3%	13.8%	17.8	14.9
South IFR2	2SI218	3.1%	3.3%	18.1	14.6
South IFR3	2SI218	0.7%	0.8%	18.1	14.6
South IFR4	2SI405B	0.1%	0.1%	18.8	14.3
North VFR1	2SV105B	29.5%	29.0%	18.1	14.4
North VFR2	2SV205B	4.3%	4.3%	17.8	14.7
North IFR1	2SI105B	2.7%	2.8%	17.8	14.9
North IFR2	2NI205B	2.0%	2.0%	17.8	14.8
North IFR3	2SI218	1.9%	0.8%	18.1	14.6
North IFR4	2SI405B	0.1%	0.2%	18.8	14.3

	Arr	Dep	Tot
	4.90	4.20	4.55
Trav. Time	17.99	14.57	16.28

Total Delay (Hours per Year)
39,804

Travel Time Offset
2,515

Total Savings (Hours per Year)
315,657

Average Delay per Operation Computation

GPS (No BFI Interaction / No Glide Slope Protection Area) - #18

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.1%	2.21	0.60	2SV105B	27.2%	2.31	0.63
	VFR2	0SV205B	15.4%	1.31	0.20	1SV205B	15.4%	2.33	0.36	2SV205B	15.4%	3.67	0.56
	IFR1	0SI105B	13.7%	1.39	0.19	1SI105B	13.7%	2.61	0.36	2SI105B	13.6%	5.69	0.77
	IFR2	0SI218	3.4%	2.24	0.08	1SI218	3.4%	8.76	0.29	2SI218	3.2%	21.19	0.68
	IFR3	0SI218	0.8%	2.24	0.02	1SI218	0.8%	8.76	0.07	2SI218	0.8%	21.19	0.16
	IFR4	0SI405B	0.1%	11.21	0.02	1SI405B	0.1%	67.98	0.08	2SI405B	0.1%	111.46	0.14
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.3%	2.21	0.65	2SV105B	29.3%	2.31	0.68
	VFR2	0SV205B	4.3%	1.31	0.06	1SV205B	4.3%	2.21	0.09	2SV205B	4.3%	3.67	0.16
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.8%	2.19	0.06	2SI105B	2.8%	5.69	0.16
	IFR2	0NI205B	2.1%	1.72	0.04	1NI205B	2.1%	3.70	0.08	2NI205B	2.0%	23.39	0.46
	IFR3	0SI218	0.9%	2.24	0.02	1SI218	0.8%	8.76	0.07	2SI218	1.4%	21.19	0.29
	IFR4	0SI405B	0.2%	11.21	0.02	1SI405B	0.1%	67.98	0.10	2SI405B	0.1%	111.46	0.15
Weighted Avg Delay (Min per Operation)					1.37				2.81				4.84
Computed Avg Delay (Min per Operation)*					1.37				2.59				4.55

* Based on 10 year weather history

Alternative: #5 w/o BFI Interaction - #18A

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV205B	15.3%	15.4%	17.6	14.9
South IFR1	0SI105B	13.4%	14.1%	17.6	14.9
South IFR2	0SI205B	3.3%	3.3%	18.4	14.8
South IFR3	0SI205B	0.8%	0.8%	18.4	14.8
South IFR4	0SI405B	0.1%	0.2%	18.7	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV205B	4.3%	4.3%	17.6	14.9
North IFR1	0SI105B	2.7%	2.8%	17.6	14.9
North IFR2	0NI205B	2.1%	2.2%	17.6	14.9
North IFR3	0SI205B	0.8%	0.8%	18.4	14.8
North IFR4	0SI405B	0.1%	0.2%	18.7	14.5

	Arr	Dep	Tot
Delay	1.69	1.74	1.72
Trav. Time	17.54	14.69	16.11

Total Delay (Hours per Year)
9,869

Travel Time Offset (Hours per Year)
603

Total Savings (Hours per Year)
15,395

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.3%	27.0%	17.4	14.4
South VFR2	1SV205B	15.4%	15.5%	17.7	14.9
South IFR1	1SI105B	13.6%	14.2%	17.7	14.9
South IFR2	1SI205B	3.0%	3.1%	19.3	14.7
South IFR3	1SI205B	0.7%	0.7%	19.3	14.7
South IFR4	1SI405B	0.1%	0.2%	18.7	14.4
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV205B	4.3%	4.3%	17.7	14.9
North IFR1	1SI105B	2.7%	2.9%	17.7	14.9
North IFR2	1NI205B	2.1%	2.2%	17.7	14.9
North IFR3	1SI205B	0.7%	0.8%	19.3	14.7
North IFR4	1SI405B	0.1%	0.2%	18.7	14.4

	Arr	Dep	Tot
	3.79	3.21	3.50
Trav. Time	17.61	14.63	16.12

Total Delay (Hours per Year)
24,789

Travel Time Offset (Hours per Year)
969

Total Savings (Hours per Year)
84,732

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105B	27.7%	3.6%	18.1	14.4
South VFR2	2SV205B	15.5%	20.7%	17.8	14.7
South IFR1	2SI105B	13.8%	18.3%	17.8	14.9
South IFR2	2SI405B	2.5%	4.2%	18.8	14.3
South IFR3	2SI405B	0.6%	1.0%	18.8	14.3
South IFR4	2SI405B	0.1%	0.2%	18.8	14.3
North VFR1	2SV105B	30.2%	38.8%	18.1	14.4
North VFR2	2SV205B	4.4%	5.8%	17.8	14.7
North IFR1	2SI105B	2.9%	3.7%	17.8	14.9
North IFR2	2NI205B	1.5%	2.5%	17.8	14.8
North IFR3	2SI405B	0.6%	1.1%	18.8	14.3
North IFR4	2SI405B	0.1%	0.2%	18.8	14.3

	Arr	Dep	Tot
	12.63	3.11	7.87
Trav. Time	18.01	14.60	16.31

Total Delay (Hours per Year)
68,848

Travel Time Offset
2,761

Total Savings (Hours per Year)
286,367

Average Delay per Operation Computation

GPS (No BFI Interaction) - #18A

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.2%	2.21	0.60	2SV105B	15.7%	2.31	0.36
	VFR2	0SV205B	15.4%	1.31	0.20	1SV205B	15.5%	2.21	0.34	2SV205B	18.1%	3.67	0.66
	IFR1	0SI105B	13.7%	1.39	0.19	1SI105B	13.9%	2.19	0.30	2SI105B	16.0%	5.69	0.91
	IFR2	0SI205B	3.3%	9.35	0.31	1SI205B	3.1%	43.71	1.34	2SI405B	3.4%	111.46	3.74
	IFR3	0SI205B	0.8%	9.35	0.07	1SI205B	0.7%	43.71	0.31	2SI405B	0.8%	111.46	0.87
	IFR4	0SI405B	0.1%	11.21	0.02	1SI405B	0.1%	50.95	0.07	2SI405B	0.2%	111.46	0.18
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.4%	2.21	0.65	2SV105B	34.5%	2.31	0.80
	VFR2	0SV205B	4.3%	1.31	0.06	1SV205B	4.3%	2.21	0.09	2SV205B	5.1%	3.67	0.19
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.8%	2.19	0.06	2SI105B	3.3%	5.69	0.19
	IFR2	0NI205B	2.2%	1.72	0.04	1NI205B	2.2%	3.70	0.08	2NI205B	2.0%	23.39	0.48
	IFR3	0SI205B	0.8%	9.35	0.08	1SI205B	0.8%	43.71	0.33	2SI405B	0.9%	111.46	0.95
	IFR4	0SI405B	0.2%	11.21	0.02	1SI405B	0.1%	50.95	0.08	2SI405B	0.2%	111.46	0.18
Weighted Avg Delay (Min per Operation)					1.72				4.27				9.50
Computed Avg Delay (Min per Operation)*					1.72				3.50				7.87

* Based on 10 year weather history

Alternative: #5 w/o Glide Slope Interference - #18B

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	0SV100	27.3%	27.0%	17.4	14.5
South VFR2	0SV205	15.3%	15.4%	17.6	14.9
South IFR1	0SI105	13.4%	13.9%	17.6	14.9
South IFR2	0SI205C	3.3%	3.5%	17.6	14.9
South IFR3	0SI205C	0.8%	0.8%	17.6	14.9
South IFR4	0SI405	0.1%	0.1%	18.7	14.5
North VFR1	0SV100	29.8%	28.9%	17.4	14.5
North VFR2	0SV205B	4.3%	4.3%	17.6	14.9
North IFR1	0SI105B	2.7%	2.8%	17.6	14.9
North IFR2	0NI205B	2.1%	2.2%	17.6	14.9
North IFR3	0SI205C	0.8%	0.9%	17.6	14.9
North IFR4	0SI405	0.1%	0.2%	18.7	14.5

	Arr	Dep	Tot
Delay	1.56	1.22	1.39
Trav. Time	17.50	14.69	16.10

Total Delay (Hours per Year)
7,999

Travel Time Offset (Hours per Year)
519

Total Savings (Hours per Year)
17,350

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	1SV100	27.3%	27.0%	17.4	14.4
South VFR2	1SV205	15.3%	15.5%	17.7	14.9
South IFR1	1SI105	13.4%	14.1%	17.7	14.9
South IFR2	1SI205C	3.3%	3.3%	17.7	14.8
South IFR3	1SI205C	0.8%	0.8%	17.7	14.8
South IFR4	1SI405	0.1%	0.1%	18.7	14.4
North VFR1	1SV100	29.8%	28.9%	17.4	14.4
North VFR2	1SV205B	4.3%	4.3%	17.7	14.9
North IFR1	1SI105B	2.7%	2.8%	17.7	14.9
North IFR2	1NI205B	2.1%	2.2%	17.7	14.9
North IFR3	1SI205C	0.8%	0.8%	17.7	14.8
North IFR4	1SI405	0.1%	0.2%	18.7	14.4

	Arr	Dep	Tot
	2.39	2.87	2.63
Trav. Time	17.54	14.64	16.09

Total Delay (Hours per Year)
18,627

Travel Time Offset (Hours per Year)
740

Total Savings (Hours per Year)
91,122

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops Arr	% of Ops Dep	Travel Time Arr	Travel Time Dep
South VFR1	2SV105	27.5%	27.2%	18.1	14.4
South VFR2	2SV205	15.4%	15.6%	17.8	14.7
South IFR1	2SI105	13.5%	13.8%	17.8	14.9
South IFR2	2SI205C	3.0%	3.3%	18.1	14.6
South IFR3	2SI205C	0.7%	0.8%	18.1	14.6
South IFR4	2SI405	0.1%	0.1%	18.8	14.3
North VFR1	2SV105B	29.9%	29.0%	18.1	14.4
North VFR2	2SV205B	4.3%	4.3%	17.8	14.7
North IFR1	2SI105B	2.8%	2.8%	17.8	14.9
North IFR2	2NI205B	2.0%	2.0%	17.8	14.8
North IFR3	2SI205C	0.7%	0.8%	18.1	14.6
North IFR4	2SI405	0.1%	0.2%	18.8	14.3

	Arr	Dep	Tot
	5.80	3.98	4.89
Trav. Time	17.99	14.57	16.28

Total Delay (Hours per Year)
42,779

Travel Time Offset
2,508

Total Savings (Hours per Year)
312,690

Average Delay per Operation Computation

GPS (No Glide Slope Interference) - #18B

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV100	27.1%	1.25	0.34	1SV100	27.1%	2.21	0.60	2SV105	27.4%	2.54	0.70
	VFR2	0SV205	15.4%	1.42	0.22	1SV205	15.4%	2.33	0.36	2SV205	15.5%	5.31	0.82
	IFR1	0SI105	13.7%	1.11	0.15	1SI105	13.7%	2.61	0.36	2SI105	13.7%	7.68	1.05
	IFR2	0SI205C	3.4%	2.34	0.08	1SI205C	3.3%	9.58	0.32	2SI205C	3.2%	34.77	1.10
	IFR3	0SI205C	0.8%	2.34	0.02	1SI205C	0.8%	9.58	0.08	2SI205C	0.7%	34.77	0.26
	IFR4	0SI405	0.1%	22.64	0.03	1SI405	0.1%	67.98	0.09	2SI405	0.1%	141.70	0.18
North	VFR1	0SV100	29.3%	1.25	0.37	1SV100	29.3%	2.21	0.65	2SV105B	29.5%	2.31	0.68
	VFR2	0SV205B	4.3%	1.31	0.06	1SV205B	4.3%	2.21	0.09	2SV205B	4.3%	3.67	0.16
	IFR1	0SI105B	2.8%	1.39	0.04	1SI105B	2.8%	2.19	0.06	2SI105B	2.8%	5.69	0.16
	IFR2	0NI205B	2.1%	1.72	0.04	1NI205B	2.1%	3.70	0.08	2NI205B	2.0%	23.39	0.47
	IFR3	0SI205C	0.9%	2.34	0.02	1SI205C	0.8%	9.58	0.08	2SI205C	0.8%	34.77	0.27
	IFR4	0SI405	0.2%	22.64	0.03	1SI405	0.1%	67.98	0.10	2SI405	0.1%	141.70	0.19
Weighted Avg Delay (Min per Operation)					1.39				2.86				6.03
Computed Avg Delay (Min per Operation)*					1.39				2.63				4.89

* Based on 10 year weather history

Alternative: Demand Mangement Strategy - #20

Demand : Baseline - 1010 ops/day - 335,048 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	0SV120	27.8%	27.1%	17.4	14.5
South VFR2	0SV220	15.2%	15.4%	17.6	14.6
South IFR1	0SI120	13.1%	13.9%	17.6	14.6
South IFR2	0SI220	3.3%	3.6%	17.6	14.6
South IFR3	0SI220	0.8%	0.8%	17.6	14.6
South IFR4	0SI420	0.1%	0.1%	17.6	15.0
North VFR1	0SV120	30.0%	28.9%	17.4	14.5
North VFR2	0SV220	4.3%	4.3%	17.6	14.6
North IFR1	0SI120	2.7%	2.8%	17.6	14.6
North IFR2	0SI220	2.0%	2.2%	17.6	14.6
North IFR3	0SI220	0.8%	0.9%	17.6	14.6
North IFR4	0SI420	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	5.73	1.17	3.45
Trav. Time	17.47	14.52	16.00

Total Delay (Hours per Year)
19,281

Travel Time Offset

Total Savings (Hours per Year)
5,840

Demand: Future 1 - 1244 ops/day - 413,047 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	1SV120	29.1%	27.6%	17.4	14.4
South VFR2	1SV220	14.7%	15.3%	17.6	14.5
South IFR1	1SI120	12.4%	13.6%	17.6	14.5
South IFR2	1SI220	3.1%	3.4%	17.6	14.5
South IFR3	1SI220	0.7%	0.8%	17.6	14.5
South IFR4	1SI420	0.1%	0.1%	17.6	14.9
North VFR1	1SV120	30.6%	29.2%	17.4	14.4
North VFR2	1SV220	4.1%	4.2%	17.6	14.5
North IFR1	1SI120	2.4%	2.7%	17.6	14.5
North IFR2	1SI220	1.9%	2.1%	17.6	14.5
North IFR3	1SI220	0.8%	0.9%	17.6	14.5
North IFR4	1SI420	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	22.40	2.34	12.37
Trav. Time	17.51	14.47	15.99

Total Delay (Hours per Year)
85,148

Travel Time Offset

Total Savings (Hours per Year)
22,234

Demand: Future 2 - 1535 ops/day - 507,725 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	2SV120	30.8%	28.4%	17.5	14.4
South VFR2	2SV220	13.4%	14.8%	17.6	14.5
South IFR1	2SI120	11.9%	13.4%	17.7	14.5
South IFR2	2SI220	2.9%	3.2%	17.7	14.5
South IFR3	2SI220	0.7%	0.8%	17.7	14.5
South IFR4	2SI420	0.1%	0.1%	17.6	14.9
North VFR1	2SV120	31.6%	29.8%	17.5	14.4
North VFR2	2SV220	3.7%	4.1%	17.6	14.5
North IFR1	2SI120	2.3%	2.6%	17.7	14.5
North IFR2	2SI220	1.8%	2.0%	17.7	14.5
North IFR3	2SI220	0.7%	0.8%	17.7	14.5
North IFR4	2SI420	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	63.23	6.95	35.09
Trav. Time	17.53	14.45	15.99

Total Delay (Hours per Year)
298,043

Travel Time Offset

Total Savings (Hours per Year)
49,518

Average Delay per Operation Computation

Demand Management Strategy - #20

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV120	27.5%	1.09	0.30	1SV120	28.4%	1.90	0.54	2SV120	29.6%	5.36	1.59
	VFR2	0SV220	15.3%	4.55	0.70	1SV220	15.0%	23.20	3.47	2SV220	14.1%	85.99	12.11
	IFR1	0SI120	13.5%	7.65	1.03	1SI120	13.0%	41.87	5.45	2SI120	12.7%	98.61	12.51
	IFR2	0SI220	3.4%	8.13	0.28	1SI220	3.3%	43.30	1.41	2SI220	3.1%	105.19	3.23
	IFR3	0SI220	0.8%	8.13	0.06	1SI220	0.8%	43.30	0.33	2SI220	0.7%	105.19	0.75
	IFR4	0SI420	0.1%	240.65	0.23	1SI420	0.1%	368.05	0.33	2SI420	0.1%	484.58	0.40
North	VFR1	0SV120	29.4%	1.09	0.32	1SV120	29.9%	1.90	0.57	2SV120	30.7%	5.36	1.65
	VFR2	0SV220	4.3%	4.55	0.19	1SV220	4.2%	23.20	0.97	2SV220	3.9%	85.99	3.34
	IFR1	0SI120	2.7%	7.65	0.21	1SI120	2.6%	41.87	1.07	2SI120	2.5%	98.61	2.42
	IFR2	0SI220	2.1%	8.13	0.17	1SI220	2.0%	43.30	0.86	2SI220	1.9%	105.19	1.97
	IFR3	0SI220	0.9%	8.13	0.07	1SI220	0.8%	43.30	0.35	2SI220	0.8%	105.19	0.80
	IFR4	0SI420	0.1%	240.65	0.24	1SI420	0.1%	368.05	0.33	2SI420	0.1%	484.58	0.41
Weighted Avg Delay (Min per Operation)					3.80				15.68				41.19
Computed Avg Delay (Min per Operation)*					3.45				12.37				35.09

* Based on 10 year weather history

Alternative: Uniform Schedule Within Each Hour - #21

Demand : Baseline - 1040 ops/day - 345,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	0SV121	27.9%	27.2%	17.4	14.5
South VFR2	0SV221	15.3%	15.4%	17.6	14.6
South IFR1	0SI121	13.0%	13.8%	17.6	14.6
South IFR2	0SI221	3.3%	3.5%	17.6	14.6
South IFR3	0SI221	0.7%	0.8%	17.6	14.6
South IFR4	0SI421	0.1%	0.1%	17.6	15.0
North VFR1	0SV121	30.0%	29.0%	17.4	14.5
North VFR2	0SV221	4.3%	4.3%	17.6	14.6
North IFR1	0SI121	2.6%	2.8%	17.6	14.6
North IFR2	0SI221	2.0%	2.1%	17.6	14.6
North IFR3	0SI221	0.8%	0.9%	17.6	14.6
North IFR4	0SI421	0.1%	0.1%	17.6	15.0

	Arr	Dep	Tot
Delay	5.49	1.16	3.33
Trav. Time	17.47	14.52	16.00

Total Delay (Hours per Year)
18,582

Travel Time Offset
-74

Total Savings (Hours per Year)
7,359

Demand: Future 1 - 1280 ops/day - 425,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	1SV121	29.5%	27.8%	17.4	14.4
South VFR2	1SV221	14.4%	15.1%	17.6	14.5
South IFR1	1SI121	12.3%	13.5%	17.6	14.5
South IFR2	1SI221	3.1%	3.4%	17.6	14.5
South IFR3	1SI221	0.7%	0.8%	17.6	14.5
South IFR4	1SI421	0.1%	0.1%	17.6	14.9
North VFR1	1SV121	30.8%	29.4%	17.4	14.4
North VFR2	1SV221	4.0%	4.2%	17.6	14.5
North IFR1	1SI121	2.4%	2.7%	17.6	14.5
North IFR2	1SI221	1.9%	2.1%	17.6	14.5
North IFR3	1SI221	0.7%	0.9%	17.6	14.5
North IFR4	1SI421	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	26.90	2.33	14.62
Trav. Time	17.50	14.47	15.99

Total Delay (Hours per Year)
100,602

Travel Time Offset
20

Total Savings (Hours per Year)
9,867

Demand: Future 2 - 1581 ops/day - 525,000 ops/yr

Configuration	Exp. #	% of Ops		Travel Time	
		Arr	Dep	Arr	Dep
South VFR1	2SV121	31.1%	28.1%	17.5	14.4
South VFR2	2SV221	13.1%	14.8%	17.6	14.5
South IFR1	2SI121	11.9%	13.5%	17.7	14.5
South IFR2	2SI221	3.0%	3.2%	17.7	14.5
South IFR3	2SI221	0.7%	0.8%	17.7	14.5
South IFR4	2SI421	0.1%	0.1%	17.6	14.9
North VFR1	2SV121	31.7%	30.0%	17.5	14.4
North VFR2	2SV221	3.6%	4.1%	17.6	14.5
North IFR1	2SI121	2.3%	2.6%	17.7	14.5
North IFR2	2SI221	1.8%	2.0%	17.7	14.5
North IFR3	2SI221	0.7%	0.8%	17.7	14.5
North IFR4	2SI421	0.1%	0.1%	17.6	14.9

	Arr	Dep	Tot
Delay	61.77	10.58	36.18
Trav. Time	17.53	14.45	15.99

Total Delay (Hours per Year)
307,258

Travel Time Offset
-28

Total Savings (Hours per Year)
50,746

Exhibit 54

Average Delay per Operation Computation

Uniform Schedule Within Each Hour - #21

		Baseline				Future 1				Future 2			
Weather		Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.	Exp.	%	Del.	Prop.
South	VFR1	0SV121	27.5%	1.14	0.31	1SV121	28.7%	1.90	0.54	2SV121	29.6%	8.19	2.42
	VFR2	0SV221	15.3%	5.78	0.89	1SV221	14.8%	33.32	4.92	2SV221	13.9%	94.91	13.24
	IFR1	0SI121	13.4%	10.92	1.46	1SI121	12.9%	51.19	6.60	2SI121	12.7%	107.83	13.69
	IFR2	0SI221	3.4%	11.42	0.39	1SI221	3.2%	52.27	1.68	2SI221	3.1%	112.39	3.45
	IFR3	0SI221	0.8%	11.42	0.09	1SI221	0.8%	52.27	0.39	2SI221	0.7%	112.39	0.80
	IFR4	0SI421	0.1%	252.30	0.24	1SI421	0.1%	379.05	0.34	2SI421	0.1%	501.41	0.41
North	VFR1	0SV121	29.5%	1.14	0.34	1SV121	30.1%	1.90	0.57	2SV121	30.8%	8.19	2.53
	VFR2	0SV221	4.3%	5.78	0.25	1SV221	4.1%	33.32	1.37	2SV221	3.9%	94.91	3.66
	IFR1	0SI121	2.7%	10.92	0.30	1SI121	2.5%	51.19	1.29	2SI121	2.4%	107.83	2.64
	IFR2	0SI221	2.1%	11.42	0.24	1SI221	2.0%	52.27	1.02	2SI221	1.9%	112.39	2.10
	IFR3	0SI221	0.8%	11.42	0.10	1SI221	0.8%	52.27	0.42	2SI221	0.8%	112.39	0.86
	IFR4	0SI421	0.1%	252.30	0.25	1SI421	0.1%	379.05	0.34	2SI421	0.1%	501.41	0.42
Weighted Avg Delay (Min per Operation)					4.84				19.49				46.23
Computed Avg Delay (Min per Operation)*					3.33				14.62				36.18

* Based on 10 year weather history

Exhibit 55

Summary of Delays and Savings

	Baseline			Future 1			Future 2		
		Savings/Year			Savings/Year			Savings/Year	
	Delays	Hours	$1M	Delays	Hours	$1M	Delays	Hours	$1M
Basecase - #1	25,867			110,490			357,976		
Class 3&4 Runway 1500' from 16L/34R - #2	20,400	5,531	$8.9	77,520	32,775	$52.6	219,711	137,629	$220.8
Class 3&4 Runway 2500' from 16L/34R - #3	13,351	12,418	$19.9	41,965	68,145	$109.3	132,273	224,488	$360.1
Full Use Runway 2500' from 16L/34R - #5	10,272	14,988	$24.0	27,056	82,479	$132.3	72,391	283,080	$454.1
- #5 (North Flow Preferred)	10,272	14,990	$24.0	26,914	82,620	$132.5	70,642	284,815	$456.8
Full Use Runway 3300' from 16L/34R with PRM - #6	8,949	16,322	$26.2	23,302	86,199	$138.3	67,274	287,399	$461.0
Full Use Runway 3300' from 16L/34R - No PRM - #7	7,740	17,790	$28.5	18,025	91,871	$147.4	45,622	309,331	$496.2
Modified Full Use Runway (No Heavy A/C) 2500' from 16L/34R - #8	11,107	14,186	$22.8	28,012	81,542	$130.8	80,265	275,181	$441.4
Wake/Vortex Detection System - #10	21,120	4,725	$7.6	96,218	14,089	$22.6	309,992	47,793	$76.7
CAT I on 16L/16X and CAT II/III on 16R - #13	12,977	12,452	$20.0	34,599	75,259	$120.7	84,551	271,106	$434.9
2.5 nmi Intrail in IFR (including VFR2) - #17	20,199	5,658	$9.1	87,719	22,759	$36.5	329,326	28,646	$45.9
GPS (No BFI Interaction / No Glide Slope Protection Area) - #18	7,855	17,493	$28.1	18,344	91,405	$146.6	39,804	315,657	$506.3
GPS (No BFI Interaction) - #18A	9,869	15,395	$24.7	24,789	84,732	$135.9	68,848	286,367	$459.3
GPS (No Glide Slope Interference) - #18B	7,999	17,350	$27.8	18,627	91,122	$146.2	42,779	312,690	$501.6
Demand Management Strategy - #20 [1]	19,281	5,840	$9.4	85,148	22,234	$35.7	298,043	49,518	$79.4
Uniform Schedule Within Each Hour - #21	18,582	7,359	$11.8	100,602	9,867	$15.8	307,258	50,746	$81.4

[1] - Savings for this alternative are computed for only those operations remaining in the reduced schedule.

Appendix A

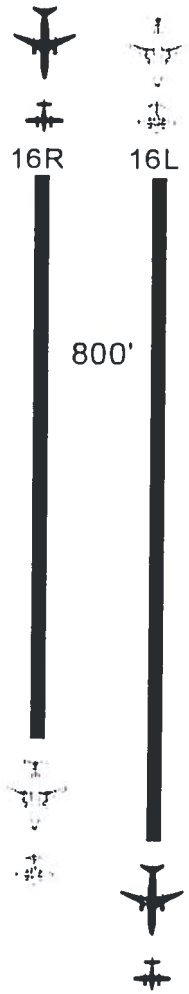
Runway Usage Diagrams

Experiment - 01

Base Case

VFR1

Ceiling > 5000'
Visibility > 5 sm



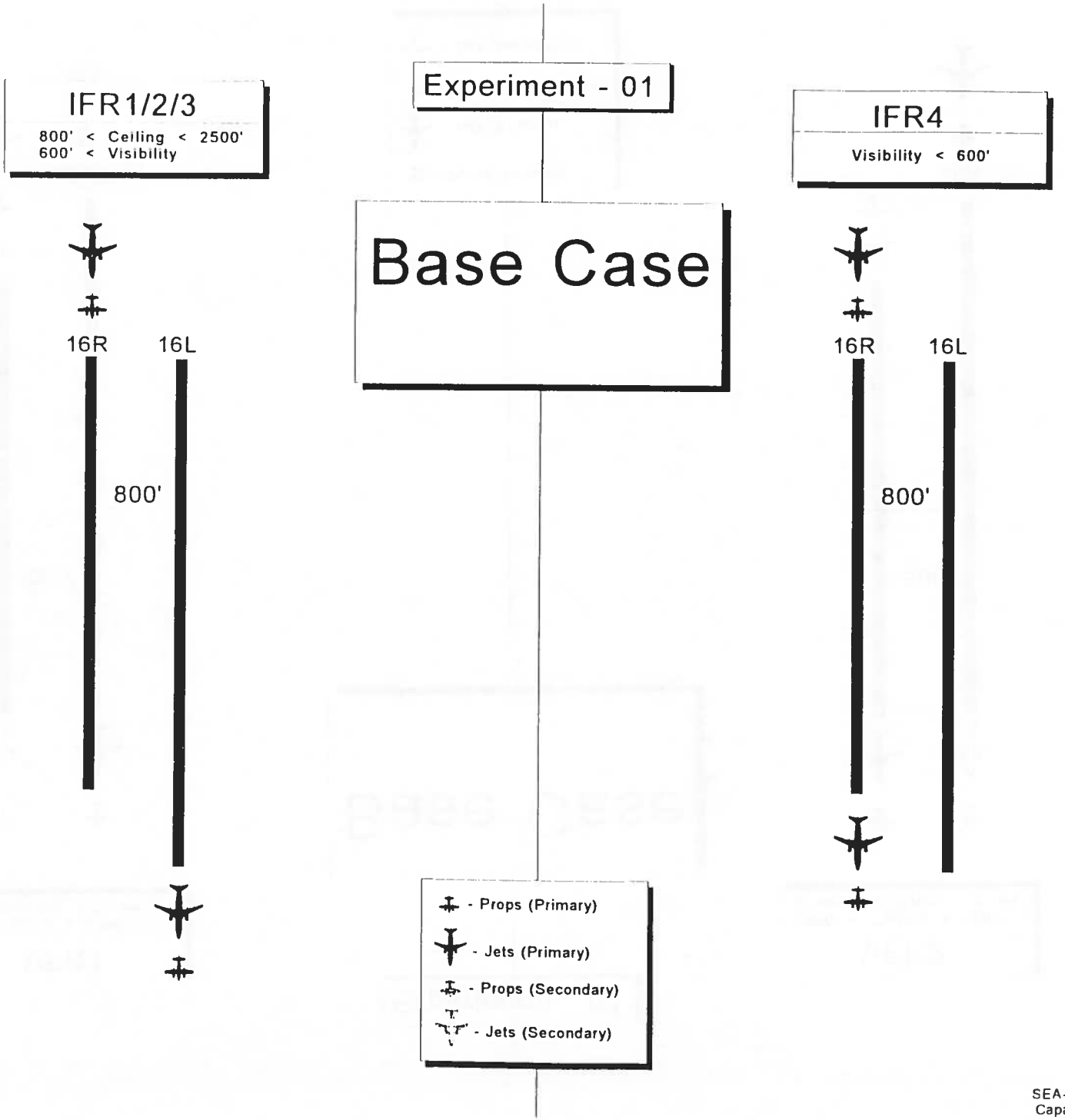
VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm

- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-2

SYN 0018913



SYN 0018914

EXP_01.GFD

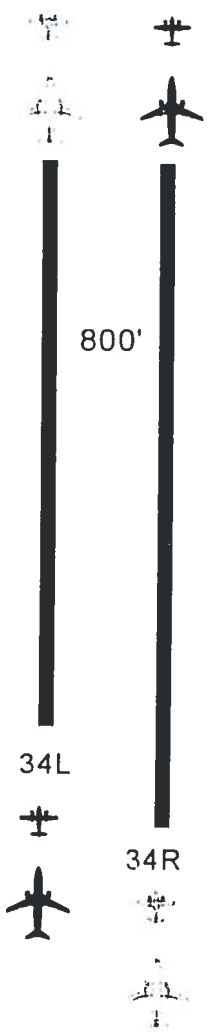
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 01

Base Case

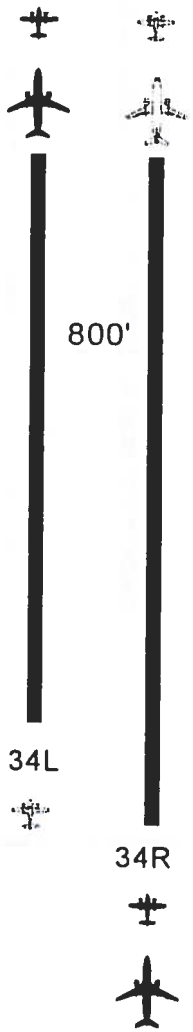
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



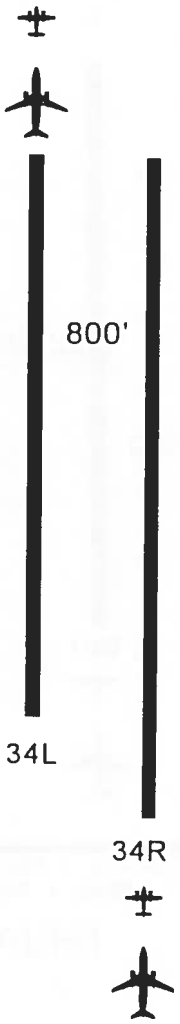
- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 01

Base Case

IFR1/2

800' < Ceiling < 2500'
1800' < Visibility < 2 sm



IFR3/4

Visibility < 1800'

- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-5

SYN 0018916

EXP_01.GED

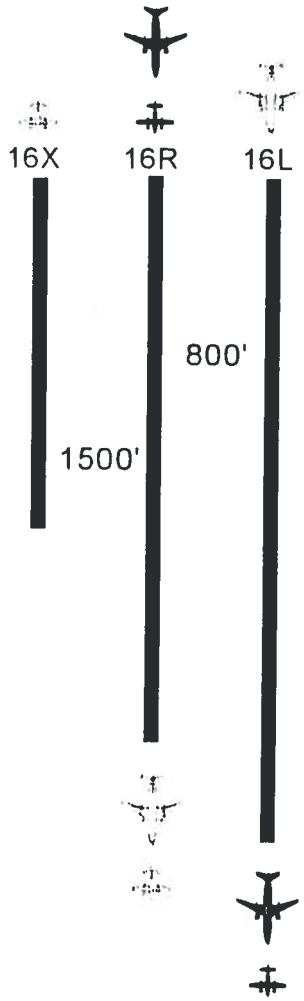
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 02

New Class 3 & 4 Runway w/ 1500' Separation

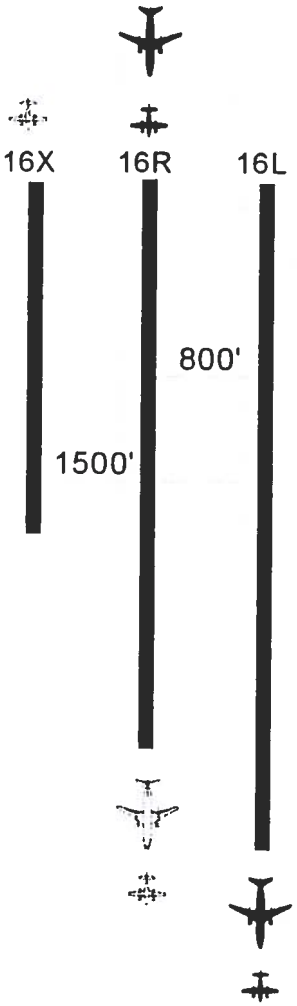
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



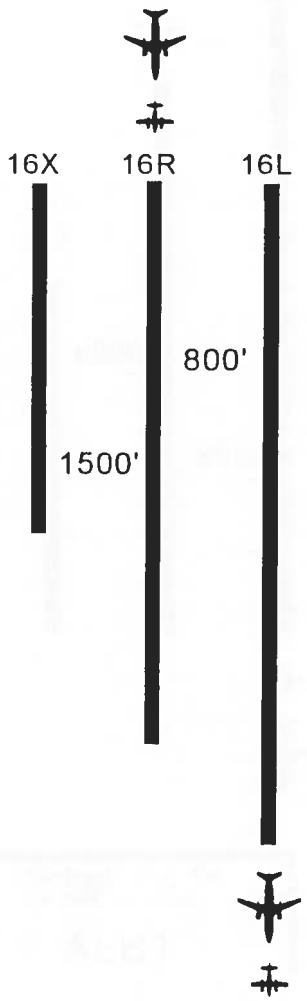
- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 02

New Class 3 & 4 Runway w/ 1500' Separation

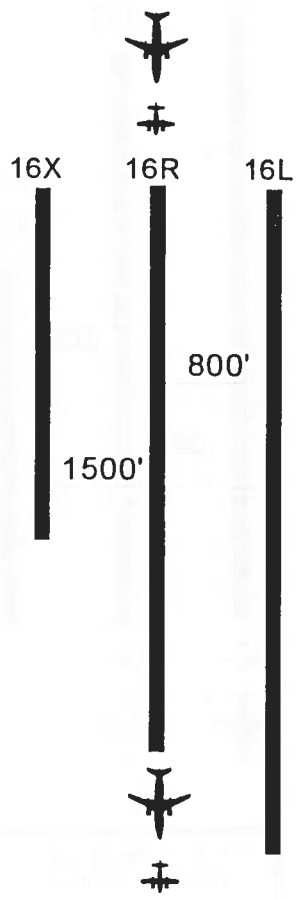
IFR1/2/3

800' < Ceiling < 2500'
600' < Visibility



IFR4

Visibility < 600'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-7

SYN 0018918

EXP_02 GED

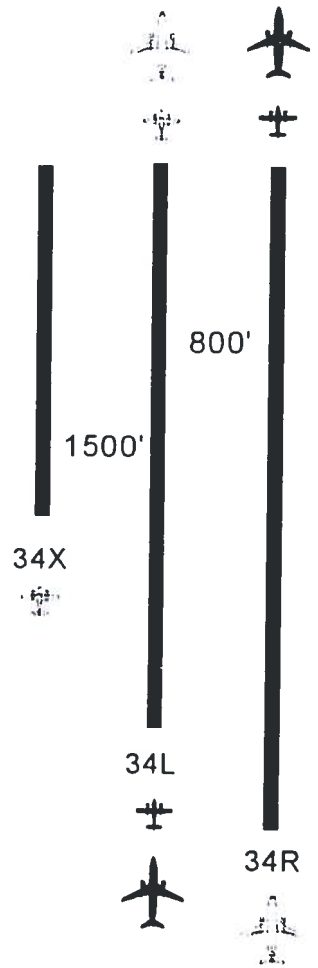
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 02

New Class 3 & 4 Runway w/ 1500' Separation

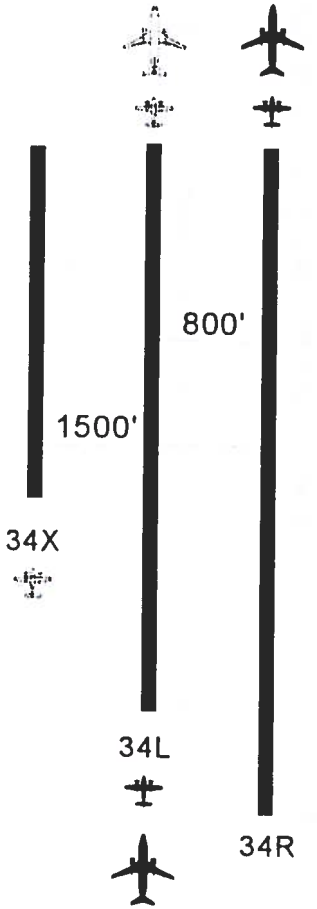
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 02

