KINGDOM OF THAILAND

DETAILED DESIGN REPORT

of the

BANGKOK TELEPHONE JUNCTION LINES PROJECT

(Annexed Sheet)

A 2

prepared for

OVERSEAS TECHNICAL COOPERATION AGENCY

GOVERNMENT OF JAPAN

by

THE NIPPON TELECOMMUNICATIONS CONSULTING CO., LTD.

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ANNEXED A-1

TRAFFIC DATA

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK, THAILAND

- YEAR 1976 -

TOTAL NUMBER OF SUBSCRIBERS	310000
TOTAL NUMBER OF EXCHANGES	58
TOTAL NUMBER OF TANDEM EXCHANGES	7

GRADE OF SERVICE

DIRECT JUNCTION BETWEEN EXCHANGES	0o002
TRUNK TO TANDEM	0o001
TRUNK TO TOLL	0o001
TRUNK TO SPECIAL SERVICE	0o010
TRUNK FROM TOLL EXCHANGE	0o002
LEAST NUMBER OF LINES ON HIGH USAGE ROUTE	10

I = Originating exchange

J = Terminating exchange

CIJ = Approximate cost for a Junction line including switching Equipment.

CIP = Last Trunk capacity

AIJ = Traffic between exchanges I and J

V/M = Variance to mean ratio (offered traffic)

MQ = Availability of Switching Equipment.

NIJ = The number of circuit Required for AIJ

EIJ = The congestion on the route I, J

OFL = Overflow traffic

VAR = Variance of overflow traffic

Routing = Routing between exchange, VIA direct routes, tandem routes.

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

***** YEAR 1976 *****

LIST OF EXCHANGES

EX NO	NAME	ABBREV	LOCATION OF TANDEM	NU OF SUB	TANDEM AREA
1	THANONTOK	TK		3000	7
2/1	SAMRAN RAT 1	SR 1		10000	1
2/2	SAMRAN RAT 2	SR 2		10000	1
2/3	SAMRAN RAT 3	SR 3		10000	1
3/1	SURAWONG 1	SW 1	T7	10000	7
3/2	SURAWONG 2	SW 2		10000	7
3/3	SURAWONG 3	SW 3		10000	7
4/1	PHLOEN CHIT 1	PL 1	T3	10000	3
4/2	PHLOEN CHIT 2	PL 2		10000	3
5	THONBURI	TH 2	T5	20000	5
6/1	PHAHONYOTHIN 1	PY 1	T2	10000	2
6/2	PHAHONYOTHIN 2	PY 2		5000	2
7/1	KRUNG KASEM 1	KK 1	T1	10000	1
7/2	KRUNG KASEM 2	KK 2		10000	1
8/1	CHAIYA PHRUK 1	CP 1		10000	6
8/2	CHAIYA PHRUK 2	CP 2		10000	6
9	THUNGMAHAMEK	TM		10000	3
10	SATHUPRADIT	SP		3000	7
11	NGAM WONG W/N	NWW		5000	4
12	PHRA PRADAENG	PD		3000	5
13	DONMUANG	DM		3000	4
14	BANGNA	BN		10000	6
15	BANG KHEN	BK		5000	4
16	BANG [illegible]	BC		6000	5
17	DAOKANONG	DK		8000	5
18	BANG SU	BS		10000	2
19	BANG PLAD	BP		8000	1
20	KLONG CHAN	KC		8000	6
21	INTHAMARA	IM		6000	2
22	POO CHAO SAMING PRAI	PS		5000	6
23	SAMUT PRAKAN	SMP		5000	6
24	RANG SIT	RS		800	2
25	BANG CHAN	BCH		800	2
27	ON NUT 2	ON 2		0	6
28	NONG KHAEM	NK		800	5
29	ON NUT 1	ON 1		0	6
30	PHASEE CHAROEN	PSR		2000	5
31	LAT PHRAO 2	LP 2		3000	2
32	PAKKRET	PK		0	4
33	LUK SI	LS	T4	2000	4
35	HUA MAK	HM		8000	6
36	RAM INDRA	RIC		800	2
37	ASOK. DIN DAENG	ASD		5000	3
38	BANG YA PHRAEK	BYP		0	6
39	SUKHUMVIT	SKV		0	3
40	BANG KHUN TIAN	BKT		0	5
41	CHARAN SANIT WONG	CHW		5000	5
42	LAT PHRAO 1	LP 1		5000	2
43	TROK CHAN	TC		5000	7
44	PATHUMWAN	PTW		5000	1
45	PRAKHANONG	PKN.	T6	5000	6
46	MUBAN SETHAKIT	MSK		0	5
47	LAT KRABANG	LKB		0	6
48	SNAMBIN DONMUANG	SDM		0	4
49	POM PHRAJUL	PPJ		0	5
50	SAMSEN	SS		5000	1
51	NONTHABURI	NN		3000	2
52	PATHUM THANI	PTN		800	2
101	TOLL	TOLL		1000	1
111	SPECIAL SERVICE	SPS		0	1

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 1 , TK SUB = 3000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	0	-	8.23	-	-	17	0.0020	-	-	1	
2/1	SR 1	8514	0.43	4.64	-	-	-	1.0000	4.64	4.64		T7
2/2	SR 2	8514	0.43	4.64	-	-	-	1.0000	4.64	4.64		T7
2/3	SR 3	8514	0.43	4.64	-	-	-	1.0000	4.64	4.64		T7
3/1	SW 1	6518	0.56	10.86	-	-	12	0.1533	1.67	3.64	3/1	T7
3/2	SW 2	6518	0.56	10.86	-	-	12	0.1533	1.67	3.64	3/2	T7
3/3	SW 3	6518	0.56	10.86	-	-	12	0.1533	1.67	3.64	3/3	T7
4/1	PL 1	8975	0.44	5.17	-	-	-	1.0000	5.17	5.17		T7
4/2	PL 2	8975	0.44	5.17	-	-	-	1.0000	5.17	5.17		T7
5	TH 2	12200	0.51	11.66	-	-	13	0.1424	1.66	3.74	5	T7
6/1	PY 1	12689	0.52	3.58	-	-	-	1.0000	3.58	3.58		T7
6/2	PY 2	12689	0.52	1.79	-	-	-	1.0000	1.79	1.79		T7
7/1	KK 1	8975	0.44	3.84	-	-	-	1.0000	3.84	3.84		T7
7/2	KK 2	8975	0.44	3.84	-	-	-	1.0000	3.84	3.84		T7
8/1	CP 1	12200	0.47	2.25	-	-	-	1.0000	2.25	2.25		T7
8/2	CP 2	12200	0.47	2.25	-	-	-	1.0000	2.25	2.25		T7
9	TM	7030	0.36	4.90	-	-	-	1.0000	4.90	4.90		T7
10	SP	6825	0.30	1.19	-	-	-	1.0000	1.19	1.19		T7
11	NWW	32158	0.68	1.06	-	-	-	1.0000	1.06	1.06		T7
12	PD	31489	0.68	0.64	-	-	-	1.0000	0.64	0.64		T7
13	DM	95260	0.90	0.64	-	-	-	1.0000	0.64	0.64		T7
14	BN	27921	0.62	1.99	-	-	-	1.0000	1.99	1.99		T7
15	BK	28255	0.67	1.06	-	-	-	1.0000	1.06	1.06		T7
16	BC	14219	0.53	1.27	-	-	-	1.0000	1.27	1.27		T7
17	DK	14769	0.41	1.70	-	-	-	1.0000	1.70	1.70		T7
18	BS	24353	0.66	2.12	-	-	-	1.0000	2.12	2.12		T7
19	BP	12812	0.52	1.70	-	-	-	1.0000	1.70	1.70		T7
20	KC	34388	0.68	1.38	-	-	-	1.0000	1.38	1.38		T7
21	IM	14342	0.54	1.03	-	-	-	1.0000	1.03	1.03		T7
22	PS	33607	0.41	0.99	-	-	-	1.0000	0.99	0.99		T7
23	SMP	72260	0.71	0.99	-	-	-	1.0000	0.99	0.99		T7
24	RS	110860	0.76	0.17	-	-	-	1.0000	0.17	0.17		T7
25	BCH	89060	0.76	0.14	-	-	-	1.0000	0.14	0.14		T7
28	NK	80660	0.76	0.17	-	-	-	1.0000	0.17	0.17		T7
30	PSR	28701	0.67	0.42	-	-	-	1.0000	0.42	0.42		T7
31	LP 2	29482	0.67	0.52	-	-	-	1.0000	0.52	0.52		T7
33	LS	37510	0.45	0.42	-	-	-	1.0000	0.42	0.42		T7
35	HM	14342	0.41	1.80	-	-	-	1.0000	1.80	1.80		T7
36	RID	71460	0.76	0.14	-	-	-	1.0000	0.14	0.14		T7
37	ASD	11282	0.50	2.58	-	-	-	1.0000	2.58	2.58		T7
41	CHW	24018	0.66	2.91	-	-	-	1.0000	2.91	2.91		T7
42	LP 1	26025	0.67	1.79	-	-	-	1.0000	1.79	1.79		T7
43	TC	5289	0.28	9.60	-	-	14	0.0469	0.45	0.99	43	T7
44	PTW	7951	0.42	1.92	-	-	-	1.0000	1.92	1.92		T7
45	PKN	14280	0.37	1.13	-	-	-	1.0000	1.13	1.13		T7
50	SS	12200	0.51	1.06	-	-	-	1.0000	1.06	1.06		T7
51	NN	30262	0.68	0.64	-	-	-	1.0000	0.64	0.64		T7
52	PTN	110660	0.76	0.17	-	-	-	1.0000	0.17	0.17		T7
101	TOLL	0	-	6.00	-	-	14	0.0010	-	-	101	
111	SPS	0	-	1.50	-	-	5	0.0100	-	-	111	
T7		8668		87.56	1.10		116	0.0010				
TOTAL				180.02			215					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 2/1 SR 1 SUB = 10000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	8514	0.38	2.12	-	-	-	1.0000	2.12	2.12		T1
2/1	SR 1	0	-	47.04	-	-	65	0.0020	-	-	2/1	
2/2	SR 2	0	-	47.04	-	-	65	0.0020	-	-	2/2	
2/3	SR 3	0	-	47.04	-	-	65	0.0020	-	-	2/3	
3/1	SW 1	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/1	T1
3/2	SW 2	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/2	T1
3/3	SW 3	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/3	T1
4/1	PL 1	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/1	T1
4/2	PL 2	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/2	T1
5	TH 2	6415	0.33	32.93	-	-	40	0.0343	1.13	3.89	5	T1
6/1	PY 1	8156	0.42	18.82	-	-	22	0.0816	1.54	4.23	6/1	T1
6/2	PY 2	8156	0.42	9.41	-	-	12	0.0977	0.92	1.99	6/2	T1
7/1	KK 1	5186	0.57	42.34	-	-	44	0.0910	3.85	14.05	7/1	T1
7/2	KK 2	5186	0.57	42.34	-	-	44	0.0910	3.85	14.05	7/2	T1
8/1	CP 1	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/1	T1
8/2	CP 2	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/2	T1
9	TM	7849	0.37	21.17	-	-	26	0.0534	1.13	3.29	9	T1
10	SP	10976	0.34	3.95	-	-	-	1.0000	3.95	3.95		T1
11	NWW	23907	0.63	6.12	-	-	-	1.0000	6.12	6.12		T1
12	PD	13791	0.34	4.23	-	-	-	1.0000	4.23	4.23		T1
13	DM	39628	0.42	3.53	-	-	-	1.0000	3.53	3.53		T1
14	BN	26917	0.64	4.70	-	-	-	1.0000	4.70	4.70		T1
15	BK	13607	0.39	3.29	-	-	-	1.0000	3.29	3.29		T1
16	BC	8105	0.37	4.52	-	-	-	1.0000	4.52	4.52		T1
17	DK	8514	0.37	5.27	-	-	-	1.0000	5.27	5.27		T1
18	BS	10670	0.49	14.11	-	-	16	0.1178	1.66	4.65	18	T1
19	BP	7593	0.43	11.29	-	-	14	0.0942	1.06	2.45	19	T1
20	KC	30931	0.65	6.40	-	-	-	1.0000	6.40	6.40		T1
21	IM	10976	0.50	4.80	-	-	-	1.0000	4.80	4.80		T1
22	PS	32604	0.66	2.35	-	-	-	1.0000	2.35	2.35		T1
23	SMP	41078	0.42	2.35	-	-	-	1.0000	2.35	2.35		T1
24	RS	98660	0.73	0.94	-	-	-	1.0000	0.94	0.94		T1
25	BCH	76860	0.73	0.64	-	-	-	1.0000	0.64	0.64		T1
28	NK	37064	0.38	0.60	-	-	-	1.0000	0.60	0.60		T1
30	PSR	12261	0.34	1.51	-	-	-	1.0000	1.51	1.51		T1
31	LP 2	14648	0.40	2.40	-	-	-	1.0000	2.40	2.40		T1
33	LS	30768	0.66	1.32	-	-	-	1.0000	1.32	1.32		T1
35	HM	12444	0.52	18.82	-	-	21	0.1038	1.95	5.30	35	T1
36	RID	34834	0.42	0.64	-	-	-	1.0000	0.64	0.64		T1
37	ASD	7900	0.40	18.82	-	-	23	0.0626	1.18	3.28	37	T1
41	CHW	8770	0.39	8.23	-	-	11	0.0900	0.74	1.54	41	T1
42	LP 1	12383	0.52	9.41	-	-	11	0.1386	1.30	2.75	42	T1
43	TC	7593	0.36	3.53	-	-	-	1.0000	3.53	3.53		T1
44	PTW	5750	0.36	21.17	-	-	26	0.0534	1.13	3.29	44	T1
45	PKN	13730	0.39	11.76	-	-	15	0.0789	0.93	2.18	45	T1
50	SS	7081	0.41	7.06	-	-	-	1.0000	7.06	7.06		T1
51	NN	13913	0.40	3.67	-	-	-	1.0000	3.67	3.67		T1
52	PTN	95860	0.73	0.98	-	-	-	1.0000	0.98	0.98		T1
101	TOLL	0	-	40.00	-	-	59	0.0010	-	-	101	
111	SPS	0	-	5.00	-	-	10	0.0100	-	-	111	
T1		6856		112.29	1.68		152	0.0010				
	TOTAL			800.02			1635					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 2/2 SR 2 SUB = 10000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	FIJ	OFL	VAR	ROUTING	
1	TK	8514	0.38	2.12	-	-	-	1.0000	2.12	2.12		T1
2/1	SR 1	0	-	47.04	-	-	65	0.0020	-	-	2/1	
2/2	SR 2	0	-	47.04	-	-	65	0.0020	-	-	2/2	
2/3	SR 3	0	-	47.04	-	-	65	0.0020	-	-	2/3	
3/1	SW 1	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/1	T1
3/2	SW 2	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/2	T1
3/3	SW 3	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/3	T1
4/1	PL 1	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/1	T1
4/2	PL 2	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/2	T1
5	TH 2	6415	0.33	32.93	-	-	40	0.0343	1.13	3.89	5	T1
6/1	PY 1	8156	0.42	18.82	-	-	22	0.0816	1.54	4.23	6/1	T1
6/2	PY 2	8156	0.42	9.41	-	-	12	0.0977	0.92	1.99	6/2	T1
7/1	KK 1	5186	0.57	42.34	-	-	44	0.0910	3.85	14.5	7/1	T1
7/2	KK 2	5186	0.57	42.34	-	-	44	0.0910	3.85	14.5	7/2	T1
8/1	CP 1	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/1	T1
8/2	CP 2	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/2	T1
9	TM	7849	0.37	21.17	-	-	26	0.0534	1.13	3.29	9	T1
10	SP	10976	0.34	3.95	-	-	-	1.0000	3.95	-3.95		T1
11	NWW	23907	0.63	6.12	-	-	-	1.0000	6.12	6.12		T1
12	PD	13791	0.34	4.23	-	-	-	1.0000	4.23	4.23		T1
13	DM	39628	0.42	3.53	-	-	-	1.0000	3.53	3.53		T1
14	BN	26917	0.64	4.70	-	-	-	1.0000	4.70	4.70		T1
15	BK	13607	0.39	3.29	-	-	-	1.0000	3.29	3.29		T1
16	BC	8105	0.37	4.52	-	-	-	1.0000	4.52	4.52		T1
17	DK	8514	0.37	5.27	-	-	-	1.0000	5.27	5.27		T1
18	BS	10670	0.49	14.11	-	-	16	0.1178	1.66	4.05	18	T1
19	BP	7593	0.43	11.29	-	-	14	0.0942	1.06	2.45	19	T1
20	KC	30931	0.65	6.40	-	-	-	1.0000	6.40	6.40		T1
21	IM	10976	0.50	4.80	-	-	-	1.0000	4.80	4.80		T1
22	PS	32604	0.66	2.35	-	-	-	1.0000	2.35	2.35		T1
23	SMP	41078	0.42	2.35	-	-	-	1.0000	2.35	2.35		T1
24	RS	98660	0.73	0.94	-	-	-	1.0000	0.94	0.94		T1
25	BCH	76860	0.73	0.64	-	-	-	1.0000	0.64	0.64		T1
28	NK	37064	0.38	0.60	-	-	-	1.0000	0.60	0.60		T1
30	PSR	12261	0.34	1.51	-	-	-	1.0000	1.51	1.51		T1
31	LP 2	14648	0.40	2.40	-	-	-	1.0000	2.40	2.40		T1
33	LS	30708	0.66	1.32	-	-	-	1.0000	1.32	1.32		T1
35	HM	12444	0.52	18.82	-	-	21	0.1038	1.95	5.30	35	T1
36	RID	34834	0.42	0.64	-	-	-	1.0000	0.64	0.64		T1
37	ASD	7900	0.40	18.82	-	-	23	0.0626	1.18	3.28	37	T1
41	CHW	8770	0.39	8.23	-	-	11	0.0900	0.74	1.54	41	T1
42	LP 1	12383	0.52	9.41	-	-	11	0.1380	1.30	2.75	42	T1
43	TC	7593	0.36	3.53	-	-	-	1.0000	3.53	3.53		T1
44	PTW	5750	0.36	21.17	-	-	26	0.0534	1.13	3.29	44	T1
45	PKN	13730	0.39	11.76	-	-	15	0.0789	0.93	2.18	45	T1
50	SS	7081	0.41	7.06	-	-	-	1.0000	7.06	7.06		T1
51	NN	13913	0.40	3.67	-	-	-	1.0000	3.67	3.67		T1
52	PTN	95860	0.73	0.98	-	-	-	1.0000	0.98	0.98		T1
'0'	TCLL	0	-	40.00	-	-	59	0.0010	-	-	'0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'	
T1		6856		112.27	1.68		152	0.0010				
	TOTAL			800.02			1035					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 2/3 SR 3 SUB = 10000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	8514	0.38	2.12	-	-	-	1.0000	2.12	2.12		T1
2/1	SR 1	0	-	47.04	-	-	65	0.0020	-	-	2/1	
2/2	SR 2	0	-	47.04	-	-	65	0.0020	-	-	2/2	
2/3	SR 3	0	-	47.04	-	-	65	0.0020	-	-	2/3	
3/1	SW 1	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/1	T1
3/2	SW 2	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/2	T1
3/3	SW 3	6057	0.34	44.69	-	-	52	0.0357	1.60	6.25	3/3	T1
4/1	PL 1	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/1	T1
4/2	PL 2	7286	0.42	37.63	-	-	43	0.0506	1.91	6.94	4/2	T1
5	TH 2	6415	0.33	32.93	-	-	40	0.0343	1.13	3.89	5	T1
6/1	PY 1	8156	0.42	18.82	-	-	22	0.0816	1.54	4.23	6/1	T1
6/2	PY 2	8156	0.42	9.41	-	-	12	0.0977	0.92	1.99	6/2	T1
7/1	KK 1	5186	0.57	42.34	-	-	44	0.0910	3.85	14.05	7/1	T1
7/2	KK 2	5186	0.57	42.34	-	-	44	0.0910	3.85	14.05	7/2	T1
8/1	CP 1	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/1	T1
8/2	CP 2	11649	0.51	23.52	-	-	26	0.0932	2.19	6.48	8/2	T1
9	TM	7849	0.37	21.17	-	-	26	0.0534	1.13	3.29	9	T1
10	SP	10976	0.34	3.95	-	-	-	1.0000	3.95	3.95		T1
11	NWW	23907	0.63	6.12	-	-	-	1.0000	6.12	6.12		T1
12	PD	13791	0.34	4.23	-	-	-	1.0000	4.23	4.23		T1
13	DM	39628	0.42	3.53	-	-	-	1.0000	3.53	3.53		T1
14	BN	26917	0.64	4.70	-	-	-	1.0000	4.70	4.70		T1
15	BK	13607	0.39	3.29	-	-	-	1.0000	3.29	3.29		T1
16	BC	8105	0.37	4.52	-	-	-	1.0000	4.52	4.52		T1
17	DK	8514	0.37	5.27	-	-	-	1.0000	5.27	5.27		T1
18	BS	10670	0.49	14.11	-	-	16	0.1178	1.66	4.05	18	T1
19	BP	7593	0.43	11.29	-	-	14	0.0942	1.06	2.45	19	T1
20	KC	30931	0.65	6.40	-	-	-	1.0000	6.40	6.40		T1
21	IM	10976	0.50	4.80	-	-	-	1.0000	4.80	4.80		T1
22	PS	32604	0.66	2.35	-	-	-	1.0000	2.35	2.35		T1
23	SNP	41078	0.42	2.35	-	-	-	1.0000	2.35	2.35		T1
24	RS	98660	0.73	0.94	-	-	-	1.0000	0.94	0.94		T1
25	BCH	76860	0.73	0.64	-	-	-	1.0000	0.64	0.64		T1
28	NK	37064	0.38	0.60	-	-	-	1.0000	0.60	0.60		T1
30	PSR	12261	0.34	1.51	-	-	-	1.0000	1.51	1.51		T1
31	LP 2	14648	0.40	2.40	-	-	-	1.0000	2.40	2.40		T1
33	LS	30708	0.66	1.32	-	-	-	1.0000	1.32	1.32		T1
35	HM	12464	0.52	18.82	-	-	21	0.1038	1.95	5.30	35	T1
36	RID	34834	0.42	0.64	-	-	-	1.0000	0.64	0.64		T1
37	ASD	7900	0.40	18.82	-	-	23	0.0626	1.18	3.28	37	T1
41	CHW	8770	0.39	8.23	-	-	11	0.0900	0.74	1.54	41	T1
42	LP 1	12383	0.52	9.41	-	-	11	0.1380	1.30	2.75	42	T1
43	TC	7593	0.36	3.53	-	-	-	1.0000	3.53	3.53		T1
44	PTW	5750	0.36	21.17	-	-	26	0.0534	1.13	3.29	44	T1
45	PKN	13730	0.39	11.76	-	-	15	0.0789	0.93	2.18	45	T1
50	SS	7081	0.41	7.06	-	-	-	1.0000	7.06	7.06		T1
51	NN	13913	0.40	3.67	-	-	-	1.0000	3.67	3.67		T1
52	PTN	95860	0.73	0.98	-	-	-	1.0000	0.98	0.98		T1
101	TCLL	0	-	40.00	-	-	59	0.0010	-	-	101	
111	SPS	0	-	5.00	-	-	10	0.0100	-	-	111	
T1		6856		112.27	1.68		152	0.0010				
	TOTAL			800.02			1035					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 3/1 SW 1 SUB = 10000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	6518	0.40	7.10	-	-	10	0.0828	0.59	1.17	1	T7
2/1	SR 1	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/1	T7
2/2	SR 2	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/2	T7
2/3	SR 3	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/3	T7
3/1	SW 1	0	-	53.81	-	-	73	0.0020	-	-	3/1	
3/2	SW 2	0	-	53.81	-	-	73	0.0020	-	-	3/2	
3/3	SW 3	0	-	53.81	-	-	73	0.0020	-	-	3/3	
4/1	PL 1	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14	4/1	T7
4/2	PL 2	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14	4/2	T7
5	TH 2	8412	0.42	43.05	-	-	49	0.0458	1.97	7.60	5	T7
6/1	PY 1	8822	0.43	19.37	-	-	23	0.0727	1.41	3.94	6/1	T7
6/2	PY 2	8822	0.43	9.69	-	-	12	0.1080	1.05	2.28	6/2	T7
7/1	KK 1	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78	7/1	T7
7/2	KK 2	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78	7/2	T7
8/1	CP 1	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09	8/1	T7
8/2	CP 2	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09	8/2	T7
9	TM	5852	0.38	35.52	-	-	41	0.0494	1.75	6.24	9	T7
10	SP	7849	0.41	4.52	-	-	-	1.0000	4.52	4.52		T7
11	NWW	26866	0.62	6.19	-	-	-	1.0000	6.19	6.19		T7
12	PD	26137	0.62	3.71	-	-	-	1.0000	3.71	3.71		T7
13	DM	41078	0.40	4.36	-	-	-	1.0000	4.36	4.36		T7
14	BN	25245	0.61	12.38	-	-	13	0.1689	2.09	4.69	14	T7
15	BK	14403	0.38	6.73	-	-	-	1.0000	6.73	6.73		T7
16	BC	11282	0.50	7.75	-	-	-	1.0000	7.75	7.75		T7
17	DK	11771	0.37	10.33	-	-	14	0.0657	0.68	1.53	17	T7
18	BS	12261	0.37	14.53	-	-	18	0.0748	1.09	2.75	18	T7
19	BP	8924	0.43	17.22	-	-	21	0.0693	1.19	3.21	19	T7
20	KC	29259	0.63	8.61	-	-	-	1.0000	8.61	8.61		T7
21	IM	11404	0.50	6.46	-	-	-	1.0000	6.46	6.46		T7
22	PS	30931	0.40	6.19	-	-	-	1.0000	6.19	6.19		T7
23	SMP	39405	0.40	6.19	-	-	-	1.0000	6.19	6.19		T7
24	RS	101260	0.71	1.16	-	-	-	1.0000	1.16	1.16		T7
25	BCH	79460	0.70	0.86	-	-	-	1.0000	0.86	0.86		T7
28	NK	41412	0.40	1.03	-	-	-	1.0000	1.03	1.03		T7
30	PSR	14648	0.38	2.58	-	-	-	1.0000	2.58	2.58		T7
31	LP 2	24130	0.61	3.23	-	-	-	1.0000	3.23	3.23		T7
33	LS	32158	0.40	2.69	-	-	-	1.0000	2.69	2.69		T7
35	HM	11526	0.37	25.40	-	-	31	0.0454	1.15	3.60	35	T7
36	RID	36283	0.40	0.86	-	-	-	1.0000	0.86	0.86		T7
37	ASD	7644	0.41	26.64	-	-	31	0.0615	1.64	5.19	37	T7
41	CHW	12077	0.37	10.76	-	-	14	0.0780	0.84	1.91	41	T7
42	LP 1	13179	0.37	9.69	-	-	13	0.0745	0.72	1.59	42	T7
43	TC	5596	0.37	11.84	-	-	15	0.0812	0.96	2.26	43	T7
44	PTW	5494	0.37	23.14	-	-	28	0.0538	1.25	3.75	44	T7
45	PKN	12812	0.37	15.87	-	-	20	0.0618	0.98	2.57	45	T7
50	SS	8412	0.42	7.26	-	-	10	0.0894	0.65	1.30	50	T7
51	NN	24910	0.61	3.71	-	-	-	1.0000	3.71	3.71		T7
52	PTN	101060	0.71	0.99	-	-	-	1.0000	0.99	0.99		T7
'0'	TOLL	0	-	40.00	-	-	59	0.0010	-	-	'0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'	
T7		5730		117.50	1.79		159	0.0010				

TOTAL 999.99 1278

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 3/2 SW 2 SUB = 10000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	CFL	VAR	ROUTING
1	TK	6518	0.40	7.10	-	-	10	0.0828	0.59	1.17	1 T7
2/1	SR 1	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/1 T7
2/2	SR 2	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/2 T7
2/3	SR 3	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37	2/3 T7
3/1	SW 1	0	-	53.81	-	-	73	0.0020	-	-	3/1
3/2	SW 2	0	-	53.81	-	-	73	0.0020	-	-	3/2
3/3	SW 3	0	-	53.81	-	-	73	0.0020	-	-	3/3
4/1	PL 1	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14	4/1 T7
4/2	PL 2	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14	4/2 T7
5	TH 2	8412	0.42	43.05	-	-	49	0.0458	1.97	7.60	5 T7
6/1	PY 1	8822	0.43	19.37	-	-	23	0.0727	1.41	3.94	6/1 T7
6/2	PY 2	8822	0.43	9.69	-	-	12	0.1080	1.05	2.28	6/2 T7
7/1	KK 1	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78	7/1 T7
7/2	KK 2	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78	7/2 T7
8/1	CP 1	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09	8/1 T7
8/2	CP 2	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09	8/2 T7
9	TN	5852	0.38	35.52	-	-	41	0.0494	1.75	6.24	9 T7
10	SP	7849	0.41	4.52	-	-	-	1.0000	4.52	4.52	T7
11	NWW	26806	0.62	6.19	-	-	-	1.0000	6.19	6.19	T7
12	PD	26137	0.62	3.71	-	-	-	1.0000	3.71	3.71	T7
13	DM	41078	0.40	4.36	-	-	-	1.0000	4.36	4.36	T7
14	BN	25245	0.61	12.38	-	-	13	0.1689	2.09	4.69	14 T7
15	BK	14403	0.38	6.73	-	-	-	1.0000	6.73	6.73	T7
16	BC	11282	0.56	7.75	-	-	-	1.0000	7.75	7.75	T7
17	DK	11771	0.37	10.33	-	-	14	0.0657	0.68	1.53	17 T7
18	BS	12261	0.37	14.53	-	-	18	0.0748	1.09	2.75	18 T7
19	BP	8924	0.43	17.22	-	-	21	0.0693	1.19	3.21	19 T7
20	KC	29259	0.63	8.61	-	-	-	1.0000	8.61	8.61	T7
21	IB	11404	0.50	6.46	-	-	-	1.0000	6.46	6.46	T7
22	PS	30931	0.40	6.19	-	-	-	1.0000	6.19	6.19	T7
23	SMP	39405	0.40	6.19	-	-	-	1.0000	6.19	6.19	T7
24	RS	101260	0.71	1.16	-	-	-	1.0000	1.16	1.16	T7
25	BCH	79460	0.70	0.86	-	-	-	1.0000	0.86	0.86	T7
28	NK	41412	0.40	1.03	-	-	-	1.0000	1.03	1.03	T7
30	PSR	14648	0.38	2.58	-	-	-	1.0000	2.58	2.58	T7
31	LP 2	24130	0.61	3.23	-	-	-	1.0000	3.23	3.23	T7
33	LS	32158	0.40	2.69	-	-	-	1.0000	2.69	2.69	T7
35	HN	11526	0.37	25.40	-	-	31	0.0454	1.15	3.60	35 T7
36	RID	36283	0.40	0.86	-	-	-	1.0000	0.86	0.86	T7
37	ASD	7644	0.41	26.64	-	-	31	0.0615	1.64	5.19	37 T7
41	CHW	12077	0.37	10.76	-	-	14	0.0780	0.84	1.91	41 T7
42	LP 1	13179	0.37	9.69	-	-	13	0.0745	0.72	1.59	42 T7
43	TC	5596	0.37	11.84	-	-	15	0.0812	0.96	2.26	43 T7
44	PTW	5494	0.37	23.14	-	-	28	0.0538	1.25	3.75	44 T7
45	PKN	12812	0.37	15.87	-	-	20	0.0618	0.98	2.57	45 T7
50	SS	8412	0.42	7.26	-	-	10	0.0894	0.65	1.30	50 T7
51	NN	24910	0.61	3.71	-	-	-	1.0000	3.71	3.71	T7
52	PTN	101060	0.71	0.99	-	-	-	1.0000	0.99	0.99	T7
'0'	TOLL	0	-	40.00	-	-	59	0.0010	-	-	'0'
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'
T7		5730		117.59	1.79		159	0.0010			

TOTAL 999.99 1278

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 3/3 SW 3 SUB = 10000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	6518	0.40	7.10	-	-	10	0.0828	0.59	1.17 1	T7
2/1	SR 1	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37 2/1	T7
2/2	SR 2	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37 2/2	T7
2/3	SR 3	6057	0.39	51.12	-	-	58	0.0395	2.02	8.37 2/3	T7
3/1	SW 1	0	-	53.81	-	-	73	0.0020	-	- 3/1	
3/2	SW 2	0	-	53.81	-	-	73	0.0020	-	- 3/2	
3/3	SW 3	0	-	53.81	-	-	73	0.0020	-	- 3/3	
4/1	PL 1	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14 4/1	T7
4/2	PL 2	6518	0.40	53.27	-	-	60	0.0407	2.17	9.14 4/2	T7
5	TH 2	8412	0.42	43.05	-	-	49	0.0458	1.97	7.80 5	T7
6/1	PY 1	8822	0.43	19.37	-	-	23	0.0727	1.41	3.94 6/1	T7
6/2	PY 2	8822	0.43	9.69	-	-	12	0.1080	1.05	2.28 6/2	T7
7/1	KK 1	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78 7/1	T7
7/2	KK 2	6518	0.40	46.28	-	-	52	0.0479	2.22	8.78 7/2	T7
8/1	CP 1	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09 8/1	T7
8/2	CP 2	10731	0.49	31.75	-	-	35	0.0761	2.42	8.09 8/2	T7
9	TM	5852	0.38	35.52	-	-	41	0.0494	1.75	6.24 9	T7
10	SP	7849	0.41	4.52	-	-	-	1.0000	4.52	4.52	T7
11	NWW	26806	0.62	6.19	-	-	-	1.0000	6.19	6.19	T7
12	PD	26137	0.62	3.71	-	-	-	1.0000	3.71	3.71	T7
13	DM	41078	0.40	4.36	-	-	-	1.0000	4.36	4.36	T7
14	BN	25245	0.61	12.38	-	-	13	0.1689	2.09	4.69 14	T7
15	BK	14403	0.38	6.73	-	-	-	1.0000	6.73	6.73	T7
16	BC	11282	0.50	7.75	-	-	-	1.0000	7.75	7.75	T7
17	DK	11771	0.37	10.33	-	-	14	0.0657	0.68	1.53 17	T7
18	RS	12261	0.37	14.53	-	-	18	0.0748	1.09	2.75 18	T7
19	BP	8924	0.43	17.22	-	-	21	0.0693	1.19	3.21 19	T7
20	KC	29259	0.63	8.61	-	-	-	1.0000	8.61	8.61	T7
21	IM	11404	0.50	6.46	-	-	-	1.0000	6.46	6.46	T7
22	PS	30931	0.40	6.19	-	-	-	1.0000	6.19	6.19	T7
23	SMP	39465	0.40	6.19	=	=	=	1.0000	6.19	6.19	T7
24	RS	101260	0.71	1.16	-	-	-	1.0000	1.16	1.16	T7
25	BCH	79460	0.70	0.86	-	-	-	1.0000	0.86	0.86	T7
28	NK	41412	0.40	1.03	-	-	-	1.0000	1.03	1.03	T7
30	PSR	14648	0.38	2.58	-	-	-	1.0000	2.58	2.58	T7
31	LP 2	24130	0.61	3.23	-	-	-	1.0000	3.23	3.23	T7
33	LS	32158	0.40	2.69	-	-	-	1.0000	2.69	2.69	T7
35	HM	11526	0.37	25.40	-	-	31	0.0454	1.15	3.60 35	T7
36	RID	36283	0.40	0.86	-	-	-	1.0000	0.86	0.86	T7
37	ASD	7644	0.41	26.64	-	-	31	0.0615	1.64	5.19 37	T7
41	CHW	12077	0.37	10.76	-	-	14	0.0780	0.84	1.91 41	T7
42	LP 1	13179	0.37	9.69	-	-	13	0.0745	0.72	1.59 42	T7
43	TC	5596	0.37	11.84	-	-	15	0.0812	0.96	2.26 43	T7
44	PTW	5494	0.37	23.14	-	-	28	0.0538	1.25	3.75 44	T7
45	PKN	12812	0.37	15.87	-	-	20	0.0618	0.98	2.57 45	T7
50	SS	8412	0.42	7.26	-	-	10	0.0894	0.65	1.30 50	T7
51	NN	24910	0.61	3.71	-	-	-	1.0000	3.71	3.71	T7
52	PTN	101060	0.71	0.99	-	-	-	1.0000	0.99	0.99	T7
101	TCLL	0	-	40.00	-	-	59	0.0010	-	- 101	
111	SPS	0	-	5.00	-	-	10	0.0100	-	- 111	
T7		5730		117.50	1.79		159	0.0010			

TOTAL 999.99 1278

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 4/1 PL 1 SUB = 10000 SYSTEM C 400 TANDEM AREA = 3

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	8975	0.43	2.93	-	-	-	1.0000	2.93	2.93	T3
2/1	SR 1	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/1 T3
2/2	SR 2	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/2 T3
2/3	SR 3	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/3 T3
3/1	SW 1	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/1 T3
3/2	SW 2	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/2 T3
3/3	SW 3	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/3 T3
4/1	PL 1	0	-	33.61	-	-	49	0.0020	-	-	4/1
4/2	PL 2	0	-	33.61	-	-	49	0.0020	-	-	4/2
5	TH 2	10302	0.48	31.81	-	-	35	0.0769	2.45	8.19	5 T3
6/1	PY 1	7132	0.40	17.35	-	-	21	0.0720	1.25	3.36	6/1 T3
6/2	PY 2	7132	0.40	8.67	-	-	11	0.1073	0.93	1.96	6/2 T3
7/1	KK 1	6210	0.39	30.36	-	-	36	0.0467	1.42	4.75	7/1 T3
7/2	KK 2	6210	0.39	30.36	-	-	36	0.0467	1.42	4.75	7/2 T3
8/1	CP 1	7183	0.40	26.39	-	-	31	0.0581	1.53	4.85	8/1 T3
8/2	CP 2	7183	0.40	26.39	-	-	31	0.0581	1.53	4.85	8/2 T3
9	TM	6569	0.40	17.35	-	-	21	0.0720	1.25	3.36	9 T3
10	SP	8924	0.43	3.58	-	-	-	1.0000	3.58	3.58	T3
11	NWW	24018	0.61	6.51	-	-	-	1.0000	6.51	6.51	T3
12	PC	28032	0.62	3.69	-	-	-	1.0000	3.69	3.69	T3
13	DM	37398	0.40	5.75	-	-	-	1.0000	5.75	5.75	T3
14	BN	12750	0.37	12.65	-	-	16	0.0767	0.97	2.34	14 T3
15	BK	12383	0.37	6.14	-	-	-	1.0000	6.14	6.14	T3
16	BC	12322	0.37	6.72	-	-	-	1.0000	6.72	6.72	T3
17	DK	12812	0.37	5.78	-	-	-	1.0000	5.78	5.78	T3
18	BS	10731	0.49	13.01	-	-	15	0.1162	1.51	3.60	18 T3
19	BP	8617	0.42	8.67	-	-	11	0.1073	0.93	1.96	19 T3
20	KC	23907	0.60	5.78	-	-	-	1.0000	5.78	5.78	T3
21	IM	7900	0.41	4.55	-	-	-	1.0000	4.55	4.55	T3
22	PS	25579	0.61	6.33	-	-	-	1.0000	6.33	6.33	T3
23	SMP	34053	0.40	6.33	-	-	-	1.0000	6.33	6.33	T3
24	RS	94660	0.71	1.53	-	-	-	1.0000	1.53	1.53	T3
25	BCH	72060	0.69	0.58	-	-	-	1.0000	0.58	0.58	T3
28	NK	74460	0.70	0.90	-	-	-	1.0000	0.90	0.90	T3
30	PSR	25245	0.61	2.24	-	-	-	1.0000	2.24	2.24	T3
31	LP 2	12322	0.37	2.17	-	-	-	1.0000	2.17	2.17	T3
33	LS	28478	0.62	2.46	-	-	-	1.0000	2.46	2.46	T3
35	HM	7849	0.41	21.11	-	-	25	0.0682	1.44	4.17	35 T3
36	RID	32158	0.40	0.58	-	-	-	1.0000	0.58	0.58	T3
37	ASD	5340	0.36	11.76	-	-	15	0.0789	0.93	2.18	37 T3
41	CHW	12750	0.37	7.95	-	-	11	0.0794	0.63	1.31	41 T3
42	LP 1	10608	0.49	8.67	-	-	10	0.1525	1.32	2.71	42 T3
43	TC	8054	0.41	4.88	-	-	-	1.0000	4.88	4.88	T3
44	PTW	5596	0.37	15.18	-	-	19	0.0675	1.03	2.64	44 T3
45	PKN	8924	0.43	13.19	-	-	16	0.0913	1.20	2.92	45 T3
50	SS	8105	0.42	6.51	-	-	-	1.0000	6.51	6.51	T3
51	NN	14586	0.38	3.90	-	-	-	1.0000	3.90	3.90	T3
52	PTN	96060	0.71	1.04	-	-	-	1.0000	1.04	1.04	T3
'0'	TOLL	6	-	40.00	-	-	59	0.0010	-	-	'0'
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'
T3		5730		125.21	1.62		166	0.0010			

TOTAL 800.00 1026

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 4/2 PL 2 SUB = 10000 SYSTEM C 400 TANDEM AREA = 3

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	8975	0.43	2.93	-	-	-	1.0000	2.93	2.93	T3
2/1	SR 1	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/1 T3
2/2	SR 2	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/2 T3
2/3	SR 3	7286	0.40	29.28	-	-	34	0.0570	1.67	5.50	2/3 T3
3/1	SK 1	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/1 T3
3/2	SK 2	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/2 T3
3/3	SK 3	6518	0.40	69.40	-	-	77	0.0364	2.53	11.90	3/3 T3
4/1	PL 1	0	-	33.61	-	-	49	0.0020	-	-	4/1
4/2	PL 2	0	-	33.61	-	-	49	0.0020	-	-	4/2
5	TH	10302	0.48	31.81	-	-	35	0.0769	2.45	8.19	5 T3
6/1	PY 1	7132	0.40	17.35	-	-	21	0.0720	1.25	3.36	6/1 T3
6/2	PY 2	7132	0.40	8.67	-	-	11	0.1073	0.93	1.96	6/2 T3
7/1	KK 1	6210	0.39	30.36	-	-	36	0.0467	1.42	4.75	7/1 T3
7/2	KK 2	6210	0.39	30.36	-	-	36	0.0467	1.42	4.75	7/2 T3
8/1	CP 1	7183	0.40	26.39	-	-	31	0.0581	1.53	4.85	8/1 T3
8/2	CP 2	7183	0.40	26.39	-	-	31	0.0581	1.53	4.85	8/2 T3
9	TM	6569	0.40	17.35	-	-	21	0.0720	1.25	3.36	9 T3
10	SP	8924	0.43	3.58	-	-	-	1.0000	3.58	3.58	T3
11	NWW	24018	0.61	6.51	-	-	-	1.0000	6.51	6.51	T3
12	PD	28032	0.62	3.69	-	-	-	1.0000	3.69	3.69	T3
13	DM	37398	0.40	5.75	-	-	-	1.0000	5.75	5.75	T3
14	BN	12750	0.37	12.65	-	-	16	0.0767	0.97	2.34	14 T3
15	BK	12383	0.37	6.14	-	-	-	1.0000	6.14	6.14	T3
16	BC	12322	0.37	6.72	-	-	-	1.0000	6.72	6.72	T3
17	DK	12812	0.37	5.78	-	-	-	1.0000	5.78	5.78	T3
18	BS	10731	0.49	13.01	-	-	15	0.1162	1.51	3.00	18 T3
19	BP	8617	0.42	8.67	-	-	11	0.1073	0.93	1.96	19 T3
20	KC	23907	0.60	5.78	-	-	-	1.0000	5.78	5.78	T3
21	IM	7900	0.41	4.55	-	-	-	1.0000	4.55	4.55	T3
22	PS	25579	0.61	6.33	-	-	-	1.0000	6.33	6.33	T3
23	SMP	34053	0.40	6.33	-	-	-	1.0000	6.33	6.33	T3
24	RS	94660	0.71	1.53	-	-	-	1.0000	1.53	1.53	T3
25	BCH	72060	0.69	0.58	-	-	-	1.0000	0.58	0.58	T3
28	NK	74460	0.70	0.90	-	-	-	1.0000	0.90	0.90	T3
30	PSR	25245	0.61	2.24	-	-	-	1.0000	2.24	2.24	T3
31	LP 2	12322	0.37	2.17	-	-	-	1.0000	2.17	2.17	T3
33	LS	28478	0.62	2.46	-	-	-	1.0000	2.46	2.46	T3
35	HM	7849	0.41	21.11	-	-	25	0.0682	1.44	4.17	35 T3
36	RID	32158	0.40	0.58	-	-	-	1.0000	0.58	0.58	T3
37	ASD	5340	0.36	11.76	-	-	15	0.0789	0.93	2.18	37 T3
41	CHW	12750	0.37	7.95	-	-	11	0.0794	0.63	1.31	41 T3
42	LP 1	10608	0.49	8.67	-	-	10	0.1525	1.32	2.71	42 T3
43	TC	8054	0.41	4.88	-	-	-	1.0000	4.88	4.88	T3
44	PTW	5596	0.37	15.18	-	-	19	0.0675	1.03	2.64	44 T3
45	PKN	8924	0.43	13.19	-	-	16	0.0913	1.20	2.92	45 T3
50	SS	8105	0.42	6.51	-	-	-	1.0000	6.51	6.51	T3
51	NN	14586	0.38	3.90	-	-	-	1.0000	3.90	3.90	T3
52	PTN	96060	0.71	1.04	-	-	-	1.0000	1.04	1.04	T3
101	TOLL	0	-	40.00	-	-	59	0.0010	-	-	101
111	SPS	0	-	5.00	-	-	10	0.0100	-	-	111
T3		5730		125.21	1.62		166	0.0010			
	TOTAL			800.00			1026				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 5 TH 2 SUB = 20000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	12200	0.37	6.84	-	-	10	0.0724	0.50	0.98	1 T5
2/1	SR 1	6415	0.40	64.41	-	-	72	0.0362	2.33	10.65	2/1 T5
2/2	SR 2	6415	0.40	64.41	-	-	72	0.0362	2.33	10.65	2/2 T5
2/3	SR 3	6415	0.40	64.41	-	-	72	0.0362	2.33	10.65	2/3 T5
3/1	SW 1	8412	0.42	55.49	-	-	62	0.0423	2.35	10.05	3/1 T5
3/2	SW 2	8412	0.42	55.49	-	-	62	0.0423	2.35	10.05	3/2 T5
3/3	SW 3	8412	0.42	55.49	-	-	62	0.0423	2.35	10.05	3/3 T5
4/1	PL 1	10302	0.48	23.78	-	-	27	0.0795	1.89	5.67	4/1 T5
4/2	PL 2	10302	0.48	23.78	-	-	27	0.0795	1.89	5.67	4/2 T5
5	TH 2	0	-	126.84	-	-	154	0.0020	-	-	5
6/1	PY 1	11282	0.50	23.78	-	-	26	0.0980	2.33	6.88	6/1 T5
6/2	PY 2	11282	0.50	11.89	-	-	14	0.1136	1.35	3.13	6/2 T5
7/1	KK 1	7132	0.40	52.52	-	-	59	0.0424	2.23	9.32	7/1 T5
7/2	KK 2	7132	0.40	52.52	-	-	59	0.0424	2.23	9.32	7/2 T5
8/1	CP 1	14036	0.38	20.81	-	-	25	0.0631	1.31	3.79	8/1 T5
8/2	CP 2	14036	0.38	20.81	-	-	25	0.0631	1.31	3.79	8/2 T5
9	TM	11404	0.50	12.86	-	-	16	0.1121	1.44	3.43	9 T5
10	SP	13791	0.38	3.86	-	-	1	0.0000	3.86	3.86	T5
11	NNW	28144	0.62	4.95	-	-	-	1.0000	4.95	4.95	T5
12	PD	10976	0.49	8.32	-	-	10	0.1363	1.13	2.32	12 T5
13	DM	75460	0.70	6.24	-	-	-	1.0000	6.24	6.24	T5
14	BN	31266	0.40	8.92	-	-	12	0.0803	0.72	1.54	14 T5
15	BK	25691	0.61	4.95	-	-	-	1.0000	4.95	4.95	T5
16	BC	5750	0.38	25.57	-	-	31	0.0475	1.21	3.80	16 T5
17	DK	6159	0.39	34.09	-	-	40	0.0449	1.53	5.37	17 T5
18	BS	12995	0.37	12.88	-	-	17	0.0590	0.76	1.85	18 T5
19	BP	8822	0.43	34.09	-	-	39	0.0552	1.88	6.57	19 T5
20	KC	35283	0.40	10.31	-	-	13	0.0946	0.98	2.18	20 T5
21	IN	13371	0.37	8.32	-	-	11	0.0934	0.78	1.62	21 T5
22	PS	36952	0.40	4.46	-	-	-	1.0000	4.46	4.46	T5
23	SMP	78260	0.70	4.46	-	-	-	1.0000	4.46	4.46	T5
24	RS	106260	0.71	1.66	-	-	-	1.0000	1.66	1.66	T5
25	BCH	84460	0.70	1.03	-	-	-	1.0000	1.03	1.03	T5
28	NK	31935	0.40	3.41	-	-	-	1.0000	3.41	3.41	T5
30	PSR	8566	0.42	8.52	-	-	11	0.1013	0.86	1.81	30 T5
31	LP 2	27586	0.62	3.86	-	-	-	1.0000	3.86	3.86	T5
33	LS	34965	0.40	1.98	-	-	-	1.0000	1.98	1.98	T5
35	HN	14831	0.38	16.65	-	-	21	0.0583	0.97	2.59	35 T5
36	RID	39771	0.40	1.03	-	-	-	1.0000	1.03	1.03	T5
37	ASD	11465	0.37	11.89	-	-	15	0.0826	0.98	2.31	37 T5
41	CPN	6415	0.40	22.20	-	-	27	0.0543	1.20	3.67	41 T5
42	LP 1	14709	0.38	11.89	-	-	15	0.0826	0.98	2.31	42 T5
43	TC	11098	0.49	11.40	-	-	13	0.1329	1.52	3.42	43 T5
44	PTN	8105	0.42	26.26	-	-	31	0.0563	1.48	4.67	44 T5
45	PKN	26025	0.61	10.40	-	-	10	0.2329	2.42	4.89	45 T5
50	SS	9996	0.48	6.44	-	-	-	1.0000	6.44	6.44	T5
51	NN	24687	0.61	2.97	-	-	-	1.0000	2.97	2.97	T5
52	PTN	103460	0.71	0.79	-	-	-	1.0000	0.79	0.79	T5
'10'	TCLL	0	-	40.00	-	-	59	0.0010	-	-	'10'
'11'	SPS	0	-	10.00	-	-	17	0.0100	-	-	'11'
TS		5730		102.62	2.13		145	0.0010			

