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LOS ANGELES INTERNATIONAL AIRPORT DATA PACKAGE NUMBER 9, AIRPOR--ETC(U)
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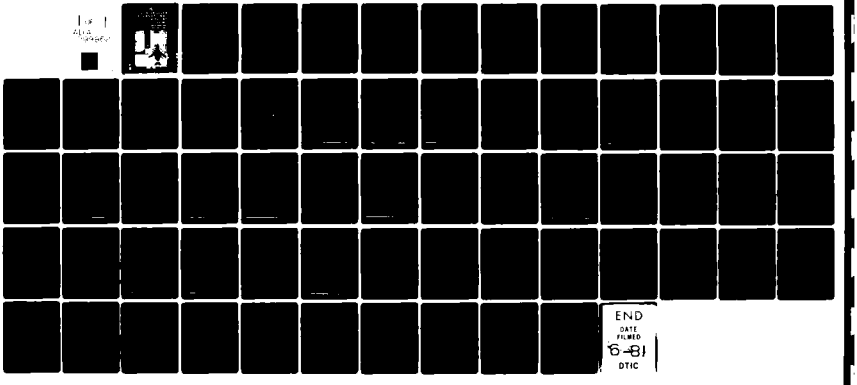

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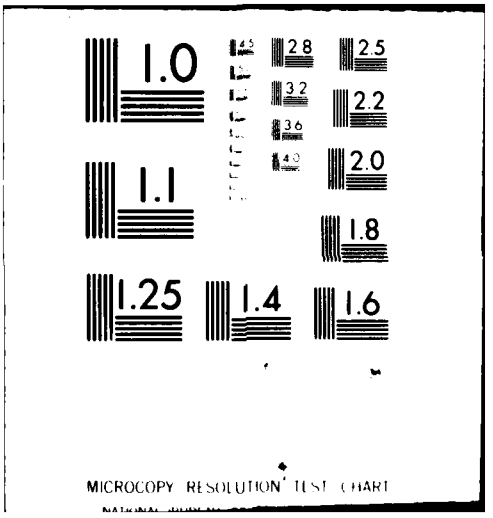
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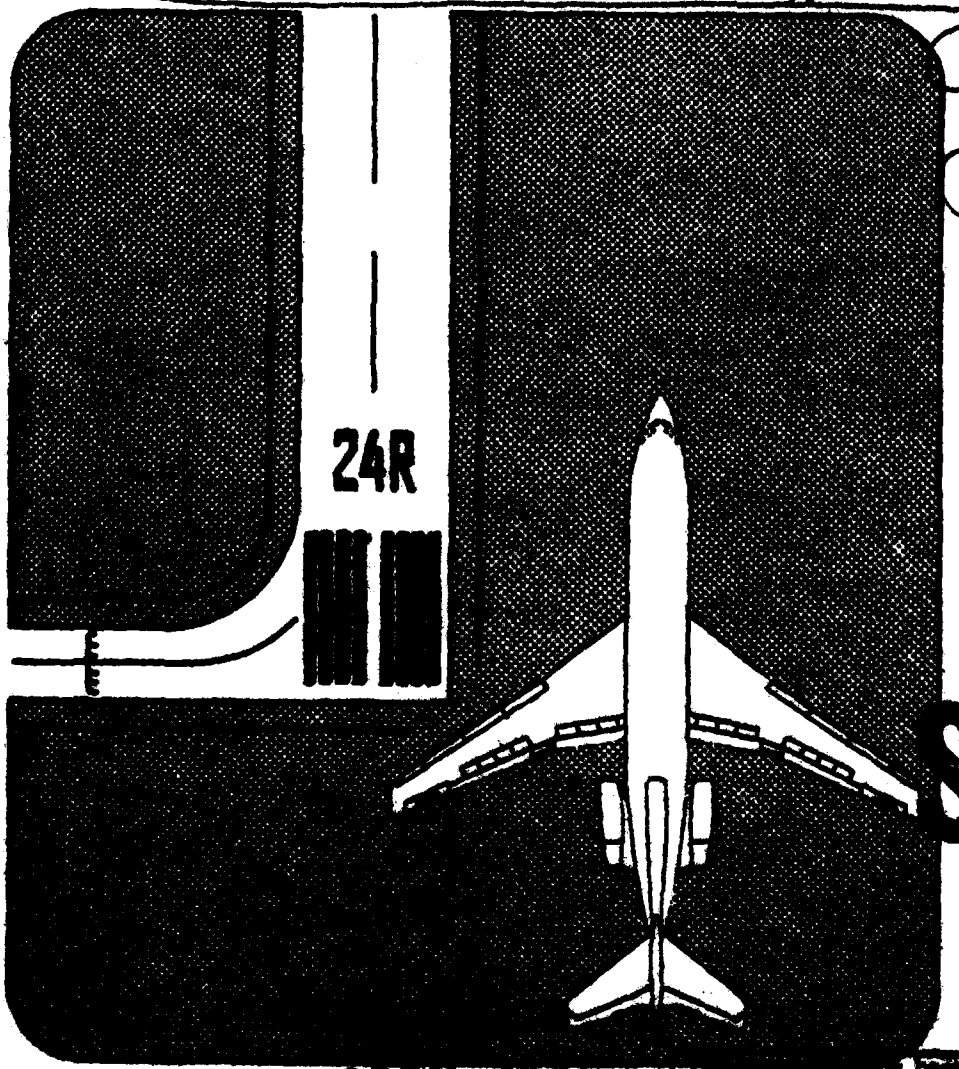
LEVEL II

LOS ANGELES INTERNATIONAL AIRPORT

DATA PACKAGE No. 9 Number

AIRPORT IMPROVEMENT TASK FORCE DELAY STUDIES.



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APRIL 1980

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

DATE: April 29, 1980

IN REPLY REFER TO:

NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER
ATLANTIC CITY, NEW JERSEY 08405

SUBJECT: Los Angeles Simulation Model Results

FROM: Program Manager, ANA-220

TO: Frank Jones, AWE-530

Enclosed is data package No. 9 for review by the Task Force members. Data package No. 8 was presented at the last meeting of the Task Force on January 30, 1980.

Attachment A is a list of the Stage 1 and Stage 2 experiments. Link node diagrams for the airport are included showing the present and near term improvements.

Attachment B shows the distribution of heavy aircraft departures for the 1978 demand. This information was requested by the task force since the last meeting, and reflects the fact that there is a higher number of heavy aircraft departures in the morning hours as compared to the early afternoon.

Attachment C contains the results of the Stage 2 experiments. The results of the experiments are presented in two sets (sets 6 and 7 representing a continuation of the results presented in data package No. 7).

Set 6 - Experiments 18, 18A, 19A, 20, 21, 22, 22A, 25, and 25A.

Set 7 - Experiments 23, 24, and 26.

Set 6 of the Stage 2 experiments deals with the VFR-1 weather conditions during westerly flow of traffic. The demand for each experiment (aircraft schedule) is shown in Table 3. One experiment (18A) has been added to the Stage 2 to permit the comparison of the dual taxiway improvement before and after tunnel construction. Experiment 18 was exercised (without tunnel improvements) in two cases. One with the same demand as experiment 7 (1982 demand) and then repeated with the departures rerouted to runway 24R when a queue of 4 built-up on runway 25R. Experiment 18A was performed using the same demand as experiment 11 (1982 demand) with departures rerouted to runway 24R when a queue of 4 built-up on runway 25R.

Set 7 of the Stage 2 experiments deals with the IFR weather conditions during westerly flow of traffic. The demand is shown in Table 16 for the experiments.

Attachment D is a summary of experiment results for total delays and travel time accumulated during the time frame the experiments were simulated (0700 to 1500). (The computer output generated data for the last hour (1500 to 1600) as a clean-up time for the simulation which had no demand for that hour).

Attachment E lists a number of initial comparisons of experiment which isolate particular improvement with their effect on either the delays or travel times.

Attachment F includes the summary of annual delays calculated in a manner similar to the yearly aircraft operations shown in Table 8 of data package No. 5.

John R. Vanderveer

JOHN R. VANDERVEER

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ATTACHMENT A

LOS ANGELES DELAY EXPERIMENTS

LOS ANGELES INTERNATIONAL AIRPORT

AIRPORT IMPROVEMENT TASK FORCE DELAY STUDIES

TABLE 1

LOS ANGELES DELAY EXPERIMENTS

Experiment number	Model	Study case[a]	Arrival runways	Departure runways	Weather	Demand	ATC System scenario[b]	Near Tearm[c] improvements
Stage I Experiments								
1	ASM[d]	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1978	1978	None
2	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1978	1978	None
3	ASM	3	24R, 25L	24L, 25R	IFR2	1978	1978	None
4	ASM	5	6R, 7L	24L, 25R	VFR1	1978	1978	None
5	ASM	6	6R, 7L	24L, 25R	IFR1	1978	1978	None
6	ASM	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1978	1978	None
7 (7A) (7B)	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982 (+5%) (+15%)	1978	None
8 (8A) (8B)	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1982 (+5%) (+15%)	1978	None
9	ASM	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1982	1978	None
10	ASM	5	6R, 7L	24L, 25R	VFR1	1982	1978	None
10A	ASM	6	6R, 7L	24L, 25R	IFR1	1982	1978	None
11	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	1982[e]
12	ASM	2	24L, 24R, 25L, 25R	24L, 25R	IFR1	1982	1982	1982
13	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	2, 3[f]
15	ASM	5	6R, 7L	24L, 25R	VFR1	1982	1982	5, 7[g]
16	ASM	4	6L, 6R, 7L, 7R	6L, 6R, 7L, 7R	VFR1	1982	1982	5, 7, 8[g]
17	ADM[h]	n.a.	n.a.	n.a.	n.a.	1978	1978	None
17A	RCM[i]	7	24L, 24R, 25L	24L, 24R, 25L	VFR1	1982	1982	Tunnel Construction[j]
17B	RCM	7	24L, 24R, 25L, 25x[k]	24L, 24R, 25L, 25X	VFR1	1982	1982	Tunnel Construction
17C	RCM	7	24L, 24R, 25L, 26	24L, 24R, 25L, 26	VFR1	1982	1982	Comments-Usage for Light

n.a. = not applicable.

a. Study cases (combinations of runway use and weather conditions) are defined in Figure III-1.

b. FAA will describe impact of 1982 and post-1987 ATC systems on model inputs.

c. Potential near-term improvements are identified in the Los Angeles International Airport Improvement Task Force Interim Report, and in Appendix B.

d. Airfield Simulation Model.

e. Task Force establishes packages of near-term improvements most likely to be implemented in 1982 and 1987 time frames. The 1982 package includes improvement # 2 (high-speed taxiway off Runway 25L to the south), improvement # 3 (strengthening of the Sepulveda Tunnel), (cont.)

TABLE 1 (CONTINUED)

e. (cont.) new taxiway access to threshold of Runway 24R, and temporary holding areas on future Taxiway 75. The 1987 package includes all 1982 improvements plus Satellite 1, International Terminal, and/or remote parking for 20 aircraft at west end of airport. These packages of improvements are subject to Task Force review and revision.
f. Impact of absence of Improvements # 2 and #3 (high-speed taxiway of Runway 25L and strengthening of the Sepulveda Tunnel).
g. Improvement # 5 is a high-speed taxi exit off Runway 7. Improvement # 7 is a high-spped taxi exit to Taxiway 47 from Runway 6R. Improvement #8 is a bypass area on the north side of Runway 7L.
h. Annual Delay Model.
i. Runway Capacity Model.
j. Runway 25R closed for tunnel construction.
k. During closure of 25R for tunnel construction, parts of Runway 25 are open for small aircraft arrivals and departures.

TABLE 1

LOS ANGELES DELAY EXPERIMENTS

Experiment number	Model	Study case[a]	Arrival Runways	Departure Runways	Weather	Demand	ATC System scenario[b]	Near-term improvements[c]
Stage 2 Experiments								
18	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	10[l]
19 A	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1978	Terminal Expansion[n]
20	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	Terminal Expansion[n]
21	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1982	1982	Remote Terminal [o]
22	ASM	7	24L, 24R, 25L	24L, 24R, 25L	VFR1	1982	1978	Tunnel Construction
22A	ASM	8	24L, 24R, 25L	24L, 24R, 25L	VFR1	1982	1978	Dual Taxiway[p]
23	ASM	8	24R, 25L	24L, 25L	IFR1	1982	1978	Tunnel Construction 25R
24	ASM	9	24R, 25R	24L, 25R	IFR1	1982	1978	Tunnel Construction 25L
25	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1987	1987	1987[e]
25A	ASM	1	24L, 24R, 25L, 25R	24L, 24R, 25L, 25R	VFR1	1987	1987	1987
26	ASM	2	24L, 24R, 25L, 25R	24L, 24R	IFR1	1987	1987	1987
27	ADM	n.a.	n.a.	n.a.	n.a.	1982	1982	1982
28	ADM	n.a.	n.a.	n.a.	n.a.	1982	1982	None
29	ADM	n.a.	n.a.	n.a.	n.a.	1982	1978	1982
30	ADM	n.a.	n.a.	n.a.	n.a.	1982	1978	None
31	ADM	n.a.	n.a.	n.a.	n.a.	1987	1987	1987
32	ADM	n.a.	n.a.	n.a.	n.a.	1987	1987	None
33	ADM	n.a.	n.a.	n.a.	n.a.	1987	1978	1987
34	ADM	n.a.	n.a.	n.a.	n.a.	1987	1988	None

l. Improvement #10 consists of a series of taxiway improvements identified in Appendix B.

n. Construction of Satellite 1 and International Terminal. The need for this experiment will be reviewed by the Task Force after consideration of future airline terminal locations.

o. Remote parking for 20 aircraft at west end of Airport.

p. Additional experiment may be needed to test value of dual taxiway system around Satellite 4 during tunnel construction

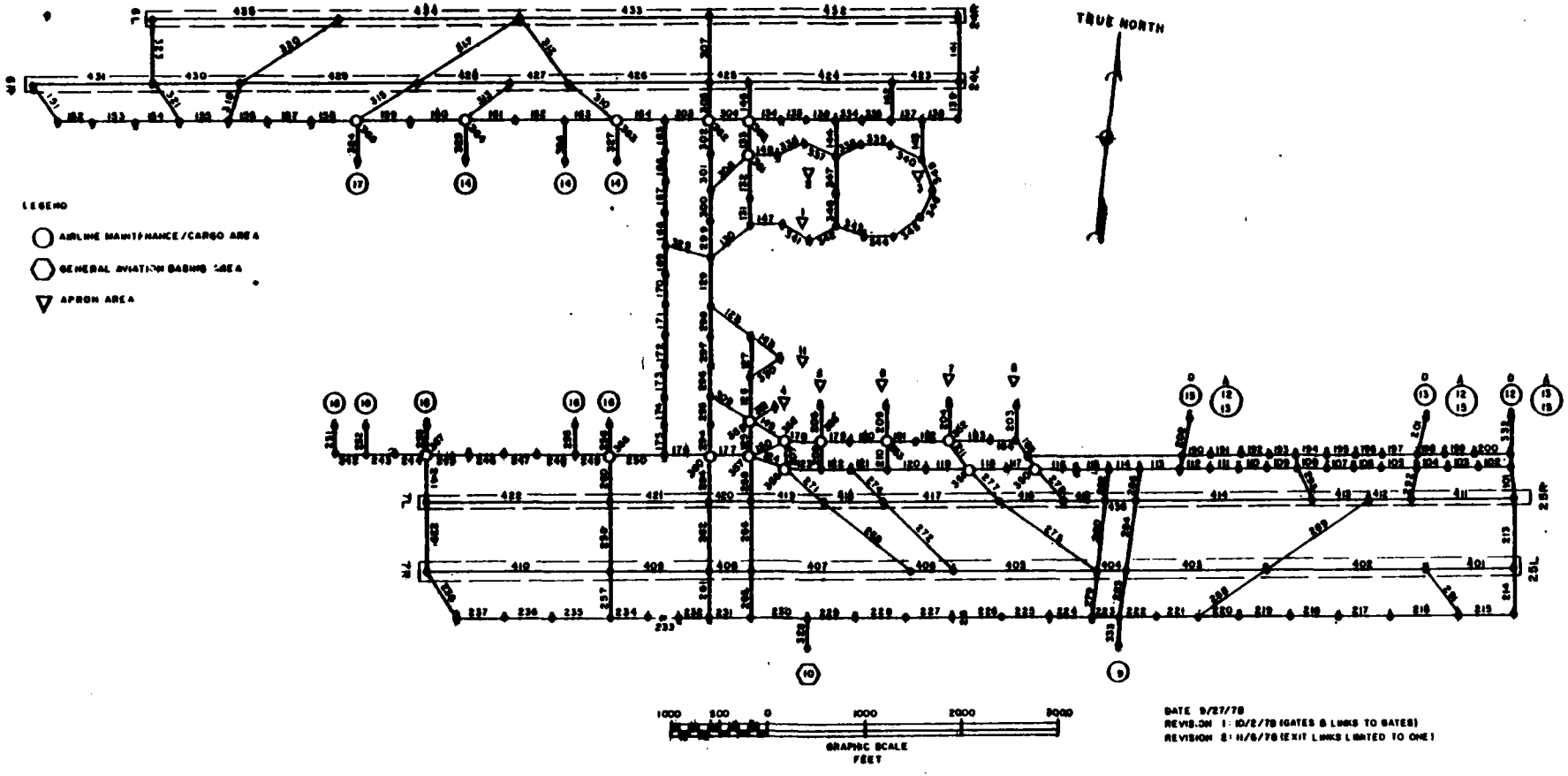

Figure 1 LAX LINK NODE DIAGRAM (PRESENT)