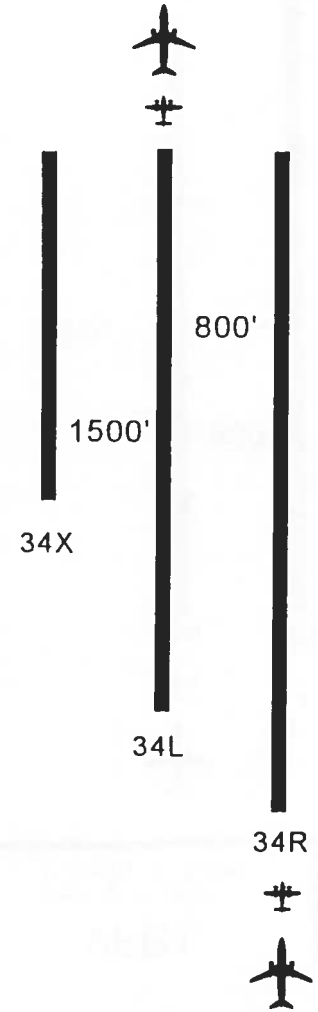
IFR1/2

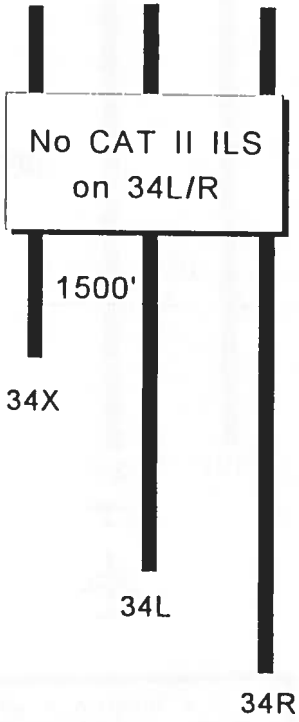
800' < Ceiling < 2500'
1800' < Visibility < 2 sm

IFR3/4

Visibility < 1800'

New Class 3 & 4 Runway w/ 1500' Separation





- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-9

SYN 0018920

EXP_02 GFD

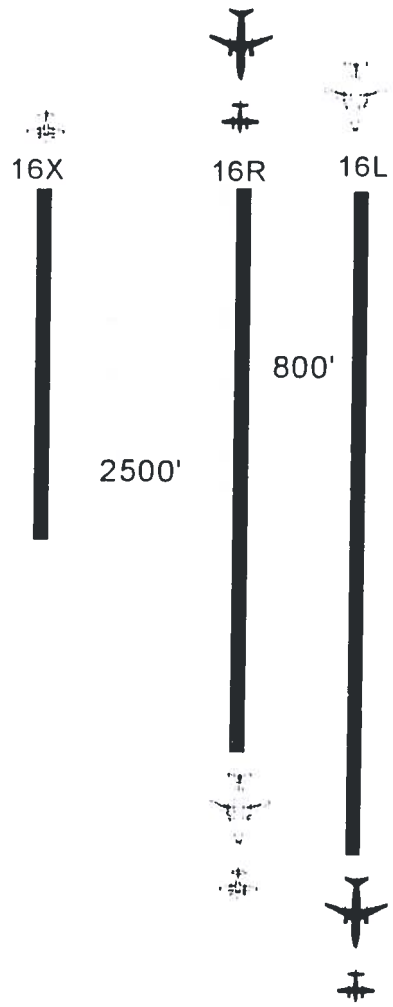
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 03

New Class 3 & 4 Runway w/ 2500' Separation

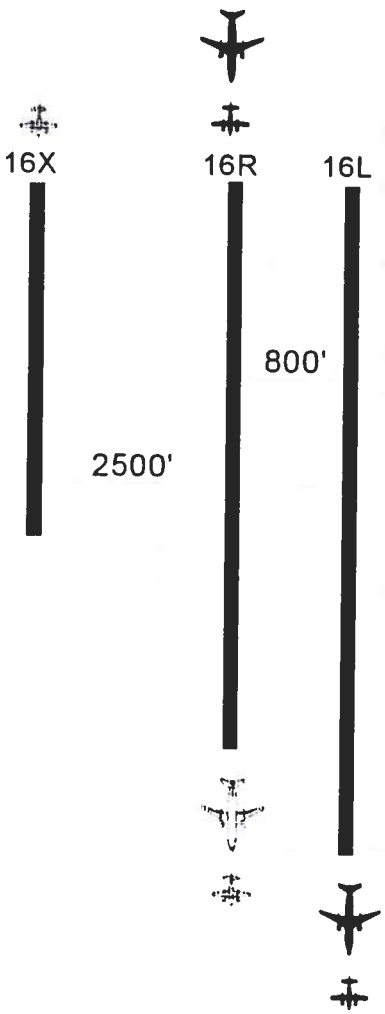
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm

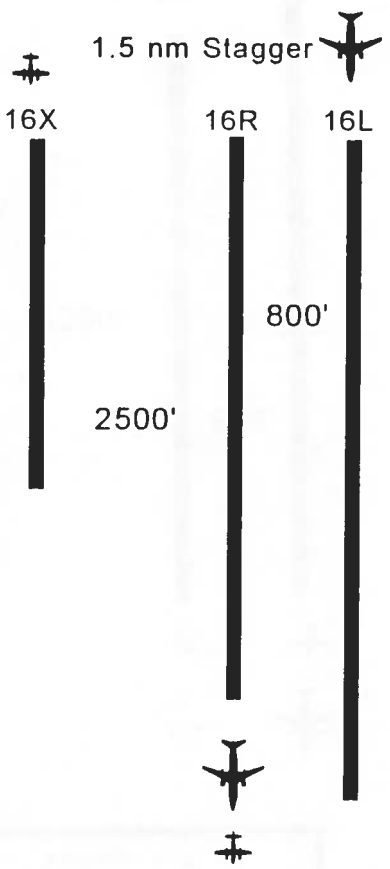


- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 03

IFR1/2

800' < Ceiling < 2500'
1800' < Visibility < 2 sm



New Class 3 & 4 Runway w/ 2500' Separation

- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

IFR3/4

See Current Airport

Same As Current Airport

A-11

SYN 0018922

EXP_03 GED

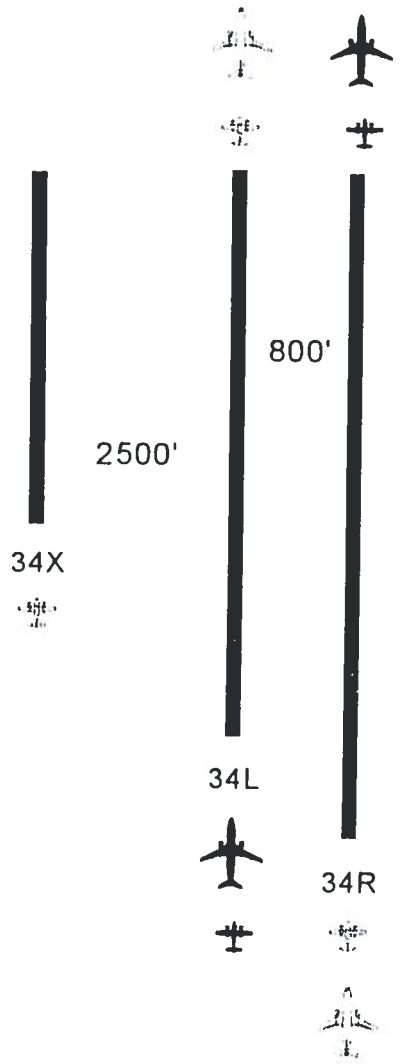
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 03

New Class 3 & 4 Runway w/ 2500' Separation

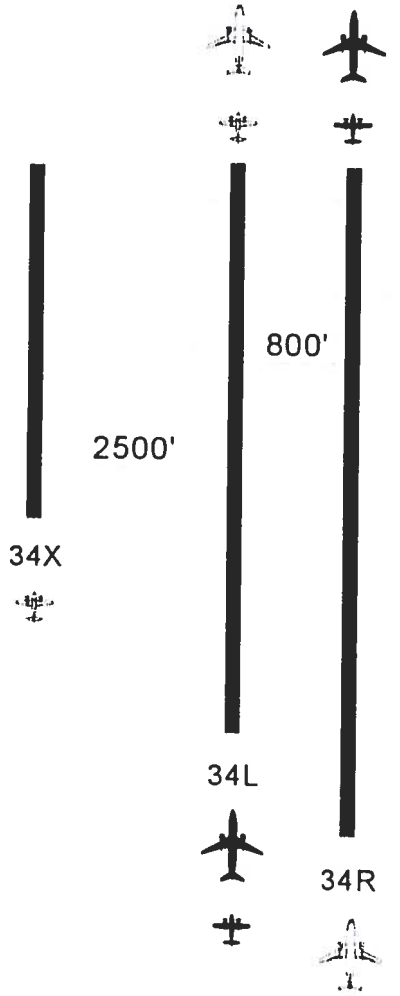
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-12

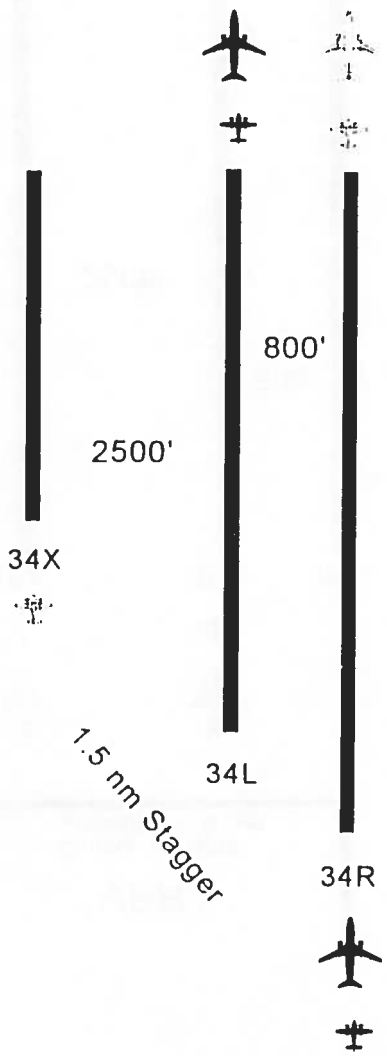
SYN 0018923

Experiment - 03

New Class 3 & 4 Runway w/ 2500' Separation

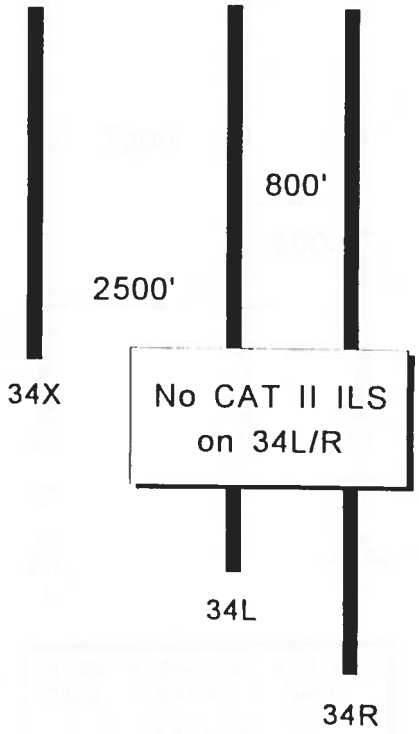
IFR1/2

800' < Ceiling < 2500'
1800' < Visibility < 2 sm



IFR3/4

Visibility < 1800'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-13

SYN 0018924

EXP_03 GED

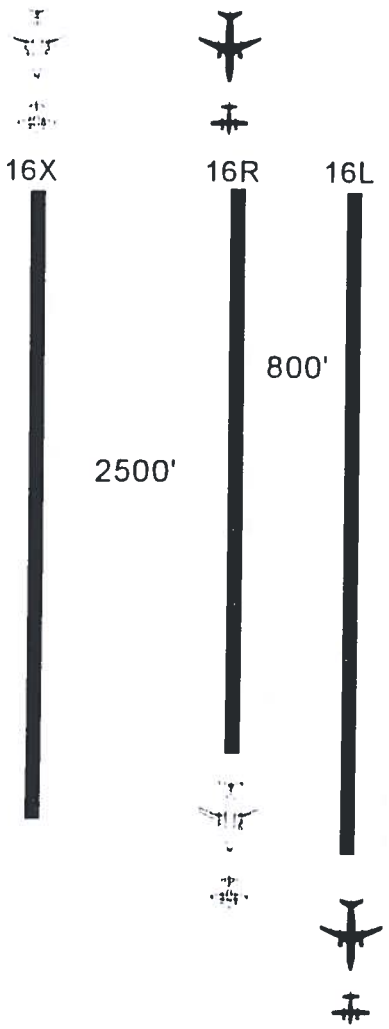
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 05

New Full Use Runway w/ 2500' Separation

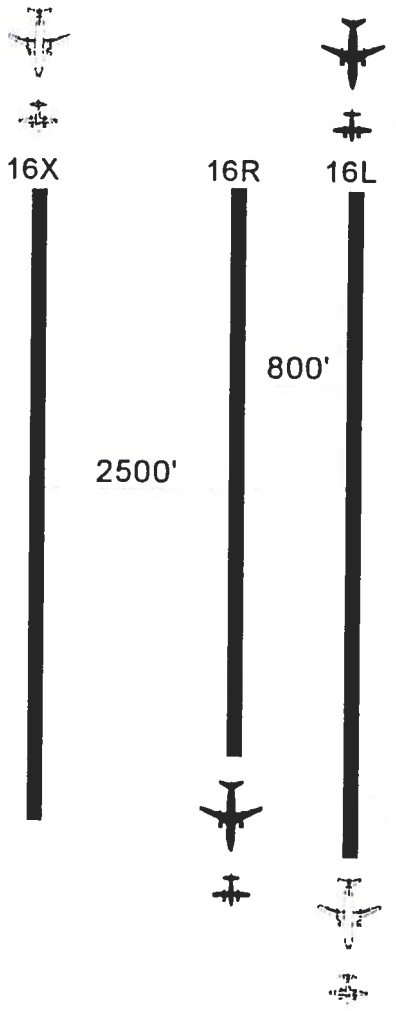
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



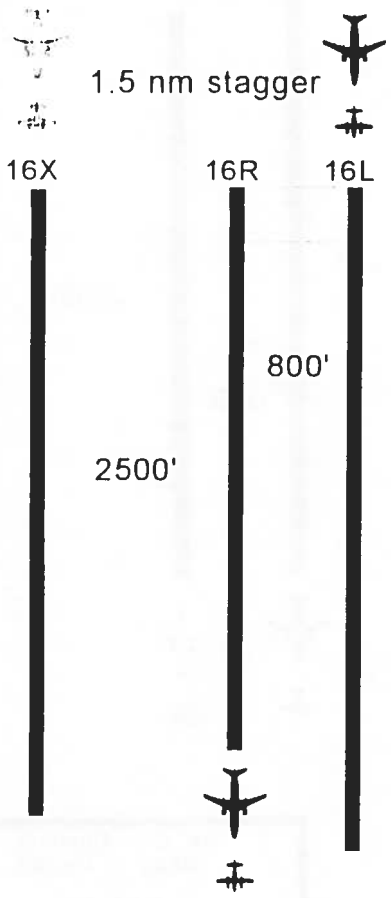
- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 05

New Full Use Runway w/ 2500' Separation

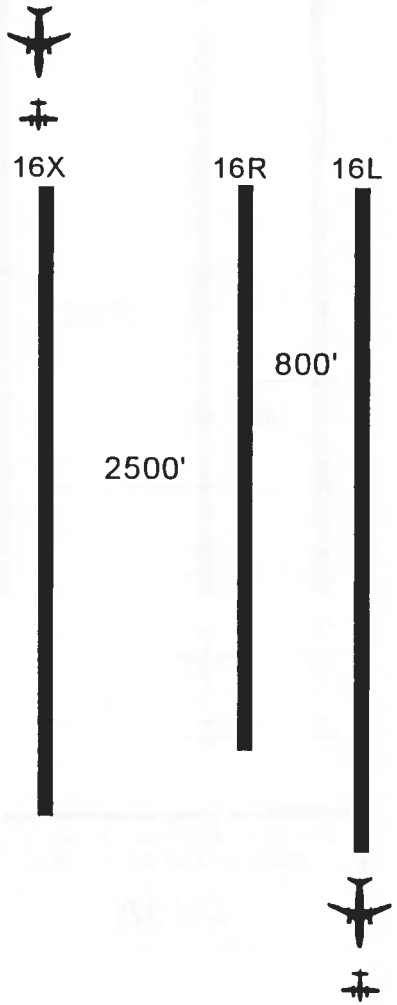
IFR1/2/3

800' < Ceiling < 2500'
600' < Visibility



IFR4

Visibility < 600'



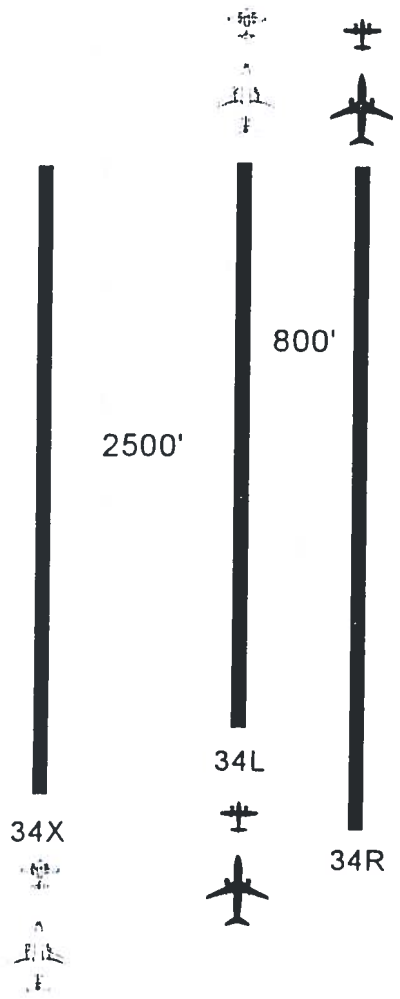
- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

Experiment - 05

New Full Use Runway w/ 2500' Separation

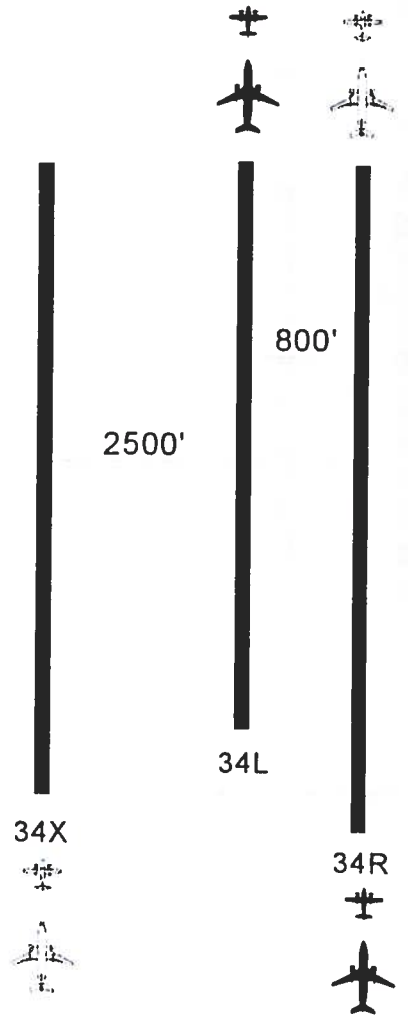
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



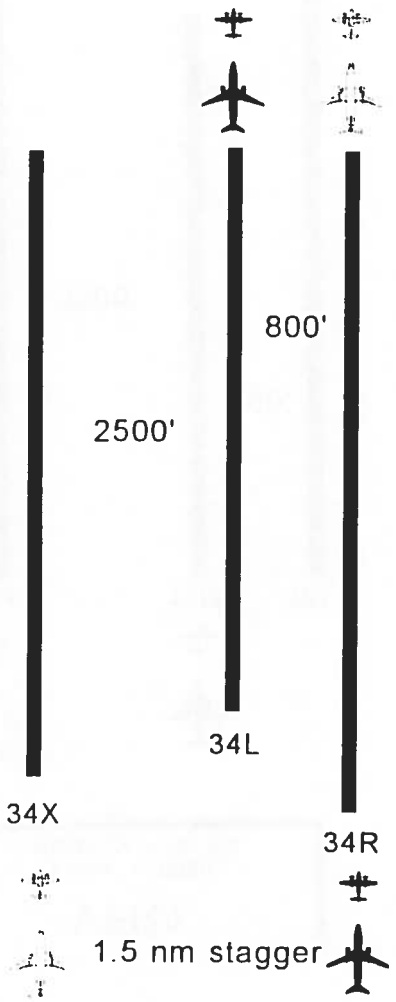
- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

SYN 0018927

Experiment - 05

IFR1/2

800' < Ceiling < 2500'
600' < Visibility < 2 sm

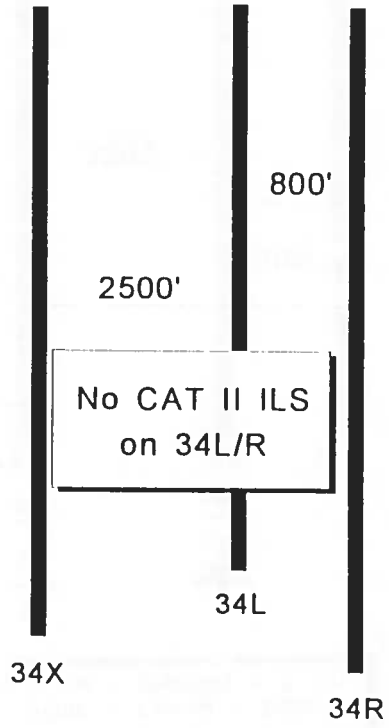


New Full Use Runway w/ 2500' Separation

- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

IFR3/4

Visibility < 1800'



A-17

SYN 0018928

EXP_05 GED

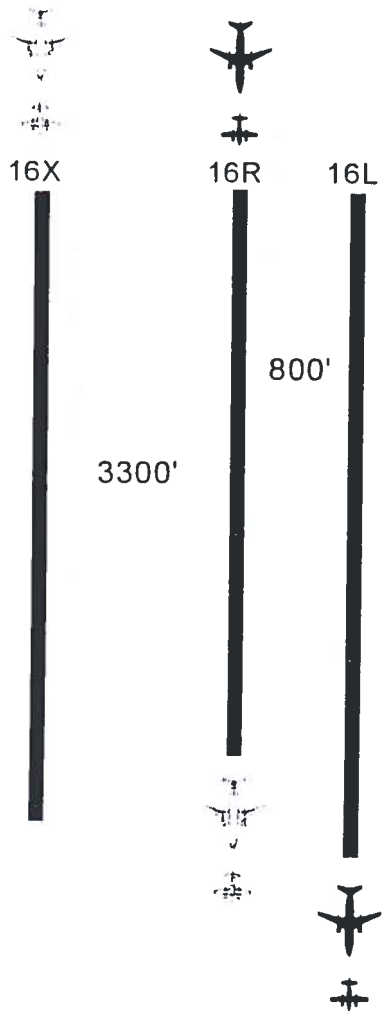
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 06

New Full Use Runway w/ 3300' Separation & PRM

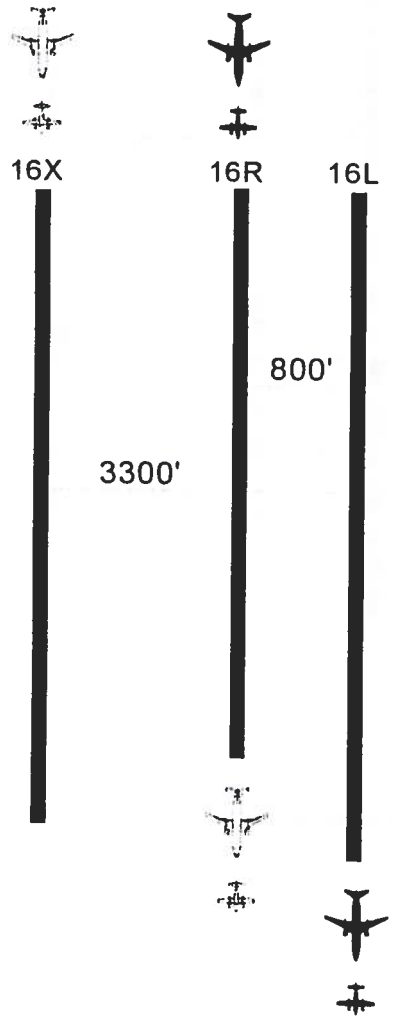
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-18

SYN 0018929

EXP_06 GFD

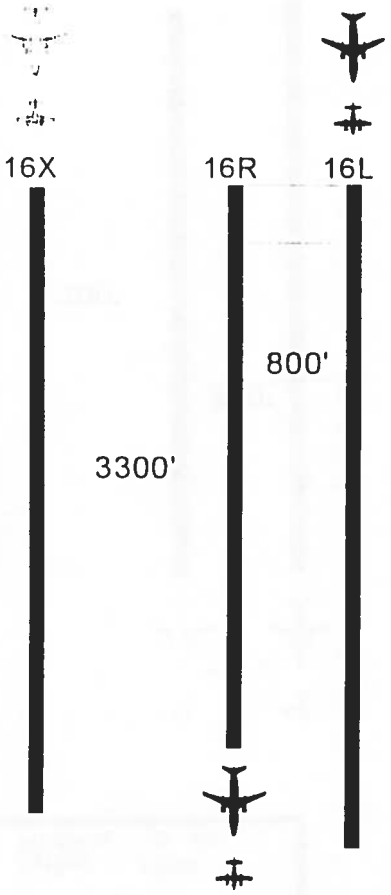
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 06

New Full Use Runway w/ 3300' Separation & PRM

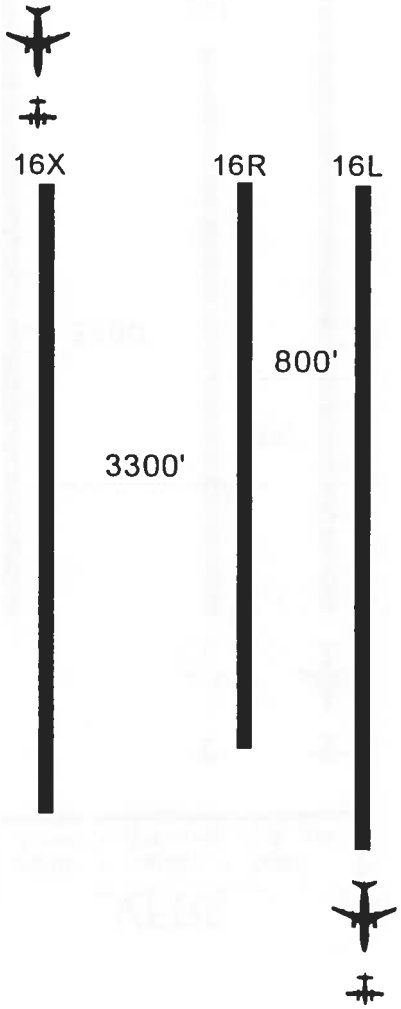
IFR1/2/3

650' < Ceiling < 2500'
600' < Visibility



IFR4

Visibility < 600'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-19

SYN 0018930

EXP_06 GED

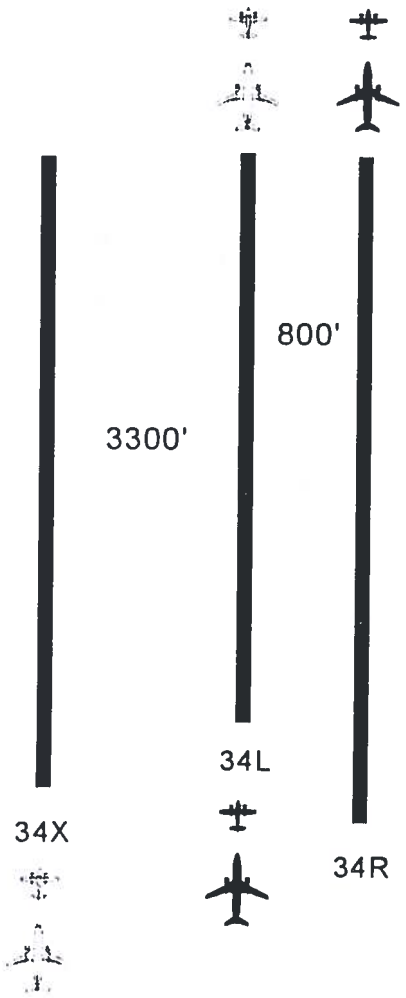
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 06

New Full Use Runway w/ 3300' Separation & PRM

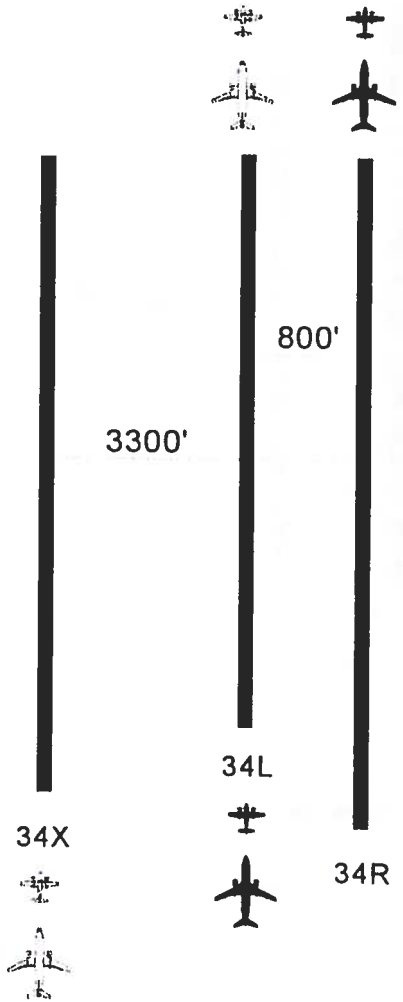
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-20

SYN 0018931

EXP_06 GED

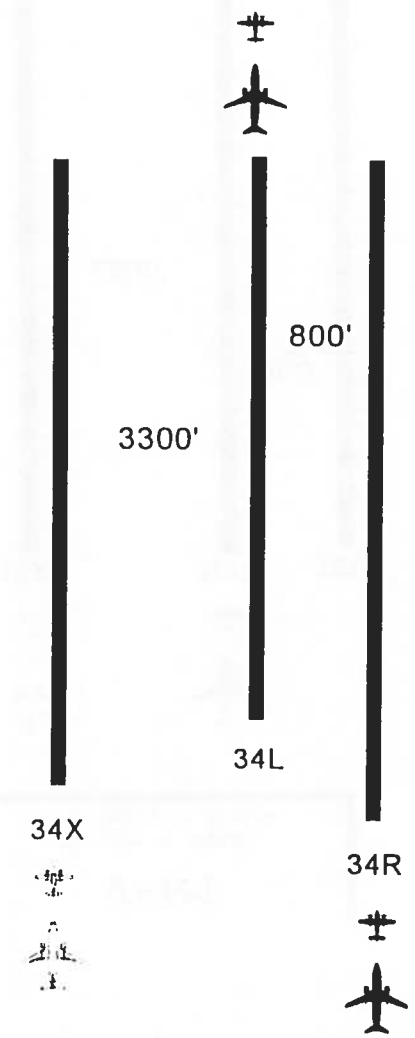
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 06

New Full Use Runway w/ 3300' Separation & PRM

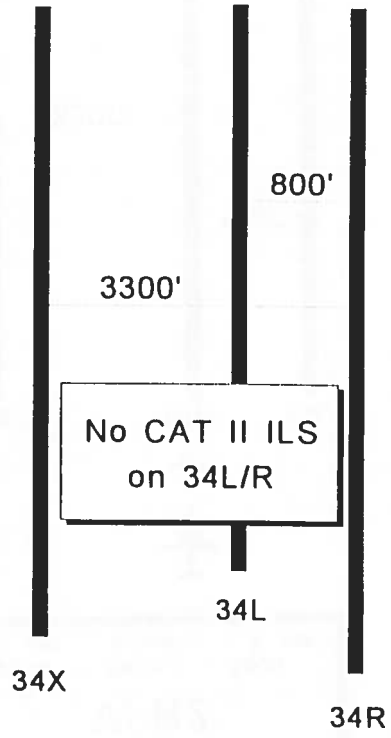
IFR1/2

800' < Ceiling < 2500'
1800' < Visibility < 2 sm



IFR3/4

Visibility < 1800'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-21

SYN 0018932

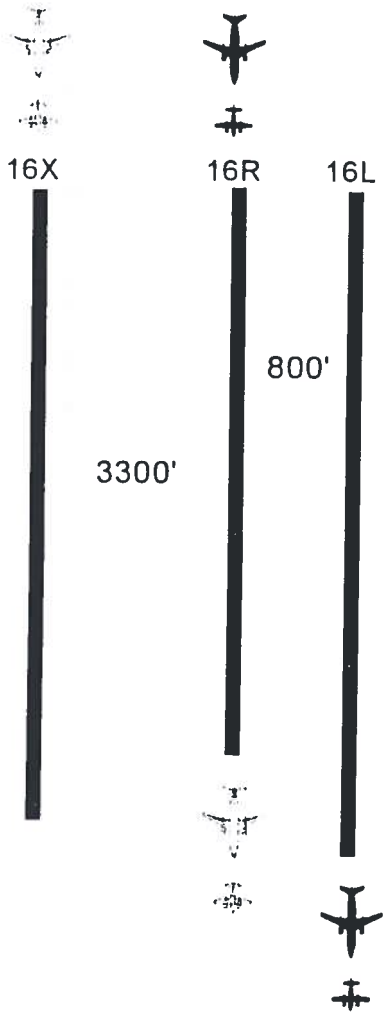
EXP_06 GED

SEA-TAC International Airport
Capacity Design Team Study

Experiment - 07

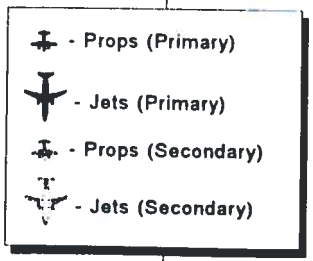
VFR1

Ceiling > 5000'
Visibility > 5 sm



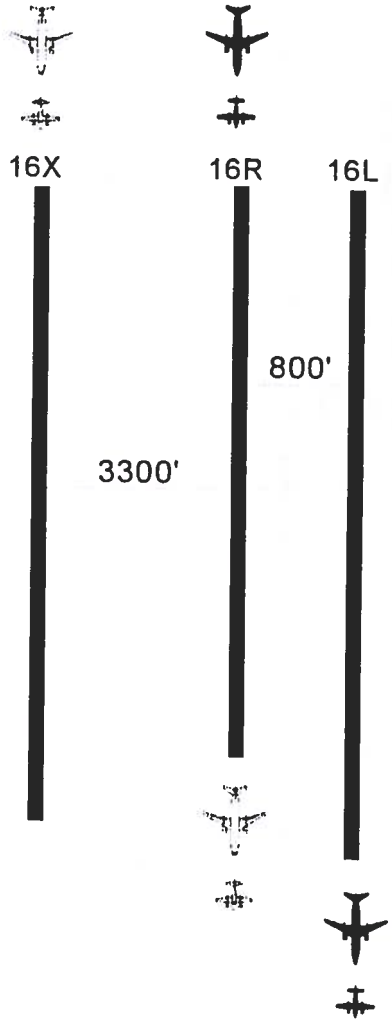
New Full Use Runway w/ 3300' Separation

No PRM



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



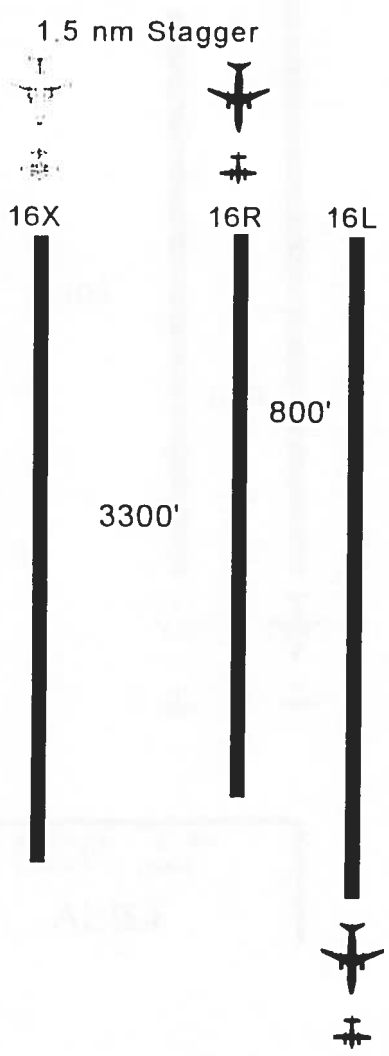
Experiment - 07

New Full Use Runway w/ 3300' Separation

No PRM

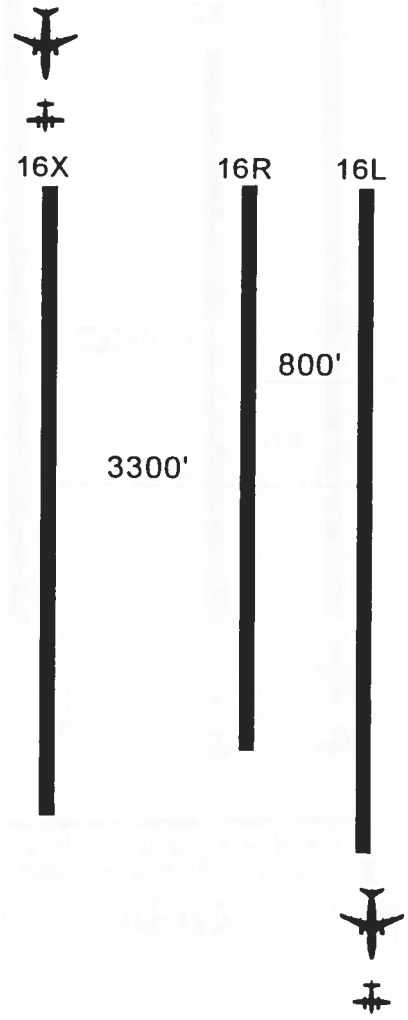
IFR1/2/3

800' < Ceiling < 2500'
600' < Visibility



IFR4

Visibility < 600'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-23

SYN 0018934

EXP_07 GED

SEA-TAC International Airport
Capacity Design Team Study

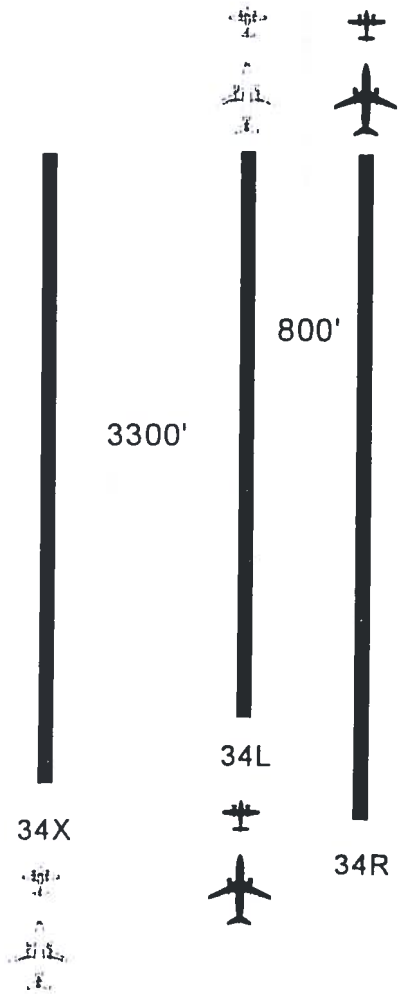
Experiment - 07

New Full Use Runway w/ 3300' Separation

No PRM

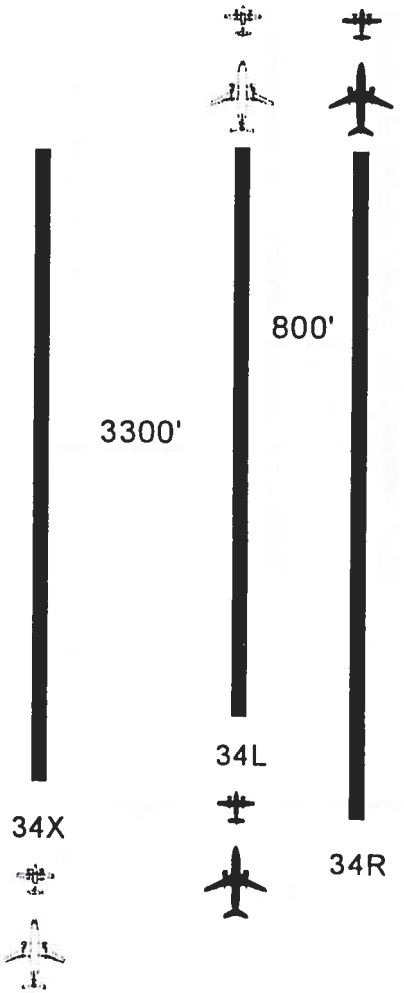
VFR1

Ceiling > 5000'
Visibility > 5 sm



VFR2

2500' < Ceiling < 5000'
3 sm < Visibility < 5 sm



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

SYN 0018935

Experiment - 07

IFR1/2

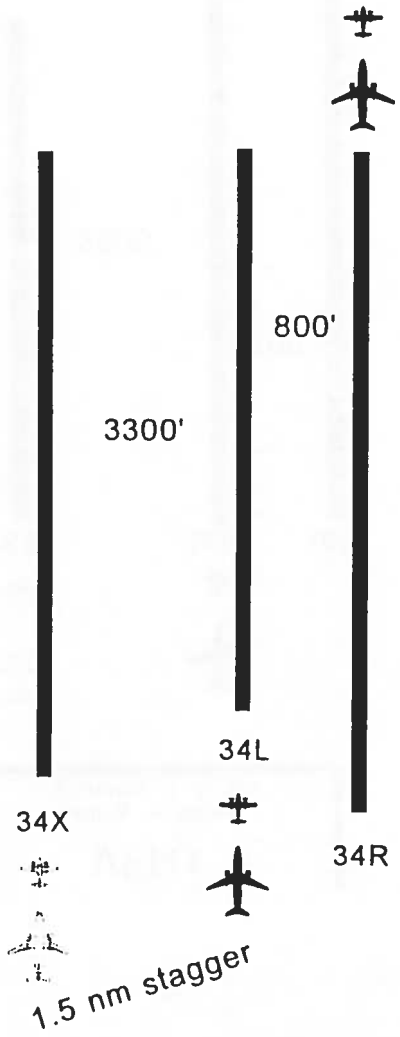
800' < Ceiling < 2500'
1800' < Visibility < 2 sm