TOTAL 1099.94 1380

CALCULATION FOR ALTERNATIVE ROUTING NETWORK. BANGKOK , THAILAND

FROM I = 6/1 PY 1 SUB = 10000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	12689	0.37	3.93	-	-	-	1.0000	3.93	3.93		T2
2/1	SR 1	8156	0.42	23.58	-	-	28	0.0602	1.42	4.30	2/1	T2
2/2	SR 2	8156	0.42	23.58	-	-	28	0.0602	1.42	4.30	2/2	T2
2/3	SR 3	8156	0.42	23.58	-	-	28	0.0602	1.42	4.30	2/3	T2
3/1	SW 1	8822	0.43	20.96	-	-	25	0.0656	1.38	3.98	3/1	T2
3/2	SW 2	8822	0.43	20.96	-	-	25	0.0656	1.38	3.98	3/2	T2
3/3	SW 3	8822	0.43	20.96	-	-	25	0.0656	1.38	3.98	3/3	T2
4/1	PL 1	7132	0.40	25.15	-	-	30	0.0546	1.37	4.27	4/1	T2
4/2	PL 2	7132	0.40	25.15	-	-	30	0.0546	1.37	4.27	4/2	T2
5	TH 2	11282	0.50	27.25	-	-	30	0.0859	2.34	7.34	5	T2
6/1	PY 1	0	-	39.30	-	-	56	0.0020	-	-	6/1	
6/2	PY 2	0	-	19.65	-	-	32	0.0020	-	-	6/2	
7/1	KK 1	7030	0.40	23.58	-	-	28	0.0602	1.42	4.30	7/1	T2
7/2	KK 2	7030	0.40	23.58	-	-	28	0.0602	1.42	4.30	7/2	T2
8/1	CP 1	11465	0.37	13.62	-	-	17	0.0765	1.04	2.57	8/1	T2
8/2	CP 2	11465	0.37	13.62	-	-	17	0.0765	1.04	2.57	8/2	T2
9	TM	10731	0.49	10.48	-	-	12	0.1384	1.45	3.18	9	T2
10	SP	13546	0.38	3.14	-	-	-	1.0000	3.14	3.14		T2
11	NSW	11343	0.50	6.81	-	-	-	1.0000	6.81	6.81		T2
12	PD	29816	0.63	2.04	-	-	-	1.0000	2.04	2.04		T2
13	DM	30708	0.63	9.43	-	-	-	1.0000	9.43	9.43		T2
14	BN	26583	0.62	14.67	-	-	15	0.1696	2.49	5.06	14	T2
15	BK	7951	0.41	18.08	-	-	22	0.0670	1.21	3.32	15	T2
16	BC	13301	0.37	4.72	-	-	-	1.0000	4.72	4.72		T2
17	DK	13791	0.38	6.29	-	-	-	1.0000	6.29	6.29		T2
18	RS	6569	0.40	34.06	-	-	39	0.0548	1.87	6.53	18	T2
19	BP	8207	0.42	17.19	-	-	21	0.0687	1.18	3.18	19	T2
20	KC	14586	0.38	10.90	-	-	14	0.0822	0.90	2.05	20	T2
21	IM	5750	0.38	14.46	-	-	18	0.0732	1.06	2.67	21	T2
22	PS	32269	0.40	7.34	-	-	10	0.0927	0.68	1.37	22	T2
23	SMP	40743	0.40	7.34	-	-	10	0.0927	0.68	1.37	23	T2
24	RS	82660	0.70	2.52	-	-	-	1.0000	2.52	2.52		T2
25	BCH	35726	0.40	1.09	-	-	-	1.0000	1.09	1.09		T2
28	NK	77660	0.70	0.63	-	-	-	1.0000	0.63	0.63		T2
30	PSR	27029	0.62	1.57	-	-	-	1.0000	1.57	1.57		T2
31	LP 2	8822	0.43	4.09	-	-	-	1.0000	4.09	4.09		T2
33	LS	13791	0.38	7.23	-	-	10	0.0881	0.64	1.28	33	T2
35	HM	10976	0.49	10.90	-	-	13	0.1150	1.25	2.82	35	T2
36	RID	25914	0.61	1.09	-	-	-	1.0000	1.09	1.09		T2
37	ASD	5852	0.38	12.58	-	-	16	0.0749	0.94	2.26	37	T2
41	CHW	12261	0.37	6.81	-	-	10	0.0713	0.49	0.96	41	T2
42	LP 1	6927	0.39	13.75	-	-	17	0.0798	1.10	2.71	42	T2
43	TC	11588	0.37	6.55	-	-	-	1.0000	6.55	6.55		T2
44	PTW	7388	0.40	11.79	-	-	15	0.0798	0.94	2.21	44	T2
45	PKN	13546	0.38	6.81	-	-	-	1.0000	6.81	6.81		T2
50	SS	6364	0.39	17.03	-	-	21	0.0656	1.12	2.99	50	T2
51	NN	10914	0.49	4.09	-	-	-	1.0000	4.09	4.09		T2
52	PTN	84060	0.70	1.09	-	-	-	1.0000	1.09	1.09		T2
'0'	TOLL	0	-	20.00	-	-	34	0.0010	-	-	'0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'	
T2		5730		102.29	1.61	-	139	0.0010				

TOTAL 650.01 873

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 6/2 PY 2 SUB = 5000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	CFL	VAR	ROUTING	
1	TK	12689	0.37	1.96	-	-	-	1.0000	1.96	1.96		T2
2/1	SR 1	8156	0.42	11.79	-	-	15	0.0798	0.94	2.21	2/1	T2
2/2	SR 2	8156	0.42	11.79	-	-	15	0.0798	0.94	2.21	2/2	T2
2/3	SR 3	8156	0.42	11.79	-	-	15	0.0798	0.94	2.21	2/3	T2
3/1	SH 1	8822	0.43	10.48	-	-	13	0.1003	1.05	2.36	3/1	T2
3/2	SH 2	8822	0.43	10.48	-	-	13	0.1003	1.05	2.36	3/2	T2
3/3	SH 3	8822	0.43	10.48	-	-	13	0.1003	1.05	2.36	3/3	T2
4/1	PL 1	7132	0.40	12.58	-	-	16	0.0749	0.94	2.26	4/1	T2
4/2	PL 2	7132	0.40	12.58	-	-	16	0.0749	0.94	2.26	4/2	T2
-	TH 2	11282	0.50	13.62	-	-	16	0.1034	1.41	3.43	5	T2
6/1	PY 1	0	-	19.65	-	-	32	0.0020	-	-	6/1	
6/2	PY 2	0	-	9.82	-	-	19	0.0020	-	-	6/2	
7/1	KK 1	7030	0.40	11.79	-	-	15	0.0798	0.94	2.21	7/1	T2
7/2	KK 2	7030	0.40	11.79	-	-	15	0.0798	0.94	2.21	7/2	T2
8/1	CP 1	11465	0.37	6.81	-	-	10	0.0713	0.49	0.96	8/1	T2
8/2	CP 2	11465	0.37	6.81	-	-	10	0.0713	0.49	0.96	8/2	T2
9	TM	10731	0.49	5.24	-	-	-	1.0000	5.24	5.24		T2
10	SP	13546	0.38	1.57	-	-	-	1.0000	1.57	1.57		T2
11	NHW	11343	0.50	3.41	-	-	-	1.0000	3.41	3.41		T2
12	PD	29816	0.63	1.02	-	-	-	1.0000	1.02	1.02		T2
13	DM	30708	0.63	4.72	-	-	-	1.0000	4.72	4.72		T2
14	BN	26583	0.62	7.34	-	-	-	1.0000	7.34	7.34		T2
15	BK	7951	0.41	9.04	-	-	12	0.0845	0.76	1.64	15	T2
16	BC	13301	0.37	2.36	-	-	-	1.0000	2.36	2.36		T2
17	DK	13791	0.38	3.14	-	-	-	1.0000	3.14	3.14		T2
18	BS	6569	0.40	17.03	-	-	21	0.0656	1.12	2.99	18	T2
19	BP	8207	0.42	8.59	-	-	11	0.1041	0.89	1.88	19	T2
20	KC	14586	0.38	5.45	-	-	-	1.0000	5.45	5.45		T2
21	IM	5750	0.38	7.23	-	-	10	0.0881	0.64	1.28	21	T2
22	PS	32269	0.40	3.67	-	-	-	1.0000	3.67	3.67		T2
23	SMP	40743	0.40	3.67	-	-	-	1.0000	3.67	3.67		T2
24	RS	82660	0.70	1.26	-	-	-	1.0000	1.26	1.26		T2
25	BCH	35726	0.40	0.54	-	-	-	1.0000	0.54	0.54		T2
28	NK	77660	0.70	0.31	-	-	-	1.0000	0.31	0.31		T2
30	PSR	27029	0.62	0.79	-	-	-	1.0000	0.79	0.79		T2
31	LP 2	8822	0.43	2.04	-	-	-	1.0000	2.04	2.04		T2
33	LS	13791	0.38	3.62	-	-	-	1.0000	3.62	3.62		T2
35	HM	10976	0.49	5.45	-	-	-	1.0000	5.45	5.45		T2
36	RID	25914	0.61	0.54	-	-	-	1.0000	0.54	0.54		T2
37	ASD	5852	0.38	6.29	-	-	-	1.0000	6.29	6.29		T2
41	CHK	12261	0.37	3.41	-	-	-	1.0000	3.41	3.41		T2
42	LP 1	6927	0.39	6.88	-	-	-	1.0000	6.88	6.88		T2
43	TC	11588	0.37	3.27	-	-	-	1.0000	3.27	3.27		T2
44	PTW	7383	0.40	5.89	-	-	-	1.0000	5.89	5.89		T2
45	PKN	13546	0.38	3.41	-	-	-	1.0000	3.41	3.41		T2
50	SS	6364	0.39	8.51	-	-	11	0.1009	0.86	1.80	50	T2
51	NN	10914	0.49	2.04	-	-	-	1.0000	2.04	2.04		T2
52	PTN	84036	0.70	0.54	-	-	-	1.0000	0.54	0.54		T2
'01'	TOLL	0	-	10.00	-	-	20	0.0010	-	-	'01'	
'11'	SPS	0	-	2.50	-	-	6	0.0100	-	-	'11'	
T2		5730		106.22	1.20		138	0.0610				

TOTAL 324.99 462

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

ARF 102

FROM I = 7/1 KK 1 SUB = 10000 SYSTEM ~~C 4FC~~ TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	BIJ	DEL	V/N	ROUTING
1	TK	8975	0.43	3.11	-	-	-	1.0000	3.11	3.11	T1
2/1	SR 1	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57 2/1	T1
2/2	SR 2	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57 2/2	T1
2/3	SR 3	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57 2/3	T1
3/1	SW 1	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48 3/1	T1
3/2	SW 2	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48 3/2	T1
3/3	SW 3	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48 3/3	T1
4/1	PL 1	6210	0.39	43.67	-	-	50	0.0428	1.87	7.25 4/1	T1
4/2	PL 2	6210	0.39	43.67	-	-	50	0.0428	1.87	7.25 4/2	T1
5	TH 2	7132	0.40	20.74	-	-	25	0.0619	1.28	3.71 5	T1
6/1	PY 1	7030	0.40	21.84	-	-	26	0.0638	1.39	4.10 6/1	T1
6/2	PY 2	7030	0.40	10.92	-	-	14	0.0828	0.95	2.07 6/2	T1
7/1	KK 1	0	-	50.77	-	-	69	0.0020	-	- 7/1	
7/2	KK 2	0	-	50.77	-	-	69	0.0020	-	- 7/2	
8/1	CP 1	10364	0.48	10.37	-	-	12	0.1341	1.39	3.04 8/1	T1
8/2	CP 2	10364	0.48	10.37	-	-	12	0.1341	1.39	3.04 8/2	T1
9	TM	8207	0.42	16.38	-	-	20	0.0723	1.18	3.12 9	T1
10	SP	11526	0.37	3.28	-	-	-	1.0000	3.28	3.28	T1
11	NWW	13607	0.38	5.46	-	-	-	1.0000	5.46	5.46	T1
12	PD	14648	0.38	2.13	-	-	-	1.0000	2.13	2.13	T1
13	DM	37175	0.40	6.88	-	-	-	1.0000	6.88	6.88	T1
14	BN	24576	0.61	7.64	-	-	-	1.0000	7.64	7.64	T1
15	BK	12261	0.37	7.92	-	-	11	0.0783	0.62	1.28 15	T1
16	BC	8822	0.43	6.22	-	-	-	1.0000	6.22	6.22	T1
17	DK	10241	0.48	7.86	-	-	10	0.1154	0.91	1.85 17	T1
18	BS	8463	0.42	12.56	-	-	16	0.0743	0.93	2.24 18	T1
19	BP	6466	0.40	20.53	-	-	25	0.0585	1.20	3.45 19	T1
20	KC	28590	0.62	10.04	-	-	10	0.2164	2.17	4.41 20	T1
21	IM	8719	0.43	7.53	-	-	10	0.1008	0.76	1.53 21	T1
22	PS	30262	0.63	3.82	-	-	-	1.0000	3.82	3.82	T1
23	SMP	38736	0.40	3.82	-	-	-	1.0000	3.82	3.82	T1
24	RS	94260	0.71	1.83	-	-	-	1.0000	1.83	1.83	T1
25	BCH	72460	0.70	1.00	-	-	-	1.0000	1.00	1.00	T1
28	NK	38625	0.40	0.83	-	-	-	1.0000	0.83	0.83	T1
30	PSR	13118	0.37	2.07	-	-	-	1.0000	2.07	2.07	T1
31	LP 2	13301	0.37	3.77	-	-	-	1.0000	3.77	3.77	T1
33	LS	28255	0.62	3.17	-	-	-	1.0000	3.17	3.17	T1
35	HN	11159	0.50	8.30	-	-	10	0.1354	1.12	2.30 35	T1
36	RID	32581	0.40	1.00	-	-	-	1.0000	1.00	1.00	T1
37	ASD	7439	0.40	21.84	-	-	26	0.0638	1.39	4.10 37	T1
41	CHW	10180	0.48	5.19	-	-	-	1.0000	5.19	5.19	T1
42	LP 1	11037	0.49	10.92	-	-	13	0.1157	1.26	2.84 42	T1
43	TC	8054	0.41	5.19	-	-	-	1.0000	5.19	5.19	T1
44	PTW	5289	0.36	17.77	-	-	22	0.0612	1.09	2.96 44	T1
45	PKN	12444	0.37	5.19	-	-	-	1.0000	5.19	5.19	T1
50	SS	5954	0.38	6.28	-	-	-	1.0000	6.28	6.28	T1
51	NN	12567	0.37	3.28	-	-	-	1.0000	3.28	3.28	T1
52	PTN	91460	0.71	0.87	-	-	-	1.0000	0.87	0.87	T1
'0'	TOLL	0	-	20.00	-	-	34	0.0010	-	- '0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	- '1'	
T1		5730		116.00	1.62		155	0.0010			
	TOTAL			800.03			1029				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 7/2 KK 2 SUB = 10000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	8975	0.43	3.11	-	-	-	1.0000	3.11	3.11		T1
2/1	SR 1	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57	2/1	T1
2/2	SR 2	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57	2/2	T1
2/3	SR 3	5186	0.36	49.13	-	-	57	0.0329	1.61	6.57	2/3	T1
3/1	SH 1	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48	3/1	T1
3/2	SH 2	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48	3/2	T1
3/3	SH 3	6518	0.40	46.95	-	-	53	0.0453	2.13	8.48	3/3	T1
4/1	PL 1	6210	0.39	43.67	-	-	50	0.0428	1.87	7.25	4/1	T1
4/2	PL 2	6210	0.39	43.67	-	-	50	0.0428	1.87	7.25	4/2	T1
5	TH 2	7132	0.40	20.74	-	-	25	0.0619	1.28	3.71	5	T1
6/1	PY 1	7030	0.40	21.84	-	-	26	0.0638	1.39	4.10	6/1	T1
6/2	PY 2	7030	0.40	10.92	-	-	14	0.0828	0.90	2.07	6/2	T1
7/1	KK 1	0	-	50.77	-	-	69	0.0020	-	-	7/1	
7/2	KK 2	0	-	50.77	-	-	69	0.0020	-	-	7/2	
8/1	CP 1	10364	0.48	10.37	-	-	12	0.1341	1.39	3.04	8/1	T1
8/2	CP 2	10364	0.48	10.37	-	-	12	0.1341	1.39	3.04	8/2	T1
9	TM	8207	0.42	16.38	-	-	20	0.0723	1.18	3.12	9	T1
10	SP	11526	0.37	3.28	-	-	-	1.0000	3.28	3.28		T1
11	NW	13607	0.38	5.46	-	-	-	1.0000	5.46	5.46		T1
12	PD	14648	0.38	2.13	-	-	-	1.0000	2.13	2.13		T1
13	DM	37175	0.40	6.88	-	-	-	1.0000	6.88	6.88		T1
14	BN	24576	0.61	7.64	-	-	-	1.0000	7.64	7.64		T1
15	BK	12261	0.37	7.92	-	-	11	0.0783	0.62	1.28	15	T1
16	BC	8822	0.43	6.22	-	-	-	1.0000	6.22	6.22		T1
17	DK	10241	0.48	7.86	-	-	10	0.1154	0.91	1.85	17	T1
18	BS	8463	0.42	12.56	-	-	16	0.0743	0.93	2.24	18	T1
19	BP	6406	0.40	20.53	-	-	25	0.0585	1.20	3.45	19	T1
20	KC	2856	0.62	10.04	-	-	10	0.2164	2.17	4.41	20	T1
21	IM	8719	0.43	7.53	-	-	10	0.1008	0.76	1.53	21	T1
22	PS	30262	0.63	3.82	-	-	-	1.0000	3.82	3.82		T1
23	SMP	38736	0.40	3.82	-	-	-	1.0000	3.82	3.82		T1
24	RS	94260	0.71	1.83	-	-	-	1.0000	1.83	1.83		T1
25	BCH	72460	0.70	1.00	-	-	-	1.0000	1.00	1.00		T1
28	NK	38625	0.40	0.83	-	-	-	1.0000	0.83	0.83		T1
30	PSR	13118	0.37	2.07	-	-	-	1.0000	2.07	2.07		T1
31	LP 2	13361	0.37	3.77	-	-	-	1.0000	3.77	3.77		T1
33	LS	28255	0.62	3.17	-	-	-	1.0000	3.17	3.17		T1
35	HM	11159	0.50	8.30	-	-	10	0.1354	1.12	2.30	35	T1
36	RID	32381	0.40	1.00	-	-	-	1.0000	1.00	1.00		T1
37	ASD	7479	0.40	21.84	-	-	26	0.0638	1.39	4.10	37	T1
41	CPK	10180	0.48	5.19	-	-	-	1.0000	5.19	5.19		T1
42	LP 1	11037	0.49	10.92	-	-	13	0.1157	1.26	2.84	42	T1
43	TC	8054	0.41	5.19	-	-	-	1.0000	5.19	5.19		T1
44	PTW	5289	0.36	17.77	-	-	22	0.0612	1.09	2.96	44	T1
45	PKN	12444	0.37	5.19	-	-	-	1.0000	5.19	5.19		T1
50	SS	5954	0.38	6.28	-	-	-	1.0000	6.28	6.28		T1
51	NN	12567	0.37	3.28	-	-	-	1.0000	3.28	3.28		T1
52	PTN	91460	0.71	0.87	-	-	-	1.0000	0.87	0.87		T1
'0'	TOLL	0	-	20.00	-	-	34	0.0010	-	-	'0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'	
T1		5730		116.00	1.62		155	0.0010				
	TOTAL			800.03			1029					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK ,BANGKOK , THAILAND

ARF 102

FROM I = 8/1 CP 1 SUB = 10000 SYSTEM ~~6 400~~ TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	12200	0.30	4.47	-	-	-	1.0000	4.47	4.47	T6
2/1	SR 1	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05 2/1	T6
2/2	SR 2	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05 2/2	T6
2/3	SR 3	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05 2/3	T6
3/1	SW 1	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45 3/1	T6
3/2	SW 2	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45 3/2	T6
3/3	SW 3	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45 3/3	T6
4/1	PL 1	7183	0.31	28.98	-	-	36	0.0329	0.95	3.13 4/1	T6
4/2	PL 2	7183	0.31	28.98	-	-	36	0.0329	0.95	3.13 4/2	T6
5	TH 2	14036	0.31	14.10	-	-	19	0.0466	0.65	1.63 5	T6
6/1	PY 1	11465	0.30	18.80	-	-	24	0.0465	0.87	2.43 6/1	T6
6/2	PY 2	11465	0.30	9.40	-	-	13	0.0657	0.62	1.35 6/2	T6
7/1	KK 1	10364	0.29	21.93	-	-	28	0.0380	0.83	2.45 7/1	T6
7/2	KK 2	10364	0.29	21.93	-	-	28	0.0380	0.83	2.45 7/2	T6
8/1	CP 1	0	-	32.90	-	-	48	0.0020	-	- 8/1	
8/2	CP 2	0	-	32.90	-	-	48	0.0020	-	- 8/2	
9	TM	7900	0.33	35.25	-	-	42	0.0377	1.33	4.72 9	T6
10	SP	11465	0.30	3.53	-	-	-	1.0000	3.53	3.53	T6
11	NW	30820	0.35	3.92	-	-	-	1.0000	3.92	3.92	T6
12	PD	34834	0.36	1.41	-	-	-	1.0000	1.41	1.41	T6
13	DM	76960	0.63	5.17	-	-	-	1.0000	5.17	5.17	T6
14	BN	8267	0.44	20.37	-	-	24	0.0727	1.48	4.22 14	T6
15	BK	26025	0.52	5.48	-	-	-	1.0000	5.48	5.48	T6
16	RC	25914	0.52	4.23	-	-	-	1.0000	4.23	4.23	T6
17	DK	26806	0.53	5.64	-	-	-	1.0000	5.64	5.64	T6
18	RS	14464	0.32	8.62	-	-	12	0.0703	0.61	1.29 18	T6
19	BP	13240	0.31	11.28	-	-	16	0.0444	0.50	1.16 19	T6
20	KC	12567	0.32	16.29	-	-	21	0.0518	0.84	2.23 20	T6
21	IN	11098	0.30	6.58	-	-	10	0.0627	0.41	0.80 21	T6
22	PS	12138	0.52	10.18	-	-	12	0.1267	1.29	2.82 22	T6
23	SMP	27252	0.66	10.18	-	-	-	1.0000	10.18	10.18	T6
24	RS	106860	0.66	1.38	-	-	-	1.0000	1.38	1.38	T6
25	BCH	37621	0.37	1.63	-	-	-	1.0000	1.63	1.63	T6
28	NK	86660	0.64	-0.56	-	-	-	1.0000	0.55	0.56	T6
30	PSR	32046	0.35	1.41	-	-	-	1.0000	1.41	1.41	T6
31	LP 2	10976	0.29	6.11	-	-	-	1.0000	6.11	6.11	T6
33	LS	35280	0.36	2.19	-	-	-	1.0000	2.19	2.19	T6
35	HN	5852	0.28	18.42	-	-	24	0.0409	0.75	2.08 35	T6
36	RID	27809	0.56	1.63	-	-	-	1.0000	1.63	1.63	T6
37	ASD	8463	0.34	14.49	-	-	19	0.0534	0.77	1.96 37	T6
41	CHW	26694	0.53	3.53	-	-	-	1.0000	3.53	3.53	T6
42	LP 1	13056	0.31	9.40	-	-	13	0.0657	0.62	1.35 42	T6
43	TC	10731	0.29	7.44	-	-	11	0.0615	0.46	0.93 43	T6
44	PTW	8719	0.26	10.97	-	-	16	0.0383	0.42	0.96 44	T6
45	PKN	5801	0.58	11.52	-	-	12	0.1796	2.07	4.51 45	T6
50	SS	12628	0.31	4.31	-	-	-	1.0000	4.31	4.31	T6
51	NN	30039	0.35	2.35	-	-	-	1.0000	2.35	2.35	T6
52	PTN	108260	0.66	0.63	-	-	-	1.0000	0.63	0.63	T6
'0'	TOLL	0	-	20.00	-	-	34	0.0010	-	- '0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	- '1'	
T6		7471		92.18	1.43		125	0.0016			
	TOTAL			649.98			888				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 8/2 CP 2 SUB = 10000 SYSTEM C 400 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	12200	0.30	4.47	-	-	-	1.0000	4.47	4.47		T6
2/1	SR 1	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05	2/1	T6
2/2	SR 2	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05	2/2	T6
2/3	SR 3	11649	0.30	31.33	-	-	39	0.0289	0.91	3.05	2/3	T6
3/1	SW 1	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45	3/1	T6
3/2	SW 2	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45	3/2	T6
3/3	SW 3	10731	0.29	23.50	-	-	30	0.0345	0.81	2.45	3/3	T6
4/1	PL 1	7183	0.31	28.98	-	-	36	0.0329	0.95	3.13	4/1	T6
4/2	PL 2	7183	0.31	28.98	-	-	36	0.0329	0.95	3.13	4/2	T6
5	TH 2	14035	0.31	14.10	-	-	19	0.0460	0.65	1.63	5	T6
6/1	PY 1	11465	0.30	18.80	-	-	24	0.0465	0.87	2.43	6/1	T6
6/2	PY 2	11465	0.30	9.40	-	-	13	0.0657	0.62	1.35	6/2	T6
7/1	KK 1	10364	0.29	21.93	-	-	28	0.0380	0.83	2.45	7/1	T6
7/2	KK 2	10364	0.29	21.93	-	-	28	0.0380	0.83	2.45	7/2	T6
8/1	CP 1	0	-	32.90	-	-	48	0.0020	-	-	8/1	
8/2	CP 2	0	-	32.90	-	-	48	0.0020	-	-	8/2	
9	TM	7900	0.33	35.25	-	-	42	0.0377	1.33	4.72	9	T6
10	SP	11465	0.30	3.53	-	-	-	1.0000	3.53	3.53		T6
11	NWW	30820	0.35	3.92	-	-	-	1.0000	3.92	3.92		T6
12	PC	34834	0.36	1.41	-	-	-	1.0000	1.41	1.41		T6
13	DM	74060	0.63	5.17	-	-	-	1.0000	5.17	5.17		T6
14	BN	8207	0.44	20.37	-	-	24	0.0727	1.48	4.22	14	T6
15	BK	26025	0.52	5.48	-	-	-	1.0000	5.48	5.48		T6
16	BC	25914	0.52	4.23	-	-	-	1.0000	4.23	4.23		T6
17	DK	26806	0.53	5.64	-	-	-	1.0000	5.64	5.64		T6
18	BS	14464	0.32	8.62	-	-	12	0.0703	0.61	1.29	18	T6
19	BP	13247	0.31	11.28	-	-	16	0.0444	0.50	1.16	19	T6
20	KC	12567	0.32	16.29	-	-	21	0.0518	0.84	2.23	20	T6
21	IM	11098	0.30	6.58	-	-	10	0.0627	0.41	0.80	21	T6
22	PS	12138	0.52	10.18	-	-	12	0.1267	1.23	2.82	22	T6
23	SNP	27252	0.66	10.18	-	-	-	1.0000	10.18	10.18		T6
24	RS	106800	0.66	1.38	-	-	-	1.0000	1.38	1.38		T6
25	BCH	37621	0.37	1.63	-	-	-	1.0000	1.63	1.63		T6
28	NK	86660	0.64	0.56	-	-	-	1.0000	0.56	0.56		T6
30	PSR	32046	0.35	1.41	-	-	-	1.0000	1.41	1.41		T6
31	LP 2	10976	0.29	6.11	-	-	-	1.0000	6.11	6.11		T6
33	LS	35280	0.36	2.19	-	-	-	1.0000	2.19	2.19		T6
35	HN	5852	0.28	18.42	-	-	24	0.0409	0.75	2.08	35	T6
36	RID	27809	0.56	1.63	-	-	-	1.0000	1.63	1.63		T6
37	ASC	8463	0.34	14.49	-	-	19	0.0534	0.77	1.96	37	T6
41	CHK	26694	0.53	3.53	-	-	-	1.0000	3.53	3.53		T6
42	LP 1	13756	0.31	9.40	-	-	13	0.0657	0.62	1.35	42	T6
43	TC	10731	0.29	7.44	-	-	11	0.0615	0.46	0.93	43	T6
44	PTW	8719	0.26	10.97	-	-	16	0.0383	0.42	0.96	44	T6
45	PKN	5801	0.58	11.52	-	-	12	0.1796	2.07	4.51	45	T6
50	SS	12628	0.31	14.31	-	-	-	1.0000	4.31	4.31		T6
51	NN	30039	0.35	2.35	-	-	-	1.0000	2.35	2.35		T6
52	PTN	108260	0.66	0.63	-	-	-	1.0000	0.63	0.63		T6
101	TCLL	0	-	20.00	-	-	34	0.0010	-	-	101	
111	SPS	0	-	5.00	-	-	10	0.0100	-	-	111	
T6		7471		92.18	1.43		125	0.0010				
	TOTAL			649.98			888					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 9 TM SUB = 10000 SYSTEM C 400 TANDEM AREA = 3

J	NAME	CIJ	C/P	AIJ	V/N	NQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	7030	0.28	6.65	-	-	19	0.0447	0.27	0.51	1	T3
2/1	SR 1	7849	0.35	23.26	-	-	28	0.0555	1.29	3.90	2/1	T3
2/2	SR 2	7849	0.35	23.26	-	-	28	0.0555	1.29	3.90	2/2	T3
2/3	SR 3	7849	0.35	23.26	-	-	28	0.0555	1.29	3.90	2/3	T3
3/1	SW 1	5852	0.29	39.29	-	-	48	0.0252	0.99	3.05	3/1	T3
3/2	SW 2	5852	0.29	39.29	-	-	48	0.0252	0.99	3.05	3/2	T3
3/3	SW 3	5852	0.29	39.29	-	-	48	0.0252	0.99	3.05	3/3	T3
4/1	PL 1	6569	0.56	34.12	-	-	36	0.0945	3.23	10.85	4/1	T3
4/2	PL 2	6569	0.56	34.12	-	-	36	0.0945	3.23	10.85	4/2	T3
5	TH 2	11404	0.45	19.64	-	-	23	0.0778	1.53	4.29	5	T3
6/1	PY 1	10731	0.49	13.44	-	-	16	0.0983	1.32	3.21	6/1	T3
6/2	PY 2	10731	0.49	6.72	-	-	-	1.0000	6.72	6.72		T3
7/1	KK 1	8207	0.41	20.68	-	-	25	0.0810	1.26	3.63	7/1	T3
7/2	KK 2	8207	0.41	20.68	-	-	25	0.0810	1.26	3.63	7/2	T3
8/1	CP 1	7900	0.36	25.85	-	-	31	0.0510	1.32	4.14	8/1	T3
8/2	CP 2	7900	0.36	25.85	-	-	31	0.0510	1.32	4.14	8/2	T3
9	TM	0	-	51.69	-	-	70	0.0020	-	-	9	
10	SP	6415	0.26	4.65	-	-	-	1.0000	4.65	4.65		T3
11	NKW	29482	0.68	4.65	-	-	-	1.0000	4.65	4.65		T3
12	PD	30039	0.61	2.79	-	-	-	1.0000	2.79	2.79		T3
13	DM	73660	0.76	3.10	-	-	-	1.0000	3.10	3.10		T3
14	BN	13607	0.36	11.89	-	-	16	0.0578	0.69	1.62	14	T3
15	BK	24687	0.66	6.98	-	-	-	1.0000	6.98	6.98		T3
16	BC	13424	0.36	2.79	-	-	-	1.0000	2.79	2.79		T3
17	DK	13913	0.36	6.62	-	-	-	1.0000	6.62	6.62		T3
18	BS	13730	0.53	6.20	-	-	-	1.0000	6.62	6.20		T3
19	BP	11894	0.49	9.51	-	-	11	0.1423	1.35	2.87	19	T3
20	KC	27921	0.64	6.20	-	-	-	1.0000	6.20	6.20		T3
21	IM	11649	0.56	5.41	-	-	-	1.0000	3.41	3.41		T3
22	PS	27140	0.59	5.94	-	-	-	1.0000	5.94	5.94		T3
23	SMP	35614	0.40	5.94	-	-	-	1.0000	5.94	5.94		T3
24	RS	104460	0.76	0.83	-	-	-	1.0000	0.83	0.83		T3
25	BCH	79260	0.74	0.62	-	-	-	1.0000	0.62	0.62		T3
28	NK	78060	0.70	0.37	-	-	-	1.0000	0.37	0.37		T3
30	PSR	27252	0.60	0.93	-	-	-	1.0000	0.93	0.93		T3
31	LP 2	24576	0.66	2.33	-	-	-	1.0000	2.33	2.33		T3
33	LS	33942	0.68	2.79	-	-	-	1.0000	2.79	2.79		T3
35	HN	10792	0.47	20.68	-	-	24	0.0785	1.62	4.04	35	T3
36	RID	36172	0.43	0.62	-	-	-	1.0000	0.62	0.62		T3
37	ASD	7849	0.42	17.06	-	-	21	0.0662	1.13	3.03	37	T3
41	CHW	14219	0.37	4.91	-	-	-	1.0000	4.91	4.91		T3
42	LP 1	13607	0.53	6.72	-	-	-	1.0000	6.72	6.72		T3
43	TC	5801	0.25	10.08	-	-	15	0.0381	0.38	0.85	43	T3
44	PTW	6978	0.37	10.34	-	-	14	0.0659	0.68	1.54	44	T3
45	PKN	10731	0.43	12.92	-	-	16	0.0839	1.08	2.62	45	T3
50	SS	11098	0.47	3.10	-	-	-	1.0000	3.10	3.10		T3
51	NN	28590	0.67	2.79	-	-	-	1.0000	2.79	2.79		T3
52	PTN	105860	0.76	0.74	-	-	-	1.0000	0.74	0.74		T3
10	TOLL	0	-	20.00	-	-	34	0.0010	-	-	10	
11	SPS	0	-	5.00	-	-	10	0.0100	-	-	11	
T3		8729		121.26	1.47		159	0.0010				
TOTAL				645.99			851					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 10 SP SUB = 3000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	6825	0.31	1.82	-	-	-	1.0000	1.82	1.82	T7
2/1	SR 1	10976	0.50	4.64	-	-	-	1.0000	4.64	4.64	T7
2/2	SR 2	10976	0.50	4.64	-	-	-	1.0000	4.64	4.64	T7
2/3	SR 3	10976	0.50	4.64	-	-	-	1.0000	4.64	4.64	T7
3/1	SK 1	7849	0.57	5.65	-	-	-	1.0000	5.65	5.65	T7
3/2	SK 2	7849	0.57	5.65	-	-	-	1.0000	5.65	5.65	T7
3/3	SK 3	7849	0.57	5.65	-	-	-	1.0000	5.65	5.65	T7
4/1	PL 1	8924	0.40	6.06	-	-	-	1.0000	6.06	6.06	T7
4/2	PL 2	8924	0.40	6.06	-	-	-	1.0000	6.06	6.06	T7
5	TH 2	13791	0.53	4.84	-	-	-	1.0000	4.84	4.84	T7
6/1	PY 1	13546	0.51	2.83	-	-	-	1.0000	2.83	2.83	T7
6/2	PY 2	13546	0.51	1.41	-	-	-	1.0000	1.41	1.41	T7
7/1	KK 1	11526	0.52	4.04	-	-	-	1.0000	4.04	4.04	T7
7/2	KK 2	11526	0.52	4.04	-	-	-	1.0000	4.04	4.04	T7
8/1	CP 1	11465	0.41	4.64	-	-	-	1.0000	4.64	4.64	T7
8/2	CP 2	11465	0.41	4.64	-	-	-	1.0000	4.64	4.64	T7
9	TM	6415	0.30	15.14	-	-	20	0.0485	0.73	1.87	9 T7
10	SP	0	-	17.92	-	-	36	0.0020	-	-	10
11	NNW	34611	0.70	1.11	-	-	-	1.0000	1.11	1.11	T7
12	PG	34388	0.71	0.67	-	-	-	1.0000	0.67	0.67	T7
13	DM	88860	0.77	0.79	-	-	-	1.0000	0.79	0.79	T7
14	BN	26583	0.56	2.22	-	-	-	1.0000	2.22	2.22	T7
15	BK	29816	0.67	1.11	-	-	-	1.0000	1.11	1.11	T7
16	BC	25468	0.89	1.09	-	-	-	1.0000	1.09	1.09	T7
17	DK	26360	0.70	1.45	-	-	-	1.0000	1.45	1.45	T7
18	BS	26806	0.69	2.42	-	-	-	1.0000	2.42	2.42	T7
19	BP	14483	0.54	1.78	-	-	-	1.0000	1.78	1.78	T7
20	KC	33750	0.63	1.45	-	-	-	1.0000	1.45	1.45	T7
21	IY	14464	0.50	1.09	-	-	-	1.0000	1.09	1.09	T7
22	PS	32269	0.39	1.11	-	-	-	1.0000	1.11	1.11	T7
23	SVP	40743	0.39	1.11	-	-	-	1.0000	1.11	1.11	T7
24	RS	113660	0.76	0.21	-	-	-	1.0000	0.21	0.21	T7
25	BCH	88460	0.74	0.15	-	-	-	1.0000	0.15	0.15	T7
28	NK	85860	0.79	0.15	-	-	-	1.0000	0.15	0.15	T7
30	PSR	31600	0.71	0.36	-	-	-	1.0000	0.36	0.36	T7
31	LP 2	29705	0.65	0.54	-	-	-	1.0000	0.54	0.54	T7
33	LS	39071	0.45	0.44	-	-	-	1.0000	0.44	0.44	T7
35	HM	13607	0.37	3.71	-	-	-	1.0000	3.71	3.71	T7
36	RID	41361	0.43	0.15	-	-	-	1.0000	0.15	0.15	T7
37	ASD	11474	0.46	3.03	-	-	-	1.0000	3.03	3.03	T7
41	CHN	26917	0.70	1.21	-	-	-	1.0000	1.21	1.21	T7
42	LP 1	26582	0.64	1.41	-	-	-	1.0000	1.41	1.41	T7
43	TC	6313	0.30	3.03	-	-	-	1.0000	3.03	3.03	T7
44	PTW	10342	0.49	2.02	-	-	-	1.0000	2.02	2.02	T7
45	PKN	13546	0.34	2.32	-	-	-	1.0000	2.32	2.32	T7
50	SS	13791	0.53	1.21	-	-	-	1.0000	1.21	1.21	T7
51	NN	33161	0.71	0.67	-	-	-	1.0000	0.67	0.67	T7
52	PTN	115067	0.78	0.18	-	-	-	1.0000	0.18	0.18	T7
101	TOLL	0	-	6.00	-	-	14	0.0010	-	-	101
111	SPS	0	-	1.50	-	-	5	0.0100	-	-	11
T7		10259		110.17	1.01		140	0.0010			

TOTAL 150.00 209

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 11 . NAW SUB = 5060 SYSTEM C 400 TANDEM AREA = 4

J	NAME	CIJ	C/P.	AIJ	V/N	MQ	NIJ	EIJ	CFL	VAR	ROUTING
1	TK	32158	0.28	6.68	-	-	-	1.0000	0.68	0.08	T4
2/1	SR 1	23907	0.33	10.48	-	-	14	0.0699	0.73	1.06 2/1	T4
2/2	SR 2	23907	0.33	10.48	-	-	14	0.0699	0.73	1.06 2/2	T4
2/3	SR 3	23907	0.33	10.48	-	-	14	0.0699	0.73	1.06 2/3	T4
3/1	SW 1	26806	0.26	3.49	-	-	-	1.0000	3.49	3.49	T4
3/2	SW 2	26806	0.26	3.49	-	-	-	1.0000	3.49	3.49	T4
3/3	SW 3	26806	0.26	3.49	-	-	-	1.0000	3.49	3.49	T4
4/1	PL 1	24018	0.35	5.55	-	-	-	1.0000	5.55	5.55	T4
4/2	PL 2	24018	0.35	5.55	-	-	-	1.0000	5.55	5.55	T4
5	TH 2	28144	0.26	5.34	-	-	-	1.0000	5.34	5.34	T4
6/1	PY 1	11343	0.19	16.03	-	-	23	0.0227	0.36	0.93 6/1	T4
6/2	PY 2	11343	0.19	8.02	-	-	13	0.0311	0.25	0.51 6/2	T4
7/1	KK 1	13607	0.20	11.92	-	-	18	0.0254	0.30	0.79 7/1	T4
7/2	KK 2	13607	0.20	11.92	-	-	18	0.0254	0.30	0.79 7/2	T4
8/1	CP 1	30820	0.28	2.67	-	-	-	1.0000	2.67	2.67	T4
8/2	CP 2	30820	0.28	2.67	-	-	-	1.0000	2.67	2.67	T4
9	TM	29482	0.27	2.47	-	-	-	1.0000	2.47	2.47	T4
10	SP	34611	0.29	0.49	-	-	-	1.0000	0.49	0.49	T4
11	NAW	0	-	49.84	-	-	68	0.0020	-	- 11	
12	PC	40743	0.29	0.55	-	-	-	1.0000	0.55	0.55	T4
13	DM	30262	0.71	1.42	-	-	-	1.0000	1.42	1.42	T4
14	BN	39851	0.30	2.26	-	-	-	1.0000	2.26	2.26	T4
15	BK	7746	0.18	2.36	-	-	-	1.0000	2.36	2.36	T4
16	BC	31823	0.27	1.48	-	-	-	1.0000	1.48	1.48	T4
17	DK	32715	0.27	1.97	-	-	-	1.0000	1.97	1.97	T4
18	BS	7644	0.12	14.80	-	-	23	0.0121	0.18	0.43 18	T4
19	BP	12995	0.18	4.44	-	-	-	1.0000	4.44	4.44	T4
20	KC	33384	0.50	2.80	-	-	-	1.0000	2.80	2.80	T4
21	IM	13362	0.22	2.84	-	-	-	1.0000	2.84	2.84	T4
22	PS	78460	0.54	1.13	-	-	-	1.0000	1.13	1.13	T4
23	SMP	93660	0.56	1.13	-	-	-	1.0000	1.13	1.13	T4
24	RS	81860	1.15	0.38	-	-	-	1.0000	0.38	0.38	T4
25	BCH	35280	0.52	0.28	-	-	-	1.0000	0.28	0.28	T4
28	NK	97260	0.55	0.20	-	-	-	1.0000	0.20	0.20	T4
30	PSR	37956	0.28	0.49	-	-	-	1.0000	0.49	0.49	T4
31	LP 2	24576	0.38	1.05	-	-	-	1.0000	1.05	1.05	T4
33	LS	13546	0.44	0.95	-	-	-	1.0000	0.95	0.95	T4
35	HM	29928	0.29	2.14	-	-	-	1.0000	2.14	2.14	T4
36	RID	25468	0.46	0.28	-	-	-	1.0000	0.28	0.28	T4
37	ASD	13485	0.21	2.77	-	-	-	1.0000	2.77	2.77	T4
41	CHW	26248	0.23	1.34	-	-	-	1.0000	1.34	1.34	T4
42	LP 1	11649	0.21	8.02	-	-	13	0.0311	0.25	0.51 42	T4
43	TC	30151	0.27	1.13	-	-	-	1.0000	1.13	1.13	T4
44	PTW	24130	0.35	5.96	-	-	-	1.0000	5.95	5.96	T4
45	PKN	34611	0.29	1.34	-	-	-	1.0000	1.34	1.34	T4
50	SS	11526	0.17	7.40	-	-	13	0.0200	0.15	0.29 50	T4
51	NN	6825	0.10	20.93	-	-	31	0.0088	0.18	0.49 51	T4
52	PTN	35391	0.27	5.58	-	-	-	1.0000	5.58	5.58	T4
101	TOLL	0	-	10.00	-	-	20	0.0010	-	- 101	
111	SPS	0	-	2.50	-	-	6	0.0100	-	- 111	
T4		23012		86.34	1.06		113	0.0010			

TOTAL 274.98 401

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 12 PD SUB = 3000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	31489	0.63	0.73	-	-	-	1.0000	0.73	0.73	T5
2/1	SR 1	13791	0.42	7.79	-	-	10	0.1122	0.87	1.78	2/1 T5
2/2	SR 2	13791	0.42	7.79	-	-	10	0.1122	0.87	1.78	2/2 T5
2/3	SR 3	13791	0.42	7.79	-	-	10	0.1122	0.87	1.78	2/3 T5
3/1	SK 1	26137	0.71	7.30	-	-	-	1.0000	7.30	7.30	T5
3/2	SK 2	26137	0.71	7.30	-	-	-	1.0000	7.30	7.30	T5
3/3	SK 3	26137	0.71	7.30	-	-	-	1.0000	7.30	7.30	T5
4/1	PL 1	28032	0.73	4.14	-	-	-	1.0000	4.14	4.14	T5
4/2	PL 2	28032	0.73	4.14	-	-	-	1.0000	4.14	4.14	T5
5	TH 2	18976	0.45	15.58	-	-	18	0.1008	1.57	4.01	5 T5
6/1	PY 1	29816	0.76	3.04	-	-	-	1.0000	3.04	3.04	T5
6/2	PY 2	29816	0.76	1.52	-	-	-	1.0000	1.52	1.52	T5
7/1	KK 1	14648	0.42	4.99	-	-	-	1.0000	4.99	4.99	T5
7/2	KK 2	14648	0.42	4.99	-	-	-	1.0000	4.99	4.99	T5
8/1	CP 1	34834	0.64	1.58	-	-	-	1.0000	1.58	1.58	T5
8/2	CP 2	34834	0.64	1.58	-	-	-	1.0000	1.58	1.58	T5
9	TP	30039	0.76	2.07	-	-	-	1.0000	2.07	2.07	T5
10	SP	34388	0.64	0.40	-	-	-	1.0000	0.40	0.40	T5
11	NAW	40743	0.66	0.55	-	-	-	1.0000	0.55	0.55	T5
12	PC	0	-	19.03	-	-	31	0.0020	-	-	12
13	DM	98060	0.78	0.40	-	-	-	1.0000	0.40	0.40	T5
14	BN	75460	0.79	1.10	-	-	-	1.0000	1.10	1.10	T5
15	BK	38290	0.65	0.61	-	-	-	1.0000	0.61	0.61	T5
16	BC	12995	0.40	2.19	-	-	-	1.0000	2.19	2.19	T5
17	DK	8770	0.27	5.84	-	-	-	1.0000	5.84	5.84	T5
18	BS	32938	0.64	1.34	-	-	-	1.0000	1.34	1.34	T5
19	BP	27029	0.72	1.95	-	-	-	1.0000	1.95	1.95	T5
20	KC	82669	0.79	1.07	-	-	-	1.0000	1.07	1.07	T5
21	IP	33496	0.64	0.95	-	-	-	1.0000	0.95	0.95	T5
22	PS	85560	0.79	0.55	-	-	-	1.0000	0.55	0.55	T5
23	SMP	109860	0.78	0.55	-	-	-	1.0000	0.55	0.55	T5
24	RS	128860	0.78	0.11	-	-	-	1.0000	0.11	0.11	T5
25	BCH	107060	0.78	0.11	-	-	-	1.0000	0.11	0.11	T5
28	NK	76660	0.79	0.29	-	-	-	1.0000	0.29	0.29	T5
30	PSR	26471	0.71	0.73	-	-	-	1.0000	0.73	0.73	T5
31	LP 2	40186	0.66	0.40	-	-	-	1.0000	0.40	0.40	T5
33	LS	82060	0.79	0.24	-	-	-	1.0000	0.24	0.24	T5
35	HM	36283	0.65	1.27	-	-	-	1.0000	1.27	1.27	T5
36	RID	89460	0.79	0.11	-	-	-	1.0000	0.11	0.11	T5
37	ASD	30131	0.63	2.07	-	-	-	1.0000	2.07	2.07	T5
41	CHA	13791	0.42	3.90	-	-	-	1.0000	3.90	3.90	T5
42	LP 1	36060	0.65	1.52	-	-	-	1.0000	1.52	1.52	T5
43	TC	29482	0.75	1.22	-	-	-	1.0000	1.22	1.22	T5
44	PTW	25468	0.70	2.50	-	-	-	1.0000	2.50	2.50	T5
45	PKN	38625	0.65	0.79	-	-	-	1.0000	0.79	0.79	T5
50	SS	27475	0.73	0.67	-	-	-	1.0000	0.67	0.67	T5
51	NN	37287	0.65	0.33	-	-	-	1.0000	0.33	0.33	T5
52	PTN	126060	0.78	0.09	-	-	-	1.0000	0.09	0.09	T5
10'	TOLL	0	-	6.00	-	-	14	0.0010	-	-	10'
11'	SPS	0	-	1.50	-	-	5	0.0100	-	-	11'
T5		18329		88.72	1.06		116	0.0010			