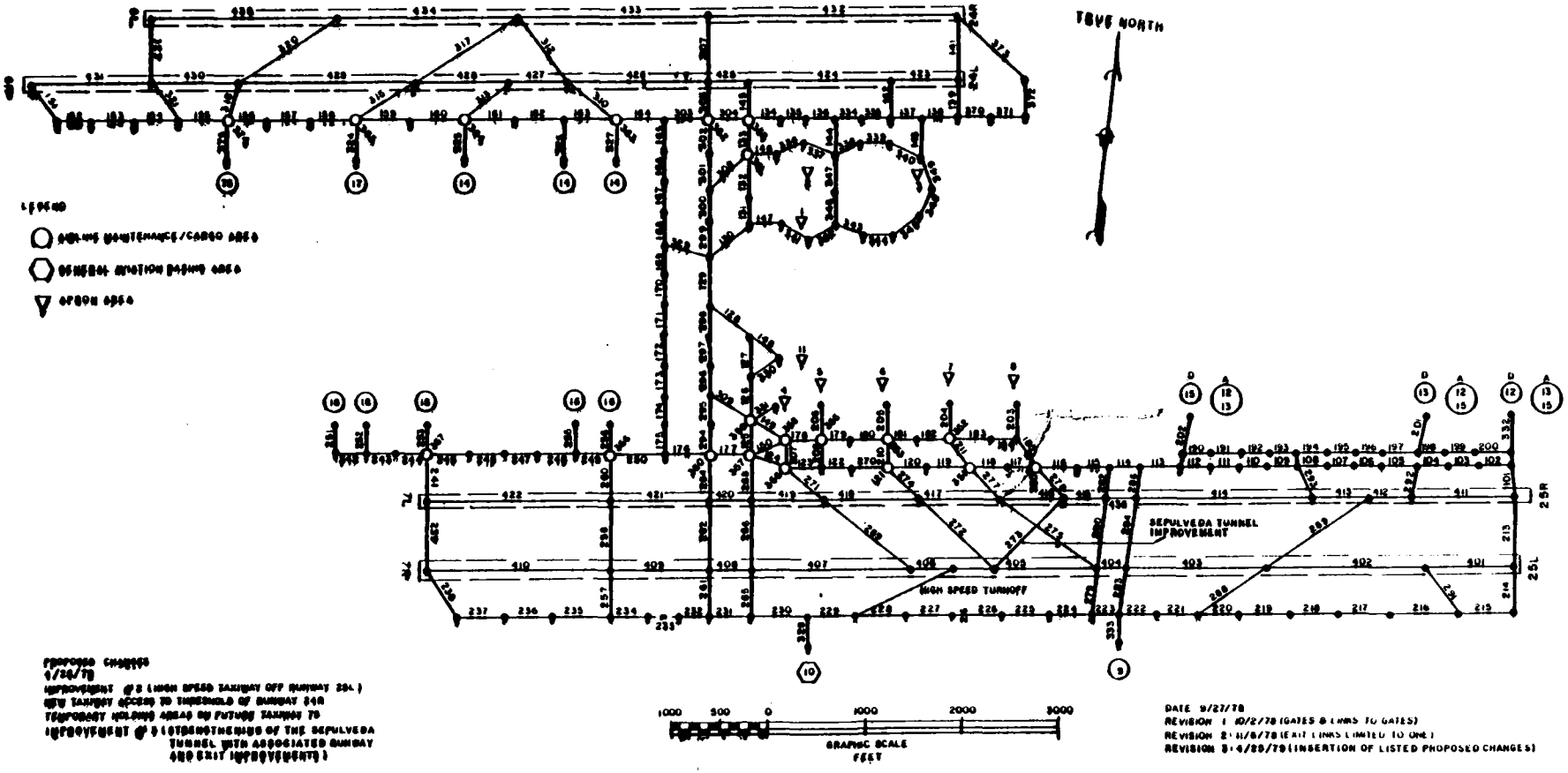

Figure 2 LAX LINK NODE DIAGRAM
(NEAR TERM IMPROVEMENTS)

ATTACHMENT B

DISTRIBUTION OF HEAVY DEPARTURES
1978 DEMAND

TABLE 2

TIME	TOTAL DEPARTURES (HEAVY)	TOTAL NORTH SIDE DEPARTURES (HEAVY)	TOTAL CROSS-OVERS TO SOUTH SIDE DEPARTURE FIX
0700	12	10	6
0800	16	15	11
0900	17	17	14
1000	7	7	4
1100	5	5	5
1200	17	16	11
1300	13	13	8
1400	3	3	3
TOTAL	90	86	62 (72.1%)
0700 TO 1100	52	49	35 (71%)
1100 TO 1500	38	37	27 (73%)

ATTACHMENT C

LOS ANGELES STAGE 2 DELAY EXPERIMENTS

LOS ANGELES INTERNATIONAL AIRPORT

AIRPORT IMPROVEMENT TASK FORCE DELAY STUDIES

TABLE 3

SET 6 DEMAND

EXPERIMENT		RWY 24R	RWY 24L	RWY 25R	RWY 25L	TOTAL
18	A	71	17	105	170	363
	D	42	171	135	78	426
(7 AND 13)	TOTAL	113	188	240	248	789
18A	A	71	17	105	170	363
	D	25	117	193	91	426
(11)	TOTAL	96	134	298	261	789
19A	A	72	14	93	184	363
AND	D	52	172	130	72	426
20	TOTAL	124	186	223	256	789
21	A	70	18	105	170	363
	D	42	171	135	78	426
	TOTAL	112	189	240	248	789
22	A	95	72	0	196	363
AND	D	29	162	0	235	426
22A	TOTAL	124	234	0	431	789
25	A	96	66	84	123	369
	D	37	124	164	107	432
	TOTAL	133	190	248	230	801
25A	A	98	68	89	125	380
	D	38	129	168	109	444
	TOTAL	136	197	257	234	820

LAX - STAGE 2

EXPERIMENT NO. 18 (18A)

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario (1982) and improvement #10 (taxiways). Experiment 18A includes the near term improvements.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment #11 is identical except for improvement #10 (taxiway improvements).

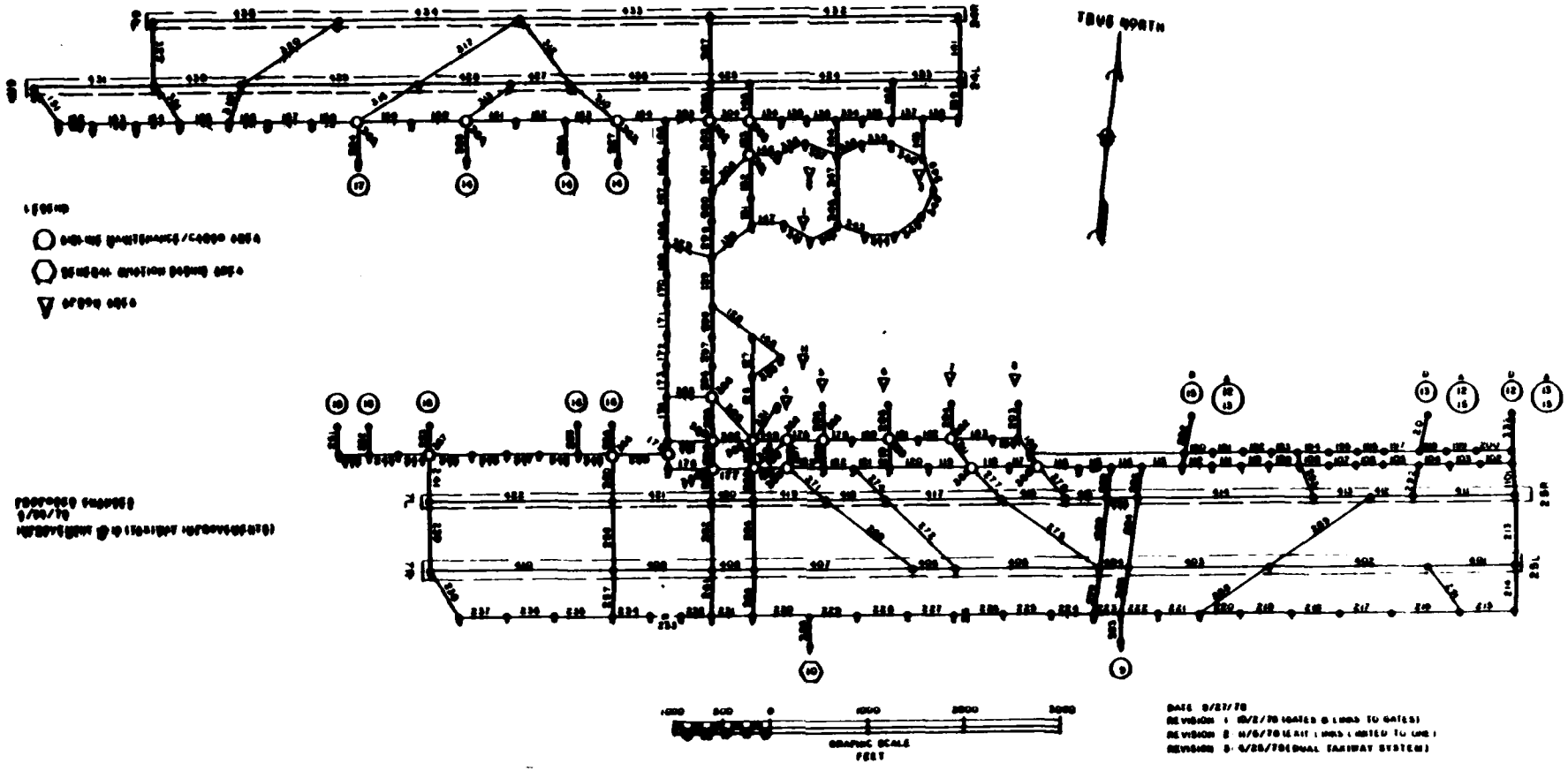

Figure 3 LAX LINK NODE DIAGRAM (DUAL TAXIWAY)

TABLE 4

P27

1 LAX EXP 18 DEMAND=82 SEP=82VFR1 CONFIG=A SCHED=X7 RTE=X18 TAXI IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	2.0	1.0	6.0	18.0	0.0	0.0	27.0	27.0	0.0	2.0	16.0	15.0	8.0	0.0	0.0	41.0	48.0	-7.0	9.39	4.39	7.26
800- 900	10.0	1.0	14.0	19.0	0.0	0.0	44.0	44.0	0.0	6.2	24.7	20.0	8.1	0.0	0.0	59.0	64.0	-5.0	10.30	4.50	13.44
900-1000	6.0	1.0	15.0	18.0	0.0	0.0	40.0	40.0	0.0	4.8	28.5	18.6	5.9	0.0	0.0	57.8	54.0	3.8	10.51	4.18	16.39
1000-1100	11.0	3.0	13.4	26.0	0.0	0.0	53.4	55.0	-1.6	8.0	21.6	15.7	5.0	0.0	0.0	50.3	48.0	2.3	11.00	4.68	13.26
1100-1200	12.0	3.0	22.9	20.6	0.0	0.0	58.5	60.0	-1.5	5.0	17.1	14.0	9.5	0.0	0.0	45.6	52.0	-6.4	11.54	4.47	9.76
1200-1300	12.0	1.0	10.7	23.4	0.0	0.0	47.1	45.0	2.1	4.0	25.9	20.2	13.1	0.0	0.0	63.2	45.0	-1.8	12.43	4.66	17.18
1300-1400	8.0	2.0	10.0	20.0	0.0	0.0	40.0	39.0	1.0	5.0	24.2	14.6	15.3	0.0	0.0	59.1	54.0	5.1	10.17	4.39	17.34
1400-1500	10.0	5.0	13.0	24.0	0.0	0.0	52.0	53.0	-1.0	5.0	12.7	15.5	11.7	0.0	0.0	44.9	41.0	3.9	10.24	4.48	9.89
* [illegible]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.88	5.18	0.00

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	.0	.7	.4	0.0	0.0	.4	.2	.1	.3	.8	2.2	1.2	0.0	0.0	1.4	.0	.3	0.0	.7	1.6
800- 900	.2	.3	.9	.9	0.0	0.0	.7	.1	.2	2.9	3.7	9.3	4.7	0.0	0.0	6.0	.0	1.3	0.0	1.0	7.3
900-1000	0.0	.0	1.0	1.7	0.0	0.0	1.1	.2	.1	3.2	11.1	6.8	8.1	0.0	0.0	8.7	.0	1.4	.3	1.4	10.4
1000-1100	.5	.4	.9	2.1	0.0	0.0	1.4	.2	.1	2.6	7.3	3.1	4.2	0.0	0.0	5.2	.0	1.4	.0	1.7	6.7
1100-1200	.1	.7	2.6	2.3	0.0	0.0	1.9	.2	.2	1.8	1.2	7.6	3.2	0.0	0.0	3.6	.0	.4	0.0	2.3	4.1
1200-1300	.3	0.0	1.1	6.0	0.0	0.0	3.3	.1	.1	1.8	4.7	17.6	8.1	0.0	0.0	9.4	.0	1.9	.1	3.6	11.4
1300-1400	.2	0.0	1.2	1.3	0.0	0.0	1.0	.1	.1	1.8	6.1	11.8	13.1	0.0	0.0	9.0	.0	2.6	.1	1.2	11.6
1400-1500	.2	.0	1.1	1.3	0.0	0.0	.9	.2	.1	.8	1.7	5.8	3.7	0.0	0.0	3.6	.1	.6	0.0	1.2	4.3
* [illegible]	0.0	0.0	0.0	1.8	0.0	0.0	1.8	.1	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	.3	0.0	0.0	0.0

* CLEAN-UP HOUR

TABLE 5

P27

1 LAX EXP 18 DEMAND=82 SEP=82VFR1 CONFIG=A SCHED=X7 RTE=X18 TAXI IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	2.0	1.0	6.0	18.0	0.0	0.0	27.0	27.0	0.0	2.5	16.0	14.5	8.0	0.0	0.0	41.0	48.0	-7.0	9.40	4.35	7.30
800- 900	10.0	1.0	14.0	19.0	0.0	0.0	44.0	44.0	0.0	10.2	23.3	15.5	8.7	0.0	0.0	57.7	44.0	-6.3	10.12	4.63	14.49
900-1000	6.0	1.0	15.0	18.0	0.0	0.0	40.0	40.0	0.0	6.0	29.2	18.2	5.3	0.0	0.0	58.7	54.0	4.7	10.57	4.13	16.46
1000-1100	11.0	3.0	13.6	26.0	0.0	0.0	53.6	55.0	-1.4	8.2	22.3	15.5	5.0	0.0	0.0	51.0	48.0	3.0	10.89	4.57	13.44
1100-1200	12.0	3.0	23.4	21.7	0.0	0.0	60.1	60.0	.1	7.4	16.6	13.0	9.1	0.0	0.0	46.1	52.0	-5.9	11.40	4.49	9.44
1200-1300	12.0	1.0	10.2	22.3	0.0	0.0	45.5	45.0	.5	8.2	24.4	16.7	17.4	0.0	0.0	66.7	65.0	1.7	10.08	4.65	15.15
1300-1400	8.0	2.0	9.8	20.0	0.0	0.0	39.8	39.0	.8	6.0	25.6	13.5	12.5	0.0	0.0	57.6	54.0	3.6	9.97	4.42	13.36
1400-1500	10.0	5.0	13.0	24.1	0.0	0.0	52.1	53.0	-.9	5.2	13.3	13.2	10.5	0.0	0.0	42.2	41.0	1.2	10.26	4.42	8.06
[illegible]	[illegible]																				

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	.8	.4	0.0	0.0	.5	.2	.1	.8	.8	2.1	1.1	0.0	0.0	1.3	.0	.3	0.0	.7	1.6
800- 900	.2	.2	.6	.7	0.0	0.0	.6	.1	.2	5.7	5.8	7.9	4.4	0.0	0.0	6.1	.1	1.9	0.0	.9	8.1
900-1000	0.0	0.0	1.1	1.7	0.0	0.0	1.2	.2	.1	4.3	11.3	5.6	8.6	0.0	0.0	8.6	.0	1.4	.4	1.4	10.4
1000-1100	.5	.3	.9	1.9	0.0	0.0	1.3	.2	.2	2.6	8.1	2.8	4.7	0.0	0.0	5.3	.0	1.5	.0	1.6	6.8
1100-1200	.1	.7	2.5	2.0	0.0	0.0	1.7	.2	.2	2.5	1.2	6.2	3.1	0.0	0.0	3.2	.0	.3	0.0	2.1	3.6
1200-1300	.5	0.0	.6	1.5	0.0	0.0	1.0	.1	.1	7.8	7.6	7.7	7.7	0.0	0.0	7.6	.0	1.5	0.0	1.2	9.2
1300-1400	.2	0.0	1.2	.9	0.0	0.0	.8	.1	.1	3.3	8.3	4.4	5.3	0.0	0.0	6.3	.0	1.3	.0	1.0	7.6
1400-1500	.2	.0	1.3	1.2	0.0	0.0	.9	.2	.1	.7	2.1	2.0	2.4	0.0	0.0	2.0	.1	.3	.0	1.3	2.4
[illegible]	[illegible]																				

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*CLEAN-UP NOVA

TABLE 6

1 P27

LAX EXP 18A DEMAND=82 SEP=82VFR1 CONFIG=A SCHED=X11 RTE=X18 TAXI IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	2.0	1.0	6.0	18.0	0.0	0.0	27.0	27.0	0.0	2.0	13.0	16.0	10.0	0.0	0.0	41.0	48.0	-7.0	9.37	4.25	6.45
800- 900	10.0	1.0	13.9	19.0	0.0	0.0	43.9	44.0	-.1	13.4	13.7	19.2	10.8	0.0	0.0	57.1	64.0	-6.9	10.20	4.57	12.62
900-1000	6.0	1.0	15.1	18.0	0.0	0.0	40.1	40.0	.1	11.1	22.8	19.6	9.5	0.0	0.0	63.0	54.0	9.0	10.70	4.06	14.50
1000-1100	11.0	3.0	13.6	26.0	0.0	0.0	53.6	55.0	-1.4	7.4	11.5	15.5	10.8	0.0	0.0	45.2	48.0	-2.8	11.07	4.60	12.10
1100-1200	12.0	3.0	23.2	21.8	0.0	0.0	60.0	60.0	0.0	7.0	16.0	15.1	11.0	0.0	0.0	49.1	52.0	-2.9	11.27	4.56	10.64
1200-1300	12.0	1.0	10.3	22.2	0.0	0.0	45.5	45.0	.5	16.2	14.7	17.4	14.6	0.0	0.0	62.9	65.0	-2.1	10.39	4.66	15.97
1300-1400	8.0	2.0	9.9	20.0	0.0	0.0	39.9	39.0	.9	11.8	18.2	17.7	13.2	0.0	0.0	60.9	54.0	6.9	10.01	4.50	13.55
1400-1500	10.0	5.0	13.0	24.0	0.0	0.0	52.0	53.0	-1.0	6.1	7.1	20.3	8.5	0.0	0.0	42.0	41.0	1.0	10.31	4.60	8.99
[illegible]																					

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	1.0	.3	0.0	0.0	.4	.1	.1	0.0	.3	1.7	1.4	0.0	0.0	1.1	0.0	.3	0.0	.7	1.4
800- 900	.1	.2	.7	.9	0.0	0.0	.6	.1	.2	2.2	.6	9.3	6.1	0.0	0.0	4.9	.1	2.0	0.0	1.0	7.0
900-1000	0.0	0.0	1.2	2.0	0.0	0.0	1.3	.2	.1	8.7	5.2	7.2	5.1	0.0	0.0	6.5	.0	2.4	.0	1.6	8.9
1000-1100	.4	.4	1.0	2.2	0.0	0.0	1.4	.2	.1	2.9	2.0	6.4	6.2	0.0	0.0	4.7	.0	2.0	.0	1.8	6.7
1100-1200	.1	.8	2.0	2.2	0.0	0.0	1.6	.2	.2	3.6	1.0	8.1	5.0	0.0	0.0	4.4	.0	.7	0.0	2.1	5.1
1200-1300	.3	.0	.8	2.1	0.0	0.0	1.3	.1	.2	7.0	2.1	14.4	8.4	0.0	0.0	8.2	.0	2.0	0.0	1.6	10.2
1300-1400	.2	.0	1.2	.9	0.0	0.0	.8	.1	.2	7.2	6.5	6.4	4.2	0.0	0.0	6.1	.0	1.9	0.0	1.1	8.0
1400-1500	.2	.0	1.4	1.3	0.0	0.0	1.0	.2	.1	1.2	.5	5.2	3.2	0.0	0.0	3.4	.1	.4	0.0	1.3	3.8
[illegible]																					

1 CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 19A

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with terminal expansion.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment #20 is identical except for an improved ATC system scenario.