New Full Use Runway w/ 3300' Separation

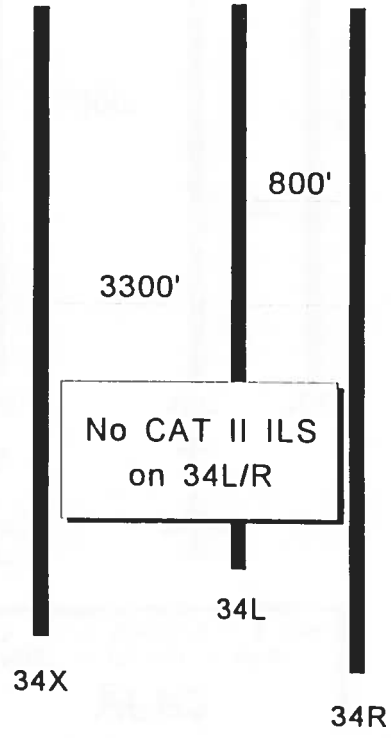
No PRM

IFR3/4

Visibility < 1800'



- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)



A-25

SYN 0018936

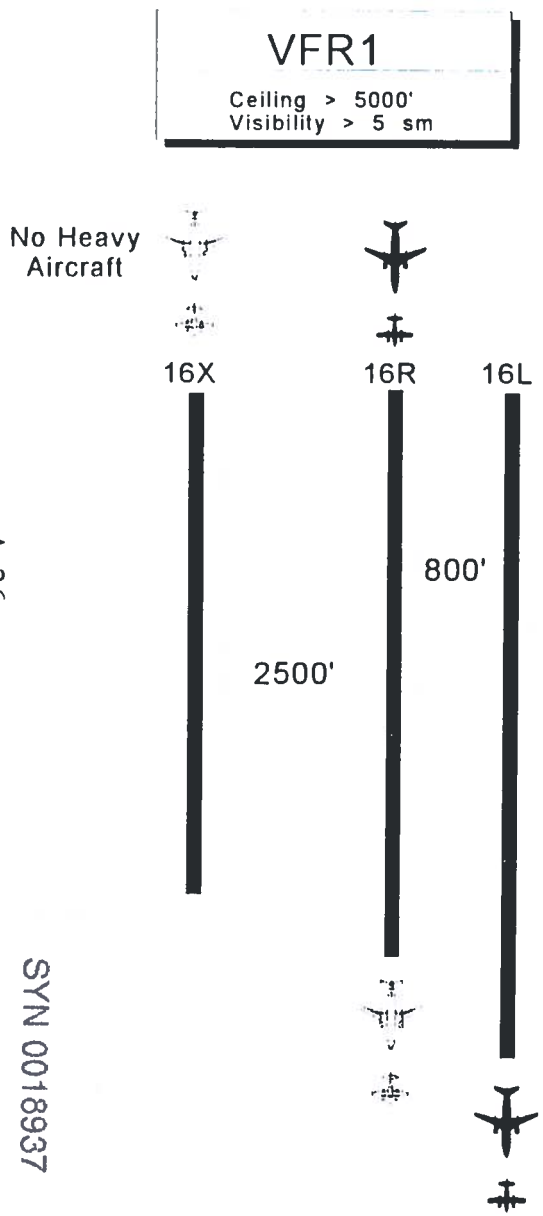
EXP_07 GED

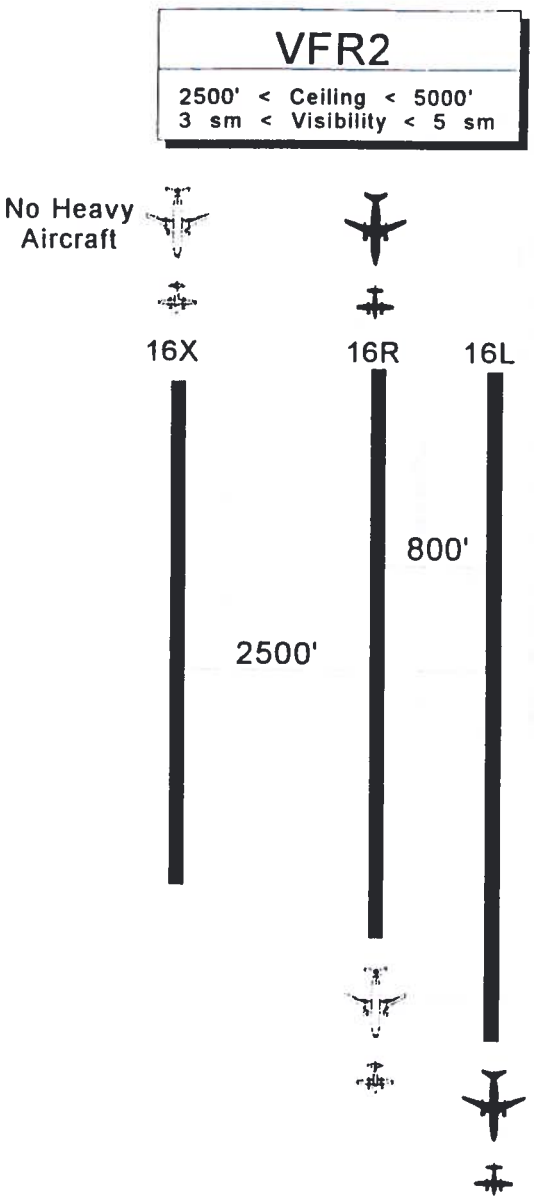
SEA-TAC International Airport
Capacity Design Team Study

Experiment - 08

Modified Full Use Runway w/ 2500' Separation & PRM

No Heavy A/C on 16/34X





- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-26

SYN 0018937

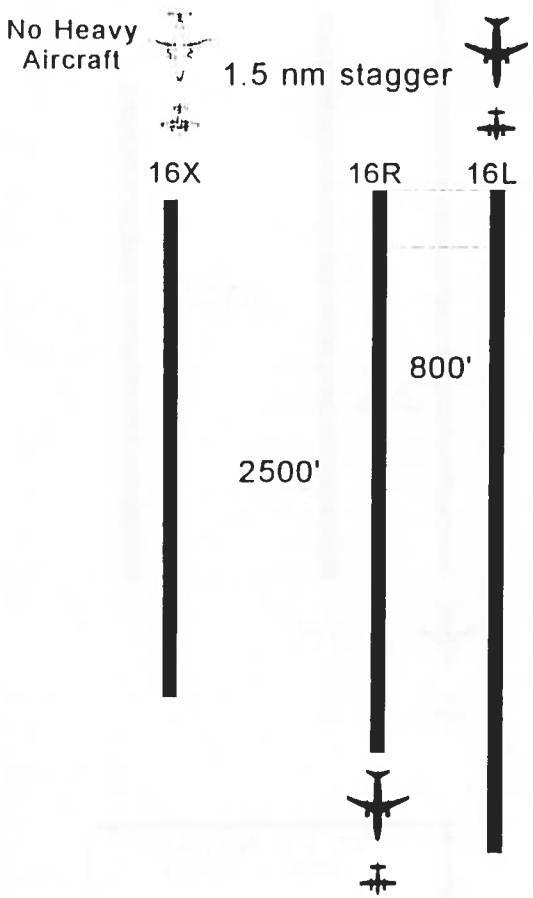
Experiment - 08

Modified Full Use Runway w/ 2500' Separation & PRM

No Heavy A/C on 16/34X

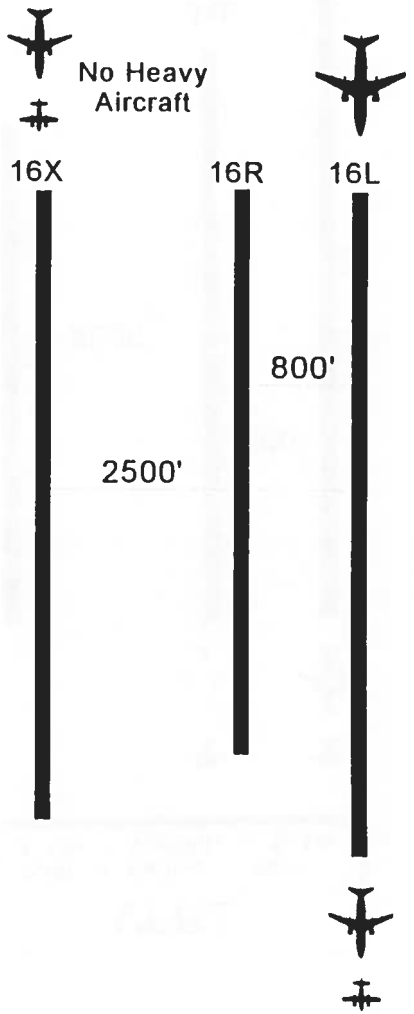
IFR1/2/3

800' < Ceiling < 2500'
600' < Visibility < 2 sm



IFR4

Visibility < 600'



No Heavy Aircraft

- Props (Primary)
- Jets (Primary)
- Props (Secondary)
- Jets (Secondary)

A-27

SYN 0018938

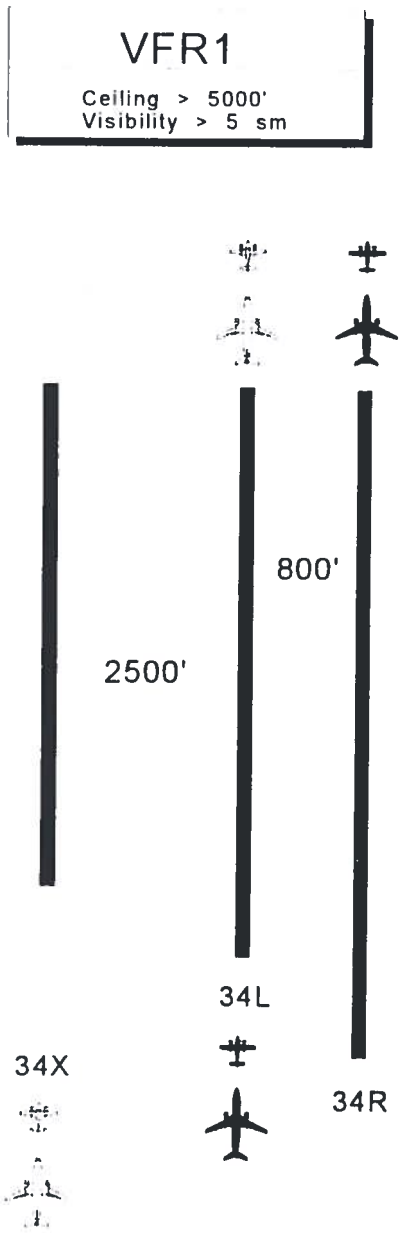
EXP_08 GED

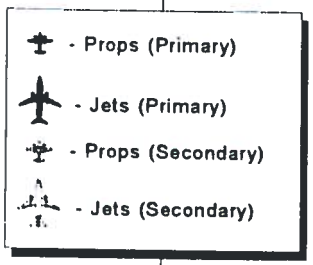
SEA-TAC International Airport
Capacity Design Team Study

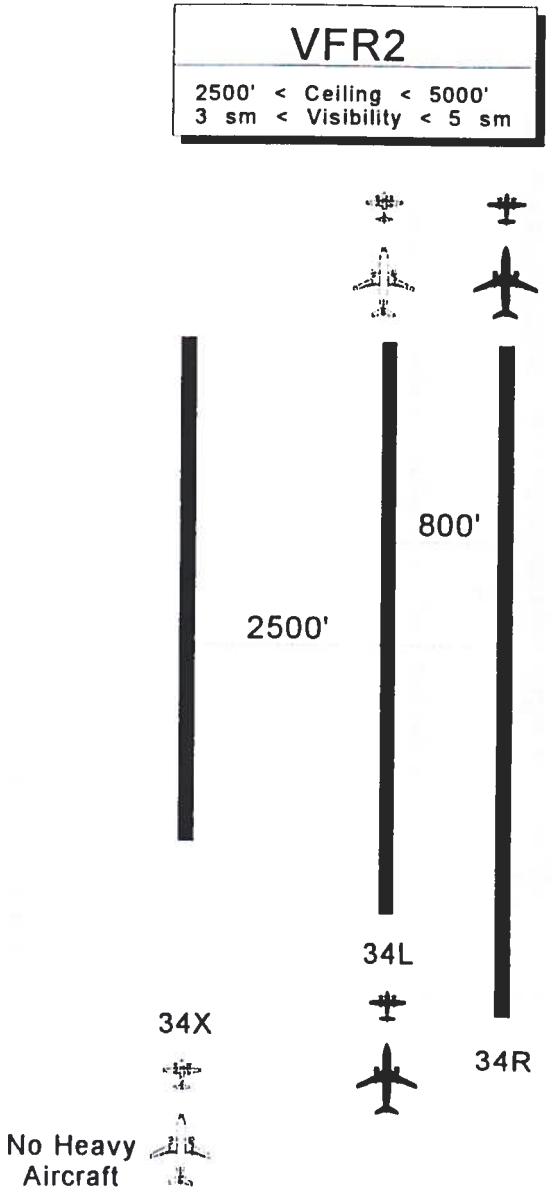
Experiment - 08

Modified Full Use Runway w/ 2500' Separation & PRM

No Heavy A/C on 16/34X







A-28

SYN 0018939

EXP_08 GED

SEA-TAC International Airport
Capacity Design Team Study

Experiment - 08

IFR1/2

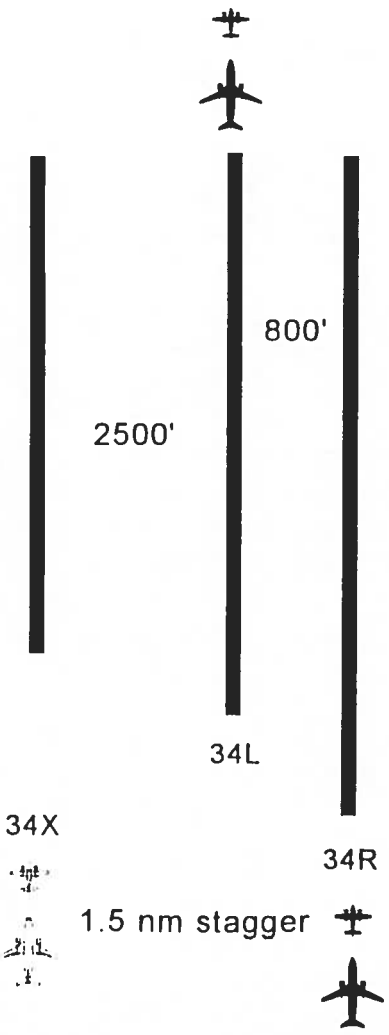
800' < Ceiling < 2500'
1800' < Visibility < 2 sm

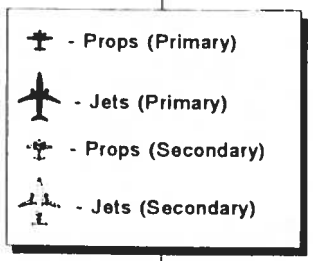
IFR3/4

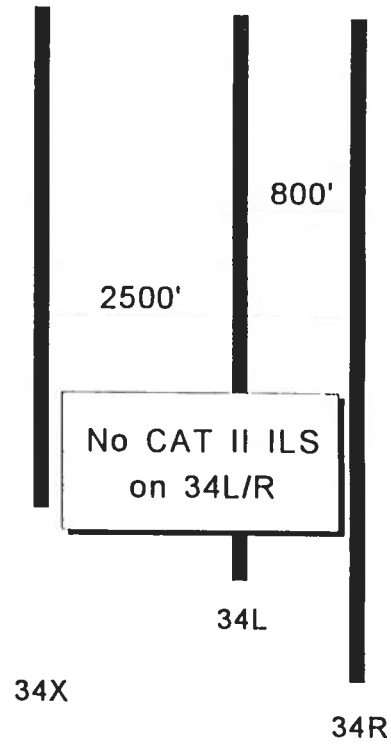
Visibility < 1800'

Modified Full Use Runway w/ 2500' Separation & PRM

No Heavy A/C on 16/34X







A-29

SYN 0018940

EXP_08 GED

SEA-TAC International Airport
Capacity Design Team Study

Appendix B

Detailed Summary of SIMMOD Experiments

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	0SV100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	434	182	0.74	6.41	133.77

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	336	5,074 (15.1)	864 (2.6)	5,937 (17.7)	380 (1.1)	128 (0.4)	507 (1.5)	6,444
16L	184	2,731 (14.8)	379 (2.1)	3,110 (16.9)	153 (0.8)	0 (0.0)	153 (0.8)	3,262
All	520	7,804 (15.0)	1,243 (2.4)	9,047 (17.4)	532 (1.0)	128 (0.2)	660 (1.3)	9,707

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	98	962 (9.8)	533 (5.4)	1,495 (15.3)	12 (0.1)	96 (1.0)	108 (1.1)	1,603
16L	422	3,946 (9.4)	2,102 (5.0)	6,047 (14.3)	8 (0.0)	519 (1.2)	528 (1.3)	6,575
All	520	4,908 (9.4)	2,635 (5.1)	7,543 (14.5)	20 (0.0)	615 (1.2)	635 (1.2)	8,178

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Ground (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,040	12,712 (12.2)	3,877 (3.7)	16,589 (16.0)	148 (0.1)	532 (1.0)	615 (1.2)	1,295 (1.2)	17,885

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018942

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	443	218	0.78	8.11	168.95

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	499	7,475 (15.0)	1,287 (2.6)	8,762 (17.6)	5,873 (11.8)	180 (0.4)	6,053 (12.1)	14,815
16L	21	318 (15.2)	49 (2.3)	367 (17.5)	69 (3.3)	0 (0.0)	69 (3.3)	436
All	520	7,793 (15.0)	1,336 (2.6)	9,129 (17.6)	5,943 (11.4)	180 (0.3)	6,122 (11.8)	15,251

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	452 (0.9)	458 (0.9)	8,055
All	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	452 (0.9)	458 (0.9)	8,055

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,024 (3.9)	16,727 (16.1)	185 (0.2)	5,943 (11.4)	452 (0.9)	6,580 (6.3)	23,306

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018943

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	214	0.79	17.53	169.77

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	11,274 (21.7)	182 (0.4)	11,456 (22.0)	20,602
All	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	11,274 (21.7)	182 (0.4)	11,456 (22.0)	20,602

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	374 (0.7)	380 (0.7)	7,961
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	374 (0.7)	380 (0.7)	7,961

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,040 (3.9)	16,728 (16.1)	187 (0.2)	11,274 (21.7)	374 (0.7)	11,835 (11.4)	28,564

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2/3
5. Experiment Number:	0SI200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	164	0.65	8.20	106.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	11,274 (21.7)	104 (0.2)	11,378 (21.9)	20,524
All	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	11,274 (21.7)	104 (0.2)	11,378 (21.9)	20,524

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	1,035 (2.0)	1,040 (2.0)	8,622
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	1,035 (2.0)	1,040 (2.0)	8,622

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Total Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,040 (3.9)	16,728 (16.1)	109 (0.1)	11,274 (21.7)	1,035 (2.0)	12,418 (11.9)	29,146

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018945

Seattle - Tacoma Capacity Design Team Update

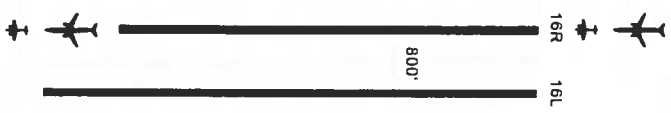
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1.	Simulation Alternative:	Do Nothing
2.	Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16R
3.	Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4.	Primary Weather Condition:	IFR4
5.	Experiment Number:	0SI400

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	0 (0.0)	0 (0.0)	0 (0.0)	9,147
All	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	0 (0.0)	0 (0.0)	0 (337.2)	9,147

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,976 (9.6)	2,798 (5.4)	7,774 (15.0)	0 (0.0)	0 (0.0)	0 (0.0)	7,774
All	520	4,976 (9.6)	2,798 (5.4)	7,774 (15.0)	0 (0.0)	0 (0.0)	0 (170.7)	7,774

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,771 (12.3)	4,150 (4.0)	16,921 (16.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (252.9)	16,921

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018946

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	1SV100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	541	267	0.81	11.95	217

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	417	6,305 (15.1)	1,072 (2.6)	7,377 (17.7)	771 (1.9)	217 (0.5)	988 (2.4)	8,365
16L	223	3,312 (14.9)	459 (2.1)	3,771 (16.9)	245 (1.1)	2 (0.0)	248 (1.1)	4,018
All	640	9,617 (15.0)	1,531 (2.4)	11,148 (17.4)	1,017 (1.6)	219 (0.3)	1,236 (1.9)	12,383

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	124	1,211 (9.8)	672 (5.4)	1,884 (15.2)	55 (0.4)	258 (2.1)	312 (2.5)	2,196
16L	516	4,788 (9.3)	2,575 (5.0)	7,363 (14.3)	46 (0.1)	1,233 (2.4)	1,280 (2.5)	8,643
All	640	6,000 (9.4)	3,247 (5.1)	9,247 (14.4)	101 (0.2)	1,491 (2.3)	1,592 (2.5)	10,839

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,617 (12.2)	4,778 (3.7)	20,395 (15.9)	320 (0.3)	1,017 (1.6)	1,491 (2.3)	2,828 (2.2)	23,223

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018947

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R, 16L ; Dep: 16R, 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	603	289	0.86	18.55	249.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	603	9,051 (15.0)	1,556 (2.6)	10,607 (17.6)	40,136 (66.6)	271 (0.5)	40,407 (67.0)	51,014
16L	37	556 (15.0)	86 (2.3)	642 (17.4)	928 (25.1)	0 (0.0)	928 (25.1)	1,570
All	640	9,608 (15.0)	1,642 (2.6)	11,249 (17.6)	41,063 (64.2)	272 (0.4)	41,335 (64.6)	52,584

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,024 (1.6)	1,037 (1.6)	10,336
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,024 (1.6)	1,037 (1.6)	10,336

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	4,957 (3.9)	20,548 (16.1)	285 (0.2)	41,063 (64.2)	1,024 (1.6)	42,372 (33.1)	62,920

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	272	0.84	22.21	227.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	64,653 (101.0)	243 (0.4)	64,896 (101.4)	76,166
All	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	64,653 (101.0)	243 (0.4)	64,896 (101.4)	76,166

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	698 (1.1)	710 (1.1)	10,010
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	698 (1.1)	710 (1.1)	10,010

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,979 (3.9)	20,570 (16.1)	256 (0.2)	64,653 (101.0)	698 (1.1)	65,606 (51.3)	86,176

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018949

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2/3
5. Experiment Number:	1SI200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	209	0.67	5.72	140.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,653 (101.0)	141 (0.2)	64,794 (101.2)	76,070
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,653 (101.0)	141 (0.2)	64,794 (101.2)	76,070

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,458 (3.8)	2,470 (3.9)	11,770
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,458 (3.8)	2,470 (3.9)	11,770

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	154 (0.1)	64,653 (101.0)	2,458 (3.8)	67,264 (52.6)	87,840

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	1SI400

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	0 (0.0)	0 (0.0)	0 (0.0)	11,270
All	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	0 (0.0)	0 (0.0)	0 (524.5)	11,270

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	6,080 (9.5)	3,450 (5.4)	9,530 (14.9)	0 (0.0)	0 (0.0)	0 (0.0)	9,530
All	640	6,080 (9.5)	3,450 (5.4)	9,530 (14.9)	0 (0.0)	0 (0.0)	0 (235.4)	9,530

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,686 (12.3)	5,114 (4.0)	20,800 (16.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (379.9)	20,800

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018951

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	673	388	0.98	15.08	381

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	516	7,823 (15.2)	1,342 (2.6)	9,164 (17.8)	1,863 (3.6)	387 (0.8)	2,250 (4.4)	11,414
16L	275	4,092 (14.9)	564 (2.1)	4,656 (16.9)	619 (2.3)	3 (0.0)	622 (2.3)	5,277
All	791	11,915 (15.1)	1,905 (2.4)	13,820 (17.5)	2,482 (3.1)	390 (0.5)	2,871 (3.6)	16,691

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,521 (9.7)	854 (5.4)	2,375 (15.1)	389 (2.5)	923 (5.9)	1,313 (8.4)	3,688
16L	633	5,849 (9.2)	3,165 (5.0)	9,014 (14.2)	38 (0.1)	10,185 (16.1)	10,223 (16.2)	19,237
All	790	7,370 (9.3)	4,019 (5.1)	11,389 (14.4)	427 (0.5)	11,108 (14.1)	11,535 (14.6)	22,925

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,285 (12.2)	5,924 (3.7)	25,209 (15.9)	817 (0.5)	2,482 (3.1)	11,108 (14.1)	14,407 (9.1)	39,616

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R, 16L ; Dep: 16R, 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	745	360	0.86	-34.8	309

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	745	11,220 (15.1)	1,937 (2.6)	13,157 (17.7)	143,077 (192.1)	343 (0.5)	143,420 (192.5)	156,577
16L	46	682 (14.8)	99 (2.2)	781 (17.0)	6,527 (141.9)	0 (0.0)	6,527 (141.9)	7,308
All	791	11,901 (15.0)	2,036 (2.6)	13,938 (17.6)	149,604 (189.1)	343 (0.4)	149,947 (189.6)	163,885

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	2,465 (3.1)	2,489 (3.2)	13,936
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	2,465 (3.1)	2,489 (3.2)	13,936

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,136 (3.9)	25,385 (16.1)	366 (0.2)	149,604 (189.1)	2,465 (3.1)	152,435 (96.4)	177,820

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018953

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI100

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	345	0.85	39.07	292.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	173,522 (219.4)	316 (0.4)	173,838 (219.8)	187,799
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	173,522 (219.4)	316 (0.4)	173,838 (219.8)	187,799

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,817 (2.3)	1,841 (2.3)	13,288
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,817 (2.3)	1,841 (2.3)	13,288

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	340 (0.2)	173,522 (219.4)	1,817 (2.3)	175,679 (111.1)	201,087

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018954

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2/3
5. Experiment Number:	2SI200

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	276	0.68	9.21	187.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	173,522 (219.4)	498 (0.6)	174,020 (220.0)	187,981
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	173,522 (219.4)	498 (0.6)	174,020 (220.0)	187,981

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	95 (0.1)	7,908 (10.0)	8,003 (10.1)	19,450
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	95 (0.1)	7,908 (10.0)	8,003 (10.1)	19,450

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	593 (0.4)	173,522 (219.4)	7,908 (10.0)	182,023 (115.1)	207,431

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Do Nothing
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	2SI400

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	0 (0.0)	0 (0.0)	0 (0.0)	13,953
All	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	0 (0.0)	0 (0.0)	0 (711.9)	13,953

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,466 (9.5)	4,274 (5.4)	11,739 (14.9)	0 (0.0)	0 (0.0)	0 (0.0)	11,739
All	790	7,466 (9.5)	4,274 (5.4)	11,739 (14.9)	0 (0.0)	0 (0.0)	0 (292.7)	11,739

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,362 (12.2)	6,331 (4.0)	25,693 (16.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (502.5)	25,693

Notes: Arrival and departure delays, travel times, and totals are in minutes
Ground Delays Include Runway Crossing Delays

SYN 0018956

Seattle - Tacoma Capacity Design Team Update

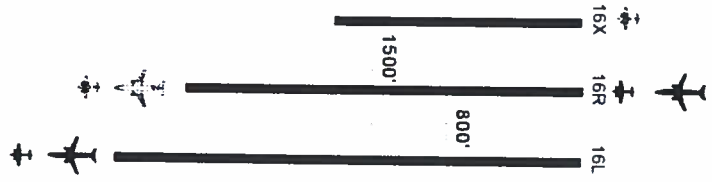
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 1500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV202

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	188	0.69	7.48	130.3
16R	141	68	0.77	3.47	52.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	379	5,696 (15.0)	966 (2.6)	6,663 (17.6)	1,031 (2.7)	102 (0.3)	1,133 (3.0)	7,796
16X	141	2,097 (14.9)	376 (2.7)	2,473 (17.5)	131 (0.9)	86 (0.6)	217 (1.5)	2,690
All	520	7,793 (15.0)	1,343 (2.6)	9,136 (17.6)	1,162 (2.2)	188 (0.4)	1,350 (2.6)	10,486

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	385 (0.7)	390 (0.8)	7,920
All	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	385 (0.7)	390 (0.8)	7,920

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	3,964 (3.8)	16,666 (16.0)	194 (0.2)	1,162 (2.2)	385 (0.7)	1,740 (1.7)	18,406

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

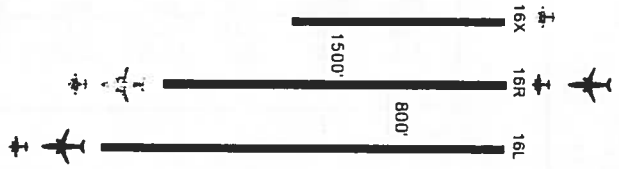
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 1500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV202

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	33	100	0.75	3.93	74.7
16L	640	291	0.7483	10.05	217.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	470	7,064 (15.0)	1,199 (2.6)	8,263 (17.6)	3,821 (8.1)	169 (0.4)	3,990 (8.5)	12,253
16X	170	2,751 (16.2)	469 (2.8)	3,220 (18.9)	481 (2.8)	131 (0.8)	612 (3.6)	3,832
All	640	9,815 (15.3)	1,668 (2.6)	11,482 (17.9)	4,302 (6.7)	300 (0.5)	4,602 (7.2)	16,085

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	1,018 (1.6)	1,037 (1.6)	10,259
All	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	1,018 (1.6)	1,037 (1.6)	10,259

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,812 (12.4)	4,893 (3.8)	20,705 (16.2)	319 (0.2)	4,302 (6.7)	1,018 (1.6)	5,639 (4.4)	26,344

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

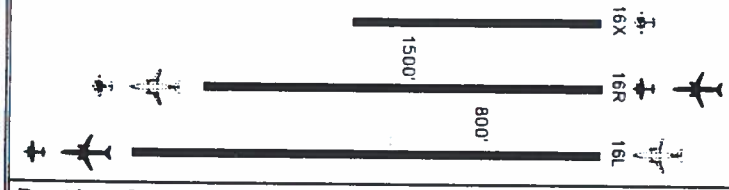
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 1500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L,16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV102

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	123	1.22	7.23	253
16L	786	361	1.0033	16.29	789

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	421	6,378 (15.2)	1,061 (2.5)	7,439 (17.7)	956 (2.3)	265 (0.6)	1,221 (2.9)	8,660
16L	162	2,390 (14.8)	340 (2.1)	2,730 (16.9)	188 (1.2)	6 (0.0)	194 (1.2)	2,924
16X	208	3,132 (15.1)	668 (3.2)	3,800 (18.3)	162 (0.8)	289 (1.4)	451 (2.2)	4,252
All	791	11,900 (15.0)	2,069 (2.6)	13,969 (17.7)	1,306 (1.7)	561 (0.7)	1,867 (2.4)	15,836

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	871 (5.6)	2,371 (15.1)	30 (0.2)	517 (3.3)	546 (3.5)	2,917
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	2,678 (4.2)	2,716 (4.3)	11,748
All	790	7,348 (9.3)	4,055 (5.1)	11,404 (14.4)	68 (0.1)	3,194 (4.0)	3,262 (4.1)	14,666

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,124 (3.9)	25,373 (16.0)	629 (0.4)	1,306 (1.7)	3,194 (4.0)	5,129 (3.2)	30,501

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018959

Seattle - Tacoma Capacity Design Team Update

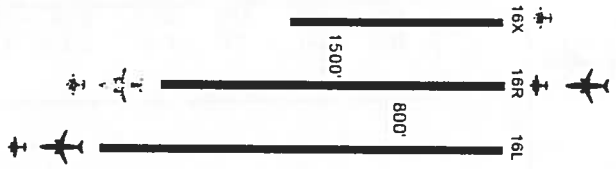
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 1500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1851 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV202

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	96	0.50	25.91	48
16L	830	356	1.18	5.26	420

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	584	8,778 (15.0)	1,191 (2.0)	9,969 (17.1)	29,498 (50.5)	6 (0.0)	29,504 (50.5)	39,473
16X	208	3,132 (15.1)	709 (3.4)	3,842 (18.5)	2,134 (10.3)	160 (0.8)	2,294 (11.0)	6,136
All	792	11,910 (15.0)	1,901 (2.4)	13,811 (17.4)	31,632 (39.9)	166 (0.2)	31,798 (40.1)	45,609

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	168	1,752 (10.4)	832 (5.0)	2,584 (15.4)	34 (0.2)	813 (4.8)	847 (5.0)	3,431
16R	622	5,598 (9.0)	3,477 (5.6)	9,075 (14.6)	336 (0.5)	1,288 (2.1)	1,623 (2.6)	10,698
All	790	7,350 (9.3)	4,309 (5.5)	11,659 (14.8)	369 (0.5)	2,101 (2.7)	2,470 (3.1)	14,129

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,582	19,260 (12.2)	6,209 (3.9)	25,469 (16.1)	535 (0.3)	31,632 (39.9)	2,101 (2.7)	34,268 (21.7)	59,738

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018960

Seattle - Tacoma Capacity Design Team Update

June 1995

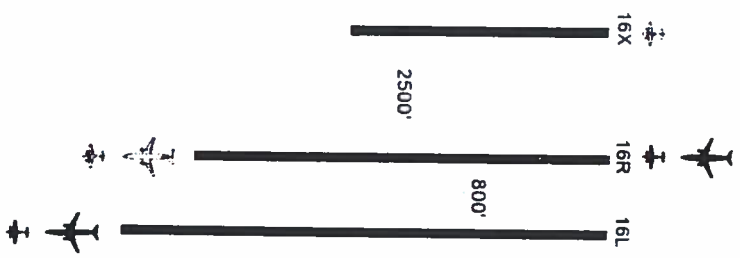
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Class 3&4 Runway @ 2500' with 89 Operations at BFI
South Flow Arr: 16R, [16X]; Dep: 16L,[16R]
Baseline: 1040 Ops/Day; 345,000 Ops/Year
VFR2
0SV203

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	661	189	0.68	8.09	128.8
16R	141	73	0.88	5.33	64.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	141	2,097 (14.9)	446 (3.2)	2,542 (18.0)	186 (1.3)	93 (0.7)	279 (2.0)	2,821
16R	379	5,696 (15.0)	966 (2.6)	6,663 (17.6)	894 (2.4)	102 (0.3)	997 (2.6)	7,660
All	520	7,793 (15.0)	1,412 (2.7)	9,205 (17.7)	1,081 (2.1)	195 (0.4)	1,276 (2.5)	10,481

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	380 (0.7)	385 (0.7)	7,914
All	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	380 (0.7)	385 (0.7)	7,914

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,033 (3.9)	16,735 (16.1)	201 (0.2)	1,081 (2.1)	380 (0.7)	1,661 (1.6)	18,395

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018961

Seattle - Tacoma Capacity Design Team Update

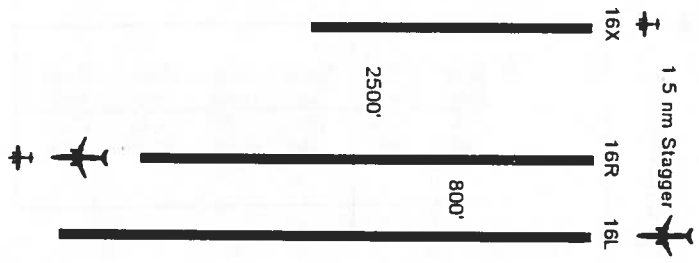
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3&4 Runway @ 2500' with 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV203B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	661	189	0.69	11.10	129.5
16R	141	73	0.86	5.33	63.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	141	2,097 (14.9)	446 (3.2)	2,542 (18.0)	116 (0.8)	93 (0.7)	209 (1.5)	2,751
16R	379	5,696 (15.0)	970 (2.6)	6,667 (17.6)	887 (2.3)	102 (0.3)	989 (2.6)	7,656
All	520	7,793 (15.0)	1,416 (2.7)	9,209 (17.7)	1,002 (1.9)	195 (0.4)	1,198 (2.3)	10,407

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	374 (0.7)	380 (0.7)	7,909
All	520	4,909 (9.4)	2,621 (5.0)	7,530 (14.5)	5 (0.0)	374 (0.7)	380 (0.7)	7,909

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,037 (3.9)	16,738 (16.1)	201 (0.2)	1,002 (1.9)	374 (0.7)	1,577 (1.5)	18,316

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018962

Seattle - Tacoma Capacity Design Team Update

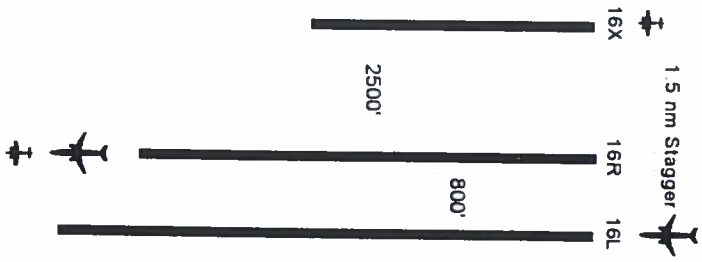
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Calss 3&4 Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI103