TOTAL 150.01 214

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 13 DM SUB = 3000 SYSTEM C 400 TANDEM AREA = 4

J	NAME	CIJ	C/P	AIJ	V/M	MC	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	95260	0.96	0.84	-	-	-	1.0000	0.84	0.84	T4
2/1	SR 1	39628	0.72	3.92	-	-	-	1.0000	3.92	3.92	T4
2/2	SR 2	39628	0.72	3.92	-	-	-	1.0000	3.92	3.92	T4
2/3	SR 3	39628	0.72	3.92	-	-	-	1.0000	3.92	3.92	T4
3/1	SW 1	41078	0.47	3.92	-	-	-	1.0000	3.92	3.92	T4
3/2	SW 2	41078	0.47	3.92	-	-	-	1.0000	3.92	3.92	T4
3/3	SW 3	41078	0.47	3.92	-	-	-	1.0000	3.92	3.92	T4
4/1	PL 1	37398	0.72	5.04	-	-	-	1.0000	5.04	5.04	T4
4/2	PL 2	37398	0.72	5.04	-	-	-	1.0000	5.04	5.04	T4
5	TH 2	75460	0.81	3.73	-	-	-	1.0000	3.73	3.73	T4
6/1	PY 1	30708	0.71	5.60	-	-	-	1.0000	5.60	5.60	T4
6/2	PY 2	30708	0.71	2.80	-	-	-	1.0000	2.80	2.80	T4
7/1	KK 1	37175	0.72	5.60	-	-	-	1.0000	5.60	5.60	T4
7/2	KK 2	37175	0.72	5.60	-	-	-	1.0000	5.60	5.60	T4
8/1	CP 1	76060	0.81	3.73	-	-	-	1.0000	3.73	3.73	T4
8/2	CP 2	76060	0.81	3.73	-	-	-	1.0000	3.73	3.73	T4
9	TM	73660	0.81	2.99	-	-	-	1.0000	2.99	2.99	T4
10	SP	82860	0.80	0.62	-	-	-	1.0000	0.62	0.62	T4
11	NWW	30262	0.71	1.96	-	-	-	1.0000	1.96	1.96	T4
12	PD	98060	0.79	0.50	-	-	-	1.0000	0.50	0.50	T4
13	DM	0	-	41.66	-	-	59	0.0020	-	-	13
14	BN	92260	0.80	2.05	-	-	-	1.0000	2.05	2.05	T4
15	BK	14036	0.53	4.67	-	-	-	1.0000	4.67	4.67	T4
16	BC	82060	0.80	1.46	-	-	-	1.0000	1.46	1.46	T4
17	DK	83660	0.80	1.94	-	-	-	1.0000	1.94	1.94	T4
18	BS	34611	0.71	5.60	-	-	-	1.0000	5.60	5.60	T4
19	BP	39740	0.72	4.33	-	-	-	1.0000	4.33	4.33	T4
20	KC	35503	0.72	3.14	-	-	-	1.0000	3.14	3.14	T4
21	IM	31600	0.71	2.58	-	-	-	1.0000	2.58	2.58	T4
22	PS	102460	0.79	1.03	-	-	-	1.0000	1.03	1.03	T4
23	SMP	117660	0.79	1.03	-	-	-	1.0000	1.03	1.03	T4
24	RS	13485	1.00	7.78	-	-	-	1.0000	7.78	7.78	T4
25	BCH	37064	0.72	0.31	-	-	-	1.0000	0.31	0.31	T4
28	NK	125460	0.78	0.19	-	-	-	1.0000	0.19	0.19	T4
30	PSR	93060	0.80	0.49	-	-	-	1.0000	0.49	0.49	T4
31	LP 2	34722	0.71	1.18	-	-	-	1.0000	1.18	1.18	T4
33	LS	8156	0.58	1.87	-	-	-	1.0000	1.87	1.87	T4
35	HM	40520	0.47	2.99	-	-	-	1.0000	2.99	2.99	T4
36	RID	27252	0.71	0.31	-	-	-	1.0000	0.31	0.31	T4
37	ASD	34611	0.71	2.52	-	-	-	1.0000	2.52	2.52	T4
41	CHW	78660	0.80	0.93	-	-	-	1.0000	0.93	0.93	T4
42	LP 1	28032	0.71	2.80	-	-	-	1.0000	2.80	2.80	T4
43	TC	76460	0.81	1.40	-	-	-	1.0000	1.40	1.40	T4
44	PTW	37956	0.72	2.80	-	-	-	1.0000	2.80	2.80	T4
45	PKN	82860	0.80	1.87	-	-	-	1.0000	1.87	1.87	T4
50	SS	35726	0.72	2.80	-	-	-	1.0000	2.80	2.80	T4
51	NN	36283	0.72	1.18	-	-	-	1.0000	1.18	1.18	T4
52	PTN	35503	0.31	0.31	-	-	-	1.0000	0.31	0.31	T4
'0'	TCLL	0	-	6.00	-	-	14	0.0010	-	-	'0'
'1'	SPS	0	-	1.50	-	-	5	0.0100	-	-	'1'
T4		10626		130.86	-		154	0.0010			
TOTAL				180.02			241				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 14 BN SUB = 10000 SYSTEM C 400 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	27921	0.67	4.35	-	-	-	1.0000	4.35	4.35		T6
2/1	SR 1	26917	0.67	10.62	-	-	10	0.2428	2.58	5.19	2/1	T6
2/2	SR 2	26917	0.67	10.62	-	-	10	0.2425	2.58	5.19	2/2	T6
2/3	SR 3	26917	0.67	10.62	-	-	10	0.2428	2.58	5.19	2/3	T6
3/1	SW 1	25245	0.66	18.35	-	-	18	0.1762	3.23	8.06	3/1	T6
3/2	SW 2	25245	0.66	18.35	-	-	18	0.1762	3.23	8.06	3/2	T6
3/3	SW 3	25245	0.66	18.35	-	-	18	0.1762	3.23	8.06	3/3	T6
4/1	PL 1	12750	0.52	17.39	-	-	19	0.1204	2.09	5.45	4/1	T6
4/2	PL 2	12750	0.52	17.39	-	-	19	0.1204	2.09	5.45	4/2	T6
5	TH 2	31266	0.68	8.69	-	-	-	1.0000	8.69	8.69		T6
6/1	PY 1	26583	0.67	13.52	-	-	13	0.2109	2.85	6.29	6/1	T6
6/2	PY 2	26583	0.67	6.76	-	-	-	1.0000	6.76	6.76		T6
7/1	KK 1	24576	0.66	11.59	-	-	11	0.2309	2.68	5.57	7/1	T6
7/2	KK 2	24576	0.66	11.59	-	-	11	0.2309	2.68	5.57	7/2	T6
8/1	CP 1	8207	0.43	19.80	-	-	23	0.0810	1.60	4.50	8/1	T6
8/2	CP 2	8207	0.43	19.80	-	-	23	0.0810	1.60	4.50	8/2	T6
9	TP	13607	0.53	10.62	-	-	12	0.1439	1.53	3.35	9	T6
10	SP	26583	0.67	1.16	-	-	-	1.0000	1.16	1.16		T6
11	NWW	39851	0.44	1.45	-	-	-	1.0000	1.45	1.45		T6
12	PD	75460	0.76	1.30	-	-	-	1.0000	1.30	1.30		T6
13	DM	92260	0.76	1.88	-	-	-	1.0000	1.88	1.88		T6
14	BN	0	-	47.33	-	-	65	0.0020	-	-	14	
15	BK	35057	0.68	4.83	-	-	-	1.0000	4.83	4.83		T6
16	BC	34945	0.68	2.61	-	-	-	1.0000	2.61	2.61		T6
17	DK	35837	0.69	3.48	-	-	-	1.0000	3.48	3.48		T6
18	RS	32746	0.68	9.66	-	-	-	1.0000	9.66	9.66		T6
19	BP	29816	0.67	5.80	-	-	-	1.0000	5.80	5.80		T6
20	KC	27029	0.67	7.73	-	-	-	1.0000	7.73	7.73		T6
21	IM	25914	0.66	5.80	-	-	-	1.0000	5.80	5.80		T6
22	PS	6671	0.27	16.56	-	-	22	0.0409	0.68	1.79	22	T6
23	SNP	11832	0.28	16.56	-	-	22	0.0409	0.68	1.79	23	T6
24	RS	123760	0.75	0.50	-	-	-	1.0000	0.50	0.50		T6
25	BCH	77660	0.76	0.77	-	-	-	1.0000	0.77	0.77		T6
28	NK	102860	0.76	0.35	-	-	-	1.0000	0.35	0.35		T6
30	PSR	41078	0.44	0.87	-	-	-	1.0000	0.87	0.87		T6
31	LP 2	25691	0.66	2.99	-	-	-	1.0000	2.99	2.99		T6
33	LS	76260	0.76	1.93	-	-	-	1.0000	1.93	1.93		T6
35	HM	11159	0.59	15.84	-	-	18	0.1776	1.70	4.35	35	T6
36	RID	35280	0.68	0.77	-	-	-	1.0000	0.77	0.77		T6
37	ASD	14280	0.54	8.69	-	-	10	0.1535	1.33	2.74	37	T6
41	CHW	35726	0.69	2.17	-	-	-	1.0000	2.17	2.17		T6
42	LP 1	29482	0.67	6.76	-	-	-	1.0000	6.76	6.76		T6
43	TC	25245	0.66	7.24	-	-	-	1.0000	7.24	7.24		T6
44	PTW	14586	0.41	5.80	-	-	-	1.0000	5.80	5.80		T6
45	PKN	6466	0.56	9.99	-	-	11	0.1589	1.57	3.34	45	T6
50	SS	28701	0.67	4.83	-	-	-	1.0000	4.83	4.83		T6
51	NN	39971	0.44	0.87	-	-	-	1.0000	0.87	0.87		T6
52	PTN	124460	0.75	0.23	-	-	-	1.0000	0.23	0.23		T6
'0'	TOLL	0	-	20.00	-	-	34	0.0010	-	-	'0'	
'1'	SPS	0	-	5.00	-	-	10	0.0100	-	-	'1'	
T6		8606		142.01	1.38		181	0.0010				

TOTAL 449.98 588

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 15 BK SUB = 5400 . SYSTEM C 400 TANDEM AREA = 4

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	28255	0.27	0.67	-	-	-	1.0000	0.67	0.67	T4
2/1	SR 1	13607	0.22	5.87	-	-	10	0.0393	0.23	0.43 2/1	T4
2/2	SR 2	13607	0.22	5.87	-	-	10	0.0393	0.23	0.43 2/2	T4
2/3	SR 3	13607	0.22	5.87	-	-	10	0.0393	0.23	0.43 2/3	T4
3/1	SW 1	14403	0.16	10.49	-	-	17	0.0180	0.19	0.41 3/1	T4
3/2	SW 2	14403	0.16	10.49	-	-	17	0.0180	0.19	0.41 3/2	T4
3/3	SW 3	14403	0.16	10.49	-	-	17	0.0180	0.19	0.41 3/3	T4
4/1	PL 1	12383	0.21	13.56	-	-	20	0.0243	0.33	0.80 4/1	T4
4/2	PL 2	12383	0.21	13.56	-	-	20	0.0243	0.33	0.80 4/2	T4
5	TH 2	25691	0.26	3.64	-	-	-	1.0000	3.64	3.64	T4
6/1	PY 1	7951	0.16	13.78	-	-	21	0.0167	0.23	0.54 6/1	T4
6/2	PY 2	7951	0.16	6.85	-	-	12	0.0242	0.17	0.32 6/2	T4
7/1	KK 1	12261	0.21	13.00	-	-	19	0.0284	0.37	0.88 7/1	T4
7/2	KK 2	12261	0.21	13.00	-	-	19	0.0284	0.37	0.88 7/2	T4
8/1	CP 1	26025	0.26	6.29	-	-	10	0.0525	0.33	0.63 8/1	T4
8/2	CP 2	26025	0.26	6.29	-	-	10	0.0525	0.33	0.63 8/2	T4
9	TN	24687	0.25	5.17	-	-	-	1.0000	5.17	5.17	T4
10	SP	29816	0.27	1.47	=	=	=	1.0000	1.47	1.47	T4
11	NW	7746	0.16	4.20	-	-	-	1.0000	4.20	4.20	T4
12	PC	38290	0.30	0.55	-	-	-	1.0000	0.55	0.55	T4
13	DM	14036	0.44	3.15	-	-	-	1.0000	3.15	3.15	T4
14	BN	35057	0.29	5.59	-	-	-	1.0000	5.59	5.59	T4
15	BK	0	-	14.12	-	-	25	0.0020	-	- 15	
16	BC	29370	0.27	1.09	-	-	-	1.0000	1.09	1.09	T4
17	DK	30262	0.27	1.45	-	-	-	1.0000	1.45	1.45	T4
18	BS	10853	0.20	12.86	-	-	19	0.0265	0.34	0.81 18	T4
19	BP	13668	0.22	6.71	-	-	11	0.0395	0.27	0.52 19	T4
20	KC	25356	0.46	6.71	-	-	-	1.0000	6.71	6.71	T4
21	IM	8361	0.17	5.03	-	-	-	1.0000	5.03	5.03	T4
22	PS	43743	0.30	2.80	-	-	-	1.0000	2.80	2.80	T4
23	SNP	85060	0.55	2.80	-	-	-	1.0000	2.80	2.80	T4
24	RS	39405	0.65	0.84	-	-	-	1.0000	0.84	0.84	T4
25	BCH	27252	0.47	0.67	-	-	-	1.0000	0.67	0.67	T4
28	NK	92860	0.56	0.15	-	-	-	1.0000	0.15	0.15	T4
30	PSR	35503	0.29	0.36	-	-	-	1.0000	0.36	0.36	T4
31	LP 2	10914	0.20	2.52	-	-	-	1.0000	2.52	2.52	T4
33	LS	8310	0.42	3.95	-	-	-	1.0000	3.95	3.95	T4
35	HM	14397	0.15	5.63	-	-	10	0.0190	0.10	0.17 35	T4
36	RID	11404	0.26	0.67	-	-	-	1.0000	0.67	0.67	T4
37	ASD	10853	0.20	6.78	-	-	11	0.0414	0.28	0.55 37	T4
41	CHW	27475	0.27	0.91	-	-	-	1.0000	0.91	0.91	T4
42	LP 1	6722	0.15	6.85	-	-	12	0.0242	0.17	0.32 42	T4
43	TC	26248	0.26	1.12	-	-	-	1.0000	1.12	1.12	T4
44	PTW	12689	0.22	6.50	-	-	11	0.0341	0.22	0.42 44	T4
45	PKN	29816	0.27	3.15	-	-	-	1.0000	3.15	3.15	T4
50	SS	11465	0.21	6.43	-	-	11	0.0324	0.21	0.40 50	T4
51	NN	11771	0.21	2.52	-	-	-	1.0000	2.52	2.52	T4
52	PTN	74660	0.61	0.67	-	-	-	1.0000	0.67	0.67	T4
'C'	TCLL	0	-	10.00	-	-	20	0.0010	-	- 'C'	
'I'	SPS	0	-	2.50	-	-	6	0.0100	-	- 'I'	
T4		14984		67.16	1.09		92	0.0010			

TOTAL 274.96 440

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 16 BC SUB = 6000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	14219	0.41	1.24	-	-	-	1.0000	1.24	1.24	T5
2/1	SR 1	8165	0.44	6.60	-	-	-	1.0000	6.60	6.60	T5
2/2	SR 2	8165	0.44	6.60	-	-	-	1.0000	6.60	6.60	T5
2/3	SR 3	8165	0.44	6.60	-	-	-	1.0000	6.60	6.60	T5
3/1	SN 1	11282	0.51	7.43	-	-	-	1.0000	7.43	7.43	T5
3/2	SN 2	11282	0.51	7.43	-	-	-	1.0000	7.43	7.43	T5
3/3	SN 3	11282	0.51	7.43	-	-	-	1.0000	7.43	7.43	T5
4/1	PL 1	12322	0.52	5.57	-	-	-	1.0000	5.57	5.57	T5
4/2	PL 2	12322	0.52	5.57	-	-	-	1.0000	5.57	5.57	T5
5	TH 2	5750	0.58	35.49	-	-	37	0.0988	3.51	11.89	5 T5
6/1	PY 1	13301	0.53	5.57	-	-	-	1.0000	5.57	5.57	T5
6/2	PY 2	13301	0.53	2.79	-	-	-	1.0000	2.79	2.79	T5
7/1	KK 1	8822	0.44	6.81	-	-	-	1.0000	6.81	6.81	T5
7/2	KK 2	8822	0.44	6.81	-	-	-	1.0000	6.81	6.81	T5
8/1	CP 1	25914	0.66	5.57	-	-	-	1.0000	5.57	5.57	T5
8/2	CP 2	25914	0.66	5.57	-	-	-	1.0000	5.57	5.57	T5
9	TN	13424	0.53	3.10	-	-	-	1.0000	3.10	3.10	T5
10	SP	25463	0.65	0.93	-	-	-	1.0000	0.93	0.93	T5
11	NWW	31823	0.67	2.58	-	-	-	1.0000	2.58	2.58	T5
12	PC	12965	0.53	2.23	-	-	-	1.0000	2.23	2.23	T5
13	DM	82960	0.74	1.55	-	-	-	1.0000	1.55	1.55	T5
14	BN	34945	0.43	3.10	-	-	-	1.0000	3.10	3.10	T5
15	BK	29379	0.67	2.58	-	-	-	1.0000	2.58	2.58	T5
16	BC	0	-	17.33	-	-	29	0.0020	-	-	16
17	DK	7849	0.43	5.94	-	-	-	1.0000	5.94	5.94	T5
18	BS	24018	0.65	5.16	-	-	-	1.0000	5.16	5.16	T5
19	BP	11771	0.51	5.94	-	-	-	1.0000	5.94	5.94	T5
20	KC	38959	0.43	4.13	-	-	-	1.0000	4.13	4.13	T5
21	IN	24576	0.65	3.10	-	-	-	1.0000	3.10	3.10	T5
22	PS	40632	0.43	1.55	-	-	-	1.0000	1.55	1.55	T5
23	SMP	84860	0.74	1.55	-	-	-	1.0000	1.55	1.55	T5
24	RS	112860	0.74	0.41	-	-	-	1.0000	0.41	0.41	T5
25	BCH	91760	0.74	0.41	-	-	-	1.0000	0.41	0.41	T5
28	NK	28255	0.34	1.62	-	-	-	1.0000	1.62	1.62	T5
30	PSR	6876	0.31	4.04	-	-	-	1.0000	4.04	4.04	T5
31	LP 2	31266	0.67	1.55	-	-	-	1.0000	1.55	1.55	T5
33	LS	38625	0.43	1.03	-	-	-	1.0000	1.03	1.03	T5
35	HM	27363	0.66	4.46	-	-	-	1.0000	4.45	4.46	T5
36	RID	73460	0.74	0.41	-	-	-	1.0000	0.41	0.41	T5
37	ASD	13485	0.41	2.79	-	-	-	1.0000	2.79	2.79	T5
41	CHN	8165	0.44	8.87	-	-	11	0.1155	1.02	2.15	41 T5
42	LP 1	27140	0.66	2.79	-	-	-	1.0000	2.79	2.79	T5
43	TC	13118	0.53	2.06	-	-	-	1.0000	2.06	2.06	T5
44	PTW	10914	0.50	3.40	-	-	-	1.0000	3.40	3.40	T5
45	PKN	29705	0.67	2.79	-	-	-	1.0000	2.79	2.79	T5
50	SS	12716	0.52	2.58	-	-	-	1.0000	2.58	2.58	T5
51	NN	28367	0.66	1.55	-	-	-	1.0000	1.55	1.55	T5
52	PTN	110160	0.74	0.41	-	-	-	1.0000	0.41	0.41	T5
'0'	TCLL	0	-	12.00	-	-	23	0.0010	-	-	'0'
'1'	SPS	0	-	3.00	-	-	7	0.0100	-	-	'1'
T5		7420		167.86	1.06		293	0.0010			
	TOTAL			240.02			310				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 17. DK SUB = 8000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	14709	0.41	2.86	-	-	-	1.0000	2.86	2.86	T5
2/1	SR 1	8514	0.44	9.21	-	-	12	0.0905	0.83	1.80 2/1	T5
2/2	SR 2	8514	0.44	9.21	-	-	12	0.0905	0.83	1.80 2/2	T5
2/3	SR 3	8514	0.44	9.21	-	-	12	0.0905	0.83	1.80 2/3	T5
3/1	SK 1	11771	0.50	10.48	-	-	12	0.1384	1.45	3.18 3/1	T5
3/2	SK 2	11771	0.50	10.48	-	-	12	0.1384	1.45	3.18 3/2	T5
3/3	SK 3	11771	0.50	10.48	-	-	12	0.1384	1.45	3.18 3/3	T5
4/1	PL 1	12812	0.52	7.31	-	-	-	1.0000	7.31	7.31	T5
4/2	PL 2	12812	0.52	7.31	-	-	-	1.0000	7.31	7.31	T5
5	TH 2	6159	0.56	34.31	-	-	36	0.0972	3.34	11.20 5	T5
6/1	PY 1	13791	0.53	7.31	-	-	-	1.0000	7.31	7.31	T5
6/2	PY 2	13791	0.53	3.65	-	-	-	1.0000	3.65	3.65	T5
7/1	KK 1	10241	0.48	8.26	-	-	10	0.1335	1.10	2.26 7/1	T5
7/2	KK 2	10241	0.48	8.26	-	-	10	0.1335	1.10	2.26 7/2	T5
8/1	CP 1	26806	0.66	6.35	-	-	-	1.0000	6.35	6.35	T5
8/2	CP 2	26806	0.66	6.35	-	-	-	1.0000	6.35	6.35	T5
9	TP	13913	0.53	7.94	-	-	-	1.0000	7.94	7.94	T5
10	SP	26360	0.66	1.91	-	-	-	1.0000	1.91	1.91	T5
11	NNW	32715	0.67	3.18	-	-	-	1.0000	3.18	3.18	T5
12	PC	8770	0.34	6.67	-	-	10	0.0660	0.44	0.86 12	T5
13	DM	83660	0.75	1.91	-	-	-	1.0000	1.91	1.91	T5
14	BN	35837	0.44	6.35	-	-	-	1.0000	6.35	6.35	T5
15	BK	30262	0.67	3.65	-	-	-	1.0000	3.65	3.65	T5
16	BC	7849	0.42	14.68	-	-	18	0.0784	1.15	2.91 16	T5
17	DK	0	-	19.06	-	-	31	0.0020	-	- 17	
18	BS	24910	0.65	7.31	-	-	-	1.0000	7.31	7.31	T5
19	BP	12261	0.51	8.39	-	-	10	0.1395	1.17	2.40 19	T5
20	KC	39851	0.44	5.85	-	-	-	1.0000	5.85	5.85	T5
21	IN	25468	0.66	4.38	-	-	-	1.0000	4.38	4.38	T5
22	PS	41524	0.44	3.18	-	-	-	1.0000	3.18	3.18	T5
23	SMP	86460	0.75	3.18	-	-	-	1.0000	3.18	3.18	T5
24	RS	114460	0.75	0.51	-	-	-	1.0000	0.51	0.51	T5
25	BCH	92660	0.75	0.58	-	-	-	1.0000	0.58	0.58	T5
28	NK	36506	0.44	1.96	-	-	-	1.0000	1.96	1.96	T5
30	PSR	11955	0.51	4.89	-	-	-	1.0000	4.89	4.89	T5
31	LP 2	32158	0.67	2.19	-	-	-	1.0000	2.19	2.19	T5
33	LS	39517	0.44	1.46	-	-	-	1.0000	1.46	1.46	T5
35	HM	28255	0.66	5.08	-	-	-	1.0000	5.08	5.08	T5
36	RID	75066	0.75	0.58	-	-	-	1.0000	0.58	0.58	T5
37	ASD	13974	0.41	3.65	-	-	-	1.0000	3.65	3.65	T5
41	CHW	8514	0.44	8.58	-	-	11	0.1037	0.89	1.87 41	T5
42	LP 1	28032	0.66	3.65	-	-	-	1.0000	3.65	3.65	T5
43	TC	13607	0.53	4.77	-	-	-	1.0000	4.77	4.77	T5
44	PTW	11404	0.50	4.13	-	-	-	1.0000	4.13	4.13	T5
45	PKN	30597	0.67	3.18	-	-	-	1.0000	3.18	3.18	T5
50	SS	12506	0.51	3.65	-	-	-	1.0000	3.65	3.65	T5
51	NN	29259	0.67	1.91	-	-	-	1.0000	1.91	1.91	T5
52	PTN	111660	0.75	0.51	-	-	-	1.0000	0.51	0.51	T5
'0'	TOLL	0	-	16.00	-	-	29	0.0010	-	- '0'	
'1'	SPS	0	-	4.00	-	-	9	0.0100	-	- '1'	
TS		8239		148.72	1.15		185	0.0010			

TOTAL 319.96 431.

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 18 BS SUB = 10000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	24353	0.64	2.29	-	-	-	-	1.0000	2.29	2.29	T2
2/1	SR 1	10670	0.45	15.29	-	-	-	18	0.0934	1.43	3.64	2/1 T2
2/2	SR 2	10670	0.45	15.29	-	-	-	18	0.0934	1.43	3.64	2/2 T2
2/3	SR 3	10670	0.45	15.29	-	-	-	18	0.0934	1.43	3.64	2/3 T2
3/1	SW 1	12261	0.50	18.86	-	-	-	21	0.1047	1.98	5.36	3/1 T2
3/2	SW 2	12261	0.50	18.86	-	-	-	21	0.1047	1.98	5.36	3/2 T2
3/3	SW 3	12261	0.50	18.86	-	-	-	21	0.1047	1.98	5.36	3/3 T2
4/1	PL 1	10731	0.49	18.35	-	-	-	21	0.0933	1.71	4.64	4/1 T2
4/2	PL 2	10731	0.49	18.35	-	-	-	21	0.0933	1.71	4.64	4/2 T2
5	TH 2	12995	0.49	20.39	-	-	-	23	0.0928	1.89	5.32	5 T2
6/1	PY 1	6569	0.56	20.90	-	-	-	22	0.1270	2.65	7.28	6/1 T2
6/2	PY 2	6569	0.56	10.45	-	-	-	11	0.1826	1.91	4.43	6/2 T2
7/1	KK 1	8463	0.39	22.94	-	-	-	28	0.0510	1.17	3.51	7/1 T2
7/2	KK 2	8463	0.39	22.94	-	-	-	28	0.0510	1.17	3.51	7/2 T2
8/1	CP 1	14464	0.41	9.17	-	-	-	12	0.0890	0.82	1.76	8/1 T2
8/2	CP 2	14464	0.41	9.17	-	-	-	12	0.0890	0.82	1.76	8/2 T2
9	TM	13739	0.53	7.65	-	-	-	-	1.0000	7.65	7.65	T2
10	SP	26806	0.67	2.29	-	-	-	-	1.0000	2.29	2.29	T2
11	NNW	7644	0.29	17.84	-	-	-	24	0.0332	0.59	1.60	11 T2
12	PC	32938	0.64	3.06	-	-	-	-	1.0000	3.06	3.06	T2
13	DN	34611	0.66	6.12	-	-	-	-	1.0000	6.12	6.12	T2
14	BN	32746	0.68	7.65	-	-	-	-	1.0000	7.65	7.65	T2
15	BK	10853	0.47	10.19	-	-	-	12	0.1271	1.29	2.83	15 T2
16	BC	24018	0.61	6.12	-	-	-	-	1.0000	6.12	6.12	T2
17	DK	24910	0.61	8.15	-	-	-	-	1.0000	8.15	8.15	T2
18	BS	0	-	46.38	-	-	-	64	0.0020	-	-	18
19	BP	8310	0.35	16.31	-	-	-	21	0.0521	0.85	2.25	19 T2
20	KC	26137	0.61	16.31	-	-	-	16	0.1848	3.01	7.26	20 T2
21	IN	8258	0.43	12.23	-	-	-	15	0.0924	1.13	2.67	21 T2
22	PS	37733	0.45	3.82	-	-	-	-	1.0000	3.82	3.82	T2
23	SMP	79660	0.76	3.82	-	-	-	-	1.0000	3.82	3.82	T2
24	RS	89669	0.74	1.63	-	-	-	-	1.0000	1.63	1.63	T2
25	BCH	39628	0.43	1.63	-	-	-	-	1.0000	1.63	1.63	T2
28	NK	83266	0.72	0.82	-	-	-	-	1.0000	0.82	0.82	T2
30	PSR	30151	0.63	2.04	-	-	-	-	1.0000	2.04	2.04	T2
31	LP 2	11343	0.46	6.12	-	-	-	-	1.0000	6.12	6.12	T2
33	LS	25691	0.63	4.08	-	-	-	-	1.0000	4.08	4.08	T2
35	HM	13974	0.53	7.34	-	-	-	-	1.0000	7.34	7.34	T2
36	RID	29816	0.65	1.63	-	-	-	-	1.0000	1.63	1.63	T2
37	ASD	8361	0.43	9.17	-	-	-	12	0.0890	0.82	1.76	37 T2
41	CHW	12383	0.33	5.10	-	-	-	-	1.0000	5.10	5.10	T2
42	LP 1	7081	0.33	10.45	-	-	-	14	0.0690	0.72	1.63	42 T2
43	TC	14097	0.40	3.82	-	-	-	-	1.0000	3.82	3.82	T2
44	PTW	10792	0.48	11.47	-	-	-	13	0.1355	1.55	3.50	44 T2
45	PKN	26806	0.67	4.59	-	-	-	-	1.0000	4.59	4.59	T2
50	SS	6722	0.33	16.23	-	-	-	21	0.0507	0.82	2.17	50 T2
51	NN	7286	0.28	10.70	-	-	-	15	0.0516	0.55	1.26	51 T2
52	PTN	74260	0.60	2.85	-	-	-	-	1.0000	2.85	2.85	T2
101	TOLL	0	-	20.00	-	-	-	34	0.0010	-	-	101
111	SPS	0	-	5.00	-	-	-	10	0.0100	-	-	111
T2		8729		128.03	1.43		166	0.0010				

TOTAL 550.01 732

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 19 BP SUB = 8000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/N	NO	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	12812	0.52	2.40	-	-	-	1.0000	2.40	2.40		T1
2/1	SR 1	7593	0.41	13.18	-	-	16	0.0910	1.20	2.91	2/1	T1
2/2	SR 2	7593	0.41	13.18	-	-	16	0.0910	1.20	2.91	2/2	T1
2/3	SR 3	7593	0.41	13.18	-	-	16	0.0910	1.20	2.91	2/3	T1
3/1	SW 1	8924	0.44	9.98	-	-	12	0.1190	1.19	2.59	3/1	T1
3/2	SW 2	8924	0.44	9.98	-	-	12	0.1190	1.19	2.59	3/2	T1
3/3	SW 3	8924	0.44	9.98	-	-	12	0.1190	1.19	2.59	3/3	T1
4/1	PL 1	8617	0.44	10.78	-	-	13	0.1107	1.19	2.68	4/1	T1
4/2	PL 2	8617	0.44	10.78	-	-	13	0.1107	1.19	2.68	4/2	T1
5	TH 2	8822	0.40	27.15	-	-	32	0.0551	1.50	4.79	5	T1
6/1	PY 1	8207	0.38	16.37	-	-	20	0.0721	1.18	3.11	6/1	T1
6/2	PY 2	8207	0.38	8.18	-	-	11	0.0881	0.72	1.50	6/2	T1
7/1	KK 1	6466	0.56	17.97	-	-	19	0.1354	2.43	6.31	7/1	T1
7/2	KK 2	6466	0.56	17.97	-	-	19	0.1354	2.43	6.31	7/2	T1
8/1	CP 1	13240	0.52	7.19	-	-	-	1.0000	7.19	7.19	-	T1
8/2	CP 2	13240	0.52	7.19	-	-	-	1.0000	7.19	7.19		T1
9	TM	11894	0.51	5.99	-	-	-	1.0000	5.99	5.99		T1
10	SP	14403	0.41	1.80	-	-	-	1.0000	1.80	1.80		T1
11	NW	12995	0.32	5.39	-	-	-	1.0000	5.39	5.39		T1
12	PC	27029	0.63	2.40	-	-	-	1.0000	2.40	2.40		T1
13	DM	39740	0.41	2.40	-	-	-	1.0000	2.40	2.40		T1
14	BN	29816	0.67	5.99	-	-	-	1.0000	5.99	5.99		T1
15	BK	13668	0.37	5.99	-	-	-	1.0000	5.99	5.99		T1
16	BC	11771	0.48	4.79	-	-	-	1.0000	4.79	4.79		T1
17	DK	12261	0.49	6.39	-	-	-	1.0000	6.39	6.39		T1
18	BS	8516	0.35	17.97	-	-	23	0.0483	0.87	2.37	18	T1
19	BP	0	-	28.75	-	-	43	0.0020	-	-	19	
20	KC	32269	0.65	12.78	-	-	12	0.2290	2.93	6.25	20	T1
21	TM	11037	0.45	9.58	-	-	12	0.1039	1.00	2.16	21	T1
22	PS	35503	0.69	2.99	-	-	-	1.0000	2.99	2.99		T1
23	SMP	75660	0.76	2.99	-	-	-	1.0000	2.99	2.99		T1
24	RS	98860	0.72	0.64	-	-	-	1.0000	0.64	0.64		T1
25	BCH	77060	0.71	1.28	-	-	-	1.0000	1.28	1.28		T1
28	NK	72660	0.73	0.64	-	-	-	1.0000	0.04	0.04		T1
30	PSR	24241	0.62	1.60	-	-	-	1.0000	1.60	1.60		T1
31	LP 2	14779	0.37	4.79	-	-	-	1.0000	4.79	4.79		T1
33	LS	36820	0.63	2.40	-	-	-	1.0000	2.40	2.40		T1
35	HM	14036	0.53	5.75	-	-	-	1.0000	5.75	5.75		T1
36	RID	34945	0.41	1.28	-	-	-	1.0000	1.23	1.28		T1
37	ASO	10976	0.49	5.39	-	-	-	1.0000	5.39	5.39		T1
41	CHN	6774	0.27	6.79	-	-	11	0.0417	0.28	0.55	41	T1
42	LP 1	12444	0.48	8.18	-	-	10	0.1298	1.06	2.17	42	T1
43	TC	11710	0.50	3.99	-	-	-	1.0000	3.99	3.99		T1
44	PTW	7695	0.42	8.98	-	-	12	0.0824	0.74	1.59	44	T1
45	PKN	24576	0.66	3.59	-	-	-	1.0000	3.59	3.59		T1
50	SS	5903	0.30	8.98	-	-	13	0.0539	0.48	1.04	50	T1
51	NN	8770	0.23	3.23	-	-	-	1.0000	3.23	3.23		T1
52	PTN	89460	0.67	0.86	-	-	-	1.0000	0.86	0.86		T1
'0'	TOLL	0	-	16.00	-	-	29	0.0010	-	-	'0'	
'1'	SPS	0	-	4.00	-	-	9	0.0100	-	-	'1'	
T1		8606		124.51	1.28		160	0.0010				

TOTAL 400.03 545

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 20 KC SUB = 8000 SYSTEM C 400 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	CFL	VAR	ROUTING	
1	TK	34388	0.56	1.35	-	-	-	1.0000	1.35	1.35		T6
2/1	SR 1	30931	0.51	6.91	-	-	-	1.0000	6.91	6.91		T6
2/2	SR 2	30931	0.51	6.91	-	-	-	1.0000	6.91	6.91		T6
2/3	SR 3	30931	0.51	6.91	-	-	-	1.0000	6.91	6.91		T6
3/1	SW 1	29259	0.50	11.05	-	-	13	0.1203	1.33	2.99	3/1	T6
3/2	SW 2	29259	0.50	11.05	-	-	13	0.1203	1.33	2.99	3/2	T6
3/3	SW 3	29259	0.50	11.05	-	-	13	0.1203	1.33	2.99	3/3	T6
4/1	PL 1	23907	0.54	13.13	-	-	14	0.1557	2.04	4.72	4/1	T6
4/2	PL 2	23907	0.54	13.13	-	-	14	0.1557	2.04	4.72	4/2	T6
5	TH 2	35280	0.53	11.74	-	-	13	0.1453	1.71	3.85	5	T6
6/1	PY 1	14586	0.24	15.89	-	-	22	0.0314	0.50	1.29	6/1	T6
6/2	PY 2	14586	0.24	7.94	-	-	12	0.0497	0.39	0.81	6/2	T6
7/1	KK 1	28590	0.50	12.44	-	-	14	0.1320	1.64	3.81	7/1	T6
7/2	KK 2	28590	0.50	12.44	-	-	14	0.1320	1.64	3.81	7/2	T6
8/1	CP 1	12567	0.32	13.13	-	-	18	0.0451	0.59	1.44	8/1	T6
8/2	CP 2	12567	0.32	13.13	-	-	18	0.0451	0.59	1.44	8/2	T6
9	TM	27921	0.61	6.91	-	-	-	1.0000	6.91	6.91		T6
10	SP	33750	0.55	1.76	-	-	-	1.0000	1.76	1.76		T6
11	NKW	33384	0.30	6.56	-	-	10	0.0619	0.41	0.79	11	T6
12	PC	82660	0.69	1.76	-	-	-	1.0000	1.76	1.76		T6
13	DN	36503	0.25	3.94	-	-	-	1.0000	3.94	3.94		T6
14	SN	27029	0.68	7.25	-	-	-	1.0000	7.25	7.25		T6
15	BK	25356	0.36	6.56	-	-	-	1.0000	6.56	6.56		T6
16	BC	38959	0.55	3.52	-	-	-	1.0000	3.52	3.52		T6
17	DK	39851	0.55	4.70	-	-	-	1.0000	4.70	4.70		T6
18	BS	26137	0.39	11.40	-	-	15	0.0691	0.79	1.83	18	T6
19	BP	32269	0.50	8.29	-	-	10	0.1349	1.12	2.29	19	T6
20	KC	0	-	23.21	-	-	37	0.0020	-	-	20	
21	IM	12567	0.21	10.36	-	-	16	0.0276	0.29	0.63	21	T6
22	PS	32715	0.73	3.63	-	-	-	1.0000	3.63	3.63		T6
23	SMP	41189	0.66	3.63	-	-	-	1.0000	3.63	3.63		T6
24	RS	91260	0.50	1.05	-	-	-	1.0000	1.05	1.05		T6
25	BCH	13974	0.11	1.62	-	-	-	1.0000	1.62	1.62		T6
28	NK	110760	0.71	0.47	-	-	-	1.0000	0.47	0.47		T6
30	PSR	77660	0.69	1.17	-	-	-	1.0000	1.17	1.17		T6
31	LP 2	8105	0.14	6.09	-	-	11	0.0248	0.15	0.28	31	T6
33	LS	26583	0.22	2.63	-	-	-	1.0000	2.63	2.63		T6
35	HN	10425	0.25	10.50	-	-	15	0.0470	0.49	1.11	35	T6
36	RID	7949	0.11	1.62	-	-	-	1.0000	1.62	1.62		T6
37	ASD	25133	0.54	6.56	-	-	-	1.0000	6.56	6.56		T6
41	CHN	38179	0.53	2.94	-	-	-	1.0000	2.94	2.94		T6
42	LP 1	12567	0.20	7.94	-	-	13	0.0295	0.23	0.47	42	T6
43	TC	31712	0.55	2.25	-	-	-	1.0000	2.25	2.25		T6
44	PTW	27252	0.49	6.22	-	-	-	1.0000	6.22	6.22		T6
45	PKN	13791	0.44	6.56	-	-	-	1.0000	6.56	6.56		T6
50	SS	28253	0.45	5.70	-	-	-	1.0000	5.70	5.70		T6
51	NN	33161	0.31	3.94	-	-	-	1.0000	3.94	3.94		T6
52	PTN	112860	0.61	1.05	-	-	-	1.0000	1.05	1.05		T6
101	TOLL	0	-	16.00	-	-	29	0.0010	-	-	101	
111	SPS	0	-	4.00	-	-	9	0.0100	-	-	111	
T6		23458		128.14	1.18		163	0.0010				
	TOTAL			359.99			586					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 21 IN SUB = 6000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/P	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	14342	0.40	1.24	-	-	-	1.0000	1.24	1.24		T2
2/1	SR 1	10976	0.50	5.49	-	-	-	1.0000	5.49	5.49		T2
2/2	SR 2	10976	0.50	5.49	-	-	-	1.0000	5.49	5.49		T2
2/3	SR 3	10976	0.50	5.49	-	-	-	1.0000	5.49	5.49		T2
3/1	SW 1	11404	0.50	8.79	-	-	10	0.1581	1.39	2.85	3/1	T2
3/2	SW 2	11404	0.50	8.79	-	-	10	0.1581	1.39	2.85	3/2	T2
3/3	SW 3	11404	0.50	8.79	-	-	10	0.1581	1.39	2.85	3/3	T2
4/1	PL 1	7980	0.39	10.43	-	-	14	0.0685	0.71	1.61	4/1	T2
4/2	PL 2	7980	0.39	10.43	-	-	14	0.0685	0.71	1.61	4/2	T2
5	TH 2	13361	0.53	9.34	-	-	11	0.1351	1.26	2.67	5	T2
6/1	PY 1	5750	0.58	12.63	-	-	13	0.1782	2.25	5.04	6/1	T2
6/2	PY 2	5750	0.58	6.32	-	-	-	1.0000	6.32	6.32		T2
7/1	KK 1	8719	0.44	9.88	-	-	12	0.1152	1.14	2.48	7/1	T2
7/2	KK 2	8719	0.44	9.88	-	-	12	0.1152	1.14	2.48	7/2	T2
8/1	CP 1	11698	0.33	5.77	-	-	-	1.0000	5.77	5.77		T2
8/2	CP 2	11098	0.33	5.77	-	-	-	1.0000	5.77	5.77		T2
9	TM	11649	0.48	6.86	-	-	-	1.0000	6.86	6.86		T2
10	SP	14464	0.38	1.40	-	-	-	1.0000	1.40	1.40		T2
11	NW	13362	0.53	5.22	-	-	-	1.0000	5.22	5.22		T2
12	PD	33496	0.67	1.40	-	-	-	1.0000	1.40	1.40		T2
13	DM	31600	0.62	3.13	-	-	-	1.0000	3.13	3.13		T2
14	BN	25914	0.57	5.77	-	-	-	1.0000	5.77	5.77		T2
15	BK	8361	0.39	5.22	-	-	-	1.0000	5.22	5.22		T2
16	BC	24576	0.65	2.80	-	-	-	1.0000	2.80	2.80		T2
17	DK	25468	0.65	3.73	-	-	-	1.0000	3.73	3.73		T2
18	BS	8258	0.44	9.06	-	-	11	0.1233	1.12	2.36	18	T2
19	BP	11037	0.50	7.91	-	-	-	1.0000	7.91	7.91		T2
20	KC	12567	0.31	10.98	-	-	15	0.0583	0.64	1.47	20	T2
21	IN	0	-	13.84	-	-	25	0.0026	-	-	21	
22	PS	31600	0.38	2.88	-	-	-	1.0000	2.88	2.88		T2
23	SMP	40074	0.39	2.88	-	-	-	1.0000	2.88	2.88		T2
24	RS	84260	0.70	0.83	-	-	-	1.0000	0.83	0.83		T2
25	BCH	38618	0.40	1.10	-	-	-	1.0000	1.10	1.10		T2
28	NK	84260	0.74	0.37	-	-	-	1.0000	0.37	0.37		T2
30	PSR	30708	0.67	0.93	-	-	-	1.0000	0.93	0.93		T2
31	LP 2	7132	0.31	4.12	-	-	-	1.0000	4.12	4.12		T2
33	LS	14280	0.37	2.09	-	-	-	1.0000	2.09	2.09		T2
35	HM	8156	0.33	4.61	-	-	-	1.0000	4.61	4.61		T2
36	RID	26806	0.60	1.10	-	-	-	1.0000	1.10	1.10		T2
37	ASD	6620	0.37	5.22	-	-	-	1.0000	5.22	5.22		T2
41	CHW	14280	0.41	2.33	-	-	-	1.0000	2.33	2.33		T2
42	LP 1	5698	0.29	6.32	-	-	10	0.0535	0.34	0.65	42	T2
43	TC	13240	0.39	2.06	-	-	-	1.0000	2.06	2.06		T2
44	PTW	8770	0.43	4.94	-	-	-	1.0000	4.94	4.94		T2
45	PKN	13179	0.34	2.88	-	-	-	1.0000	2.88	2.88		T2
50	SS	8054	0.44	4.53	-	-	-	1.0000	4.53	4.53		T2
51	NN	12934	0.53	3.13	-	-	-	1.0000	3.13	3.13		T2
52	PTN	90660	0.74	0.83	-	-	-	1.0000	0.83	0.83		T2
101	TOLL	0	-	12.00	-	-	23	0.0010	-	-	101	
111	SPS	0	-	3.00	-	-	7	0.0100	-	-	111	
T2		7420		139.32	1.11		174	0.0010				