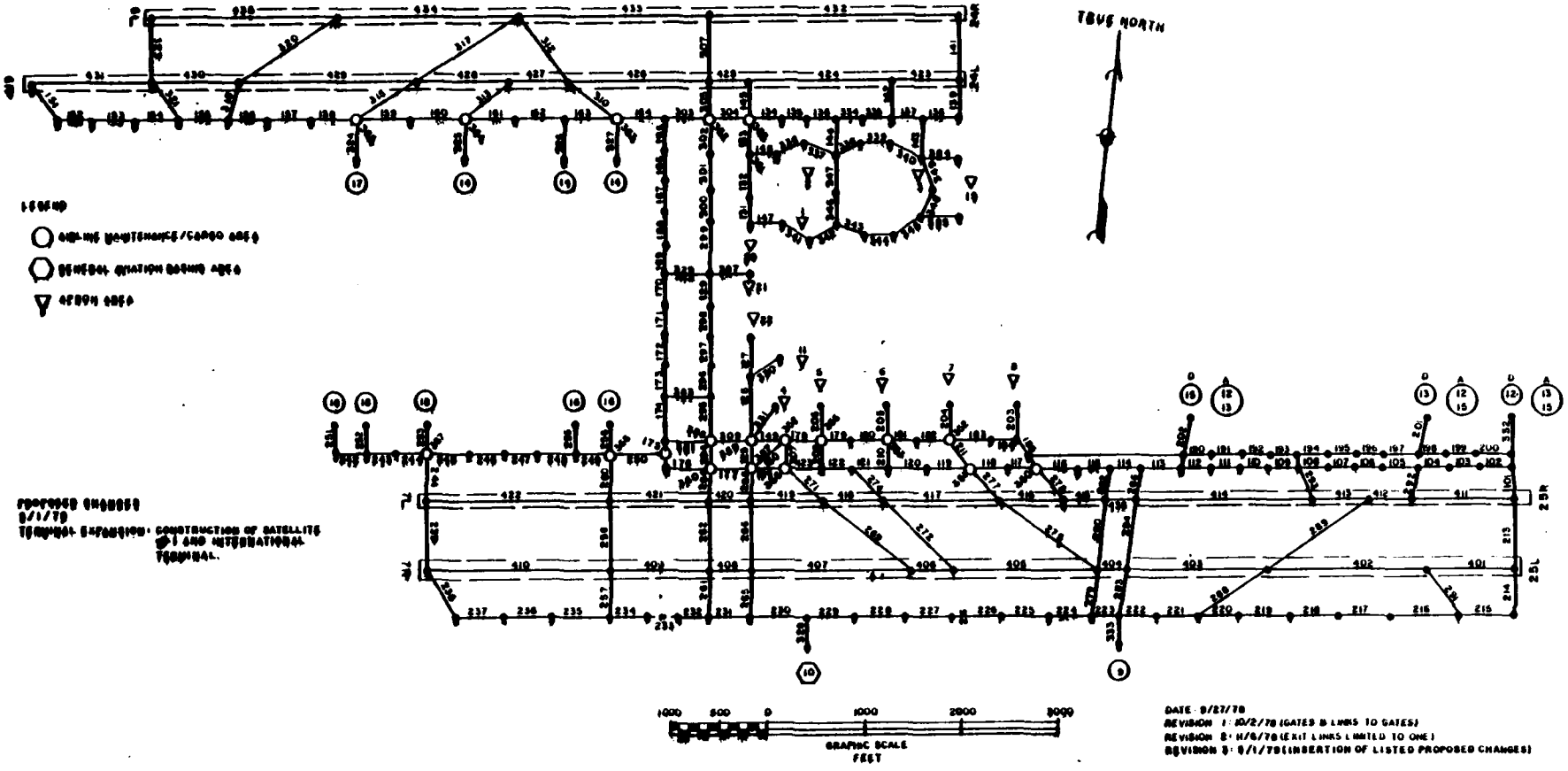

Figure 4 LAX LINK NODE DIAGRAM (TERMINAL EXPANSION)

TABLE 7

1 P27

LAX EXP 19A DEMAND=82 SEP=78VFR1 CONFIG=A SCHED=X19A RTE=X19 TERM EXP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	4.0	0.0	9.0	14.0	0.0	0.0	27.0	27.0	0.0	6.0	14.0	13.0	8.0	0.0	0.0	41.0	48.0	-7.0	10.38	4.13	7.00
800- 900	11.0	1.0	12.0	20.0	0.0	0.0	44.0	44.0	0.0	5.2	26.3	17.9	9.2	0.0	0.0	58.6	64.0	-5.4	10.42	4.81	11.49
900-1000	5.0	1.0	13.0	21.9	0.0	0.0	40.9	41.0	-.1	4.0	29.5	19.3	4.5	0.0	0.0	57.3	54.0	3.3	10.47	4.61	15.75
1000-1100	14.0	1.0	9.8	27.9	0.0	0.0	52.7	55.0	-2.3	8.8	19.3	15.7	7.3	0.0	0.0	51.1	49.0	2.1	11.47	4.40	13.07
1100-1200	13.0	3.0	17.4	27.5	0.0	0.0	60.9	60.0	.9	9.0	19.9	15.0	6.8	0.0	0.0	50.7	52.0	-1.3	10.89	4.56	8.73
1200-1300	8.0	3.0	13.0	21.7	0.0	0.0	45.7	45.0	.7	5.1	23.9	17.2	13.4	0.0	0.0	59.6	65.0	-5.4	11.34	4.44	14.58
1300-1400	8.0	2.0	6.8	22.0	0.0	0.0	38.8	39.0	-.2	6.8	26.9	15.6	11.8	0.0	0.0	61.1	54.0	7.1	10.35	4.55	16.41
1400-1500	9.0	3.0	10.4	20.7	0.0	0.0	43.1	53.0	-9.9	8.1	11.0	10.9	4.8	0.0	0.0	36.8	41.0	-4.2	10.86	4.31	8.33
* 1500-1600	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	.7	0.0	0.0	0.8	0.0	0.8	7.87	4.28	0.00

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	1.7	.6	0.0	0.0	.8	.1	.0	1.0	1.2	1.7	1.5	0.0	0.0	1.4	0.0	.3	0.0	1.0	1.7
800- 900	.3	0.0	1.2	1.6	0.0	0.0	1.1	.2	.1	3.8	4.3	7.0	4.8	0.0	0.0	5.1	.0	.5	0.0	1.4	5.7
900-1000	.1	0.0	1.3	2.0	0.0	0.0	1.5	.2	.3	3.4	10.1	9.1	5.1	0.0	0.0	8.9	0.0	1.0	.1	2.0	9.9
1000-1100	.9	.0	.9	3.2	0.0	0.0	2.1	.1	.1	2.7	5.8	6.8	4.8	0.0	0.0	5.4	.0	1.8	.0	2.3	7.2
1100-1200	.3	.0	1.9	2.3	0.0	0.0	1.6	.2	.1	1.6	1.3	4.6	4.0	0.0	0.0	2.7	.0	.3	0.0	1.9	3.0
1200-1300	.5	0.0	1.4	2.9	0.0	0.0	1.9	.1	.1	2.4	4.5	12.8	9.2	0.0	0.0	7.8	.0	1.2	0.0	2.1	9.0
1300-1400	.1	.0	.9	1.4	0.0	0.0	1.0	.1	.2	4.9	9.6	8.5	7.1	0.0	0.0	8.3	.0	2.2	.1	1.2	10.7
1400-1500	.2	.0	.7	2.5	0.0	0.0	1.3	.1	.0	1.6	2.5	3.1	2.4	0.0	0.0	2.4	0.0	.5	.0	1.5	3.0
* 1500-1600	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	.0	0.0	0.0	.0	.5	0.0	0.0	.4	0.0	.0	0.0	0.4	.6

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* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 20

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and terminal expansion.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Experiment #21 is identical except for remote parking for 20 aircraft at west end of airport in place of terminal expansion.

Prior Experiment #19A is identical except for a 1978 ATC system scenario.

TABLE 8

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1 P27 LAX EXP 20 DEMAND=82 SEP=82VFR1 CONFIG=A SCHED=X19A RTE=X19 TERM EXP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	4.0	0.0	9.0	14.0	0.0	0.0	27.0	27.0	0.0	6.0	14.0	13.0	8.0	0.0	0.0	41.0	48.0	-7.0	10.06	4.21	7.05
800- 900	11.0	1.0	12.0	20.0	0.0	0.0	44.0	44.0	0.0	4.9	26.3	17.8	9.3	0.0	0.0	58.3	64.0	-5.7	10.41	4.81	11.51
900-1000	5.0	1.0	13.0	22.0	0.0	0.0	41.0	41.0	0.0	4.2	29.1	20.2	4.6	0.0	0.0	58.1	54.0	4.1	10.02	4.76	15.40
1000-1100	14.0	1.0	9.5	28.9	0.0	0.0	53.4	55.0	-1.6	8.7	19.9	14.6	7.1	0.0	0.0	50.3	49.0	1.3	11.15	4.44	13.18
1100-1200	13.0	3.0	18.4	27.0	0.0	0.0	61.4	60.0	1.4	9.2	19.7	14.0	7.0	0.0	0.0	49.9	52.0	-2.1	10.22	4.65	9.47
1200-1300	8.0	3.0	12.3	21.1	0.0	0.0	44.4	45.0	-.6	5.0	24.1	17.7	13.3	0.0	0.0	60.1	65.0	-4.9	11.15	4.53	15.22
1300-1400	8.0	2.0	6.8	22.0	0.0	0.0	38.8	39.0	-.2	7.0	26.2	16.5	11.4	0.0	0.0	61.1	54.0	7.1	10.08	4.54	17.60
1400-1500	9.0	3.0	11.7	26.5	0.0	0.0	50.2	53.0	-2.8	8.0	11.8	13.8	8.7	0.0	0.0	42.3	41.0	1.3	10.58	4.25	8.77
* 1500-1600	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	.0	1.5	1.0	0.0	0.0	4.3	0.0	4.3	13.00	7.10	4.82

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	1.0	.4	0.0	0.0	.5	.1	.0	1.0	1.4	1.8	1.1	0.0	0.0	1.4	0.0	.3	0.0		.6	1.7
800- 900	.3	0.0	1.1	1.6	0.0	0.0	1.1	.1	.1	4.4	3.7	7.7	5.0	0.0	0.0	5.2	.0	.5	0.0		1.4	5.7
900-1000	.1	0.0	1.1	1.3	0.0	0.0	1.0	.2	.4	3.8	10.5	7.0	6.2	0.0	0.0	8.4	.0	.9	.2		1.6	9.6
1000-1100	.8	.0	.7	2.7	0.0	0.0	-1.8	.2	.1	3.3	6.5	6.1	4.3	0.0	0.0	5.6	.0	1.7	.0		2.1	7.3
1100-1200	.2	0.0	1.0	1.3	0.0	0.0	.9	.2	.1	1.6	1.7	6.8	3.8	0.0	0.0	3.4	.0	.3	0.0		1.2	3.8
1200-1300	.5	.0	.9	2.9	0.0	0.0	1.7	.1	.1	3.1	4.5	14.0	10.0	0.0	0.0	8.4	.0	1.2	0.0		1.9	9.6
1300-1400	.1	.0	.8	1.0	0.0	0.0	.7	.1	.2	4.7	10.0	9.7	9.5	0.0	0.0	9.2	.0	2.5	.1		1.0	11.9
1400-1500	.1	.0	.6	1.9	0.0	0.0	1.1	.1	.0	1.1	2.8	3.3	3.9	0.0	0.0	2.9	0.0	.3	.0		1.3	3.3
* 1500-1600	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	1	1.2	3.0	0.0	0.0	3.0	0.0	0	0.0		3.0	5.4

* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 21

Objective:

To assess delays to aircraft in 1982 for the following runway configuration in VFR 1 with an improved ATC system scenario and remote parking for 20 aircraft.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment #20 is identical except for remote parking for 20 aircraft at west end of airport in place of terminal expansion.

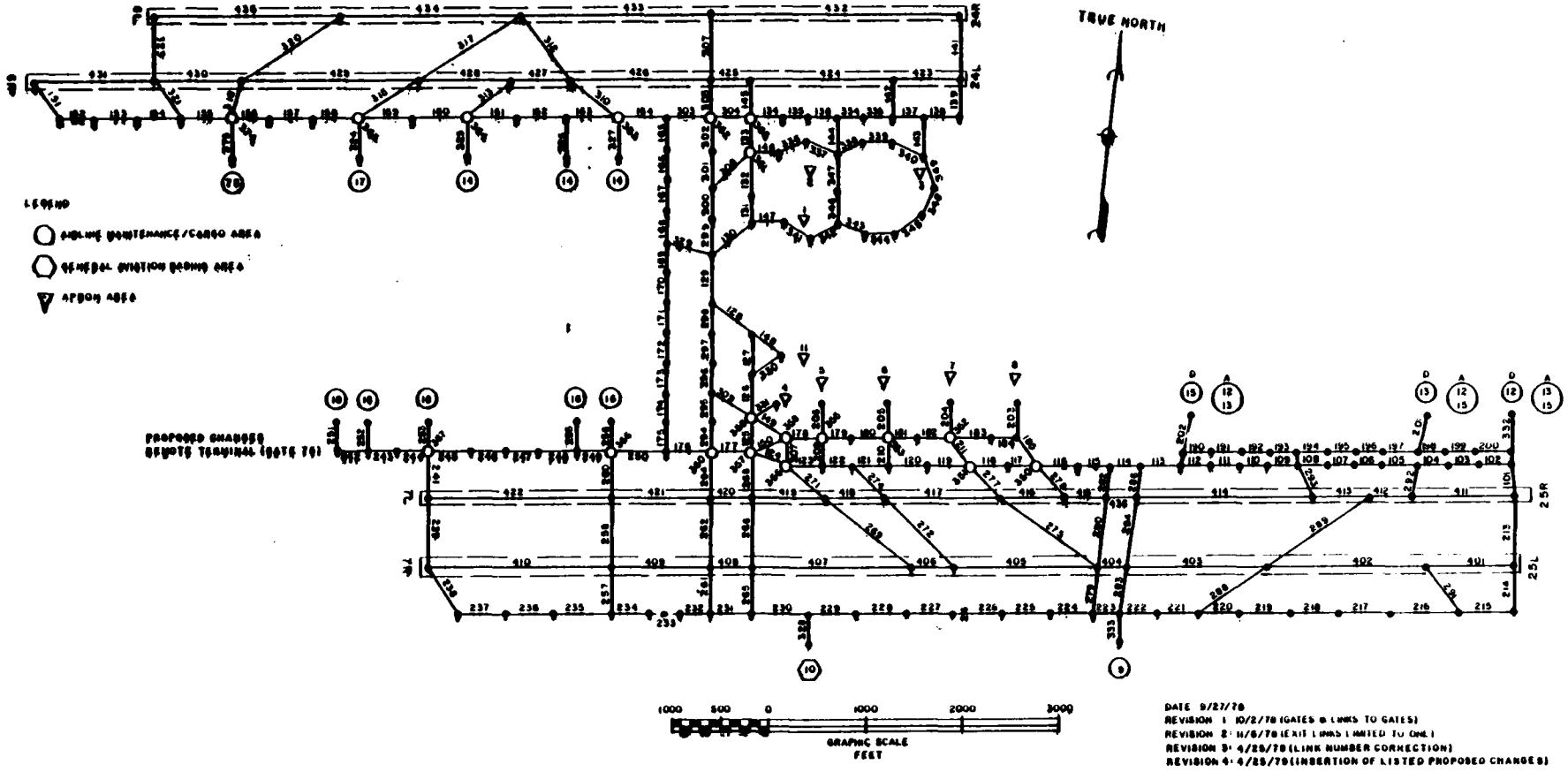

Figure 5 LAX LINK NODE DIAGRAM (REMOTE TERMINAL)

TABLE 9

P27

1 LAX EXP 21 DEMAND=82 SEP=82VFR1 CONFIG=A SCHED=X21 RTE=X1 NORMAL

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	2.0	1.0	6.0	18.0	0.0	0.0	27.0	27.0	0.0	2.0	16.0	15.0	8.0	0.0	0.0	41.0	49.0	-8.0	9.59	4.21	7.22
800- 900	9.0	2.0	14.0	19.0	0.0	0.0	44.0	44.0	0.0	6.0	25.8	20.0	8.4	0.0	0.0	60.2	64.0	-3.8	10.31	4.43	13.59
900-1000	5.0	1.0	15.0	19.0	0.0	0.0	40.0	40.0	0.0	5.0	29.4	18.6	4.6	0.0	0.0	57.6	54.0	3.6	10.41	4.17	16.26
1000-1100	11.0	3.0	13.4	26.0	0.0	0.0	53.4	55.0	-1.6	8.0	20.6	15.5	6.0	0.0	0.0	50.1	48.0	2.1	10.95	4.49	13.43
1100-1200	12.0	2.0	23.4	21.6	0.0	0.0	59.0	60.0	-1.0	5.0	17.0	14.9	9.0	0.0	0.0	45.9	52.0	-6.1	11.20	4.45	9.49
1200-1300	13.0	2.0	10.2	21.4	0.0	0.0	46.6	45.0	1.6	3.7	25.5	19.4	14.3	0.0	0.0	62.9	65.0	-2.1	11.07	4.39	16.80
1300-1400	8.0	2.0	9.3	20.0	0.0	0.0	39.3	39.0	.3	5.3	24.7	14.0	14.8	0.0	0.0	58.8	54.0	4.8	10.20	4.43	17.59
1400-1500	10.0	5.0	13.7	25.0	0.0	0.0	53.7	54.0	-.3	5.1	12.8	16.9	11.6	0.0	0.0	46.4	42.0	4.4	10.32	4.35	10.65
* ~~1500-1600~~	~~0.0~~	~~0.0~~	~~0.0~~	~~1.0~~	~~0.0~~	~~0.0~~	~~1.0~~	~~0.0~~	~~1.0~~	~~1.0~~	~~.0~~	~~1.7~~	~~1.3~~	~~0.0~~	~~0.0~~	~~5.1~~	~~0.0~~	~~5.1~~	~~10.35~~	~~3.04~~	~~6.80~~