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	661	191	0.92	4.45	175.1
16R	141	54	0.57	12.46	30.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	141	2,097 (14.9)	477 (3.4)	2,573 (18.3)	190 (1.4)	83 (0.6)	274 (1.9)	2,847
16L	379	5,696 (15.0)	777 (2.1)	6,473 (17.1)	921 (2.4)	0 (0.0)	921 (2.4)	7,394
All	520	7,793 (15.0)	1,254 (2.4)	9,047 (17.4)	1,111 (2.1)	83 (0.2)	1,195 (2.3)	10,241

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	78 (0.2)	442 (0.9)	520 (1.0)	8,289
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	78 (0.2)	442 (0.9)	520 (1.0)	8,289

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,129 (4.0)	16,815 (16.2)	161 (0.2)	1,111 (2.1)	442 (0.9)	1,715 (1.6)	18,530

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018963

Seattle - Tacoma Capacity Design Team Update

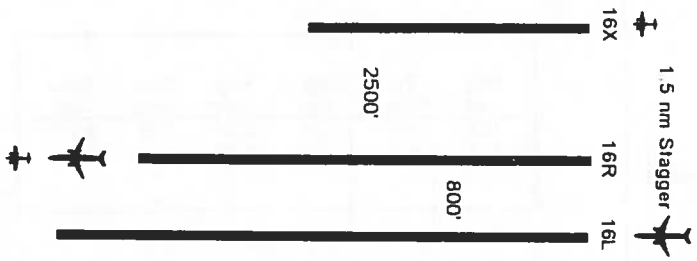
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Calss 3&4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI103B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	661	191	0.91	4.58	173.2
16R	141	53	0.58	9.55	30.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	141	2,097 (14.9)	477 (3.4)	2,573 (18.3)	121 (0.9)	80 (0.6)	202 (1.4)	2,775
16L	379	5,696 (15.0)	777 (2.1)	6,473 (17.1)	902 (2.4)	0 (0.0)	902 (2.4)	7,375
All	520	7,793 (15.0)	1,254 (2.4)	9,047 (17.4)	1,023 (2.0)	80 (0.2)	1,104 (2.1)	10,150

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	78 (0.2)	416 (0.8)	494 (1.0)	8,263
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	78 (0.2)	416 (0.8)	494 (1.0)	8,263

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,129 (4.0)	16,815 (16.2)	158 (0.2)	1,023 (2.0)	416 (0.8)	1,598 (1.5)	18,413

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

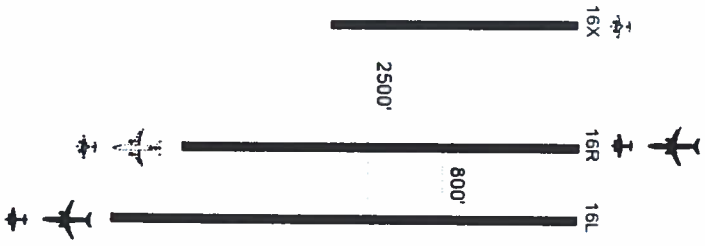
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV203

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	170	101	0.87	4.66	87.70
16L	640	288	0.75	11.92	217.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	470	7,064 (15.0)	1,199 (2.6)	8,263 (17.6)	3,831 (8.2)	169 (0.4)	4,000 (8.5)	12,262
16X	170	2,751 (16.2)	553 (3.3)	3,303 (19.4)	619 (3.6)	136 (0.8)	755 (4.4)	4,058
All	640	9,815 (15.3)	1,751 (2.7)	11,566 (18.1)	4,449 (7.0)	305 (0.5)	4,755 (7.4)	16,320

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	1,030 (1.6)	1,050 (1.6)	10,272
All	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	1,030 (1.6)	1,050 (1.6)	10,272

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,812 (12.4)	4,977 (3.9)	20,788 (16.2)	324 (0.3)	4,449 (7.0)	1,030 (1.6)	5,804 (4.5)	26,592

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018965

Seattle - Tacoma Capacity Design Team Update

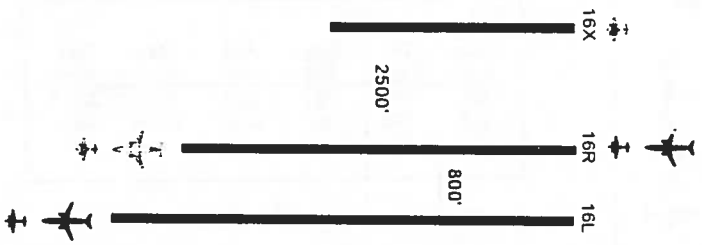
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV203B No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	170	105	0.86	5.68	90.65
16L	640	285	0.78	15.89	222.30

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	470	7,064 (15.0)	1,199 (2.6)	8,263 (17.6)	3,802 (8.1)	179 (0.4)	3,981 (8.5)	12,244
16X	170	2,751 (16.2)	553 (3.3)	3,303 (19.4)	439 (2.6)	136 (0.8)	575 (3.4)	3,878
All	640	9,815 (15.3)	1,751 (2.7)	11,566 (18.1)	4,241 (6.6)	315 (0.5)	4,556 (7.1)	16,121

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	986 (1.5)	1,005 (1.6)	10,227
All	640	5,997 (9.4)	3,226 (5.0)	9,222 (14.4)	19 (0.0)	986 (1.5)	1,005 (1.6)	10,227

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,812 (12.4)	4,977 (3.9)	20,788 (16.2)	334 (0.3)	4,241 (6.6)	986 (1.5)	5,560 (4.3)	26,348

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018966

Seattle - Tacoma Capacity Design Team Update

June 1995

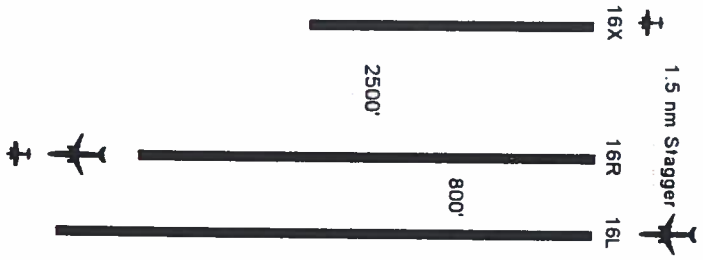
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Calss 3&4 Runway @ 2500' with 109 Operations at BFI
South Flow Arr: 16L, [16X]; Dep: 16R
Future 1: 1280 Ops/Day; 425,000 Ops/Year
IFR1
1SI103 - No Glide Slope Interference

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	810	297	1.11	4.52	330.7
16R	170	88	0.53	12.08	46.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	170	2,545 (15.0)	576 (3.4)	3,121 (18.4)	607 (3.6)	117 (0.7)	724 (4.3)	3,845
16L	470	7,059 (15.0)	959 (2.0)	8,018 (17.1)	4,183 (8.9)	5 (0.0)	4,188 (8.9)	12,206
All	640	9,604 (15.0)	1,535 (2.4)	11,139 (17.4)	4,790 (7.5)	122 (0.2)	4,912 (7.7)	16,051

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,552 (5.6)	9,536 (14.9)	147 (0.2)	1,056 (1.7)	1,203 (1.9)	10,739
All	640	5,984 (9.4)	3,552 (5.6)	9,536 (14.9)	147 (0.2)	1,056 (1.7)	1,203 (1.9)	10,739

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,087 (4.0)	20,675 (16.2)	269 (0.2)	4,790 (7.5)	1,056 (1.7)	6,115 (4.8)	26,791

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018967

Seattle - Tacoma Capacity Design Team Update

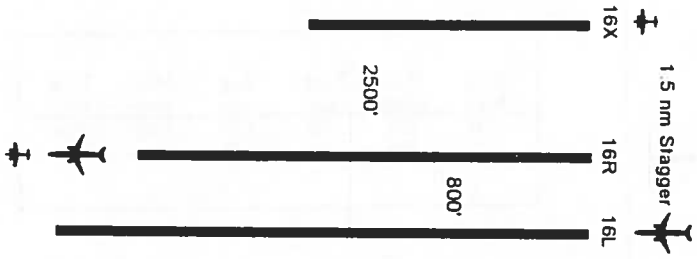
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Calss 3&4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI103B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	810	291	1.15	4.05	333.7
16R	170	82	0.60	24.14	49.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	170	2,545 (15.0)	578 (3.4)	3,123 (18.4)	457 (2.7)	124 (0.7)	581 (3.4)	3,704
16L	470	7,059 (15.0)	959 (2.0)	8,018 (17.1)	4,051 (8.6)	5 (0.0)	4,056 (8.6)	12,074
All	640	9,604 (15.0)	1,537 (2.4)	11,141 (17.4)	4,509 (7.0)	129 (0.2)	4,638 (7.2)	15,779

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,552 (5.6)	9,536 (14.9)	147 (0.2)	1,043 (1.6)	1,190 (1.9)	10,726
All	640	5,984 (9.4)	3,552 (5.6)	9,536 (14.9)	147 (0.2)	1,043 (1.6)	1,190 (1.9)	10,726

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,089 (4.0)	20,677 (16.2)	276 (0.2)	4,509 (7.0)	1,043 (1.6)	5,828 (4.6)	26,505

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

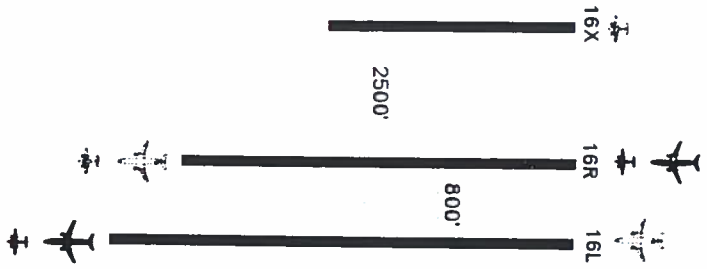
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L,16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV103

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	125	1.27	7.60	264
16L	786	360	0.99	12.14	779

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	421	6,378 (15.2)	1,061 (2.5)	7,439 (17.7)	956 (2.3)	269 (0.6)	1,225 (2.9)	8,664
16L	162	2,390 (14.8)	339 (2.1)	2,728 (16.8)	190 (1.2)	6 (0.0)	196 (1.2)	2,924
16X	208	3,132 (15.1)	749 (3.6)	3,881 (18.7)	266 (1.3)	260 (1.3)	526 (2.5)	4,408
All	791	11,900 (15.0)	2,148 (2.7)	14,048 (17.8)	1,411 (1.8)	536 (0.7)	1,947 (2.5)	15,996

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	854 (5.4)	2,353 (15.0)	20 (0.1)	515 (3.3)	535 (3.4)	2,889
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	2,532 (4.0)	2,570 (4.1)	11,603
All	790	7,348 (9.3)	4,038 (5.1)	11,386 (14.4)	58 (0.1)	3,047 (3.9)	3,105 (3.9)	14,492

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,186 (3.9)	25,435 (16.1)	594 (0.4)	1,411 (1.8)	3,047 (3.9)	5,053 (3.2)	30,487

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018969

Seattle - Tacoma Capacity Design Team Update

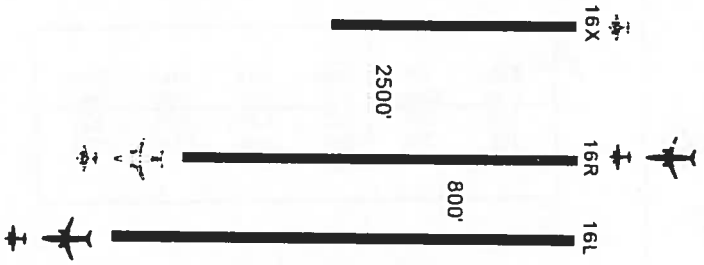
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500' with 135 Ops at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV203

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	161	0.95	7.05	153.22
16L	948	333	0.7517	11.63	250.31

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	583	8,762 (15.0)	1,481 (2.5)	10,243 (17.6)	28,748 (49.3)	192 (0.3)	28,940 (49.6)	39,183
16X	208	3,224 (15.5)	697 (3.4)	3,921 (18.9)	2,617 (12.6)	225 (1.1)	2,841 (13.7)	6,762
All	791	11,986 (15.2)	2,178 (2.8)	14,164 (17.9)	31,364 (39.7)	417 (0.5)	31,781 (40.2)	45,946

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,509 (9.6)	867 (5.5)	2,375 (15.1)	64 (0.4)	565 (3.6)	630 (4.0)	3,005
16L	633	5,906 (9.3)	3,184 (5.0)	9,090 (14.4)	51 (0.1)	1,006 (1.6)	1,057 (1.7)	10,147
All	790	7,415 (9.4)	4,051 (5.1)	11,465 (14.5)	115 (0.1)	1,572 (2.0)	1,687 (2.1)	13,152

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,401 (12.3)	6,228 (3.9)	25,629 (16.2)	532 (0.3)	31,364 (39.7)	1,572 (2.0)	33,468 (21.2)	59,097

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018970

Seattle - Tacoma Capacity Design Team Update

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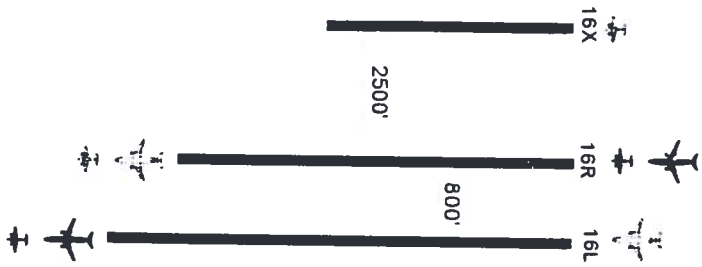
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L,16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV103B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	125	1.30	9.71	271
16L	786	367	0.98	12.69	770

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	421	6,378 (15.2)	1,061 (2.5)	7,439 (17.7)	951 (2.3)	269 (0.6)	1,221 (2.9)	8,660
16L	162	2,390 (14.8)	339 (2.1)	2,728 (16.8)	188 (1.2)	6 (0.0)	194 (1.2)	2,922
16X	208	3,132 (15.1)	745 (3.6)	3,877 (18.6)	162 (0.8)	268 (1.3)	431 (2.1)	4,308
All	791	11,900 (15.0)	2,144 (2.7)	14,044 (17.8)	1,302 (1.6)	544 (0.7)	1,846 (2.3)	15,890

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	854 (5.4)	2,353 (15.0)	22 (0.1)	507 (3.2)	529 (3.4)	2,883
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	2,564 (4.1)	2,602 (4.1)	11,635
All	790	7,348 (9.3)	4,038 (5.1)	11,386 (14.4)	60 (0.1)	3,071 (3.9)	3,131 (4.0)	14,517

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,182 (3.9)	25,431 (16.1)	604 (0.4)	1,302 (1.6)	3,071 (3.9)	4,977 (3.1)	30,407

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018971

Seattle - Tacoma Capacity Design Team Update

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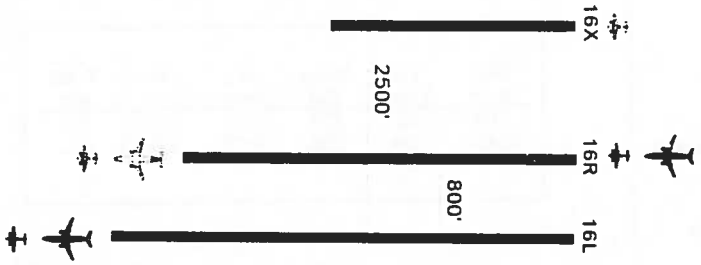
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV203B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	157	0.93	5.20	146.11
16L	948	335	0.73	16.41	244.55

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	583	8,762 (15.0)	1,481 (2.5)	10,243 (17.6)	28,818 (49.4)	187 (0.3)	29,004 (49.8)	39,248
16X	208	3,224 (15.5)	697 (3.4)	3,921 (18.9)	2,107 (10.1)	220 (1.1)	2,328 (11.2)	6,248
All	791	11,986 (15.2)	2,178 (2.8)	14,164 (17.9)	30,925 (39.1)	407 (0.5)	31,332 (39.6)	45,496

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,509 (9.6)	867 (5.5)	2,375 (15.1)	69 (0.4)	526 (3.4)	595 (3.8)	2,970
16L	633	5,906 (9.3)	3,184 (5.0)	9,090 (14.4)	57 (0.1)	1,025 (1.6)	1,082 (1.7)	10,172
All	790	7,415 (9.4)	4,051 (5.1)	11,465 (14.5)	126 (0.2)	1,551 (2.0)	1,677 (2.1)	13,143

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,401 (12.3)	6,228 (3.9)	25,629 (16.2)	533 (0.3)	30,925 (39.1)	1,551 (2.0)	33,009 (20.9)	58,639

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018972

Seattle - Tacoma Capacity Design Team Update

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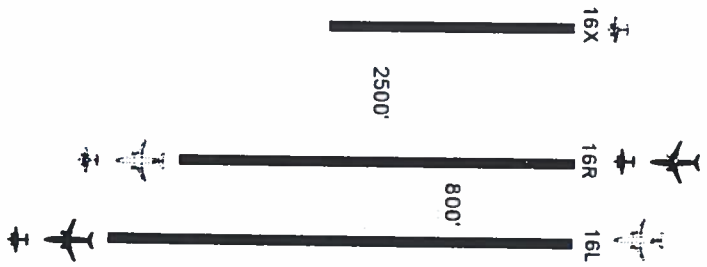
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L,16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV103

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	156	0.94	5.26	196
16L	948	296	0.70	8.55	662

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	583	8,762 (15.0)	1,481 (2.5)	10,243 (17.6)	28,759 (49.3)	169 (0.3)	28,928 (49.6)	39,172
16X	208	3,224 (15.5)	697 (3.4)	3,921 (18.9)	2,508 (12.1)	202 (1.0)	2,710 (13.0)	6,631
All	791	11,986 (15.2)	2,178 (2.8)	14,164 (17.9)	31,268 (39.5)	371 (0.5)	31,639 (40.0)	45,803

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,509 (9.6)	867 (5.5)	2,375 (15.1)	482 (3.1)	2,477 (15.8)	2,959 (18.9)	5,335
16L	633	5,906 (9.3)	3,184 (5.0)	9,090 (14.4)	639 (1.0)	3,089 (4.9)	3,728 (5.9)	12,818
All	790	7,415 (9.4)	4,051 (5.1)	11,465 (14.5)	1,121 (1.4)	5,567 (7.0)	6,688 (8.5)	18,153

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,401 (12.3)	6,228 (3.9)	25,629 (16.2)	1,492 (0.9)	31,268 (39.5)	5,567 (7.0)	38,327 (24.2)	63,956

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018973

Seattle - Tacoma Capacity Design Team Update

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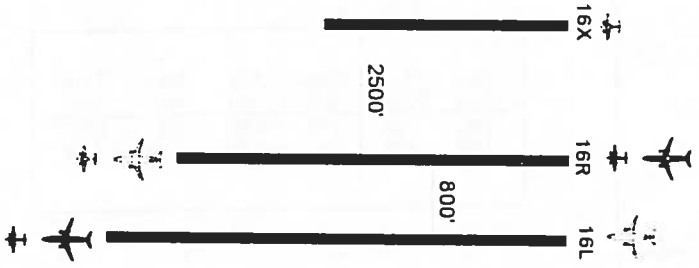
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Class 3 & 4 Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L,16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV103B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	208	155	0.95	5.20	198
16L	948	294	0.68	9.38	646

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	583	8,762 (15.0)	1,481 (2.5)	10,243 (17.6)	28,818 (49.4)	192 (0.3)	29,010 (49.8)	39,253
16X	208	3,224 (15.5)	699 (3.4)	3,923 (18.9)	2,107 (10.1)	206 (1.0)	2,313 (11.1)	6,236
All	791	11,986 (15.2)	2,180 (2.8)	14,166 (17.9)	30,925 (39.1)	398 (0.5)	31,323 (39.6)	45,489

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,509 (9.6)	867 (5.5)	2,375 (15.1)	537 (3.4)	2,620 (16.7)	3,157 (20.1)	5,533
16L	633	5,906 (9.3)	3,184 (5.0)	9,090 (14.4)	810 (1.3)	3,450 (5.5)	4,260 (6.7)	13,350
All	790	7,415 (9.4)	4,051 (5.1)	11,465 (14.5)	1,347 (1.7)	6,070 (7.7)	7,417 (9.4)	18,883

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,401 (12.3)	6,230 (3.9)	25,631 (16.2)	1,745 (1.1)	30,925 (39.1)	6,070 (7.7)	38,740 (24.5)	64,372

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

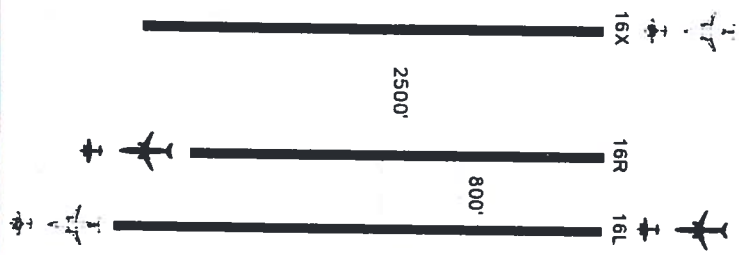
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Baseline 1: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV205

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	178	0.90	3.74	159.9
16R	182	71	0.67	12.49	47.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	684 (3.8)	3,620 (19.9)	186 (1.0)	91 (0.5)	277 (1.5)	3,897
16L	338	4,857 (14.4)	696 (2.1)	5,553 (16.4)	690 (2.0)	0 (0.0)	690 (2.0)	6,243
All	520	7,793 (15.0)	1,381 (2.7)	9,173 (17.6)	875 (1.7)	91 (0.2)	966 (1.9)	10,139

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	437 (0.8)	510 (1.0)	8,278
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	437 (0.8)	510 (1.0)	8,278

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,256 (4.1)	16,942 (16.3)	164 (0.2)	875 (1.7)	437 (0.8)	1,476 (1.4)	18,418

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018975

Seattle - Tacoma Capacity Design Team Update

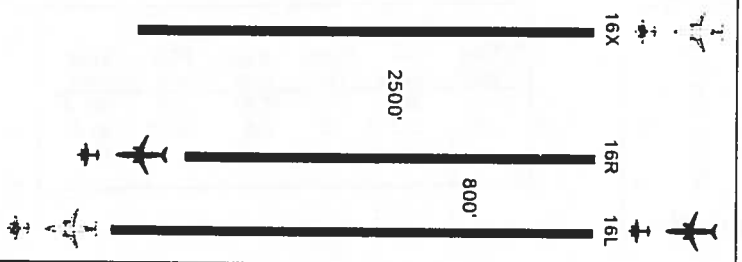
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Baseline 1: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV205B - No BFI Interference

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	177	0.90	3.71	159.3
16R	182	68	0.68	11.58	46.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	684 (3.8)	3,620 (19.9)	86 (0.5)	87 (0.5)	173 (1.0)	3,793
16L	338	4,857 (14.4)	693 (2.1)	5,550 (16.4)	686 (2.0)	0 (0.0)	686 (2.0)	6,236
All	520	7,793 (15.0)	1,377 (2.6)	9,170 (17.6)	772 (1.5)	87 (0.2)	859 (1.7)	10,029

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	426 (0.8)	499 (1.0)	8,268
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	426 (0.8)	499 (1.0)	8,268

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,253 (4.1)	16,939 (16.3)	160 (0.2)	772 (1.5)	426 (0.8)	1,358 (1.3)	18,297

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018976

Seattle - Tacoma Capacity Design Team Update

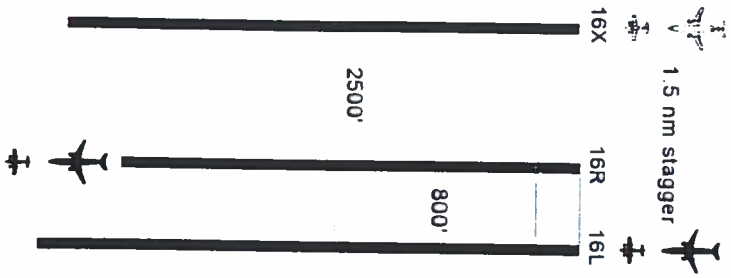
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI105

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	175	0.92	3.55	161.6
16R	182	65	0.65	12.47	42.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	686 (3.8)	3,622 (19.9)	235 (1.3)	89 (0.5)	324 (1.8)	3,946
16L	338	4,857 (14.4)	696 (2.1)	5,553 (16.4)	744 (2.2)	0 (0.0)	744 (2.2)	6,297
All	520	7,793 (15.0)	1,382 (2.7)	9,175 (17.6)	978 (1.9)	89 (0.2)	1,068 (2.1)	10,243

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	10 (0.0)	73 (0.1)	83 (0.2)	7,852
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	10 (0.0)	73 (0.1)	83 (0.2)	7,852

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,258 (4.1)	16,944 (16.3)	100 (0.1)	978 (1.9)	73 (0.1)	1,151 (1.1)	18,095

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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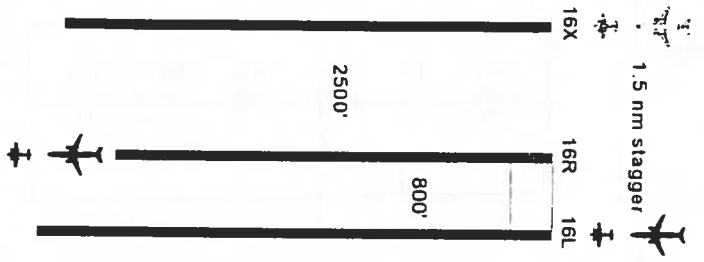
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X, 16L; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI205 - Glide Slope Protection

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	955	39	0.84	2.52	32.63
16R	435	155	0.56	8.03	86.283

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	85	1,379 (16.2)	169 (2.0)	1,548 (18.2)	197 (2.3)	0 (0.0)	197 (2.3)	1,745
16X	435	6,447 (14.8)	1,562 (3.6)	8,008 (18.4)	4,472 (10.3)	122 (0.3)	4,594 (10.6)	12,602
All	520	7,825 (15.0)	1,731 (3.3)	9,556 (18.4)	4,669 (9.0)	122 (0.2)	4,791 (9.2)	14,347

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	510 (1.0)	5,179 (10.0)	5,689 (10.9)	13,369
All	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	510 (1.0)	5,179 (10.0)	5,689 (10.9)	13,369

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,719 (12.2)	4,518 (4.3)	17,237 (16.6)	631 (0.6)	4,669 (9.0)	5,179 (10.0)	10,480 (10.1)	27,716

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018978

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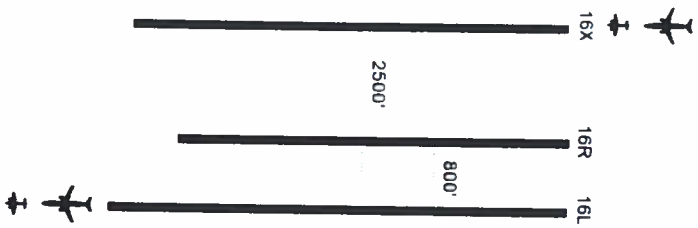
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario: South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule: Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition: IFR4
5. Experiment Number: 0SI405

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	151	0.75	11.99	113.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	520	7,862 (15.1)	1,867 (3.6)	9,729 (18.7)	23,072 (44.4)	109 (0.2)	23,182 (44.6)	32,911
All	520	7,862 (15.1)	1,867 (3.6)	9,729 (18.7)	23,072 (44.4)	109 (0.2)	23,182 (44.6)	32,911

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	354 (0.7)	359 (0.7)	7,873
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	354 (0.7)	359 (0.7)	7,873

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,756 (12.3)	4,488 (4.3)	17,243 (16.6)	114 (0.1)	23,072 (44.4)	354 (0.7)	23,540 (22.6)	40,784

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018979

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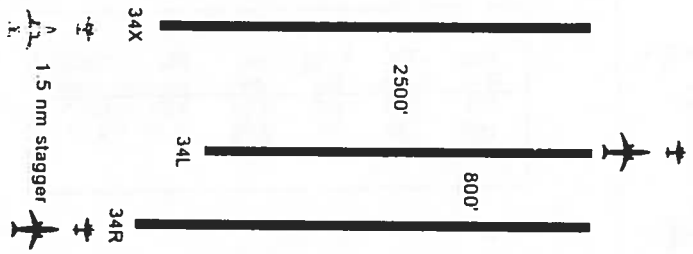
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	North Flow Arr: 34R, 34X; Dep: 34L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0NI205B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	702	151	0.89	4.15	134.14
34L	182	72	0.56	5.05	40.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34R	338	4,857 (14.4)	696 (2.1)	5,553 (16.4)	737 (2.2)	0 (0.0)	737 (2.2)	6,290
34X	182	2,936 (16.1)	684 (3.8)	3,620 (19.9)	160 (0.9)	84 (0.5)	244 (1.3)	3,864
All	520	7,793 (15.0)	1,381 (2.7)	9,173 (17.6)	897 (1.7)	84 (0.2)	981 (1.9)	10,154

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	738 (1.4)	811 (1.6)	8,575
All	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	738 (1.4)	811 (1.6)	8,575

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12.686 (12.2)	4.251 (4.1)	16.937 (16.3)	157 (0.2)	897 (1.7)	738 (1.4)	1,792 (1.7)	18,729

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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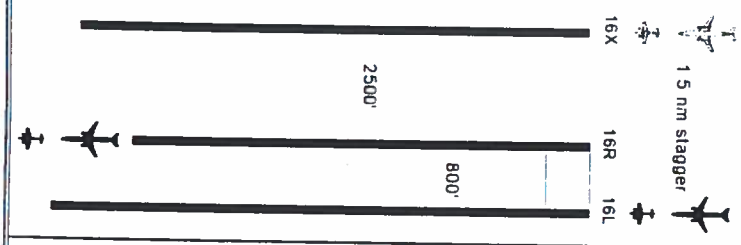
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Full Use Runway @ 2500'
South Flow Arr: 16L, [16X]; Dep: 16R
Baseline: 1040Ops/Day; 345,000 Ops/Year
IFR1
0SI105B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	178	0.94	3.89	166.7
16R	182	69	0.68	14.17	47.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	684 (3.8)	3,620 (19.9)	160 (0.9)	95 (0.5)	255 (1.4)	3,875
16L	338	4,857 (14.4)	693 (2.1)	5,550 (16.4)	737 (2.2)	0 (0.0)	737 (2.2)	6,287
All	520	7,793 (15.0)	1,377 (2.6)	9,170 (17.6)	897 (1.7)	95 (0.2)	992 (1.9)	10,162

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	10 (0.0)	442 (0.9)	452 (0.9)	8,221
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	10 (0.0)	442 (0.9)	452 (0.9)	8,221

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uninpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,253 (4.1)	16,939 (16.3)	105 (0.1)	897 (1.7)	442 (0.9)	1,444 (1.4)	18,383

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018981

Seattle - Tacoma Capacity Design Team Update

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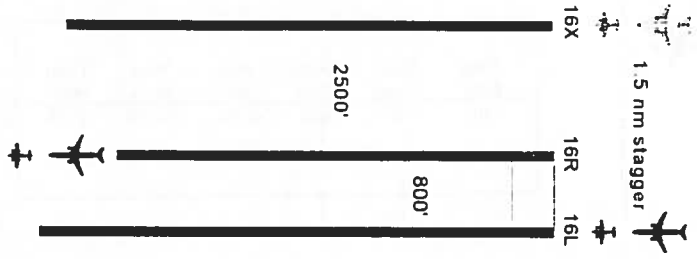
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0S1205B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	938	38	0.82	2.69	31.223
16R	419	156	0.54	11.96	84.76

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	85	1,379 (16.2)	169 (2.0)	1,548 (18.2)	72 (0.9)	1 (0.0)	73 (0.9)	1,621
16X	435	6,447 (14.8)	1,562 (3.6)	8,008 (18.4)	2,097 (4.8)	117 (0.3)	2,214 (5.1)	10,223
All	520	7,825 (15.0)	1,731 (3.3)	9,556 (18.4)	2,169 (4.2)	118 (0.2)	2,287 (4.4)	11,843

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	676 (1.3)	6,760 (13.0)	7,436 (14.3)	15,116
All	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	676 (1.3)	6,760 (13.0)	7,436 (14.3)	15,116

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12.719 (12.2)	4.518 (4.3)	17.237 (16.6)	794 (0.8)	2,169 (4.2)	6,760 (13.0)	9,723 (9.3)	26,960

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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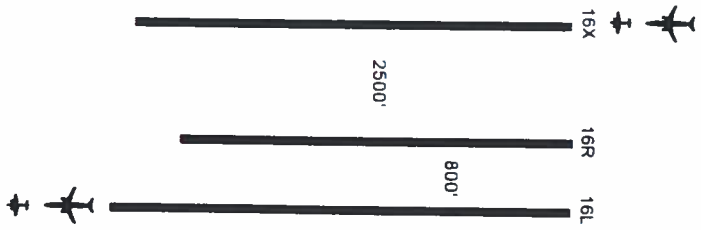
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Full Use Runway @ 3300'
South Flow Arr: 16X; Dep: 16L
Baseline: 1040 Ops/Day; 345,000 Ops/Year
IFR4
0SI405B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	163	0.81	10.18	131.49

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	520	7,862 (15.1)	1,867 (3.6)	9,729 (18.7)	11,180 (21.5)	130 (0.3)	11,310 (21.8)	21,039
All	520	7,862 (15.1)	1,867 (3.6)	9,729 (18.7)	11,180 (21.5)	130 (0.3)	11,310 (21.8)	21,039

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	343 (0.7)	348 (0.7)	7,862
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	343 (0.7)	348 (0.7)	7,862

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,756 (12.3)	4,488 (4.3)	17,243 (16.6)	135 (0.1)	11,180 (21.5)	343 (0.7)	11,658 (11.2)	28,902

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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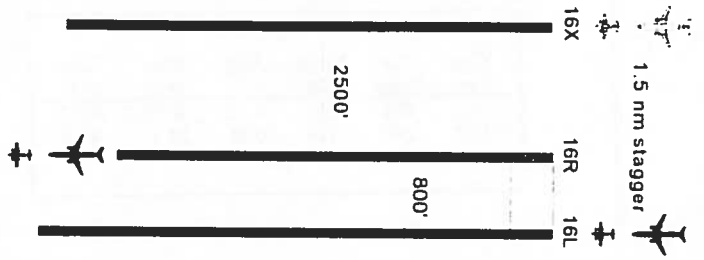
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' - No Glide Slope Interference
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI205C

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	123	0.84	5.08	102.71
16R	182	73	0.50	7.82	36.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	338	4,857 (14.4)	693 (2.1)	5,550 (16.4)	744 (2.2)	0 (0.0)	744 (2.2)	6,294
16X	182	2,936 (16.1)	686 (3.8)	3,622 (19.9)	235 (1.3)	80 (0.4)	315 (1.7)	3,937
All	520	7,793 (15.0)	1,379 (2.7)	9,172 (17.6)	978 (1.9)	80 (0.2)	1,058 (2.0)	10,230

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,860 (5.5)	7,753 (14.9)	42 (0.1)	1,336 (2.6)	1,378 (2.7)	9,131
All	520	4,893 (9.4)	2,860 (5.5)	7,753 (14.9)	42 (0.1)	1,336 (2.6)	1,378 (2.7)	9,131

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,239 (4.1)	16,925 (16.3)	122 (0.1)	978 (1.9)	1,336 (2.6)	2,436 (2.3)	19,361

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018984

Seattle - Tacoma Capacity Design Team Update

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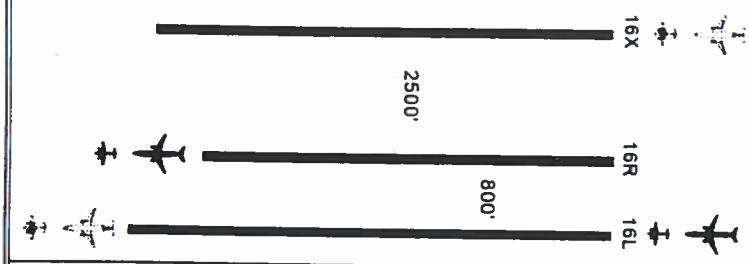
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV205

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	268	1.12	4.78	300.2
16R	246	116	0.86	22.12	99.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	549 (2.2)	180 (0.7)	728 (3.0)	5,584
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,111 (2.8)	4 (0.0)	1,115 (2.8)	7,588
All	640	9,604 (15.0)	1,726 (2.7)	11,329 (17.7)	1,660 (2.6)	184 (0.3)	1,843 (2.9)	13,173

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	141 (0.2)	1,005 (1.6)	1,146 (1.8)	10,675
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	141 (0.2)	1,005 (1.6)	1,146 (1.8)	10,675

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,271 (4.1)	20,859 (16.3)	324 (0.3)	1,660 (2.6)	1,005 (1.6)	2,989 (2.3)	23,848

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018985

Seattle - Tacoma Capacity Design Team Update

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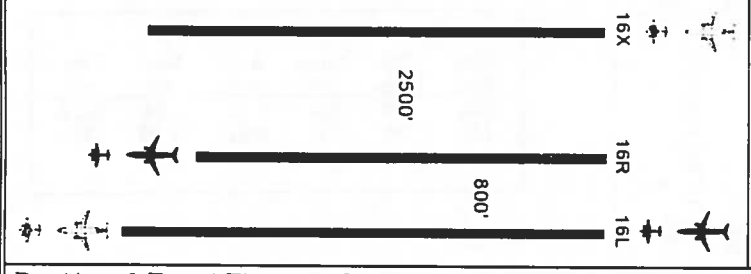
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV205B - No BFI Interference

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	263	1.11	4.59	292.8
16R	229	116	0.89	20.73	103.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	256 (1.0)	177 (0.7)	433 (1.8)	5,289
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,111 (2.8)	4 (0.0)	1,115 (2.8)	7,588
All	640	9,604 (15.0)	1,726 (2.7)	11,329 (17.7)	1,367 (2.1)	181 (0.3)	1,548 (2.4)	12,877

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,152 (1.8)	1,280 (2.0)	10,810
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,152 (1.8)	1,280 (2.0)	10,810

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,271 (4.1)	20,859 (16.3)	309 (0.2)	1,367 (2.1)	1,152 (1.8)	2,828 (2.2)	23,687

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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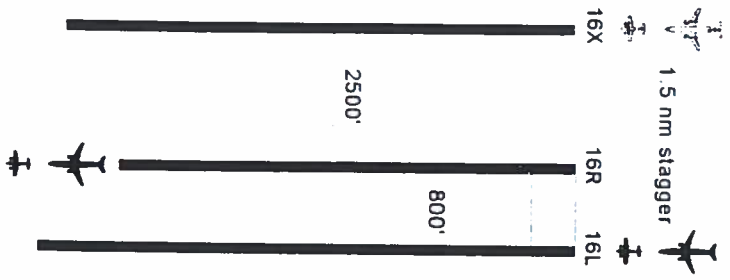
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI105

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	262	1.12	4.58	292.6
16R	246	114	0.91	21.05	103.9

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	755 (3.1)	192 (0.8)	947 (3.9)	5,803
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,253 (3.2)	4 (0.0)	1,257 (3.2)	7,730
All	640	9,604 (15.0)	1,726 (2.7)	11,329 (17.7)	2,008 (3.1)	196 (0.3)	2,204 (3.4)	13,533