TOTAL 270.00 371

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 22 PS SUB = 5000 SYSTEM C 400 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	33607	0.64	2.47	-	-	-	1.0000	2.47	2.47	T6
2/1	SR 1	32604	0.64	6.04	-	-	-	1.0000	6.04	6.04	T6
2/2	SR 2	32604	0.64	6.04	-	-	-	1.0000	6.04	6.04	T6
2/3	SR 3	32604	0.64	6.04	-	-	-	1.0000	6.04	6.04	T6
3/1	SW 1	30931	0.63	10.43	-	-	10	0.2342	2.44	4.93	3/1 T6
3/2	SW 2	30931	0.63	10.43	-	-	10	0.2342	2.44	4.93	3/2 T6
3/3	SW 3	30931	0.63	10.43	-	-	10	0.2342	2.44	4.93	3/3 T6
4/1	PL 1	25579	0.72	9.88	-	-	-	1.0000	9.88	9.88	T6
4/2	PL 2	25579	0.72	9.88	-	-	-	1.0000	9.88	9.88	T6
5	TH 2	36952	0.65	4.94	-	-	-	1.0000	4.94	4.94	T6
6/1	PY 1	32269	0.64	7.58	-	-	-	1.0000	7.68	7.68	T6
6/2	PY 2	32269	0.64	3.84	-	-	-	1.0000	3.84	3.84	T6
7/1	KK 1	30262	0.63	6.59	-	-	-	1.0000	6.59	6.59	T6
7/2	KK 2	30262	0.63	6.59	-	-	-	1.0000	6.59	6.59	T6
8/1	CP 1	12138	0.41	11.25	-	-	14	0.0929	1.05	2.40	8/1 T6
8/2	CP 2	12138	0.41	11.25	-	-	14	0.0929	1.05	2.40	8/2 T6
9	TN	27140	0.74	6.04	-	-	-	1.0000	6.04	6.04	T6
10	SP	32269	0.64	0.66	-	-	-	1.0000	0.66	0.66	T6
11	NNW	78460	0.78	0.82	-	-	-	1.0000	0.82	0.82	T6
12	PD	85660	0.78	0.74	-	-	-	1.0000	0.74	0.74	T6
13	DM	168460	0.77	1.07	-	-	-	1.0000	1.07	1.07	T6
14	BN	6671	0.22	18.83	-	-	26	0.0241	0.45	1.24	14 T6
15	BK	40743	0.66	2.74	-	-	-	1.0000	2.74	2.74	T6
16	BC	40632	0.66	1.48	-	-	-	1.0000	1.48	1.48	T6
17	DK	41524	0.66	1.98	-	-	-	1.0000	1.98	1.98	T6
18	BS	37733	0.65	5.49	-	-	-	1.0000	5.49	5.49	T6
19	BP	35503	0.65	3.29	-	-	-	1.0000	3.29	3.29	T6
20	KC	32715	0.64	4.39	-	-	-	1.0000	4.39	4.39	T6
21	IN	31600	0.63	3.29	-	-	-	1.0000	3.29	3.29	T6
22	PS	0	-	13.45	-	-	24	0.0020	-	-	22
23	SNP	7951	0.15	9.41	-	-	16	0.0150	0.14	0.29	23 T6
24	RS	133200	0.77	0.29	-	-	-	1.0000	0.29	0.29	T6
25	BCH	87860	0.78	0.44	-	-	-	1.0000	0.44	0.44	T6
28	NK	113060	0.77	0.20	-	-	-	1.0000	0.20	0.20	T6
30	PSR	80660	0.78	0.49	-	-	-	1.0000	0.49	0.49	T6
31	LP 2	31377	0.63	1.65	-	-	-	1.0000	1.65	1.65	T6
33	LS	86460	0.78	1.10	-	-	-	1.0000	1.10	1.10	T6
35	HM	14280	0.43	9.00	-	-	11	0.1208	1.09	2.30	35 T6
36	PID	40966	0.66	0.44	-	-	-	1.0000	0.44	0.44	T6
37	ASD	28367	0.76	4.94	-	-	-	1.0000	4.94	4.94	T6
41	CHW	41412	0.66	1.24	-	-	-	1.0000	1.24	1.24	T6
42	LP 1	35108	0.64	3.84	-	-	-	1.0000	3.84	3.84	T6
43	TC	30931	0.63	4.12	-	-	-	1.0000	4.12	4.12	T6
44	PTW	28924	0.63	3.29	-	-	-	1.0000	3.29	3.29	T6
45	PKN	10058	0.45	5.63	-	-	-	1.0000	5.63	5.63	T6
50	SS	34388	0.64	2.74	-	-	-	1.0000	2.74	2.74	T6
51	NN	77060	0.78	0.49	-	-	-	1.0000	0.49	0.49	T6
52	PTN	134660	0.77	0.13	-	-	-	1.0000	0.13	0.13	T6
101	TCLL	0	-	10.00	-	-	20	0.0010	-	-	101
111	SPS	0	-	2.50	-	-	6	0.0100	-	-	111
T6		16657		144.11	1.69		179	0.0010			
	TOTAL			249.99			340.				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 23. SMP SUB = 5000 SYSTEM ARF 102 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	72260	0.86	2.21	-	-	-	1.0000	2.21	2.21	T6
2/1	SR 1	41078	0.50	5.40	-	-	-	1.0000	5.40	5.40	T6
2/2	SR 2	41078	0.50	5.40	-	-	-	1.0000	5.40	5.40	T6
2/3	SR 3	41078	0.50	5.40	-	-	-	1.0000	5.40	5.40	T6
3/1	SW 1	39405	0.49	9.33	-	-	11	0.1346	1.25	2.66 3/1	T6
3/2	SW 2	39405	0.49	9.33	-	-	11	0.1346	1.25	2.66 3/2	T6
3/3	SW 3	39405	0.49	9.33	-	-	11	0.1346	1.25	2.66 3/3	T6
4/1	PL 1	34053	0.51	8.84	-	-	10	0.1605	1.42	2.91 4/1	T6
4/2	PL 2	34053	0.51	8.84	-	-	10	0.1605	1.42	2.91 4/2	T6
5	TH 2	78260	0.88	4.42	-	-	-	1.0000	4.42	4.42	T6
6/1	PY 1	40743	0.49	6.88	-	-	-	1.0000	6.88	6.88	T6
6/2	PY 2	40743	0.49	3.44	-	-	-	1.0000	3.44	3.44	T6
7/1	KK 1	38736	0.49	5.89	-	-	-	1.0000	5.89	5.89	T6
7/2	KK 2	38736	0.49	5.89	-	-	-	1.0000	5.89	5.89	T6
8/1	CP 1	27252	0.44	10.07	-	-	12	0.1224	1.23	2.70 8/1	T6
8/2	CP 2	27252	0.44	10.07	-	-	12	0.1224	1.23	2.70 8/2	T6
9	TM	35614	0.52	5.40	-	-	-	1.0000	5.40	5.40	T6
10	SP	40743	0.49	0.59	-	-	-	1.0000	0.59	0.59	T6
11	NKW	93660	0.71	0.74	-	-	-	1.0000	0.74	0.74	T6
12	PD	100860	0.71	0.66	-	-	-	1.0000	0.66	0.66	T6
13	DM	117660	0.72	0.96	-	-	-	1.0000	0.96	0.96	T6
14	BN	11832	0.19	16.85	-	-	24	0.0221	0.37	0.97 14	T6
15	BK	85060	0.91	2.46	-	-	-	1.0000	2.46	2.46	T6
16	BC	84860	0.91	1.33	-	-	-	1.0000	1.33	1.33	T6
17	DK	86460	0.91	1.77	-	-	-	1.0000	1.77	1.77	T6
18	BS	79660	0.89	4.91	-	-	-	1.0000	4.91	4.91	T6
19	BP	75660	0.87	2.95	-	-	-	1.0000	2.95	2.95	T6
20	KC	41189	0.50	3.93	-	-	-	1.0000	3.93	3.93	T6
21	IM	40074	0.49	2.95	-	-	-	1.0000	2.95	2.95	T6
22	PS	7951	0.12	8.42	-	-	15	0.0129	0.11	0.22 22	T6
23	SMP	0	-	12.03	-	-	22	0.0020	-	- 23	
24	RS	148460	0.72	0.26	-	-	-	1.0000	0.26	0.26	T6
25	BCH	103060	0.71	0.39	-	-	-	1.0000	0.39	0.39	T6
28	NK	128260	0.72	0.18	-	-	-	1.0000	0.18	0.18	T6
30	PSR	95860	0.71	0.44	-	-	-	1.0000	0.44	0.44	T6
31	LP 2	39851	0.49	1.47	-	-	-	1.0000	1.47	1.47	T6
33	LS	101660	0.71	0.98	-	-	-	1.0000	0.98	0.98	T6
35	HM	31154	0.48	8.05	-	-	10	0.1239	1.00	2.04 35	T6
36	RID	85460	0.91	0.39	-	-	-	1.0000	0.39	0.39	T6
37	ASD	36841	0.53	4.42	-	-	-	1.0000	4.42	4.42	T6
41	CHW	86260	0.91	1.11	-	-	-	1.0000	1.11	1.11	T6
42	LP 1	75960	0.87	3.44	-	-	-	1.0000	3.44	3.44	T6
43	TC	39405	0.49	3.68	-	-	-	1.0000	3.68	3.68	T6
44	PTW	37398	0.48	2.95	-	-	-	1.0000	2.95	2.95	T6
45	PKN	14709	0.27	5.03	-	-	-	1.0000	5.03	5.03	T6
50	SS	73660	0.86	2.46	-	-	-	1.0000	2.46	2.46	T6
51	NN	92260	0.71	0.44	-	-	-	1.0000	0.44	0.44	T6
52	PTN	149860	0.72	0.12	-	-	-	1.0000	0.12	0.12	T6
101	TOLL	0	-	10.00	-	-	20	0.0010	-	- 101	
111	SPS	0	-	2.56	-	-	6	0.0100	-	- 111	
T6		40530		111.89	1.11		143	0.0010			

TOTAL 225.00 317

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 24 RS SUB = 800 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	110860	0.80	0.13	-	-	-	1.0000	0.13	0.13	T2
2/1	SR 1	98660	0.79	0.62	-	-	-	1.0000	0.62	0.62	T2
2/2	SR 2	98660	0.79	0.62	-	-	-	1.0000	0.62	0.62	T2
2/3	SR 3	98660	0.79	0.62	-	-	-	1.0000	0.62	0.62	T2
3/1	SW 1	101260	0.81	0.62	-	-	-	1.0000	0.62	0.62	T2
3/2	SW 2	101260	0.81	0.62	-	-	-	1.0000	0.62	0.62	T2
3/3	SW 3	101260	0.81	0.62	-	-	-	1.0000	0.62	0.62	T2
4/1	PL 1	94660	0.77	0.80	-	-	-	1.0000	0.80	0.80	T2
4/2	PL 2	94660	0.77	0.80	-	-	-	1.0000	0.80	0.80	T2
5	TH 2	106260	0.83	0.59	-	-	-	1.0000	0.59	0.59	T2
6/1	PY 1	82660	0.74	0.89	-	-	-	1.0000	0.89	0.89	T2
6/2	PY 2	82660	0.74	0.45	-	-	-	1.0000	0.45	0.45	T2
7/1	KK 1	94260	0.77	0.89	-	-	-	1.0000	0.89	0.89	T2
7/2	KK 2	94260	0.77	0.89	-	-	-	1.0000	0.89	0.89	T2
8/1	CP 1	106860	0.79	0.59	-	-	-	1.0000	0.59	0.59	T2
8/2	CP 2	106860	0.79	0.59	-	-	-	1.0000	0.59	0.59	T2
9	TM	104460	0.82	0.48	-	-	-	1.0000	0.48	0.48	T2
10	SP	113660	0.81	0.10	-	-	-	1.0000	0.10	0.10	T2
11	NNW	81860	0.64	0.31	-	-	-	1.0000	0.31	0.31	T2
12	PD	128860	0.85	0.08	-	-	-	1.0000	0.08	0.08	T2
13	DM	103485	0.09	4.64	-	-	-	1.0000	4.64	4.64	T2
14	BN	123060	0.83	0.33	-	-	-	1.0000	0.33	0.33	T2
15	BK	39405	0.32	0.74	-	-	-	1.0000	0.74	0.74	T2
16	BC	112860	0.80	0.23	-	-	-	1.0000	0.23	0.23	T2
17	CK	114460	0.81	0.31	-	-	-	1.0000	0.31	0.31	T2
18	BS	89660	0.74	0.89	-	-	-	1.0000	0.89	0.89	T2
19	BP	98860	0.79	0.69	-	-	-	1.0000	0.69	0.69	T2
20	KC	91260	0.64	0.50	-	-	-	1.0000	0.50	0.50	T2
21	LM	84260	0.70	0.41	-	-	-	1.0000	0.41	0.41	T2
22	PS	133260	0.72	0.16	-	-	-	1.0000	0.16	0.16	T2
23	SMP	148460	0.72	0.16	-	-	-	1.0000	0.16	0.16	T2
24	RS	0	-	1.77	-	-	6	0.0020	-	-	24
25	BCH	94060	0.49	0.05	-	-	-	1.0000	0.05	0.05	T2
28	NK	156260	0.72	0.03	-	-	-	1.0000	0.03	0.03	T2
30	PSR	123860	0.83	0.08	-	-	-	1.0000	0.08	0.08	T2
31	LP 2	89860	0.72	0.19	-	-	-	1.0000	0.19	0.19	T2
33	LS	30151	0.21	0.30	-	-	-	1.0000	0.30	0.30	T2
35	HM	100260	0.79	0.48	-	-	-	1.0000	0.48	0.48	T2
36	RID	76460	0.52	0.05	-	-	-	1.0000	0.05	0.05	T2
37	ASD	89560	0.75	0.40	-	-	-	1.0000	0.40	0.40	T2
41	CPW	109460	0.79	0.15	-	-	-	1.0000	0.15	0.15	T2
42	LP 1	77860	0.64	0.45	-	-	-	1.0000	0.45	0.45	T2
43	TC	107260	0.79	0.22	-	-	-	1.0000	0.22	0.22	T2
44	PTW	95660	0.78	0.45	-	-	-	1.0000	0.45	0.45	T2
45	PKN	113660	0.81	0.30	-	-	-	1.0000	0.30	0.30	T2
50	SS	91660	0.76	0.45	-	-	-	1.0000	0.45	0.45	T2
51	NN	92660	0.73	0.19	-	-	-	1.0000	0.19	0.19	T2
52	PTN	11894	0.05	0.05	-	-	-	1.0000	0.05	0.05	T2
'0'	TOLL	0	-	1.60	-	-	7	0.0010	-	-	'0'
'1'	SFS	0	-	0.40	-	-	2	0.0100	-	-	'1'
T2		84330		24.21	-		40	0.0010			
	TOTAL			27.98			55				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 25 BCH SUB = 800 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	FIJ	CFL	VAR	ROUTING
1	TK	89060	0.81	0.10	-	-	-	1.0000	0.10	0.10	T2
2/1	SR 1	76860	0.81	0.54	-	-	-	1.0000	0.54	0.54	T2
2/2	SR 2	76860	0.81	0.54	-	-	-	1.0000	0.54	0.54	T2
2/3	SR 3	76860	0.81	0.54	-	-	-	1.0000	0.54	0.54	T2
3/1	SK 1	79460	0.82	0.86	-	-	-	1.0000	0.86	0.86	T2
3/2	SK 2	79460	0.82	0.86	-	-	-	1.0000	0.86	0.86	T2
3/3	SK 3	79460	0.82	0.86	-	-	-	1.0000	0.86	0.86	T2
4/1	PL 1	72060	0.77	1.02	-	-	-	1.0000	1.02	1.02	T2
4/2	PL 2	72060	0.77	1.02	-	-	-	1.0000	1.02	1.02	T2
5	TH 2	84460	0.86	0.91	-	-	-	1.0000	0.91	0.91	T2
6/1	PY 1	35726	0.43	1.24	-	-	-	1.0000	1.24	1.24	T2
6/2	PY 2	35726	0.43	0.62	-	-	-	1.0000	0.62	0.62	T2
7/1	KK 1	72460	0.77	0.97	-	-	-	1.0000	0.97	0.97	T2
7/2	KK 2	72460	0.77	0.97	-	-	-	1.0000	0.97	0.97	T2
8/1	CP 1	37621	0.35	1.02	-	-	-	1.0000	1.02	1.02	T2
8/2	CP 2	37621	0.35	1.02	-	-	-	1.0000	1.02	1.02	T2
9	TM	79260	0.81	0.54	-	-	-	1.0000	0.54	0.54	T2
10	SP	88460	0.79	0.14	-	-	-	1.0000	0.14	0.14	T2
11	NWW	35280	0.36	0.51	-	-	-	1.0000	0.51	0.51	T2
12	PD	107060	0.87	0.14	-	-	-	1.0000	0.14	0.14	T2
13	DM	37064	0.30	0.31	-	-	-	1.0000	0.31	0.31	T2
14	BN	77660	0.65	0.57	-	-	-	1.0000	0.57	0.57	T2
15	BK	27252	0.29	0.51	-	-	-	1.0000	0.51	0.51	T2
16	BC	91060	0.82	0.27	-	-	-	1.0000	0.27	0.27	T2
17	DK	92660	0.82	0.37	-	-	-	1.0000	0.37	0.37	T2
18	BS	39628	0.43	0.89	-	-	-	1.0000	0.89	0.89	T2
19	BP	77960	0.81	0.65	-	-	-	1.0000	0.65	0.65	T2
20	KC	13974	0.12	1.27	-	-	-	1.0000	1.27	1.27	T2
21	IM	36618	0.40	0.81	-	-	-	1.0000	0.81	0.81	T2
22	PS	87869	0.56	0.28	-	-	-	1.0000	0.28	0.28	T2
23	SNP	103060	0.58	0.28	-	-	-	1.0000	0.28	0.28	T2
24	RS	94060	0.49	0.08	-	-	-	1.0000	0.08	0.08	T2
25	BCH	0	-	0.18	-	-	2	0.0020	-	-	25
28	NK	134460	0.72	0.04	-	-	-	1.0000	0.04	0.04	T2
30	PSR	102060	0.85	0.09	-	-	-	1.0000	0.09	0.09	T2
31	LP 2	36931	0.32	0.47	-	-	-	1.0000	0.47	0.47	T2
33	LS	28144	0.25	0.20	-	-	-	1.0000	0.20	0.20	T2
35	HN	33719	0.34	0.82	-	-	-	1.0000	0.82	0.82	T2
36	RID	8566	0.07	0.13	-	-	-	1.0000	0.13	0.13	T2
37	ASD	39628	0.43	0.51	-	-	-	1.0000	0.51	0.51	T2
41	CHW	87660	0.81	0.23	-	-	-	1.0000	0.23	0.23	T2
42	LP 1	33050	0.35	0.62	-	-	-	1.0000	0.62	0.62	T2
43	TC	85460	0.80	0.17	-	-	-	1.0000	0.17	0.17	T2
44	PTW	73860	0.76	0.48	-	-	-	1.0000	0.48	0.48	T2
45	PKN	39851	0.36	0.51	-	-	-	1.0000	0.51	0.51	T2
50	SS	46743	0.44	0.44	-	-	-	1.0000	0.44	0.44	T2
51	NN	41341	0.42	0.31	-	-	-	1.0000	0.31	0.31	T2
52	PTN	116260	0.59	0.08	-	-	-	1.0000	0.08	0.08	T2
'0'	TOLL	0	-	1.60	-	-	7	0.0010	-	-	'0'
'1'	SPS	0	-	0.40	-	-	2	0.0100	-	-	'1'
T2		62530		25.81	-		42	0.0010			

TOTAL 27.99 53

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 28 NK SUB = 800 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	80660	0.81	0.12	-	-	-	1.0000	0.12	0.12	TS
2/1	SR 1	37064	0.45	0.66	-	-	-	1.0000	0.66	0.66	TS
2/2	SR 2	37064	0.45	0.66	-	-	-	1.0000	0.66	0.66	TS
2/3	SR 3	37064	0.45	0.66	-	-	-	1.0000	0.66	0.66	TS
3/1	SN 1	41412	0.48	0.74	-	-	-	1.0000	0.74	0.74	TS
3/2	SN 2	41412	0.48	0.74	-	-	-	1.0000	0.74	0.74	TS
3/3	SN 3	41412	0.48	0.74	-	-	-	1.0000	0.74	0.74	TS
4/1	PL 1	74460	0.85	0.56	-	-	-	1.0000	0.55	0.56	TS
4/2	PL 2	74460	0.85	0.56	-	-	-	1.0000	0.56	0.56	TS
5	TH 2	31935	0.43	3.54	-	-	-	1.0000	3.54	3.54	TS
6/1	PY 1	77660	0.87	0.56	-	-	-	1.0000	0.56	0.56	TS
6/2	PY 2	77660	0.87	0.28	-	-	-	1.0000	0.28	0.28	TS
7/1	KK 1	38625	0.46	0.68	-	-	-	1.0000	0.68	0.68	TS
7/2	KK 2	38625	0.46	0.68	-	-	-	1.0000	0.68	0.68	TS
8/1	CP 1	86660	0.83	0.56	-	-	-	1.0000	0.56	0.56	TS
8/2	CP 2	86660	0.83	0.56	-	-	-	1.0000	0.56	0.56	TS
9	TM	78060	0.87	0.31	-	-	-	1.0000	0.31	0.31	TS
10	SP	85860	0.83	0.09	-	-	-	1.0000	0.09	0.09	TS
11	NNW	97260	0.87	0.26	-	-	-	1.0000	0.26	0.26	TS
12	PD	76660	0.86	0.22	-	-	-	1.0000	0.22	0.22	TS
13	DM	125460	0.72	0.15	-	-	-	1.0000	0.15	0.15	TS
14	BN	102860	0.71	0.31	-	-	-	1.0000	0.31	0.31	TS
15	BK	92860	0.86	0.26	-	-	-	1.0000	0.26	0.26	TS
16	BC	28255	0.34	1.21	-	-	-	1.0000	1.21	1.21	TS
17	DK	36536	0.44	0.59	-	-	-	1.0000	0.59	0.59	TS
18	BS	83260	0.82	0.51	-	-	-	1.0000	0.51	0.51	TS
19	BP	72660	0.83	0.59	-	-	-	1.0000	0.59	0.59	TS
20	KC	113960	0.71	0.41	-	-	-	1.0000	0.41	0.41	TS
21	LM	84260	0.82	0.31	-	-	-	1.0000	0.31	0.31	TS
22	PS	113960	0.71	0.15	-	-	-	1.0000	0.15	0.15	TS
23	SMP	128260	0.72	0.15	-	-	-	1.0000	0.15	0.15	TS
24	RS	156260	0.72	0.04	-	-	-	1.0000	0.04	0.04	TS
25	RCH	134460	0.72	0.04	-	-	-	1.0000	0.04	0.04	TS
28	NK	0	-	0.23	-	-	2	0.0020	-	-	28
30	PSR	14280	0.16	0.40	-	-	-	1.0000	0.40	0.40	TS
31	LP 2	96260	0.87	0.15	-	-	-	1.0000	0.15	0.15	TS
33	LS	109460	0.71	0.10	-	-	-	1.0000	0.10	0.10	TS
35	HM	89260	0.84	0.44	-	-	-	1.0000	0.44	0.44	TS
36	RID	116860	0.71	0.04	-	-	-	1.0000	0.04	0.04	TS
37	ASD	78260	0.83	0.28	-	-	-	1.0000	0.28	0.28	TS
41	CHN	37064	0.45	0.89	-	-	-	1.0000	0.89	0.89	TS
42	LP 1	88860	0.84	0.28	-	-	-	1.0000	0.28	0.28	TS
43	TC	77760	0.86	0.21	-	-	-	1.0000	0.21	0.21	TS
44	PTW	40743	0.47	0.34	-	-	-	1.0000	0.34	0.34	TS
45	PKN	93460	0.86	0.28	-	-	-	1.0000	0.28	0.28	TS
50	SS	73460	0.84	0.26	-	-	-	1.0000	0.26	0.26	TS
51	NN	91060	0.85	0.15	-	-	-	1.0000	0.15	0.15	TS
52	PTN	153460	0.72	0.04	-	-	-	1.0000	0.04	0.04	TS
'0'	TCLL	0	-	1.00	-	-	7	0.0010	-	-	'0'
'1'	SPS	0	-	0.40	-	-	2	0.0100	-	-	'1'
TS		55730		21.76	-		37	0.0010			
	TOTAL			23.99			48				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 30 PSR SUB = 2000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/M	MO	NIJ	FIJ	OFL	VAR	ROUTING
1	TK	28701	0.63	0.36	-	-	-	1.0000	0.36	0.36	T5
2/1	SR 1	12261	0.42	1.94	-	-	-	1.0000	1.94	1.94	T5
2/2	SR 2	12261	0.42	1.94	-	-	-	1.0000	1.94	1.94	T5
2/3	SR 3	12261	0.42	1.94	-	-	-	1.0000	1.94	1.94	T5
3/1	SW 1	14648	0.44	2.18	-	-	-	1.0000	2.18	2.18	T5
3/2	SW 2	14648	0.44	2.18	-	-	-	1.0000	2.18	2.18	T5
3/3	SW 3	14648	0.44	2.18	-	-	-	1.0000	2.18	2.18	T5
4/1	PL 1	25245	0.73	1.63	-	-	-	1.0000	1.63	1.63	T5
4/2	PL 2	25245	0.73	1.63	-	-	-	1.0000	1.63	1.63	T5
5	TH 2	8566	0.41	19.41	-	-	13	0.0980	1.02	2.28 5	T5
6/1	PY 1	27029	0.76	1.63	-	-	-	1.0000	1.63	1.63	T5
6/2	PY 2	27029	0.76	0.82	-	-	-	1.0000	0.82	0.82	T5
7/1	KK 1	13118	0.42	2.00	-	-	-	1.0000	2.00	2.00	T5
7/2	KK 2	13118	0.42	2.00	-	-	-	1.0000	2.00	2.00	T5
8/1	CP 1	32046	0.64	1.63	-	-	-	1.0000	1.63	1.63	T5
8/2	CP 2	32046	0.64	1.63	-	-	-	1.0000	1.63	1.63	T5
9	TM	27252	0.76	0.91	-	-	-	1.0000	0.91	0.91	T5
10	SP	31609	0.63	0.27	-	-	-	1.0000	0.27	0.27	T5
11	NAW	37956	0.65	0.76	-	-	-	1.0000	0.76	0.76	T5
12	PD	26471	0.75	0.65	-	-	-	1.0000	0.65	0.65	T5
13	OM	93060	0.77	0.45	-	-	-	1.0000	0.45	0.45	T5
14	BN	41078	0.45	0.91	-	-	-	1.0000	0.91	0.91	T5
15	BK	35503	0.65	0.76	-	-	-	1.0000	0.76	0.76	T5
16	BC	6876	0.24	3.56	-	-	-	1.0000	3.56	3.56	T5
17	DK	11955	0.41	1.74	-	-	-	1.0000	1.74	1.74	T5
18	BS	39151	0.63	1.51	-	-	-	1.0000	1.51	1.51	T5
19	BP	24241	0.72	1.74	-	-	-	1.0000	1.74	1.74	T5
20	KC	77660	0.77	1.21	-	-	-	1.0000	1.21	1.21	T5
21	IM	30708	0.63	0.91	-	-	-	1.0000	0.91	0.91	T5
22	PS	80660	0.77	0.45	-	-	-	1.0000	0.45	0.45	T5
23	SMP	95860	0.77	0.45	-	-	-	1.0000	0.45	0.45	T5
24	RS	123860	0.76	0.12	-	-	-	1.0000	0.12	0.12	T5
25	BCH	102060	0.77	0.12	-	-	-	1.0000	0.12	0.12	T5
28	NK	14280	0.15	0.47	-	-	-	1.0000	0.47	0.47	T5
30	PSR	0	-	1.70	-	-	6	0.0020	-	-	30
31	LP 2	37398	0.65	0.45	-	-	-	1.0000	0.45	0.45	T5
33	LS	77060	0.77	0.30	-	-	-	1.0000	0.30	0.30	T5
35	HN	33496	0.64	1.31	-	-	-	1.0000	1.31	1.31	T5
36	RID	84460	0.77	0.12	-	-	-	1.0000	0.12	0.12	T5
37	ASD	27363	0.62	0.82	-	-	-	1.0000	0.82	0.82	T5
41	CHW	12261	0.42	2.60	-	-	-	1.0000	2.60	2.60	T5
42	LP 1	33273	0.64	0.82	-	-	-	1.0000	0.82	0.82	T5
43	TC	26694	0.75	0.61	-	-	-	1.0000	0.61	0.61	T5
44	PTW	14280	0.44	1.00	-	-	-	1.0000	1.00	1.00	T5
45	PKN	35837	0.65	0.82	-	-	-	1.0000	0.82	0.82	T5
50	SS	24687	0.73	0.76	-	-	-	1.0000	0.76	0.76	T5
51	NN	34499	0.64	0.45	-	-	-	1.0000	0.45	0.45	T5
52	PTN	121060	0.76	0.12	-	-	-	1.0000	0.12	0.12	T5
101	TOLL	0	-	4.00	-	-	11	0.0010	-	-	101
111	SPS	0	-	1.00	-	-	4	0.0100	-	-	111
T5		15542		53.88	1.02		76	0.0010			

TOTAL 69.97 110

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 31 LP 2 SUB = 3000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	29482	0.62	0.45	-	-	-	1.0000	0.45	0.45	T2
2/1	SR 1	14648	0.44	2.32	-	-	-	1.0000	2.32	2.32	T2
2/2	SR 2	14648	0.44	2.32	-	-	-	1.0000	2.32	2.32	T2
2/3	SR 3	14648	0.44	2.32	-	-	-	1.0000	2.32	2.32	T2
3/1	SW 1	24130	0.70	3.70	-	-	-	1.0000	3.70	3.70	T2
3/2	SW 2	24130	0.70	3.70	-	-	-	1.0000	3.70	3.70	T2
3/3	SW 3	24130	0.70	3.70	-	-	-	1.0000	3.70	3.70	T2
4/1	PL 1	12322	0.39	4.40	-	-	-	1.0000	4.40	4.40	T2
4/2	PL 2	12322	0.39	4.40	-	-	-	1.0000	4.40	4.40	T2
5	TH 2	27586	0.76	3.94	-	-	-	1.0000	3.94	3.94	T2
6/1	PY 1	8822	0.41	5.33	-	-	-	1.0000	5.33	5.33	T2
6/2	PY 2	8822	0.41	2.66	-	-	-	1.0000	2.66	2.66	T2
7/1	KK 1	13301	0.42	4.17	-	-	-	1.0000	4.17	4.17	T2
7/2	KK 2	13301	0.42	4.17	-	-	-	1.0000	4.17	4.17	T2
8/1	CP 1	10976	0.24	4.40	-	-	-	1.0000	4.40	4.40	T2
8/2	CP 2	10976	0.24	4.40	-	-	-	1.0000	4.40	4.40	T2
9	TM	24576	0.69	2.32	-	-	-	1.0000	2.32	2.32	T2
10	SP	29705	0.60	0.59	-	-	-	1.0000	0.59	0.59	T2
11	NHW	24574	0.67	2.20	-	-	-	1.0000	2.20	2.20	T2
12	PD	40186	0.66	0.59	-	-	-	1.0000	0.59	0.59	T2
13	DM	34722	0.56	1.32	-	-	-	1.0000	1.32	1.32	T2
14	BN	25691	0.45	2.43	-	-	-	1.0000	2.43	2.43	T2
15	BK	10914	0.33	2.20	-	-	-	1.0000	2.20	2.20	T2
16	BC	31266	0.63	1.18	-	-	-	1.0000	1.18	1.18	T2
17	DK	32158	0.64	1.57	-	-	-	1.0000	1.57	1.57	T2
18	BS	11343	0.38	3.82	-	-	-	1.0000	3.82	3.82	T2
19	BP	14709	0.44	2.78	-	-	-	1.0000	2.78	2.78	T2
20	KC	8105	0.15	5.45	-	-	10	0.0280	0.15	0.28 20	T2
21	IM	7132	0.24	3.47	-	-	-	1.0000	3.47	3.47	T2
22	PS	31377	0.33	1.22	-	-	-	1.0000	1.22	1.22	T2
23	SNP	39851	0.35	1.22	-	-	-	1.0000	1.22	1.22	T2
24	RS	89860	0.68	0.35	-	-	-	1.0000	0.35	0.35	T2
25	BCH	30931	0.30	0.54	-	-	-	1.0000	0.54	0.54	T2
28	NK	96260	0.77	0.16	-	-	-	1.0000	0.16	0.16	T2
30	PSR	37398	0.65	0.39	-	-	-	1.0000	0.39	0.39	T2
31	LP 2	0	-	2.92	-	-	9	0.0020	-	- 31	
33	LS	25802	0.51	0.88	-	-	-	1.0000	0.88	0.88	T2
35	HM	8054	0.22	3.52	-	-	-	1.0000	3.52	3.52	T2
36	RID	13424	0.24	0.54	-	-	-	1.0000	0.54	0.54	T2
37	ASD	10792	0.37	2.20	-	-	-	1.0000	2.20	2.20	T2
41	CHW	29370	0.63	0.98	-	-	-	1.0000	0.98	0.98	T2
42	LP 1	7132	0.23	2.66	-	-	-	1.0000	2.66	2.66	T2
43	TC	27475	0.61	0.75	-	-	-	1.0000	0.75	0.75	T2
44	PTW	13362	0.42	2.68	-	-	-	1.0000	2.68	2.68	T2
45	PKN	13056	0.26	2.20	-	-	-	1.0000	2.20	2.20	T2
50	SS	12576	0.42	1.91	-	-	-	1.0000	1.91	1.91	T2
51	NN	24353	0.68	1.32	-	-	-	1.0000	1.32	1.32	T2
52	PTN	97660	0.73	0.35	-	-	-	1.0000	0.35	0.35	T2
'0'	TCLL	0	-	6.00	-	-	14	0.0010	-	- '0'	
'1'	SPS	0	-	1.50	-	-	5	0.0100	-	- '1'	
T2		16099		104.27	1.00		133	0.0010			
TOTAL				119.99			171				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 35 UM SUB = 8000 SYSTEM C 400 TANDEM AREA = 6

J	NAME	CIJ	C/P	AIJ	V/N	MG	MIJ	SIJ	OFL	VAR	ROUTING
1	TK	14342	0.33	2.12	-	-	-	1.0000	2.12	2.12	T6
2/1	SR 1	12444	0.30	14.85	-	-	20	0.0430	0.64	1.63 2/1	T6
2/2	SR 2	12444	0.30	14.85	-	-	20	0.0430	0.64	1.63 2/2	T6
2/3	SR 3	12444	0.30	14.85	-	-	20	0.0430	0.64	1.63 2/3	T6
3/1	SW 1	11526	0.29	11.14	-	-	16	0.0416	0.46	1.66 3/1	T6
3/2	SW 2	11526	0.29	11.14	-	-	16	0.0416	0.46	1.66 3/2	T6
3/3	SW 3	11526	0.29	11.14	-	-	16	0.0416	0.46	1.66 3/3	T6
4/1	PL 1	7849	0.30	13.74	-	-	19	0.0397	0.55	1.35 4/1	T6
4/2	PL 2	7849	0.30	13.74	-	-	19	0.0397	0.55	1.35 4/2	T6
5	TH 2	14831	0.31	6.68	-	-	10	0.0664	0.44	0.87 5	T6
6/1	PY 1	10976	0.26	8.91	-	-	13	0.0520	0.46	0.99 6/1	T6
6/2	PY 2	10976	0.26	4.46	-	-	-	1.0000	4.46	4.46	T6
7/1	KK 1	11159	0.29	10.40	-	-	15	0.0448	0.47	1.65 7/1	T6
7/2	KK 2	11159	0.29	10.40	-	-	15	0.0448	0.47	1.65 7/2	T6
8/1	CP 1	5852	0.28	15.60	-	-	21	0.0403	0.63	1.63 8/1	T6
8/2	CP 2	5852	0.28	15.60	-	-	21	0.0403	0.63	1.63 8/2	T6
9	TM	10792	0.39	16.71	-	-	21	0.0594	0.99	2.55 9	T6
10	SP	13607	0.33	1.67	-	-	-	1.0000	1.67	1.67	T6
11	NNW	29928	0.33	1.86	-	-	-	1.0000	1.86	1.86	T6
12	PD	36283	0.36	0.67	-	-	-	1.0000	0.67	0.67	T6
13	DM	40520	0.33	2.45	-	-	-	1.0000	2.45	2.45	T6
14	BN	11159	0.51	9.65	-	-	11	0.1482	1.43	3.64 14	T6
15	BK	14797	0.27	2.60	-	-	-	1.0000	2.60	2.60	T6
16	BC	27363	0.52	2.01	-	-	-	1.0000	2.01	2.01	T6
17	DK	28255	0.52	2.67	-	-	-	1.0000	2.67	2.67	T6
18	RS	13974	0.29	4.08	-	-	-	1.0000	4.08	4.08	T6
19	BP	14036	0.30	5.35	-	-	-	1.0000	5.35	5.35	T6
20	KC	10425	0.25	7.72	-	-	12	0.0438	0.34	0.69 20	T6
21	IN	8156	0.20	3.12	-	-	-	1.0000	3.12	3.12	T6
22	PS	14280	0.54	4.83	-	-	-	1.0000	4.83	4.83	T6
23	SMP	31154	0.70	4.83	-	-	-	1.0000	4.83	4.83	T6
24	RS	100260	0.61	0.65	-	-	-	1.0000	0.65	0.65	T6
25	BCH	33719	0.32	0.77	-	-	-	1.0000	0.77	0.77	T6
28	NK	89260	0.65	0.27	-	-	-	1.0000	0.27	0.27	T6
30	PSR	33496	0.35	0.67	-	-	-	1.0000	0.07	0.07	T6
31	LP 2	8054	0.20	2.99	-	-	-	1.0000	2.99	2.99	T6
33	LS	31600	0.31	1.04	-	-	-	1.0000	1.04	1.04	T6
35	HM	0	-	12.48	-	-	23	0.0020	-	- 35	
36	RID	23907	0.45	0.77	-	-	-	1.0000	0.77	0.77	T6
37	ASD	10119	0.36	6.87	-	-	10	0.0736	0.51	1.00 37	T6
41	CHN	28144	0.52	1.67	-	-	-	1.0000	1.67	1.67	T6
42	LP 1	10914	0.24	4.46	-	-	-	1.0000	4.46	4.46	T6
43	TC	12873	0.32	3.53	-	-	-	1.0000	3.53	3.53	T6
44	PTW	10425	0.28	5.20	-	-	-	1.0000	5.20	5.20	T6
45	PKN	7593	0.57	5.46	-	-	-	1.0000	5.46	5.46	T6
50	SS	13424	0.30	2.04	-	-	-	1.0000	2.04	2.04	T6
51	NN	29147	0.32	1.11	-	-	-	1.0000	1.11	1.11	T6
52	PTN	106660	0.64	0.30	-	-	-	1.0000	0.30	0.30	T6
'0'	TOLL	0	-	16.00	-	-	29	0.0010	-	- '0'	
'1'	SPS	0	-	4.00	-	-	9	0.0100	-	- '1'	
T6		9953		84.32	1.17		113	0.0010			

TOTAL 320.03 469

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 36 RID SUB = 800 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	71460	0.83	0.09	-	-	-	1.0000	0.09	0.09	T2
2/1	SR 1	34834	0.48	0.46	-	-	-	1.0000	0.46	0.46	T2
2/2	SR 2	34834	0.48	0.46	-	-	-	1.0000	0.46	0.46	T2
2/3	SR 3	34834	0.48	0.46	-	-	-	1.0000	0.46	0.46	T2
3/1	SN 1	36283	0.50	0.73	-	-	-	1.0000	0.73	0.73	T2
3/2	SN 2	36283	0.50	0.73	-	-	-	1.0000	0.73	0.73	T2
3/3	SN 3	36283	0.50	0.73	-	-	-	1.0000	0.73	0.73	T2
4/1	PL 1	32158	0.46	0.87	-	-	-	1.0000	0.87	0.87	T2
4/2	PL 2	32158	0.46	0.87	-	-	-	1.0000	0.87	0.87	T2
5	TH 2	39071	0.52	0.77	-	-	-	1.0000	0.77	0.77	T2
6/1	PY 1	25914	0.43	1.05	-	-	-	1.0000	1.05	1.05	T2
6/2	PY 2	25914	0.43	0.52	-	-	-	1.0000	0.52	0.52	T2
7/1	KK 1	32381	0.46	0.82	-	-	-	1.0000	0.82	0.82	T2
7/2	KK 2	32381	0.46	0.82	-	-	-	1.0000	0.82	0.82	T2
8/1	CP 1	27809	0.33	0.87	-	-	-	1.0000	0.87	0.87	T2
8/2	CP 2	27809	0.33	0.87	-	-	-	1.0000	0.87	0.87	T2
9	TM	36172	0.49	0.46	-	-	-	1.0000	0.46	0.46	T2
10	SP	41301	0.47	0.12	-	-	-	1.0000	0.12	0.12	T2
11	NNW	25468	0.34	0.43	-	-	-	1.0000	0.43	0.43	T2
12	PD	89460	0.90	0.12	-	-	-	1.0000	0.12	0.12	T2
13	DM	27252	0.27	0.26	-	-	-	1.0000	0.26	0.26	T2
14	BN	35280	0.37	0.48	-	-	-	1.0000	0.48	0.48	T2
15	BK	11404	0.16	0.43	-	-	-	1.0000	0.43	0.43	T2
16	BC	73460	0.84	0.23	-	-	-	1.0000	0.23	0.23	T2
17	DK	75360	0.84	0.31	-	-	-	1.0000	0.31	0.31	T2
18	BS	29816	0.43	0.75	-	-	-	1.0000	0.75	0.75	T2
19	BP	34945	0.49	0.55	-	-	-	1.0000	0.55	0.55	T2
20	KC	7849	0.09	1.07	-	-	-	1.0000	1.07	1.07	T2
21	IN	26876	0.40	0.68	-	-	-	1.0000	0.68	0.68	T2
22	PS	40966	0.31	0.24	-	-	-	1.0000	0.24	0.24	T2
23	SNP	95460	0.56	0.24	-	-	-	1.0000	0.24	0.24	T2
24	RS	76460	0.45	0.07	-	-	-	1.0000	0.07	0.07	T2
25	BCH	8566	0.06	0.11	-	-	-	1.0000	0.11	0.11	T2
28	NK	116860	0.71	0.03	-	-	-	1.0000	0.03	0.03	T2
30	PSR	84460	0.88	0.08	-	-	-	1.0000	0.08	0.08	T2
31	LP 2	13424	0.18	0.40	-	-	-	1.0000	0.40	0.40	T2
33	LS	11894	0.13	0.17	-	-	-	1.0000	0.17	0.17	T2
35	HP	23907	0.32	0.69	-	-	-	1.0000	0.69	1.69	T2
36	RID	0	-	0.15	-	-	2	0.0020	-	-	36
37	ASD	29816	0.44	0.43	-	-	-	1.0000	0.43	0.43	T2
41	CHN	40855	0.48	0.19	-	-	-	1.0000	0.19	0.19	T2
42	LP 1	14586	0.21	0.52	-	-	-	1.0000	0.52	0.52	T2
43	TC	39628	0.47	0.15	-	-	-	1.0000	0.15	0.15	T2
44	PTN	33161	0.47	0.41	-	-	-	1.0000	0.41	0.41	T2
45	PKN	30039	0.34	0.43	-	-	-	1.0000	0.43	0.43	T2
50	SS	30931	0.45	0.38	-	-	-	1.0000	0.38	0.38	T2
51	NN	31489	0.42	0.26	-	-	-	1.0000	0.26	0.26	T2
52	PTN	98660	0.57	0.07	-	-	-	1.0000	0.07	0.07	T2
101	TOLL	0	-	1.60	-	-	7	0.0010	-	-	101
111	SFS	0	-	0.40	-	-	2	0.0100	-	-	111
T2		44930		21.88	-		37	0.0010			
	TOTAL			24.03			48				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 37. ASD SUB = 5000 SYSTEM C 400 TANDEM AREA = 3

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	11282	0.50	1.01	-	-	-	1.0000	1.01	1.01	T3
2/1	SR 1	7900	0.40	10.11	-	-	13	0.0879	0.89	1.98 2/1	T3
2/2	SR 2	7900	0.40	10.11	-	-	13	0.0879	0.89	1.98 2/2	T3
2/3	SR 3	7900	0.40	10.11	-	-	13	0.0879	0.89	1.98 2/3	T3
3/1	SH 1	7644	0.42	23.97	-	-	28	0.0661	1.59	4.82 3/1	T3
3/2	SH 2	7644	0.42	23.97	-	-	28	0.0661	1.59	4.82 3/2	T3
3/3	SW 3	7644	0.42	23.97	-	-	28	0.0661	1.59	4.82 3/3	T3
4/1	PL 1	5340	0.57	11.61	-	-	12	0.1831	2.13	4.63 4/1	T3
4/2	PL 2	5340	0.57	11.61	-	-	12	0.1831	2.13	4.63 4/2	T3
5	TH 2	11465	0.50	10.99	-	-	13	0.1182	1.30	2.92 5	T3
6/1	PY 1	5852	0.30	5.99	-	-	-	1.0000	5.99	5.99	T3
6/2	PY 2	5852	0.30	3.00	-	-	-	1.0000	3.00	3.00	T3
7/1	KK 1	7439	0.42	10.49	-	-	13	0.1007	1.06	2.37 7/1	T3
7/2	KK 2	7439	0.42	10.49	-	-	13	0.1007	1.06	2.37 7/2	T3
8/1	CP 1	8463	0.43	9.11	-	-	12	0.0869	0.79	1.71 8/1	T3
8/2	CP 2	8463	0.43	9.11	-	-	12	0.0869	0.79	1.71 8/2	T3
9	TM	7849	0.43	5.99	-	-	-	1.0000	5.99	5.99	T3
10	SP	11404	0.51	1.24	-	-	-	1.0000	1.24	1.24	T3
11	NW	13485	0.33	2.25	-	-	-	1.0000	2.25	2.25	T3
12	PC	30151	0.65	1.27	-	-	-	1.0000	1.27	1.27	T3
13	DM	34611	0.37	1.98	-	-	-	1.0000	1.98	1.98	T3
14	BN	14280	0.40	4.37	-	-	-	1.0000	4.37	4.37	T3
15	BK	10853	0.31	2.12	-	-	-	1.0000	2.12	2.12	T3
16	RC	13485	0.39	2.32	-	-	-	1.0000	2.32	2.32	T3
17	DK	13974	0.39	2.00	-	-	-	1.0000	2.00	2.00	T3
18	BS	8361	0.35	4.49	-	-	-	1.0000	4.49	4.49	T3
19	BP	10976	0.50	3.00	-	-	-	1.0000	3.00	3.00	T3
20	KC	25133	0.61	2.00	-	-	-	1.0000	2.00	2.00	T3
21	IM	6620	0.32	1.57	-	-	-	1.0000	1.57	1.57	T3
22	PS	28367	0.65	2.18	-	-	-	1.0000	2.18	2.18	T3
23	SMP	36841	0.43	2.18	-	-	-	1.0000	2.18	2.18	T3
24	RS	89660	0.66	0.53	-	-	-	1.0000	0.53	0.53	T3
25	BCH	39628	0.38	0.20	-	-	-	1.0000	0.20	0.20	T3
28	NK	78260	0.72	0.31	-	-	-	1.0000	0.31	0.31	T3
30	PSR	27363	0.64	0.77	-	-	-	1.0000	0.77	0.77	T3
31	LP 2	10792	0.31	0.75	-	-	-	1.0000	0.75	0.75	T3
33	LS	25691	0.54	0.85	-	-	-	1.0000	0.85	0.85	T3
35	HM	10119	0.49	7.29	-	-	-	1.0000	7.29	7.29	T3
36	RID	29816	0.36	0.20	-	-	-	1.0000	0.20	0.20	T3
37	ASD	0	-	5.80	-	-	13	0.0020	-	- 37	
41	CHN	14219	0.40	2.75	-	-	-	1.0000	2.75	2.75	T3
42	LP 1	8258	0.35	3.00	-	-	-	1.0000	3.00	3.00	T3
43	TC	10180	0.48	1.69	-	-	-	1.0000	1.69	1.69	T3
44	PTW	6219	0.37	5.24	-	-	-	1.0000	5.24	5.24	T3
45	PKN	11404	0.51	4.56	-	-	-	1.0000	4.56	4.56	T3
50	SS	8156	0.38	2.25	-	-	-	1.0000	2.25	2.25	T3
51	NN	13056	0.32	1.35	-	-	-	1.0000	1.35	1.35	T3
52	PTN	91060	0.66	0.36	-	-	-	1.0000	0.36	0.36	T3
'0'	TOLL	0	-	10.00	-	-	20	0.0010	-	- '0'	
'1'	SPS	0	-	2.50	-	-	6	0.0100	-	- '1'	
T3		7010		97.73	1.25		129	0.0010			

TOTAL 275.01 378

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 41 CHW SUB = 5000 SYSTEM C 400 TANDEM AREA = 5

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	24018	0.66	1.37	-	-	-	1.0000	1.37	1.37	T5
2/1	SR 1	8770	0.44	12.92	-	-	16	0.0839	1.08	2.62	2/1 T5
2/2	SR 2	8770	0.44	12.92	-	-	16	0.0839	1.08	2.62	2/2 T5
2/3	SR 3	8770	0.44	12.92	-	-	16	0.0839	1.08	2.62	2/3 T5
3/1	SW 1	12077	0.51	11.13	-	-	13	0.1232	1.37	3.09	3/1 T5
3/2	SW 2	12077	0.51	11.13	-	-	13	0.1232	1.37	3.09	3/2 T5
3/3	SW 3	12077	0.51	11.13	-	-	13	0.1232	1.37	3.09	3/3 T5
4/1	PL 1	12750	0.51	4.77	-	-	-	1.0000	4.77	4.77	T5
4/2	PL 2	12750	0.51	4.77	-	-	-	1.0000	4.77	4.77	T5
5	TH 2	6415	0.56	25.44	-	-	27	0.1092	2.78	8.30	5 T5
6/1	PY 1	12261	0.46	4.77	-	-	-	1.0000	4.77	4.77	T5
6/2	PY 2	12261	0.46	2.38	-	-	-	1.0000	2.38	2.38	T5
7/1	KK 1	10180	0.47	10.53	-	-	13	0.1021	1.07	2.41	7/1 T5
7/2	KK 2	10180	0.47	10.53	-	-	13	0.1021	1.07	2.41	7/2 T5
8/1	CP 1	26694	0.65	4.17	-	-	-	1.0000	4.17	4.17	T5
8/2	CP 2	26694	0.65	4.17	-	-	-	1.0000	4.17	4.17	T5
9	TM	14219	0.53	2.58	-	-	-	1.0000	2.58	2.58	T5
10	SP	26917	0.67	0.78	-	-	-	1.0000	0.78	0.78	T5
11	NNW	26248	0.54	0.99	-	-	-	1.0000	0.99	0.99	T5
12	PD	13791	0.53	1.67	-	-	-	1.0000	1.67	1.67	T5
13	DM	78660	0.70	1.25	-	-	-	1.0000	1.25	1.25	T5
14	BN	35726	0.44	1.79	-	-	-	1.0000	1.79	1.79	T5
15	BK	27475	0.60	0.99	-	-	-	1.0000	0.99	0.99	T5
16	BC	8105	0.43	5.13	-	-	-	1.0000	5.13	5.13	T5
17	DK	8514	0.43	6.84	-	-	-	1.0000	6.84	6.84	T5
18	BS	12383	0.32	2.58	-	-	-	1.0000	2.58	2.58	T5
19	BP	6774	0.28	6.84	-	-	11	0.0431	0.29	0.58	19 T5
20	KC	38179	0.42	2.07	-	-	-	1.0000	2.07	2.07	T5
21	IN	14280	0.36	1.67	-	-	-	1.0000	1.67	1.67	T5
22	PS	41412	0.43	0.89	-	-	-	1.0000	0.89	0.89	T5
23	SNP	86260	0.75	0.89	-	-	-	1.0000	0.89	0.89	T5
24	RS	109460	0.72	0.33	-	-	-	1.0000	0.33	0.33	T5
25	BCH	87660	0.71	0.21	-	-	-	1.0000	0.21	0.21	T5
28	NK	37864	0.44	0.68	-	-	-	1.0000	0.68	0.68	T5
30	PSR	12261	0.51	1.71	-	-	-	1.0000	1.71	1.71	T5
31	LP 2	29370	0.61	0.78	-	-	-	1.0000	0.78	0.78	T5
33	LS	36729	0.41	0.40	-	-	-	1.0000	0.40	0.40	T5
35	HM	28144	0.65	3.34	-	-	-	1.0000	3.34	3.34	T5
36	RID	40855	0.41	0.21	-	-	-	1.0000	0.21	0.21	T5
37	ASD	14219	0.41	2.38	-	-	-	1.0000	2.38	2.38	T5
41	CHW	0	-	6.36	-	-	14	0.0020	-	-	41
42	LP 1	25245	0.89	2.38	-	-	-	1.0000	2.38	2.38	T5
43	TC	13913	0.53	2.29	-	-	-	1.0000	2.29	2.29	T5
44	PTW	11649	0.50	5.27	-	-	-	1.0000	5.27	5.27	T5
45	PKN	30485	0.66	2.09	-	-	-	1.0000	2.09	2.09	T5
50	SS	8617	0.35	1.29	-	-	-	1.0000	1.29	1.29	T5
51	NN	12934	0.29	0.60	-	-	-	1.0000	0.60	0.60	T5
52	PTN	100060	0.67	0.16	-	-	-	1.0000	0.16	0.16	T5
101	TCLL	0	-	10.00	-	-	20	0.0010	-	-	101
111	SPS	0	-	2.50	-	-	6	0.0100	-	-	111
T5		8545		93.23	1.20		124	0.0010			