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	.0	.6	.4	0.0	0.0	.4	.2	.1	.3	.7	2.2	1.3	0.0	0.0	1.4	.0	.3	0.0	.7	1.7
800- 900	.2	.0	.9	1.3	0.0	0.0	.9	.1	.2	3.9	3.3	11.0	5.5	0.0	0.0	6.2	.0	1.4	.0	1.2	7.6
900-1000	0.0	0.0	.9	1.7	0.0	0.0	1.1	.2	.1	2.8	11.3	6.9	5.5	0.0	0.0	8.7	0.0	1.4	.4	1.4	10.5
1000-1100	.4	.3	.9	2.0	0.0	0.0	1.3	.2	.2	2.9	7.0	4.4	6.1	0.0	0.0	5.4	.0	1.4	.0	1.7	6.9
1100-1200	.1	.6	2.0	2.1	0.0	0.0	1.6	.2	.2	1.5	1.1	7.4	3.1	0.0	0.0	3.6	.0	.3	0.0	2.0	3.9
1200-1300	.6	.3	.8	3.1	0.0	0.0	1.8	.1	.1	2.0	6.0	15.5	9.0	0.0	0.0	9.3	.0	1.9	.0	2.0	11.2
1300-1400	.2	0.0	1.0	1.4	0.0	0.0	1.6	.1	.1	2.2	6.2	13.2	11.3	0.0	0.0	8.8	.0	3.0	0.0	1.2	11.8
1400-1500	.3	.0	1.2	1.4	0.0	0.0	1.0	.2	.1	.6	1.7	7.6	3.6	0.0	0.0	4.2	.1	.6	.0	1.3	4.9
* ~~1500-1600~~	~~0.0~~	~~0.0~~	~~0.0~~	~~1.8~~	~~0.0~~	~~0.0~~	~~1.8~~	~~.1~~	~~0.0~~	~~.0~~	~~.1~~	~~1.4~~	~~1.0~~	~~0.0~~	~~0.0~~	~~.0~~	~~0.0~~	~~.0~~	~~0.0~~	~~0.0~~	~~1.8~~

TT

* CLEAN UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 22

Objective:

To assess the delay impact to aircraft in (1982) for the following runway configuration in VFR 1 due to the runway closure of 25R during work on the Spulveda Tunnel.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25L	24R, 24L, 25L

Related Comparison Experiments:

Prior Experiment #1 is identical except for closure of 25R for tunnel construction and a 1978 demand.

TABLE 10

1 P87 LAX EXP 22 DEMAND=82 SEP=78VFR1 CONFIG=A SCHED=X22 RTE=X1 NORMAL

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	6.0	3.0	0.0	17.0	0.0	0.0	26.0	27.0	-1.0	3.0	18.0	0.0	20.0	0.0	0.0	41.0	48.0	-7.0	10.04	5.44	7.22
800- 900	13.0	8.0	0.0	23.0	0.0	0.0	44.0	44.0	0.0	5.7	20.9	0.0	26.9	0.0	0.0	53.5	64.0	-10.5	11.97	5.07	13.55
900-1000	13.5	8.0	0.0	18.0	0.0	0.0	39.5	40.0	-.5	1.3	24.1	0.0	29.9	0.0	0.0	55.3	55.0	.3	11.81	5.64	22.07
1000-1100	16.5	13.0	0.0	25.4	0.0	0.0	54.9	55.0	-.1	7.0	21.9	0.0	27.4	0.0	0.0	56.3	48.0	8.3	11.40	5.43	23.11
1100-1200	13.0	11.0	0.0	25.3	0.0	0.0	49.3	63.0	-13.7	1.0	13.1	0.0	31.3	0.0	0.0	45.4	52.0	-6.6	16.67	5.16	14.73
1200-1300	15.0	11.0	0.0	23.2	0.0	0.0	49.2	46.0	3.2	4.9	23.3	0.0	31.9	0.0	0.0	60.1	65.0	-4.9	25.50	5.15	18.24
1300-1400	10.0	6.0	0.0	23.3	0.0	0.0	39.3	39.0	.3	2.1	29.8	0.0	27.2	0.0	0.0	59.1	58.0	1.1	29.64	5.35	22.91
1400-1500	11.0	13.0	0.0	25.6	0.0	0.0	49.6	53.0	-3.4	4.0	15.6	0.0	29.5	0.0	0.0	49.1	42.0	7.1	25.43	5.41	20.41
~~1500-1600~~	~~0.0~~	~~0.0~~	~~0.0~~	~~15.2~~	~~0.0~~	~~0.0~~	~~15.2~~	~~0.0~~	~~15.2~~	~~0.0~~	~~.3~~	~~0.0~~	~~14.9~~	~~0.0~~	~~0.0~~	~~15.2~~	~~0.0~~	~~15.2~~	~~11.20~~	~~5.18~~	~~19.00~~

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	.0	0.0	1.6	0.0	0.0	1.0	.0	.2	.6	1.0	0.0	1.6	0.0	0.0	1.2	.0	.3	0.0	1.2	1.6
800- 900	.8	.2	0.0	3.9	0.0	0.0	2.3	.0	.1	2.5	4.7	0.0	10.5	0.0	0.0	7.3	0.0	.7	.2	2.4	8.1
900-1000	1.4	1.1	0.0	2.8	0.0	0.0	2.0	.0	.1	2.4	12.3	0.0	16.6	0.0	0.0	14.3	0.0	.7	1.5	2.2	16.5
1000-1100	1.3	1.2	0.0	2.7	0.0	0.0	1.9	.1	.2	2.3	15.3	0.0	13.8	0.0	0.0	13.1	.0	2.5	2.2	2.2	17.7
1100-1200	.2	.3	0.0	13.3	0.0	0.0	6.9	.0	.2	.2	2.7	0.0	10.6	0.0	0.0	8.1	.0	.3	.6	7.1	9.1
1200-1300	.9	.6	0.0	33.7	0.0	0.0	16.3	.0	.2	2.4	5.1	0.0	16.3	0.0	0.0	10.8	0.0	.6	1.7	16.5	13.3
1300-1400	.2	.2	0.0	34.7	0.0	0.0	20.6	.0	.2	7.2	7.6	0.0	20.5	0.0	0.0	13.4	.0	.8	3.4	20.8	17.6
1400-1500	.7	.8	0.0	31.3	0.0	0.0	16.4	.1	.1	1.2	3.9	0.0	16.8	0.0	0.0	11.5	0.0	.4	3.0	16.6	14.9
~~1500-1600~~	~~0.0~~	~~0.0~~	~~0.0~~	~~33.4~~	~~0.0~~	~~0.0~~	~~33.4~~	~~.0~~	~~.0~~	~~0.0~~	~~.1~~	~~0.0~~	~~10.7~~	~~0.0~~	~~0.0~~	~~10.4~~	~~0.0~~	~~.1~~	~~1.0~~	~~34.~~	~~11.~~

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* CLEAN-UP HOUR

TABLE 11

P27

1 LAX EXP 22 DEMAND=82 SEP=78VFR1 CONFIG=A SCHED=X22 RTE=X1 NORMAL

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	6.0	3.0	0.0	17.0	0.0	0.0	26.0	27.0	-1.0	3.0	18.0	0.0	20.0	0.0	0.0	41.0	48.0	-7.0	10.04	5.44	7.22
800- 900	13.0	8.0	0.0	24.0	0.0	0.0	45.0	44.0	1.0	13.0	19.0	0.0	21.4	0.0	0.0	53.4	64.0	-10.6	10.96	4.98	13.98
900-1000	13.0	8.0	0.0	17.0	0.0	0.0	38.0	40.0	-2.0	9.5	19.1	0.0	23.9	0.0	0.0	52.5	55.0	-2.5	11.34	6.15	20.64
1000-1100	16.0	13.0	0.0	26.7	0.0	0.0	55.7	55.0	.7	10.6	21.1	0.0	16.7	0.0	0.0	48.4	48.0	.4	11.06	6.00	30.87
1100-1200	13.3	11.0	0.0	31.3	0.0	0.0	55.6	63.0	-7.4	13.5	20.5	0.0	22.9	0.0	0.0	56.9	52.0	4.9	13.95	5.10	23.60
1200-1300	15.7	11.0	0.0	27.1	0.0	0.0	53.8	46.0	7.8	16.8	15.7	0.0	25.6	0.0	0.0	58.1	65.0	-6.9	15.81	7.18	30.20
1300-1400	10.0	6.0	0.0	23.9	0.0	0.0	39.9	39.0	.9	9.9	25.8	0.0	21.2	0.0	0.0	56.9	58.0	-1.1	9.85	5.39	25.37
1400-1500	11.0	13.0	0.0	27.6	0.0	0.0	51.6	53.0	-1.4	7.2	22.7	0.0	22.4	0.0	0.0	52.3	42.0	10.3	11.30	5.46	29.05
* 1600-1600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	.0	0.0	1.6	0.0	0.0	1.0	.0	.2	.6	1.0	0.0	1.6	0.0	0.0	1.2	.0	.3	0.0	1.2	1.6
800- 900	1.1	.4	0.0	1.7	0.0	0.0	1.3	.1	.1	8.6	5.6	0.0	5.6	0.0	0.0	6.3	.1	1.6	.0	1.4	7.9
900-1000	1.8	1.1	0.0	1.4	0.0	0.0	1.5	.0	.7	11.6	16.5	0.0	5.8	0.0	0.0	10.8	.0	3.6	.4	2.2	14.8
1000-1100	2.2	1.5	0.0	1.4	0.0	0.0	1.6	.1	.8	12.9	22.6	0.0	4.9	0.0	0.0	14.4	.0	6.4	4.0	2.5	14.8
1100-1200	.4	.4	0.0	7.6	0.0	0.0	4.4	.0	.2	10.8	12.9	0.0	7.8	0.0	0.0	10.4	.1	4.0	2.9	4.7	17.4
1200-1300	1.5	1.0	0.0	11.5	0.0	0.0	6.5	.0	2.3	15.0	13.0	0.0	6.9	0.0	0.0	10.8	.0	3.1	.2	8.8	14.1
1300-1400	.4	.2	0.0	1.4	0.0	0.0	1.0	.0	.2	11.1	18.8	0.0	4.8	0.0	0.0	12.2	.0	4.2	3.0	1.2	19.4
1400-1500	1.0	2.3	0.0	3.1	0.0	0.0	2.4	.1	.2	6.1	19.5	0.0	6.5	0.0	0.0	12.1	.0	4.2	7.1	2.7	23.5
* 1600-1600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TT

* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 22A

Objective:

To assess the delay impact to aircraft in 1982 for the following runway configuration in VFR 1 due to the runway closure of 25R during work on the Sepulveda Tunnel with a dual taxiway system around satellite 4.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24L, 24R, 25L	24L, 24R, 25L

Related Comparison Experiments:

Prior Experiment #22 is identical except for a dual taxiway system

TABLE 12

1 P27 LAX EXP 22A DEMAND=82 SEP=78VFR1 CONFIG=A SCHED=X22 RTE=X18 TAXI IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	6.0	3.0	0.0	17.0	0.0	0.0	26.0	27.0	-1.0	3.0	18.0	0.0	20.0	0.0	0.0	41.0	48.0	-7.0	9.96	5.67	7.22
800- 900	13.0	8.0	0.0	24.0	0.0	0.0	45.0	44.0	1.0	12.5	19.8	0.0	21.7	0.0	0.0	54.0	64.0	-10.0	10.97	5.26	13.37
900-1000	13.1	8.0	0.0	17.0	0.0	0.0	38.1	40.0	-1.9	9.6	19.0	0.0	24.2	0.0	0.0	52.8	55.0	-2.2	11.48	5.85	19.87
1000-1100	16.0	13.0	0.0	26.0	0.0	0.0	55.0	55.0	0.0	10.4	22.5	0.0	17.6	0.0	0.0	50.5	48.0	2.5	11.10	5.91	28.50
1100-1200	13.1	11.0	0.0	31.6	0.0	0.0	55.7	63.0	-7.3	13.5	18.6	0.0	21.5	0.0	0.0	53.6	52.0	1.6	13.95	5.22	20.84
1200-1300	15.8	11.0	0.0	27.4	0.0	0.0	54.2	46.0	8.2	15.4	14.4	0.0	26.6	0.0	0.0	56.4	65.0	-8.6	16.28	6.87	20.66
1300-1400	10.0	6.0	0.0	24.0	0.0	0.0	40.0	39.0	1.0	11.1	25.6	0.0	21.2	0.0	0.0	57.9	58.0	-.1	9.88	5.56	27.35
1400-1500	11.0	13.0	0.0	27.5	0.0	0.0	51.5	53.0	-1.5	6.9	25.0	0.0	21.0	0.0	0.0	52.9	42.0	10.9	11.44	5.51	30.79
* 1500-1600	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	1.5	4.2	4.1	0.0	4.6	0.0	0.0	12.8	0.0	12.8	10.44	7.49	41.38

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	0.0	1.4	0.0	0.0	.9	.0	.2	.7	1.0	0.0	1.4	0.0	0.0	1.1	.0	.3	0.0	1.2	1.5
800- 900	1.0	.3	0.0	1.8	0.0	0.0	1.3	.0	.1	7.0	5.1	0.0	5.6	0.0	0.0	5.7	.1	1.5	.0	1.5	7.2
900-1000	1.7	1.1	0.0	1.8	0.0	0.0	1.6	.0	.4	10.4	15.5	0.0	6.0	0.0	0.0	10.4	.0	3.2	.3	2.1	13.8
1000-1100	2.1	1.4	0.0	1.5	0.0	0.0	1.7	.1	.5	11.9	21.4	0.0	4.7	0.0	0.0	13.7	.0	5.2	3.7	2.2	22.6
1100-1200	.4	.4	0.0	7.6	0.0	0.0	4.5	.0	.3	8.3	12.2	0.0	7.5	0.0	0.0	9.4	.1	3.0	2.1	4.8	14.6
1200-1300	1.8	1.1	0.0	12.3	0.0	0.0	7.0	.0	1.8	16.4	12.8	0.0	6.4	0.0	0.0	10.8	.0	3.6	.2	8.8	14.6
1300-1400	.3	.2	0.0	1.5	0.0	0.0	1.0	.0	.2	12.8	19.2	0.0	4.5	0.0	0.0	12.6	.0	5.2	3.6	1.3	21.3
1400-1500	1.1	2.4	0.0	3.2	0.0	0.0	2.6	.1	.2	4.8	17.3	0.0	7.9	0.0	0.0	12.0	.0	3.2	9.7	2.8	25.0
* 1500-1600	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	5.1	4.8	0.0	4.8	0.0	0.0	5.0	.1	7.2	4.1	2.2	42.3

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* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 25 (25A)

Objective:

To assess delays to aircraft in 1987 for the following runway configuration in VFR 1 with an improved 1987 ATC system scenario and 1982 improvements plus the satellite terminal and/or remote parking for 20 aircraft (1987 improvement package). Experiment #25A is with greater peaks.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24R, 24L, 25R, 25L

Related Comparison Experiments:

Prior Experiment #11 is identical except for the improvements from 1982 to 1987 and the 1987 demand.