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	122 (0.2)	1,011 (1.6)	1,133 (1.8)	10,662
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	122 (0.2)	1,011 (1.6)	1,133 (1.8)	10,662

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,271 (4.1)	20,859 (16.3)	317 (0.2)	2,008 (3.1)	1,011 (1.6)	3,337 (2.6)	24,196

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018987

Seattle - Tacoma Capacity Design Team Update

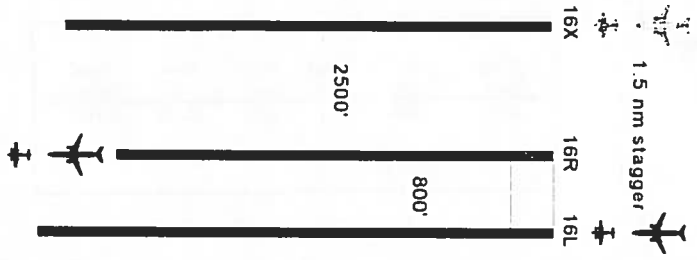
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI205

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1203	25	0.74	1.60	18.417
16R	563	236	0.47	7.44	111.71

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	54	704 (13.0)	106 (2.0)	810 (15.0)	382 (7.1)	1 (0.0)	382 (7.1)	1,192
16X	586	9,435 (16.1)	2,104 (3.6)	11,538 (19.7)	54,609 (93.2)	135 (0.2)	54,744 (93.4)	66,282
All	640	10,138 (15.8)	2,210 (3.5)	12,348 (19.3)	54,991 (85.9)	135 (0.2)	55,126 (86.1)	67,475

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	8,262 (12.9)	8,275 (12.9)	17,690
All	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	8,262 (12.9)	8,275 (12.9)	17,690

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	16,122 (12.6)	5,641 (4.4)	21,763 (17.0)	148 (0.1)	54,991 (85.9)	8,262 (12.9)	63,402 (49.5)	85,164

Notes: Arrival and departure delays, travel times, and totals are in minutes
Runways crossing delays are included in ground delays

SYN 0018988

Seattle - Tacoma Capacity Design Team Update

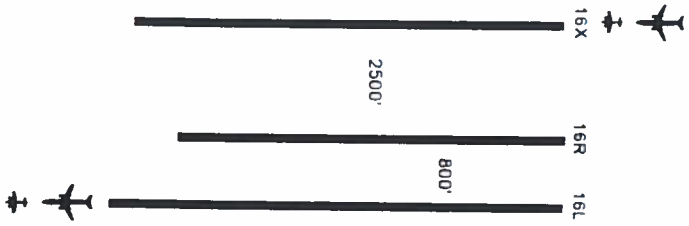
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	1SI405

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1280	207	0.73	16.25	151.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	640	9,690 (15.1)	2,298 (3.6)	11,987 (18.7)	86,272 (134.8)	147 (0.2)	86,419 (135.0)	98,406
All	640	9,690 (15.1)	2,298 (3.6)	11,987 (18.7)	86,272 (134.8)	147 (0.2)	86,419 (135.0)	98,406

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	582 (0.9)	595 (0.9)	9,805
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	582 (0.9)	595 (0.9)	9,805

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,674 (12.2)	5,523 (4.3)	21,197 (16.6)	160 (0.1)	86,272 (134.8)	582 (0.9)	87,014 (68.0)	108,211

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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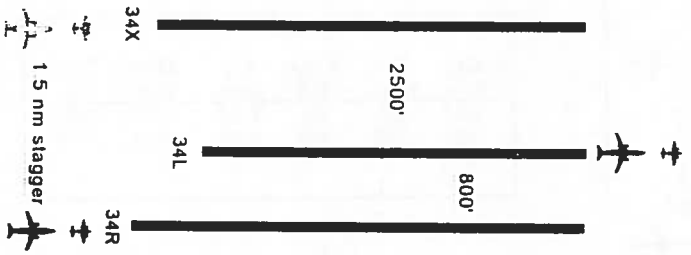
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Full Use Runway @ 2500'
2. Runway Use Weather Scenario: North Flow Arr: 34R, [34X]; Dep: 34R
3. Aircraft Demand Schedule: Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition: IFR2
5. Experiment Number: 1N1205B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	886	185	1.28	6.11	237.11
34L	246	116	0.67	11.97	77.72

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34R	394	5,678 (14.4)	792 (2.0)	6,469 (16.4)	1,198 (3.0)	4 (0.0)	1,202 (3.1)	7,671
34X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	308 (1.3)	155 (0.6)	462 (1.9)	5,319
All	640	9,604 (15.0)	1,722 (2.7)	11,326 (17.7)	1,505 (2.4)	159 (0.2)	1,664 (2.6)	12,990

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	640	5,984 (9.4)	3,520 (5.5)	9,504 (14.9)	224 (0.4)	2,848 (4.5)	3,072 (4.8)	12,576
All	640	5,984 (9.4)	3,520 (5.5)	9,504 (14.9)	224 (0.4)	2,848 (4.5)	3,072 (4.8)	12,576

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,242 (4.1)	20,830 (16.3)	383 (0.3)	1,505 (2.4)	2,848 (4.5)	4,736 (3.7)	25,566

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018990

Seattle - Tacoma Capacity Design Team Update

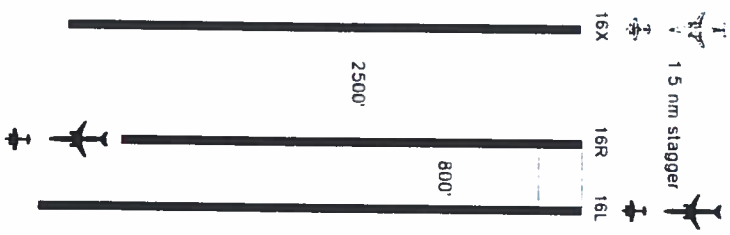
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Full Use Runway @ 2500'
2. Runway Use Weather Scenario: South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule: Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition: IFR1
5. Experiment Number: 1SI105B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	261	1.10	4.77	287.5
16R	246	110	0.88	20.78	97.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	308 (1.3)	182 (0.7)	490 (2.0)	5,346
16L	394	5,678 (14.4)	800 (2.0)	6,477 (16.4)	1,198 (3.0)	4 (0.0)	1,202 (3.1)	7,679
All	640	9,604 (15.0)	1,730 (2.7)	11,333 (17.7)	1,505 (2.4)	186 (0.3)	1,691 (2.6)	13,025

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	986 (1.5)	1,114 (1.7)	10,643
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	986 (1.5)	1,114 (1.7)	10,643

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,275 (4.1)	20,863 (16.3)	314 (0.2)	1,505 (2.4)	986 (1.5)	2,805 (2.2)	23,668

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018991

Seattle - Tacoma Capacity Design Team Update

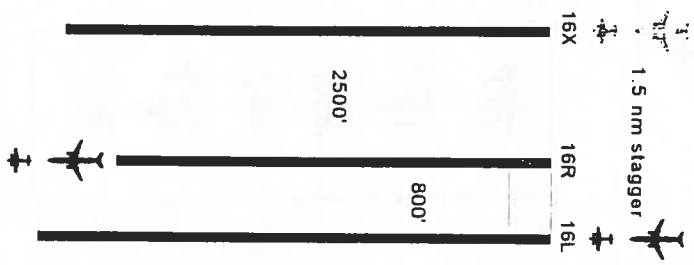
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI205B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	938	27	0.76	1.55	20.61
16R	419	246	0.45	5.71	110.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	54	704 (13.0)	104 (1.9)	808 (15.0)	309 (5.7)	1 (0.0)	309 (5.7)	1,117
16X	586	9,435 (16.1)	2,104 (3.6)	11,538 (19.7)	36,725 (62.7)	135 (0.2)	36,859 (62.9)	48,398
All	640	10,138 (15.8)	2,208 (3.4)	12,346 (19.3)	37,034 (57.9)	135 (0.2)	37,169 (58.1)	49,515

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	18,771 (29.3)	18,784 (29.4)	28,198
All	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	18,771 (29.3)	18,784 (29.4)	28,198

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Ground (Avg)	Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	16,122 (12.6)	5,638 (4.4)	21,761 (17.0)	148 (0.1)	37,034 (57.9)	18,771 (29.3)	55,953 (43.7)	77,713

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018992

Seattle - Tacoma Capacity Design Team Update

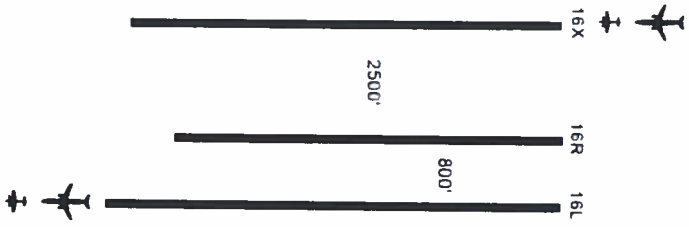
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	1SI405B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1280	219	0.81	16.83	176.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	640	9,690 (15.1)	2,304 (3.6)	11,994 (18.7)	64,320 (100.5)	173 (0.3)	64,493 (100.8)	76,486
All	640	9,690 (15.1)	2,304 (3.6)	11,994 (18.7)	64,320 (100.5)	173 (0.3)	64,493 (100.8)	76,486

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	704 (1.1)	717 (1.1)	9,926
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	704 (1.1)	717 (1.1)	9,926

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,674 (12.2)	5,530 (4.3)	21,203 (16.6)	186 (0.1)	64,320 (100.5)	704 (1.1)	65,210 (50.9)	86,413

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018993

Seattle - Tacoma Capacity Design Team Update

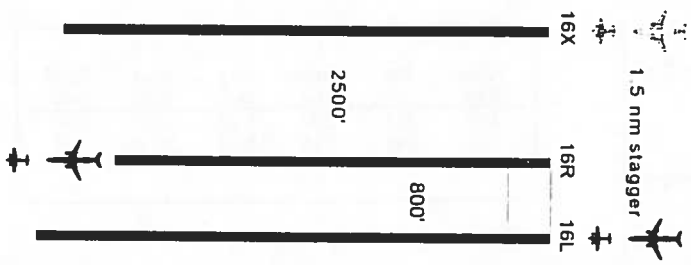
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' - No Glide Slope Interference
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI205C - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	119	0.96	6.37	114.64
16R	246	117	0.55	11.85	63.96

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,253 (3.2)	47 (0.1)	1,300 (3.3)	7,774
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	755 (3.1)	150 (0.6)	905 (3.7)	5,761
All	640	9,604 (15.0)	1,726 (2.7)	11,329 (17.7)	2,008 (3.1)	197 (0.3)	2,205 (3.4)	13,535

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,507 (5.5)	9,491 (14.8)	109 (0.2)	9,952 (15.6)	10,061 (15.7)	19,552
All	640	5,984 (9.4)	3,507 (5.5)	9,491 (14.8)	109 (0.2)	9,952 (15.6)	10,061 (15.7)	19,552

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,233 (4.1)	20,821 (16.3)	306 (0.2)	2,008 (3.1)	9,952 (15.6)	12,266 (9.6)	33,087

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018994

Seattle - Tacoma Capacity Design Team Update

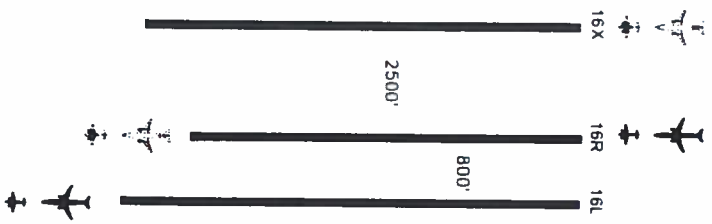
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, 16X; Dep: 16L, 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV105

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	381	209	1.43	10.29	299
16L	948	316	0.91	27.32	287

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	410	6,023 (14.7)	980 (2.4)	7,003 (17.1)	787 (1.9)	152 (0.4)	939 (2.3)	7,942
16X	381	5,875 (15.4)	1,421 (3.7)	7,296 (19.2)	838 (2.2)	537 (1.4)	1,375 (3.6)	8,672
All	791	11,898 (15.0)	2,401 (3.0)	14,299 (18.1)	1,625 (2.1)	689 (0.9)	2,314 (2.9)	16,613

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	455 (2.9)	465 (3.0)	2,815
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,203 (1.9)	1,241 (2.0)	10,274
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,658 (2.1)	1,705 (2.2)	13,089

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,246 (12.2)	6,436 (4.1)	25,682 (16.2)	736 (0.5)	1,625 (2.1)	1,658 (2.1)	4,020 (2.5)	29,702

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018995

Seattle - Tacoma Capacity Design Team Update

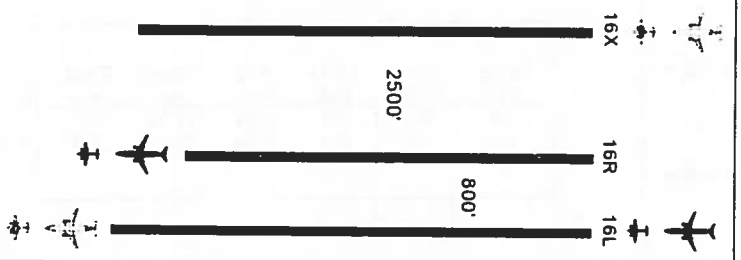
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV205

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	337	150	0.81	19.06	121.8
16L	959	352	1.21	4.87	425.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,264 (3.8)	6,585 (19.5)	1,965 (5.8)	276 (0.8)	2,241 (6.7)	8,826
16L	454	6,565 (14.5)	917 (2.0)	7,482 (16.5)	3,782 (8.3)	5 (0.0)	3,786 (8.3)	11,268
All	791	11,886 (15.0)	2,181 (2.8)	14,067 (17.8)	5,747 (7.3)	281 (0.4)	6,027 (7.6)	20,094

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	622	5,598 (9.0)	3,471 (5.6)	9,069 (14.6)	255 (0.4)	1,418 (2.3)	1,673 (2.7)	10,742
16L	168	1,752 (10.4)	832 (5.0)	2,584 (15.4)	27 (0.2)	669 (4.0)	696 (4.1)	3,279
All	790	7,350 (9.3)	4,302 (5.4)	11,653 (14.8)	282 (0.4)	2,087 (2.6)	2,369 (3.0)	14,021

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,236 (12.2)	6,483 (4.1)	25,720 (16.3)	563 (0.4)	5,747 (7.3)	2,087 (2.6)	8,396 (5.3)	34,116

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

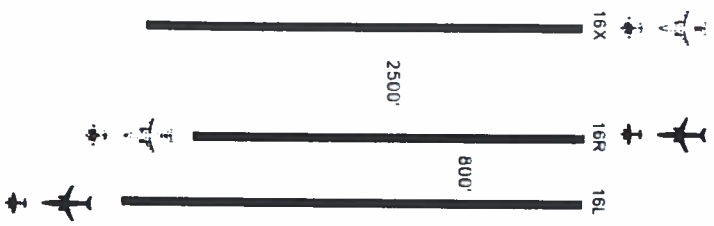
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L,[16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV105B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	381	207	1.43	11.73	296
16L	948	315	0.90	23.95	283

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	410	6,023 (14.7)	984 (2.4)	7,007 (17.1)	783 (1.9)	156 (0.4)	939 (2.3)	7,946
16X	381	5,875 (15.4)	1,421 (3.7)	7,296 (19.2)	472 (1.2)	518 (1.4)	991 (2.6)	8,287
All	791	11,898 (15.0)	2,405 (3.0)	14,303 (18.1)	1,256 (1.6)	674 (0.9)	1,930 (2.4)	16,233

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	452 (2.9)	462 (2.9)	2,812
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,228 (1.9)	1,266 (2.0)	10,299
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,680 (2.1)	1,728 (2.2)	13,111

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,246 (12.2)	6,440 (4.1)	25,686 (16.2)	721 (0.5)	1,256 (1.6)	1,680 (2.1)	3,657 (2.3)	29,343

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0018997

Seattle - Tacoma Capacity Design Team Update

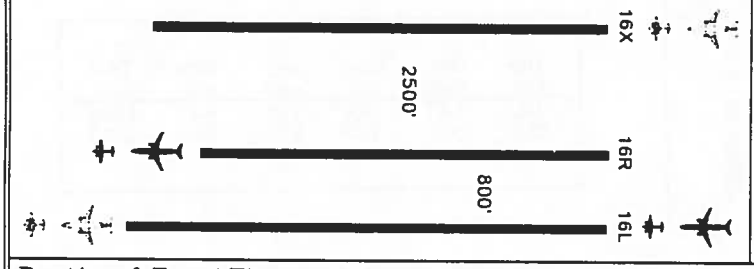
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R, [16L]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV205B No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	369	164	0.85	20.57	139.1
16L	991	343	1.17	5.18	401.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	369	5,760 (15.6)	1,376 (3.7)	7,136 (19.3)	1,321 (3.6)	303 (0.8)	1,624 (4.4)	8,760
16L	423	6,142 (14.5)	850 (2.0)	6,992 (16.5)	1,899 (4.5)	4 (0.0)	1,904 (4.5)	8,896
All	792	11,902 (15.0)	2,227 (2.8)	14,129 (17.8)	3,220 (4.1)	307 (0.4)	3,527 (4.5)	17,656

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	622	5,598 (9.0)	3,465 (5.6)	9,063 (14.6)	261 (0.4)	1,393 (2.2)	1,655 (2.7)	10,717
16L	168	1,752 (10.4)	832 (5.0)	2,584 (15.4)	25 (0.2)	603 (3.6)	628 (3.7)	3,212
All	790	7,350 (9.3)	4,296 (5.4)	11,646 (14.7)	286 (0.4)	1,996 (2.5)	2,283 (2.9)	13,929

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,582	19,252 (12.2)	6,523 (4.1)	25,775 (16.3)	593 (0.4)	3,220 (4.1)	1,996 (2.5)	5,810 (3.7)	31,585

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

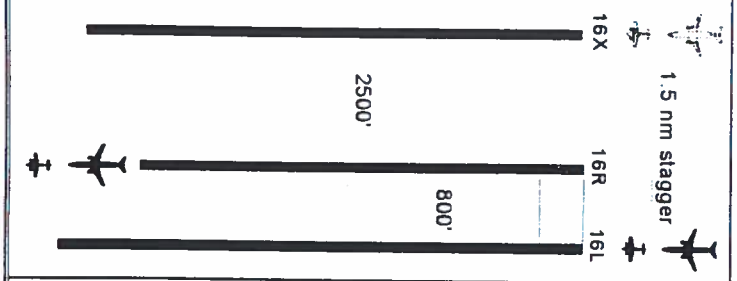
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI105

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1127	399	1.45	4.71	576.6
16R	337	180	1.23	36.82	221.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,264 (3.8)	6,585 (19.5)	3,272 (9.7)	388 (1.2)	3,660 (10.9)	10,245
16L	454	6,565 (14.5)	922 (2.0)	7,486 (16.5)	4,685 (10.3)	5 (0.0)	4,690 (10.3)	12,176
All	791	11,886 (15.0)	2,185 (2.8)	14,071 (17.8)	7,958 (10.1)	392 (0.5)	8,350 (10.6)	22,421

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	411 (0.5)	3,381 (4.3)	3,792 (4.8)	15,531
All	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	411 (0.5)	3,381 (4.3)	3,792 (4.8)	15,531

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,233 (12.2)	6,578 (4.2)	25,811 (16.3)	803 (0.5)	7,958 (10.1)	3,381 (4.3)	12,142 (7.7)	37,952

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0018999

Seattle - Tacoma Capacity Design Team Update

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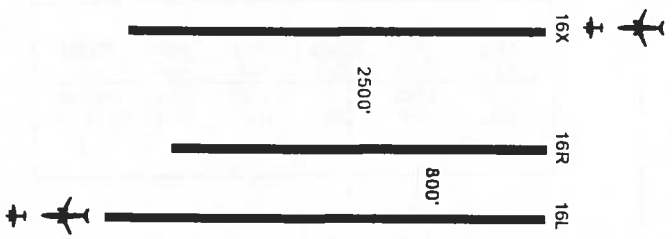
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	2SI405

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	256	0.90	43.46	229.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	791	11,999 (15.2)	2,848 (3.6)	14,847 (18.8)	222,318 (281.1)	261 (0.3)	222,579 (281.4)	237,427
All	791	11,999 (15.2)	2,848 (3.6)	14,847 (18.8)	222,318 (281.1)	261 (0.3)	222,579 (281.4)	237,427

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,990 (5.1)	11,337 (14.4)	24 (0.0)	1,422 (1.8)	1,446 (1.8)	12,782
All	790	7,347 (9.3)	3,990 (5.1)	11,337 (14.4)	24 (0.0)	1,422 (1.8)	1,446 (1.8)	12,782

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,346 (12.2)	6,837 (4.3)	26,184 (16.6)	285 (0.2)	222,318 (281.1)	1,422 (1.8)	224,025 (141.7)	250,209

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019000

Seattle - Tacoma Capacity Design Team Update

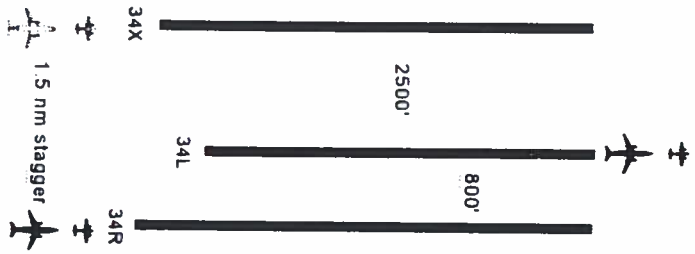
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	North Flow Arr: 34X; Dep: 34R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2NI205B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	1148	205	1.77	15.69	362.85
34L	358	227	0.67	15.10	151.33

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34R	433	6,274 (14.5)	888 (2.1)	7,162 (16.5)	6,040 (14.0)	1,516 (3.5)	7,556 (17.5)	14,718
34X	358	5,613 (15.7)	1,335 (3.7)	6,949 (19.4)	3,111 (8.7)	1,450 (4.1)	4,561 (12.7)	11,510
All	791	11,888 (15.0)	2,223 (2.8)	14,111 (17.8)	9,151 (11.6)	2,965 (3.7)	12,117 (15.3)	26,227

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	790	7,347 (9.3)	4,345 (5.5)	11,692 (14.8)	2,220 (2.8)	22,641 (28.7)	24,861 (31.5)	36,553
All	790	7,347 (9.3)	4,345 (5.5)	11,692 (14.8)	2,220 (2.8)	22,641 (28.7)	24,861 (31.5)	36,553

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,235 (12.2)	6,568 (4.2)	25,803 (16.3)	5,185 (3.3)	9,151 (11.6)	22,641 (28.7)	36,978 (23.4)	62,781

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019001

Seattle - Tacoma Capacity Design Team Update

June 1995

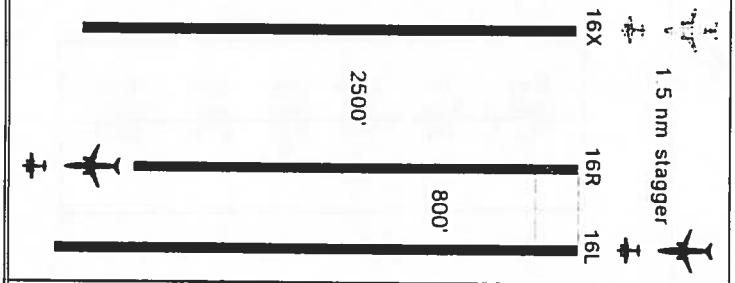
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Full Use Runway @ 2500'
South Flow Arr: 16L, [16X]; Dep: 16R
Future 2: 1581 Ops/Day; 525,000 Ops/Year
IFR1
2SI105B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1148	397	1.47	4.86	584.3
16R	358	199	1.29	37.94	256.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	358	5,613 (15.7)	1,335 (3.7)	6,949 (19.4)	1,586 (4.4)	440 (1.2)	2,026 (5.7)	8,975
16L	433	6,274 (14.5)	866 (2.0)	7,140 (16.5)	2,399 (5.5)	4 (0.0)	2,403 (5.6)	9,543
All	791	11,888 (15.0)	2,201 (2.8)	14,089 (17.8)	3,985 (5.0)	445 (0.6)	4,429 (5.6)	18,518

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,385 (5.6)	11,732 (14.9)	450 (0.6)	4,116 (5.2)	4,566 (5.8)	16,298
All	790	7,347 (9.3)	4,385 (5.6)	11,732 (14.9)	450 (0.6)	4,116 (5.2)	4,566 (5.8)	16,298

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,235 (12.2)	6,586 (4.2)	25,820 (16.3)	895 (0.6)	3,985 (5.0)	4,116 (5.2)	8,996 (5.7)	34,816

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

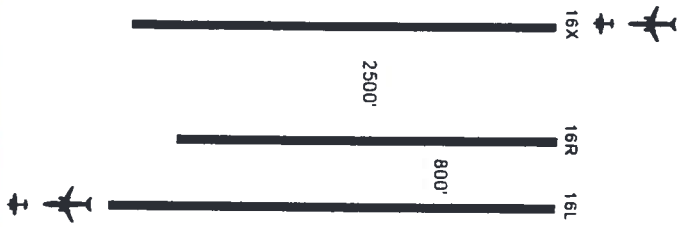
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	2SI405B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	265	0.89	44.28	234.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	791	11,999 (15.2)	2,840 (3.6)	14,839 (18.8)	174,202 (220.2)	261 (0.3)	174,463 (220.6)	189,302
All	791	11,999 (15.2)	2,840 (3.6)	14,839 (18.8)	174,202 (220.2)	261 (0.3)	174,463 (220.6)	189,302

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	24 (0.0)	1,730 (2.2)	1,754 (2.2)	13,082
All	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	24 (0.0)	1,730 (2.2)	1,754 (2.2)	13,082

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,346 (12.2)	6,821 (4.3)	26,168 (16.6)	285 (0.2)	174,202 (220.2)	1,730 (2.2)	176,217 (111.5)	202,385

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019003

Seattle - Tacoma Capacity Design Team Update

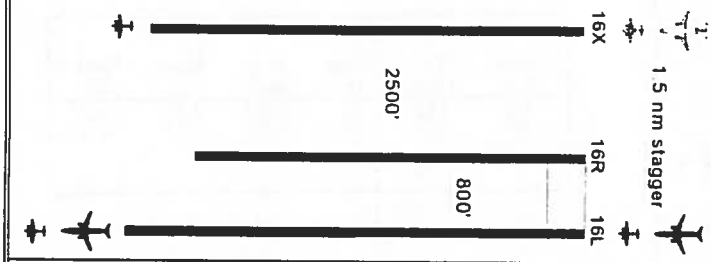
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' - No Glide Slope Interference
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16X]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI105C

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	516	305	1.02	18.55	311.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	516	7,735 (15.0)	1,894 (3.7)	9,629 (18.7)	45,398 (88.0)	294 (0.6)	45,692 (88.6)	55,320
16L	275	4,150 (15.1)	534 (1.9)	4,683 (17.0)	1,972 (7.2)	3 (0.0)	1,975 (7.2)	6,658
All	791	11,885 (15.0)	2,427 (3.1)	14,312 (18.1)	47,369 (59.9)	297 (0.4)	47,666 (60.3)	61,978

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	643	6,031 (9.4)	3,241 (5.0)	9,272 (14.4)	26 (0.0)	7,034 (10.9)	7,060 (11.0)	16,332
16X	147	1,316 (9.0)	951 (6.5)	2,267 (15.4)	21 (0.1)	221 (1.5)	241 (1.6)	2,508
All	790	7,347 (9.3)	4,192 (5.3)	11,539 (14.6)	46 (0.1)	7,255 (9.2)	7,301 (9.2)	18,840

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,232 (12.2)	6,619 (4.2)	25,851 (16.4)	343 (0.2)	47,369 (59.9)	7,255 (9.2)	54,968 (34.8)	80,818

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

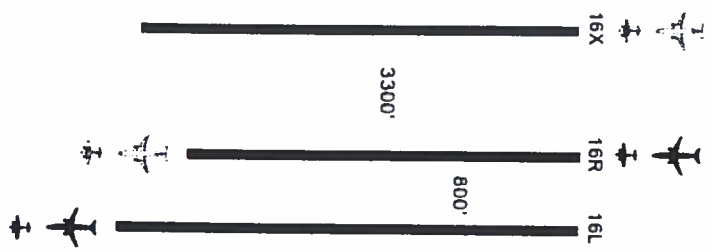
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV206

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	182	89	0.80	7.37	71.2
16L	520	139	0.68	7.37	94.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	338	4,860 (14.4)	690 (2.0)	5,550 (16.4)	61 (0.2)	112 (0.3)	172 (0.5)	5,722
16X	182	2,936 (16.1)	755 (4.2)	3,691 (20.3)	189 (1.0)	104 (0.6)	293 (1.6)	3,984
All	520	7,796 (15.0)	1,445 (2.8)	9,241 (17.8)	250 (0.5)	215 (0.4)	465 (0.9)	9,706

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,662 (5.1)	7,556 (14.5)	10 (0.0)	286 (0.6)	296 (0.6)	7,852
All	520	4,893 (9.4)	2,662 (5.1)	7,556 (14.5)	10 (0.0)	286 (0.6)	296 (0.6)	7,852

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,107 (3.9)	16,797 (16.2)	226 (0.2)	250 (0.5)	286 (0.6)	762 (0.7)	17,558

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019005

Seattle - Tacoma Capacity Design Team Update

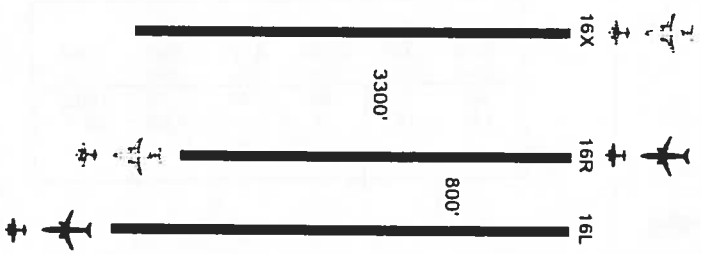
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV206B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	182	88	0.80	3.74	70.693
16L	520	144	0.66	7.03	95.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	338	4,860 (14.4)	831 (2.5)	5,692 (16.8)	690 (2.0)	61 (0.2)	750 (2.2)	6,442
16X	182	2,936 (16.1)	757 (4.2)	3,693 (20.3)	86 (0.5)	106 (0.6)	191 (1.1)	3,884
All	520	7,796 (15.0)	1,589 (3.1)	9,385 (18.0)	775 (1.5)	166 (0.3)	941 (1.8)	10,326

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,662 (5.1)	7,556 (14.5)	5 (0.0)	270 (0.5)	276 (0.5)	7,831
All	520	4,893 (9.4)	2,662 (5.1)	7,556 (14.5)	5 (0.0)	270 (0.5)	276 (0.5)	7,831

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,251 (4.1)	16,940 (16.3)	172 (0.2)	775 (1.5)	270 (0.5)	1,217 (1.2)	18,157

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

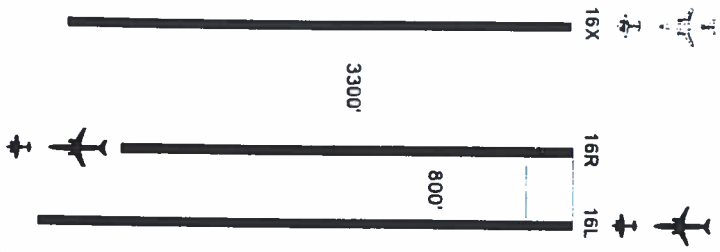
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI106

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	180	0.89	3.70	160.2
16R	182	69	0.67	9.60	46.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	755 (4.2)	3,691 (20.3)	149 (0.8)	91 (0.5)	240 (1.3)	3,931
16L	338	4,857 (14.4)	696 (2.1)	5,553 (16.4)	686 (2.0)	0 (0.0)	686 (2.0)	6,239
All	520	7,793 (15.0)	1,452 (2.8)	9,244 (17.8)	835 (1.6)	91 (0.2)	926 (1.8)	10,171

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	432 (0.8)	504 (1.0)	8,273
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	432 (0.8)	504 (1.0)	8,273

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,327 (4.2)	17,013 (16.4)	164 (0.2)	835 (1.6)	432 (0.8)	1,431 (1.4)	18,444

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019007

Seattle - Tacoma Capacity Design Team Update

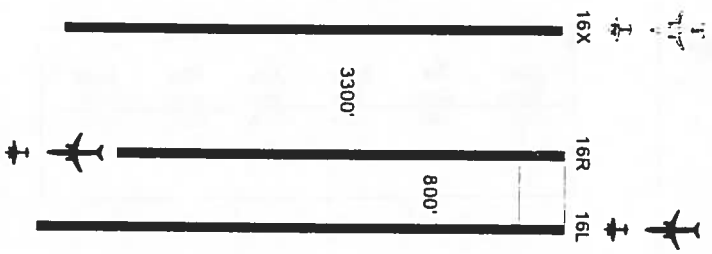
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM and 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI206

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	955	40	0.77	1.78	30.7
16R	435	163	0.70	14.31	114.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	435	6,447 (14.8)	1,718 (4.0)	8,165 (18.8)	4,006 (9.2)	148 (0.3)	4,154 (9.6)	12,319
16L	85	1,379 (16.2)	167 (2.0)	1,545 (18.2)	153 (1.8)	1 (0.0)	154 (1.8)	1,699
All	520	7,825 (15.0)	1,885 (3.6)	9,710 (18.7)	4,159 (8.0)	149 (0.3)	4,308 (8.3)	14,018

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	135 (0.3)	1,976 (3.8)	2,111 (4.1)	9,792
All	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	135 (0.3)	1,976 (3.8)	2,111 (4.1)	9,792

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,719 (12.2)	4,672 (4.5)	17,391 (16.7)	284 (0.3)	4,159 (8.0)	1,976 (3.8)	6,419 (6.2)	23,810

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

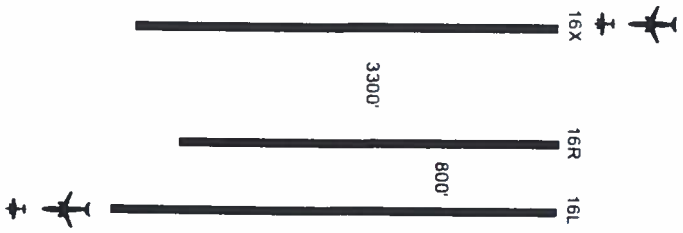
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	0SI406

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	155	0.76	10.31	118.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	520	7,862 (15.1)	2,070 (4.0)	9,932 (19.1)	23,072 (44.4)	114 (0.2)	23,187 (44.6)	33,119
All	520	7,862 (15.1)	2,070 (4.0)	9,932 (19.1)	23,072 (44.4)	114 (0.2)	23,187 (44.6)	33,119

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	338 (0.7)	343 (0.7)	7,857
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	338 (0.7)	343 (0.7)	7,857

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,756 (12.3)	4,690 (4.5)	17,446 (16.8)	120 (0.1)	23,072 (44.4)	338 (0.7)	23,530 (22.6)	40,976

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019009

Seattle - Tacoma Capacity Design Team Update

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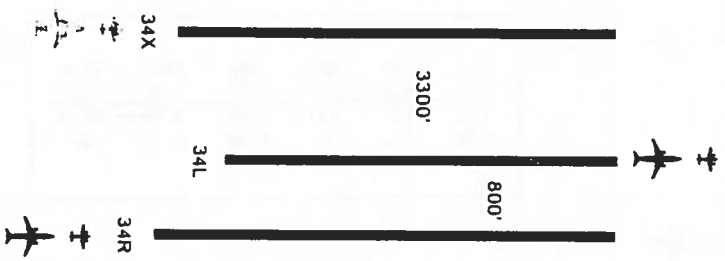
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	North Flow Arr: 34R, [34X]; Dep: 34L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0NI206B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	702	156	0.84	3.83	131.3
34L	182	71	0.60	7.78	42.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34X	182	2,936 (16.1)	755 (4.2)	3,691 (20.3)	86 (0.5)	84 (0.5)	169 (0.9)	3,860
34R	338	4,857 (14.4)	696 (2.1)	5,553 (16.4)	686 (2.0)	0 (0.0)	686 (2.0)	6,239
All	520	7,793 (15.0)	1,452 (2.8)	9,244 (17.8)	772 (1.5)	84 (0.2)	855 (1.6)	10,100

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	614 (1.2)	686 (1.3)	8,450
All	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	614 (1.2)	686 (1.3)	8,450

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,322 (4.2)	17,008 (16.4)	157 (0.2)	772 (1.5)	614 (1.2)	1,542 (1.5)	18,550

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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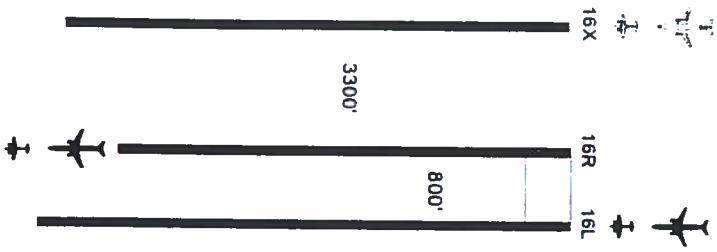
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI106B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	181	0.90	3.79	162.6
16R	182	71	0.64	13.10	45.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	753 (4.1)	3,689 (20.3)	86 (0.5)	89 (0.5)	175 (1.0)	3,864
16L	338	4,857 (14.4)	693 (2.1)	5,550 (16.4)	686 (2.0)	0 (0.0)	686 (2.0)	6,236
All	520	7,793 (15.0)	1,446 (2.8)	9,239 (17.8)	772 (1.5)	89 (0.2)	861 (1.7)	10,100

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	432 (0.8)	504 (1.0)	8,273
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	432 (0.8)	504 (1.0)	8,273

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,322 (4.2)	17,008 (16.4)	162 (0.2)	772 (1.5)	432 (0.8)	1,365 (1.3)	18,373

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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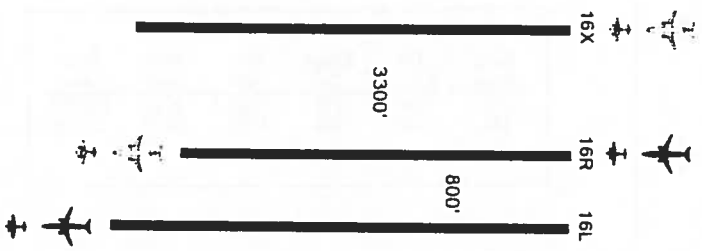
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV206

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	246	127	0.84	4.19	106.05
16L	640	267	0.91	19.15	242.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	394	5,681 (14.4)	957 (2.4)	6,639 (16.9)	1,107 (2.8)	126 (0.3)	1,233 (3.1)	7,872
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	544 (2.2)	234 (1.0)	777 (3.2)	5,729
All	640	9,608 (15.0)	1,983 (3.1)	11,591 (18.1)	1,651 (2.6)	360 (0.6)	2,011 (3.1)	13,601

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	960 (1.5)	979 (1.5)	10,189
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	960 (1.5)	979 (1.5)	10,189

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,209 (4.1)	20,800 (16.3)	379 (0.3)	1,651 (2.6)	960 (1.5)	2,990 (2.3)	23,790

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV206B - No BFI Interaction

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	246	129	0.83	4.18	107.29
16L	640	264	0.86	19.71	227.9

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	394	5,681 (14.4)	957 (2.4)	6,639 (16.9)	1,107 (2.8)	126 (0.3)	1,233 (3.1)	7,872
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	256 (1.0)	219 (0.9)	475 (1.9)	5,427
All	640	9,608 (15.0)	1,983 (3.1)	11,591 (18.1)	1,363 (2.1)	345 (0.5)	1,708 (2.7)	13,299