TOTAL 224.99 315

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 42 LP 1 SUB = .5000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	FIJ	OFL	VAR	ROUTING	
1	TK	26025	0.67	1.48	-	-	-	1.0000	1.48	1.48		T2
2/1	SR 1	12383	0.51	8.88	-	-	10	0.1623	1.44	2.96	2/1	T2
2/2	SR 2	12383	0.51	8.88	-	-	10	0.1623	1.44	2.96	2/2	T2
2/3	SR 3	12383	0.51	8.88	-	-	10	0.1623	1.44	2.96	2/3	T2
3/1	SW 1	13179	0.52	7.89	-	-	-	1.0000	7.89	7.89		T2
3/2	SW 2	13179	0.52	7.89	-	-	-	1.0000	7.89	7.89		T2
3/3	SW 3	13179	0.52	7.89	-	-	-	1.0000	7.89	7.89		T2
4/1	PL 1	10608	0.47	9.47	-	-	11	0.1406	1.33	2.82	4/1	T2
4/2	PL 2	10608	0.47	9.47	-	-	11	0.1406	1.33	2.82	4/2	T2
5	TH 2	14709	0.54	10.26	-	-	11	0.1744	1.79	3.79	5	T2
6/1	PY 1	6927	0.57	14.79	-	-	16	0.1382	2.04	4.97	6/1	T2
6/2	PY 2	6927	0.57	7.40	-	-	-	1.0000	7.40	7.40		T2
7/1	KK 1	11037	0.49	8.88	-	-	11	0.1159	1.03	2.17	7/1	T2
7/2	KK 2	11037	0.49	8.88	-	-	11	0.1159	1.03	2.17	7/2	T2
8/1	CP 1	13056	0.37	5.13	-	-	-	1.0000	5.13	5.13		T2
8/2	CP 2	13056	0.37	5.13	-	-	-	1.0000	5.13	5.13		T2
9	TM	13607	0.51	3.95	-	-	-	1.0000	3.95	3.95		T2
10	SP	26583	0.65	1.18	-	-	-	1.0000	1.18	1.18		T2
11	NW	11649	0.43	2.56	-	-	-	1.0000	2.56	2.56		T2
12	PD	36060	0.69	0.77	-	-	-	1.0000	0.77	0.77		T2
13	DM	28032	0.53	3.55	-	-	-	1.0000	3.55	3.55		T2
14	BN	29482	0.62	5.52	-	-	-	1.0000	5.52	5.52		T2
15	BK	6722	0.28	6.81	-	-	10	0.0713	0.49	0.96	15	T2
16	BC	27140	0.68	1.78	-	-	-	1.0000	1.78	1.78		T2
17	DK	28032	0.68	2.37	-	-	-	1.0000	2.37	2.37		T2
18	BS	7081	0.34	12.82	-	-	17	0.0577	0.74	1.79	18	T2
19	BP	12444	0.51	6.47	-	-	-	1.0000	6.47	6.47		T2
20	KC	12567	0.29	4.10	-	-	-	1.0000	4.10	4.10		T2
21	IN	5698	0.29	5.44	-	-	-	1.0000	5.44	5.44		T2
22	PS	35168	0.41	2.76	-	-	-	1.0000	2.76	2.76		T2
23	SMP	75060	0.71	2.76	-	-	-	1.0000	2.76	2.76		T2
24	RS	77860	0.64	0.95	-	-	-	1.0000	0.95	0.95		T2
25	BCH	33050	0.35	0.41	-	-	-	1.0000	0.41	0.41		T2
28	NK	80860	0.77	0.24	-	-	-	1.0000	0.24	0.24		T2
30	PSR	33273	0.69	0.59	-	-	-	1.0000	0.59	0.59		T2
31	LP 2	7132	0.28	1.54	-	-	-	1.0000	1.54	1.54		T2
33	LS	12322	0.30	2.72	-	-	-	1.0000	2.72	2.72		T2
35	HN	10914	0.41	4.10	-	-	-	1.0000	4.10	4.10		T2
36	RID	14586	0.31	0.41	-	-	-	1.0000	0.41	0.41		T2
37	ASD	8258	0.41	4.73	-	-	-	1.0000	4.73	4.73		T2
41	CHW	25245	0.67	2.56	-	-	-	1.0000	2.56	2.56		T2
42	LP 1	0	-	7.40	-	-	16	0.0020	-	-	42	
43	TC	24018	0.67	2.47	-	-	-	1.0000	2.47	2.47		T2
44	PTW	11465	0.50	4.44	-	-	-	1.0000	4.44	4.44		T2
45	PKN	24241	0.60	2.56	-	-	-	1.0000	2.56	2.56		T2
50	SS	10241	0.49	6.41	-	-	-	1.0000	6.41	6.41		T2
51	NN	11526	0.43	1.54	-	-	-	1.0000	1.54	1.54		T2
52	PTN	85060	0.68	0.41	-	-	-	1.0000	0.41	0.41		T2
101	TCLL	0	-	10.00	-	-	20	0.0010	-	-	101	
111	SPS	0	-	2.50	-	-	6	0.0100	-	-	111	
T2		9157		136.20	1.12		170	0.0010				

TOTAL 250.02 340

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 43 TC SUB = 5000 SYSTEM C 400 TANDEM AREA = 7

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING	
1	TK	5289	0.29	13.33	-	-	18	0.0489	0.65	1.60	1	T7
2/1	SR 1	7593	0.43	7.51	-	-	10	0.1000	0.75	1.52	2/1	T7
2/2	SR 2	7593	0.43	7.51	-	-	10	0.1000	0.75	1.52	2/2	T7
2/3	SR 3	7593	0.43	7.51	-	-	10	0.1000	0.75	1.52	2/3	T7
3/1	SW 1	5596	0.58	17.60	-	-	18	0.1554	2.73	6.90	3/1	T7
3/2	SW 2	5596	0.58	17.60	-	-	18	0.1554	2.73	6.90	3/2	T7
3/3	SW 3	5596	0.58	17.60	-	-	18	0.1554	2.73	6.90	3/3	T7
4/1	PL 1	8054	0.44	8.37	-	-	11	0.0954	0.80	1.67	4/1	T7
4/2	PL 2	8054	0.44	8.37	-	-	11	0.0954	0.80	1.67	4/2	T7
5	TH 2	11098	0.50	18.88	-	-	21	0.1052	1.99	5.39	5	T7
6/1	PY 1	11588	0.51	5.79	-	-	-	1.0000	5.79	5.79		T7
6/2	PY 2	11588	0.51	2.90	-	-	-	1.0000	2.90	2.90		T7
7/1	KK 1	8054	0.44	6.22	-	-	-	1.0000	6.22	6.22		T7
7/2	KK 2	8054	0.44	6.22	-	-	-	1.0000	6.22	6.22		T7
8/1	CP 1	10731	0.45	3.65	-	-	-	1.0000	3.65	3.65		T7
8/2	CP 2	10731	0.45	3.65	-	-	-	1.0000	3.65	3.65		T7
9	TM	5801	0.33	7.94	-	-	11	0.0791	0.63	1.30	9	T7
10	SP	6313	0.30	1.93	-	-	-	1.0000	1.93	1.93		T7
11	NAW	30151	0.66	1.72	-	-	-	1.0000	1.72	1.72		T7
12	PD	29482	0.66	1.03	-	-	-	1.0000	1.03	1.03		T7
13	DM	76460	0.74	1.03	-	-	-	1.0000	1.03	1.03		T7
14	BN	25245	0.58	3.22	-	-	-	1.0000	3.22	3.22		T7
15	BK	26248	0.65	1.72	-	-	-	1.0000	1.72	1.72		T7
16	BC	13118	0.53	2.06	-	-	-	1.0000	2.06	2.06		T7
17	DK	13607	0.40	2.75	-	-	-	1.0000	2.75	2.75		T7
18	BS	14097	0.40	3.43	-	-	-	1.0000	3.43	3.43		T7
19	BP	11710	0.51	2.75	-	-	-	1.0000	2.75	2.75		T7
20	KC	31712	0.65	2.23	-	-	-	1.0000	2.23	2.23		T7
21	IM	13240	0.53	1.67	-	-	-	1.0000	1.67	1.67		T7
22	PS	30931	0.39	1.61	-	-	-	1.0000	1.61	1.61		T7
23	SMP	39405	0.40	1.61	-	-	-	1.0000	1.61	1.61		T7
24	RS	107260	0.74	0.27	-	-	-	1.0000	0.27	0.27		T7
25	BCH	86460	0.74	0.22	-	-	-	1.0000	0.22	0.22		T7
28	NK	77060	0.74	0.27	-	-	-	1.0000	0.27	0.27		T7
30	PSR	26694	0.65	0.69	-	-	-	1.0000	0.69	0.69		T7
31	LP 2	27475	0.66	0.84	-	-	-	1.0000	0.84	0.84		T7
33	LS	35503	0.43	0.69	-	-	-	1.0000	0.69	0.69		T7
35	HM	12873	0.39	2.92	-	-	-	1.0000	2.92	2.92		T7
36	RID	39628	0.43	0.22	-	-	-	1.0000	0.22	0.22		T7
37	ASD	10180	0.49	4.18	-	-	-	1.0000	4.18	4.18		T7
41	CHW	13913	0.40	4.72	-	-	-	1.0000	4.72	4.72		T7
42	LP 1	24018	0.64	2.90	-	-	-	1.0000	2.90	2.90		T7
43	TC	0	-	22.21	-	-	35	0.0020	-	-	43	
44	PTW	7030	0.41	3.11	-	-	-	1.0000	3.11	3.11		T7
45	PKN	12812	0.35	1.82	-	-	-	1.0000	1.82	1.82		T7
50	SS	11098	0.50	1.72	-	-	-	1.0000	1.72	1.72		T7
51	NN	28255	0.66	1.03	-	-	-	1.0000	1.03	1.03		T7
52	PTN	107060	0.74	0.27	-	-	-	1.0000	0.27	0.27		T7
101	TCLL	0	-	10.00	-	-	20	0.0010	-	-	101	
111	SPS	0	-	2.50	-	-	6	0.0100	-	-	111	
T7		7266		98.38	1.22		130	0.0010				
	TOTAL			249.99			347					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 44. PTW SUB = 5000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/N	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	7951	0.35	1.44	-	-	-	1.0000	1.44	1.44	T1
2/1	SR 1	5750	0.36	22.76	-	-	28	0.0485	1.10	3.31 2/1	T1
2/2	SR 2	5750	0.36	22.76	-	-	28	0.0485	1.10	3.31 2/2	T1
2/3	SR 3	5750	0.36	22.76	-	-	28	0.0485	1.10	3.31 2/3	T1
3/1	SK 1	5494	0.31	21.75	-	-	28	0.0358	0.78	2.28 3/1	T1
3/2	SK 2	5494	0.31	21.75	-	-	28	0.0358	0.78	2.28 3/2	T1
3/3	SK 3	5494	0.31	21.75	-	-	28	0.0358	0.78	2.28 3/3	T1
4/1	PL 1	5596	0.32	20.23	-	-	26	0.0401	0.81	2.32 4/1	T1
4/2	PL 2	5596	0.32	20.23	-	-	26	0.0401	0.81	2.32 4/2	T1
5	TH 2	8105	0.41	9.61	-	-	12	0.1050	1.01	2.20 5	T1
6/1	PY 1	7388	0.38	10.11	-	-	13	0.0879	0.89	1.98 6/1	T1
6/2	PY 2	7388	0.38	5.06	-	-	-	1.0000	5.06	5.06	T1
7/1	KK 1	5289	0.57	23.52	-	-	25	0.1136	2.67	7.73 7/1	T1
7/2	KK 2	5289	0.57	23.52	-	-	25	0.1136	2.67	7.73 7/2	T1
8/1	CP 1	8719	0.38	4.80	-	-	-	1.0000	4.80	4.80	T1
8/2	CP 2	8719	0.38	4.80	-	-	-	1.0000	4.80	4.80	T1
9	TM	6978	0.33	7.59	-	-	11	0.0666	0.51	1.03 9	T1
10	SP	10302	0.31	1.52	-	-	-	1.0000	1.52	1.52	T1
11	NKW	24130	0.04	2.53	-	-	-	1.0000	2.53	2.53	T1
12	PC	25468	0.63	0.99	-	-	-	1.0000	0.99	0.99	T1
13	DM	37956	0.40	3.19	-	-	-	1.0000	3.19	3.19	T1
14	BN	14586	0.35	3.54	-	-	-	1.0000	3.54	3.54	T1
15	BK	12689	0.37	3.67	-	-	-	1.0000	3.67	3.67	T1
16	BC	10914	0.49	2.88	-	-	-	1.0000	2.88	2.88	T1
17	DK	11404	0.50	3.64	-	-	-	1.0000	3.64	3.64	T1
18	BS	10792	0.50	5.82	-	-	-	1.0000	5.82	5.82	T1
19	BP	7695	0.43	9.51	-	-	12	0.1013	0.96	2.09 19	T1
20	KC	27252	0.57	4.65	-	-	-	1.0000	4.65	4.65	T1
21	IN	8770	0.40	3.49	-	-	-	1.0000	3.49	3.49	T1
22	PS	28924	0.58	1.77	-	-	-	1.0000	1.77	1.77	T1
23	SMP	37398	0.38	1.77	-	-	-	1.0000	1.77	1.77	T1
24	RS	95660	0.71	0.85	-	-	-	1.0000	0.85	0.85	T1
25	BCH	73860	0.70	0.47	-	-	-	1.0000	0.47	0.47	T1
28	NK	40743	0.42	0.38	-	-	-	1.0000	0.38	0.38	T1
30	PSR	14280	0.39	0.96	-	-	-	1.0000	0.96	0.96	T1
31	LP 2	13362	0.36	1.74	-	-	-	1.0000	1.74	1.74	T1
33	LS	29036	0.62	1.47	-	-	-	1.0000	1.47	1.47	T1
35	HM	10425	0.43	3.84	-	-	-	1.0000	3.84	3.84	T1
36	RID	33161	0.40	0.47	-	-	-	1.0000	0.47	0.47	T1
37	ASD	6210	0.31	10.11	-	-	14	0.0597	0.60	1.35 37	T1
41	CHN	11649	0.51	2.40	-	-	-	1.0000	2.40	2.40	T1
42	LP 1	11465	0.48	5.06	-	-	-	1.0000	5.06	5.06	T1
43	TC	7030	0.33	2.40	-	-	-	1.0000	2.40	2.40	T1
44	PTW	0	-	11.76	-	-	22	0.0020	-	- 44	
45	PKN	11710	0.33	2.40	-	-	-	1.0000	2.40	2.40	T1
50	SS	7030	0.41	2.91	-	-	-	1.0000	2.91	2.91	T1
51	NN	14036	0.40	1.52	-	-	-	1.0000	1.52	1.52	T1
52	PTN	96260	0.73	0.40	-	-	-	1.0000	0.40	0.40	T1
'0'	TOLL	0	-	10.00	-	-	20	0.0010	-	- '0'	
'1'	SPS	0	-	2.50	-	-	6	0.0100	-	- '1'	
T1		6959		99.42	1.29		132	0.0010			

TOTAL 375.05 512

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 50 SS SUB = 5000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	FIJ	OFL	VAR	ROUTING	
1	TK	12200	0.51	1.16	-	-	-	1.0000	1.16	1.16		T1
2/1	SR 1	7081	0.40	7.75	-	-	10	0.1105	0.86	1.74	2/1	T1
2/2	SR 2	7081	0.40	7.75	-	-	10	0.1105	0.86	1.74	2/2	T1
2/3	SR 3	7081	0.40	7.75	-	-	10	0.1105	0.86	1.74	2/3	T1
3/1	SW 1	8412	0.43	9.56	-	-	12	0.1032	0.99	2.14	3/1	T1
3/2	SW 2	8412	0.43	9.56	-	-	12	0.1032	0.99	2.14	3/2	T1
3/3	SW 3	8412	0.43	9.56	-	-	12	0.1032	0.99	2.14	3/3	T1
4/1	PL 1	8105	0.43	9.30	-	-	12	0.0937	0.87	1.88	4/1	T1
4/2	PL 2	8105	0.43	9.30	-	-	12	0.0937	0.87	1.88	4/2	T1
5	TH 2	9996	0.48	10.33	-	-	12	0.1325	1.37	3.00	5	T1
6/1	PY 1	6364	0.31	10.59	-	-	15	0.0490	0.52	1.18	6/1	T1
6/2	PY 2	6364	0.31	5.29	-	-	-	1.0000	5.29	5.29		T1
7/1	KK 1	5954	0.56	11.62	-	-	13	0.1409	1.64	3.69	7/1	T1
7/2	KK 2	5954	0.56	11.62	-	-	13	0.1409	1.64	3.69	7/2	T1
8/1	CP 1	12628	0.52	4.65	-	-	-	1.0000	4.65	4.65		T1
8/2	CP 2	12628	0.52	4.65	-	-	-	1.0000	4.65	4.65		T1
9	TM	11098	0.49	3.87	-	-	-	1.0000	3.87	3.87		T1
10	SP	13791	0.40	1.16	-	-	-	1.0000	1.16	1.16		T1
11	NNW	11526	0.29	9.04	-	-	13	0.0555	0.50	1.08	11	T1
12	PC	27475	0.66	1.55	-	-	-	1.0000	1.55	1.55		T1
13	DY	35726	0.37	3.10	-	-	-	1.0000	3.10	3.10		T1
14	BN	28701	0.66	3.87	-	-	-	1.0000	3.87	3.87		T1
15	BK	11465	0.32	5.17	-	-	-	1.0000	5.17	5.17		T1
16	BC	12016	0.51	3.10	-	-	-	1.0000	3.10	3.10		T1
17	DK	12506	0.51	4.13	-	-	-	1.0000	4.13	4.13		T1
18	BS	6722	0.29	16.45	-	-	22	0.0392	0.65	1.70	18	T1
19	BP	5903	0.31	8.26	-	-	12	0.0590	0.49	1.02	19	T1
20	KC	28255	0.58	8.26	-	-	-	1.0000	8.26	8.26		T1
21	IM	8054	0.34	6.20	-	-	-	1.0000	6.20	6.20		T1
22	PS	34388	0.67	1.94	-	-	-	1.0000	1.94	1.94		T1
23	SMP	73660	0.74	1.94	-	-	-	1.0000	1.94	1.94		T1
24	RS	91660	0.67	0.83	-	-	-	1.0000	0.83	0.83		T1
25	BCH	40743	0.38	0.83	-	-	-	1.0000	0.83	0.83		T1
28	NK	73460	0.74	0.41	-	-	-	1.0000	0.41	0.41		T1
30	PSR	24687	0.65	1.03	-	-	-	1.0000	1.03	1.03		T1
31	LP 2	12506	0.32	3.10	-	-	-	1.0000	3.10	3.10		T1
33	LS	26806	0.55	2.07	-	-	-	1.0000	2.07	2.07		T1
35	HM	13424	0.53	3.72	-	-	-	1.0000	3.72	3.72		T1
36	RID	30931	0.37	0.83	-	-	-	1.0000	0.83	0.83		T1
37	ASD	8156	0.38	4.65	-	-	-	1.0000	4.65	4.65		T1
41	CHW	8617	0.36	2.58	-	-	-	1.0000	2.58	2.58		T1
42	LP 1	10241	0.40	5.29	-	-	-	1.0000	5.29	5.29		T1
43	TC	11098	0.49	1.94	-	-	-	1.0000	1.94	1.94		T1
44	PTW	7930	0.40	5.81	-	-	-	1.0000	5.81	5.81		T1
45	PKN	14709	0.40	2.32	-	-	-	1.0000	2.32	2.32		T1
50	SS	0	-	11.75	-	-	22	0.0020	-	-	50	
51	NN	11098	0.30	5.42	-	-	-	1.0000	5.42	5.42		T1
52	PTN	84660	0.64	1.45	-	-	-	1.0000	1.45	1.45		T1
101	TOLL	0	-	10.00	-	-	20	0.0010	-	-	101	
111	SPS	0	-	2.50	-	-	6	0.0100	-	-	111	
T1		7994		116.39	1.14		149	0.0019				
	TOTAL			275.01			387					

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 51 NN SUB = 3000 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	30262	0.60	0.34	-	-	-	1.0000	0.34	0.34	T2
2/1	SR 1	13913	0.38	5.21	-	-	-	1.0000	5.21	5.21	T2
2/2	SR 2	13913	0.38	5.21	-	-	-	1.0000	5.21	5.21	T2
2/3	SR 3	13913	0.38	5.21	-	-	-	1.0000	5.21	5.21	T2
3/1	SK 1	24910	0.67	1.74	-	-	-	1.0000	1.74	1.74	T2
3/2	SK 2	24910	0.67	1.74	-	-	-	1.0000	1.74	1.74	T2
3/3	SK 3	24910	0.67	1.74	-	-	-	1.0000	1.74	1.74	T2
4/1	PL 1	14586	0.42	2.76	-	-	-	1.0000	2.76	2.76	T2
4/2	PL 2	14586	0.42	2.76	-	-	-	1.0000	2.76	2.76	T2
5	TH 2	24687	0.63	2.66	-	-	-	1.0000	2.66	2.66	T2
6/1	PY 1	10914	0.45	7.97	-	-	10	0.1203	0.96	1.96 6/1	T2
6/2	PY 2	10914	0.45	3.98	-	-	-	1.0000	3.98	3.98	T2
7/1	KK 1	12567	0.36	5.93	-	-	-	1.0000	5.93	5.93	T2
7/2	KK 2	12567	0.36	5.93	-	-	-	1.0000	5.93	5.93	T2
8/1	CP 1	30039	0.63	1.33	-	-	-	1.0000	1.33	1.33	T2
8/2	CP 2	30039	0.63	1.33	-	-	-	1.0000	1.33	1.33	T2
9	TM	28590	0.74	1.23	-	-	-	1.0000	1.23	1.23	T2
10	SP	33161	0.63	0.25	-	-	-	1.0000	0.25	0.25	T2
11	NNW	6825	0.17	17.34	-	-	25	0.0186	0.32	0.84 11	T2
12	PD	37287	0.58	0.28	-	-	-	1.0000	0.28	0.28	T2
13	DM	36283	0.56	0.70	-	-	-	1.0000	0.70	0.70	T2
14	BN	39071	0.65	1.12	-	-	-	1.0000	1.12	1.12	T2
15	BK	11771	0.33	1.17	-	-	-	1.0000	1.17	1.17	T2
16	BC	28367	0.54	0.74	-	-	-	1.0000	0.74	0.74	T2
17	DK	29259	0.55	0.98	-	-	-	1.0000	0.98	0.98	T2
18	BS	7286	0.22	7.36	-	-	12	0.0349	0.26	0.51 18	T2
19	BP	8770	0.24	2.21	-	-	-	1.0000	2.21	2.21	T2
20	KC	33161	0.60	1.39	-	-	-	1.0000	1.39	1.39	T2
21	IM	12934	0.40	1.41	-	-	-	1.0000	1.41	1.41	T2
22	PS	77760	0.79	0.56	-	-	-	1.0000	0.56	0.56	T2
23	SMP	92260	0.79	0.56	-	-	-	1.0000	0.56	0.56	T2
24	RS	92660	0.69	0.19	-	-	-	1.0000	0.19	0.19	T2
25	BCH	41361	0.39	0.14	-	-	-	1.0000	0.14	0.14	T2
28	NK	91060	0.71	0.10	-	-	-	1.0000	0.10	0.10	T2
30	PSR	34499	0.57	0.25	-	-	-	1.0000	0.25	0.25	T2
31	LP 2	24353	0.65	0.52	-	-	-	1.0000	0.52	0.52	T2
33	LS	27363	0.51	0.47	-	-	-	1.0000	0.47	0.47	T2
35	HP	29147	0.75	1.06	-	-	-	1.0000	1.06	1.06	T2
36	RID	31489	0.54	0.14	-	-	-	1.0000	0.14	0.14	T2
37	ASD	13056	0.41	1.38	-	-	-	1.0000	1.38	1.38	T2
41	CHW	12934	0.26	0.66	-	-	-	1.0000	0.66	0.66	T2
42	LP 1	11526	0.34	3.98	-	-	-	1.0000	3.98	3.98	T2
43	TC	28255	0.59	0.56	-	-	-	1.0000	0.56	0.56	T2
44	PTW	14536	0.40	2.96	-	-	-	1.0000	2.96	2.96	T2
45	PKN	33830	0.64	0.66	-	-	-	1.0000	0.66	0.66	T2
50	SS	11098	0.34	3.68	-	-	-	1.0000	3.68	3.68	T2
51	NN	0	-	14.86	-	-	26	0.0020	-	- 51	
52	PTN	41412	0.30	2.77	-	-	-	1.0000	2.77	2.77	T2
'0'	TCLL	0	-	6.00	-	-	14	0.0010	-	- '0'	
'1'	SPS	0	-	1.50	-	-	5	0.0100	-	- '1'	
T2		18218		81.53	1.02		108	0.0010			

TOTAL 135.02 200

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 52 PTN SUB = 800 SYSTEM C 400 TANDEM AREA = 2

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	CFL	VAR	ROUTING
1	TK	110660	0.79	0.08	-	-	-	1.0000	0.08	0.08	T2
2/1	SR 1	95860	0.76	1.26	-	-	-	1.0000	1.26	1.26	T2
2/2	SR 2	95860	0.76	1.26	-	-	-	1.0000	1.26	1.26	T2
2/3	SR 3	95860	0.76	1.26	-	-	-	1.0000	1.26	1.26	T2
3/1	SW 1	101060	0.79	0.42	-	-	-	1.0000	0.42	0.42	T2
3/2	SW 2	101060	0.79	0.42	-	-	-	1.0000	0.42	0.42	T2
3/3	SW 3	101060	0.79	0.42	-	-	-	1.0000	0.42	0.42	T2
4/1	PL 1	96060	0.77	0.67	-	-	-	1.0000	0.67	0.67	T2
4/2	PL 2	96060	0.77	0.67	-	-	-	1.0000	0.67	0.67	T2
5	TH 2	153460	0.80	0.64	-	-	-	1.0000	0.64	0.64	T2
6/1	PY 1	84060	0.74	1.92	-	-	-	1.0000	1.92	1.92	T2
6/2	PY 2	84060	0.74	0.96	-	-	-	1.0000	0.96	0.96	T2
7/1	KK 1	91460	0.73	1.43	-	-	-	1.0000	1.43	1.43	T2
7/2	KK 2	91460	0.73	1.43	-	-	-	1.0000	1.43	1.43	T2
8/1	CP 1	108260	0.79	0.32	-	-	-	1.0000	0.32	0.32	T2
8/2	CP 2	108260	0.79	0.32	-	-	-	1.0000	0.32	0.32	T2
9	TM	105860	0.82	0.30	-	-	-	1.0000	0.30	0.30	T2
10	SP	115760	0.81	0.06	-	-	-	1.0000	0.06	0.06	T2
11	NNW	35391	0.27	4.19	-	-	-	1.0000	4.19	4.19	T2
12	PC	126060	0.82	0.07	-	-	-	1.0000	0.07	0.07	T2
13	DM	35563	0.23	0.17	-	-	-	1.0000	0.17	0.17	T2
14	BN	124460	0.83	0.27	-	-	-	1.0000	0.27	0.27	T2
15	BK	74660	0.59	0.28	-	-	-	1.0000	0.28	0.28	T2
16	BC	110060	0.77	0.18	-	-	-	1.0000	0.18	0.18	T2
17	DK	111660	0.78	0.24	-	-	-	1.0000	0.24	0.24	T2
18	BS	74260	0.60	1.78	-	-	-	1.0000	1.78	1.78	T2
19	BP	89460	0.71	0.53	-	-	-	1.0000	0.53	0.53	T2
20	KC	112860	0.78	0.34	-	-	-	1.0000	0.34	0.34	T2
21	IM	90660	0.74	0.34	-	-	-	1.0000	0.34	0.34	T2
22	PS	134660	0.72	0.14	-	-	-	1.0000	0.14	0.14	T2
23	SMP	149860	0.72	0.14	-	-	-	1.0000	0.14	0.14	T2
24	RS	11894	0.05	0.05	-	-	-	1.0000	0.05	0.05	T2
25	BCH	116260	0.59	0.03	-	-	-	1.0000	0.03	0.03	T2
26	NK	153460	0.70	0.02	-	-	-	1.0000	0.02	0.02	T2
30	PSR	121060	0.81	0.06	-	-	-	1.0000	0.06	0.06	T2
31	LP 2	97060	0.76	0.13	-	-	-	1.0000	0.13	0.13	T2
33	LS	76460	0.53	0.11	-	-	-	1.0000	0.11	0.11	T2
35	HM	106660	0.83	0.26	-	-	-	1.0000	0.26	0.26	T2
36	RID	98660	0.66	0.03	-	-	-	1.0000	0.03	0.03	T2
37	ASD	91760	0.75	0.33	-	-	-	1.0000	0.33	0.33	T2
41	CHW	100060	0.72	0.16	-	-	-	1.0000	0.16	0.16	T2
42	LP 1	85060	0.68	0.96	-	-	-	1.0000	0.96	0.96	T2
43	TC	107060	0.78	0.14	-	-	-	1.0000	0.14	0.14	T2
44	PTN	96260	0.77	0.72	-	-	-	1.0000	0.72	0.72	T2
45	PKN	115060	0.81	0.16	-	-	-	1.0000	0.16	0.16	T2
50	SS	84660	0.69	0.89	-	-	-	1.0000	0.89	0.89	T2
51	NN	41412	0.32	2.51	-	-	-	1.0000	2.51	2.51	T2
52	PTN	0	-	0.96	-	-	5	0.0020	-	-	52
101	TOLL	0	-	1.60	-	-	7	0.0010	-	-	101
111	SPS	0	-	0.40	-	-	2	0.0100	-	-	111
T2		85730		29.07	-		46	0.0010			
	TOTAL			32.03			60				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

FROM I = 101 TOLL SUB = 1000 SYSTEM C 400 TANDEM AREA = 1

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	FIJ	OFL	VAR	ROUTING
1	TK	8975	-	12.00	-	-	22	0.0020	-	-	1
2/1	SR 1	5186	-	40.00	-	-	57	0.0020	-	-	2/1
2/2	SR 2	5186	-	40.00	-	-	57	0.0020	-	-	2/2
2/3	SR 3	5186	-	40.00	-	-	57	0.0020	-	-	2/3
3/1	SW 1	6518	-	40.00	-	-	57	0.0020	-	-	3/1
3/2	SW 2	6518	-	40.00	-	-	57	0.0020	-	-	3/2
3/3	SW 3	6518	-	40.00	-	-	57	0.0020	-	-	3/3
4/1	PL 1	6210	-	40.00	-	-	57	0.0020	-	-	4/1
4/2	PL 2	6210	-	40.00	-	-	57	0.0020	-	-	4/2
5	TH 2	7132	-	80.00	-	-	102	0.0020	-	-	5
6/1	PY 1	7030	-	40.00	-	-	57	0.0020	-	-	6/1
6/2	PY 2	7030	-	20.00	-	-	33	0.0020	-	-	6/2
7/1	KK 1	0	-	40.00	-	-	57	0.0020	-	-	7/1
7/2	KK 2	0	-	40.00	-	-	57	0.0020	-	-	7/2
8/1	CP 1	10364	-	40.00	-	-	57	0.0020	-	-	8/1
8/2	CP 2	10364	-	40.00	-	-	57	0.0020	-	-	8/2
9	TM	8207	-	40.00	-	-	57	0.0020	-	-	9
10	SP	11526	-	12.00	-	-	22	0.0020	-	-	10
11	NW	13607	-	20.00	-	-	33	0.0020	-	-	11
12	PD	14648	-	12.00	-	-	22	0.0020	-	-	12
13	DM	37175	-	12.00	-	-	22	0.0020	-	-	13
14	BN	24576	-	40.00	-	-	57	0.0020	-	-	14
15	BK	12261	-	20.00	-	-	33	0.0020	-	-	15
16	BC	8822	-	24.00	-	-	38	0.0020	-	-	16
17	DK	10241	-	32.00	-	-	47	0.0020	-	-	17
18	BS	8463	-	40.00	-	-	57	0.0020	-	-	18
19	BP	6466	-	32.00	-	-	47	0.0020	-	-	19
20	KC	28590	-	32.00	-	-	47	0.0020	-	-	20
21	IM	8719	-	24.00	-	-	38	0.0020	-	-	21
22	PS	30262	-	20.00	-	-	33	0.0020	-	-	22
23	SMP	38736	-	20.00	-	-	33	0.0020	-	-	23
24	RS	94260	-	3.20	-	-	9	0.0020	-	-	24
25	BCH	72460	-	3.20	-	-	9	0.0020	-	-	25
28	NK	38625	-	3.20	-	-	9	0.0020	-	-	28
30	PSR	13118	-	8.00	-	-	17	0.0020	-	-	30
31	LP 2	13301	-	12.00	-	-	22	0.0020	-	-	31
33	LS	28255	-	8.00	-	-	17	0.0020	-	-	33
35	HM	11159	-	32.00	-	-	47	0.0020	-	-	35
36	RID	32381	-	3.20	-	-	9	0.0020	-	-	36
37	ASD	7439	-	20.00	-	-	33	0.0020	-	-	37
41	CHW	10180	-	20.00	-	-	33	0.0020	-	-	41
42	LP 1	11037	-	20.00	-	-	33	0.0020	-	-	42
43	TC	8054	-	20.00	-	-	33	0.0020	-	-	43
44	PTW	5289	-	20.00	-	-	33	0.0020	-	-	44
45	PKN	12444	-	20.00	-	-	33	0.0020	-	-	45
50	SS	5954	-	20.00	-	-	33	0.0020	-	-	50
51	NN	12567	-	12.00	-	-	22	0.0020	-	-	51
52	PTN	91460	-	3.20	-	-	9	0.0020	-	-	52

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 1 SYSTEM ARF 102

J	NAME	CIJ	C/P	AIJ	V/M	MG	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	9935	-	17.58	-	-	32	0.0010	-	-	1
2/1	SR 1	5186	-	6.39	3.30	-	27	0.0010	-	-	2/1
2/2	SR 2	5186	-	6.39	3.30	-	27	0.0010	-	-	2/2
2/3	SR 3	5186	-	6.39	3.30	-	27	0.0010	-	-	2/3
3/1	SW 1	6518	-	11.99	3.56	-	38	0.0010	-	-	3/1
3/2	SW 2	6518	-	11.99	3.56	-	38	0.0010	-	-	3/2
3/3	SW 3	6518	-	11.99	3.56	-	38	0.0010	-	-	3/3
4/1	PL 1	6210	-	12.33	3.42	-	38	0.0010	-	-	4/1
4/2	PL 2	6210	-	12.33	3.42	-	38	0.0010	-	-	4/2
5	TH 2	7732	-	14.72	2.31	-	36	0.0010	-	-	5
6/1	PY 1	7610	-	39.17	1.44	-	63	0.0010	-	-	6/1
6/2	PY 2	7610	-	15.63	1.40	-	32	0.0010	-	-	6/2
7/1	KK 1	0	-	18.31	3.27	-	46	0.0010	-	-	7/1
7/2	KK 2	0	-	18.31	3.27	-	46	0.0010	-	-	7/2
8/1	CP 1	10364	-	26.00	1.62	-	47	0.0010	-	-	8/1
8/2	CP 2	10364	-	26.00	1.62	-	47	0.0010	-	-	8/2
9	TM	9017	-	16.12	1.68	-	34	0.0010	-	-	9
10	SP	17663	-	22.89	-	-	39	0.0010	-	-	10
11	NWW	21454	-	37.70	1.02	-	57	0.0010	-	-	11
12	PD	23349	-	21.89	-	-	37	0.0010	-	-	12
13	DM	63460	-	33.04	-	-	51	0.0010	-	-	13
14	BN	24576	-	42.78	-	-	63	0.0010	-	-	14
15	BK	19001	-	25.94	1.05	-	42	0.0010	-	-	15
16	BC	9752	-	36.77	-	-	56	0.0010	-	-	16
17	DK	10241	-	31.78	1.06	-	50	0.0010	-	-	17
18	BS	9323	-	14.18	1.87	-	33	0.0010	-	-	18
19	BP	6466	-	7.04	2.47	-	25	0.0010	-	-	19
20	KC	28590	-	39.38	1.20	-	61	0.0010	-	-	20
21	IM	9629	-	26.60	1.10	-	44	0.0010	-	-	21
22	PS	30262	-	21.39	-	-	37	0.0010	-	-	22
23	SMP	66260	-	21.39	-	-	37	0.0010	-	-	23
30	PSR	20562	-	12.26	-	-	25	0.0010	-	-	30
31	LP 2	20896	-	24.37	-	-	40	0.0010	-	-	31
33	LS	28255	-	16.24	-	-	30	0.0010	-	-	33
35	HM	11159	-	21.42	1.58	-	41	0.0010	-	-	35
37	ASD	8099	-	16.97	1.73	-	36	0.0010	-	-	37
41	CHW	10180	-	17.86	1.15	-	33	0.0010	-	-	41
42	LP 1	11037	-	17.83	1.48	-	35	0.0010	-	-	42
43	TC	8834	-	29.30	-	-	47	0.0010	-	-	43
44	PTW	5289	-	12.11	1.91	-	30	0.0010	-	-	44
45	PKN	19335	-	21.47	1.17	-	38	0.0010	-	-	45
50	SS	5954	-	37.13	1.01	-	56	0.0010	-	-	50
51	NN	19558	-	27.74	-	-	45	0.0010	-	-	51
TOTAL				909.13			1742				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 2 SYSTEM C 400

J	NAME	CIJ	C/P	AIJ	V/H	MO	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	19781	-	12.09	-	-	24	0.0010	-	-	1
2/1	SR 1	8956	-	21.13	1.37	-	39	0.0010	-	-	2/1
2/2	SR 2	8956	-	21.13	1.37	-	39	0.0010	-	-	2/2
2/3	SR 3	8956	-	21.13	1.37	-	39	0.0010	-	-	2/3
3/1	SW 1	9752	-	21.75	1.40	-	40	0.0010	-	-	3/1
3/2	SW 2	9752	-	21.75	1.40	-	40	0.0010	-	-	3/2
3/3	SW 3	9752	-	21.75	1.40	-	40	0.0010	-	-	3/3
4/1	PL 1	7732	-	16.59	1.57	-	34	0.0010	-	-	4/1
4/2	PL 2	7732	-	16.59	1.57	-	34	0.0010	-	-	4/2
5	TH 2	11282	-	20.95	1.66	-	41	0.0010	-	-	5
6/1	PY 1	0	-	18.34	1.62	-	37	0.0010	-	-	6/1
6/2	PY 2	0	-	24.82	1.09	-	42	0.0010	-	-	6/2
7/1	KK 1	7610	-	19.91	1.45	-	38	0.0010	-	-	7/1
7/2	KK 2	7610	-	19.91	1.45	-	38	0.0010	-	-	7/2
8/1	CP 1	17551	-	21.77	1.14	-	38	0.0010	-	-	8/1
8/2	CP 2	17551	-	21.77	1.14	-	38	0.0010	-	-	8/2
9	TM	10731	-	30.48	1.06	-	48	0.0010	-	-	9
10	SP	21342	-	10.84	-	-	23	0.0010	-	-	10
11	NWW	11343	-	26.55	1.06	-	43	0.0010	-	-	11
12	PD	29816	-	9.57	-	-	21	0.0010	-	-	12
13	DM	30708	-	34.35	-	-	53	0.0010	-	-	13
14	BN	26583	-	33.97	1.10	-	53	0.0010	-	-	14
15	BK	8711	-	14.30	1.35	-	30	0.0010	-	-	15
16	BC	20896	-	20.61	-	-	36	0.0010	-	-	16
17	DK	21788	-	27.46	-	-	44	0.0010	-	-	17
18	BS	6569	-	13.23	1.69	-	30	0.0010	-	-	18
19	BP	9017	-	24.72	1.18	-	42	0.0010	-	-	19
20	KC	23238	-	18.82	1.33	-	36	0.0010	-	-	20
21	IM	5750	-	15.39	1.25	-	30	0.0010	-	-	21
22	PS	54660	-	16.41	1.04	-	30	0.0010	-	-	22
23	SMP	69860	-	16.41	1.04	-	30	0.0010	-	-	23
24	RS	82660	-	43.65	-	-	64	0.0010	-	-	24
25	BCH	60860	-	28.94	-	-	46	0.0010	-	-	25
30	PSR	27029	-	6.87	-	-	17	0.0010	-	-	30
31	LP 2	9752	-	19.62	-	-	34	0.0010	-	-	31
33	LS	21788	-	15.28	1.04	-	29	0.0010	-	-	33
35	HM	10976	-	29.58	1.05	-	47	0.0010	-	-	35
36	RID	25914	-	28.96	-	-	46	0.0010	-	-	36
37	ASD	5852	-	23.25	1.10	-	40	0.0010	-	-	37
41	CHW	19001	-	16.26	1.03	-	30	0.0010	-	-	41
42	LP 1	7487	-	18.23	1.16	-	34	0.0010	-	-	42
43	TC	17774	-	20.16	-	-	35	0.0010	-	-	43
44	PTW	8038	-	24.86	1.13	-	42	0.0010	-	-	44
45	PKN	21342	-	24.51	-	-	41	0.0010	-	-	45
50	SS	6364	-	21.49	1.19	-	38	0.0010	-	-	50
51	NN	10914	-	15.94	1.04	-	29	0.0010	-	-	51
52	PTN	84060	-	35.35	-	-	54	0.0010	-	-	52
TOTAL		1007.44					1776				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 3 SYSTEM C 400

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	CFL	VAR	ROUTING
1	TK	9935	-	7.14	1.03	-	17	0.0010	-	-	1
2/1	SR 1	7916	-	5.52	3.06	-	25	0.0010	-	-	2/1
2/2	SR 2	7916	-	5.52	3.06	-	25	0.0010	-	-	2/2
2/3	SR 3	7916	-	5.52	3.06	-	25	0.0010	-	-	2/3
3/1	SW 1	6518	-	7.63	4.23	-	34	0.0010	-	-	3/1
3/2	SW 2	6518	-	7.63	4.23	-	34	0.0010	-	-	3/2
3/3	SW 3	6518	-	7.63	4.23	-	34	0.0010	-	-	3/3
4/1	PL 1	0	-	5.35	2.89	-	23	0.0010	-	-	4/1
4/2	PL 2	0	-	5.35	2.89	-	23	0.0010	-	-	4/2
5	TH 2	10302	-	10.20	2.56	-	30	0.0010	-	-	5
6/1	PY 1	7732	-	21.37	1.29	-	39	0.0010	-	-	6/1
6/2	PY 2	7732	-	11.58	1.18	-	25	0.0010	-	-	6/2
7/1	KK 1	6210	-	5.15	3.01	-	24	0.0010	-	-	7/1
7/2	KK 2	6210	-	5.15	3.01	-	24	0.0010	-	-	7/2
8/1	CP 1	7793	-	5.18	3.00	-	24	0.0010	-	-	8/1
8/2	CP 2	7793	-	5.18	3.00	-	24	0.0010	-	-	8/2
9	TM	6569	-	8.49	1.50	-	22	0.0010	-	-	9
10	SP	9874	-	13.05	-	-	26	0.0010	-	-	10
11	NWW	24018	-	19.92	-	-	35	0.0010	-	-	11
12	PD	28032	-	11.44	-	-	23	0.0010	-	-	12
13	DM	63860	-	16.58	-	-	30	0.0010	-	-	13
14	BN	19893	-	7.00	1.52	-	20	0.0010	-	-	14
15	BK	19224	-	21.38	-	-	37	0.0010	-	-	15
16	BC	19112	-	18.55	-	-	33	0.0010	-	-	16
17	DK	20004	-	20.18	-	-	35	0.0010	-	-	17
18	BS	10731	-	13.71	1.30	-	29	0.0010	-	-	18
19	BP	9507	-	6.21	1.58	-	19	0.0010	-	-	19
20	KC	23907	-	19.76	-	-	35	0.0010	-	-	20
21	IM	8650	-	14.08	-	-	27	0.0010	-	-	21
22	PS	25579	-	20.78	-	-	36	0.0010	-	-	22
23	SMP	57860	-	20.78	-	-	36	0.0010	-	-	23
30	PSR	25245	-	6.18	-	-	16	0.0010	-	-	30
31	LP 2	19113	-	7.42	-	-	18	0.0010	-	-	31
33	LS	28478	-	8.56	-	-	19	0.0010	-	-	33
35	HM	8589	-	11.79	1.72	-	28	0.0010	-	-	35
37	ASD	5340	-	2.98	2.47	-	17	0.0010	-	-	37
41	CHW	19893	-	8.92	1.15	-	21	0.0010	-	-	41
42	LP 1	10608	-	12.36	1.22	-	26	0.0010	-	-	42
43	TC	8834	-	11.83	1.04	-	24	0.0010	-	-	43
44	PTW	5596	-	7.97	1.51	-	21	0.0010	-	-	44
45	PKN	9874	-	8.05	1.62	-	22	0.0010	-	-	45
50	SS	8895	-	18.37	-	-	33	0.0010	-	-	50
51	NN	23238	-	11.94	-	-	24	0.0010	-	-	51
	TOTAL			469.40			1142				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 4 SYSTEM C 4CC

J	NAME	CIJ	C/P	AIJ	V/M	MQ	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	64060	-	2.36	-	-	9	0.0010	-	-	1
2/1	SR 1	30708	-	6.35	1.18	-	17	0.0010	-	-	2/1
2/2	SR 2	30708	-	6.35	1.18	-	17	0.0010	-	-	2/2
2/3	SR 3	30708	-	6.35	1.18	-	17	0.0010	-	-	2/3
3/1	SW 1	54460	-	10.22	1.02	-	22	0.0010	-	-	3/1
3/2	SW 2	54460	-	10.22	1.02	-	22	0.0010	-	-	3/2
3/3	SW 3	54460	-	10.22	1.02	-	22	0.0010	-	-	3/3
4/1	PL 1	28478	-	14.31	1.03	-	27	0.0010	-	-	4/1
4/2	PL 2	28478	-	14.31	1.03	-	27	0.0010	-	-	4/2
5	TH 2	59460	-	14.20	-	-	27	0.0010	-	-	5
6/1	PY 1	21788	-	28.42	1.03	-	45	0.0010	-	-	6/1
6/2	PY 2	21788	-	4.92	1.08	-	14	0.0010	-	-	6/2
7/1	KK 1	28255	-	9.52	1.10	-	21	0.0010	-	-	7/1
7/2	KK 2	28255	-	9.52	1.10	-	21	0.0010	-	-	7/2
8/1	CP 1	60060	-	8.30	1.04	-	19	0.0010	-	-	8/1
8/2	CP 2	60060	-	8.30	1.04	-	19	0.0010	-	-	8/2
9	TM	57660	-	11.92	-	-	24	0.0010	-	-	9
10	SP	66860	-	2.95	-	-	10	0.0010	-	-	10
11	NW	21342	-	7.21	-	-	17	0.0010	-	-	11
12	PD	82060	-	1.74	-	-	8	0.0010	-	-	12
13	DM	8956	-	5.36	-	-	14	0.0010	-	-	13
14	BN	76260	-	11.30	-	-	23	0.0010	-	-	14
15	BK	9140	-	9.50	-	-	21	0.0010	-	-	15
16	BC	66060	-	4.30	-	-	13	0.0010	-	-	16
17	DK	67660	-	5.72	-	-	15	0.0010	-	-	17
18	BS	25691	-	9.34	1.08	-	20	0.0010	-	-	18
19	BP	30820	-	10.72	1.02	-	22	0.0010	-	-	19
20	KC	26583	-	14.33	-	-	27	0.0010	-	-	20
21	IM	22680	-	11.71	-	-	24	0.0010	-	-	21
22	PS	86460	-	5.66	-	-	15	0.0010	-	-	22
23	SMP	101660	-	5.66	-	-	15	0.0010	-	-	23
30	PSR	77060	-	1.43	-	-	7	0.0010	-	-	30
31	LP 2	25802	-	5.38	-	-	14	0.0010	-	-	31
33	LS	0	-	8.18	-	-	19	0.0010	-	-	33
35	HM	53460	-	6.49	1.01	-	16	0.0010	-	-	35
37	ASD	25691	-	7.27	1.04	-	17	0.0010	-	-	37
41	CHW	62660	-	3.41	-	-	11	0.0010	-	-	41
42	LP 1	19112	-	4.92	1.08	-	14	0.0010	-	-	42
43	TC	60460	-	3.93	-	-	12	0.0010	-	-	43
44	PTW	29036	-	10.61	1.02	-	22	0.0010	-	-	44
45	PKN	66860	-	7.15	-	-	17	0.0010	-	-	45
50	SS	26806	-	4.77	1.07	-	13	0.0010	-	-	50
51	NN	27363	-	4.51	1.07	-	13	0.0010	-	-	51
'0'	TOLL	0	-	4.00	-	**	12	0.0010	-	-	'0'
'1'	SPS	0	-	1.00	-	**	5	0.0100	-	-	'1'
	TOTAL			354.35			806				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 5 SYSTEM C 400