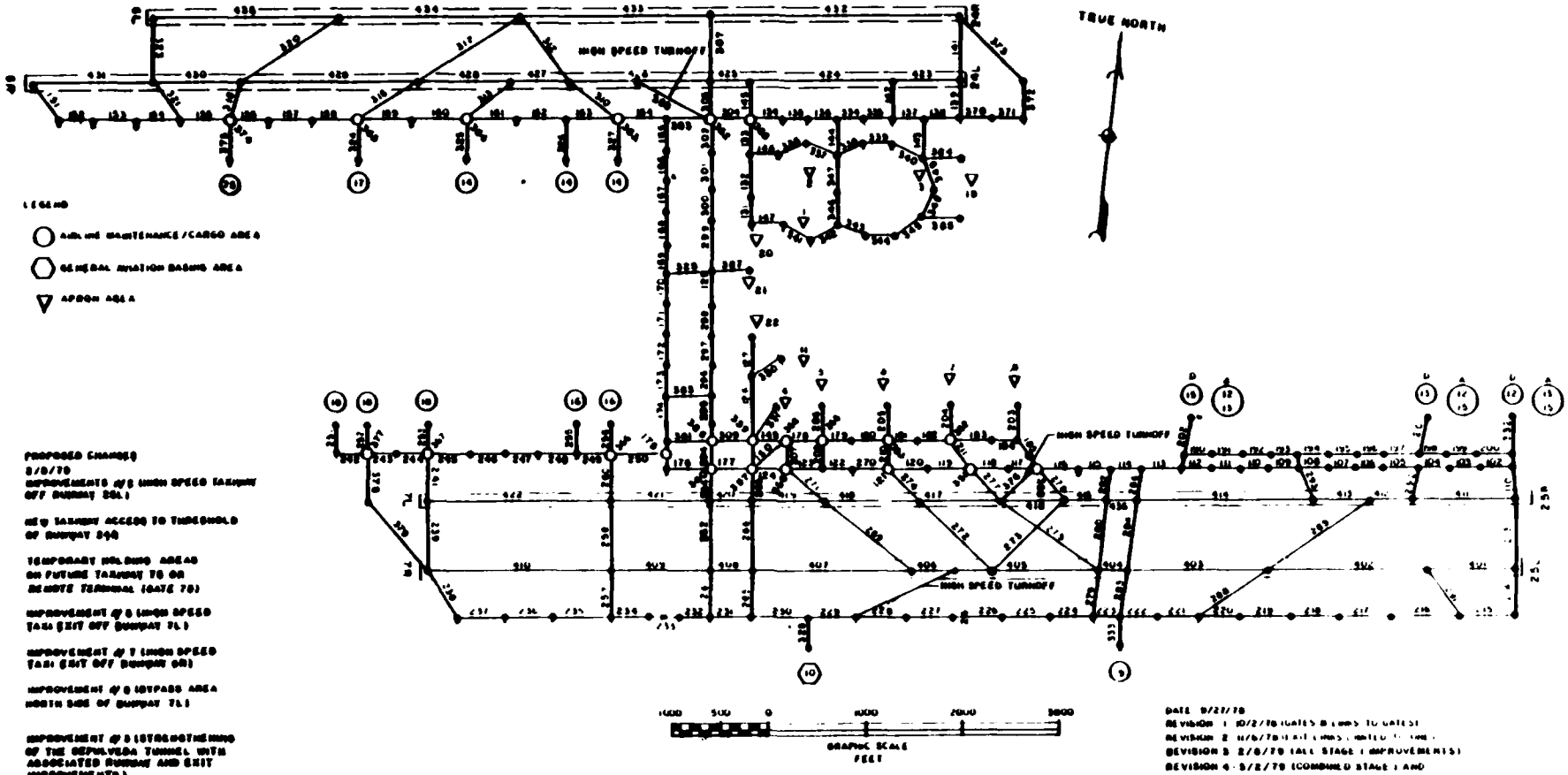

Figure 5 LAX LINK NODE DIAGRAM (COMBINED IMPROVEMENTS)

TABLE 13

TT

1 P27 LAX EXP 25 DEMAND=87 SEP=87VFR1 CONFIG=A SCHED=X25 RTE=X25 TOTAL IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	8.0	5.0	6.0	11.0	0.0	0.0	30.0	30.0	0.0	3.0	11.0	17.1	12.0	0.0	0.0	43.1	48.0	-4.9	9.83	3.95	5.43
800- 900	15.0	7.0	12.0	12.2	0.0	0.0	46.2	47.0	-.8	7.8	18.7	22.1	13.3	0.0	0.0	61.9	65.0	-3.1	10.49	4.05	9.28
900-1000	8.0	4.0	10.0	15.6	0.0	0.0	37.6	38.0	-.4	1.2	21.5	26.8	9.7	0.0	0.0	59.2	55.0	4.2	9.68	4.01	9.02
1000-1100	14.0	11.0	14.0	17.2	0.0	0.0	56.2	56.0	.2	6.0	12.1	17.9	10.9	0.0	0.0	46.9	49.0	-2.1	10.21	3.95	7.71
1100-1200	19.0	6.0	12.0	24.0	0.0	0.0	61.0	60.0	1.0	4.0	13.7	16.6	17.6	0.0	0.0	51.9	52.0	-.1	10.08	4.03	7.70
1200-1300	11.0	12.0	12.0	13.0	0.0	0.0	48.0	49.0	-1.0	6.0	16.0	25.9	16.0	0.0	0.0	63.9	66.0	-2.1	10.04	3.99	10.44
1300-1400	7.0	9.0	11.0	15.0	0.0	0.0	42.0	41.0	1.0	2.0	18.6	22.6	17.8	0.0	0.0	61.0	55.0	6.0	9.70	3.61	8.73
1400-1500	14.0	12.0	7.0	15.0	0.0	0.0	48.0	48.0	0.0	6.0	12.4	13.6	9.7	0.0	0.0	41.7	42.0	-.3	10.39	3.85	5.16
* [illegible]																					

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	.0	.3	0.0	0.0	.1	.0	.2	.8	.1	.7	.7	0.0	0.0	.6	0.0	.1	0.0	.4	.7
800- 900	.2	.1	.5	1.0	0.0	0.0	.5	.1	.2	1.3	1.4	5.5	3.3	0.0	0.0	3.3	0.0	1.3	0.0	.7	4.6
900-1000	.0	.1	.4	1.1	0.0	0.0	.6	.1	.1	.1	.6	5.7	4.1	0.0	0.0	3.4	.0	.7	0.0	.8	4.2
1000-1100	.3	.7	.4	1.2	0.0	0.0	.6	.1	.1	1.0	1.9	5.0	1.5	0.0	0.0	2.9	0.0	.3	0.0	.8	3.2
1100-1200	.4	.1	.1	1.1	0.0	0.0	.6	.1	.1	1.1	1.1	1.8	6.8	0.0	0.0	3.2	0.0	.2	0.0	.7	3.4
1200-1300	.2	.5	.3	.7	0.0	0.0	.4	.1	.1	.8	.9	8.7	4.7	0.0	0.0	5.0	0.0	.8	.0	.6	5.8
1300-1400	.2	.1	.2	1.0	0.0	0.0	.5	.0	.1	.7	1.5	6.2	2.9	0.0	0.0	3.7	0.0	.5	.0	.6	4.2
1400-1500	.2	.4	.2	1.2	0.0	0.0	.6	.1	.1	.3	1.1	1.2	1.6	0.0	0.0	1.1	0.0	.1	0.0	.7	1.2
* [illegible]																					

TT

* CLEAN-UP HOUR

TABLE 14

P27

1 LAX EXP 25A DEMAND=87 SEP=87VFR1 CONFIG=A SCHED=X25A RTE=X25 TOTAL IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	8.0	5.0	6.0	11.0	0.0	0.0	30.0	30.0	0.0	3.0	11.0	17.2	12.0	0.0	0.0	43.2	48.0	-4.8	9.83	3.97	5.43
800- 900	15.0	8.0	15.0	13.0	0.0	0.0	51.0	52.0	-1.0	8.6	19.6	22.5	13.4	0.0	0.0	64.1	70.0	-5.9	10.94	4.14	9.89
900-1000	8.0	4.0	10.0	15.7	0.0	0.0	37.7	38.0	-.3	1.4	22.4	27.3	10.6	0.0	0.0	61.7	55.0	6.7	9.68	3.92	9.76
1000-1100	14.0	11.0	14.0	17.3	0.0	0.0	56.3	56.0	.3	6.0	12.1	18.0	11.0	0.0	0.0	47.1	49.0	-1.9	10.16	3.82	8.01
1100-1200	21.0	7.0	14.0	25.0	0.0	0.0	67.0	66.0	1.0	4.0	13.9	15.6	16.1	0.0	0.0	49.6	52.0	-2.4	10.49	4.24	8.57
1200-1300	11.0	12.0	12.0	13.0	0.0	0.0	48.0	49.0	-1.0	6.0	19.0	25.0	17.1	0.0	0.0	67.1	73.0	-5.9	10.19	4.06	13.35
1300-1400	7.0	8.9	11.0	15.0	0.0	0.0	41.9	41.0	.9	2.0	18.8	24.5	18.2	0.0	0.0	63.5	55.0	8.5	9.89	3.58	15.37
1400-1500	14.0	12.1	7.0	15.0	0.0	0.0	48.1	48.0	.1	6.0	12.2	16.9	10.5	0.0	0.0	45.6	42.0	3.6	10.45	3.81	6.79
* [illegible]																					

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	0.0	0.0	0.0	.3	0.0	0.0	.1	.1	.2	.8	.1	.7	.8	0.0	0.0	.6	0.0	.2	0.0	.4	.7
800- 900	.2	.2	1.4	1.6	0.0	0.0	.9	.1	.2	1.6	1.5	6.5	4.4	0.0	0.0	3.9	0.0	1.4	0.0	1.2	5.2
900-1000	.0	.1	.3	1.2	0.0	0.0	.6	.1	.1	.1	.7	6.5	5.3	0.0	0.0	4.0	.0	.8	.0	.8	4.9
1000-1100	.3	.5	.2	1.2	0.0	0.0	.6	.1	.1	1.2	2.0	4.9	2.3	0.0	0.0	3.1	0.0	.5	0.0	.7	3.5
1100-1200	.6	.5	.6	1.6	0.0	0.0	.9	.1	.1	1.4	1.2	3.3	7.8	0.0	0.0	4.0	0.0	.3	0.0	1.2	4.3
1200-1300	.2	.5	.9	.7	0.0	0.0	.6	.1	.1	.8	3.2	12.4	6.5	0.0	0.0	7.2	0.0	1.5	.1	.8	8.8
1300-1400	.2	.1	.5	1.3	0.0	0.0	.6	.1	.1	.5	1.6	14.4	6.4	0.0	0.0	7.9	0.0	1.8	1.0	.8	10.7
1400-1500	.3	.6	.2	1.3	0.0	0.0	.7	.1	.1	.3	1.1	3.8	2.6	0.0	0.0	2.4	0.0	.4	.0	.8	2.8
* [illegible]																					

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CLEAN-UP HOUR

TABLE 15

CLASS AND RUNWAY DEMAND DISTRIBUTION
FOR ARRIVALS AND DEPARTURES

EXPERIMENT NO. 25A

RUNWAY NAME	24R	24L	25R	25L	TOTAL
	ARRIVALS				
CLASS 1 (HEAVY)	19	13	29	25	86
CLASS 2 (LARGE)	56	40	59	61	216
CLASS 3 (SMALL)	17	11	0	26	54
CLASS 4 (SMALLER)	6	4	1	13	24
TOTAL	98	68	89	125	380

	DEPARTURES				
CLASS 1 (HEAVY)	0	42	59	17	118
CLASS 2 (LARGE)	4	86	102	54	246
CLASS 3 (SMALL)	28	1	6	26	61
CLASS 4 (SMALLER)	6	0	1	12	19
TOTAL	38	129	168	109	444

ARRIVAL AND DEPARTURE TOTALS	136	197	257	234	824

TABLE 16

SET I DEMAND

EXPERIMENT		RWY 24R	RWY 24L	RWY 25R	RWY 25L	TOTAL
23	A	167	0	0	196	363
	D	0	191	0	235	426
	TOTAL	167	191	0	431	789
24	A	174	0	189	0	363
	D	0	185	241	0	426
	TOTAL	174	185	430	0	789
26	A	162	0	0	207	369
	D	0	161	271	0	432
	TOTAL	162	161	271	207	801
	A					
	D					
	TOTAL					
	A					
	D					
	TOTAL					
	A					
	D					
	TOTAL					
	A					
	D					
	TOTAL					

LAX - STAGE 2

EXPERIMENT NO. 23

Objective:

To assess the delay impact to aircraft in (1982) for the following runway configuration in IFR 1 due to the runway closure of 25R during work on the Sepulveda Tunnel.

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 25L	24L, 25L

Related Comparison Experiments:

Prior experiment #2 is identical except for the closure of runway 25R for tunnel construction and a 1978 demand.

TABLE 17

1 P27

LAX EXP 23 DEMAND=82 SEP=78IFR1 CONFIG=A SCHED=X23 RTE=X1 NORMAL

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO WOFF
700- 800	9.0	0.0	0.0	17.0	0.0	0.0	26.0	27.0	-1.0	0.0	21.0	0.0	19.0	0.0	0.0	40.0	48.0	-8.0	11.35	5.57	7.98
800- 900	20.9	0.0	0.0	23.6	0.0	0.0	44.5	44.0	.5	0.0	29.2	0.0	16.7	0.0	0.0	45.9	64.0	-18.1	13.57	5.13	17.95
900-1000	19.3	0.0	0.0	17.0	0.0	0.0	36.3	40.0	-3.7	0.0	26.8	0.0	22.2	0.0	0.0	49.0	54.0	-5.0	13.20	5.55	25.24
1000-1100	20.9	0.0	0.0	22.0	0.0	0.0	42.9	55.0	-12.1	0.0	28.6	0.0	14.1	0.0	0.0	42.7	48.0	-5.3	15.75	5.63	36.99
1100-1200	20.3	0.0	0.0	23.1	0.0	0.0	43.4	60.0	-16.6	0.0	30.4	0.0	15.2	0.0	0.0	45.6	52.0	-6.4	26.67	5.54	44.88
1200-1300	20.0	0.0	0.0	22.8	0.0	0.0	42.8	45.0	-2.2	0.0	28.0	0.0	18.1	0.0	0.0	46.1	65.0	-18.9	39.22	5.81	36.88
1300-1400	20.3	0.0	0.0	22.0	0.0	0.0	42.3	39.0	3.3	0.0	27.7	0.0	13.6	0.0	0.0	41.3	54.0	-12.7	33.78	5.29	41.67
1400-1500	20.6	0.0	0.0	22.0	0.0	0.0	42.6	53.0	-10.4	0.0	25.9	0.0	16.3	0.0	0.0	42.2	41.0	1.2	27.37	5.34	45.45
* 1500-1600	3.0	0.0	0.0	14.4	0.0	0.0	17.4	0.0	17.4	0.0	35.6	0.0	7.0	0.0	0.0	48.6	0.0	48.6	58.18	4.85	87.58

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	.1	0.0	0.0	3.5	0.0	0.0	2.3	.0	.2	0.0	1.2	0.0	3.0	0.0	0.0	2.0	.0	.3	0.0	2.6	2.4
800- 900	4.4	0.0	0.0	3.3	0.0	0.0	3.8	.1	.1	0.0	10.1	0.0	11.4	0.0	0.0	10.5	.1	.6	.6	4.0	11.2
900-1000	4.0	0.0	0.0	2.4	0.0	0.0	3.3	.1	.1	0.0	20.8	0.0	8.5	0.0	0.0	15.2	.0	.6	3.8	3.4	19.6
1000-1100	9.5	0.0	0.0	3.4	0.0	0.0	6.3	.1	.3	0.0	21.6	0.0	8.3	0.0	0.0	17.0	.0	1.3	12.9	6.7	31.3
1100-1200	18.9	0.0	0.0	15.3	0.0	0.0	17.2	.0	.5	0.0	18.7	0.0	13.0	0.0	0.0	16.9	.0	1.6	20.7	17.7	39.2
1200-1300	22.7	0.0	0.0	35.6	0.0	0.0	30.2	.0	.8	0.0	20.3	0.0	9.9	0.0	0.0	16.2	.0	.9	14.0	31.1	31.1
1300-1400	20.2	0.0	0.0	30.4	0.0	0.0	25.5	.0	.5	0.0	21.1	0.0	11.2	0.0	0.0	17.7	.0	.9	17.5	26.1	36.2
1400-1500	9.6	0.0	0.0	28.0	0.0	0.0	19.1	.1	.4	0.0	22.3	0.0	9.0	0.0	0.0	17.0	.0	1.0	21.9	19.5	40.0
* 1500-1600	18.3	0.0	0.0	33.1	0.0	0.0	30.7	.0	.1	0.0	15.4	0.0	0.0	0.0	0.0	14.8	.0	2.1	58.1	30.8	14.8

* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 24

Objective:

To assess the delay impact to aircraft in 1982 for the following runway configuration in IFR 1 due to the runway closure of 25L during work on the Sepulveda Tunnel

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 25R	24L, 25R

Related Comparison Experiments:

Prior Experiment #2 is identical except for the closure of runway 25L for tunnel construction and a 1978 demand.

TABLE 18

```
 L/EXP/
1                LAX EXP 24     DEMAND=82  SEP=78IFR1  CONFIG=A  SCHED=X24  RTE=X1  NORMAL
†† P28
1                LAX EXP 24     DEMAND=82  SEP=78IFR1  CONFIG=A  SCHED=X24  RTE=X1  NORMAL
```

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	10.0	0.0	15.1	0.0	0.0	0.0	25.1	27.0	-1.9	0.0	15.0	24.2	0.0	0.0	0.0	39.2	48.0	-8.8	11.55	5.68	9.89
800- 900	19.0	0.0	23.4	0.0	0.0	0.0	42.4	44.0	-1.6	0.0	26.8	17.8	0.0	0.0	0.0	44.6	64.0	-19.4	15.44	5.07	16.54
900-1000	13.9	0.0	23.2	0.0	0.0	0.0	37.1	40.0	-2.9	0.0	31.5	16.3	0.0	0.0	0.0	47.8	54.0	-6.2	20.68	5.11	27.76
1000-1100	24.0	0.0	23.2	0.0	0.0	0.0	47.2	56.0	-8.8	0.0	16.7	21.3	0.0	0.0	0.0	38.0	48.0	-10.0	20.96	5.57	44.55
1100-1200	25.8	0.0	23.4	0.0	0.0	0.0	49.2	60.0	-10.8	0.0	19.3	19.9	0.0	0.0	0.0	39.2	52.0	-12.8	29.13	5.16	40.02
1200-1300	25.4	0.0	22.9	0.0	0.0	0.0	48.3	45.0	3.3	0.0	27.8	18.3	0.0	0.0	0.0	46.1	65.0	-18.9	43.55	5.43	36.99
1300-1400	25.2	0.0	22.6	0.0	0.0	0.0	47.8	39.0	8.8	0.0	27.4	16.3	0.0	0.0	0.0	43.7	54.0	-10.3	38.56	5.76	40.27
1400-1500	25.4	0.0	23.2	0.0	0.0	0.0	48.6	53.0	-4.4	0.0	18.2	20.8	0.0	0.0	0.0	39.0	41.0	-2.0	31.15	6.00	56.60
* 1500-1600	4.7	0.0	12.0	0.0	0.0	0.0	16.7	0.0	16.7	0.0	2.7	40.0	0.0	0.0	0.0	42.7	0.0	42.7	24.37	5.75	100.44

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	.3	0.0	1.2	0.0	0.0	0.0	.8	.0	.1	0.0	1.3	6.3	0.0	0.0	0.0	4.4	0.0	.3	0.0	.9	4.7
800- 900	2.3	0.0	6.7	0.0	0.0	0.0	4.7	.1	.2	0.0	2.9	20.6	0.0	0.0	0.0	9.9	0.0	.7	.5	5.0	11.1
900-1000	2.3	0.0	14.8	0.0	0.0	0.0	10.1	.1	.3	0.0	7.6	41.0	0.0	0.0	0.0	18.9	0.0	.4	3.0	10.5	22.4
1000-1100	5.6	0.0	14.8	0.0	0.0	0.0	10.1	.0	.3	0.0	7.3	39.9	0.0	0.0	0.0	25.6	0.0	.6	13.1	10.5	39.3
1100-1200	11.7	0.0	26.8	0.0	0.0	0.0	18.9	.0	.1	0.0	2.7	39.3	0.0	0.0	0.0	21.3	0.0	.6	12.7	19.0	34.6
1200-1300	23.8	0.0	43.7	0.0	0.0	0.0	33.2	.1	.1	0.0	3.6	44.1	0.0	0.0	0.0	19.7	0.0	.4	12.0	33.4	32.1
1300-1400	17.9	0.0	39.6	0.0	0.0	0.0	28.1	.0	.4	0.0	7.6	47.0	0.0	0.0	0.0	22.2	0.0	.5	12.3	28.5	35.0
1400-1500	14.1	0.0	28.3	0.0	0.0	0.0	20.9	.1	.9	0.0	3.3	50.4	0.0	0.0	0.0	28.6	0.0	.8	21.9	21.8	51.3
* 1500-1600	11.7	0.0	31.5	0.0	0.0	0.0	24.0	.0	1.1	0.0	.8	28.0	0.0	0.0	0.0	26.5	0.0	2.0	14.1	23.1	45.4
1	0	0																			