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	954 (1.5)	973 (1.5)	10,182
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	954 (1.5)	973 (1.5)	10,182

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,209 (4.1)	20,800 (16.3)	364 (0.3)	1,363 (2.1)	954 (1.5)	2,681 (2.1)	23,481

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019013

Seattle - Tacoma Capacity Design Team Update

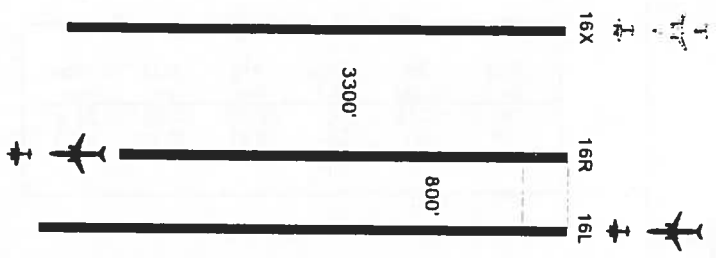
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI106

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	264	1.12	4.53	294.4
16R	246	110	0.88	22.07	96.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	549 (2.2)	175 (0.7)	723 (2.9)	5,675
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,111 (2.8)	0 (0.0)	1,111 (2.8)	7,585
All	640	9,604 (15.0)	1,822 (2.8)	11,425 (17.9)	1,660 (2.6)	175 (0.3)	1,834 (2.9)	13,260

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,024 (1.6)	1,152 (1.8)	10,682
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,024 (1.6)	1,152 (1.8)	10,682

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,367 (4.2)	20,955 (16.4)	303 (0.2)	1,660 (2.6)	1,024 (1.6)	2,986 (2.3)	23,941

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019014

Seattle - Tacoma Capacity Design Team Update

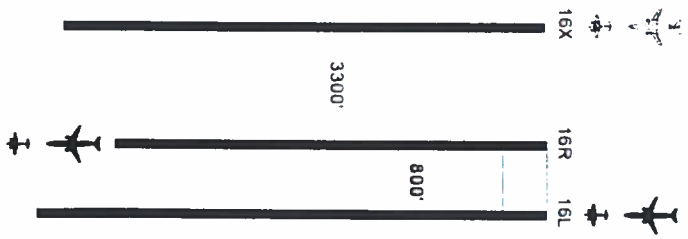
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI206

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1211	33	0.66	2.30	21.8
16R	571	234	0.69	13.15	161.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	571	9,239 (16.2)	2,255 (4.0)	11,494 (20.1)	42,551 (74.5)	194 (0.3)	42,745 (74.9)	54,239
16L	69	897 (13.0)	141 (2.1)	1,038 (15.1)	385 (5.6)	1 (0.0)	386 (5.6)	1,424
All	640	10,136 (15.8)	2,397 (3.7)	12,533 (19.6)	42,936 (67.1)	195 (0.3)	43,131 (67.4)	55,663

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	2,790 (4.4)	2,803 (4.4)	12,218
All	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	2,790 (4.4)	2,803 (4.4)	12,218

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	16,120 (12.6)	5,827 (4.6)	21,947 (17.1)	208 (0.2)	42,936 (67.1)	2,790 (4.4)	45,934 (35.9)	67,881

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019015

Seattle - Tacoma Capacity Design Team Update

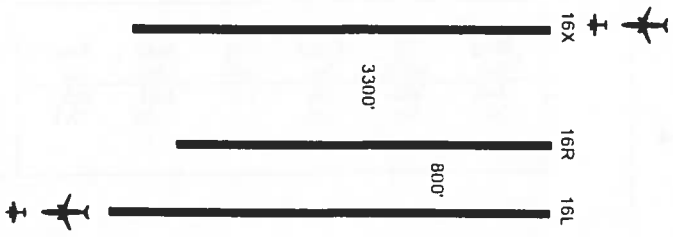
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	1SI406

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	210	0.74	14.45	154.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	640	9,690 (15.1)	2,547 (4.0)	12,237 (19.1)	86,272 (134.8)	154 (0.2)	86,426 (135.0)	98,662
All	640	9,690 (15.1)	2,547 (4.0)	12,237 (19.1)	86,272 (134.8)	154 (0.2)	86,426 (135.0)	98,662

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	608 (1.0)	621 (1.0)	9,830
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	13 (0.0)	608 (1.0)	621 (1.0)	9,830

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,674 (12.2)	5,773 (4.5)	21,446 (16.8)	166 (0.1)	86,272 (134.8)	608 (1.0)	87,046 (68.0)	108,493

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 34R, [34X]; Dep: 34L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1N1206B - NO BFI Interaction

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	886	190	1.03	4.81	195.1
34L	246	112	0.71	11.38	79.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34X	246	3,926 (16.0)	1,028 (4.2)	4,954 (20.1)	256 (1.0)	150 (0.6)	406 (1.7)	5,360
34R	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,111 (2.8)	4 (0.0)	1,115 (2.8)	7,588
All	640	9,604 (15.0)	1,824 (2.9)	11,428 (17.9)	1,367 (2.1)	154 (0.2)	1,521 (2.4)	12,949

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	640	5,984 (9.4)	3,526 (5.5)	9,510 (14.9)	160 (0.3)	1,933 (3.0)	2,093 (3.3)	11,603
All	640	5,984 (9.4)	3,526 (5.5)	9,510 (14.9)	160 (0.3)	1,933 (3.0)	2,093 (3.3)	11,603

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay: Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,351 (4.2)	20,938 (16.4)	314 (0.2)	1,367 (2.1)	1,933 (3.0)	3,614 (2.8)	24,552

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019017

Seattle - Tacoma Capacity Design Team Update

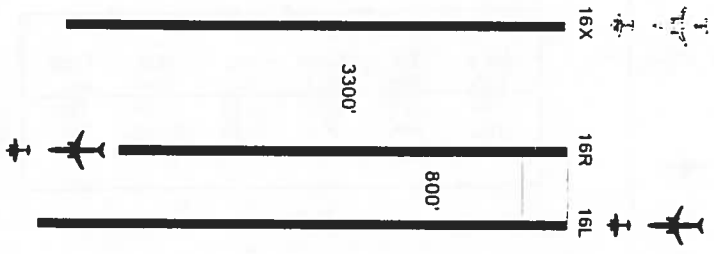
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI106B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	262	1.11	4.21	291.3
16R	246	111	0.96	16.15	106.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,028 (4.2)	4,954 (20.1)	256 (1.0)	185 (0.8)	440 (1.8)	5,395
16L	394	5,678 (14.4)	792 (2.0)	6,469 (16.4)	1,111 (2.8)	4 (0.0)	1,115 (2.8)	7,585
All	640	9,604 (15.0)	1,820 (2.8)	11,424 (17.8)	1,367 (2.1)	188 (0.3)	1,555 (2.4)	12,979

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,037 (1.6)	1,165 (1.8)	10,694
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,037 (1.6)	1,165 (1.8)	10,694

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,366 (4.2)	20,954 (16.4)	316 (0.2)	1,367 (2.1)	1,037 (1.6)	2,720 (2.1)	23,674

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019018

Seattle - Tacoma Capacity Design Team Update

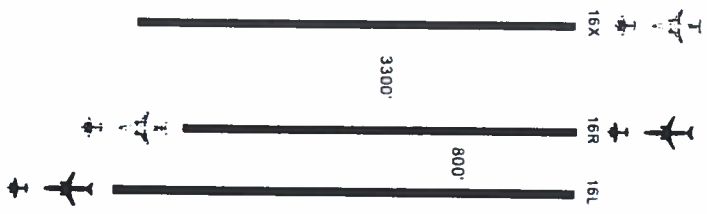
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV106

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	412	210	1.34	11.44	281
16L	948	315	0.95	30.68	298

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	379	5,560 (14.7)	902 (2.4)	6,462 (17.1)	610 (1.6)	152 (0.4)	762 (2.0)	7,224
16X	412	6,337 (15.4)	1,697 (4.1)	8,034 (19.5)	1,347 (3.3)	511 (1.2)	1,858 (4.5)	9,892
All	791	11,896 (15.0)	2,599 (3.3)	14,496 (18.3)	1,957 (2.5)	662 (0.8)	2,620 (3.3)	17,116

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	418 (2.7)	427 (2.7)	2,777
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,247 (2.0)	1,285 (2.0)	10,318
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,665 (2.1)	1,712 (2.2)	13,095

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,245 (12.2)	6,634 (4.2)	25,879 (16.4)	710 (0.4)	1,957 (2.5)	1,665 (2.1)	4,332 (2.7)	30,211

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019019

Seattle - Tacoma Capacity Design Team Update

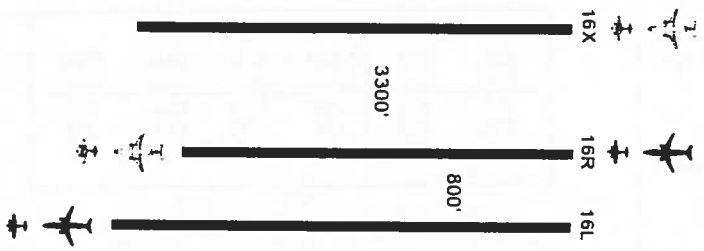
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV206

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	337	222	0.91	4.44	202.76
16L	959	312	0.83	16.42	257.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	454	6,574 (14.5)	1,103 (2.4)	7,677 (16.9)	3,764 (8.3)	136 (0.3)	3,900 (8.6)	11,577
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	1,965 (5.8)	340 (1.0)	2,305 (6.8)	9,025
All	791	11,895 (15.0)	2,502 (3.2)	14,397 (18.2)	5,728 (7.2)	477 (0.6)	6,205 (7.8)	20,602

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	168	1,752 (10.4)	885 (5.3)	2,638 (15.7)	10 (0.1)	447 (2.7)	457 (2.7)	3,095
16L	622	5,598 (9.0)	3,154 (5.1)	8,752 (14.1)	31 (0.1)	1,387 (2.2)	1,418 (2.3)	10,170
All	790	7,350 (9.3)	4,039 (5.1)	11,389 (14.4)	41 (0.1)	1,834 (2.3)	1,875 (2.4)	13,264

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,245 (12.2)	6,541 (4.1)	25,786 (16.3)	518 (0.3)	5,728 (7.2)	1,834 (2.3)	8,080 (5.1)	33,866

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

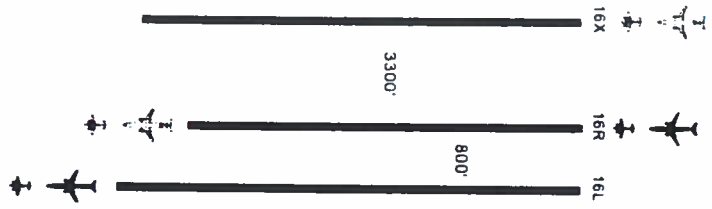
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV106B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	412	204	1.34	12.33	272
16L	833	316	0.92	14.49	292

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	379	5,560 (14.7)	906 (2.4)	6,466 (17.1)	614 (1.6)	144 (0.4)	758 (2.0)	7,224
16X	412	6,337 (15.4)	1,693 (4.1)	8,030 (19.5)	622 (1.5)	503 (1.2)	1,125 (2.7)	9,155
All	791	11,896 (15.0)	2,599 (3.3)	14,496 (18.3)	1,236 (1.6)	647 (0.8)	1,883 (2.4)	16,378

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	413 (2.6)	422 (2.7)	2,773
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,222 (1.9)	1,260 (2.0)	10,293
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,635 (2.1)	1,682 (2.1)	13,065

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,245 (12.2)	6,634 (4.2)	25,879 (16.4)	694 (0.4)	1,236 (1.6)	1,635 (2.1)	3,565 (2.3)	29,444

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019021

Seattle - Tacoma Capacity Design Team Update

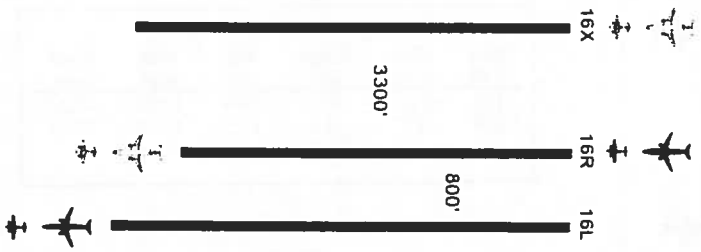
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV206B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	369	230	0.91	5.33	208.53
16L	960	316	0.86	15.47	272.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	423	6,150 (14.5)	1,019 (2.4)	7,170 (17.0)	1,904 (4.5)	135 (0.3)	2,039 (4.8)	9,209
16X	369	5,760 (15.6)	1,520 (4.1)	7,280 (19.7)	1,321 (3.6)	373 (1.0)	1,694 (4.6)	8,974
All	792	11,911 (15.0)	2,540 (3.2)	14,450 (18.2)	3,225 (4.1)	508 (0.6)	3,733 (4.7)	18,183

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	168	1,752 (10.4)	885 (5.3)	2,638 (15.7)	10 (0.1)	438 (2.6)	449 (2.7)	3,086
16L	622	5,598 (9.0)	3,154 (5.1)	8,752 (14.1)	37 (0.1)	1,424 (2.3)	1,462 (2.4)	10,213
All	790	7,350 (9.3)	4,039 (5.1)	11,389 (14.4)	47 (0.1)	1,863 (2.4)	1,910 (2.4)	13,299

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,582	19,261 (12.2)	6,579 (4.2)	25,839 (16.3)	555 (0.4)	3,225 (4.1)	1,863 (2.4)	5,643 (3.6)	31,482

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019022

Seattle - Tacoma Capacity Design Team Update

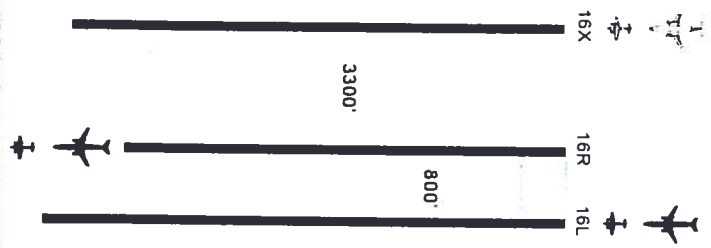
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM and 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI106

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1127	402	3.04	14.68	1222.1
16R	337	189	1.21	52.01	228.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	1,965 (5.8)	408 (1.2)	2,372 (7.0)	9,092
16L	454	6,565 (14.5)	922 (2.0)	7,486 (16.5)	3,782 (8.3)	5 (0.0)	3,786 (8.3)	11,273
All	791	11,886 (15.0)	2,320 (2.9)	14,206 (18.0)	5,747 (7.3)	412 (0.5)	6,159 (7.8)	20,365

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,306 (5.5)	11,653 (14.8)	40 (0.1)	3,863 (4.9)	3,903 (4.9)	15,555
All	790	7,347 (9.3)	4,306 (5.5)	11,653 (14.8)	40 (0.1)	3,863 (4.9)	3,903 (4.9)	15,555

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,233 (12.2)	6,626 (4.2)	25,859 (16.4)	452 (0.3)	5,747 (7.3)	3,863 (4.9)	10,061 (6.4)	35,920

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019023

Seattle - Tacoma Capacity Design Team Update

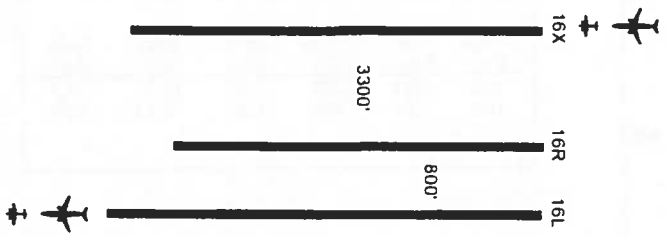
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16X; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	2SI406

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	252	0.94	51.81	237.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	791	11,999 (15.2)	3,156 (4.0)	15,156 (19.2)	222,318 (281.1)	269 (0.3)	222,587 (281.4)	237,743
All	791	11,999 (15.2)	3,156 (4.0)	15,156 (19.2)	222,318 (281.1)	269 (0.3)	222,587 (281.4)	237,743

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,990 (5.1)	11,337 (14.4)	24 (0.0)	1,469 (1.9)	1,493 (1.9)	12,830
All	790	7,347 (9.3)	3,990 (5.1)	11,337 (14.4)	24 (0.0)	1,469 (1.9)	1,493 (1.9)	12,830

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,581	19,346 (12.2)	7,146 (4.5)	26,492 (16.8)	293 (0.2)	222,318 (281.1)	1,469 (1.9)	224,081 (141.7)	250,573

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019024

Seattle - Tacoma Capacity Design Team Update

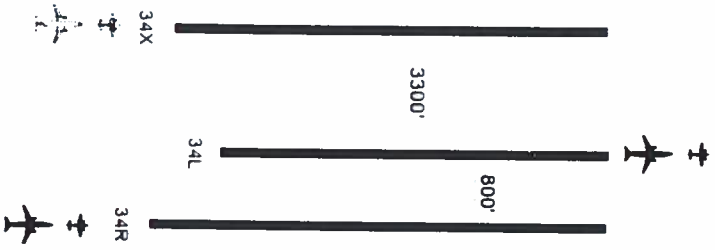
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2NI206B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1134	222	3.45	16.50	765.5
16R	344	198	0.76	18.28	150.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	344	5,394 (15.7)	1,431 (4.2)	6,825 (19.8)	1,218 (3.5)	275 (0.8)	1,493 (4.3)	8,318
16L	447	6,495 (14.5)	894 (2.0)	7,389 (16.5)	1,882 (4.2)	4 (0.0)	1,886 (4.2)	9,275
All	791	11,889 (15.0)	2,325 (2.9)	14,214 (18.0)	3,100 (3.9)	280 (0.4)	3,379 (4.3)	17,593

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,258 (5.4)	11,605 (14.7)	40 (0.1)	15,531 (19.7)	15,571 (19.7)	27,176
All	790	7,347 (9.3)	4,258 (5.4)	11,605 (14.7)	40 (0.1)	15,531 (19.7)	15,571 (19.7)	27,176

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,236 (12.2)	6,583 (4.2)	25,819 (16.3)	319 (0.2)	3,100 (3.9)	15,531 (19.7)	18,950 (12.0)	44,769

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019025

Seattle - Tacoma Capacity Design Team Update

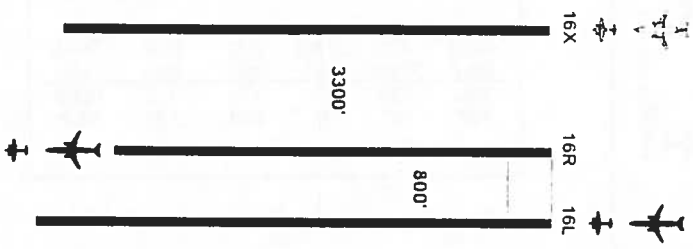
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI106B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1134	392	3.39	14.83	1326.9
16R	344	196	1.17	45.33	229.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	344	5,394 (15.7)	1,428 (4.2)	6,822 (19.8)	1,218 (3.5)	399 (1.2)	1,617 (4.7)	8,438
16L	447	6,495 (14.5)	894 (2.0)	7,389 (16.5)	1,882 (4.2)	4 (0.0)	1,886 (4.2)	9,275
All	791	11,889 (15.0)	2,322 (2.9)	14,210 (18.0)	3,100 (3.9)	404 (0.5)	3,503 (4.4)	17,714

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,306 (5.5)	11,653 (14.8)	47 (0.1)	4,353 (5.5)	4,400 (5.6)	16,053
All	790	7,347 (9.3)	4,306 (5.5)	11,653 (14.8)	47 (0.1)	4,353 (5.5)	4,400 (5.6)	16,053

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,236 (12.2)	6,627 (4.2)	25,863 (16.4)	451 (0.3)	3,100 (3.9)	4,353 (5.5)	7,903 (5.0)	33,766

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

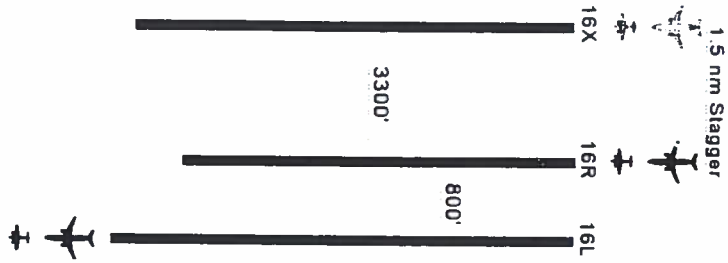
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI107

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	176	0.76	11.27	133.8
16R	182	73	0.81	2.86	58.9

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	757 (4.2)	3,693 (20.3)	202 (1.1)	113 (0.6)	315 (1.7)	4,008
16R	338	4,860 (14.4)	831 (2.5)	5,692 (16.8)	750 (2.2)	81 (0.2)	831 (2.5)	6,523
All	520	7,796 (15.0)	1,589 (3.1)	9,385 (18.0)	952 (1.8)	194 (0.4)	1,146 (2.2)	10,531

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	411 (0.8)	416 (0.8)	7,930
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	411 (0.8)	416 (0.8)	7,930

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,209 (4.0)	16,899 (16.2)	199 (0.2)	952 (1.8)	411 (0.8)	1,562 (1.5)	18,461

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019027

Seattle - Tacoma Capacity Design Team Update

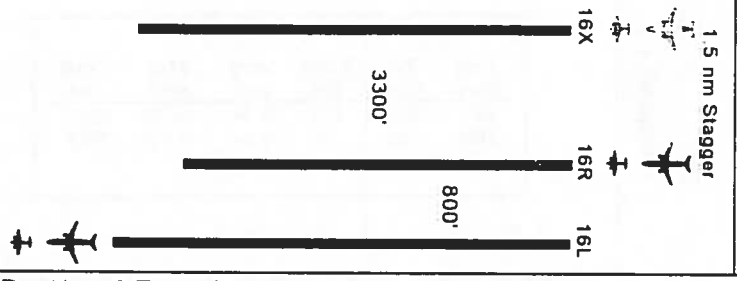
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 89 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI207

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	151	0.76	7.06	115.0
16R	182	72	0.81	2.73	58.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	757 (4.2)	3,693 (20.3)	202 (1.1)	98 (0.5)	300 (1.7)	3,993
16R	338	4,860 (14.4)	831 (2.5)	5,692 (16.8)	747 (2.2)	74 (0.2)	821 (2.4)	6,513
All	520	7,796 (15.0)	1,589 (3.1)	9,385 (18.0)	949 (1.8)	173 (0.3)	1,122 (2.2)	10,506

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	738 (1.4)	744 (1.4)	8,258
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	738 (1.4)	744 (1.4)	8,258

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,209 (4.0)	16,899 (16.2)	178 (0.2)	949 (1.8)	738 (1.4)	1,865 (1.8)	18,764

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

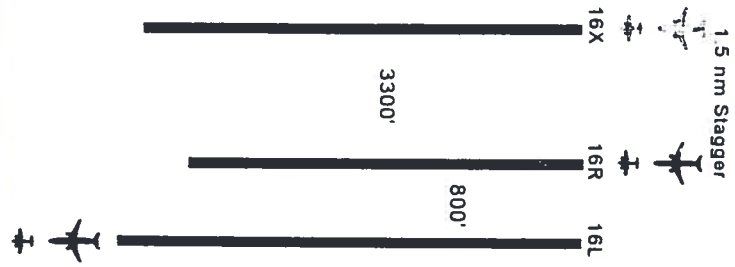
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI107B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	175	0.74	10.20	129.2
16R	182	70	0.84	2.73	58.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	755 (4.2)	3,691 (20.3)	122 (0.7)	106 (0.6)	228 (1.3)	3,918
16R	338	4,860 (14.4)	828 (2.5)	5,689 (16.8)	737 (2.2)	81 (0.2)	818 (2.4)	6,507
All	520	7,796 (15.0)	1,583 (3.0)	9,380 (18.0)	859 (1.7)	187 (0.4)	1,045 (2.0)	10,425

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	10 (0.0)	390 (0.8)	400 (0.8)	7,914
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	10 (0.0)	390 (0.8)	400 (0.8)	7,914

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,204 (4.0)	16,894 (16.2)	197 (0.2)	859 (1.7)	390 (0.8)	1,446 (1.4)	18,339

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019029

Seattle - Tacoma Capacity Design Team Update

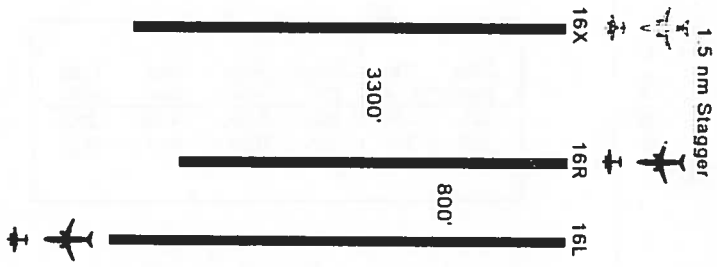
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI207B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	148	0.77	6.20	114.0
16R	182	70	0.82	3.26	57.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	182	2,936 (16.1)	757 (4.2)	3,693 (20.3)	122 (0.7)	96 (0.5)	218 (1.2)	3,911
16R	338	4,860 (14.4)	831 (2.5)	5,692 (16.8)	737 (2.2)	74 (0.2)	811 (2.4)	6,503
All	520	7,796 (15.0)	1,589 (3.1)	9,385 (18.0)	859 (1.7)	171 (0.3)	1,030 (2.0)	10,414

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	759 (1.5)	764 (1.5)	8,278
All	520	4,893 (9.4)	2,621 (5.0)	7,514 (14.5)	5 (0.0)	759 (1.5)	764 (1.5)	8,278

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,689 (12.2)	4,209 (4.0)	16,899 (16.2)	176 (0.2)	859 (1.7)	759 (1.5)	1,794 (1.7)	18,693

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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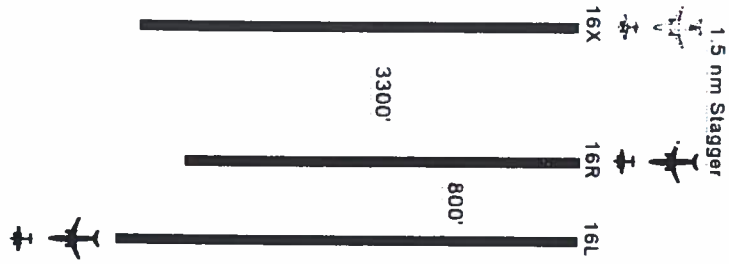
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI107

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	266	0.85	14.16	225.7
16R	246	116	0.86	4.14	99.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	743 (3.0)	209 (0.9)	952 (3.9)	5,904
16R	394	5,681 (14.4)	957 (2.4)	6,639 (16.9)	1,253 (3.2)	126 (0.3)	1,379 (3.5)	8,018
All	640	9,608 (15.0)	1,983 (3.1)	11,591 (18.1)	1,996 (3.1)	335 (0.5)	2,331 (3.6)	13,922

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	1,005 (1.6)	1,024 (1.6)	10,234
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	1,005 (1.6)	1,024 (1.6)	10,234

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,209 (4.1)	20,800 (16.3)	354 (0.3)	1,996 (3.1)	1,005 (1.6)	3,355 (2.6)	24,156

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019031

Seattle - Tacoma Capacity Design Team Update

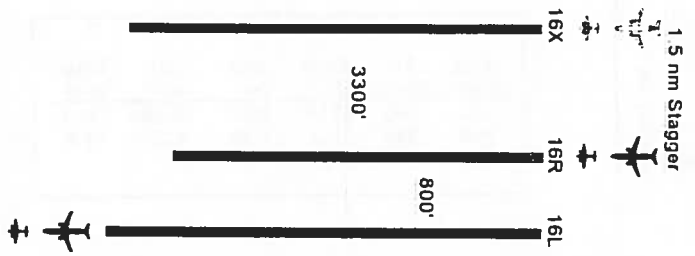
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI207

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	215	0.84	14.17	180.2
16R	246	117	0.85	4.22	99.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	743 (3.0)	177 (0.7)	920 (3.7)	5,872
16R	394	5,681 (14.4)	957 (2.4)	6,639 (16.9)	1,253 (3.2)	110 (0.3)	1,363 (3.5)	8,002
All	640	9,608 (15.0)	1,983 (3.1)	11,591 (18.1)	1,996 (3.1)	287 (0.4)	2,283 (3.6)	13,874

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	3,501 (5.5)	3,520 (5.5)	12,730
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	3,501 (5.5)	3,520 (5.5)	12,730

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,209 (4.1)	20,800 (16.3)	307 (0.2)	1,996 (3.1)	3,501 (5.5)	5,803 (4.5)	26,604

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

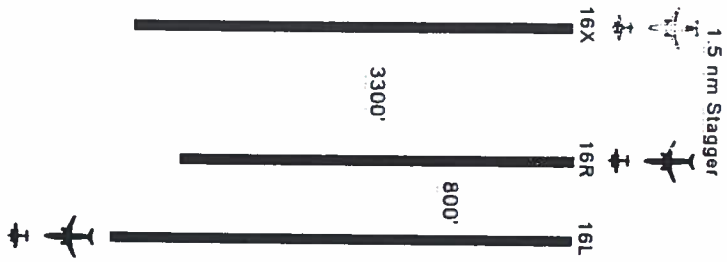
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI107B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	274	0.84	15.88	231.1
16R	246	113	0.88	4.22	99.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	330 (1.3)	209 (0.9)	539 (2.2)	5,491
16R	394	5,681 (14.4)	957 (2.4)	6,639 (16.9)	1,217 (3.1)	134 (0.3)	1,351 (3.4)	7,990
All	640	9,608 (15.0)	1,983 (3.1)	11,591 (18.1)	1,547 (2.4)	343 (0.5)	1,890 (3.0)	13,481

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	941 (1.5)	960 (1.5)	10,170
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	941 (1.5)	960 (1.5)	10,170

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,209 (4.1)	20,800 (16.3)	362 (0.3)	1,547 (2.4)	941 (1.5)	2,850 (2.2)	23,651

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

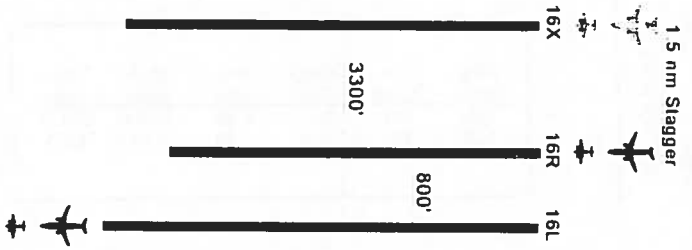
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI207B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	213	0.85	18.10	180.7
16R	246	114	0.87	4.14	98.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	246	3,926 (16.0)	1,026 (4.2)	4,952 (20.1)	330 (1.3)	175 (0.7)	504 (2.1)	5,456
16R	394	5,681 (14.4)	953 (2.4)	6,635 (16.8)	1,217 (3.1)	110 (0.3)	1,328 (3.4)	7,963
All	640	9,608 (15.0)	1,979 (3.1)	11,587 (18.1)	1,547 (2.4)	285 (0.4)	1,832 (2.9)	13,419

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	3,501 (5.5)	3,520 (5.5)	12,730
All	640	5,984 (9.4)	3,226 (5.0)	9,210 (14.4)	19 (0.0)	3,501 (5.5)	3,520 (5.5)	12,730

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	5,205 (4.1)	20,797 (16.2)	304 (0.2)	1,547 (2.4)	3,501 (5.5)	5,352 (4.2)	26,149

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019034

Seattle - Tacoma Capacity Design Team Update

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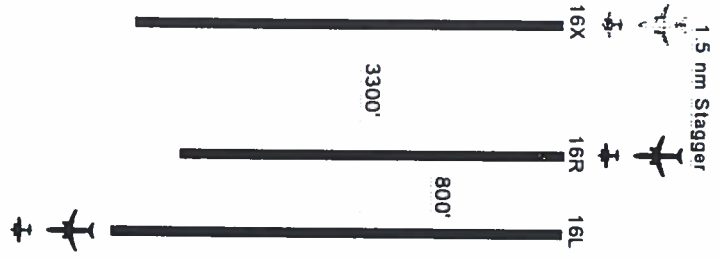
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI207

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	361	0.86	27.34	311.7
16R	337	136	0.73	2.83	99.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	4,452 (13.2)	239 (0.7)	4,691 (13.9)	11,411
16R	454	6,574 (14.5)	1,103 (2.4)	7,677 (16.9)	7,904 (17.4)	195 (0.4)	8,099 (17.8)	15,777
All	791	11,895 (15.0)	2,502 (3.2)	14,397 (18.2)	12,356 (15.6)	434 (0.5)	12,790 (16.2)	27,187

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	23,566 (29.8)	23,605 (29.9)	34,934
All	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	23,566 (29.8)	23,605 (29.9)	34,934

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,242 (12.2)	6,483 (4.1)	25,726 (16.3)	474 (0.3)	12,356 (15.6)	23,566 (29.8)	36,396 (23.0)	62,121

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019035

Seattle - Tacoma Capacity Design Team Update

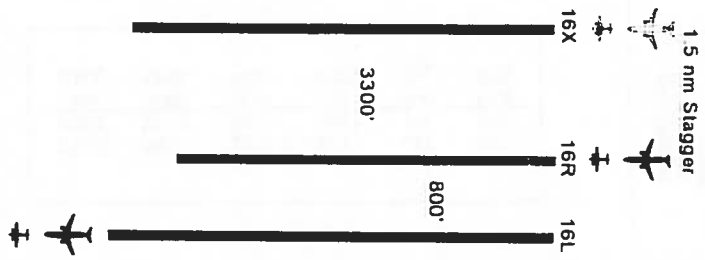
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI107B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	404	1.00	33.00	402.7
16R	337	178	0.90	3.88	159.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	1,092 (3.2)	428 (1.3)	1,520 (4.5)	8,240
16R	454	6,574 (14.5)	1,103 (2.4)	7,677 (16.9)	4,404 (9.7)	200 (0.4)	4,604 (10.1)	12,281
All	791	11,895 (15.0)	2,502 (3.2)	14,397 (18.2)	5,496 (6.9)	628 (0.8)	6,123 (7.7)	20,520

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	3,990 (5.1)	4,029 (5.1)	15,358
All	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	3,990 (5.1)	4,029 (5.1)	15,358

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,242 (12.2)	6,483 (4.1)	25,726 (16.3)	667 (0.4)	5,496 (6.9)	3,990 (5.1)	10,152 (6.4)	35,878

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

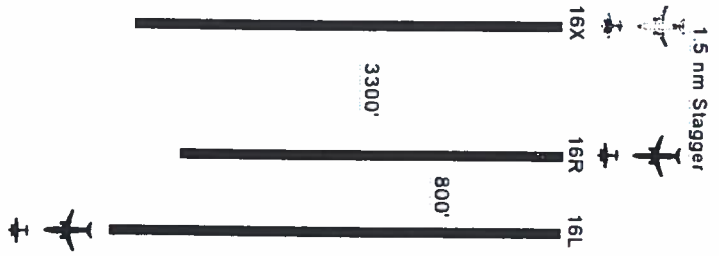
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI207B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	347	0.88	21.21	303.6
16R	337	143	0.77	4.44	110.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	1,270 (3.8)	263 (0.8)	1,533 (4.6)	8,253
16R	454	6,574 (14.5)	1,103 (2.4)	7,677 (16.9)	7,228 (15.9)	182 (0.4)	7,409 (16.3)	15,086
All	791	11,895 (15.0)	2,502 (3.2)	14,397 (18.2)	8,498 (10.7)	444 (0.6)	8,943 (11.3)	23,340

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	26,031 (33.0)	26,070 (33.0)	37,399
All	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	26,031 (33.0)	26,070 (33.0)	37,399

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,242 (12.2)	6,483 (4.1)	25,726 (16.3)	484 (0.3)	8,498 (10.7)	26,031 (33.0)	35,013 (22.1)	60,738

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019037

Seattle - Tacoma Capacity Design Team Update

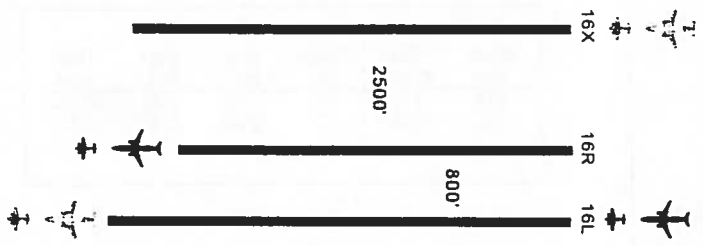
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV208

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	175	66	0.59	7.81	38.83
16L	695	179	0.87	3.38	155.73

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	345	4,965 (14.4)	707 (2.1)	5,672 (16.4)	752 (2.2)	0 (0.0)	752 (2.2)	6,424
16X	175	2,826 (16.2)	660 (3.8)	3,486 (19.9)	189 (1.1)	82 (0.5)	271 (1.6)	3,757
All	520	7,791 (15.0)	1,367 (2.6)	9,158 (17.6)	941 (1.8)	82 (0.2)	1,023 (2.0)	10,181

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	416 (0.8)	489 (0.9)	8,258
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	416 (0.8)	489 (0.9)	8,258

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,684 (12.2)	4,243 (4.1)	16,927 (16.3)	155 (0.1)	941 (1.8)	416 (0.8)	1,512 (1.5)	18,439

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019038

Seattle - Tacoma Capacity Design Team Update

June 1995

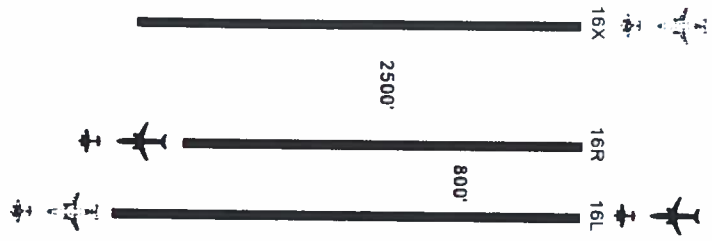
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Non-Heavy Runway @ 2500' with PRM and 135 Operations at BFI
South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
Baseline: 1040 Ops/Day; 345,000 Ops/Year
VFR2
0SV208B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	175	66	0.66	9.41	43.34
16L	695	177	0.89	3.67	157.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	345	4,965 (14.4)	704 (2.0)	5,668 (16.4)	752 (2.2)	0 (0.0)	752 (2.2)	6,420
16X	175	2,826 (16.2)	660 (3.8)	3,486 (19.9)	130 (0.7)	88 (0.5)	217 (1.2)	3,703
All	520	7,791 (15.0)	1,364 (2.6)	9,154 (17.6)	882 (1.7)	88 (0.2)	969 (1.9)	10,123

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	416 (0.8)	489 (0.9)	8,258
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	416 (0.8)	489 (0.9)	8,258

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,684 (12.2)	4,239 (4.1)	16,923 (16.3)	160 (0.2)	882 (1.7)	416 (0.8)	1,458 (1.4)	18,381

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

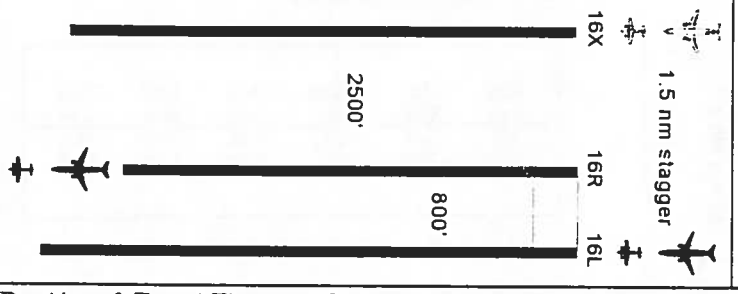
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI108