J	NAME	CIJ	C/P	AIJ	V/M	MC	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	18889	-	7.18	1.07	-	17	0.0010	-	-	1
2/1	SR 1	6415	-	14.32	1.82	-	32	0.0010	-	-	2/1
2/2	SR 2	6415	-	14.32	1.82	-	32	0.0010	-	-	2/2
2/3	SR 3	6415	-	14.32	1.82	-	32	0.0010	-	-	2/3
3/1	SW 1	9262	-	22.82	1.49	-	42	0.0010	-	-	3/1
3/2	SW 2	9262	-	22.82	1.49	-	42	0.0010	-	-	3/2
3/3	SW 3	9262	-	22.82	1.49	-	42	0.0010	-	-	3/3
4/1	PL 1	10302	-	25.87	1.15	-	44	0.0010	-	-	4/1
4/2	PL 2	10302	-	25.87	1.15	-	44	0.0010	-	-	4/2
5	TH 2	0	-	15.75	2.62	-	39	0.0010	-	-	5
6/1	PY 1	11282	-	35.51	1.13	-	55	0.0010	-	-	6/1
6/2	PY 2	11282	-	12.79	1.14	-	26	0.0010	-	-	6/2
7/1	KK 1	7732	-	18.88	1.51	-	37	0.0010	-	-	7/1
7/2	KK 2	7732	-	18.88	1.51	-	37	0.0010	-	-	7/2
8/1	CP 1	22234	-	21.17	1.12	-	37	0.0010	-	-	8/1
8/2	CP 2	22234	-	21.17	1.12	-	37	0.0010	-	-	8/2
9	TM	11404	-	18.35	1.11	-	34	0.0010	-	-	9
10	SP	21788	-	8.24	-	-	19	0.0010	-	-	10
11	NWW	28144	-	13.27	-	-	26	0.0010	-	-	11
12	PD	10976	-	6.34	1.25	-	17	0.0010	-	-	12
13	DM	75460	-	11.95	-	-	24	0.0010	-	-	13
14	BN	52860	-	14.28	1.06	-	27	0.0010	-	-	14
15	BK	25691	-	13.80	-	-	27	0.0010	-	-	15
16	BC	5750	-	14.45	1.30	-	30	0.0010	-	-	16
17	DK	6159	-	22.48	1.17	-	39	0.0010	-	-	17
18	BS	20339	-	19.17	1.06	-	34	0.0010	-	-	18
19	BP	9752	-	13.57	1.46	-	29	0.0010	-	-	19
20	KC	60060	-	15.72	1.08	-	29	0.0010	-	-	20
21	IM	20896	-	12.10	1.07	-	24	0.0010	-	-	21
22	PS	63060	-	11.23	-	-	23	0.0010	-	-	22
23	SMP	78260	-	11.23	-	-	23	0.0010	-	-	23
28	NK	54060	-	25.59	-	-	42	0.0010	-	-	28
30	PSR	9446	-	12.63	1.08	-	25	0.0010	-	-	30
31	LP 2	27586	-	9.38	-	-	20	0.0010	-	-	31
33	LS	59460	-	5.51	-	-	15	0.0010	-	-	33
35	HM	23684	-	16.87	1.10	-	31	0.0010	-	-	35
37	ASD	17551	-	12.97	1.10	-	26	0.0010	-	-	37
41	CHW	6415	-	10.51	1.43	-	25	0.0010	-	-	41
42	LP 1	23461	-	12.42	1.11	-	25	0.0010	-	-	42
43	TC	11098	-	12.68	1.15	-	26	0.0010	-	-	43
44	PTW	8895	-	18.12	1.18	-	34	0.0010	-	-	44
45	PKN	26025	-	12.37	1.20	-	26	0.0010	-	-	45
50	SS	9996	-	15.65	-	-	29	0.0010	-	-	50
51	NN	24687	-	7.96	-	-	18	0.0010	-	-	51
TOTAL				693.35			1342				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 6 SYSTEM C 400

J	NAME	CIJ	C/P	AIJ	V/M	MC	NIJ	EIJ	OFL	VAR	ROUTING
1	TK	22680	-	22.95	-	-	39	0.0010	-	-	1
2/1	SR 1	21677	-	33.95	1.23	-	54	0.0010	-	-	2/1
2/2	SR 2	21677	-	33.95	1.23	-	54	0.0010	-	-	2/2
2/3	SR 3	21677	-	33.95	1.23	-	54	0.0010	-	-	2/3
3/1	SW 1	20004	-	18.28	1.78	-	38	0.0010	-	-	3/1
3/2	SW 2	20004	-	18.28	1.78	-	38	0.0010	-	-	3/2
3/3	SW 3	20004	-	18.28	1.78	-	38	0.0010	-	-	3/3
4/1	PL 1	9874	-	27.67	1.46	-	48	0.0010	-	-	4/1
4/2	PL 2	9874	-	27.67	1.46	-	48	0.0010	-	-	4/2
5	TH 2	26025	-	29.04	1.16	-	48	0.0010	-	-	5
6/1	PY 1	21342	-	51.34	1.15	-	75	0.0010	-	-	6/1
6/2	PY 2	21342	-	23.30	1.08	-	40	0.0010	-	-	6/2
7/1	KK 1	19335	-	26.33	1.34	-	46	0.0010	-	-	7/1
7/2	KK 2	19335	-	26.33	1.34	-	46	0.0010	-	-	7/2
8/1	CP 1	5801	-	16.20	1.47	-	33	0.0010	-	-	8/1
8/2	CP 2	5801	-	16.20	1.47	-	33	0.0010	-	-	8/2
9	TM	10731	-	35.42	1.29	-	57	0.0010	-	-	9
10	SP	21342	-	14.09	-	-	27	0.0010	-	-	10
11	NWW	58860	-	14.44	1.03	-	27	0.0010	-	-	11
12	PD	66060	-	8.43	-	-	19	0.0010	-	-	12
13	DM	82860	-	22.38	-	-	38	0.0010	-	-	13
14	BN	6466	-	19.34	1.44	-	37	0.0010	-	-	14
15	BK	29816	-	32.00	-	-	50	0.0010	-	-	15
16	BC	29705	-	20.84	-	-	36	0.0010	-	-	16
17	DK	30597	-	27.78	-	-	45	0.0010	-	-	17
18	BS	26806	-	29.05	1.08	-	47	0.0010	-	-	18
19	BP	24576	-	23.32	1.11	-	40	0.0010	-	-	19
20	KC	21788	-	23.57	1.13	-	40	0.0010	-	-	20
21	IM	20673	-	18.49	1.06	-	33	0.0010	-	-	21
22	PS	10058	-	15.27	1.28	-	31	0.0010	-	-	22
23	SMP	23461	-	33.08	1.04	-	51	0.0010	-	-	23
30	PSR	61060	-	6.94	-	-	17	0.0010	-	-	30
31	LP 2	20450	-	23.35	1.01	-	39	0.0010	-	-	31
33	LS	66860	-	12.80	-	-	25	0.0010	-	-	33
35	HM	8283	-	12.01	1.68	-	28	0.0010	-	-	35
37	ASD	11404	-	24.20	1.18	-	42	0.0010	-	-	37
41	CHW	30485	-	17.38	-	-	31	0.0010	-	-	41
42	LP 1	24241	-	23.14	1.07	-	39	0.0010	-	-	42
43	TC	20004	-	24.25	1.04	-	40	0.0010	-	-	43
44	PTW	17997	-	28.00	1.04	-	45	0.0010	-	-	44
45	PKN	0	-	33.94	1.20	-	54	0.0010	-	-	45
50	SS	23461	-	27.84	-	-	45	0.0010	-	-	50
51	NN	57460	-	12.34	-	-	25	0.0010	-	-	51
'0'	TCLL	0	-	10.00	-	**	21	0.0010	-	-	'0'
'1'	SPS	0	-	2.50	-	**	7	0.0100	-	-	'1'
	TOTAL			1019.88			1768				

CALCULATION FOR ALTERNATIVE ROUTING NETWORK BANGKOK , THAILAND

TANDEM 7 SYSTEM C 4CC

J	NAME	CIJ	C/P	AIJ	V/M	MO	NIJ	EIJ	CFL	VAR	ROUTING
1	TK	6518	-	4.24	1.64	-	16	0.0010	-	-	1
2/1	SR 1	6057	-	16.10	2.23	-	37	0.0010	-	-	2/1
2/2	SR 2	6057	-	16.10	2.23	-	37	0.0010	-	-	2/2
2/3	SR 3	6057	-	16.10	2.23	-	37	0.0010	-	-	2/3
3/1	SW 1	0	-	10.05	1.61	-	25	0.0010	-	-	3/1
3/2	SW 2	0	-	10.05	1.61	-	25	0.0010	-	-	3/2
3/3	SW 3	0	-	10.05	1.61	-	25	0.0010	-	-	3/3
4/1	PL 1	6518	-	18.54	2.17	-	41	0.0010	-	-	4/1
4/2	PL 2	6518	-	18.54	2.17	-	41	0.0010	-	-	4/2
5	TH 2	9262	-	18.59	2.24	-	40	0.0010	-	-	5
6/1	PY 1	9752	-	30.32	1.25	-	50	0.0010	-	-	6/1
6/2	PY 2	9752	-	9.24	1.40	-	23	0.0010	-	-	6/2
7/1	KK 1	6518	-	20.75	1.95	-	42	0.0010	-	-	7/1
7/2	KK 2	6518	-	20.75	1.95	-	42	0.0010	-	-	7/2
8/1	CP 1	10731	-	17.79	1.96	-	38	0.0010	-	-	8/1
8/2	CP 2	10731	-	17.79	1.96	-	38	0.0010	-	-	8/2
9	TM	5852	-	11.51	2.33	-	31	0.0010	-	-	9
10	SP	8589	-	16.68	-	-	30	0.0010	-	-	10
11	NWW	26806	-	22.46	-	-	38	0.0010	-	-	11
12	PD	26137	-	13.47	-	-	26	0.0010	-	-	12
13	DM	70460	-	15.54	-	-	29	0.0010	-	-	13
14	BN	25245	-	13.70	1.57	-	30	0.0010	-	-	14
15	BK	22903	-	24.08	-	-	40	0.0010	-	-	15
16	BC	11282	-	27.67	-	-	45	0.0010	-	-	16
17	DK	18109	-	7.94	1.32	-	20	0.0010	-	-	17
18	BS	19001	-	11.23	1.44	-	26	0.0010	-	-	18
19	BP	9874	-	9.81	1.62	-	25	0.0010	-	-	19
20	KC	29259	-	30.89	-	-	48	0.0010	-	-	20
21	IM	11404	-	23.17	-	-	39	0.0010	-	-	21
22	PS	52260	-	22.28	-	-	38	0.0010	-	-	22
23	SMP	67460	-	22.28	-	-	38	0.0010	-	-	23
30	PSR	23349	-	9.21	-	-	20	0.0010	-	-	30
31	LP 2	24130	-	11.59	-	-	24	0.0010	-	-	31
33	LS	54460	-	9.62	-	-	21	0.0010	-	-	33
35	HM	17663	-	11.89	1.62	-	28	0.0010	-	-	35
37	ASD	8344	-	14.71	1.72	-	32	0.0010	-	-	37
41	CHW	18666	-	11.36	1.28	-	25	0.0010	-	-	41
42	LP 1	20673	-	8.27	1.32	-	21	0.0010	-	-	42
43	TC	5596	-	6.36	1.70	-	20	0.0010	-	-	43
44	PTW	5494	-	10.79	1.70	-	27	0.0010	-	-	44
45	PKN	20004	-	8.21	1.58	-	22	0.0010	-	-	45
50	SS	9262	-	5.94	1.33	-	17	0.0010	-	-	50
51	NN	24910	-	13.47	-	-	26	0.0010	-	-	51
	TOTAL			648.60			1343				

ANNEXED A-2

LETTER ON TRAFFIC DATA

The Nippon Telecommunications Consulting Co., Ltd.

3-3, UDAGAWA-CHO, SHIBUYA-KU, TOKYO, JAPAN

CABLE ADDRESS:
TOKNITOCO TOKYO
PHONE: TOKYO 462-2221

Bangkok, June 9, 1972.

Director of Planning and Project Department
Telephone Organization of Thailand,
Bangkok.

Dear Sir,

Your revised traffic data for Junction Cable Network Design has been received on June 1st, 1972 and wish to inform you that we are still in doubt of several items for which, according to our understanding, shell be meant as per the following :-

1) Satellite Office shall comprise of 5 exchanges, namely, RS, BCH, RID, NK and PTN exchanges with parent office at PY exchange for RS, BCH, RID, and PTN exchanges and parent office at TH exchange for NK exchange.

2) The estimate of number of subscribers in BK exchange for future demand is as follows :-

For 1976	.....	5,000 Lines
For 1980	.....	3,200 Lines
For 1990	.....	5,500 Lines

The number of subscribers decreased in the year of 1980 is due to the establish of a new exchange office adjacent to the existing office.

3) The connection between Special Service Centre and various exchange offices shall be as follows :-

SW Centre : to be connected with TK, SR, SW, PC, PY, KK, MM, SP, IM, ASD, SKV, TC, PTW and SS exchanges.

PKN Centre : to be connected with CP, BN, KC, PS, SMP, BCH, ON1, ON2, HM and PKN exchanges.

...../2

The Nippon Telecommunications Consulting Co., Ltd.

3-3, UDAGAWA-CHO, SHIBUYA-KU, TOKYO, JAPAN

CABLE ADDRESS:
TOKNITOCO TOKYO
PHONE: TOKYO 462-2221

CHW Centre : to be connected with TH, PD,BC, DK, BP, NK, PSR, BKT, CHW, MSK and PPJ exchanges.

IS Centre : to be connected with NWW, DM, BKN, BS, RS, LP1, LP2, PK, PTN, RID, SDM and NN exchanges.

4) Toll Service shall be rendered by KK exchange as usual.

Your confirmation to our above understanding will be highly appreciated,

Yours Very Truly,

Nippon Telecommunication Consulting
Company, Ltd.

Department of Planning and Project
Telephone Organization of Thailand

June 23, 1972

To Mr. H. Sano
Nippon Telecommunication Consulting Co.
Dusithani Building

Dear Sir.

With reference to your letter dated June 9, 1972 requesting for confirmation on informations which you extracted from the revised traffic data, we are glad to confirm them as follows :-

1. The five exchanges mentioned in item (1) shall remain as satellite office upto 1976 only.

2. Correct as per item (2).

3. Correct as per item (3), the letter IS may be mistake, this should be IS.

4. Correct as per item (4).

We hope that the above answer would satisfy your requirement.

Thank you for your kind assistance.

Yours truly

B. Phienpanij

(Mr. Boonchoo Phienpanij)
Direct of Planning and Project Department.

ANNEXED B

DIAGRAM OF INTER-EXCHANGE JUNCTION LINES PLAN

EX NO I TK EXCHANGE T7 SUB. 3,000 — 7,000 — 11,000

Route		Type	('76)	('80)	('90)	To
SR	(T1)	X	— (3)	30 (5)	45 (10)	SR
		X	36 (7)	54 (13)	81 (21)	
SW	(T7)	X	30	45	60	SW
		X	— (3)	20 (5)	36 (10)	
PL	(T3)	X	—	—	24	PL
		X	13	21	31	
TH	(T5)	X	10	15	22	TH
CP	(T6)	X	—	20	22	CP
		X	—	10	18	
MM	(T3)	X	10	13	23	MM
DK	(T5)	X	—	—	10	DK
PS	(T6)	X	—	—	10	PS
		X	—	—	13	
HM	(T6)	X	—	—	16	HM
		X	—	—	26	
ASD	(T3)	X	—	—	11	ASD
		X	—	15	22	
SKV	(T3)	X	—	—	10	SKV
CHW	(T5)	X	—	—	15	CHW
LP-I	(T2)	X	—	—	11	LP-I
		X	14	48	66	
TC	(T7)	X	18	63	87	TC
		X	—	16	27	
PTW	(T1)	X	—	14	22	PTW
		X	14	26	36	
KK	(TOLL)	•	22	42	61	KK
SPS	(SW)	X	5	8	11	SW
		•	116	161	209	
SW	(T7)	Δ	16	23	30	SW
KK	T1	Δ	32 (12)	46 (23)	61 (30)	KK
PY	T2	Δ	24	41	58	PY
PL	T3	Δ	17	38	20	PL
LS	T4	Δ	9	16	23	LS
TH	T5	Δ	17	33	42	TH
PKN	T6	Δ	39	57	64	PKN
KK	TEST	X̄	6	14	22	KK
KK	OBS	X̄	3	3	3	KK
MISC		X̄	6	6	6	SW
KK	SPS	X	3	7	11	KK

NOTE

- X ----- 11db
- Δ ----- 6 db
- • ----- 4 db
- Δ ----- 3 db
- X̄ ----- METALLIC WIRE
- O --- DIRECT LINE

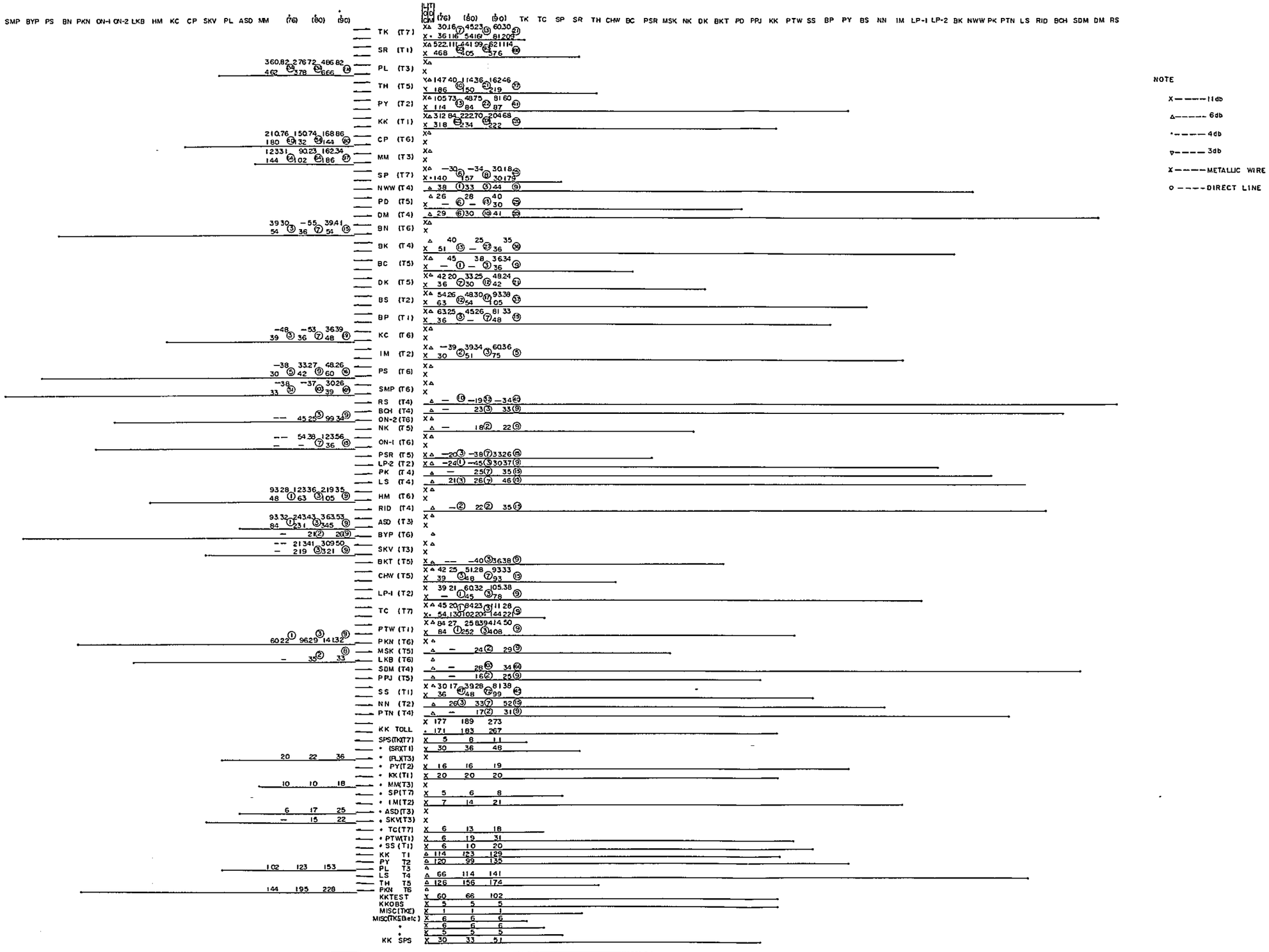
EX. NO. 2 SR EXCHANGE (TI) SUB. 20,000 — 36,000 — 57,000

PD	BKT	DK	CHW	BC	TH	(76)	(80)	(90)		(76)	(80)	(90)	KK	PTW	SS	BP	SW	TK	TC	ST	PL	ASD	MM	SKV	CP	HM	KC	ON-1	ON-2	PKN	BN	PS	PY	BS	NN	IM	LP-1	LP-2	BK	NWW	LS	DM
									TK (T 7)				X					—																								
													X					468																								
									SW (T 7)				X					522																								
													X					258																								
									PL (T 3)				X					204																								
						120	102	150					X																												
						216	192	282	TH (T 5)				X																												
													X					102																								
									PY (T 2)				X					129																								
													X					264																								
									KK (T 1)				X					342																								
													X					150																								
									CP (T 6)				X					234																								
													X					78																								
									MM (T 3)				X					84																								
													X					—																								
									SP (T 7)				X					—																								
									NWW (T 4)				X					42																								
						—	—	30					X																												
						30	33	48	PD (T 5)				X																												
									BN (T 6)				X					30																								
									BK (T 4)				X					30																								
								30					X																												
								39	BC (T 5)				X																												
								30					X																												
								45	DK (T 5)				X																												
													X					48																								
									BS (T 2)				X					54																								
													X					42																								
									BP (T 1)				X					48																								
									KC (T 6)				X																												
													X																												
									IM (T 2)				X					—																								
									PS (T 6)				X					—																								
													X					—																								
									ON-2 (T 6)				X					—																								
													X					—																								
									ON-1 (T 6)				X					—																								
													X					—																								
									LP-2 (T 2)				X					—																								
													X					63																								
									HM (T 6)				X					60																								
													X					69																								
									ASD (T 3)				X					39																								
													X					—																								
									SKV (T 3)				X					—																								
						—	—	30					X																												
						—	—	33	BKT (T 5)				X																												
						33	42	61					X																												
						48	63	126	CHW (T 5)				X																												
													X					33																								
									LP-1 (T 2)				X					30																								
													X					—																								
									TC (T 7)				X					30																								
													X					78																								
									PTW (T 1)				X					84																								
									PKN (T 6)				X					45																								
													X					—																								
									SS (T 1)				X					30																								
													X					—																								
									NN (T 2)				X					—																								
													X					177																								
									KK TOLL				•					171																								
									SPS (SW)				X					30																								
													•					456																								
									KK T1				Δ					81																								
									PY T2				Δ					117																								
									PL T3				Δ					75																								
									LS T4				Δ					51																								
						96	132	141	TH T5				Δ																												
									PKN T6				Δ					162																								
									SW T7				Δ					111																								
									KK TEST				X					60																								
									KK OBS				X					5																								
						1	1	1	MISC (TKE)				X					1																								
									•				X					1																								
									• (etc)				X					14																								
									DM (T 4)																																		
									KK SPS				X					20																								

NOTE

X	——— 11 db
Δ	——— 6 db
•	——— 4 db
▽	——— 3 db
✕	———METALLIC WIRE
o	———DIRECT LINE

EX. NO.3 SW & T7 EXCHANGE SUB. 30.000—33.000 — 51.000



EX. NO. 4 PL (T3) EXCHANGE SUB. 20,000 — 22,000 — 43,000

		('76)	('80)	('90)	ASD	PTW	SW	TC	TK	SR	TH	DK	BKT	PD	PPJ	BC	PSR	MSK	NK	CHW	BP	SS	KK	PY	IM	BS	NN	LP-1	LP-2	BK	NWW	PK	PTN	LS	RID	BCH	SDM	DM	RS
TK	(T7)	X△-17		-36																																			
		X — ③		20 ⑤	24	20																																		
				396 ⑯																																				
SR	(T1)	X△204		75	186	90																																		
		X 258㉓		222	⑤3396	㊽																																		
SW	(T7)	X△462		102	378	123	666	153																																
		X 360㉖		276	㉘	486	㉙																																	
TH	(T5)	X△ 70		30	583	4	1043																																	
		X 54㉑		44	㉒	80	㉜																																	
PY	(T2)	X△ 64		4	325	4	684	1																																
		X 92㉔		66	㉕	88	㉚																																	
KK	(T1)	X△144		48	108	34	1245	6																																
		X 200㉗		148	㉛	172	㉜																																	
CP	(T6)	X△																																						
		X※																																						
MM	(T3)	X△																																						
		X※																																						
SP	(T7)	X△																																						
		X																																						
NWW	(T4)	△ -35		-40		-51																																		
		— ②		— ③		20 ⑤																																		
PD	(T5)	△ 23㉒		-33	㉓	-53	⑤																																	
DM	(T4)	X△ 30㉒		36	㉓	28	22	⑤																																
BN	(T6)	X△																																						
		X																																						
BK	(T4)	△ -37		-29		-47																																		
		X 40㉒		20 ③		34	⑤																																	
BC	(T5)	X△ -33		-40		32	23																																	
		X ㉒		③		22	⑤																																	
DK	(T5)	X△ -35		-42		24	27																																	
		X ㉒		③			⑤																																	
SS	(T2)	X△ 30		29	26	27	70	34																																
		X 42㉓		34	⑤	86	⑩																																	
BP	(T1)	X△ 22		19	-53	38	27																																	
		X 26①		20 ③		42	⑤																																	
KC	(T6)	X△																																						
		X																																						
IM	(T2)	X△ -27		22	22	42	24																																	
		X 28①		42 ③		78	⑤																																	
PS	(T6)	X△																																						
		X																																						
SMP	(T6)	X△																																						
		X																																						
RS	(T4)	△ --		--		27	②	-56	⑨																																
BCH	(T4)	△ --		--		21	③	35	⑨																																
ON-2	(T6)	X△																																						
		X																																						
NK	(T5)	△ --		18	②	-25	⑨																																	
ON-1	(T6)	X△																																						
		X																																						
PSR	(T5)	X△-16①		40	③	20	36	⑨																																
		X△ -18		-42		24	26																																	
LP-2	(T2)	X — ①		22	③	40	⑨																																	
PK	(T4)	△ --		-31		-41																																		
		X		③		X	⑨																																	
LS	(T4)	△-19①		-31	③	-54	⑨																																	
		X△																																						
HM	(T6)	X																																						
RID	(T4)	△ --		20	②	-37	⑨																																	
ASD	(T3)	X△ 30	17	4	82	30	3	150	4	9																													
		X 24	12	5	70	28	6	134	2	2																													
BYP	(T6)	△																																						
		X																																						
SKV	(T3)	X△																																						
		X※																																						
BKT	(T5)	△ --		-33	③	-64	⑤																																	
CHW	(T5)	X△ 22		21	28	25	62	30																																
		X ①		③		36	⑤																																	
LP-1	(T2)	X△ 20		26	36	25	78	38																																
		X 22①		36 ③		80	⑤																																	
TC	(T7)	X△ -24		26	20	42	26																																	
		X 22①		39 ③		64	⑤																																	
PTW	(T1)	X△ 38	21	122	39	246	53																																	
		X 52①		156 ③		318	⑤																																	
PKN	(T6)	X△																																						
		△ --		-25	②	-33	⑨																																	
MSK	(T5)	△																																						
LKB	(T6)	X△ --		-41	④	22	20	⑨																																
SDM	(T4)	△ --		-18	②	-33	⑨																																	
PPJ	(T5)	X△ -33		24	23	64	31																																	
SS	(T1)	X 24 ③		33	⑤	80	⑩																																	
NN	(T2)	X△ -24①		-40	③	30	27	⑨																																
PTN	(T4)	△ --		-21	②	-43	⑨																																	
KK	T1	△ 76		74		98																																		
PY	T2	△ 68		56		80																																		
LS	T4	△ 54		80		128																																		
TH	T5	△ 88		100		114																																		
PKN	T6	△																																						
SW	T7	△ 82		72		82																																		
KK TOLL		X 118		126		224																																		
		• 114		122		218																																		
SPS	(SW)	X 20		22		36																																		
KK MISC		X 4		4		4																																		
KK TEST		X 40		44		88																																		
KK SPS		X 20		22		43																																		

NOTE

X ----- 11db

▽ ----- 6db

• ----- 4db

▽ ----- 3db

X ----- METALLIC WIRE

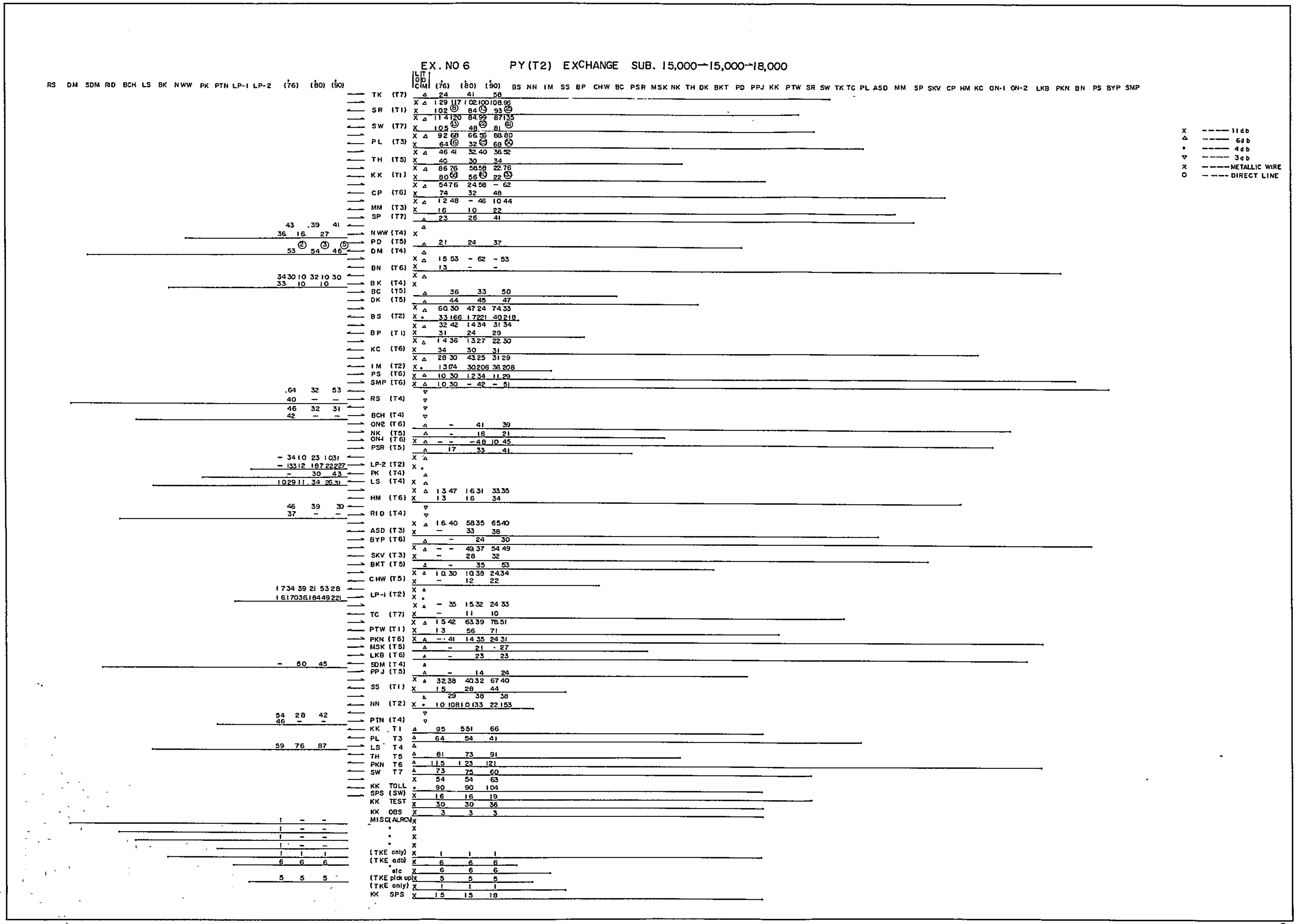
o ----- DIRECT LINE

EX. NO.5 TH EXCHANGE T5 SUB. 20,000--22,000--35,000

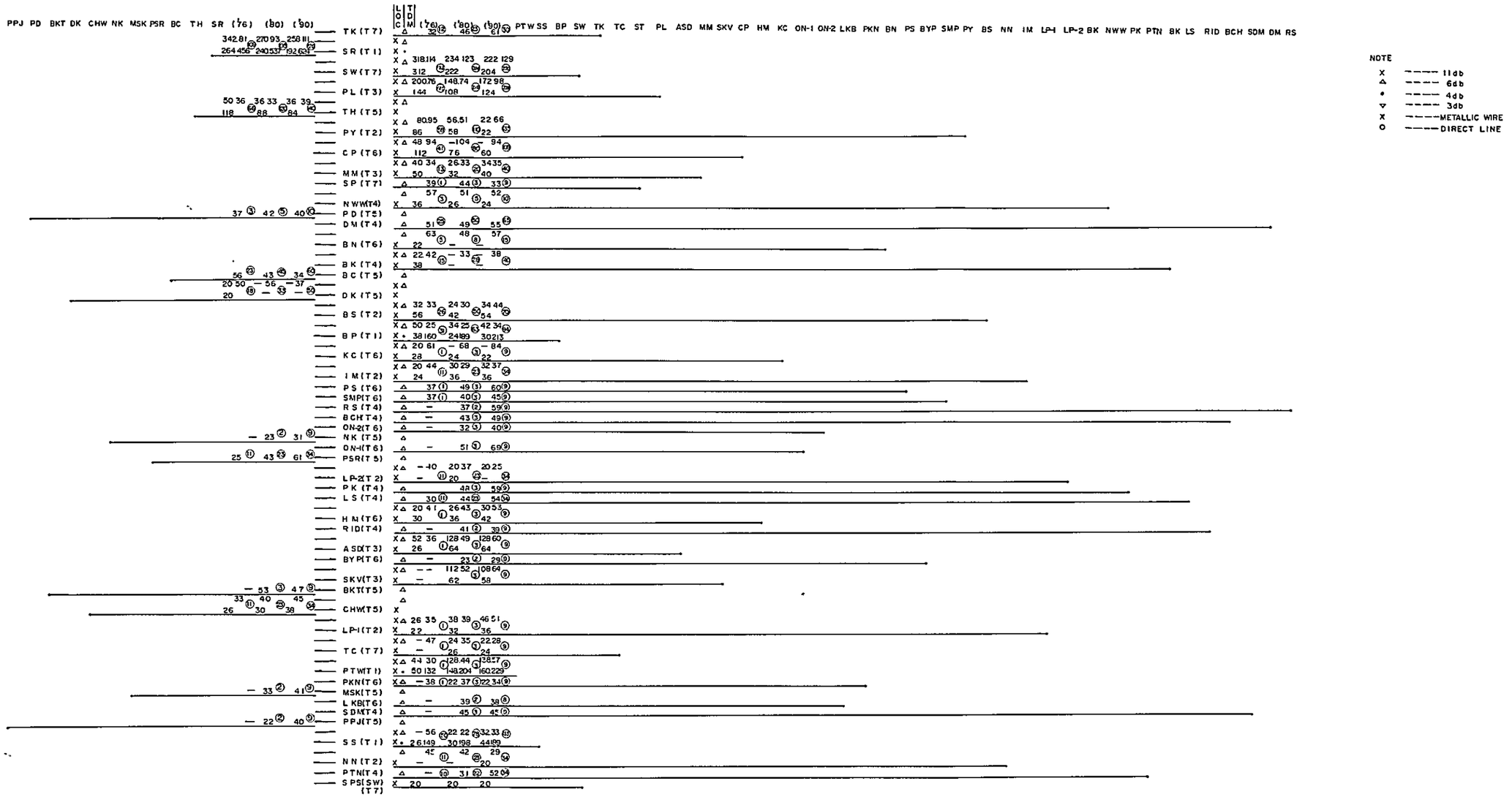
BP CHW NK MSK PSR BC PRJ PO BKT DK (76) (80) (90) SR SW TC TK SP KK PTW PL MM ASD SKV CP PKN BN PS SMP BYP HM KC ON-1 ON-2 LKB SS BS NN NWW PK PTN PY IM LP-1 LP-2 RID BCH BK LS SDM DM RS

	(76)	(80)	(90)
T K (T7)	XΔ 10.17	15.33	22.42
	X 13	21	31
S R (T1)	XΔ 216.96	192 132	282.141
	X 120 (3)	102 (4)	150 (5)
S W (T7)	XΔ 186.126	150 156	219.176
	X 147 (3)	114 (4)	162 (5)
P L (T3)	XΔ 54 88	44 100	80.114
	X 70 (3)	58 (4)	104 (5)
P Y (T2)	XΔ 40 81	30.73	34.91
	X 46	32	36
K K (T1)	XΔ 118.74	88.96	64 100
	X 50 (2)	36 (3)	36 (5)
C P (T6)	XΔ 50.74	38.78	46.100
	X 38	28	32
M M (T3)	XΔ 15 34	11.35	21.56
	X 23	16	31
P D (T5)	XΔ		
	X•		
B N (T6)	XΔ 12.27	-37	13.44
B C (T5)	XΔ		
	X•		
D K (T5)	XΔ		
	X•		
B S (T2)	XΔ 17.34	15.42	30.56
	X 23	19	39
B P (T1)	XΔ		
	X		
K C (T6)	XΔ 1329	1340	19.51
	X 13	12	17
I M (T2)	XΔ 11 24	1951	30 55
	X 11	17	27
P S (T6)	XΔ -23	37	13.44
	X —	—	10
ON-2 (T6)	XΔ —	36	19 60
N K (T5)	XΔ		
	X•		
ON-1 (T6)	XΔ —	15 34	3443
PSR (T5)	XΔ		
	X•		
LP-2 (T2)	XΔ -20	-44	14.56
H M (T6)	XΔ 21 31	2957	5467
	X 10	13	23
ASD (T3)	XΔ 15 26	4149	6346
	X 13	35	54
SKV (T3)	XΔ —	36 70	5461
	X —	33	50
BKT (T5)	XΔ		
	X•		
CHW (T5)	XΔ		
	X•		
LP-1 (T2)	XΔ 15 25	2650	4662
	X 11	19	34
T C (T7)	XΔ 13 26	2648	3758
	X 21	39	55
PTW (T1)	XΔ 31 34	101 62	169 70
	X 12	37	62
PKN (T6)	XΔ 1026	1948	2967
MSK (T5)	XΔ		
	X•		
S DM (T4)	XΔ —	-26	10 25
S S (T1)	XΔ -29	1138 (2)	2649
	X 12	16 (3)	35 (5)
"0" TOLL	X 59	63	94
"1" SPS	X		
PPJ (T5)	XΔ		
	X•		
K K TOLL	• 102	111	168
K K T1	Δ 36	33	39
P Y T2	Δ 41	40	52
P L T3	Δ 30	34	43
L S T4	Δ 27	34	51
PKN T6	Δ 48	55	72
S W T7	Δ 40	36	46
K K TEST	X 40	44	70
MISC (OBS)	X 5	5	5
S P (T7)	Δ -19	-22	-35
NWW (T4)	Δ -26	-26	-37
D M (T4)	Δ -24	-28	-41
B K (T4)	Δ -27	-19	-29
SMP (T6)	Δ -23	-26	-38
R S (T4)	Δ —	-17	-34
BCH (T4)	Δ —	-22	-36
P K (T4)	Δ —	-20	-30
L S (T4)	Δ -15	-21	-39
RID (T4)	Δ —	-21	-38
BYP (T6)	Δ —	-16	-20
LKB (T6)	Δ —	-21	-21
N N (T2)	Δ -18	-26	-44
PTN (T4)	Δ —	-14	-26
K K SPS	X 20	22	35
MISC (TKE)	1	1	1

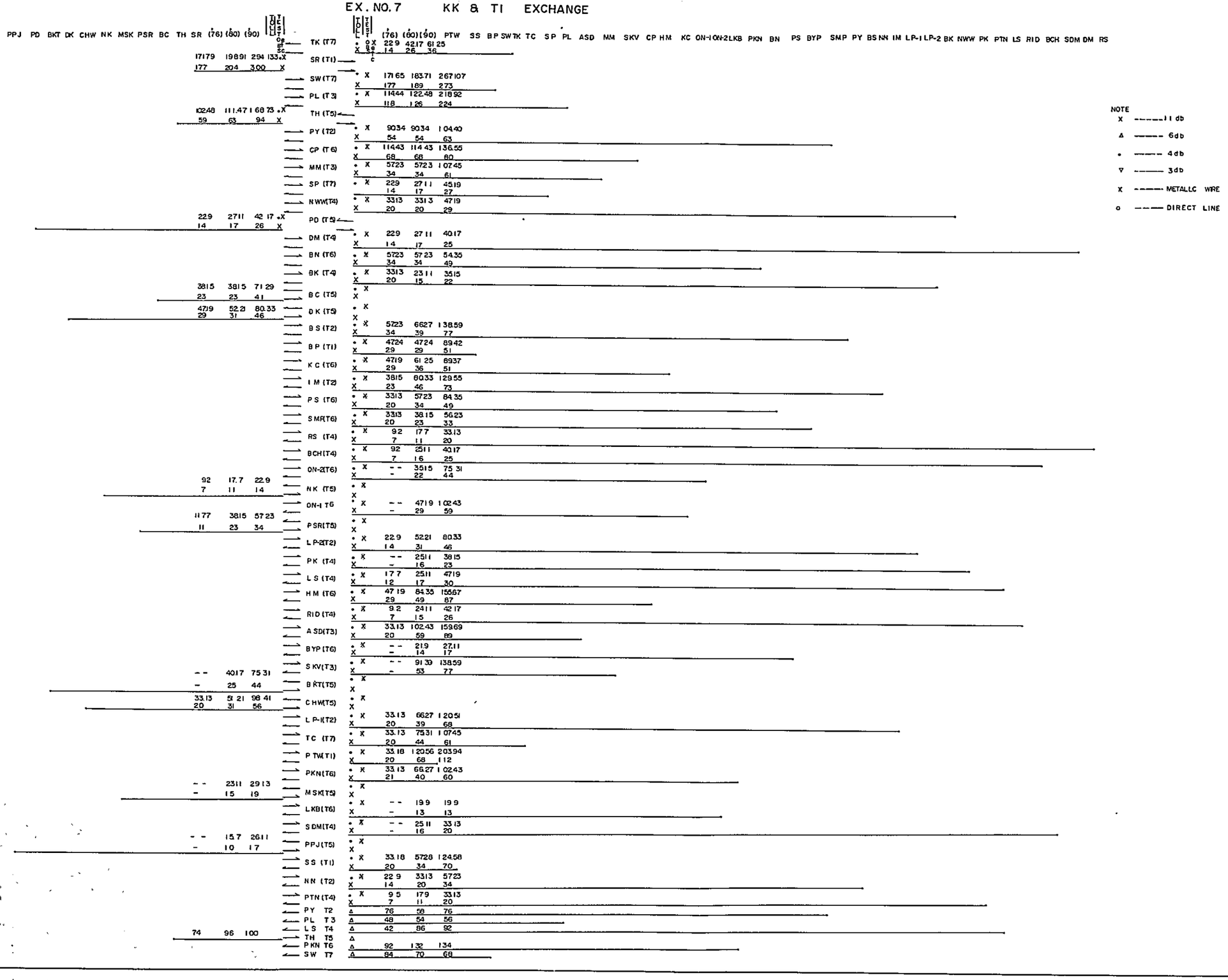
X ----- 11db
Δ ----- 6db
• ----- 4db
▼ ----- 3db
X ----- METALLIC WIRE
o ---- DIRECT LINE


EX. NO 6 PY (T2) EXCHANGE SUB. 15,000→15,000→18,000
RS DM SDM RID BCH LS BK NWW PK PTN LP-1 LP-2 (76) (80) (90)
(76) (80) (90) BS NN IM SS BP CHW BC PSR MSK NK TH DK BKT PD PPJ KK PTW SR SW TK TC PL ASD MM SP SKV CP HM KC ON-1 ON-2 LKB PKN BN PS BYP SMP
X ---- 11db
Δ ---- 6db
• ---- 4db
▽ ---- 3db
x ---- METALLIC WIRE
O ---- DIRECT LINE

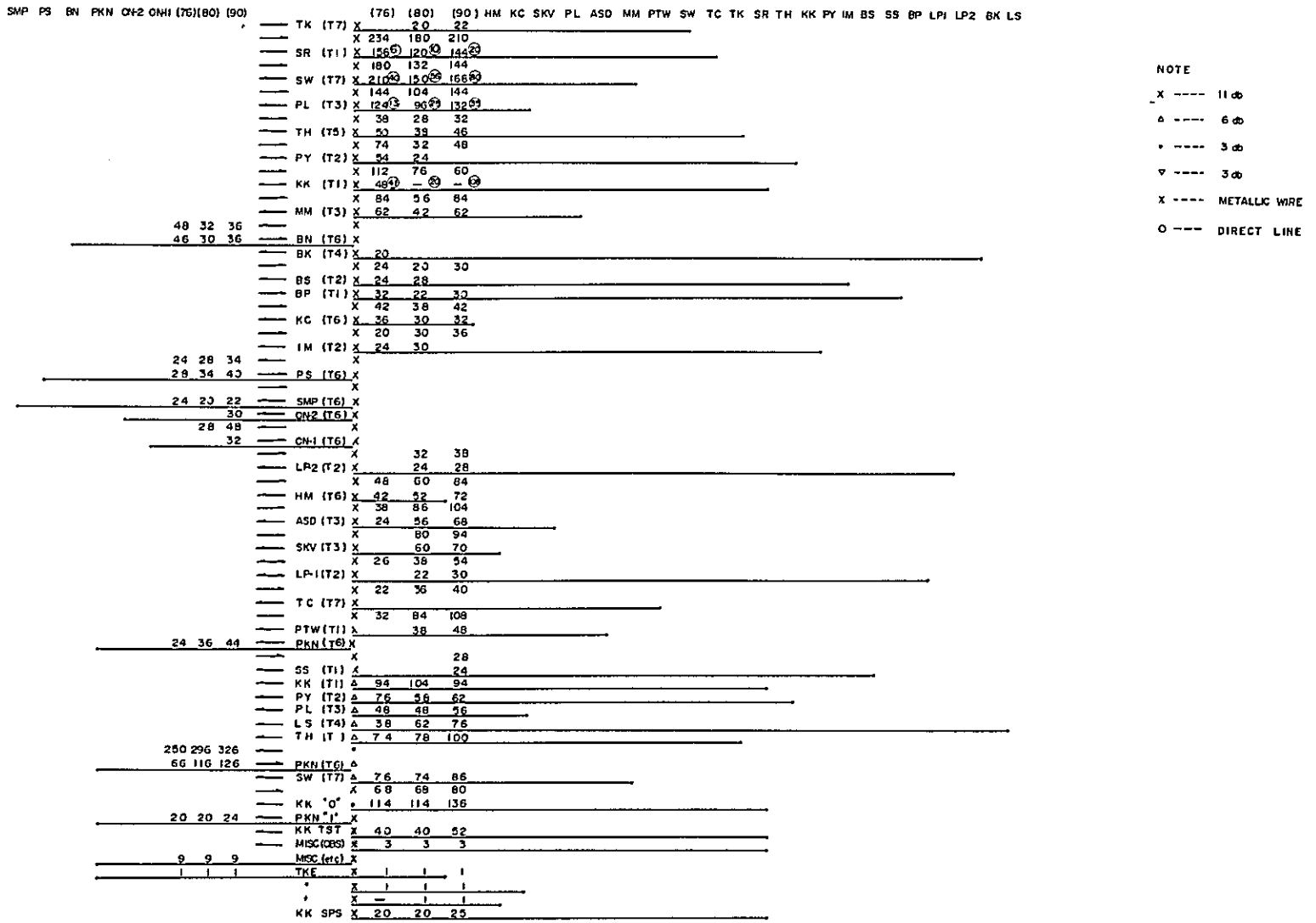
EX. NO. 7 (K K (T I) EXCHANGE SUB. 2,000 — 20,000 — 20,000