* CLEAN UP HOUR

TABLE 19

P27

1 LAX EXP 24 DEMAND=82 SEP=78IFR1 CONFIG=A SCHED=X24 RTE=X1 NORMAL

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO RDLT
700- 800	10.0	0.0	15.3	0.0	0.0	0.0	25.3	27.0	-1.7	0.0	19.0	19.8	0.0	0.0	0.0	38.8	48.0	-9.2	11.52	5.64	9.13
800- 900	19.0	0.0	25.6	0.0	0.0	0.0	44.6	44.0	.6	0.0	28.9	15.1	0.0	0.0	0.0	44.0	64.0	-20.0	14.77	5.15	20.87
900-1000	12.9	0.0	24.1	0.0	0.0	0.0	37.0	40.0	-3.0	0.0	33.0	17.9	0.0	0.0	0.0	50.9	54.0	-3.1	15.54	4.87	28.10
1000-1100	22.6	0.0	25.8	0.0	0.0	0.0	48.4	56.0	-7.6	0.0	30.8	14.2	0.0	0.0	0.0	45.0	48.0	-3.0	16.71	5.54	38.86
1100-1200	22.0	0.0	27.0	0.0	0.0	0.0	49.0	60.0	-11.0	0.0	31.8	13.4	0.0	0.0	0.0	45.2	52.0	-6.8	27.17	5.51	49.19
1200-1300	22.2	0.0	26.2	0.0	0.0	0.0	48.4	45.0	3.4	0.0	31.4	15.6	0.0	0.0	0.0	47.0	65.0	-18.0	35.85	6.63	42.55
1300-1400	22.2	0.0	18.9	0.0	0.0	0.0	41.1	39.0	2.1	0.0	29.0	19.2	0.0	0.0	0.0	48.2	54.0	-5.8	39.34	5.84	44.65
1400-1500	22.2	0.0	26.0	0.0	0.0	0.0	48.2	53.0	-4.8	0.0	30.6	15.1	0.0	0.0	0.0	45.7	41.0	4.7	33.38	5.38	58.59
* 1500-1600	19.1	0.0	.4	0.0	0.0	0.0	19.5	0.0	19.5	0.0	33.1	1.1	0.0	0.0	0.0	39.5	0.0	39.5	44.05	6.55	86.00

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	.3	0.0	1.1	0.0	0.0	0.0	.8	.0	.1	0.0	2.4	4.3	0.0	0.0	0.0	3.4	0.0	.3	0.0	.9	3.6
800- 900	4.5	0.0	3.6	0.0	0.0	0.0	4.0	.1	.2	0.0	11.8	13.5	0.0	0.0	0.0	12.3	0.0	1.0	1.3	4.3	14.5
900-1000	2.8	0.0	5.9	0.0	0.0	0.0	4.9	.0	.2	0.0	17.8	12.1	0.0	0.0	0.0	15.8	0.0	.6	6.1	5.2	22.5
1000-1100	8.5	0.0	4.0	0.0	0.0	0.0	6.1	.1	.3	0.0	21.7	13.2	0.0	0.0	0.0	19.0	0.0	1.2	12.6	6.5	32.8
1100-1200	20.1	0.0	14.5	0.0	0.0	0.0	17.0	.1	.7	0.0	21.8	17.6	0.0	0.0	0.0	20.3	0.0	1.5	21.3	17.7	43.1
1200-1300	38.3	0.0	15.0	0.0	0.0	0.0	25.7	.1	1.3	0.0	21.7	15.6	0.0	0.0	0.0	19.5	0.0	1.2	15.6	27.1	36.3
1300-1400	50.4	0.0	3.4	0.0	0.0	0.0	28.9	.1	.5	0.0	28.2	7.6	0.0	0.0	0.0	19.8	0.0	1.5	17.2	29.4	38.5
1400-1500	46.9	0.0	2.7	0.0	0.0	0.0	23.1	.1	.3	0.0	22.8	15.2	0.0	0.0	0.0	20.3	0.0	1.2	31.0	23.5	52.5
* 1500-1600	54.5	0.0	.3	0.0	0.0	0.0	54.8	.4	.5	0.0	34.7	1.1	0.0	0.0	0.0	18.0	0.0	2.2	58.1	54.4	70.3

77

* CLEAN-UP HOUR

LAX - STAGE 2

EXPERIMENT NO. 26

Objective:

To assess delays to aircraft in 1987 for the following runway configuration in IFR 1 with an improved 1987 ATC system scenario and 1982 improvements plus the satellite terminal and/or remote parking for 20 aircraft.(1987 improvement package).

ARRIVAL RUNWAYS	DEPARTURE RUNWAYS
24R, 24L, 25R, 25L	24L, 25R

Related Comparison Experiments:

Prior Experiment #12 is identical except for the improvements from 1982 to 1987 and the demand.(1987)

TABLE 20

LAX EXP 26 DEMAND=87 SEP=87IFR1 CONFIG=A SCHED=X26 RTE=X25 TOTAL IMP

AVERAGE FLOW RATES

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	DE-MAND	DIF	AVERAGE TRAVEL TIMES FIX TO THRESH	THRESH TO GATE	GATE TO ROLL
700- 800	13.0	0.0	0.0	16.7	0.0	0.0	29.7	30.0	-.3	0.0	14.0	29.1	0.0	0.0	0.0	43.1	48.0	-4.9	9.89	4.19	5.89
800- 900	22.0	0.0	0.0	22.7	0.0	0.0	44.7	47.0	-2.3	0.0	25.4	36.8	0.0	0.0	0.0	62.2	65.0	-2.8	11.85	4.07	8.97
900-1000	12.0	0.0	0.0	26.4	0.0	0.0	38.4	38.0	.4	0.0	23.7	35.1	0.0	0.0	0.0	58.8	55.0	3.8	10.63	4.03	9.49
1000-1100	25.0	0.0	0.0	32.0	0.0	0.0	57.0	56.0	1.0	0.0	18.0	28.6	0.0	0.0	0.0	46.6	49.0	-2.4	11.24	4.09	8.40
1100-1200	25.0	0.0	0.0	34.0	0.0	0.0	59.0	60.0	-1.0	0.0	17.9	32.7	0.0	0.0	0.0	50.6	52.0	-1.4	11.49	4.27	8.66
1200-1300	23.0	0.0	0.0	24.0	0.0	0.0	47.0	49.0	-2.0	0.0	22.0	40.7	0.0	0.0	0.0	62.7	66.0	-3.3	14.02	4.25	11.75
1300-1400	16.0	0.0	0.0	27.2	0.0	0.0	43.2	41.0	2.2	0.0	20.5	39.6	0.0	0.0	0.0	60.1	55.0	5.1	14.08	3.99	12.38
1400-1500	26.0	0.0	0.0	24.0	0.0	0.0	50.0	48.0	2.0	0.0	18.3	26.4	0.0	0.0	0.0	44.7	42.0	2.7	11.50	3.97	7.12
*1500-1600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.4	0.0	0.0	0.0	3.7	0.0	3.7	0.00	0.00	1.44

AVERAGE DELAYS

TIME	ARRIVALS RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI IN	DEPARTURES RWY 24R	RWY 24L	RWY 25R	RWY 25L	RWY	RWY	TOT	RWY CRS	TAXI OUT	RWY CNG	GRAND TOTAL AVERAGE DELAYS ARR DELAY	DEP DELAY
700- 800	.0	0.0	0.0	.2	0.0	0.0	.1	.1	.2	0.0	.2	1.5	0.0	0.0	0.0	1.1	0.0	.2	0.0	.4	1.3
800- 900	1.2	0.0	0.0	2.3	0.0	0.0	1.8	.1	.1	0.0	1.5	5.3	0.0	0.0	0.0	3.7	0.0	.4	.2	1.9	4.3
900-1000	.1	0.0	0.0	1.9	0.0	0.0	1.4	.1	.1	0.0	.6	6.9	0.0	0.0	0.0	4.4	.0	.3	.1	1.5	4.7
1000-1100	.8	0.0	0.0	2.2	0.0	0.0	1.6	.1	.0	0.0	2.0	5.0	0.0	0.0	0.0	3.8	0.0	.2	0.0	1.7	4.1
1100-1200	.5	0.0	0.0	3.0	0.0	0.0	1.9	.1	.1	0.0	1.7	5.9	0.0	0.0	0.0	4.4	0.0	.1	0.0	2.1	4.5
1200-1300	.6	0.0	0.0	8.1	0.0	0.0	4.4	.1	.1	0.0	1.3	9.7	0.0	0.0	0.0	6.7	0.0	.1	.3	4.6	7.1
1300-1400	.2	0.0	0.0	7.3	0.0	0.0	4.6	.1	.0	0.0	1.3	10.0	0.0	0.0	0.0	7.0	0.0	.2	.0	4.8	8.0
1400-1500	1.0	0.0	0.0	2.2	0.0	0.0	1.6	.1	.0	0.0	1.9	4.0	0.0	0.0	0.0	3.1	0.0	.1	.0	1.7	3.2
*1500-1600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.4	0.0	0.0	0.0	1.7	0.0	1.7	0.0	0.0	1.4

*CLEAN-UP HOUR

ATTACHMENT D

SUMMARY OF EXPERIMENT RESULTS FOR TOTAL DELAYS AND TRAVEL TIMES

LOS ANGELES INTERNATIONAL AIRPORT

AIRPORT IMPROVEMENT TASK FORCE DELAY STUDIES

TABLE 21
SUMMARY OF DELAYS FOR VFR
WESTERLY FLOW

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS
	RUNWAY (AIRBORNE)	TAXIWAY	RUNWAY CROSSING	RUNWAY	TAXIWAY	RUNWAY CROSSING	GATE HOLD	
1	802.9	46.4	80.1	2791.8	482.1	1.9	74.4	3476.7
7	634.3	56.8	81.2	2597.8	562.0	7.6	30.2	3355.6
7A	1576.4	66.4	118.8	4182.0	897.0	4.1	293.4	5561.6
7B	5671.0	226.4	104.9	5540.9	1590.9	3.9	1118.4	8587.4
11	1357.5	123.3	108.2	4130.0	1357.3	3.8	1133.4	6856.0
11 (REROUTED)	405.2	57.5	86.8	2048.0	494.4	8.3	6.1	3106.3
13	436.1	61.4	87.9	2379.9	468.0	8.0	20.6	3025.8
18	516.1	48.2	58.9	2626.4	561.1	9.2	26.8	3330.6
18 (REROUTED)	381.5	48.1	59.7	2277.0	484.5	10.4	31.2	2910.9
18A (REROUTED)	408.6	54.9	62.4	2189.6	659.4	10.0	3.2	2979.5
19A	525.2	38.6	45.0	2345.5	423.9	7.5	12.0	2872.5
20	420.1	47.8	50.6	2493.6	431.9	7.8	52.1	3085.8
21	440.7	45.7	62.8	2667.5	587.9	6.2	28.2	3398.3
22	3072.8	56.8	15.7	4343.0	354.7	2.1	693.6	5393.3
22 (REROUTED)	992.8	233.5	18.5	4199.5	1449.7	11.6	944.0	6856.8
22A (REROUTED)	1034.3	187.4	16.2	4071.4	1359.2	11.6	1047.8	6410.0
25	188.7	34.3	31.7	1324.7	245.1	1.3	1.6	1638.7
25A	257.1	39.7	38.4	1957.2	414.8	1.4	72.8	2574.5

TABLE 22
SUMMARY OF DELAYS FOR IFR
WESTERLY FLOW

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS
	RUNWAY (AIRBORNE)	TAXIWAY	RUNWAY CROSSING	RUNWAY	TAXIWAY	RUNWAY CROSSING	GATE HOLD	
2	4444.0	34.9	60.2	2894.7	127.5	3.8	515.4	3436.5
3	7008.6	1053.5	83.5	9534.5	240.8	4.7	5305.0	16222.0
8	5099.6	39.1	62.8	2713.6	164.2	4.7	304.0	3288.4
8A	7945.2	35.5	56.0	3776.7	170.2	1.3	416.0	4455.7
8B	12703.3	81.4	56.1	5441.7	296.6	1.6	2285.4	8162.8
12	5045.8	55.1	53.5	2373.0	165.4	3.3	223.2	2813.5
12 (REROUTED)	2320.8	50.0	58.4	2713.0	189.0	6.2	290.6	3307.2
23 (REROUTED)	4775.6	130.9	16.6	5291.8	331.4	7.2	4317.8	9948.2
24	5967.2	107.9	17.6	6326.7	176.9	0.0	3111.6	9740.7
24 (REROUTED)	5043.1	173.1	19.6	6020.1	393.8	0.0	4872.4	11477.0
26	831.2	22.9	35.0	1922.8	88.3	1.6	79.4	2150.0

TABLE 23
SUMMARY OF DELAYS FOR VFR AND IFR
EASTERLY FLOW 6,9 and 16
NIGHT TIME 4,10 and 15 (VFR) 5 and 10A (IFR)

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS
	RUNWAY (AIRBORNE)	TAXIWAY	RUNWAY CROSSING	RUNWAY	TAXIWAY	RUNWAY CROSSING	GATE HOLD	
6	460.0	166.4	42 0	2546.2	605.7	0.3	384.2	3771.8
9	408.2	84.8	56.5	2370.1	406.0	9.5	67.0	3301.9
16	331.9	76.0	62.1	22705	308.7	12.8	64.8	2774.9
4	374.2	3.1	0.0	457.0	5,1	0.0	0.0	465.2
10	1034.5	3.8	0.0	686.4	15.1	0.0	0.0	705.3
15	844.3	3 8	0.0	616.7	14.7	0.0	0.0	635.2
5	1244.9	43	0.0	1129.5	5.1	0.0	0.0	1138.9
10A	2048.3	3.8	0.0	1285.2	12.6	0.0	0.0	1301.6

TABLE 24
SUMMARY OF TRAVEL TIMES
(MINUTES)

EXPERIMENT	ARRIVAL AIRBORNE TRAVEL TIME	ARRIVAL GROUND TRAVEL TIME	DEPARTURE GROUND TRAVEL TIME	TOTAL TRAVEL TIME
1	4076.9	1528.6	5677.0	11282.5
7	4026.7	1609.6	5659.3	11295.6
11 (REROUTED)	3797.0	1501.4	4801.3	10100.2
13	3828.1	1610.7	5304.0	10742.8
18 (REROUTED)	3785.8	1624.8	5348.7	10759.3
18A (REROUTED)	3747.7	1629.1	5175.2	10552.0
19A	3822.6	1586.4	5151.4	10560.4
22 (REROUTED)	4403.4	2100.1	9082.1	15504.4
22A (REROUTED)	4444.3	2101.3	9000.9	15546.5
25	3720.1	1452.1	3519.3	8691.5
2	7609.6	1548.4	5597.1	14755.1
8	8323.9	1577.7	5568.1	15469.7
12 (REROUTED)	5405.8	1664.8	5444.3	12514.9
24 (REROUTED)	8626.2	1910.9	13504.5	36556.5
26	4392.4	1516.8	4010.4	9919.6