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	695	180	0.99	4.52	178.5
16R	175	68	0.52	6.78	35.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	175	2,826 (16.2)	662 (3.8)	3,488 (19.9)	186 (1.1)	82 (0.5)	268 (1.5)	3,756
16L	345	4,965 (14.4)	711 (2.1)	5,675 (16.5)	807 (2.3)	0 (0.0)	807 (2.3)	6,483
All	520	7,791 (15.0)	1,372 (2.6)	9,163 (17.6)	993 (1.9)	82 (0.2)	1,075 (2.1)	10,238

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	567 (1.1)	640 (1.2)	8,408
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	73 (0.1)	567 (1.1)	640 (1.2)	8,408

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,684 (12.2)	4,248 (4.1)	16,932 (16.3)	155 (0.1)	993 (1.9)	567 (1.1)	1,715 (1.6)	18,646

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019040

Seattle - Tacoma Capacity Design Team Update

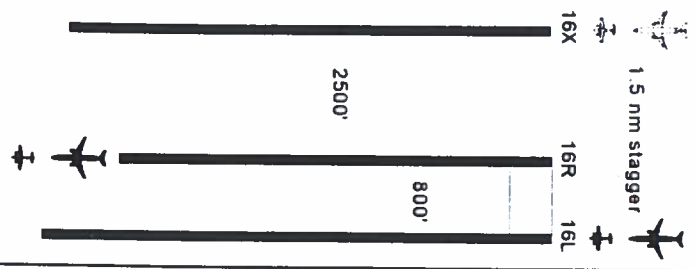
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with PRM and 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI208

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	919	52	0.82	2.50	42.6
16R	399	143	0.49	9.62	69.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	399	5,953 (14.9)	1,436 (3.6)	7,389 (18.5)	2,737 (6.9)	112 (0.3)	2,849 (7.1)	10,238
16L	121	1,866 (15.4)	252 (2.1)	2,118 (17.5)	132 (1.1)	1 (0.0)	133 (1.1)	2,251
All	520	7,819 (15.0)	1,688 (3.2)	9,507 (18.3)	2,869 (5.5)	113 (0.2)	2,982 (5.7)	12,489

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	1,300 (2.5)	12,132 (23.3)	13,432 (25.8)	21,112
All	520	4,893 (9.4)	2,787 (5.4)	7,680 (14.8)	1,300 (2.5)	12,132 (23.3)	13,432 (25.8)	21,112

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,712 (12.2)	4,475 (4.3)	17,187 (16.5)	1,413 (1.4)	2,869 (5.5)	12,132 (23.3)	16,414 (15.8)	33,601

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

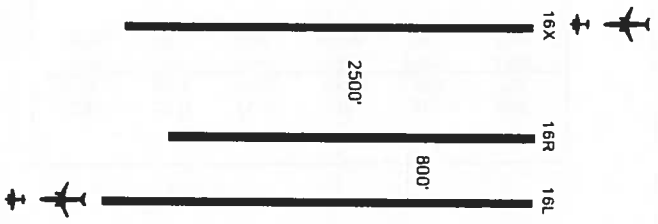
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with PRM and 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	0SI408

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	996	25	46.40	1.73	1160.0
16R	476	156	0.56	5.31	87.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	476	7,659 (16.1)	1,723 (3.6)	9,382 (19.7)	21,134 (44.4)	95 (0.2)	21,230 (44.6)	30,612
16L	44	620 (14.1)	100 (2.3)	720 (16.4)	1,962 (44.6)	0 (0.0)	1,962 (44.6)	2,682
All	520	8,278 (15.9)	1,823 (3.5)	10,102 (19.4)	23,097 (44.4)	95 (0.2)	23,192 (44.6)	33,294

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,792 (5.4)	7,686 (14.8)	229 (0.4)	1,087 (2.1)	1,316 (2.5)	9,001
All	520	4,893 (9.4)	2,792 (5.4)	7,686 (14.8)	229 (0.4)	1,087 (2.1)	1,316 (2.5)	9,001

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	13,172 (12.7)	4,616 (4.4)	17,787 (17.1)	324 (0.3)	23,097 (44.4)	1,087 (2.1)	24,508 (23.6)	42,295

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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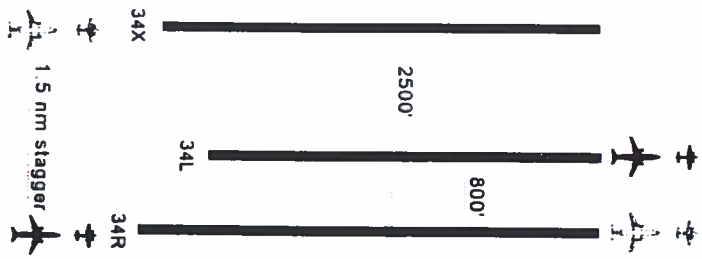
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with PRM
2. Runway Use Weather Scenario:	North Flow Arr: 34R, [34X]; Dep: 34L, [34R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0NI208B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	695	150	0.91	4.68	136.0
16R	175	69	0.51	6.47	35.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	175	2,826 (16.2)	660 (3.8)	3,486 (19.9)	114 (0.7)	79 (0.5)	193 (1.1)	3,679
16L	345	4,965 (14.4)	707 (2.1)	5,672 (16.4)	797 (2.3)	0 (0.0)	797 (2.3)	6,469
All	520	7,791 (15.0)	1,367 (2.6)	9,158 (17.6)	911 (1.8)	79 (0.2)	989 (1.9)	10,147

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	770 (1.5)	842 (1.6)	8,606
All	520	4,893 (9.4)	2,870 (5.5)	7,764 (14.9)	73 (0.1)	770 (1.5)	842 (1.6)	8,606

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,684 (12.2)	4,237 (4.1)	16,921 (16.3)	152 (0.1)	911 (1.8)	770 (1.5)	1,832 (1.8)	18,753

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019043

Seattle - Tacoma Capacity Design Team Update

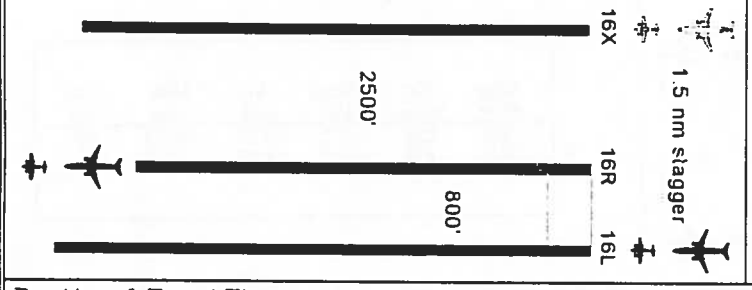
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with PRM
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI108B - No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	695	181	0.99	4.10	178.6
16R	175	73	0.57	9.74	41.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	175	2,826 (16.2)	662 (3.8)	3,488 (19.9)	114 (0.7)	88 (0.5)	201 (1.2)	3,689
16L	345	4,965 (14.4)	711 (2.1)	5,675 (16.5)	797 (2.3)	0 (0.0)	797 (2.3)	6,472
All	520	7,791 (15.0)	1,372 (2.6)	9,163 (17.6)	911 (1.8)	88 (0.2)	998 (1.9)	10,161

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	68 (0.1)	567 (1.1)	634 (1.2)	8,403
All	520	4,893 (9.4)	2,876 (5.5)	7,769 (14.9)	68 (0.1)	567 (1.1)	634 (1.2)	8,403

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,040	12,684 (12.2)	4,248 (4.1)	16,932 (16.3)	155 (0.1)	911 (1.8)	567 (1.1)	1,633 (1.6)	18,564

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV208

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	236	112	0.75	14.93	84
16L	876	263	1.11	4.09	292.8

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	404	5,834 (14.4)	816 (2.0)	6,650 (16.5)	1,204 (3.0)	4 (0.0)	1,208 (3.0)	7,858
16X	236	3,769 (16.0)	894 (3.8)	4,663 (19.8)	481 (2.0)	156 (0.7)	637 (2.7)	5,301
All	640	9,603 (15.0)	1,711 (2.7)	11,313 (17.7)	1,685 (2.6)	160 (0.2)	1,845 (2.9)	13,158

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	122 (0.2)	1,024 (1.6)	1,146 (1.8)	10,675
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	122 (0.2)	1,024 (1.6)	1,146 (1.8)	10,675

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,587 (12.2)	5,256 (4.1)	20,843 (16.3)	281 (0.2)	1,685 (2.6)	1,024 (1.6)	2,991 (2.3)	23,834

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019045

Seattle - Tacoma Capacity Design Team Update

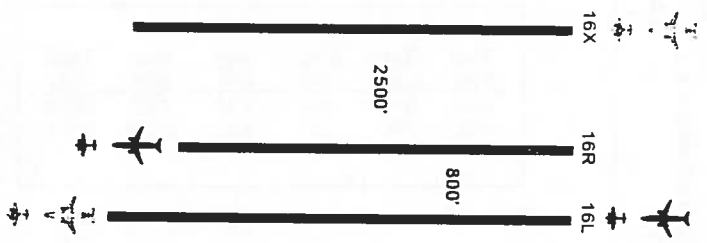
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV208B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	236	111	0.79	15.90	88.06
16L	876	268	1.12	4.74	301.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	404	5,834 (14.4)	816 (2.0)	6,650 (16.5)	1,200 (3.0)	4 (0.0)	1,204 (3.0)	7,854
16X	236	3,769 (16.0)	894 (3.8)	4,663 (19.8)	236 (1.0)	163 (0.7)	399 (1.7)	5,062
All	640	9,603 (15.0)	1,711 (2.7)	11,313 (17.7)	1,436 (2.2)	167 (0.3)	1,603 (2.5)	12,916

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	141 (0.2)	1,037 (1.6)	1,178 (1.8)	10,707
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	141 (0.2)	1,037 (1.6)	1,178 (1.8)	10,707

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,587 (12.2)	5,256 (4.1)	20,843 (16.3)	308 (0.2)	1,436 (2.2)	1,037 (1.6)	2,780 (2.2)	23,623

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

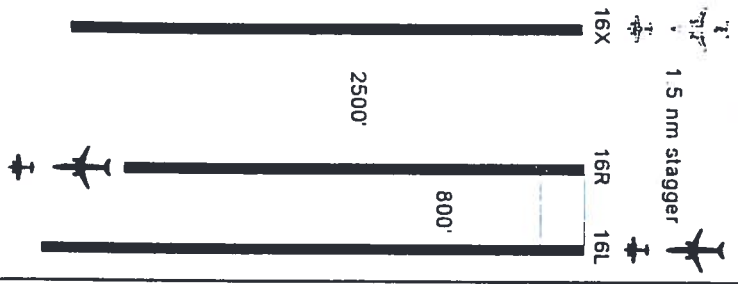
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI108

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	876	264	1.13	4.67	297.0
16R	236	107	0.82	21.99	87.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	236	3,769 (16.0)	894 (3.8)	4,663 (19.8)	651 (2.8)	165 (0.7)	817 (3.5)	5,480
16L	404	5,834 (14.4)	824 (2.0)	6,658 (16.5)	1,353 (3.4)	4 (0.0)	1,357 (3.4)	8,015
All	640	9,603 (15.0)	1,719 (2.7)	11,321 (17.7)	2,005 (3.1)	169 (0.3)	2,174 (3.4)	13,495

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,024 (1.6)	1,152 (1.8)	10,682
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	128 (0.2)	1,024 (1.6)	1,152 (1.8)	10,682

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,587 (12.2)	5,264 (4.1)	20,851 (16.3)	297 (0.2)	2,005 (3.1)	1,024 (1.6)	3,326 (2.6)	24,177

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019047

Seattle - Tacoma Capacity Design Team Update

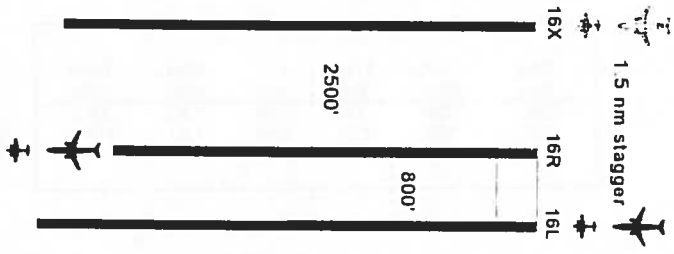
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI208

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1190	41	0.75	1.51	30.5
16R	550	227	0.43	6.73	98.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	550	8,872 (16.1)	1,980 (3.6)	10,852 (19.7)	39,204 (71.3)	132 (0.2)	39,336 (71.5)	50,188
16L	90	1,265 (14.1)	184 (2.0)	1,449 (16.1)	1,616 (18.0)	0 (0.0)	1,616 (18.0)	3,065
All	640	10,137 (15.8)	2,164 (3.4)	12,301 (19.2)	40,820 (63.8)	132 (0.2)	40,952 (64.0)	53,253

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	31,046 (48.5)	31,059 (48.5)	40,474
All	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	13 (0.0)	31,046 (48.5)	31,059 (48.5)	40,474

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	16,121 (12.6)	5,594 (4.4)	21,715 (17.0)	145 (0.1)	40,820 (63.8)	31,046 (48.5)	72,012 (56.3)	93,727

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	1SI408

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1225	28	0.69	3.42	19.2
16R	585	203	0.57	5.81	115.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	585	9,407 (16.1)	2,124 (3.6)	11,530 (19.7)	78,858 (134.8)	135 (0.2)	78,993 (135.0)	90,523
16L	55	781 (14.2)	124 (2.3)	905 (16.5)	7,425 (135.0)	0 (0.0)	7,425 (135.0)	8,330
All	640	10,188 (15.9)	2,247 (3.5)	12,435 (19.4)	86,283 (134.8)	135 (0.2)	86,418 (135.0)	98,853

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	1,101 (1.7)	2,445 (3.8)	3,546 (5.5)	12,960
All	640	5,984 (9.4)	3,430 (5.4)	9,414 (14.7)	1,101 (1.7)	2,445 (3.8)	3,546 (5.5)	12,960

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	16,172 (12.6)	5,678 (4.4)	21,850 (17.1)	1,235 (1.0)	86,283 (134.8)	2,445 (3.8)	89,963 (70.3)	111,813

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

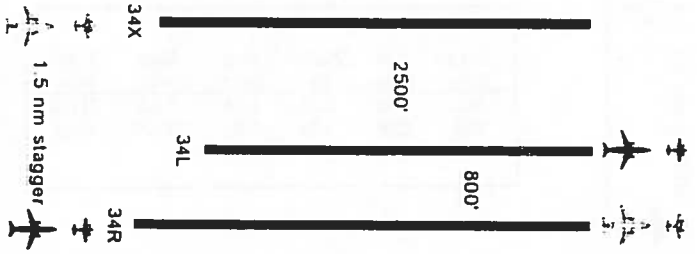
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway 2500'
2. Runway Use Weather Scenario:	North Flow Arr: 34R, [34X]; Dep: 34L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1NI208B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	876	190	1.24	5.74	235.6
34L	236	111	0.60	12.08	66.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34X	236	3,769 (16.0)	894 (3.8)	4,663 (19.8)	312 (1.3)	139 (0.6)	451 (1.9)	5,114
34R	404	5,834 (14.4)	820 (2.0)	6,654 (16.5)	1,305 (3.2)	0 (0.0)	1,305 (3.2)	7,959
All	640	9,603 (15.0)	1,715 (2.7)	11,317 (17.7)	1,616 (2.5)	139 (0.2)	1,756 (2.7)	13,073

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	640	5,984 (9.4)	3,526 (5.5)	9,510 (14.9)	205 (0.3)	2,726 (4.3)	2,931 (4.6)	12,442
All	640	5,984 (9.4)	3,526 (5.5)	9,510 (14.9)	205 (0.3)	2,726 (4.3)	2,931 (4.6)	12,442

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,587 (12.2)	5,241 (4.1)	20,828 (16.3)	344 (0.3)	1,616 (2.5)	2,726 (4.3)	4,687 (3.7)	25,515

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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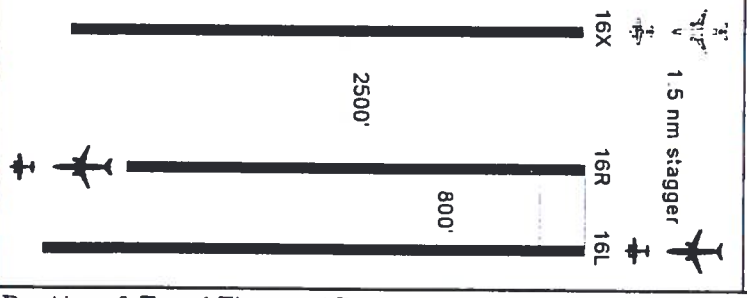
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI108B - NO BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	876	268	1.16	4.85	311.8
16R	236	106	0.81	23.07	86.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	236	3,769 (16.0)	897 (3.8)	4,666 (19.8)	312 (1.3)	168 (0.7)	479 (2.0)	5,145
16L	404	5,834 (14.4)	820 (2.0)	6,654 (16.5)	1,305 (3.2)	4 (0.0)	1,309 (3.2)	7,963
All	640	9,603 (15.0)	1,717 (2.7)	11,320 (17.7)	1,616 (2.5)	172 (0.3)	1,788 (2.8)	13,108

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	134 (0.2)	1,062 (1.7)	1,197 (1.9)	10,726
All	640	5,984 (9.4)	3,546 (5.5)	9,530 (14.9)	134 (0.2)	1,062 (1.7)	1,197 (1.9)	10,726

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,280	15,587 (12.2)	5,263 (4.1)	20,849 (16.3)	306 (0.2)	1,616 (2.5)	1,062 (1.7)	2,985 (2.3)	23,834

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

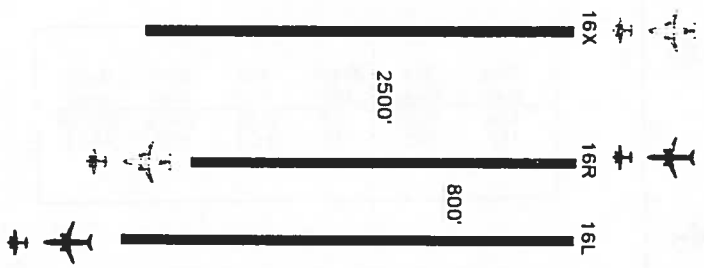
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV108

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	363	205	1.47	13.44	301
16L	948	323	0.88	23.74	285

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	428	6,292 (14.7)	1,036 (2.4)	7,327 (17.1)	869 (2.0)	158 (0.4)	1,027 (2.4)	8,355
16X	363	5,608 (15.5)	1,354 (3.7)	6,962 (19.2)	741 (2.0)	519 (1.4)	1,260 (3.5)	8,222
All	791	11,900 (15.0)	2,390 (3.0)	14,290 (18.1)	1,609 (2.0)	677 (0.9)	2,287 (2.9)	16,577

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	462 (2.9)	471 (3.0)	2,821
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,209 (1.9)	1,247 (2.0)	10,280
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,671 (2.1)	1,718 (2.2)	13,101

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,425 (4.1)	25,673 (16.2)	725 (0.5)	1,609 (2.0)	1,671 (2.1)	4,005 (2.5)	29,678

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

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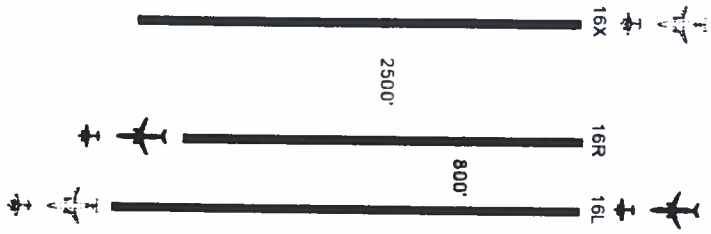
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV208

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	320	143	0.74	20.18	105.58
16L	942	354	1.24	4.85	440.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	471	6,782 (14.4)	961 (2.0)	7,743 (16.4)	4,361 (9.3)	5 (0.0)	4,366 (9.3)	12,109
16X	320	5,066 (15.8)	1,206 (3.8)	6,272 (19.6)	1,712 (5.4)	259 (0.8)	1,971 (6.2)	8,243
All	791	11,848 (15.0)	2,167 (2.7)	14,015 (17.7)	6,073 (7.7)	264 (0.3)	6,337 (8.0)	20,353

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	622	5,598 (9.0)	3,471 (5.6)	9,069 (14.6)	292 (0.5)	1,412 (2.3)	1,704 (2.7)	10,773
16L	168	1,752 (10.4)	832 (5.0)	2,584 (15.4)	27 (0.2)	734 (4.4)	761 (4.5)	3,345
All	790	7,350 (9.3)	4,302 (5.4)	11,653 (14.8)	319 (0.4)	2,146 (2.7)	2,465 (3.1)	14,118

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Ground (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,581	19,198 (12.1)	6,470 (4.1)	25,668 (16.2)	583 (0.4)	6,073 (7.7)	2,146 (2.7)	8,803 (5.6)	34,471

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019053

Seattle - Tacoma Capacity Design Team Update

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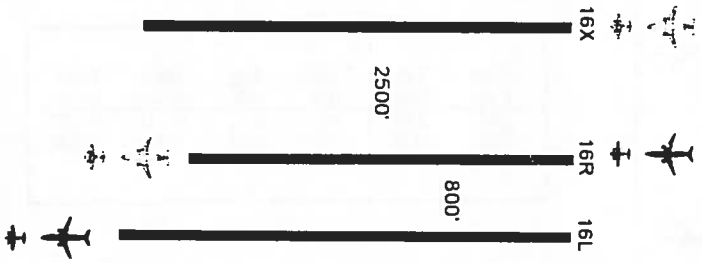
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV108B No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	363	204	1.46	11.73	297
16L	948	315	0.91	24.90	287

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	428	6,292 (14.7)	1,036 (2.4)	7,327 (17.1)	865 (2.0)	163 (0.4)	1,027 (2.4)	8,355
16X	363	5,608 (15.5)	1,354 (3.7)	6,962 (19.2)	425 (1.2)	523 (1.4)	947 (2.6)	7,910
All	791	11,900 (15.0)	2,390 (3.0)	14,290 (18.1)	1,289 (1.6)	685 (0.9)	1,975 (2.5)	16,264

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,499 (9.6)	851 (5.4)	2,350 (15.0)	9 (0.1)	487 (3.1)	496 (3.2)	2,846
16L	633	5,849 (9.2)	3,184 (5.0)	9,033 (14.3)	38 (0.1)	1,291 (2.0)	1,329 (2.1)	10,362
All	790	7,348 (9.3)	4,035 (5.1)	11,383 (14.4)	47 (0.1)	1,778 (2.3)	1,825 (2.3)	13,209

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,425 (4.1)	25,673 (16.2)	733 (0.5)	1,289 (1.6)	1,778 (2.3)	3,800 (2.4)	29,473

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

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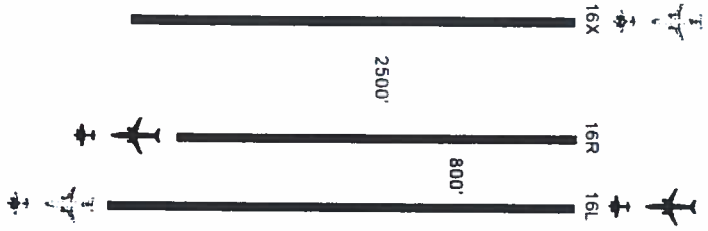
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV208B No BFI Interaction

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16R	320	142	0.72	17.25	101.77
16L	1110	353	1.23	4.85	433.0

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Air	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	471	6,782 (14.4)	956 (2.0)	7,739 (16.4)	4,361 (9.3)	5 (0.0)	4,366 (9.3)	12,105
16X	320	5,066 (15.8)	1,210 (3.8)	6,275 (19.6)	723 (2.3)	253 (0.8)	976 (3.1)	7,251
All	791	11,848 (15.0)	2,166 (2.7)	14,014 (17.7)	5,085 (6.4)	258 (0.3)	5,342 (6.8)	19,356

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	622	5,598 (9.0)	3,471 (5.6)	9,069 (14.6)	305 (0.5)	1,505 (2.4)	1,810 (2.9)	10,879
16L	168	1,752 (10.4)	832 (5.0)	2,584 (15.4)	27 (0.2)	732 (4.4)	759 (4.5)	3,343
All	790	7,350 (9.3)	4,302 (5.4)	11,653 (14.8)	332 (0.4)	2,238 (2.8)	2,569 (3.3)	14,222

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,198 (12.1)	6,468 (4.1)	25,666 (16.2)	589 (0.4)	5,085 (6.4)	2,238 (2.8)	7,912 (5.0)	33,578

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

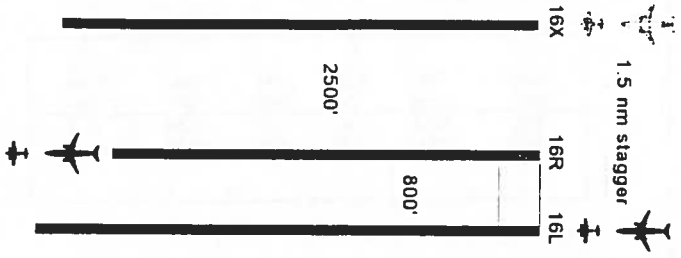
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1841 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI108

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1087	413	1.48	5.01	610.6
16R	297	161	0.88	33.63	141.1

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	297	4,749 (16.0)	1,132 (3.8)	5,881 (19.8)	2,432 (8.2)	276 (0.9)	2,709 (9.1)	8,589
16L	494	7,143 (14.5)	998 (2.0)	8,141 (16.5)	6,926 (14.0)	5 (0.0)	6,931 (14.0)	15,072
All	791	11,892 (15.0)	2,129 (2.7)	14,022 (17.7)	9,358 (11.8)	281 (0.4)	9,639 (12.2)	23,661

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	427 (0.5)	3,342 (4.2)	3,768 (4.8)	15,508
All	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	427 (0.5)	3,342 (4.2)	3,768 (4.8)	15,508

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Delay Queue (Avg)	Total (Avg)	System Time
1,581	19,239 (12.2)	6,522 (4.1)	25,761 (16.3)	708 (0.4)	9,358 (11.8)	3,342 (4.2)	13,408 (8.5)	39,169

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019056

Seattle - Tacoma Capacity Design Team Update

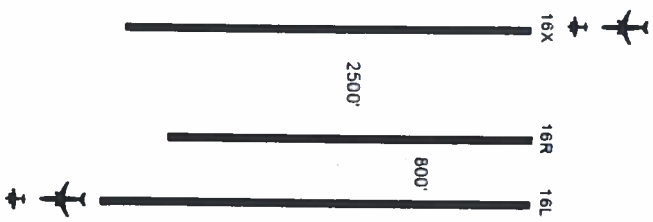
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500' with 109 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1841 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR4
5. Experiment Number:	2SI408

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1513	36	0.73	7.56	26.3
16R	723	250	0.59	7.28	146.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	723	11,611 (16.1)	2,624 (3.6)	14,236 (19.7)	200,351 (277.1)	174 (0.2)	200,524 (277.4)	214,760
16L	68	970 (14.3)	151 (2.2)	1,121 (16.5)	8,739 (128.5)	1 (0.0)	8,739 (128.5)	9,861
All	791	12,582 (15.9)	2,775 (3.5)	15,357 (19.4)	209,089 (264.3)	174 (0.2)	209,263 (264.6)	224,621

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,242 (5.4)	11,589 (14.7)	4,590 (5.8)	6,036 (7.6)	10,626 (13.5)	22,215
All	790	7,347 (9.3)	4,242 (5.4)	11,589 (14.7)	4,590 (5.8)	6,036 (7.6)	10,626 (13.5)	22,215

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,929 (12.6)	7,018 (4.4)	26,946 (17.0)	4,764 (3.0)	209,089 (264.3)	6,036 (7.6)	219,889 (139.1)	246,835

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

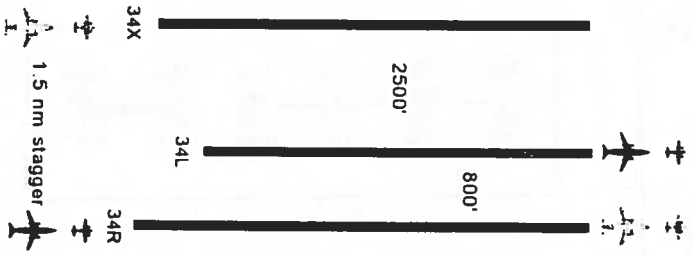
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500'
2. Runway Use Weather Scenario:	North Flow Arr: 34R, [34X]; Dep: 34L
3. Aircraft Demand Schedule:	Future 2: 1841 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2NI208B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
34R	1134	214	1.81	18.83	386.6
34L	344	217	0.63	31.34	136.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Air (Avg)	Ground (Avg)	Total (Avg)	System Time
34X	344	5,394 (15.7)	1,290 (3.8)	6,684 (19.4)	2,886 (8.4)	1,238 (3.6)	4,125 (12.0)	10,808
34R	447	6,490 (14.5)	912 (2.0)	7,402 (16.6)	6,996 (15.7)	1,319 (3.0)	8,314 (18.6)	15,717
All	791	11,884 (15.0)	2,202 (2.8)	14,086 (17.8)	9,882 (12.5)	2,557 (3.2)	12,439 (15.7)	26,525

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
34L	790	7,347 (9.3)	4,345 (5.5)	11,692 (14.8)	2,402 (3.0)	21,654 (27.4)	24,056 (30.5)	35,748
All	790	7,347 (9.3)	4,345 (5.5)	11,692 (14.8)	2,402 (3.0)	21,654 (27.4)	24,056 (30.5)	35,748

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay: Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,231 (12.2)	6,547 (4.1)	25,778 (16.3)	4,959 (3.1)	9,882 (12.5)	21,654 (27.4)	36,494 (23.1)	62,273

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

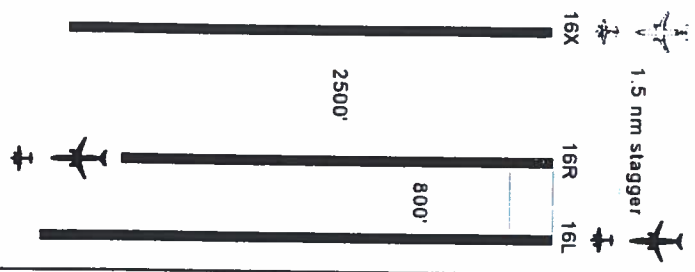
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Non-Heavy Runway @ 2500'
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16R
3. Aircraft Demand Schedule:	Future 2: 1841 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI108B

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1087	419	1.50	4.73	627.8
16R	297	161	0.99	45.57	159.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	297	4,749 (16.0)	1,132 (3.8)	5,881 (19.8)	959 (3.2)	297 (1.0)	1,256 (4.2)	7,137
16L	494	7,143 (14.5)	1,003 (2.0)	8,146 (16.5)	6,615 (13.4)	5 (0.0)	6,620 (13.4)	14,766
All	791	11,892 (15.0)	2,134 (2.7)	14,027 (17.7)	7,574 (9.6)	302 (0.4)	7,876 (10.0)	21,903

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	419 (0.5)	3,555 (4.5)	3,974 (5.0)	15,713
All	790	7,347 (9.3)	4,392 (5.6)	11,739 (14.9)	419 (0.5)	3,555 (4.5)	3,974 (5.0)	15,713

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,239 (12.2)	6,527 (4.1)	25,766 (16.3)	721 (0.5)	7,574 (9.6)	3,555 (4.5)	11,850 (7.5)	37,616

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	0SV110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	434	184	0.74	9.62	136.77

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	336	5,074 (15.1)	864 (2.6)	5,937 (17.7)	349 (1.0)	134 (0.4)	484 (1.4)	6,421
16L	184	2,731 (14.8)	381 (2.1)	3,111 (16.9)	138 (0.8)	0 (0.0)	138 (0.8)	3,249
All	520	7,804 (15.0)	1,244 (2.4)	9,049 (17.4)	487 (0.9)	134 (0.3)	622 (1.2)	9,670

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	98	962 (9.8)	533 (5.4)	1,495 (15.3)	11 (0.1)	83 (0.9)	94 (1.0)	1,590
16L	422	3,946 (9.4)	2,102 (5.0)	6,047 (14.3)	8 (0.0)	435 (1.0)	443 (1.1)	6,490
All	520	4,908 (9.4)	2,635 (5.1)	7,543 (14.5)	19 (0.0)	518 (1.0)	537 (1.0)	8,080

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,712 (12.2)	3,879 (3.7)	16,591 (16.0)	154 (0.1)	487 (0.9)	518 (1.0)	1,159 (1.1)	17,750

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Trubulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	499	219	0.83	13.69	181.04

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	499	7,475 (15.0)	1,297 (2.6)	8,772 (17.6)	4,261 (8.5)	195 (0.4)	4,456 (8.9)	13,228
16L	21	318 (15.2)	49 (2.3)	367 (17.5)	50 (2.4)	0 (0.0)	50 (2.4)	417
All	520	7,793 (15.0)	1,346 (2.6)	9,139 (17.6)	4,311 (8.3)	195 (0.4)	4,506 (8.7)	13,645

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	359 (0.7)	364 (0.7)	7,961
All	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	359 (0.7)	364 (0.7)	7,961

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,034 (3.9)	16,736 (16.1)	200 (0.2)	4,311 (8.3)	359 (0.7)	4,870 (4.7)	21,606

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019061

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	212	0.77	10.63	163.59

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	8,315 (16.0)	177 (0.3)	8,492 (16.3)	17,644
All	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	8,315 (16.0)	177 (0.3)	8,492 (16.3)	17,644

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	10 (0.0)	307 (0.6)	317 (0.6)	7,899
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	10 (0.0)	307 (0.6)	317 (0.6)	7,899

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,046 (3.9)	16,734 (16.1)	187 (0.2)	8,315 (16.0)	307 (0.6)	8,809 (8.5)	25,542

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	162	0.64	6.71	103.14

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	8,315 (16.0)	104 (0.2)	8,419 (16.2)	17,566
All	520	7,795 (15.0)	1,352 (2.6)	9,147 (17.6)	8,315 (16.0)	104 (0.2)	8,419 (16.2)	17,566

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	884 (1.7)	889 (1.7)	8,471
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	884 (1.7)	889 (1.7)	8,471

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,040 (3.9)	16,728 (16.1)	109 (0.1)	8,315 (16.0)	884 (1.7)	9,308 (9.0)	26,036

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019063

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	1SV110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	541	259	0.82	11.72	213

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	417	6,305 (15.1)	1,076 (2.6)	7,381 (17.7)	705 (1.7)	213 (0.5)	917 (2.2)	8,298
16L	223	3,312 (14.9)	462 (2.1)	3,773 (16.9)	245 (1.1)	2 (0.0)	248 (1.1)	4,021
All	640	9,617 (15.0)	1,537 (2.4)	11,154 (17.4)	950 (1.5)	215 (0.3)	1,165 (1.8)	12,319

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	124	1,211 (9.8)	672 (5.4)	1,884 (15.2)	40 (0.3)	232 (1.9)	272 (2.2)	2,155
16L	516	4,788 (9.3)	2,575 (5.0)	7,363 (14.3)	36 (0.1)	996 (1.9)	1,032 (2.0)	8,395
All	640	6,000 (9.4)	3,247 (5.1)	9,247 (14.4)	76 (0.1)	1,228 (1.9)	1,304 (2.0)	10,550

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,617 (12.2)	4,784 (3.7)	20,401 (15.9)	291 (0.2)	950 (1.5)	1,228 (1.9)	2,468 (1.9)	22,869

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L] ; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	603	303	0.90	35.80	271.19

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	603	9,051 (15.0)	1,562 (2.6)	10,613 (17.6)	34,859 (57.8)	295 (0.5)	35,155 (58.3)	45,768
16L	37	556 (15.0)	85 (2.3)	642 (17.4)	878 (23.7)	0 (0.0)	878 (23.7)	1,520
All	640	9,608 (15.0)	1,647 (2.6)	11,255 (17.6)	35,737 (55.8)	296 (0.5)	36,033 (56.3)	47,288

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	858 (1.3)	870 (1.4)	10,170
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	858 (1.3)	870 (1.4)	10,170

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15.592 (12.2)	4.962 (3.9)	20.554 (16.1)	309 (0.2)	35.737 (55.8)	858 (1.3)	36.904 (28.8)	57,458

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019065

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	279	0.80	22.75	222.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	56,198 (87.8)	237 (0.4)	56,435 (88.2)	67,712
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	56,198 (87.8)	237 (0.4)	56,435 (88.2)	67,712

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	518 (0.8)	531 (0.8)	9,830
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	518 (0.8)	531 (0.8)	9,830

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uninpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	250 (0.2)	56,198 (87.8)	518 (0.8)	56,966 (44.5)	77,542

Notes. Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario: South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule: Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition: IFR2
5. Experiment Number: 1SI210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	205	0.66	7.77	134.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	56,198 (87.8)	134 (0.2)	56,333 (88.0)	67,610
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	56,198 (87.8)	134 (0.2)	56,333 (88.0)	67,610

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,157 (3.4)	2,170 (3.4)	11,469
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,157 (3.4)	2,170 (3.4)	11,469

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	147 (0.1)	56,198 (87.8)	2,157 (3.4)	58,502 (45.7)	79,078

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019067

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR1
5. Experiment Number:	2SV110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	673	391	1.05	22.84	411

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	516	7,823 (15.2)	1,336 (2.6)	9,159 (17.8)	1,563 (3.0)	413 (0.8)	1,976 (3.8)	11,135
16L	275	4,092 (14.9)	564 (2.1)	4,656 (16.9)	514 (1.9)	3 (0.0)	517 (1.9)	5,173
All	791	11,915 (15.1)	1,900 (2.4)	13,815 (17.5)	2,078 (2.6)	416 (0.5)	2,493 (3.2)	16,308

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,521 (9.7)	854 (5.4)	2,375 (15.1)	93 (0.6)	688 (4.4)	780 (5.0)	3,156
16L	633	5,849 (9.2)	3,165 (5.0)	9,014 (14.2)	38 (0.1)	6,438 (10.2)	6,476 (10.2)	15,490
All	790	7,370 (9.3)	4,019 (5.1)	11,389 (14.4)	131 (0.2)	7,125 (9.0)	7,256 (9.2)	18,645

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,285 (12.2)	5,919 (3.7)	25,204 (15.9)	546 (0.3)	2,078 (2.6)	7,125 (9.0)	9,749 (6.2)	34,953

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019068

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L] ; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	745	371	0.84	47.5	309.785

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	745	11,220 (15.1)	1,944 (2.6)	13,164 (17.7)	132,126 (177.4)	335 (0.5)	132,461 (177.8)	145,625
16L	46	682 (14.8)	98 (2.1)	780 (17.0)	6,002 (130.5)	0 (0.0)	6,002 (130.5)	6,782
All	791	11,901 (15.0)	2,042 (2.6)	13,944 (17.6)	138,128 (174.6)	335 (0.4)	138,463 (175.0)	152,407

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,525 (1.9)	1,548 (2.0)	12,996
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,525 (1.9)	1,548 (2.0)	12,996

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,143 (3.9)	25,391 (16.1)	359 (0.2)	138,128 (174.6)	1,525 (1.9)	140,011 (88.6)	165,402

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI110

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	356	0.92	95.32	327.5

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	157,836 (199.5)	372 (0.5)	158,208 (200.0)	172,161
All	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	157,836 (199.5)	372 (0.5)	158,208 (200.0)	172,161