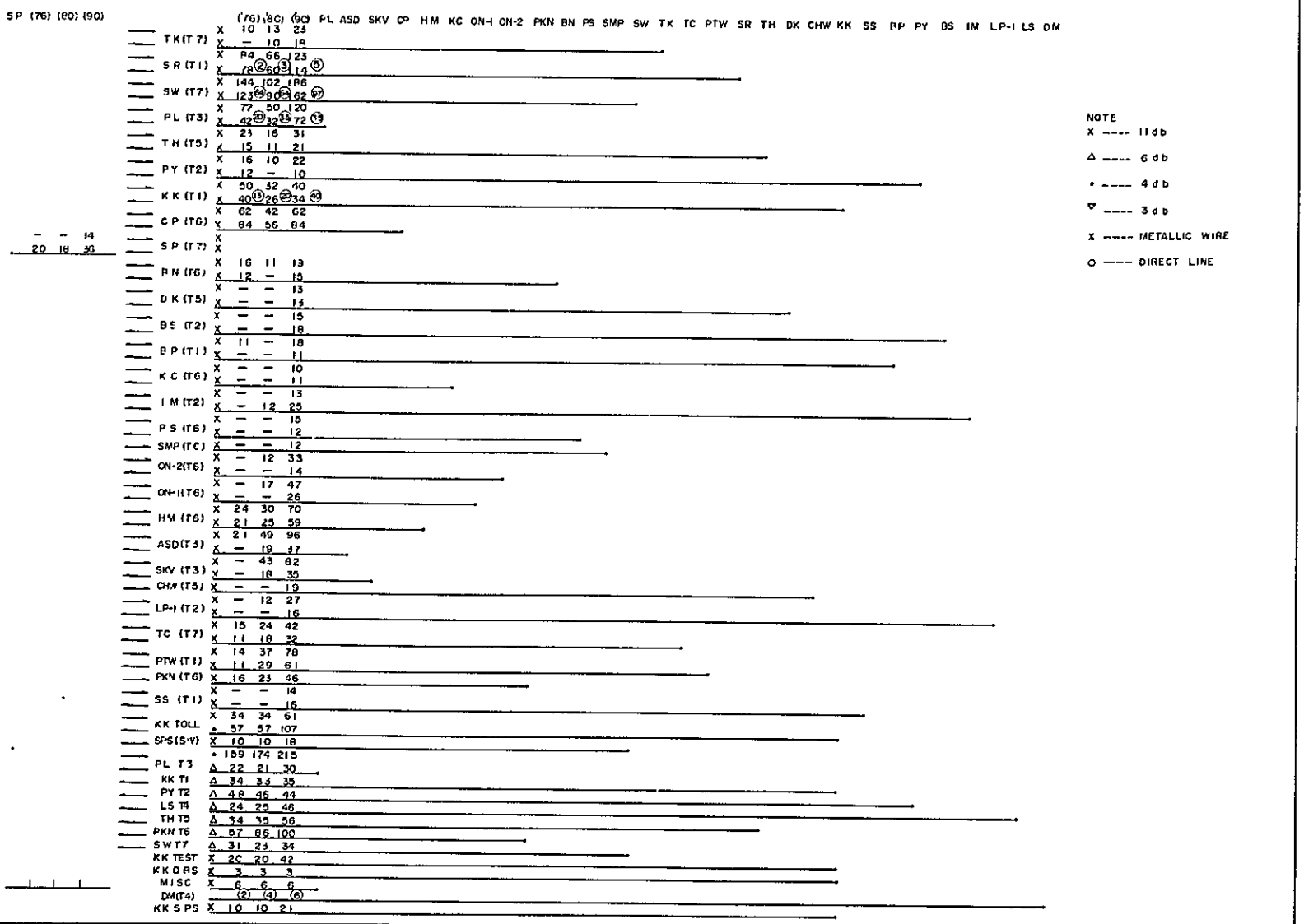
EX. NO. 7 KK & TI EXCHANGE



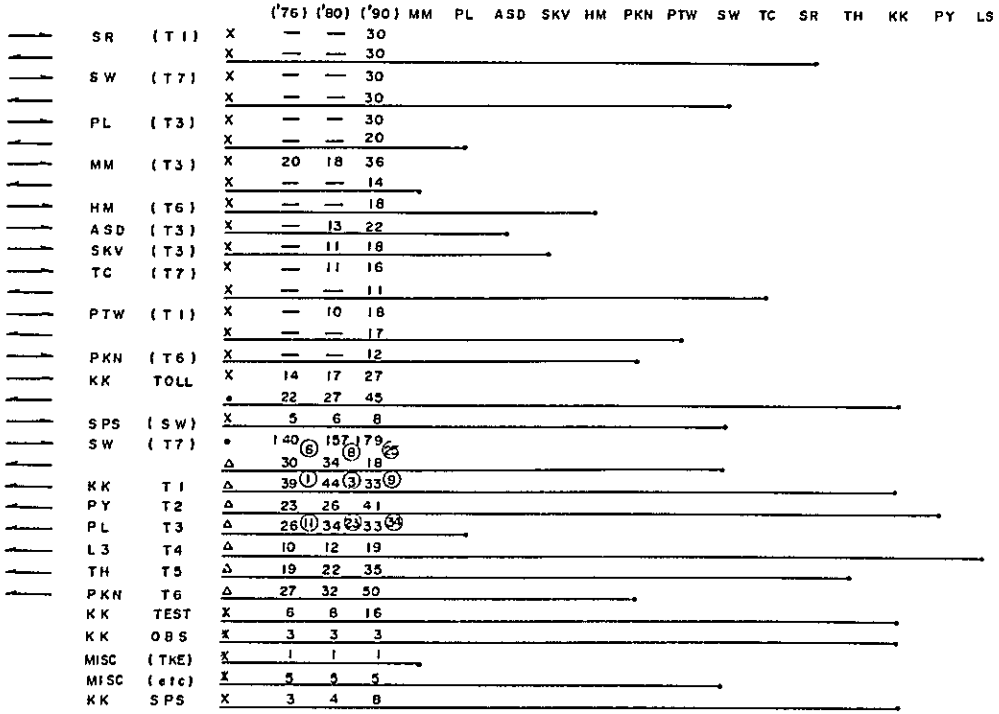
EX.NO 8 CP EXCHANGE (T6) SUB. 20,000 — 20,000—25,000



EX.NO 9 MM EXCHANGE (T3) SUB. 10,000 — 10,000 — 21,000



EX NO.10 SP EXCHANGE (T7) SUB. 3,000—4,000—7,500



NOTE

X ——— 11 db

Δ ——— 6 db

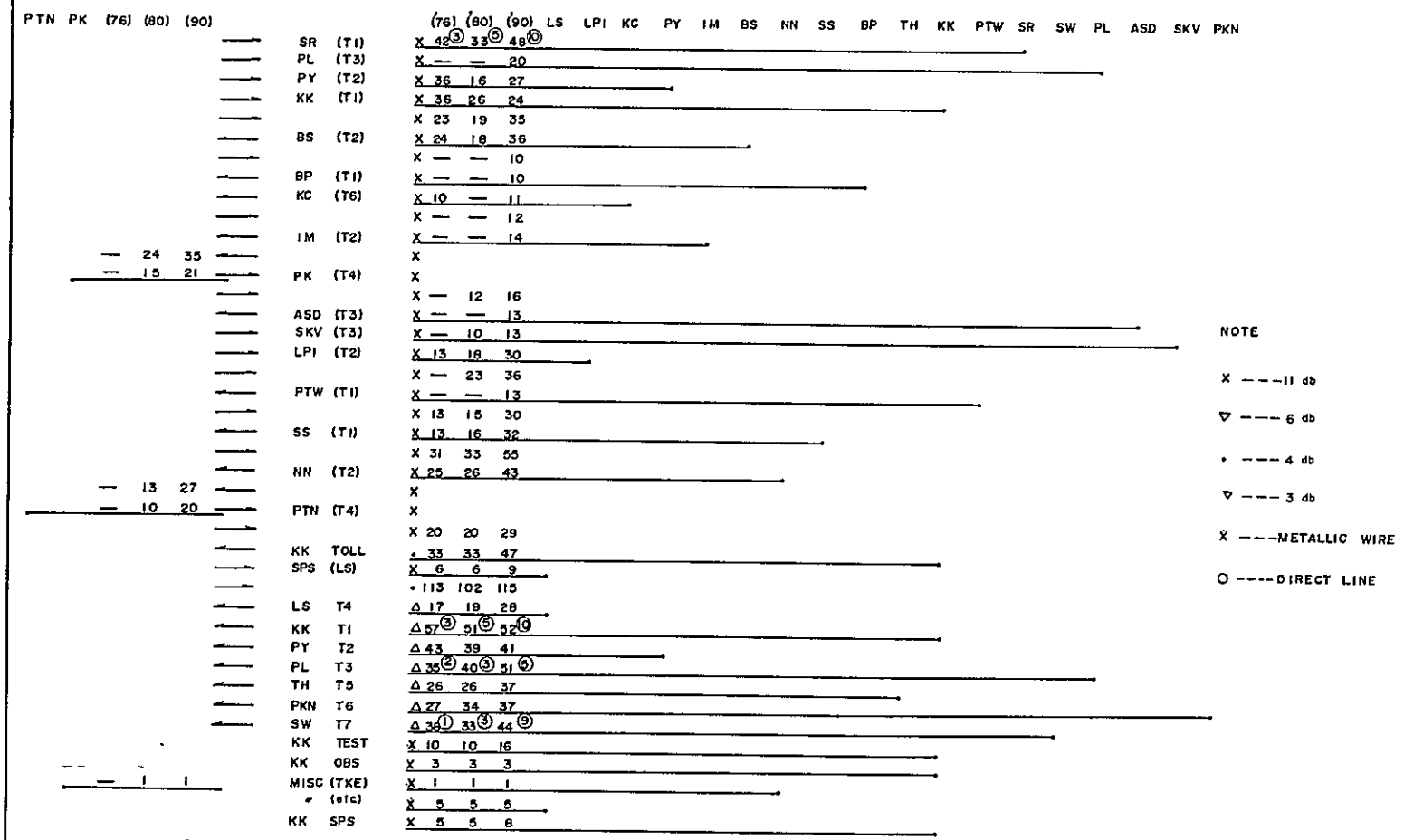
• ——— 4 db

▽ ——— 3 db

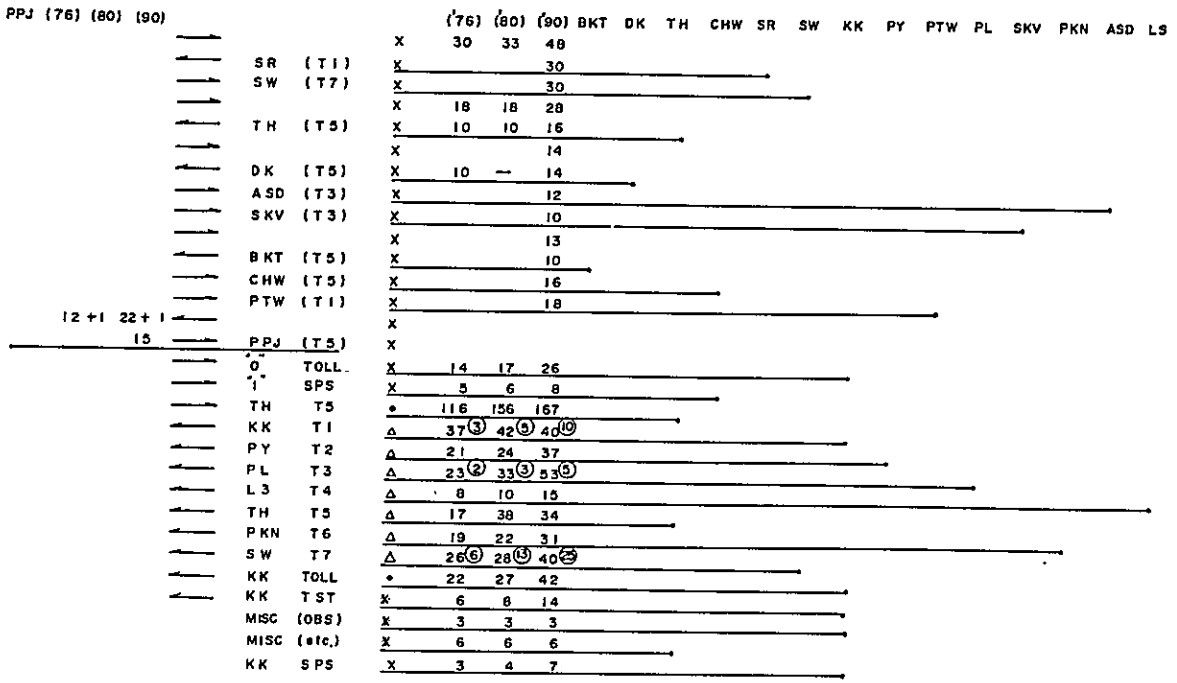
X ——— METALLIC WIRE

O ——— DIRECT LINE

EX. NO. 11 NWW EXCHANGE (T4) SUB. 5,000—5,000—8,000



EX. NO 12 PD EXCHANGE(T5) SUB. 3,000—4,000—7,000



NOTE

x ---- 11 db.

△ ---- 6 db

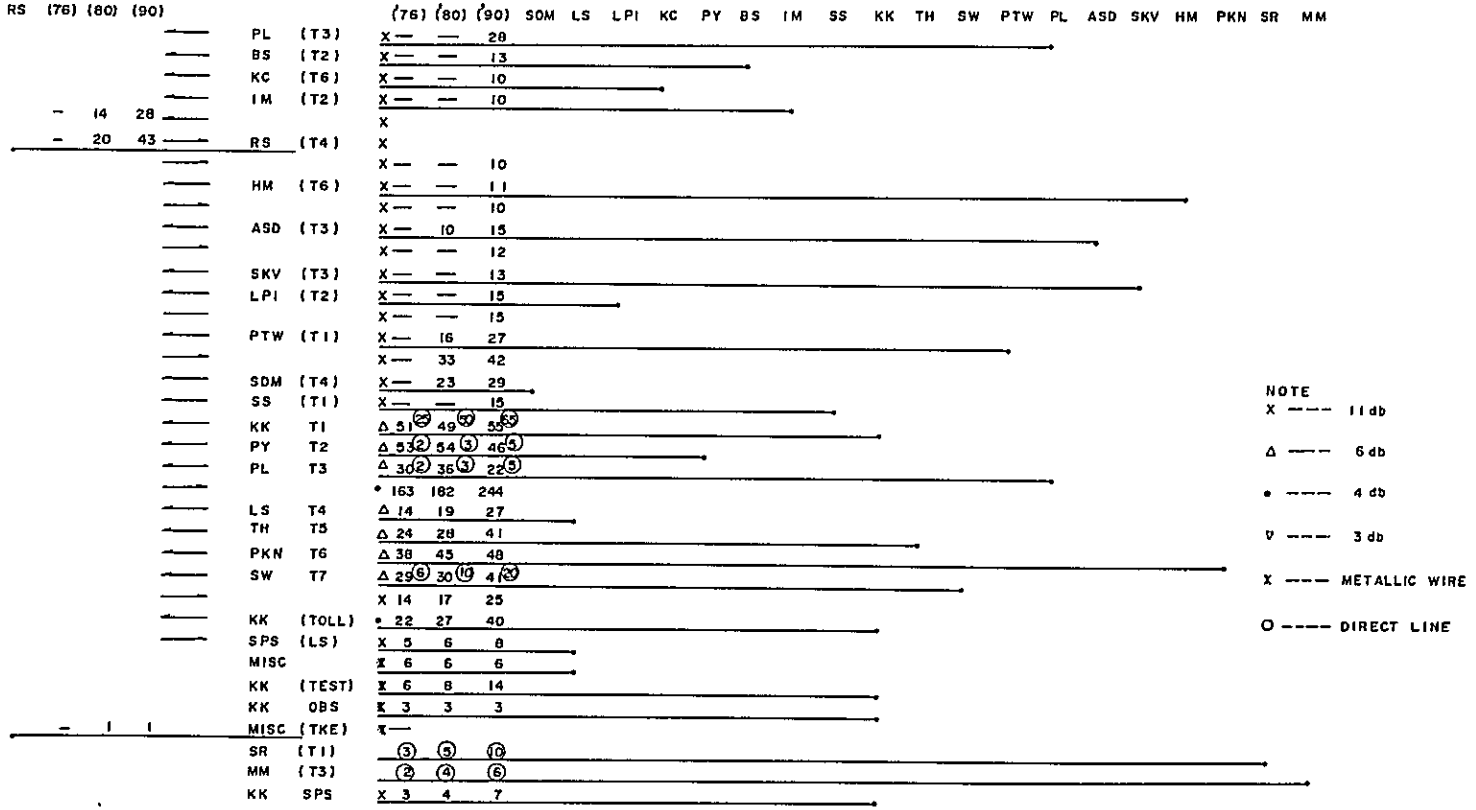
• ---- 4 db

▽ ---- 3 db

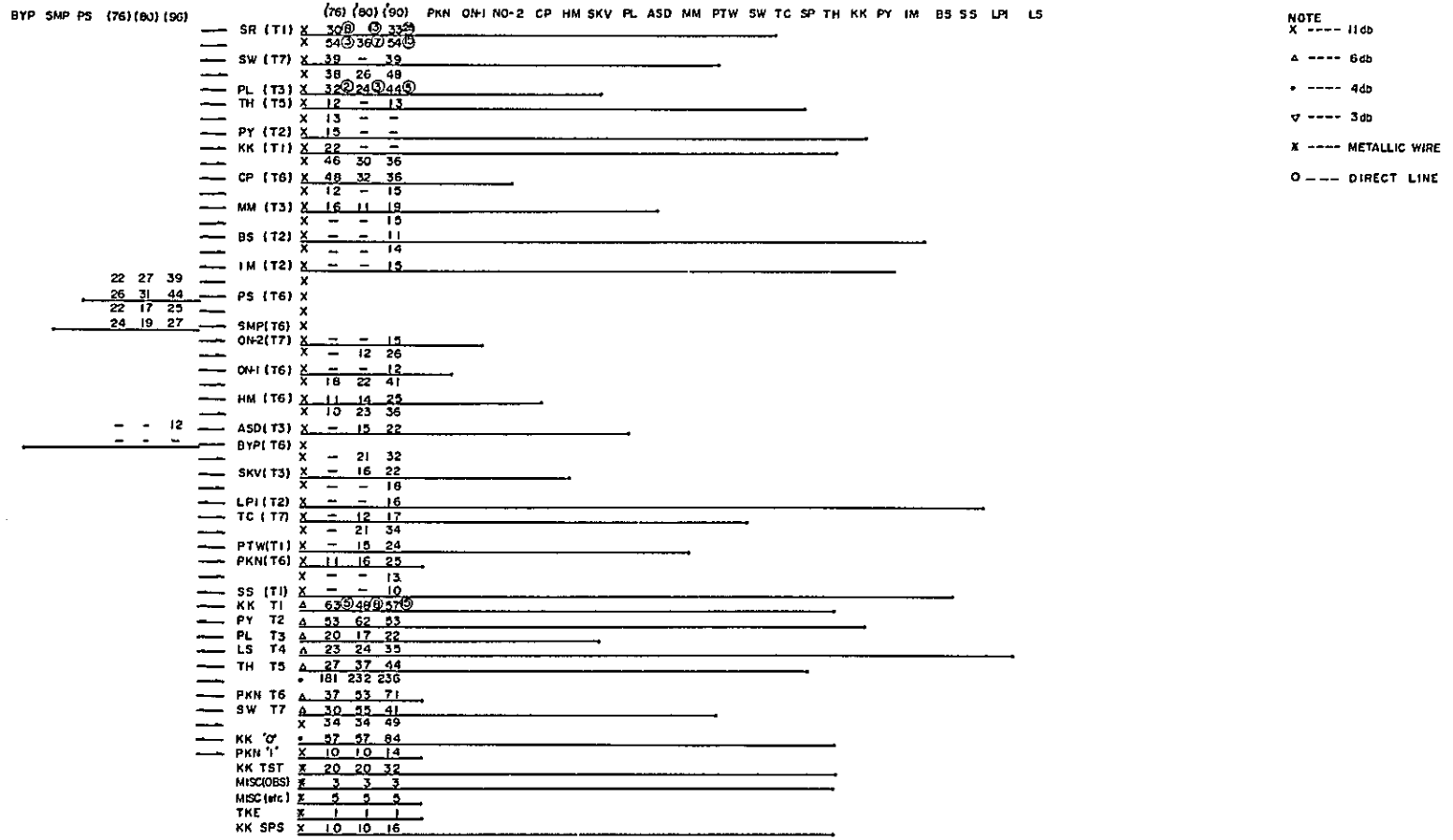
x ---- METALLIC WIRE

O ----- DIRECT LINE

EX. NO 13 DM EXCHANGE (T4) SUB. 3,000—4,000 — 6,500

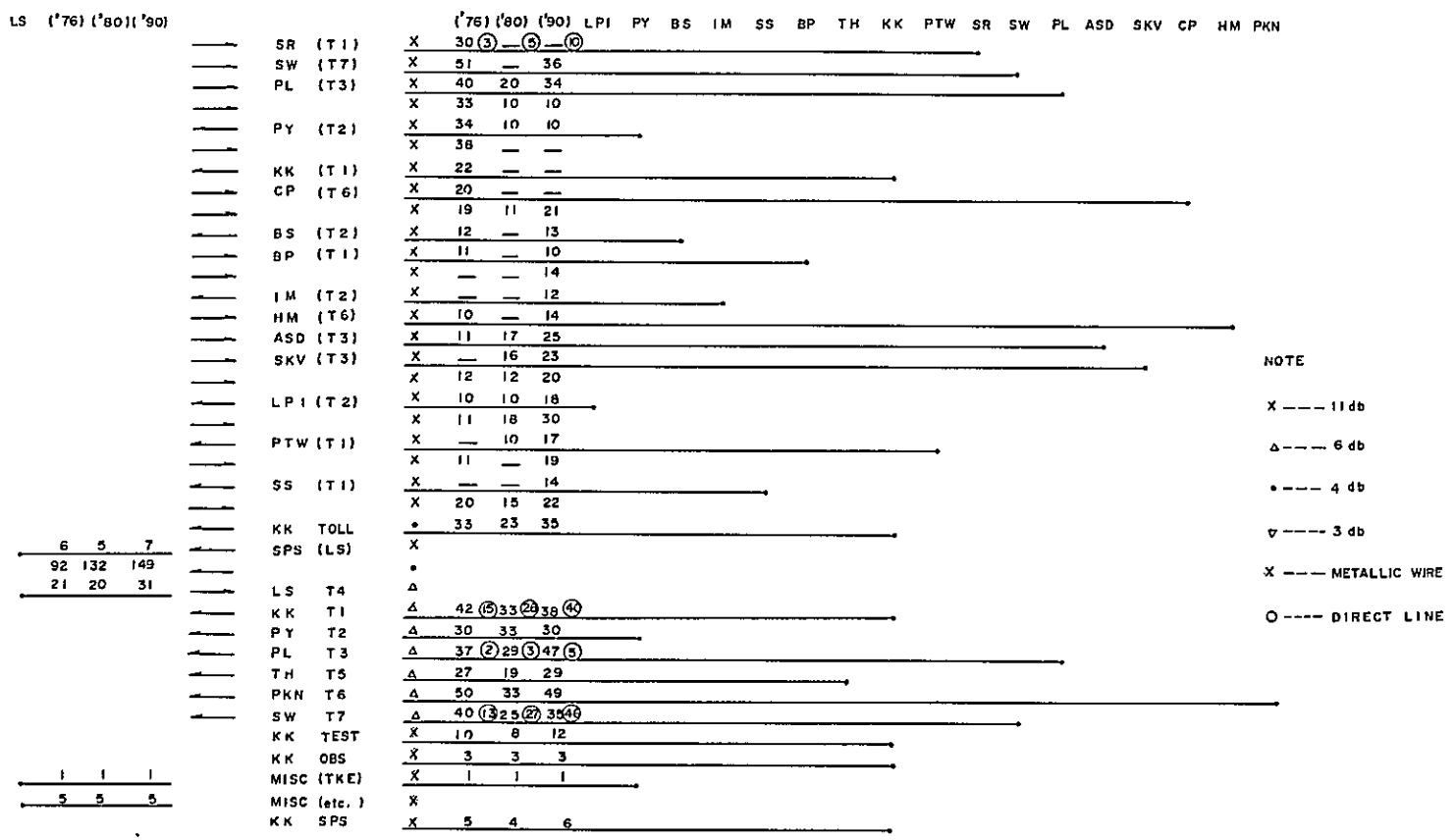


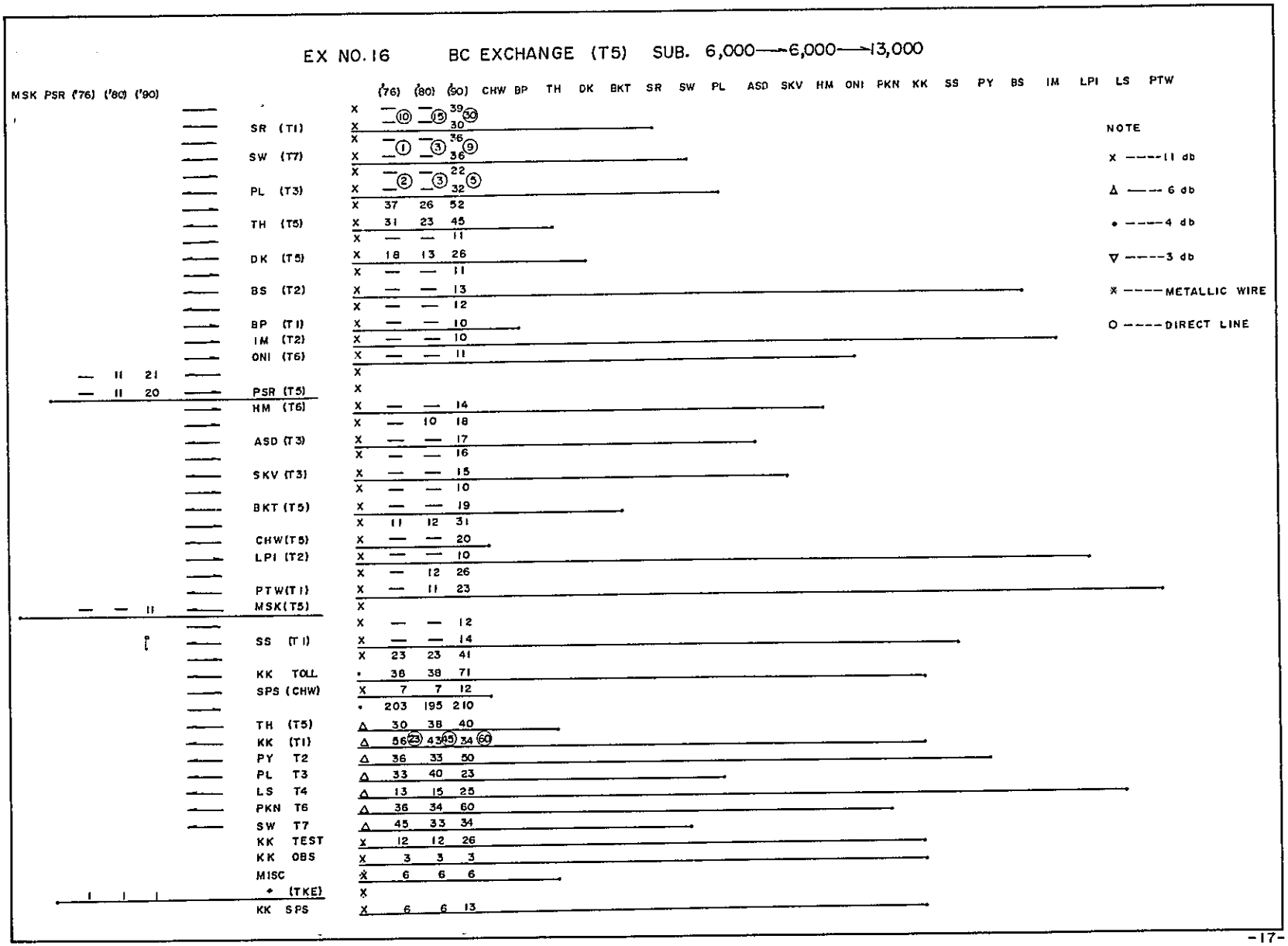
EX. NO 14 BN EXCHANGE (T6) SUB. 10,000—10,000—16,000



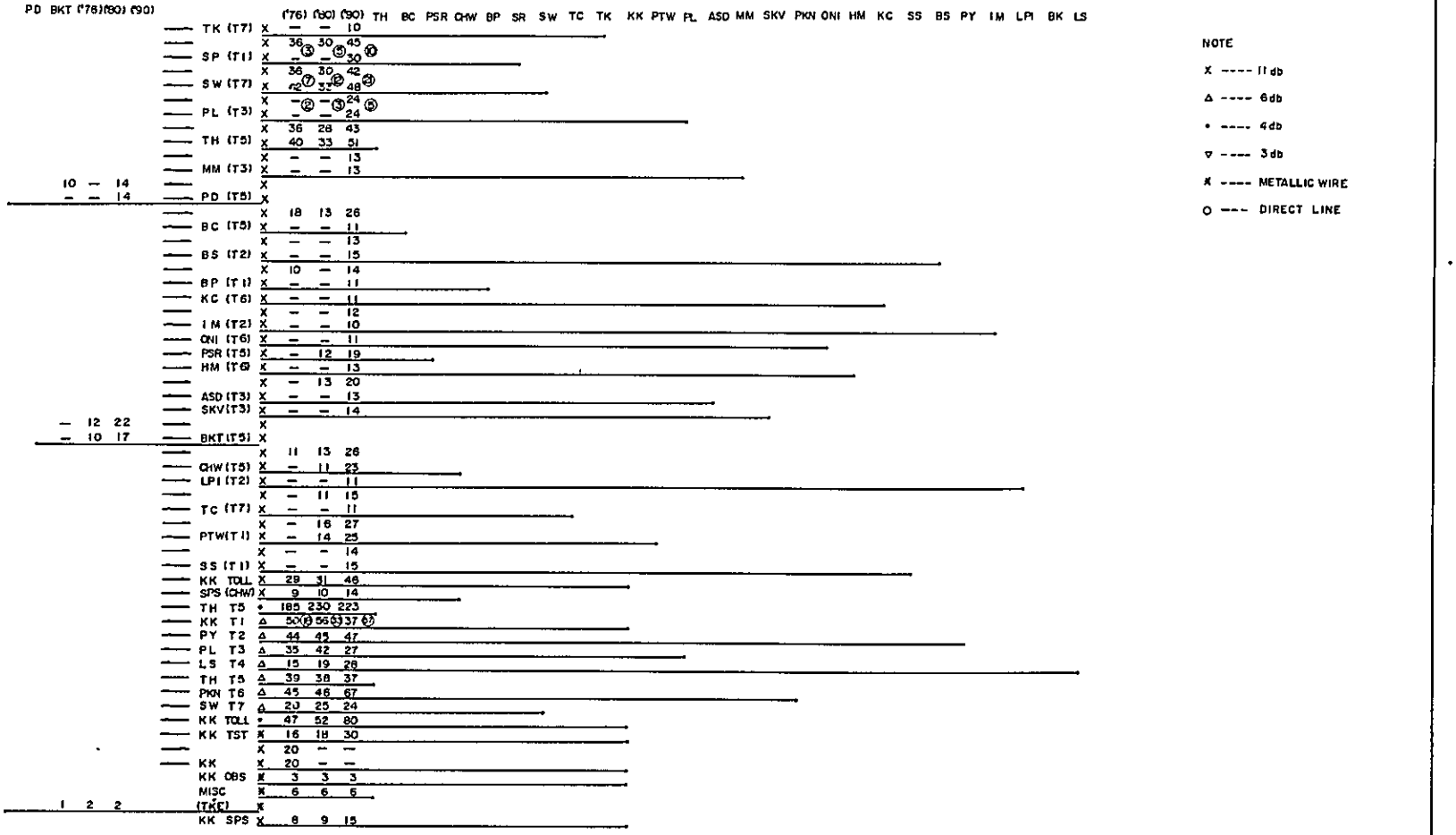
NOTE
X ---- 11db
Δ ---- 6db
• ---- 4db
▽ ---- 3db
X ---- METALLIC WIRE
O --- DIRECT LINE

EX. NO. 15 BK EXCHAGE (T 4) SUB. 5,000 — 3,200 — 5,500




EX NO. 16 BC EXCHANGE (T5) SUB. 6,000——6,000——13,000
MSK PSR ('76) ('80) ('90)
('76) ('80) ('90) CHW BP TH DK BKT SR SW PL ASD SKV HM ONI PKN KK SS PY BS IM LPI LS PTW
SR (T1)
SW (T7)
PL (T3)
TH (T5)
DK (T5)
BS (T2)
BP (T1)
IM (T2)
ONI (T6)
PSR (T5)
HM (T6)
ASD (T3)
SKV (T3)
BKT (T5)
CHW(T5)
LPI (T2)
PTW(T1)
MSK(T5)
SS (T1)
KK TOLL
SPS (CHW)
TH (T5)
KK (T1)
PY T2
PL T3
LS T4
PKN T6
SW T7
KK TEST
KK OBS
MISC
* (TKE)
KK SPS
NOTE
x ——— 11 db
Δ ——— 6 db
• ——— 4 db
▽ ——— 3 db
※ ——— METALLIC WIRE
O ——— DIRECT LINE

EX. NO 17 DK. EXCHANGE (T5) SUB. 8,000—9,000—13,000



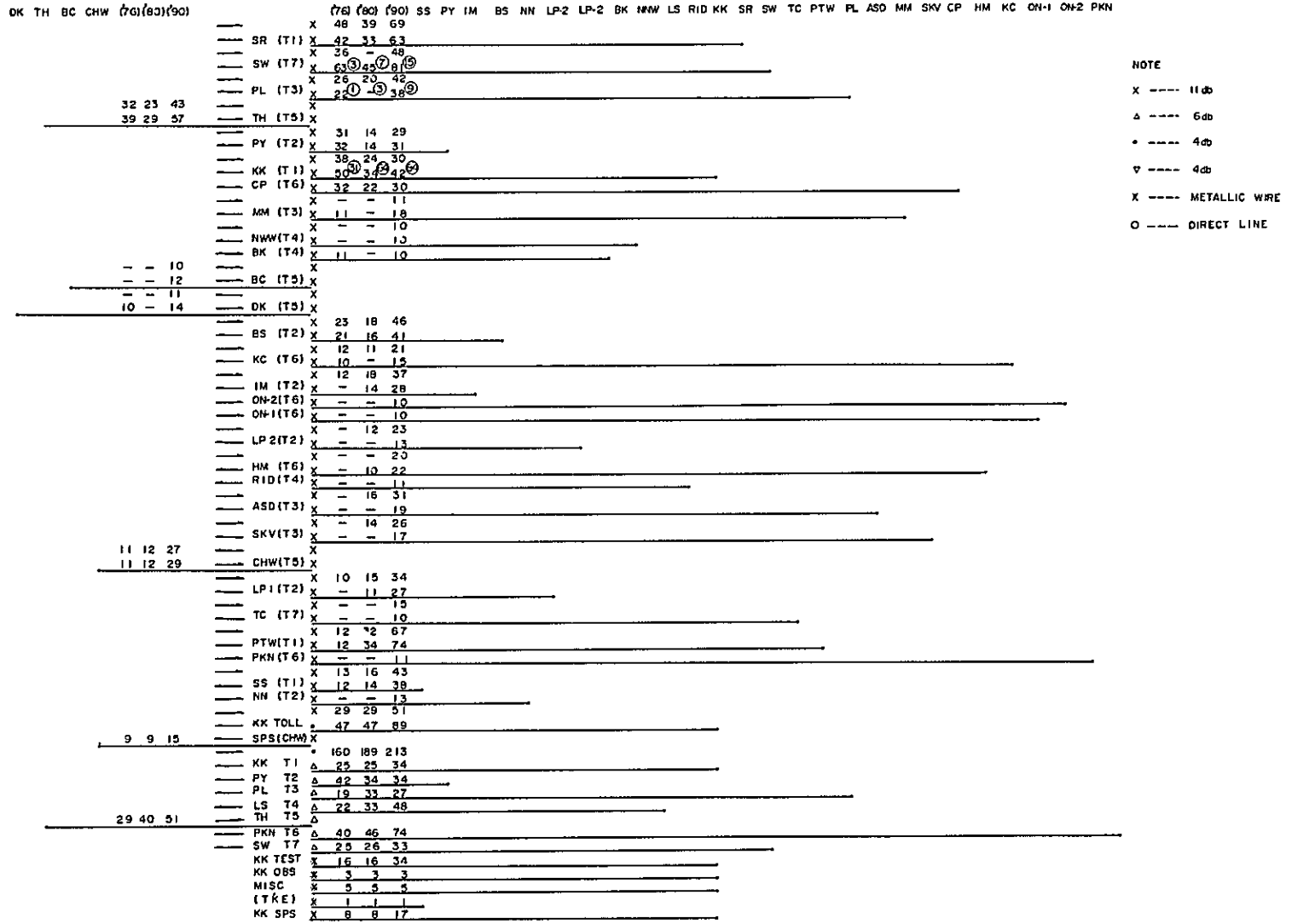
EX. NO.18 BS EXCHANGE (T2) SUB. 10,000--12,000--28,000

NN (76)	(80)	(90)			(76)	(80)	(90)	PY	IM	LP-1	LP-2	BK	NWW	PK	PTN	LS	RID	BCH	SDM	DM	SS	BP	CHW	BC	PSR	TH	DK	BKT	KK	PTW	SR	SW	TC	PL	ASD	MM	SKV	CP	HM	KC	ON-1	CN-2	PKN	BN	PS
				X	54	48	99																																						
			SR (T1)	X	48	45	96																																							
				X	63	54	105																																							
			SW (T7)	X	54	48	93																																							
				X	42	34	86																																							
			PL (T3)	X	30	26	70																																							
				X	23	19	39																																							
			TH (T5)	X	17	15	30																																							
				X	33	17	40																																							
			PY (T2)	X	60	47	74																																							
				X	56	42	54																																							
			KK (T1)	X	32	24	34																																							
				X	24		28																																							
			CP (T6)	X	24	20	30																																							
				X	—	—	18																																							
			MM (T3)	X	—	—	15																																							
				X	24	18	36																																							
			NWW (T4)	X	23	19	35																																							
			DM (T4)	X	—	—	13																																							
				X	—	—	11																																							
			BN (T6)	X	—	—	15																																							
				X	12	—	13																																							
			BK (T4)	X	19	11	21																																							
				X	—	—	13																																							
			BC (T5)	X	—	—	11																																							
				X	—	—	15																																							
			DK (T5)	X	—	—	13																																							
				X	21	16	41																																							
			BP (T1)	X	23	18	46																																							
				X	16	17	35																																							
			KC (T6)	X	15	15	28																																							
				X	15	27	59																																							
			IM (T3)	X	11	19	43																																							
				X	—	—	15																																							
			PS (T6)	X	—	—	17																																							
			BCH (T4)	X	—	—	16																																							
			ON2 (T6)	X	—	—	10																																							
			ON1 (T6)	X	—	—	17																																							
			PSR (T5)	X	—	—	10																																							
				X	—	16	34																																							
			LP2 (T2)	X	—	11	23																																							
				X	—	14	28																																							
			PK (T4)	X	—	—	16																																							
			LS (T4)	X	—	—	16																																							
				X	—	12	31																																							
			HM (T6)	X	—	10	23																																							
			RID (T4)	X	—	—	14																																							
				X	12	32	67																																							
			ASD (T3)	X	—	18	39																																							
				X	—	26	55																																							
			SKV (T3)	X	—	15	33																																							
			BKT (T5)	X	—	—	14																																							
				X	—	10	24																																							
			CHW (T5)	X	—	—	15																																							
				X	14	24	58																																							
			LP-1 (T2)	X	17	29	72																																							
				X	—	11	20																																							
			TC (T7)	X	—	—	18																																							
				X	13	45	104																																							
			PTW (T1)	X	—	24	58																																							
			PKN (T6)	X	—	—	17																																							
			SDM (T4)	X	—	—	10																																							
				X	21	30	91																																							
			SS (T1)	X	22	31	93																																							
				X																																									
15	18	44	NN (T2)	X																																									
12	14	32		X																																								
				X	—	—	18																																							
			PTN (T4)	X	—	—	12																																							
				X	34	39	77																																							
			KK TOLL	•	57	66	138																																							
			SPS (LS)	X	10	18	22																																							
				•	166	221	218																																							
			PY T2	Δ	30	24	33																																							
			KK T1	Δ	33	30	44																																							
			PL T3	Δ	29	27	34																																							
			LS T4	Δ	20	43	72																																							
			TH T5	Δ	34	42	56																																							
			PKN T6	Δ	47	51	74																																							
			SW T7	Δ	26	30	38																																							
			KK TEST	X	20	24	56																																							
			KK OBS	X	3	3	3																																							
1	1	1	MISC	X	6	6	6																																							
			KK SPS	X	10	12	28																																							

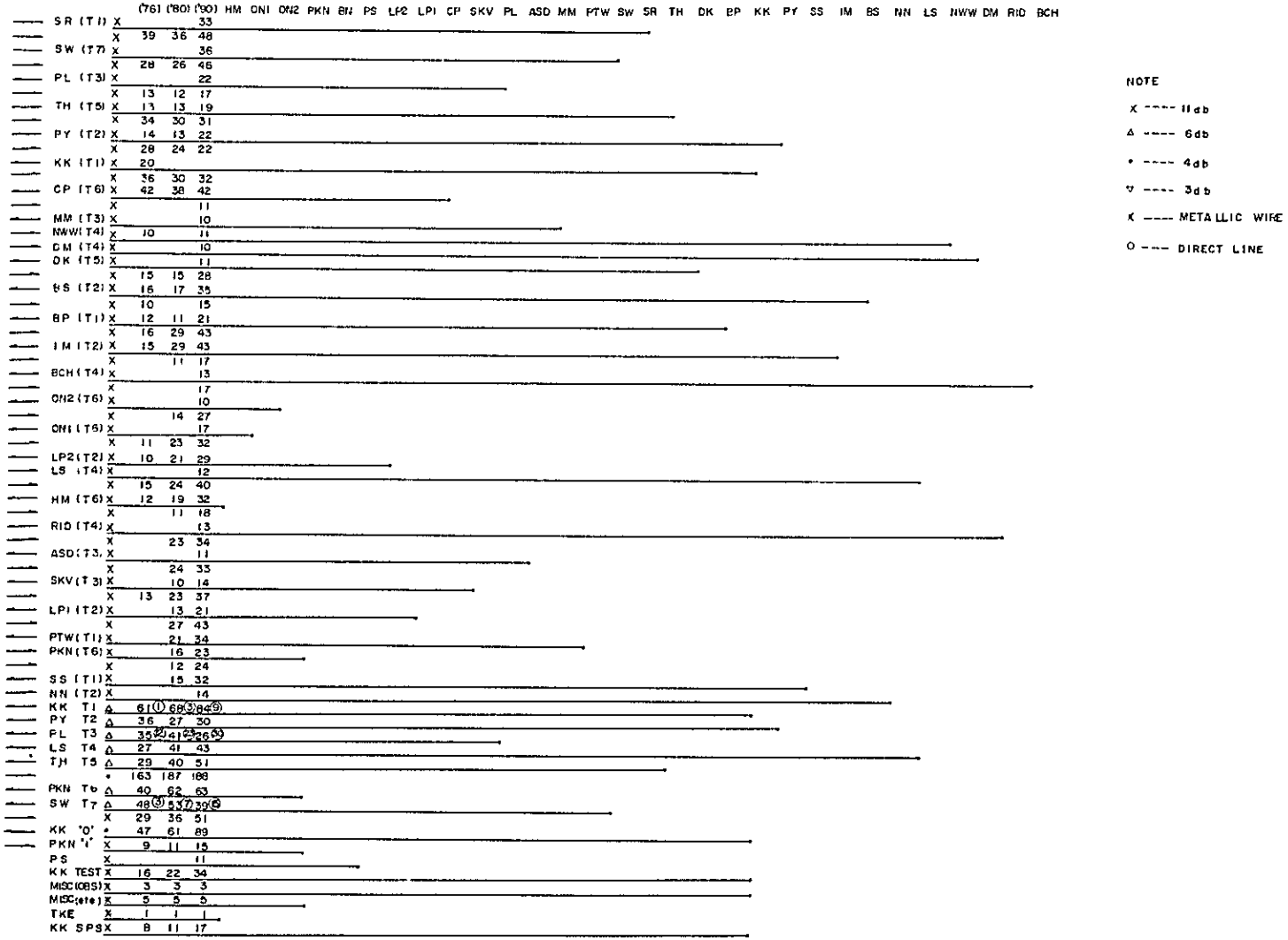
NOTE

X	——— 11db
Δ	——— 6db
•	——— 4db
▽	——— 3db
✕	———METALLIC WIRE
o	———DIRECT LINE

EX. NO. 19 BP. EXCHANGE (T1) SUB. 8,000 — 8,000 — 17,000



EX NO 20 KC. EXCHANGE (T6) SUB. 8,000—11,000—17,000

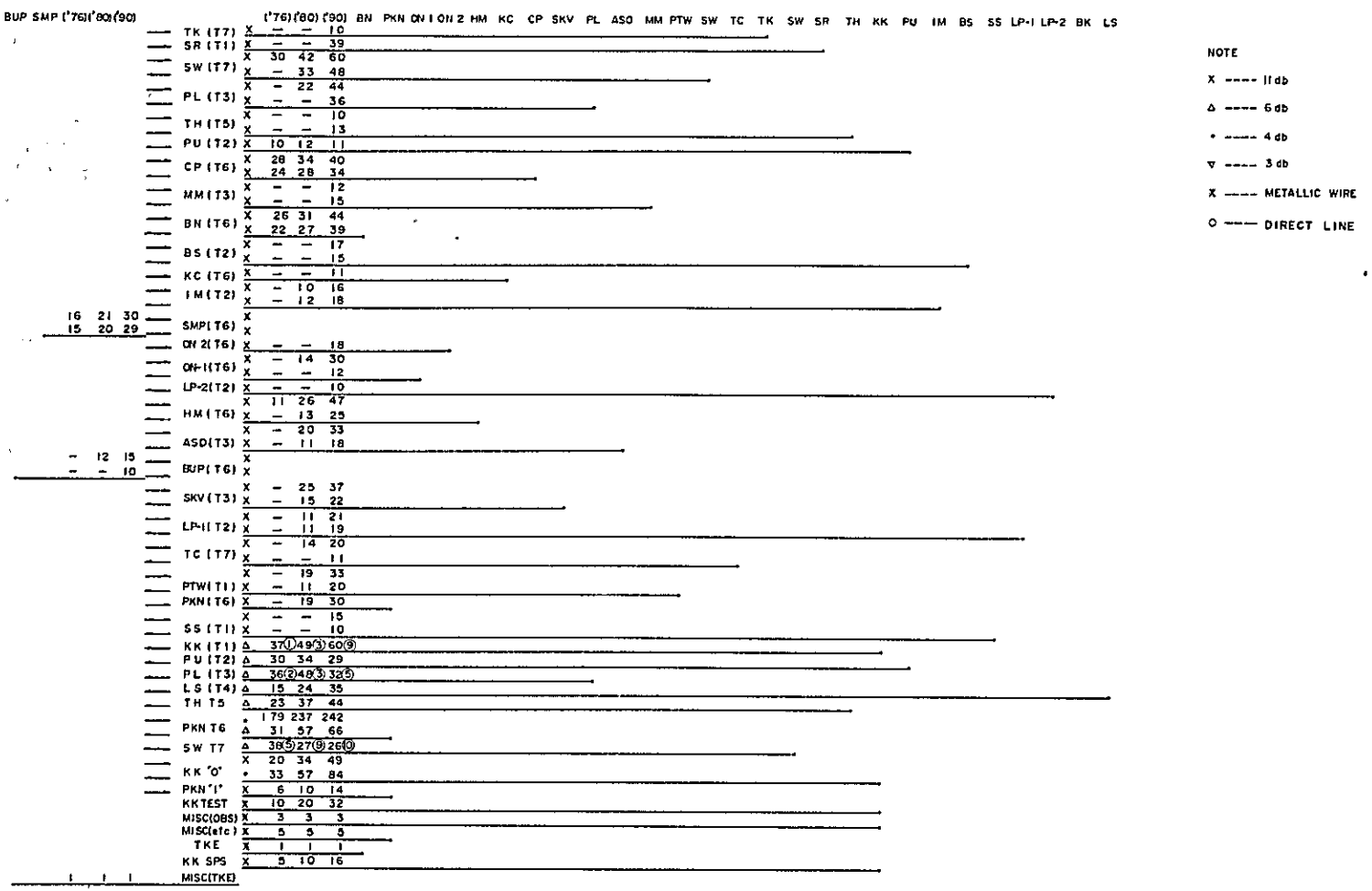


EX. NO.21 IM EXCHANGE (T2) SUB. 6,000—15,000—26,000

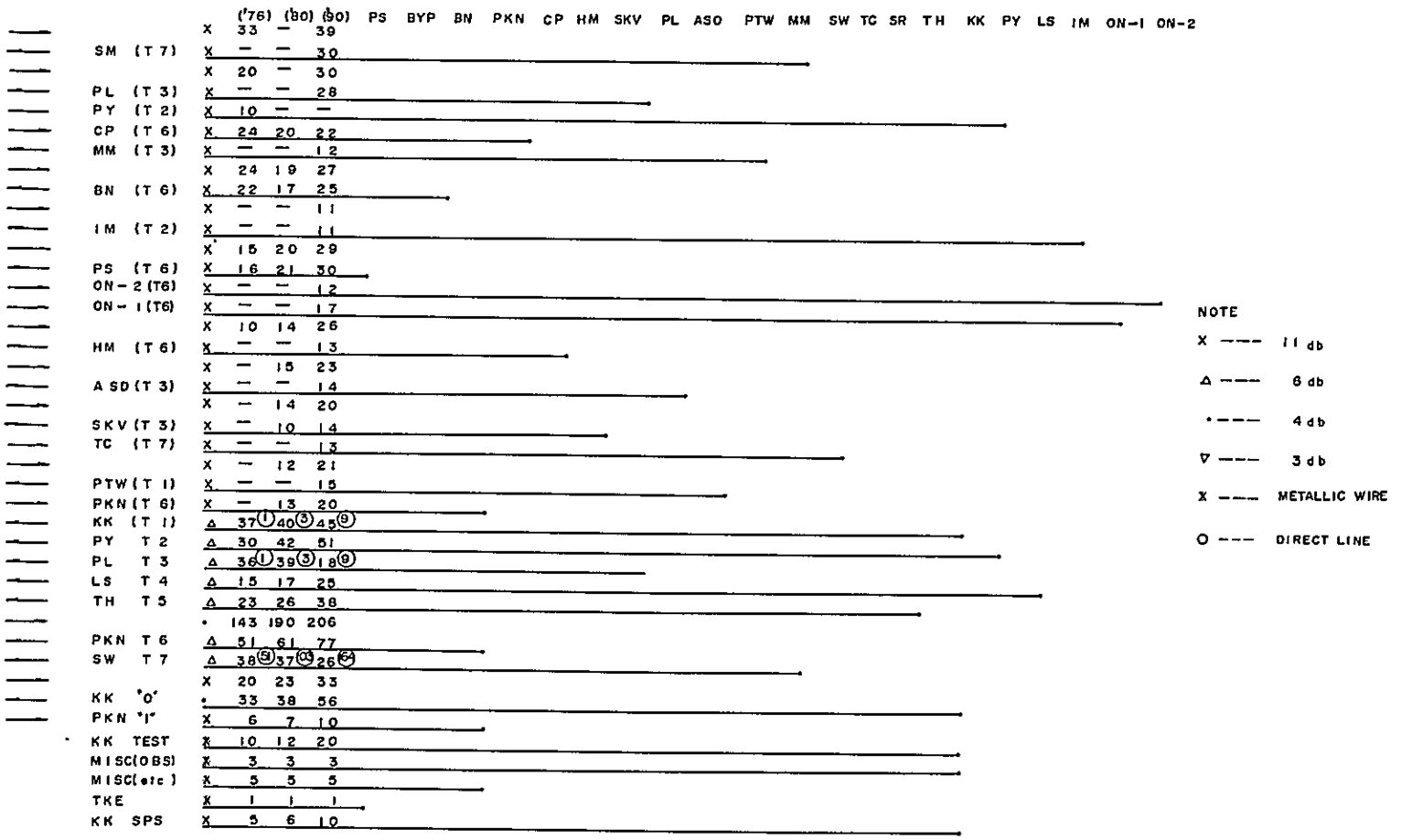
		(76)	(80)	(90)	PY	BS	NN	LP-1	LP-2	BK	NWW	LS	RID	BCH	DM	SS	BP	CHW	BC	TH	DK	KK	PTW	SR	SW	TC	PL	ASD	MM	SKV	CP	HM	KC	ON-1	ON-2	PKN	BN	PS	SMP
		X	—	③36	⑤54	②																																	
SR	(T1)	X	—	33	61																																			
		X	30	②51	③75	⑤																																		
SW	(T7)	X	—	39	60																																			
		X	28	①42	③78	⑤																																		
PL	(T3)	X	—	22	42																																			
		X	11	17	27																																		
TH	(T5)	X	11	19	30																																		
		X	13	30	36																																		
PY	(T2)	X	28	43	51																																		
		X	24	①36	③35	⑤																																		
KK	(T1)	X	20	30	32																																			
		X	—	24	30																																		
CP	(T6)	X	20	30	36																																		
		X	—	12	25																																		
MM	(T3)	X	—	—	13																																		
		X	—	—	14																																		
NWW	(T4)	X	—	—	12																																		
DM	(T4)	X	—	—	10																																		
		X	—	—	15																																		
BN	(T6)	X	—	—	14																																		
		X	—	—	12																																		
BK	(T4)	X	—	—	14																																		
BC	(T5)	X	—	—	10																																		
		X	—	—	10																																		
DK	(T5)	X	—	—	12																																		
		X	11	19	43																																		
BS	(T2)	X	15	27	59																																		
		X	—	14	28																																		
BP	(T1)	X	12	18	37																																		
		X	15	29	43																																		
KC	(T6)	X	16	29	43																																		
		X	—	12	18																																		
PS	(T6)	X	—	10	16																																		
		X	—	—	11																																		
SMP	(T6)	X	—	—	11																																		
		X	—	10	17																																		
BCH	(T4)	X	—	—	13																																		
ON-2	(T6)	X	—	—	16																																		
ON-1	(T6)	X	—	—	18																																		
		X	—	24	38																																		
LP-2	(T2)	X	—	21	34																																		
LS	(T4)	X	—	—	16																																		
		X	—	18	34																																		
HM	(T6)	X	—	15	28																																		
		X	—	—	15																																		
RID	(T4)	X	—	—	11																																		
		X	—	37	59																																		
ASD	(T3)	X	—	14	23																																		
		X	—	31	49																																		
SKV	(T3)	X	—	12	19																																		
		X	—	—	17																																		
CHW	(T5)	X	—	—	15																																		
		X	10	29	55																																		
LP-1	(T2)	X	—	27	50																																		
		X	—	11	17																																		
TC	(T7)	X	—	—	13																																		
		X	—	41	71																																		
PTW	(T1)	X	—	32	57																																		
PKN	(T6)	X	—	14	22																																		
		X	—	16	39																																		
SS	(T1)	X	—	24	55																																		
		X	—	—	17																																		
NN	(T2)	X	—	—	10																																		
		X	23	46	73																																		
KK	TOLL	•	38	80	129																																		
SPS	(SW)	X	7	14	21																																		
		•	174	206	208																																		
PY	T2	Δ	30	25	29																																		
KK	T1	Δ	44	29	37																																		
PL	T3	Δ	27	22	24																																		
LS	T4	Δ	24	53	50																																		
TH	T5	Δ	24	51	55																																		
PKN	T6	Δ	33	56	67																																		
SW	T7	Δ	39	34	36																																		
KK	TEST	X	12	30	52																																		
KK	OBS	X	3	3	3																																		
MISC		X	6	6	6																																		
KK	SPS	X	6	15	26																																		