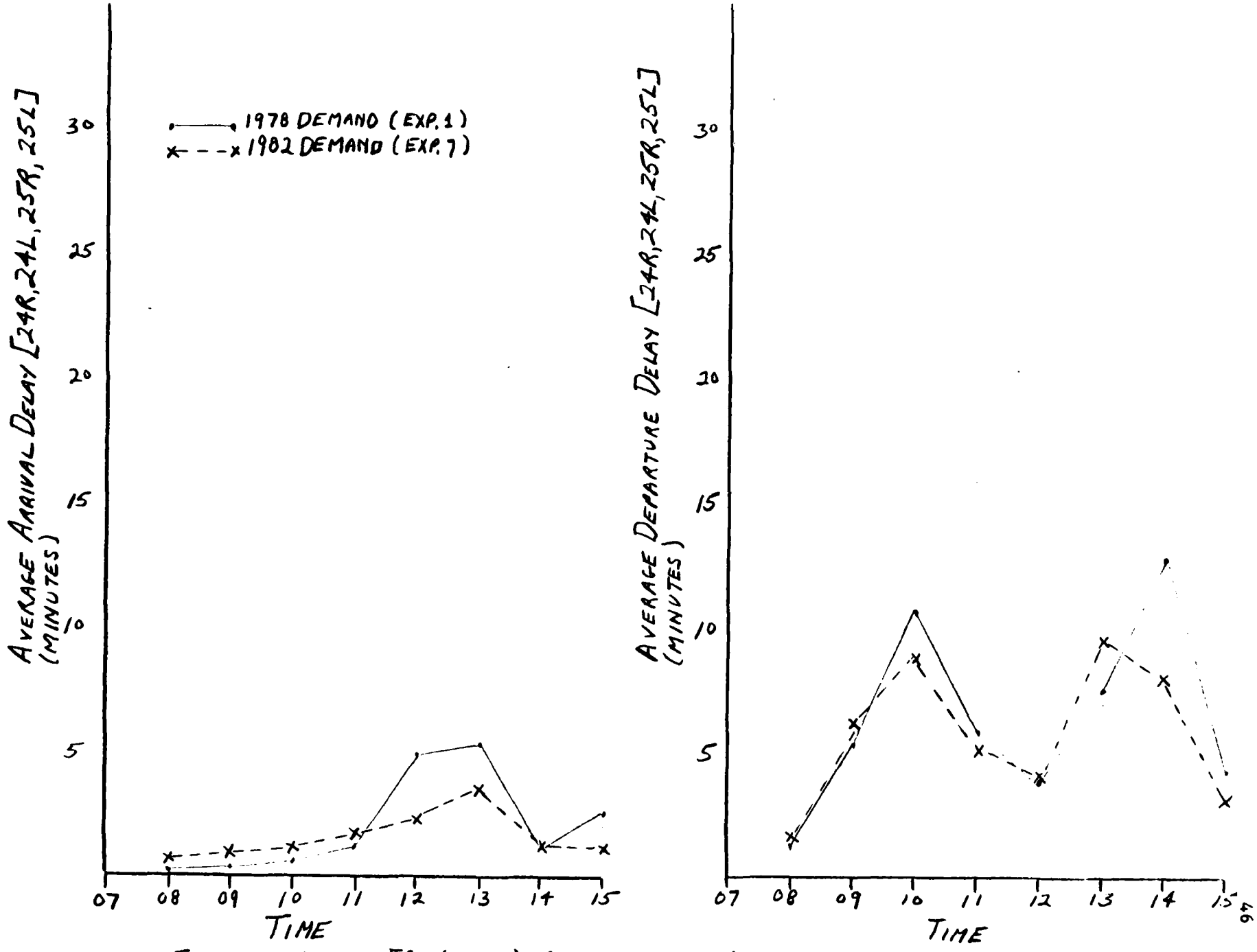


FIGURE 7. VFR (1978) COMPARISON - WESTERLY FLOW

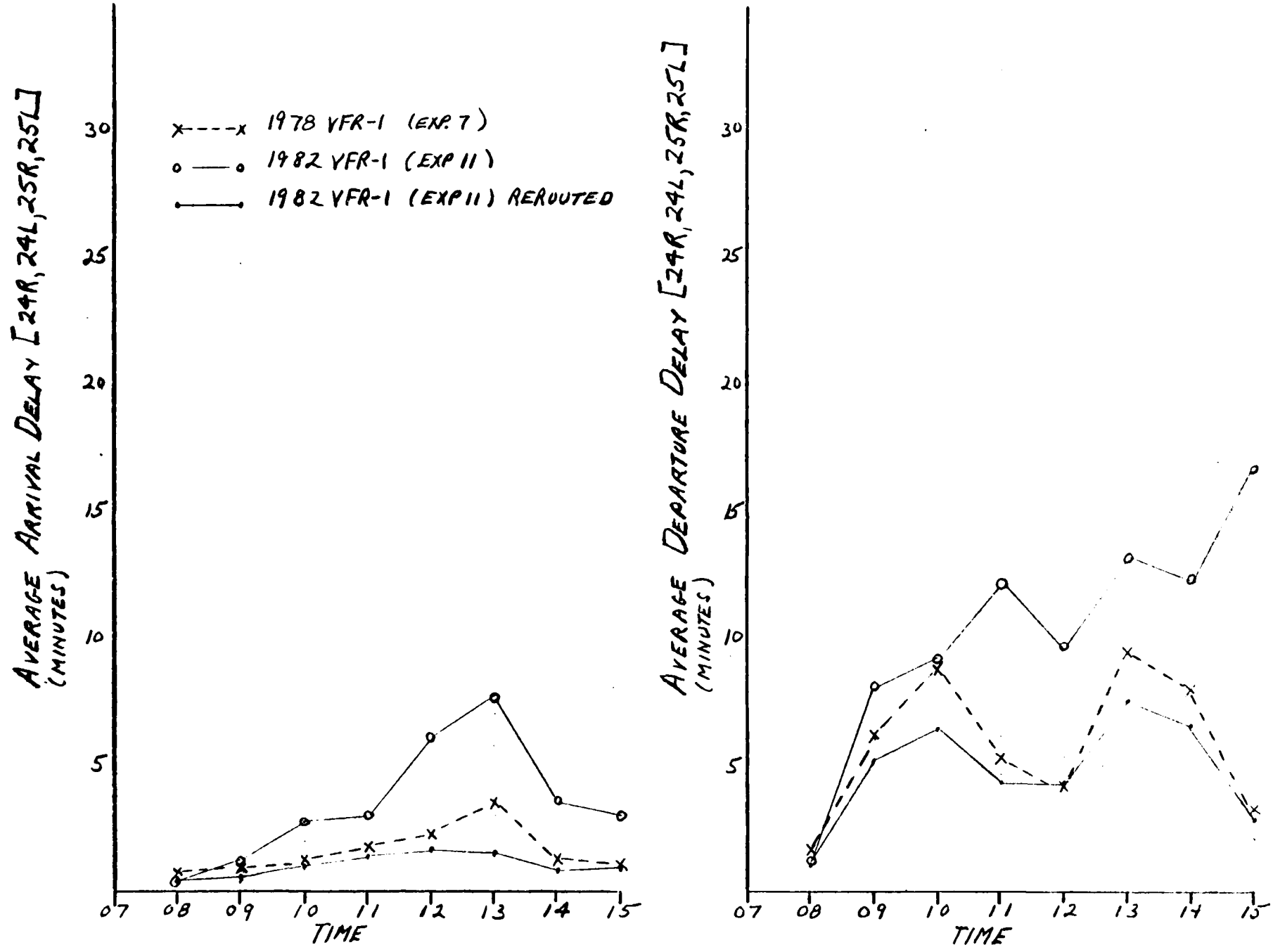


FIGURE 8 VFR (1978 AND 1982) COMPARISON WESTERLY FLOW

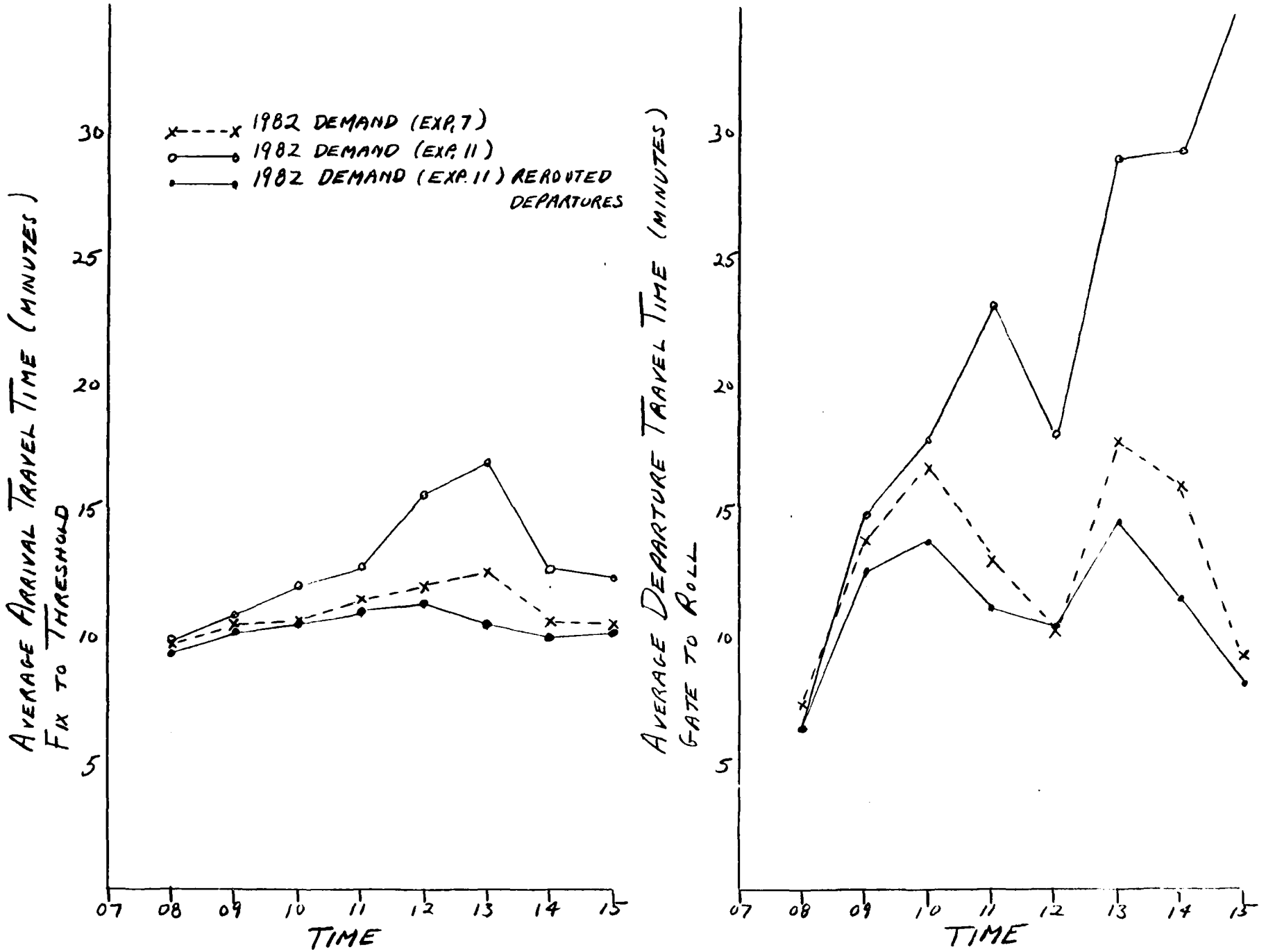


FIGURE 9 VFR (1978 AND 1982) COMPARISON - WESTERLY FLOW

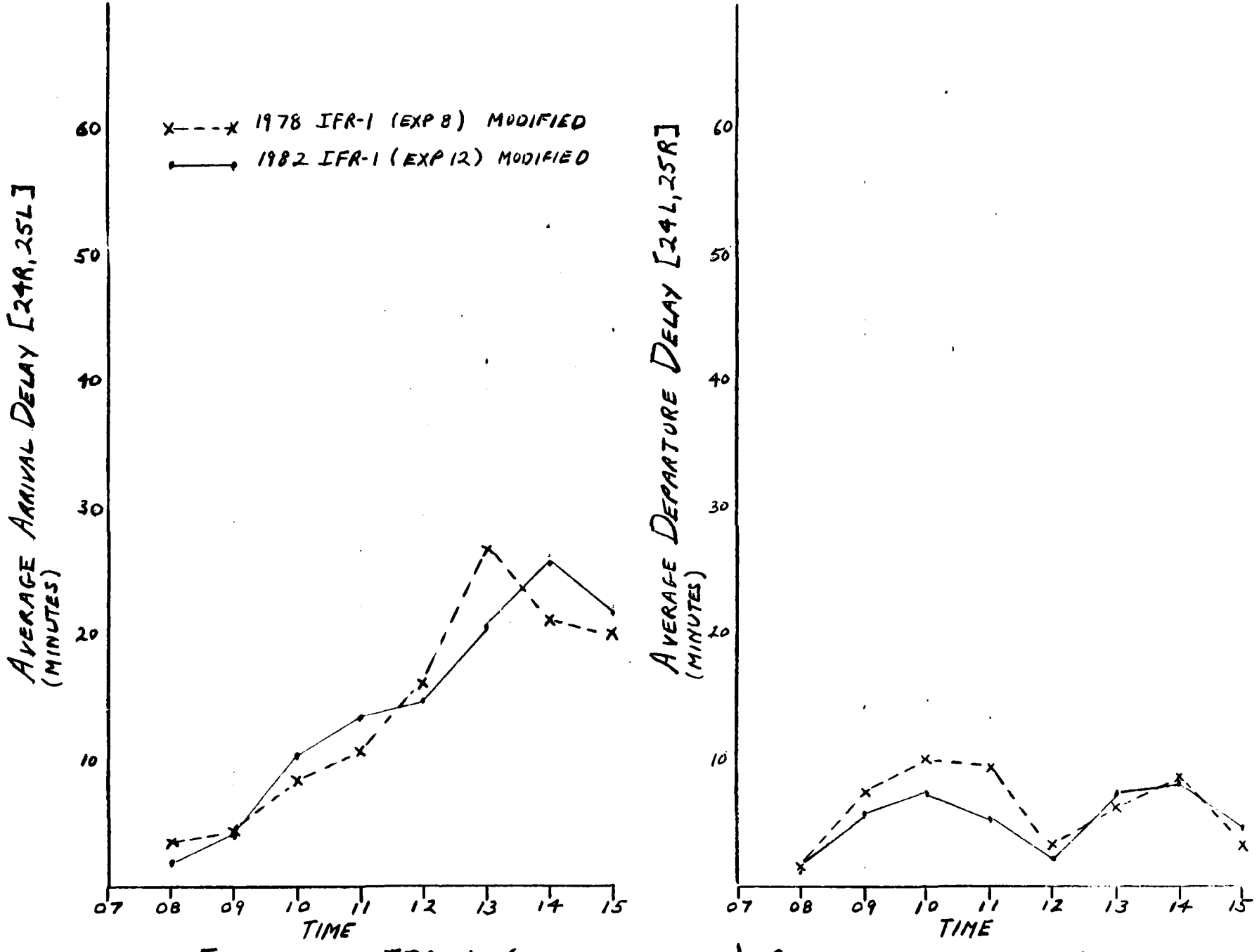


FIGURE 10 IFR-1 (1978 AND 1982) COMPARISON-WESTERLY FLOW

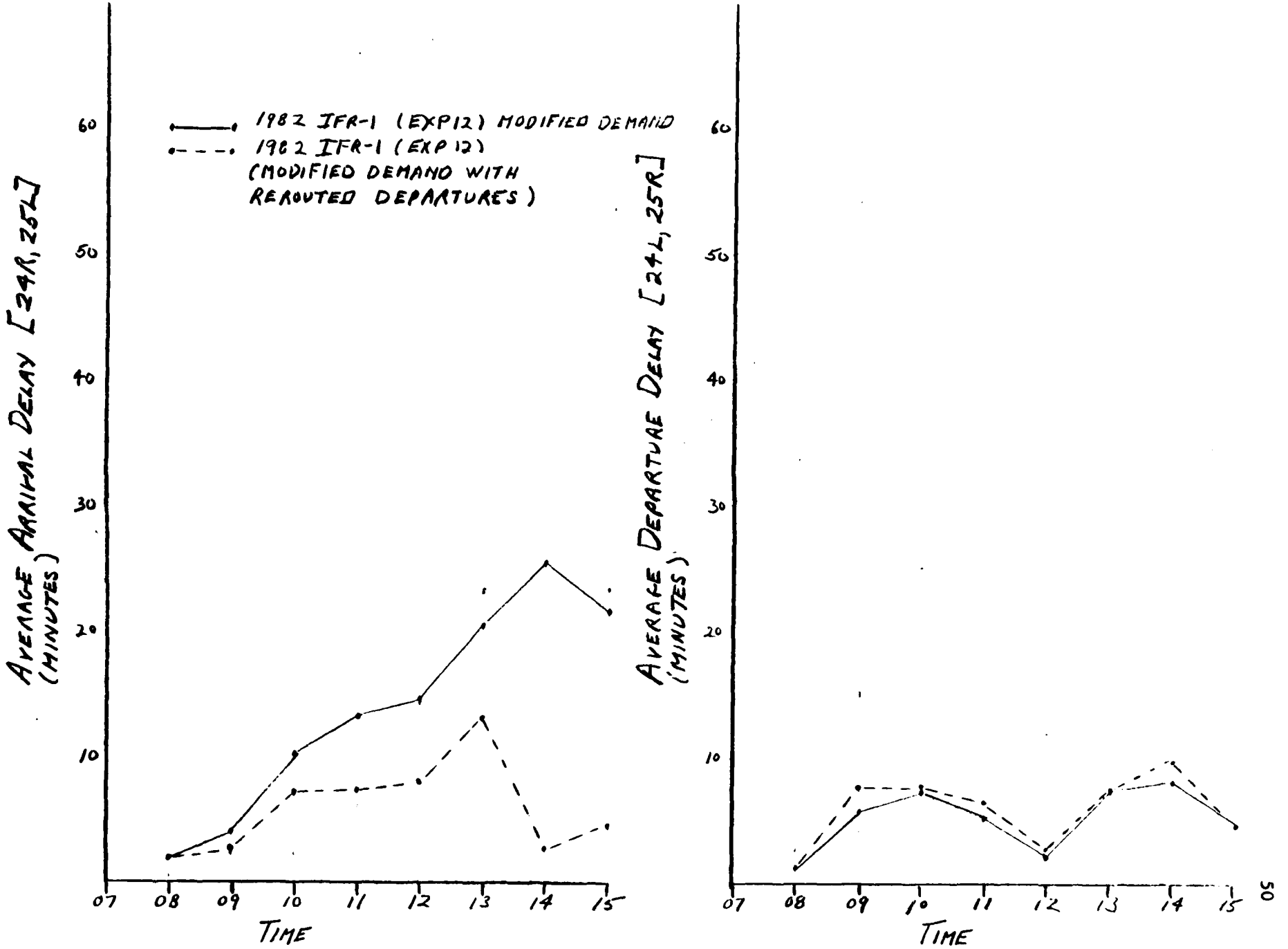


FIGURE 11 IFR-1 (1982) COMPARISON - WESTERLY FLOW

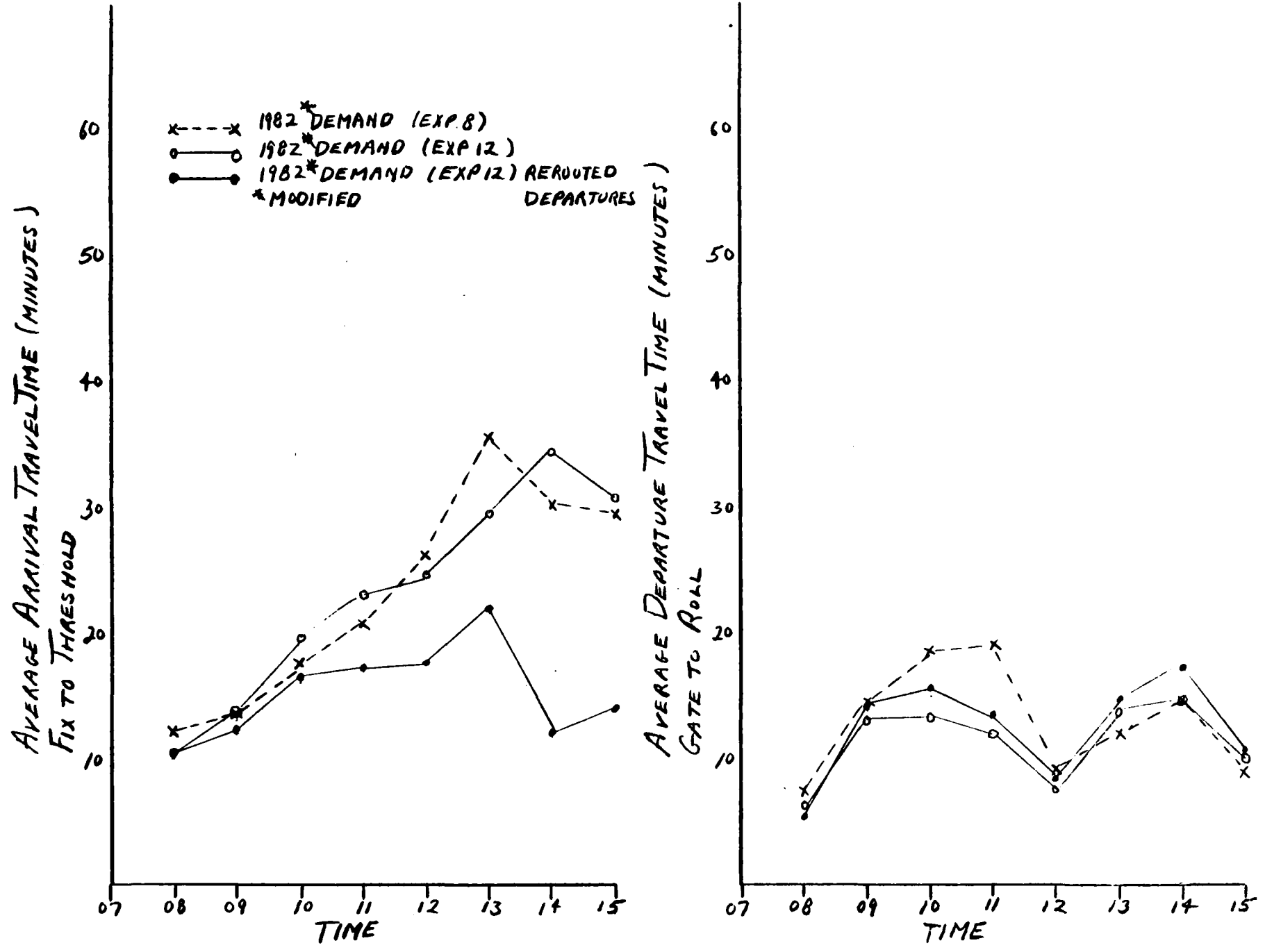


FIGURE 12 IFR (1978 AND 1982) COMPARISON - WESTERLY FLOW

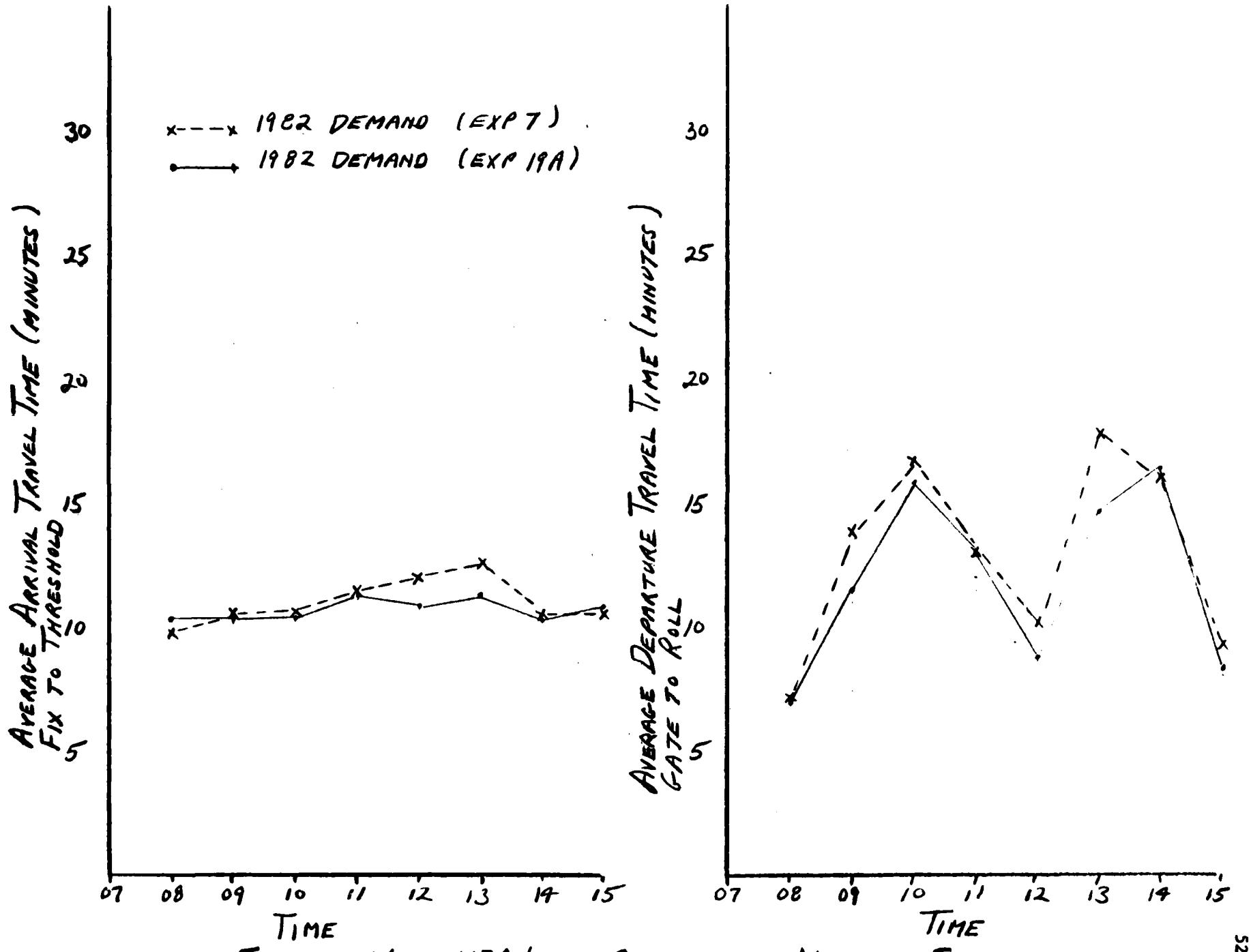
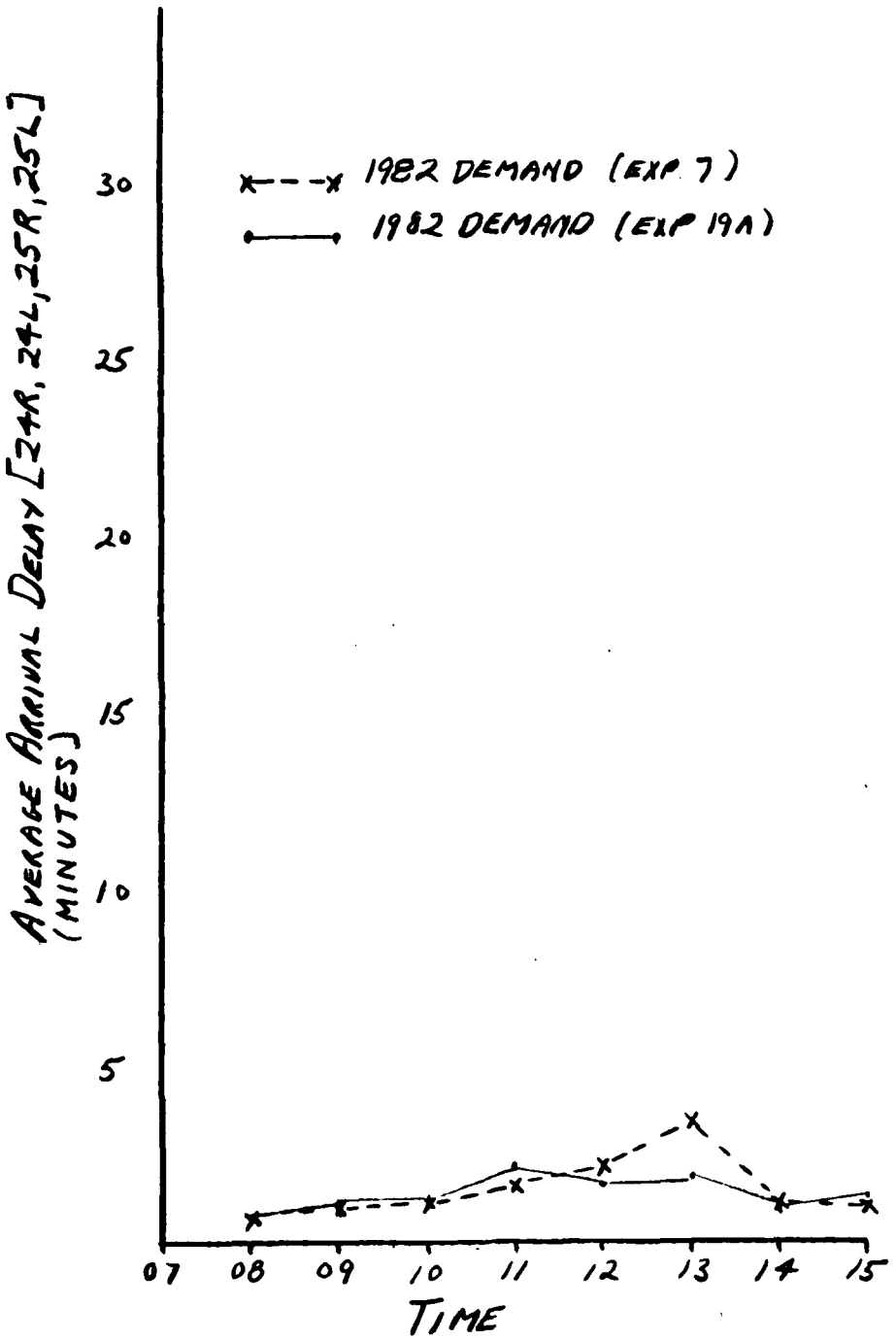


FIGURE 14 VFR (1978) COMPARISON - WESTERLY FLOW



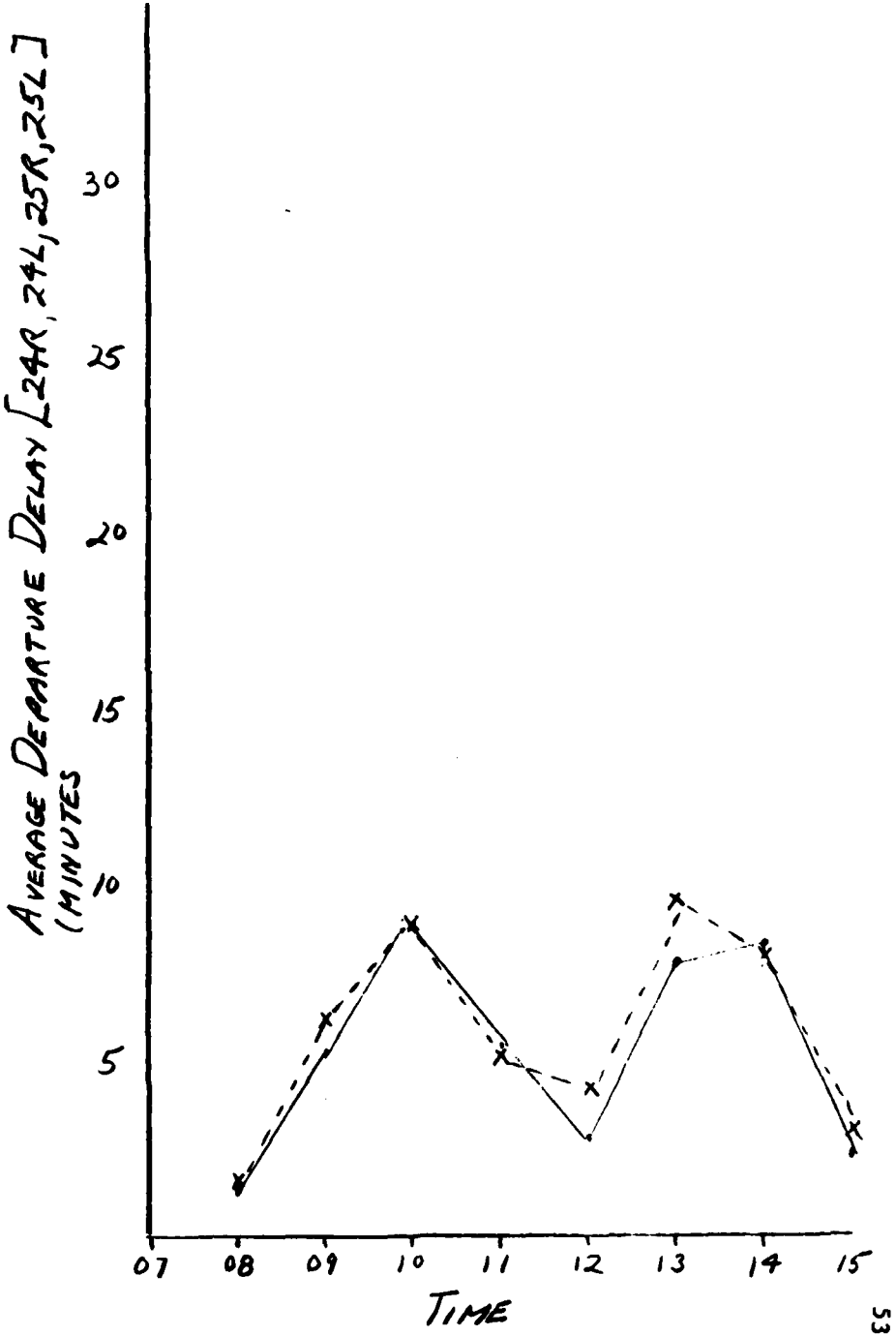


FIGURE 13 VFR (1978) COMPARISON - WESTERLY FLOW

ATTACHMENT E

COMPARISON OF EXPERIMENTS

LOS ANGELES INTERNATIONAL AIRPORT

TABLE 25

COMPARISON OF EXPERIMENTS

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS	TRAVEL TIMES			
	RUNWAY (AIR)	TAXI	RUNWAY X-ING	RUNWAY	TAXI	RUNWAY X-ING	GATE HOLD		ARRIVAL AIR	ARRIVAL GROUND	DEPART. GROUND	TOTAL
IMPROVEMENT- NEAR TERM IMPROVEMENTS (TUNNEL) **RESULTS- 10% improvement in departure ground travel time.**												
* 11 (REROUTED)	405.2	57.5	86.8	2048.0	494.4	8.3	6.1	3106.3	3797.0	1501.4	4804.8	10100.2
18 (REROUTED)	381.5	48.1	59.7	2277.0	484.5	10.4	31.2	2910.9	3785.8	1624.8	5348.7	10757.3
IMPROVEMENT- 1982 SEPARATIONS AND NEAR TERM IMPROVEMENTS **RESULTS- 36.1% improvement in airborne delays and 21.0% improvement in departure delays.**												
7	634.3	56.8	81.2	2597.8	562.0	7.6	30.2	3335.6	4026.7	1609.6	5659.3	11295.6
* 11 (REROUTED)	405.2	57.5	86.8	2048.0	494.4	8.3	6.1	3106.3	3797.0	1501.4	4801.8	10100.2
IMPROVEMENT-BY-PASS FOR 24L TO 24R **RESULTS- 6.2% improvement in departure travel times.**												
7	634.3	56.8	81.2	2597.8	562.0	7.6	30.2	3335.6	4026.7	1609.6	5659.3	11295.6
* 13	436.1	61.4	87.9	2379.9	468.0	8.0	20.6	3025.8	3828.1	1610.7	5304.0	10759.3
IMPROVEMENT- DUAL TAXIWAY **RESULTS- NO CHANGE**												
11 (REROUTED)	405.2	57.5	86.8	2048.0	494.4	8.3	6.1	3106.3	3797.0	1501.4	4801.8	10100.2
* 18 (REROUTED)	381.5	48.1	59.7	2277.0	484.5	10.4	31.2	2910.9	3785.8	1624.8	5348.7	10759.3

TABLE25 (continued)

COMPARISON OF EXPERIMENTS

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS	TRAVEL TIMES			