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,169 (1.5)	1,193 (1.5)	12,640
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,169 (1.5)	1,193 (1.5)	12,640

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,157 (3.9)	25,400 (16.1)	395 (0.3)	157,836 (199.5)	1,169 (1.5)	159,401 (100.8)	184,801

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Wake/Vortex Turbulence Detection System
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L] ; Dep: [16L], [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI210

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	265	0.64	8.4	170.483

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	157,836 (199.5)	380 (0.5)	158,216 (200.0)	172,169
All	791	11,897 (15.0)	2,057 (2.6)	13,953 (17.6)	157,836 (199.5)	380 (0.5)	158,216 (200.0)	172,169

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	63 (0.1)	7,142 (9.0)	7,205 (9.1)	18,652
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	63 (0.1)	7,142 (9.0)	7,205 (9.1)	18,652

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,157 (3.9)	25,400 (16.1)	443 (0.3)	157,836 (199.5)	7,142 (9.0)	165,421 (104.6)	190,821

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	0SV217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	499	220	0.80	8.86	176.73

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	499	7,475 (15.0)	1,292 (2.6)	8,767 (17.6)	3,368 (6.8)	190 (0.4)	3,558 (7.1)	12,325
16L	21	318 (15.2)	48 (2.3)	367 (17.5)	50 (2.4)	0 (0.0)	50 (2.4)	417
All	520	7,793 (15.0)	1,341 (2.6)	9,134 (17.6)	3,418 (6.6)	190 (0.4)	3,608 (6.9)	12,742

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	494 (1.0)	499 (1.0)	8,096
All	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	494 (1.0)	499 (1.0)	8,096

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,029 (3.9)	16,731 (16.1)	195 (0.2)	3,418 (6.6)	494 (1.0)	4,107 (3.9)	20,838

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

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June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	0SI117

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	214	0.78	11.59	166.21

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	5,762 (11.1)	182 (0.4)	5,944 (11.4)	15,096
All	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	5,762 (11.1)	182 (0.4)	5,944 (11.4)	15,096

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	374 (0.7)	380 (0.7)	7,961
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	374 (0.7)	380 (0.7)	7,961

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,046 (3.9)	16,734 (16.1)	187 (0.2)	5,762 (11.1)	374 (0.7)	6,323 (6.1)	23,057

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	148	0.66	4.75	97.187

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,347 (2.6)	9,142 (17.6)	5,762 (11.1)	99 (0.2)	5,860 (11.3)	15,002
All	520	7,795 (15.0)	1,347 (2.6)	9,142 (17.6)	5,762 (11.1)	99 (0.2)	5,860 (11.3)	15,002

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	1,134 (2.2)	1,139 (2.2)	8,720
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	1,134 (2.2)	1,139 (2.2)	8,720

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,035 (3.9)	16,723 (16.1)	104 (0.1)	5,762 (11.1)	1,134 (2.2)	6,999 (6.7)	23,722

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

SYN 0019074

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L] ; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	1243	310	0.93	18.33	286.75

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	603	9,051 (15.0)	1,562 (2.6)	10,613 (17.6)	26,019 (43.2)	320 (0.5)	26,339 (43.7)	36,952
16L	37	556 (15.0)	87 (2.3)	643 (17.4)	749 (20.2)	0 (0.0)	749 (20.3)	1,392
All	640	9,608 (15.0)	1,648 (2.6)	11,256 (17.6)	26,768 (41.8)	320 (0.5)	27,088 (42.3)	38,344

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,133 (1.8)	1,146 (1.8)	10,445
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,133 (1.8)	1,146 (1.8)	10,445

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	4,964 (3.9)	20,555 (16.1)	333 (0.3)	26,768 (41.8)	1,133 (1.8)	28,234 (22.1)	48,789

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	1SI117

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	288	0.82	10.90	234.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	45,574 (71.2)	262 (0.4)	45,837 (71.6)	57,107
All	640	9,606 (15.0)	1,664 (2.6)	11,270 (17.6)	45,574 (71.2)	262 (0.4)	45,837 (71.6)	57,107

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	723 (1.1)	736 (1.2)	10,035
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	723 (1.1)	736 (1.2)	10,035

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,979 (3.9)	20,570 (16.1)	275 (0.2)	45,574 (71.2)	723 (1.1)	46,573 (36.4)	67,142

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	195	0.69	8.46	133.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	45,574 (71.2)	134 (0.2)	45,709 (71.4)	56,986
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	45,574 (71.2)	134 (0.2)	45,709 (71.4)	56,986

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Delay: Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,944 (4.6)	2,957 (4.6)	12,256
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,944 (4.6)	2,957 (4.6)	12,256

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time: Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay: Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	147 (0.1)	45,574 (71.2)	2,944 (4.6)	48,666 (38.0)	69,242

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019077

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L] ; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	745	367	0.85	15.4	310.115

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	745	11,220 (15.1)	1,937 (2.6)	13,157 (17.7)	123,663 (166.0)	343 (0.5)	124,005 (166.5)	137,162
16L	46	682 (14.8)	100 (2.2)	782 (17.0)	5,736 (124.7)	0 (0.0)	5,736 (124.7)	6,518
All	791	11,901 (15.0)	2,037 (2.6)	13,939 (17.6)	129,399 (163.6)	343 (0.4)	129,741 (164.0)	143,680

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	2,575 (3.3)	2,599 (3.3)	14,046
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	2,575 (3.3)	2,599 (3.3)	14,046

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,137 (3.9)	25,386 (16.1)	366 (0.2)	129,399 (163.6)	2,575 (3.3)	132,341 (83.7)	157,726

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Runways crossing delays are included in ground delays

Seattle - Tacoma Capacity Design Team Update

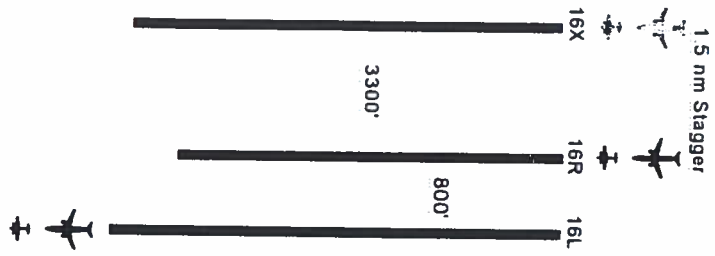
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 3300' without PRM and 135 Operations at BFI
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI107

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	403	1.01	35.54	408.4
16R	337	177	0.86	3.45	152.2

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	337	5,321 (15.8)	1,399 (4.2)	6,720 (19.9)	3,326 (9.9)	411 (1.2)	3,737 (11.1)	10,457
16R	454	6,574 (14.5)	1,108 (2.4)	7,682 (16.9)	4,672 (10.3)	204 (0.5)	4,876 (10.7)	12,558
All	791	11,895 (15.0)	2,506 (3.2)	14,401 (18.2)	7,998 (10.1)	615 (0.8)	8,613 (10.9)	23,015

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	3,776 (4.8)	3,816 (4.8)	15,144
All	790	7,347 (9.3)	3,982 (5.0)	11,329 (14.3)	40 (0.1)	3,776 (4.8)	3,816 (4.8)	15,144

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,242 (12.2)	6,488 (4.1)	25,730 (16.3)	655 (0.4)	7,998 (10.1)	3,776 (4.8)	12,429 (7.9)	38,159

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019079

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR1
5. Experiment Number:	2SI117

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	354	0.86	33.50	302.7

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	143,424 (181.3)	332 (0.4)	143,756 (181.7)	157,717
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	143,424 (181.3)	332 (0.4)	143,756 (181.7)	157,717

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,896 (2.4)	1,920 (2.4)	13,367
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	24 (0.0)	1,896 (2.4)	1,920 (2.4)	13,367

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	356 (0.2)	143,424 (181.3)	1,896 (2.4)	145,676 (92.1)	171,084

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	2.5 nmi Intrail Separation for Like Type Non-Heavy Aircraft
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI217

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	254	0.77	12.89	194.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	143,424 (181.3)	862 (1.1)	144,286 (182.4)	158,247
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	143,424 (181.3)	862 (1.1)	144,286 (182.4)	158,247

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	111 (0.1)	11,518 (14.6)	11,629 (14.7)	23,076
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	111 (0.1)	11,518 (14.6)	11,629 (14.7)	23,076

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	973 (0.6)	143,424 (181.3)	11,518 (14.6)	155,915 (98.6)	181,323

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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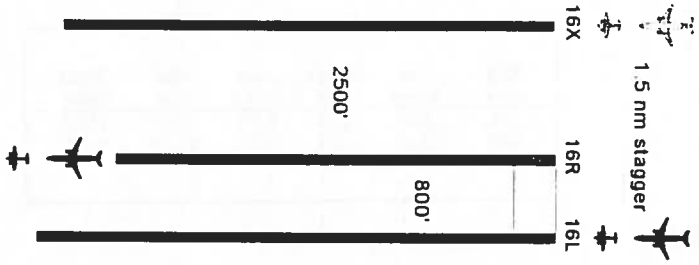
SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' without Glide Interference or BFI Interaction
2. Runway Use Weather Scenario:	South Flow Arr: 16L, 16X; Dep: 16R
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI218

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	702	130	0.81	3.94	105.5
16R	182	72	0.52	5.82	37.4

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	338	4,857 (14.4)	693 (2.1)	5,550 (16.4)	737 (2.2)	0 (0.0)	737 (2.2)	6,287
16X	182	2,936 (16.1)	686 (3.8)	3,622 (19.9)	160 (0.9)	82 (0.5)	242 (1.3)	3,864
All	520	7,793 (15.0)	1,379 (2.7)	9,172 (17.6)	897 (1.7)	82 (0.2)	979 (1.9)	10,151

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	520	4,893 (9.4)	2,860 (5.5)	7,753 (14.9)	47 (0.1)	1,300 (2.5)	1,347 (2.6)	9,100
All	520	4,893 (9.4)	2,860 (5.5)	7,753 (14.9)	47 (0.1)	1,300 (2.5)	1,347 (2.6)	9,100

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,686 (12.2)	4,239 (4.1)	16,925 (16.3)	129 (0.1)	897 (1.7)	1,300 (2.5)	2,326 (2.2)	19,251

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019082

Seattle - Tacoma Capacity Design Team Update

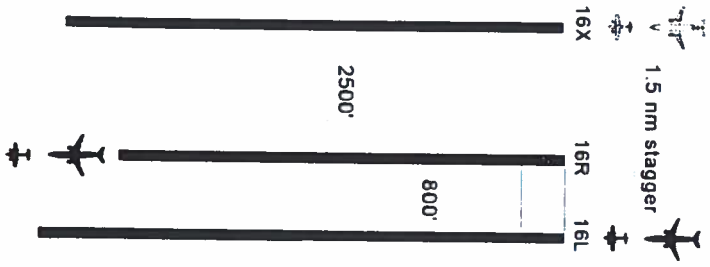
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' without Glide Interference or BFI Interaction
2. Runway Use Weather Scenario:	South Flow Arr: 16L, 16X; Dep: 16R
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI218

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xng Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	886	117	0.98	6.66	114.5
16R	246	115	0.55	10.86	63.3

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16L	394	5,678 (14.4)	796 (2.0)	6,473 (16.4)	1,198 (3.0)	28 (0.1)	1,225 (3.1)	7,699
16X	246	3,926 (16.0)	930 (3.8)	4,856 (19.7)	308 (1.3)	143 (0.6)	450 (1.8)	5,306
All	640	9,604 (15.0)	1,726 (2.7)	11,329 (17.7)	1,505 (2.4)	170 (0.3)	1,676 (2.6)	13,005

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	640	5,984 (9.4)	3,507 (5.5)	9,491 (14.8)	96 (0.2)	9,446 (14.8)	9,542 (14.9)	19,034
All	640	5,984 (9.4)	3,507 (5.5)	9,491 (14.8)	96 (0.2)	9,446 (14.8)	9,542 (14.9)	19,034

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,588 (12.2)	5,233 (4.1)	20,821 (16.3)	266 (0.2)	1,505 (2.4)	9,446 (14.8)	11,218 (8.8)	32,039

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019083

Seattle - Tacoma Capacity Design Team Update

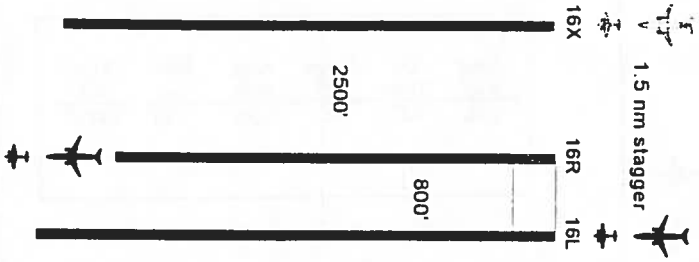
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Full Use Runway @ 2500' without Glide Interference or BFI Interaction
2. Runway Use Weather Scenario:	South Flow Arr: 16L, [16X]; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI218

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	663	332	1.14	27.15	379.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16X	516	7,735 (15.0)	1,894 (3.7)	9,629 (18.7)	18,726 (36.3)	382 (0.7)	19,107 (37.0)	28,736
16L	275	4,150 (15.1)	534 (1.9)	4,683 (17.0)	1,141 (4.2)	3 (0.0)	1,144 (4.2)	5,827
All	791	11,885 (15.0)	2,427 (3.1)	14,312 (18.1)	19,867 (25.1)	385 (0.5)	20,251 (25.6)	34,563

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16X	147	1,316 (9.0)	951 (6.5)	2,267 (15.4)	21 (0.1)	273 (1.9)	294 (2.0)	2,561
16L	643	6,031 (9.4)	3,241 (5.0)	9,272 (14.4)	32 (0.1)	12,931 (20.1)	12,963 (20.2)	22,235
All	790	7,347 (9.3)	4,192 (5.3)	11,539 (14.6)	53 (0.1)	13,204 (16.7)	13,257 (16.8)	24,796

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Air (Avg)	Queue (Avg)	Total (Avg)	System Time
1,581	19,232 (12.2)	6,619 (4.2)	25,851 (16.4)	437 (0.3)	19,867 (25.1)	13,204 (16.7)	33,508 (21.2)	59,359

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Baseline: 1040 Ops/Day; 345,000 Ops/Year
VFR1
0SV120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	427	182	0.74	7.23	134.07

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	329	4,965 (15.1)	842 (2.6)	5,807 (17.7)	342 (1.0)	118 (0.4)	461 (1.4)	6,267
16L	176	2,614 (14.9)	364 (2.1)	2,978 (16.9)	125 (0.7)	0 (0.0)	125 (0.7)	3,103
All	505	7,578 (15.0)	1,207 (2.4)	8,785 (17.4)	467 (0.9)	118 (0.2)	586 (1.2)	9,370

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	98	962 (9.8)	532 (5.4)	1,495 (15.3)	7 (0.1)	96 (1.0)	103 (1.1)	1,597
16L	407	3,789 (9.3)	2,027 (5.0)	5,816 (14.3)	4 (0.0)	411 (1.0)	415 (1.0)	6,231
All	505	4,752 (9.4)	2,559 (5.1)	7,311 (14.5)	11 (0.0)	507 (1.0)	518 (1.0)	7,829

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Air (Avg)	Uminpeded Travel Time Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,010	12,330 (12.2)	3,766 (3.7)	16,095 (15.9)	129 (0.1)	467 (0.9)	507 (1.0)	1,104 (1.1)	17,199

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019085

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule: Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition: VFR2
5. Experiment Number: 0SV220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	484	206	0.80	12.27	164.46

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	484	7,250 (15.0)	1,254 (2.6)	8,504 (17.6)	3,969 (8.2)	169 (0.4)	4,138 (8.6)	12,642
16L	21	320 (15.3)	47 (2.3)	368 (17.5)	43 (2.0)	0 (0.0)	43 (2.0)	411
All	505	7,571 (15.0)	1,301 (2.6)	8,872 (17.6)	4,011 (7.9)	170 (0.3)	4,181 (8.3)	13,053

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	505	4,757 (9.4)	2,611 (5.2)	7,368 (14.6)	5 (0.0)	414 (0.8)	419 (0.8)	7,787
All	505	4,757 (9.4)	2,611 (5.2)	7,368 (14.6)	5 (0.0)	414 (0.8)	419 (0.8)	7,787

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,010	12,328 (12.2)	3,912 (3.9)	16,240 (16.1)	175 (0.2)	4,011 (7.9)	414 (0.8)	4,600 (4.6)	20,840

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Baseline: 1040 Ops/Day; 345,000 Ops/Year
IFR1
0SI120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	505	205	0.75	7.99	153.07

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	505	7,570 (15.0)	1,313 (2.6)	8,883 (17.6)	7,222 (14.3)	162 (0.3)	7,383 (14.6)	16,266
All	505	7,570 (15.0)	1,313 (2.6)	8,883 (17.6)	7,222 (14.3)	162 (0.3)	7,383 (14.6)	16,266

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	505	4,737 (9.4)	2,611 (5.2)	7,348 (14.6)	5 (0.0)	338 (0.7)	343 (0.7)	7,691
All	505	4,737 (9.4)	2,611 (5.2)	7,348 (14.6)	5 (0.0)	338 (0.7)	343 (0.7)	7,691

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,010	12,307 (12.2)	3,924 (3.9)	16,231 (16.1)	167 (0.2)	7,222 (14.3)	338 (0.7)	7,727 (7.7)	23,957

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019087

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Baseline: 1040 Ops/Day; 345,000 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	0SI220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	505	154	0.66	7.31	100.87

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	505	7,570 (15.0)	1,313 (2.6)	8,883 (17.6)	7,222 (14.3)	101 (0.2)	7,323 (14.5)	16,205
All	505	7,570 (15.0)	1,313 (2.6)	8,883 (17.6)	7,222 (14.3)	101 (0.2)	7,323 (14.5)	16,205

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	505	4,737 (9.4)	2,611 (5.2)	7,348 (14.6)	5 (0.0)	879 (1.7)	884 (1.8)	8,232
All	505	4,737 (9.4)	2,611 (5.2)	7,348 (14.6)	5 (0.0)	879 (1.7)	884 (1.8)	8,232

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,010	12,307 (12.2)	3,924 (3.9)	16,231 (16.1)	106 (0.1)	7,222 (14.3)	879 (1.7)	8,206 (8.1)	24,437

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 1: 1280 Ops/Day; 425,000 Ops/Year
VFR1
1SV120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	531	254	0.79	7.36	200.24

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	407	6,162 (15.1)	1,042 (2.6)	7,204 (17.7)	635 (1.6)	199 (0.5)	834 (2.1)	8,038
16L	215	3,195 (14.9)	445 (2.1)	3,640 (16.9)	204 (1.0)	0 (0.0)	204 (1.0)	3,844
All	622	9,357 (15.0)	1,487 (2.4)	10,844 (17.4)	839 (1.3)	199 (0.3)	1,039 (1.7)	11,882

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	124	1,211 (9.8)	672 (5.4)	1,884 (15.2)	32 (0.3)	257 (2.1)	289 (2.3)	2,172
16L	498	4,611 (9.3)	2,490 (5.0)	7,101 (14.3)	25 (0.1)	1,011 (2.0)	1,036 (2.1)	8,137
All	622	5,823 (9.4)	3,162 (5.1)	8,985 (14.4)	57 (0.1)	1,268 (2.0)	1,325 (2.1)	10,310

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,244	15,180 (12.2)	4,649 (3.7)	19,829 (15.9)	257 (0.2)	839 (1.3)	1,268 (2.0)	2,363 (1.9)	22,192

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	585	284	0.84	26.08	239.51

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	585	8,798 (15.0)	1,521 (2.6)	10,319 (17.6)	26,992 (46.1)	257 (0.4)	27,249 (46.6)	37,569
16L	37	546 (14.8)	84 (2.3)	630 (17.0)	599 (16.2)	0 (0.0)	599 (16.2)	1,229
All	622	9,345 (15.0)	1,605 (2.6)	10,950 (17.6)	27,591 (44.4)	257 (0.4)	27,848 (44.8)	38,798

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	995 (1.6)	1,008 (1.6)	10,033
All	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	995 (1.6)	1,008 (1.6)	10,033

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Uninpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,244	15,148 (12.2)	4,827 (3.9)	19,975 (16.1)	270 (0.2)	27,591 (44.4)	995 (1.6)	28,856 (23.2)	48,831

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019090

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 1: 1280 Ops/Day; 425,000 Ops/Year
IFR1
1SI120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	622	264	0.77	10.68	204.16

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	622	9,342 (15.0)	1,617 (2.6)	10,960 (17.6)	51,215 (82.3)	218 (0.4)	51,433 (82.7)	62,393
All	622	9,342 (15.0)	1,617 (2.6)	10,960 (17.6)	51,215 (82.3)	218 (0.4)	51,433 (82.7)	62,393

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	634 (1.0)	647 (1.0)	9,672
All	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	634 (1.0)	647 (1.0)	9,672

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,244	15,146 (12.2)	4,839 (3.9)	19,985 (16.1)	230 (0.2)	51,215 (82.3)	634 (1.0)	52,080 (41.9)	72,065

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule: Future 1: 1280 Ops/Day; 425,000 Ops/Year
4. Primary Weather Condition: IFR1
5. Experiment Number: 1SI220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	622	264	0.66	8.26	172.92

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	622	9,342 (15.0)	1,617 (2.6)	10,960 (17.6)	51,215 (82.3)	131 (0.2)	51,346 (82.6)	62,306
All	622	9,342 (15.0)	1,617 (2.6)	10,960 (17.6)	51,215 (82.3)	131 (0.2)	51,346 (82.6)	62,306

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	2,500 (4.0)	2,513 (4.0)	11,538
All	622	5,803 (9.3)	3,222 (5.2)	9,025 (14.5)	12 (0.0)	2,500 (4.0)	2,513 (4.0)	11,538

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uninpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,244	15,146 (12.2)	4,839 (3.9)	19,985 (16.1)	143 (0.1)	51,215 (82.3)	2,500 (4.0)	53,859 (43.3)	73,844

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule: Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition: VFR1
5. Experiment Number: 2SV120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	657	367	0.97	16.08	355.99

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	503	7,625 (15.2)	1,303 (2.6)	8,928 (17.8)	1,499 (3.0)	362 (0.7)	1,861 (3.7)	10,789
16L	265	3,941 (14.9)	541 (2.0)	4,481 (16.9)	451 (1.7)	3 (0.0)	453 (1.7)	4,934
All	768	11,566 (15.1)	1,843 (2.4)	13,409 (17.5)	1,949 (2.5)	365 (0.5)	2,314 (3.0)	15,724

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	154	1,494 (9.7)	836 (5.4)	2,330 (15.1)	32 (0.2)	719 (4.7)	752 (4.9)	3,082
16L	613	5,646 (9.2)	3,065 (5.0)	8,711 (14.2)	37 (0.1)	5,125 (8.4)	5,161 (8.4)	13,872
All	767	7,140 (9.3)	3,901 (5.1)	11,041 (14.4)	69 (0.1)	5,844 (7.6)	5,913 (7.7)	16,954

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,535	18,706 (12.2)	5,745 (3.7)	24,450 (15.9)	434 (0.3)	1,949 (2.5)	5,844 (7.6)	8,227 (5.4)	32,677

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	2SV220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	722	352	0.82	23.92	288.64

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	722	10,881 (15.1)	1,884 (2.6)	12,765 (17.7)	123,527 (171.1)	310 (0.4)	123,837 (171.5)	136,602
16L	46	682 (14.8)	99 (2.2)	781 (17.0)	5,769 (125.4)	0 (0.0)	5,769 (125.4)	6,550
All	768	11,562 (15.1)	1,984 (2.6)	13,546 (17.6)	129,296 (168.4)	310 (0.4)	129,606 (168.8)	143,152

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	767	7,133 (9.3)	3,981 (5.2)	11,114 (14.5)	23 (0.0)	2,362 (3.1)	2,385 (3.1)	13,499
All	767	7,133 (9.3)	3,981 (5.2)	11,114 (14.5)	23 (0.0)	2,362 (3.1)	2,385 (3.1)	13,499

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,535	18,695 (12.2)	5,965 (3.9)	24,660 (16.1)	333 (0.2)	129,296 (168.4)	2,362 (3.1)	131,992 (86.0)	156,652

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule: Future 2: 1581 Ops/Day; 525,000 Ops/Year
4. Primary Weather Condition: IFR1
5. Experiment Number: 2SI120

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	768	333	0.84	35.41	280.83

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	768	11,551 (15.0)	2,012 (2.6)	13,563 (17.7)	149,084 (194.1)	315 (0.4)	149,399 (194.5)	162,962
All	768	11,551 (15.0)	2,012 (2.6)	13,563 (17.7)	149,084 (194.1)	315 (0.4)	149,399 (194.5)	162,962

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	767	7,118 (9.3)	3,981 (5.2)	11,098 (14.5)	23 (0.0)	1,941 (2.5)	1,964 (2.6)	13,062
All	767	7,118 (9.3)	3,981 (5.2)	11,098 (14.5)	23 (0.0)	1,941 (2.5)	1,964 (2.6)	13,062

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,535	18,668 (12.2)	5,993 (3.9)	24,661 (16.1)	338 (0.2)	149,084 (194.1)	1,941 (2.5)	151,363 (98.6)	176,024

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019095

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 2: 1581 Ops/Day; 525,000 Ops/Year
IFR2
2SI220

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	768	256	0.73	19.38	185.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	768	11,551 (15.0)	2,004 (2.6)	13,555 (17.7)	151,388 (197.1)	722 (0.9)	152,110 (198.1)	165,665
All	768	11,551 (15.0)	2,004 (2.6)	13,555 (17.7)	151,388 (197.1)	722 (0.9)	152,110 (198.1)	165,665

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	767	7,118 (9.3)	3,981 (5.2)	11,098 (14.5)	138 (0.2)	9,212 (12.0)	9,350 (12.2)	20,448
All	767	7,118 (9.3)	3,981 (5.2)	11,098 (14.5)	138 (0.2)	9,212 (12.0)	9,350 (12.2)	20,448

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uninpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Ground (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,535	18,668 (12.2)	5,985 (3.9)	24,654 (16.1)	860 (0.6)	151,388 (197.1)	9,212 (12.0)	161,460 (105.2)	186,114

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

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SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Baseline: 1010 Ops/Day; 335,048 Ops/Year
VFR1
0SV121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	434	181	0.74	6.57	133.04

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	336	5,074 (15.1)	864 (2.6)	5,937 (17.7)	349 (1.0)	128 (0.4)	477 (1.4)	6,414
16L	184	2,731 (14.8)	385 (2.1)	3,115 (16.9)	131 (0.7)	0 (0.0)	131 (0.7)	3,246
All	520	7,804 (15.0)	1,248 (2.4)	9,052 (17.4)	480 (0.9)	128 (0.2)	608 (1.2)	9,660

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	98	962 (9.8)	534 (5.5)	1,496 (15.3)	12 (0.1)	105 (1.1)	117 (1.2)	1,613
16L	422	3,946 (9.4)	2,102 (5.0)	6,047 (14.3)	4 (0.0)	460 (1.1)	464 (1.1)	6,511
All	520	4,908 (9.4)	2,636 (5.1)	7,544 (14.5)	16 (0.0)	565 (1.1)	581 (1.1)	8,125

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Air (Avg)	Unimpeded Travel Time Ground (Avg)	Total (Avg)	Ground (Avg)	Total Arr Air (Avg)	Delay Dep Que (Avg)	Total (Avg)	System Time
1,040	12,712 (12.2)	3,884 (3.7)	16,596 (16.0)	144 (0.1)	480 (0.9)	565 (1.1)	1,189 (1.1)	17,785

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019097

Seattle - Tacoma Capacity Design Team Update

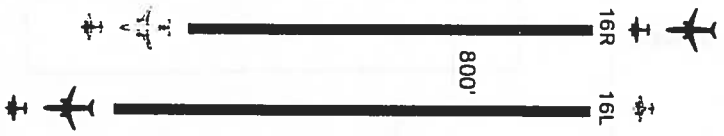
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule: Baseline: 1010 Ops/Day; 335,048 Ops/Year
4. Primary Weather Condition: VFR2
5. Experiment Number: 0SV221

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	499	216	0.76	6.41	164.52

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	499	7,475 (15.0)	1,292 (2.6)	8,767 (17.6)	5,359 (10.7)	175 (0.4)	5,534 (11.1)	14,301
16L	21	318 (15.2)	49 (2.3)	367 (17.5)	56 (2.7)	0 (0.0)	57 (2.7)	424
All	520	7,793 (15.0)	1,341 (2.6)	9,135 (17.6)	5,416 (10.4)	175 (0.3)	5,591 (10.8)	14,725

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	411 (0.8)	416 (0.8)	8,013
All	520	4,909 (9.4)	2,688 (5.2)	7,597 (14.6)	5 (0.0)	411 (0.8)	416 (0.8)	8,013

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,702 (12.2)	4,030 (3.9)	16,732 (16.1)	180 (0.2)	5,416 (10.4)	411 (0.8)	6,007 (5.8)	22,738

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019098

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R; Dep: 16L
Baseline: 1010 Ops/Day; 335,048 Ops/Year
IFR1
0SI121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	211	0.75	10.22	158.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	10,832 (20.8)	166 (0.3)	10,998 (21.2)	20,150
All	520	7,795 (15.0)	1,357 (2.6)	9,152 (17.6)	10,832 (20.8)	166 (0.3)	10,998 (21.2)	20,150

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	348 (0.7)	354 (0.7)	7,935
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	348 (0.7)	354 (0.7)	7,935

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Arr Air (Avg)	Ground (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,046 (3.9)	16,734 (16.1)	172 (0.2)	10,832 (20.8)	348 (0.7)	11,352 (10.9)	28,085

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019099

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative: Demand Management Strategy
2. Runway Use Weather Scenario: South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule: Baseline: 1010 Ops/Day; 335,048 Ops/Year
4. Primary Weather Condition: IFR2
5. Experiment Number: 0SI221

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	520	168	0.66	7.18	110.6

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	520	7,795 (15.0)	1,347 (2.6)	9,142 (17.6)	10,832 (20.8)	109 (0.2)	10,941 (21.0)	20,082
All	520	7,795 (15.0)	1,347 (2.6)	9,142 (17.6)	10,832 (20.8)	109 (0.2)	10,941 (21.0)	20,082

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	931 (1.8)	936 (1.8)	8,518
All	520	4,893 (9.4)	2,688 (5.2)	7,582 (14.6)	5 (0.0)	931 (1.8)	936 (1.8)	8,518

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,040	12,688 (12.2)	4,035 (3.9)	16,723 (16.1)	114 (0.1)	10,832 (20.8)	931 (1.8)	11,877 (11.4)	28,600

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 1: 1244 Ops/Day; 413,047 Ops/Year
VFR1
1SV121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	531	254	0.79	7.36	200.24

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	407	6,162 (15.1)	1,042 (2.6)	7,204 (17.7)	635 (1.6)	199 (0.5)	834 (2.1)	8,038
16L	215	3,195 (14.9)	445 (2.1)	3,640 (16.9)	204 (1.0)	0 (0.0)	204 (1.0)	3,844
All	622	9,357 (15.0)	1,487 (2.4)	10,844 (17.4)	839 (1.3)	199 (0.3)	1,039 (1.7)	11,882

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	124	1,211 (9.8)	672 (5.4)	1,884 (15.2)	32 (0.3)	257 (2.1)	289 (2.3)	2,172
16L	498	4,611 (9.3)	2,490 (5.0)	7,101 (14.3)	25 (0.1)	1,011 (2.0)	1,036 (2.1)	8,137
All	622	5,823 (9.4)	3,162 (5.1)	8,985 (14.4)	57 (0.1)	1,268 (2.0)	1,325 (2.1)	10,310

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,244	15,180 (12.2)	4,649 (3.7)	19,829 (15.9)	257 (0.2)	839 (1.3)	1,268 (2.0)	2,363 (1.9)	22,192

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
3. Aircraft Demand Schedule:	Future 1: 1244 Ops/Day; 413,047 Ops/Year
4. Primary Weather Condition:	VFR2
5. Experiment Number:	1SV221

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	603	292	0.84	13.02	245.77

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	603	9,051 (15.0)	1,556 (2.6)	10,607 (17.6)	40,389 (67.0)	265 (0.4)	40,654 (67.4)	51,261
16L	37	556 (15.0)	86 (2.3)	643 (17.4)	976 (26.4)	0 (0.0)	976 (26.4)	1,619
All	640	9,608 (15.0)	1,642 (2.6)	11,249 (17.6)	41,365 (64.6)	266 (0.4)	41,630 (65.0)	52,880

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,011 (1.6)	1,024 (1.6)	10,323
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	1,011 (1.6)	1,024 (1.6)	10,323

F. Aircraft Travel Times and Delay - Arrivals and Departures

No Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,592 (12.2)	4,957 (3.9)	20,549 (16.1)	278 (0.2)	41,365 (64.6)	1,011 (1.6)	42,654 (33.3)	63,203

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019102

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R; Dep: 16L
Future 1: 1244 Ops/Day; 413,047 Ops/Year
IFR1
1SI121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	273	0.77	18.31	211.12

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,704 (101.1)	224 (0.4)	64,928 (101.5)	76,205
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,704 (101.1)	224 (0.4)	64,928 (101.5)	76,205

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	576 (0.9)	589 (0.9)	9,888
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	576 (0.9)	589 (0.9)	9,888

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	237 (0.2)	64,704 (101.1)	576 (0.9)	65,517 (51.2)	86,093

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019103

Seattle - Tacoma Capacity Design Team Update

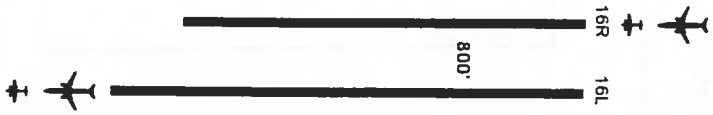
June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 1: 1244 Ops/Day; 413,047 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	1SI221

B. Runway Operating Configuration



C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	640	206	0.64	9.50	132.53

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,704 (101.1)	134 (0.2)	64,838 (101.3)	76,115
All	640	9,606 (15.0)	1,670 (2.6)	11,277 (17.6)	64,704 (101.1)	134 (0.2)	64,838 (101.3)	76,115

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,054 (3.2)	2,067 (3.2)	11,366
All	640	5,984 (9.4)	3,315 (5.2)	9,299 (14.5)	13 (0.0)	2,054 (3.2)	2,067 (3.2)	11,366

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,280	15,590 (12.2)	4,986 (3.9)	20,576 (16.1)	147 (0.1)	64,704 (101.1)	2,054 (3.2)	66,906 (52.3)	87,482

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 2: 1535 Ops/Day; 507,725 Ops/Year
VFR1
2SV121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	673	394	0.98	16.99	386.78

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	516	7,823 (15.2)	1,336 (2.6)	9,159 (17.8)	1,662 (3.2)	387 (0.8)	2,049 (4.0)	11,208
16L	275	4,092 (14.9)	567 (2.1)	4,659 (16.9)	492 (1.8)	3 (0.0)	495 (1.8)	5,154
All	791	11,915 (15.1)	1,903 (2.4)	13,818 (17.5)	2,154 (2.7)	390 (0.5)	2,544 (3.2)	16,361

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16R	157	1,521 (9.7)	856 (5.5)	2,377 (15.1)	322 (2.1)	769 (4.9)	1,091 (7.0)	3,468
16L	633	5,849 (9.2)	3,165 (5.0)	9,014 (14.2)	19 (0.0)	9,292 (14.7)	9,311 (14.7)	18,325
All	790	7,370 (9.3)	4,021 (5.1)	11,391 (14.4)	341 (0.4)	##### (12.7)	10,403 (13.2)	21,793

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,285 (12.2)	5,924 (3.7)	25,208 (15.9)	731 (0.5)	2,154 (2.7)	##### (12.7)	12,946 (8.2)	38,155

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R, [16L]; Dep: 16L, [16R]
Future 2: 1535 Ops/Day; 507,725 Ops/Year
VFR2
2SV221

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	745	352	0.82	23.26	289.81

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	745	11,220 (15.1)	1,937 (2.6)	13,157 (17.7)	140,917 (189.2)	313 (0.4)	141,230 (189.6)	154,386
16L	46	682 (14.8)	98 (2.1)	780 (17.0)	6,387 (138.9)	0 (0.0)	6,387 (138.9)	7,167
All	791	11,901 (15.0)	2,035 (2.6)	13,936 (17.6)	147,304 (186.2)	313 (0.4)	147,617 (186.6)	161,553

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	16 (0.0)	2,425 (3.1)	2,441 (3.1)	13,888
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	16 (0.0)	2,425 (3.1)	2,441 (3.1)	13,888

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,248 (12.2)	6,135 (3.9)	25,384 (16.1)	329 (0.2)	147,304 (186.2)	2,425 (3.1)	150,058 (94.9)	175,441

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019106

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:
2. Runway Use Weather Scenario:
3. Aircraft Demand Schedule:
4. Primary Weather Condition:
5. Experiment Number:

Demand Management Strategy
South Flow Arr: 16R; Dep: 16L
Future 2: 1535 Ops/Day; 507,725 Ops/Year
IFR1
2SI121

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	343	0.84	35.14	287.55

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	168,451 (213.0)	308 (0.4)	168,760 (213.4)	182,721
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	168,451 (213.0)	308 (0.4)	168,760 (213.4)	182,721

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	16 (0.0)	1,699 (2.2)	1,714 (2.2)	13,161
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	16 (0.0)	1,699 (2.2)	1,714 (2.2)	13,161

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	324 (0.2)	168,451 (213.0)	1,699 (2.2)	170,474 (107.8)	195,882

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019107

Seattle - Tacoma Capacity Design Team Update

June 1995

SIMMOD - Simulation Model
Simulation Experiment Synopsis

A. Simulation Description

1. Simulation Alternative:	Demand Management Strategy
2. Runway Use Weather Scenario:	South Flow Arr: 16R; Dep: 16L
3. Aircraft Demand Schedule:	Future 2: 1535 Ops/Day; 507,725 Ops/Year
4. Primary Weather Condition:	IFR2
5. Experiment Number:	2SI221

B. Runway Operating Configuration

C. Runway Crossing Statistics

Xing Rwy	Tot Xings	Xings Del	Avg (min)	Max (min)	Total (min)
16L	791	268	0.71	15.89	190.73

D. Aircraft Travel Times and Delay - Arrivals

Rwy	No. Arrs	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Air (Avg)	Ground (Avg)	Total (Avg)	System Time
16R	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	168,451 (213.0)	625 (0.8)	169,076 (213.8)	183,037
All	791	11,897 (15.0)	2,065 (2.6)	13,961 (17.7)	168,451 (213.0)	625 (0.8)	169,076 (213.8)	183,037

E. Aircraft Travel Times and Delay - Departures

Rwy	No. Deps	Unimpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Delay Ground (Avg)	Queue (Avg)	Total (Avg)	System Time
16L	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	95 (0.1)	8,516 (10.8)	8,611 (10.9)	20,058
All	790	7,347 (9.3)	4,100 (5.2)	11,447 (14.5)	95 (0.1)	8,516 (10.8)	8,611 (10.9)	20,058

F. Aircraft Travel Times and Delay - Arrivals and Departures

No. Ops	Uminpeded Travel Time Air (Avg)	Ground (Avg)	Total (Avg)	Total Delay Ground (Avg)	Arr Air (Avg)	Dep Que (Avg)	Total (Avg)	System Time
1,581	19,244 (12.2)	6,165 (3.9)	25,408 (16.1)	720 (0.5)	168,451 (213.0)	8,516 (10.8)	177,687 (112.4)	203,096

Notes: Arrival and departure delays, travel times, and totals are in minutes.
Ground Delays Include Runway Crossing Delays

SYN 0019108