	RUNWAY (AIR)	TAXI	RUNWAY X-ING	RUNWAY	TAXI	RUNWAY X-ING	GATE HOLD		ARRIVAL AIR	ARRIVAL GROUND	DEPART. GROUND	TOTAL
TUNNEL CONSTRUCTION **RESULTS- Larger departure delays can be expected (about 56%).**												
7	634.3	56.8	81.2	2597.8	562.0	7.6	30.2	3335.6	4026.7	1609.6	5659.3	11295.6
22 (REROUTED)	992.8	233.5	18.5	4199.5	1449.7	11.6	944.0	6490.0	4403.4	2100.1	9082.1	15504.4
IMPROVEMENT- TERMINAL EXPANSION **RESULTS- 15.1% improvement in airborne delay.(5% in airborne travel time.)** **8.(5 improvement in departure travel time.**												
7	634.3	56.8	81.2	2597.8	562.0	7.6	30.2	3335.6	4026.7	1609.6	5659.3	11295.6
* 19A	525.2	38.6	45.0	2345.5	423.9	7.5	12.0	2872.5	3822.6	1586.4	5757.4	10560.4
IMPROVEMENT- 1982 SEPARATIONS AND NEAR TERM IMPROVEMENTS. (IFR) **RESULTS- 54% improvement in airborne delay.**												
8	5099.6	39.1	62.8	2713.6	164.2	4.7	304.0	3288.4	8323.9	1577.7	5568.1	15469.7
* 12 (REROUTED)	2328	50.0	58.4	2713.0	189.0	6.2	290.6	3307.2	5745.8	1664.8	5444.3	12514.9
IMPROVEMENT- LONG TERM IFR SEPARATIONS **RESULTS- Reduce delays to present day VFR conditions.**												
1	802.9	46.4	80.1	2791.8	482.1	1.9	74.4	3476.7	4076.9	1528.6	5671.0	11282.5
* 26	831.2	22.9	35.0	1922.8	88.3	1.6	79.4	2150.0	4392.4	1516.8	4010.4	9919.6

TABLE 25 (continued)
COMPARISON OF EXPERIMENTS

EXPERIMENT	ARRIVALS			DEPARTURES				TOTAL GROUND DELAYS	TRAVEL TIMES			
	RUNWAY (AIR)	TAXI	RUNWAY X-ING	RUNWAY	TAXI	RUNWAY X-ING	GATE HOLD		ARRIVAL AIR	ARRIVAL GROUND	DEPART. GROUND	TOTAL
IMPROVEMENT- NEAR TERM IMPROVEMENTS **RESULTS- Eliminate almost entirely night time delays.**												
4 (VFR)	374.2	3.1	0.0	457.0	5.1	0.0	0.0	465.2	—	—	—	—
EXPERIMENT 11 AND 12 SHOW THAT THE SOUTH COMPLEX WILL NOT HANDLE THE DEMAND FOR DEPARTURE FROM CLOSE-BY TERMINALS												
11 (VFR)	1357.5	123.3	108.2	4130.0	1357.3	3.8	1133.4	6856.0	—	—	—	—
12 (IFR)	5045.8	55.1	53.5	2375.0	165.4	3.3	223.2	2873.5	—	—	—	—

ATTACHMENT F

SUMMARY OF ANNUAL DELAYS

TABLE 25

EXPERIMENT	DEMAND	ATC SYSTEM SCENARIO	IMPROVEMENTS	ANNUAL DELAY (HOURS)
17	1978	1978	NONE	37,991
27	1982	1982	1982	21,036
28	1982	1982	NONE	33,953
29	1982	1978	1982	33,150
30	1982	1978	NONE	39,630
31	1987	1987	1987	13,496
32	1987	1987	NONE	21,728 (EST.)
33	1987	1978	1987	21,188 (EST.)
34	1987	1978	NONE	41,339 (EST.)


DATE
ILME