NOTE
- X ---- 11db
- Δ ---- 6db
- • ---- 4db
- ——— 3db
- X ---- METALLIC WIRE
- o --- DIRECT LINE

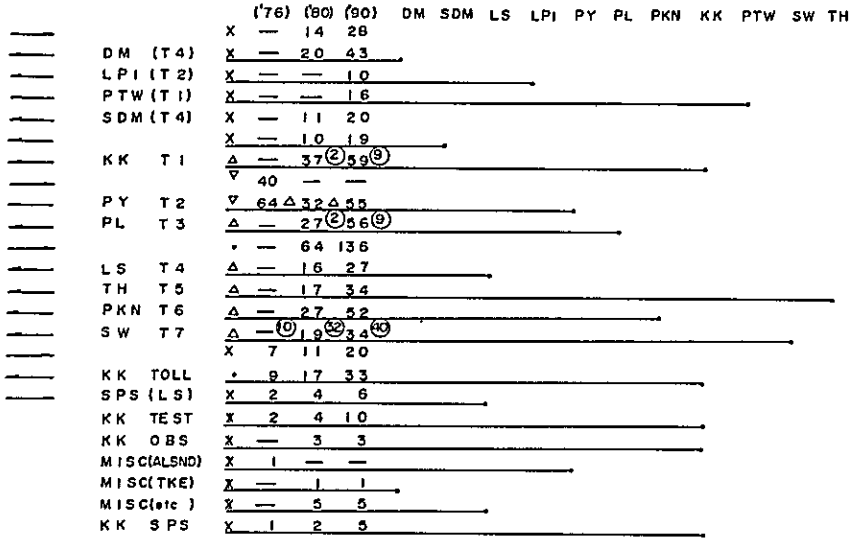
EX NO 22 PS EXCHANGE (T6) SUB. 5,000—10,000—16,000



EX.NO.23 SMP. EXCHANGE (T6) SUB. 5,000→6,000→9,800



EX. NO. 24 RS EXCHANGE (T4) SUB. 800—2,000—5,000



NOTE

X ——— 11 db

Δ ——— 6 db

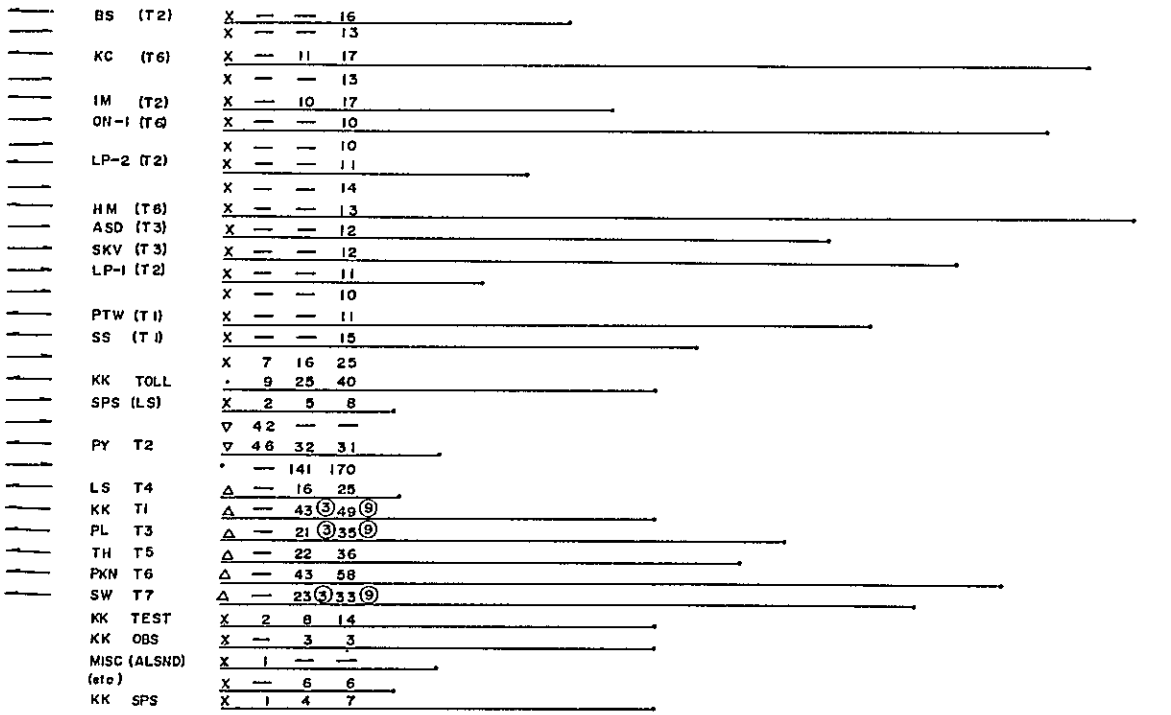
• — — — 4 db

▽ — — — 3 db

X ——— METALLIC WIRE

O ——— DIRECT LINE

EX.NO 25 BCH. EXCHANGE (T4) SUB. 800—3,500—6,500



NOTE

X ———11 db

△ ——— 6 db

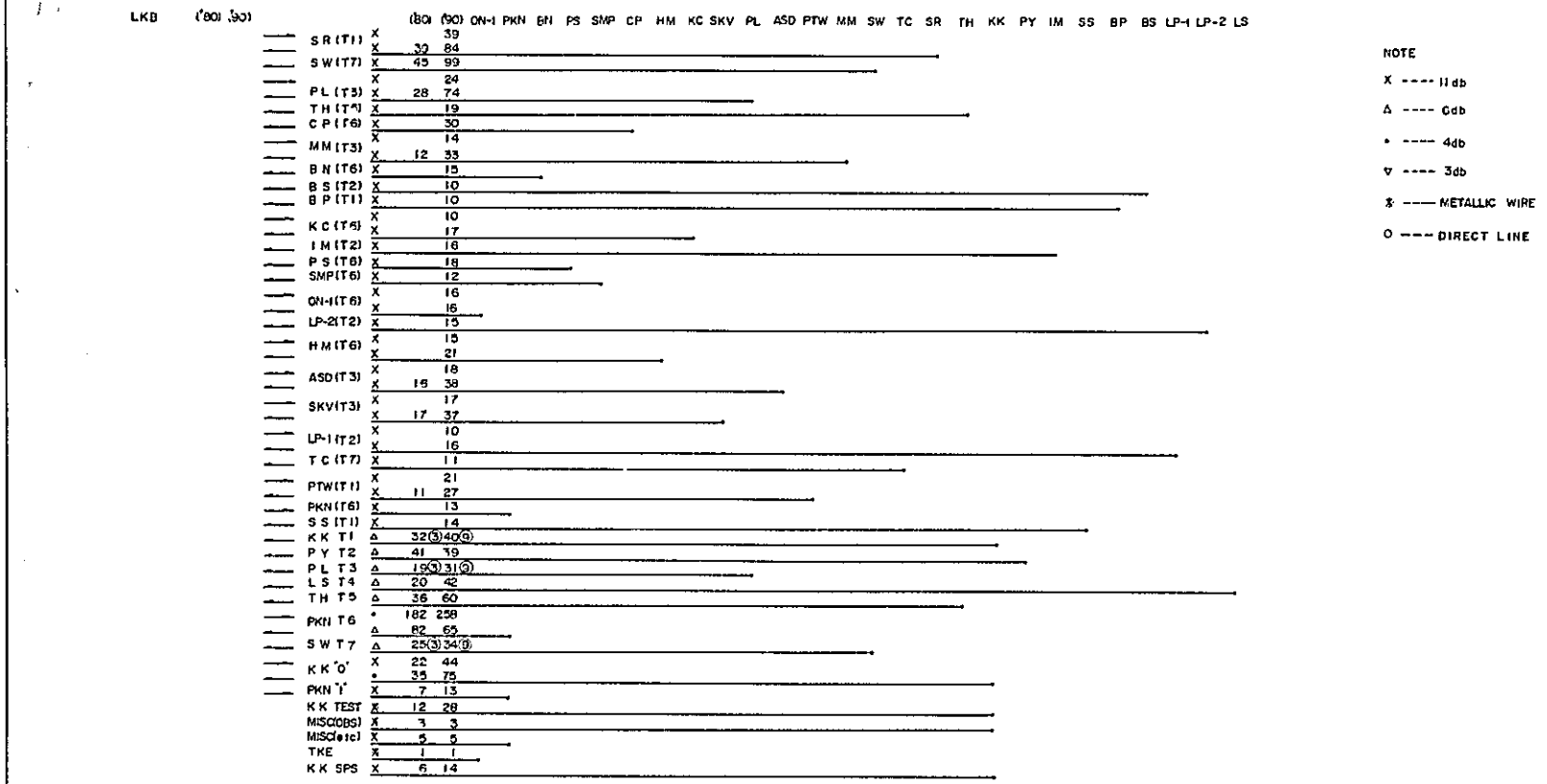
• ——— 4 db

▽ ——— 3 db

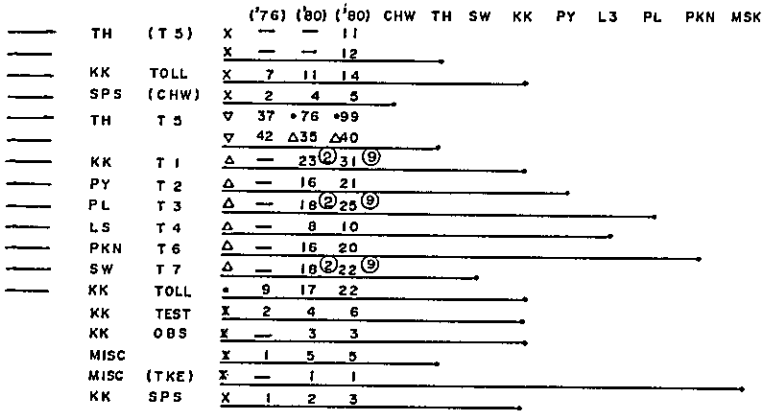
X ———METALLIC WIRE

O ——— DIRECT LINE

EX NO 27 ON-2. EXCHANGE (T6) SUB. 0 — 5,500 — 14,000



EX. NO.28 NK EXCHANGE (T5) SUB. 8,00 — 2,000 — 3,000



NOTE

X ——— 11 db

△ ——— 6 db

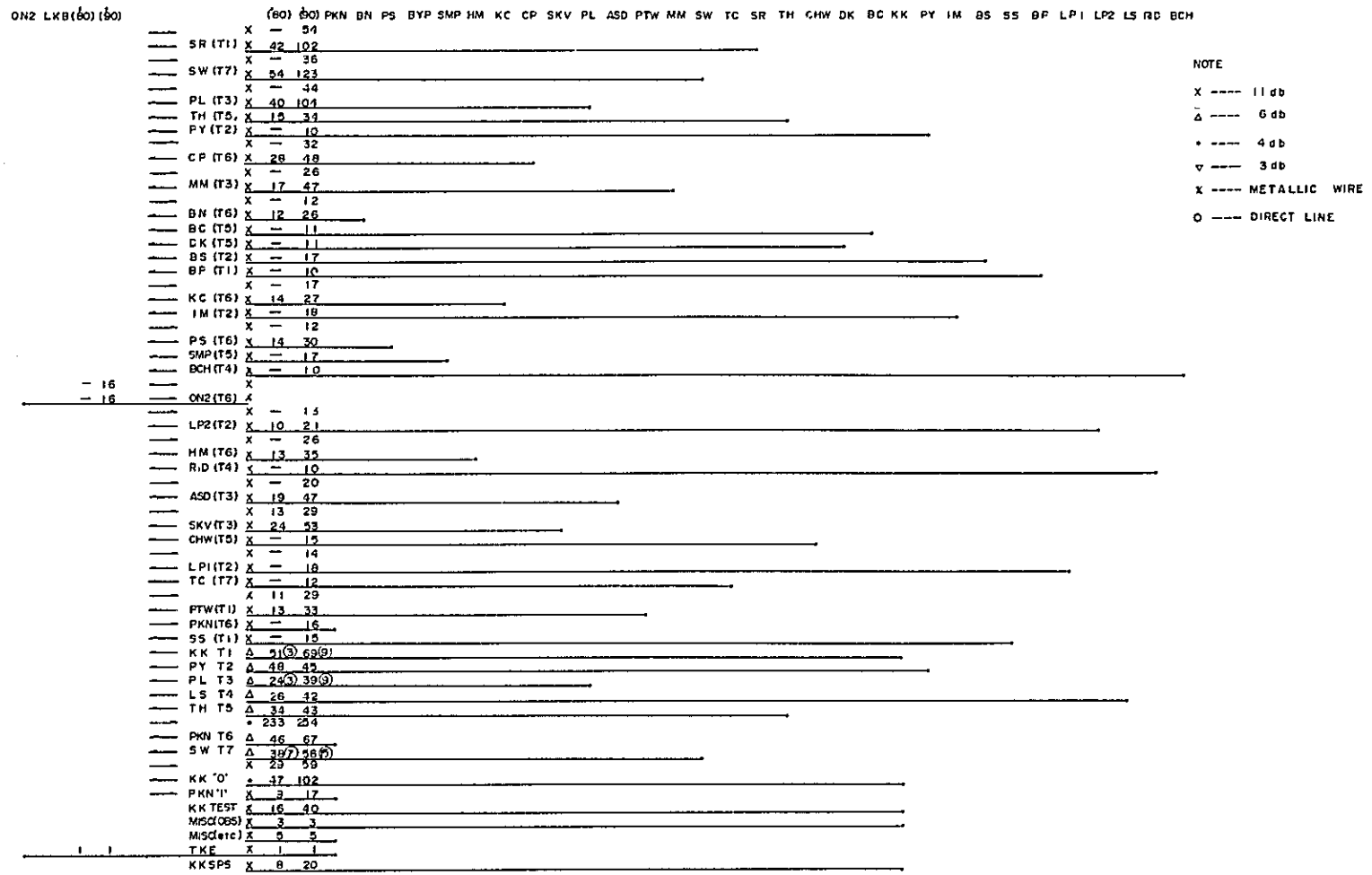
• ——— 4 db

▽ ——— 3 db

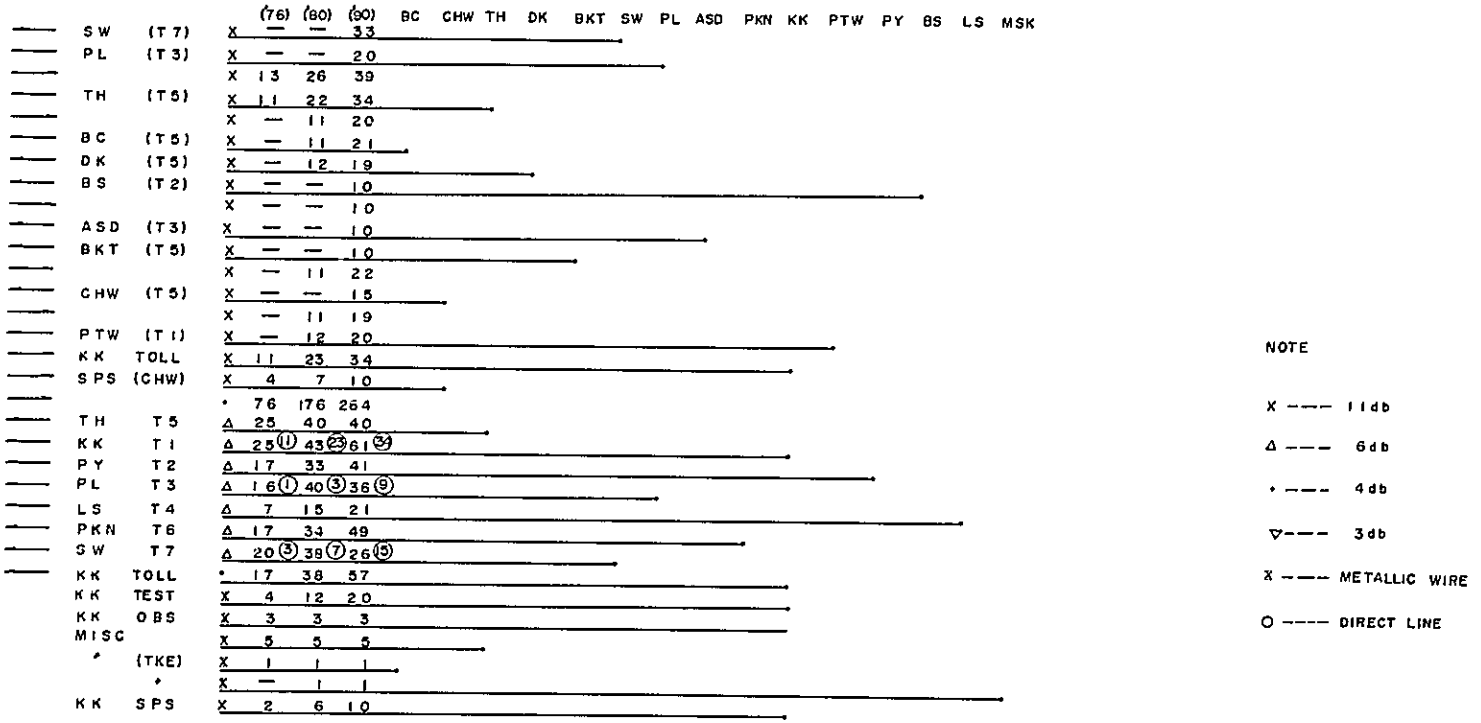
X ——— METALLIC WIRE

O ——— DIRECT LINE

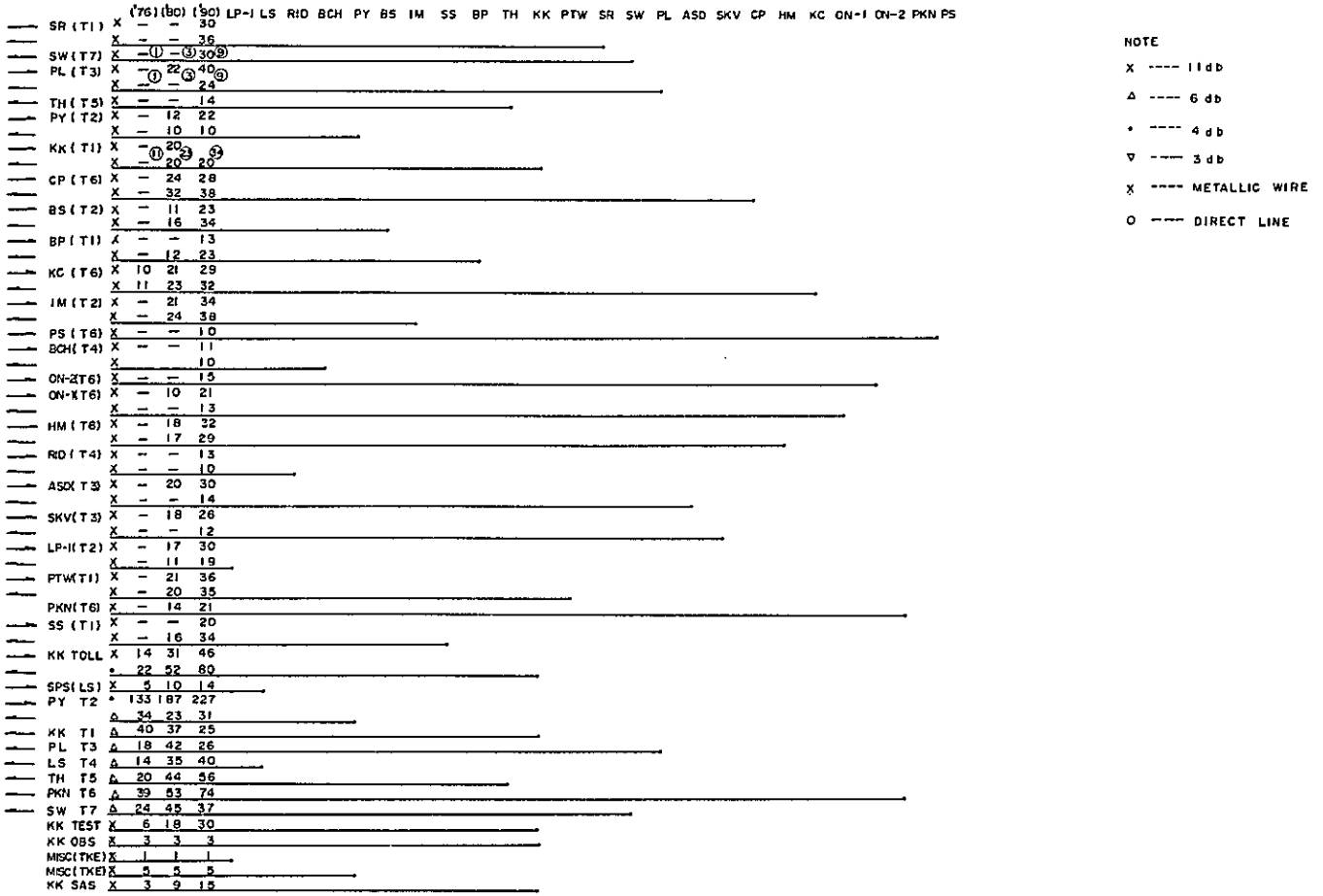
EX NO 29 ON 1 EXCHANGE (T6) SUB. 0 — 8,000 — 20,000



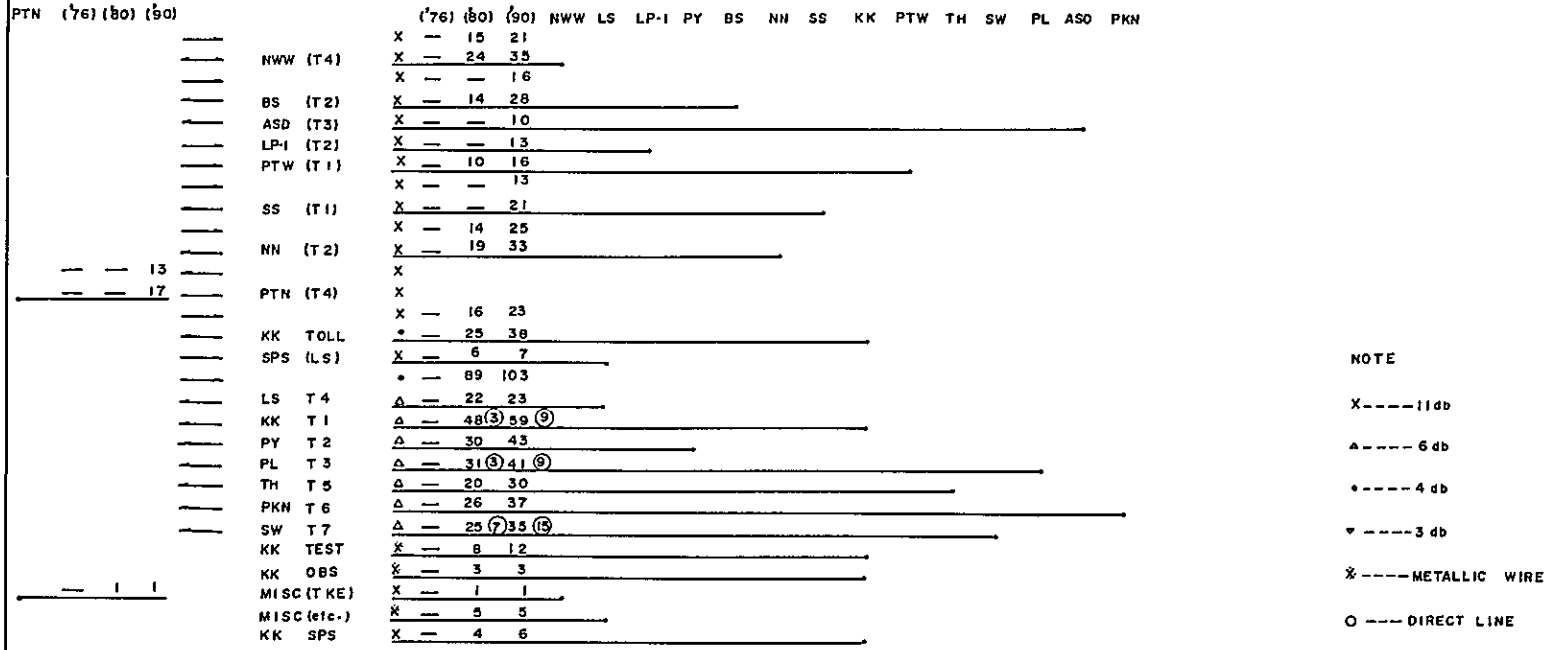
EX.NO 30 PSR EXCHANGE (T5) SUB. 2,000—6,000—10,000



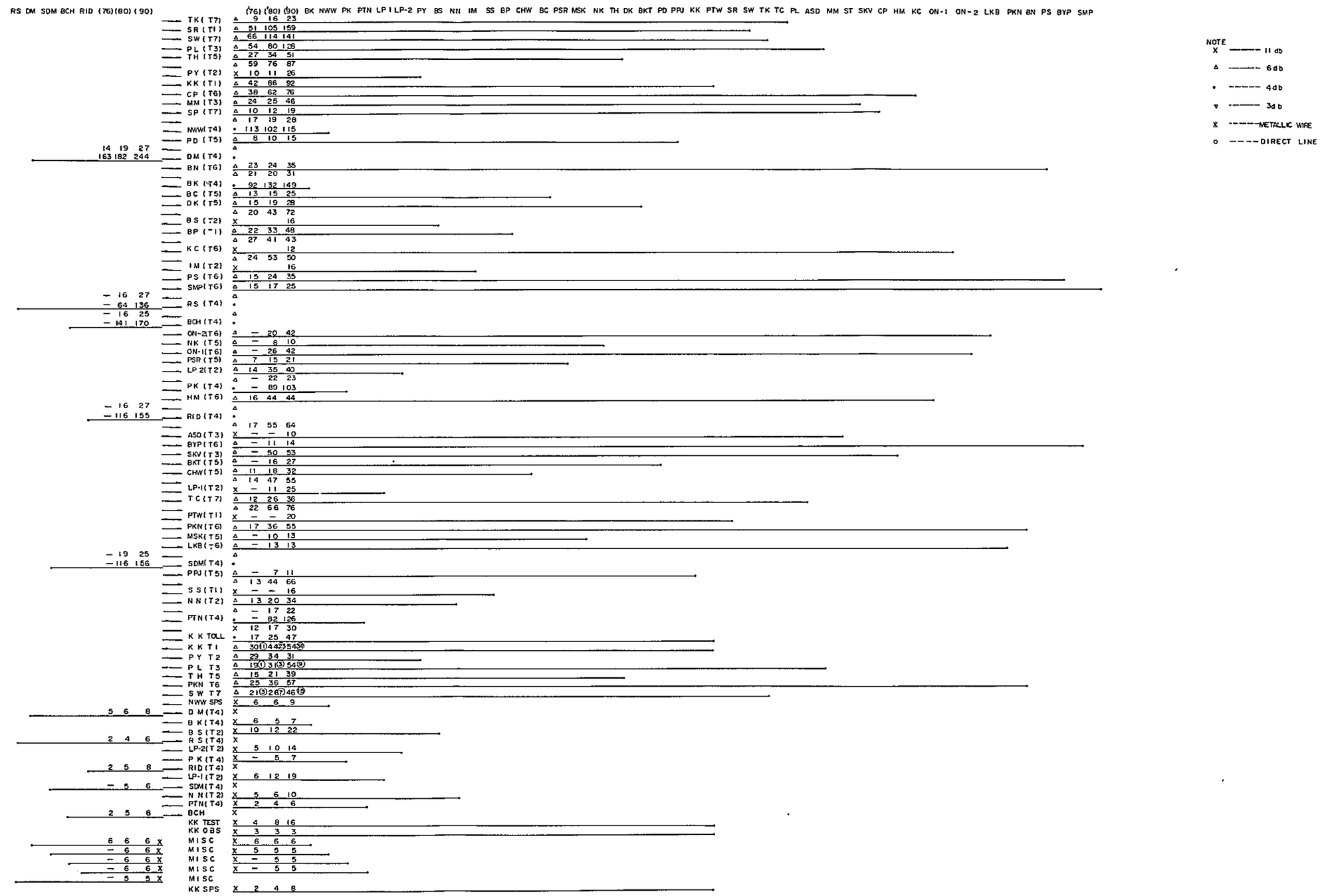
EX. NO. 31 LP–2. EXCHANGE (T 2) SUB. 3,000—9,000—15,000



EX. NO. 32 PK EXCHANGE (T4) SUB. 0 — 3,500 — 6,000



EX. NO.33 LS. T4 EXCHANGE SUB. 2,000 —3,500—8,000



EX. NO. 35 HM " EXCHANGE SUB. 8,000 —→ 16,000 —→ 32,000

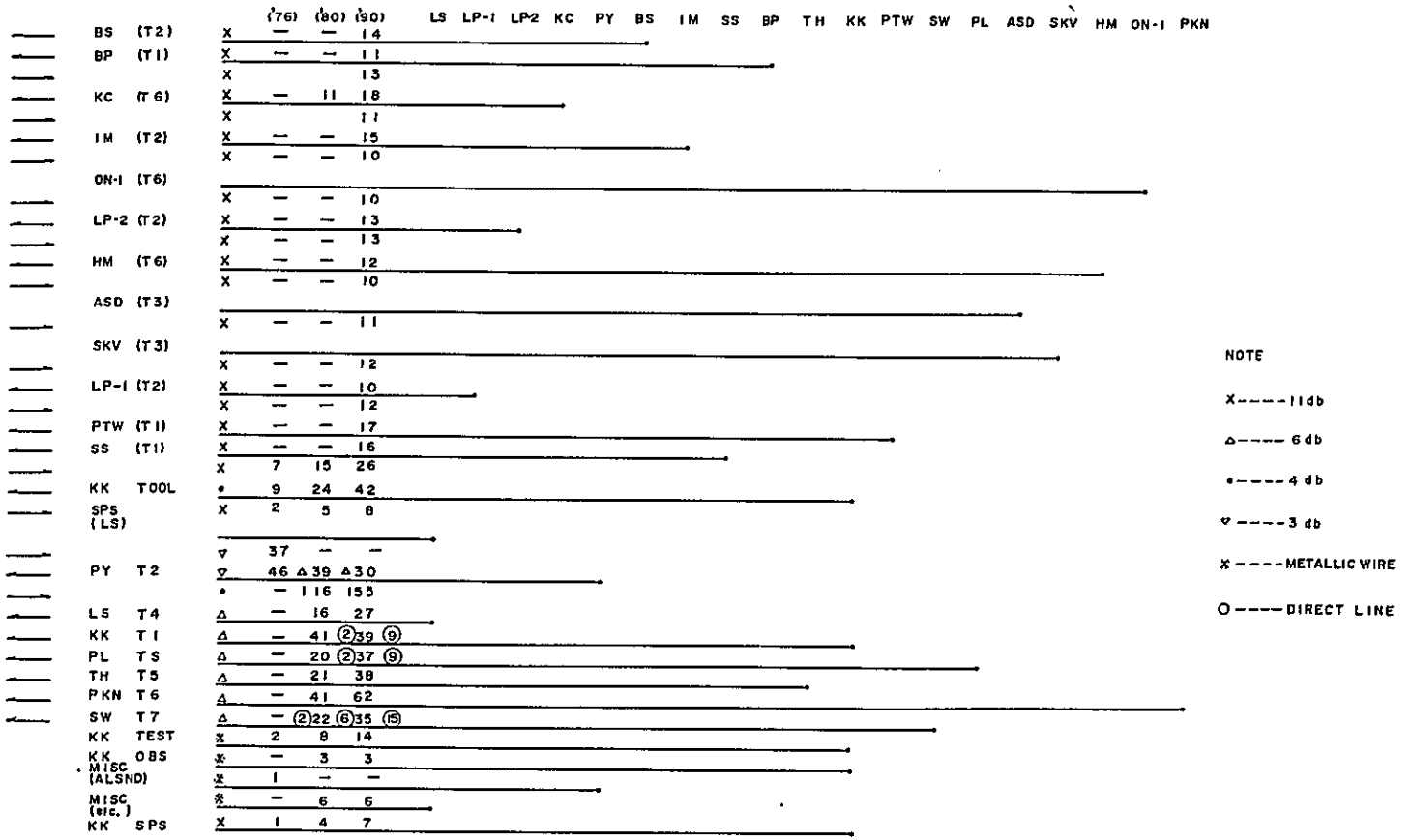
		(76)	(80)	(90)
TK	(T7)	X —	—	16
		X —	—	13
SR	(T1)	X 60	87	150
		X 63	96	174
SW	(T7)	X 48	63	105
		X 93	123	219
PL	(T3)	X 38	50	106
		X 50	72	160
TH	(T5)	X 10	13	23
		X 21	29	54
PY	(T2)	X 13	16	34
		X 13	16	33
KK	(T1)	X 30	36	42
		X 20	26	30
CP	(T6)	X 42	52	72
		X 48	60	84
MM	(T3)	X 21	25	59
		X 24	30	70
SP	(T7)	X —	—	18
DM	(T4)	X —	—	11
		X —	—	10
BN	(T6)	X 11	14	25
		X 18	22	41
BK	(T4)	X —	—	—
		X 10	—	14
BC	(T5)	X —	—	14
DK	(T5)	X —	—	13
BS	(T2)	X —	10	23
		X —	12	31
BP	(T1)	X —	10	22
		X —	—	20
KC	(T6)	X		
		X		
IM	(T2)	X —	15	28
		X —	18	34
PS	(T6)	X —	13	25
		X 11	26	47
SMP	(T6)	X —	—	13
		X 10	14	26
BCH	(T4)	X —	—	13
		X —	—	14
ON-2	(T6)	X —	—	21
		X —	—	15
ON-1	(T6)	X —	13	35
		X —	—	26
LP-2	(T2)	X —	17	29
		X —	18	32
RID	(T4)	X —	—	12
		X —	—	13
ASD	(T3)	X 10	41	76
		X —	42	81
SKV	(T3)	X —	37	67
		X —	44	80
BKT	(T5)	X —	—	10
CHW	(T5)	X —	—	11
		X —	—	20
LPI	(T2)	X —	19	40
		X —	16	34
TC	(T7)	X —	17	28
		X —	13	22
PTW	(T1)	X —	39	78
		X —	27	57
PKN	(T6)	X —	17	34
SS	(T1)	X —	—	20
		X —	10	28
KK	T1	△ 41	① 43	③ 52 ⑨
PY	T2	△ 47	31	35
PL	T3	△ 28	① 33	③ 49 ⑨
LS	T4	△ 16	44	44
TH	T5	△ 31	57	67
PKN	T6	△ 113	149	174
		• 28	69	92
SW	T7	△ 28	① 36	③ 35 ⑨
KK	"O"	• 29	49	87
		X 47	84	155
PKN	"I"	X 9	14	24
KK	TEST	X 16	32	64
MISC	(OBS)	X 3	3	3
MISC	(etc)	X 5	5	5
TKE		X 1	1	1
KK	SPS	X 8	16	32

12 19 32
15 24 40

1 1 1

NOTE
- X ------ 11 db
- △ ------ 6 db
- • ------ 4 db
- ▽ ------ 3 db
- X ------ METALLIC WIRE
- o ------ DIRECT LINE

EX NO.36 RID EXCHANGE (T4) SUB. 800 → 3,300 → 7,000

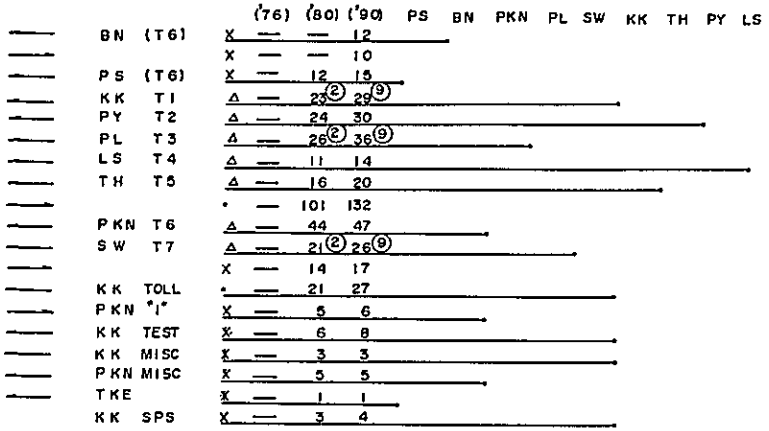


EX. NO.37 ASD EXCHANGE (T3) SUB. 5,000—20,000—33,000

	('76)	('80)	('90)	FL	MM	SKV	CP	HM	KC	ON-I	ON-2	PKN	BN	PS	SMP	SW	TK	TC	ST	KK	PTW	SR	TH	CHW	BC	PSR	DK	BKT	PD	SS	BP	PY	BS	NN	IM	LP-I	LP-2	BK	NWW	PK	LS	RID	BCH	SDM	DM	RS
				X																																										
TK (T7)		17	26	X																																										
	39	111	171	X																																										
SR (T1)	69	195	297	X																																									
	84	231	345	X																																									
SW (T7)	93	243	363	X																																									
	24	70	134	X																																									
PL (T3)	30	82	150	X																																									
	13	35	54	X																																									
TH (T5)	15	41	63	X																																									
		33	38	X																																									
PY (T2)	16	58	65	X																																									
	26	64	64	X																																									
KK (T1)	52	128	128	X																																									
	24	56	68	X																																									
CP (T6)	38	86	104	X																																									
		19	37	X																																									
MM (T3)	21	49	96	X																																									
SP (T7)		13	22	X																																									
			13	X																																									
NWW(T4)		12	16	X																																									
PD (T5)			12	X																																									
		10	15	X																																									
DM (T4)			10	X																																									
		15	22	X																																									
BN (T6)	10	23	36	X																																									
BK (T4)	11	17	25	X																																									
			17	X																																									
BC (T3)		10	18	X																																									
			13	X																																									
DK (T5)		13	20	X																																									
		18	39	X																																									
BS (T2)	12	32	67	X																																									
			19	X																																									
BP (T1)		16	31	X																																									
			11	X																																									
KC (T6)		23	34	X																																									
		14	23	X																																									
IM (T7		37	59	X																																									
		11	18	X																																									
PS (T6)		20	33	X																																									
			14	X																																									
SMP(T6)		15	23	X																																									
BCH(T4)			12	X																																									
		16	38	X																																									
ON-2(T6)			18	X																																									
		19	47	X																																									
ON-I(T6)			20	X																																									
			10	X																																									
PSR(T5)			10	X																																									
			14	X																																									
LP-2(T2)		20	30	X																																									
PK (T4)			10	X																																									
LS (T4)			10	X																																									
		42	81	X																																									
HM (T6)	10	41	76	X																																									
RID (T4)			10	X																																									
		43	66	X																																									
SKV (T3)		47	72	X																																									
BKT (T5)			11	X																																									
		16	32	X																																									
CHW(T5)		14	28	X																																									
		24	44	X																																									
LP-I(T2)		33	61	X																																									
		15	21	X																																									
TC (T7)		32	47	X																																									
		75	129	X																																									
PTW(T1)	14	138	240	X																																									
PKN(T6)		32	51	X																																									
SDM(T4)			12	X																																									
		15	35	X																																									
SS (T1)		28	61	X																																									
			16	X																																									
NN (T2)			14	X																																									
	20	59	89	X																																									
KK TOLL	33	102	159	•																																									
SPS(SW)	6	17	25	X																																									
	129	⑪228	⑤222	•																																									
PL T3	17	30	41	Δ																																									
KK T1	36	①49	③60	Δ																																									
PY T2	40	35	40	Δ																																									
LS T4	17	55	64	Δ																																									
TH T5	26	49	46	Δ																																									
PKN T6	42	107	135	Δ																																									
SW T7	32	①43	③53	Δ																																									
KK TEST	10	40	66	X																																									
KK OBS	3	3	3	X																																									
MISC	6	6	6	X																																									
KK SPS	5	20	33	X																																									

NOTE
- X ------11db
- Δ ------ 6db
- • ------ 4db
- ▫ ------ 3db
- X ------METALLIC WIRE
- O -----DIRECT LINE

EX. NO.38 BYP EXCHANGE SUB. 0—2,800—4,000



NOTE

X ----11 db

Δ ---- 6 db

• ---- 4 db

▽ ---- 3 db

X ---- METALLIC WIRE

O --- DIRECT LINE

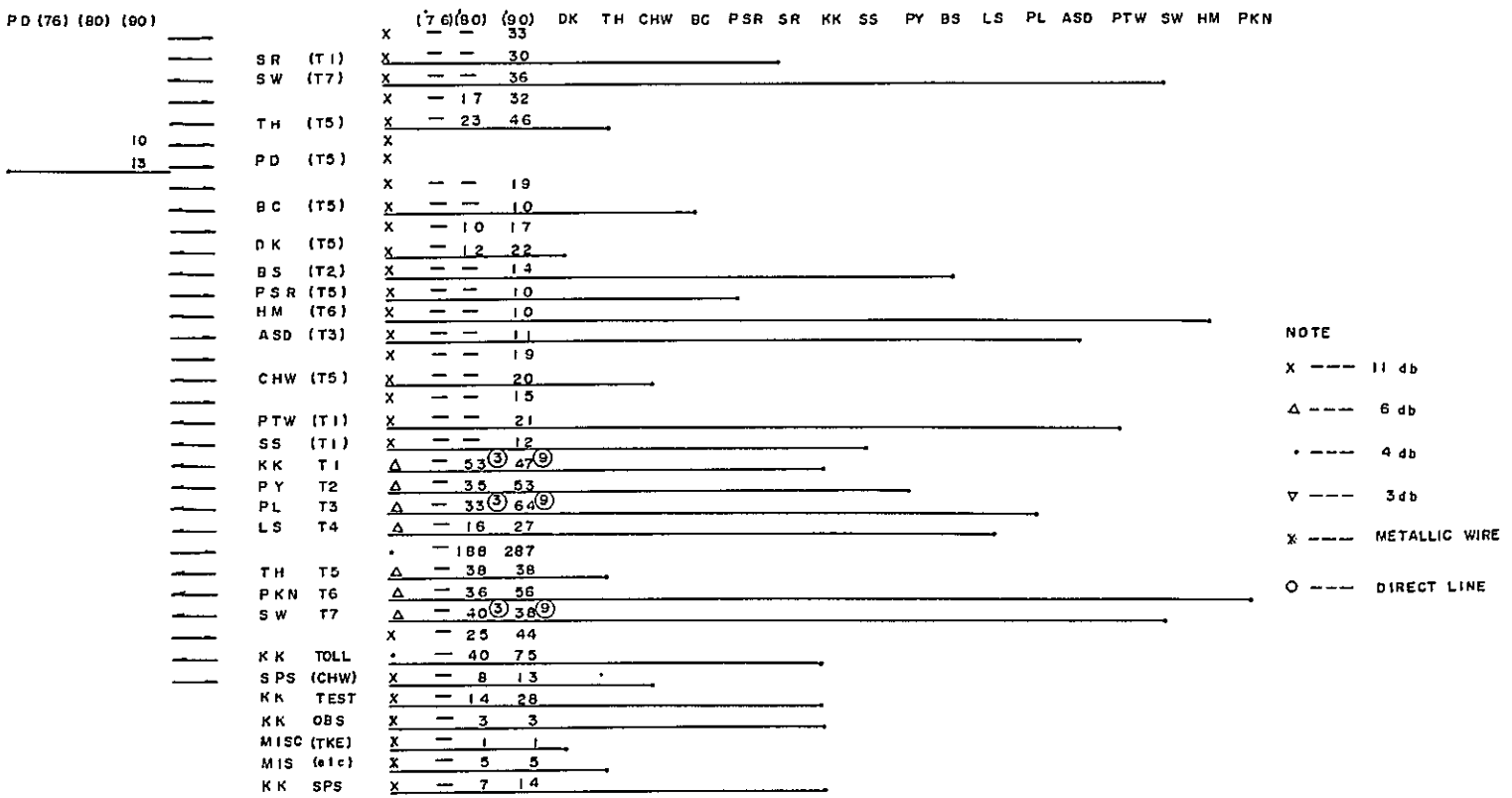
EX. NO.39 SKV EXCHANGE (T3) SUB. O → 17,500 → 28,000

SMP	PS	BN	PKN	ON-1	ON-2	HM	KC	CP	(76)	(80)	(90)			(76)	(80)	(90)	PL	MM	ASD	PTW	SW	TK	TC	SP	SR	TH	DK	PD	CHW	BC	KK	SS	BP	PY	BS	NN	IM	LP-1	LP-2	BK	NWW	LS	RID	BCH	SDM	DM
													TK (T7)																																					
													SR (T1)																																					
													SW (T7)																																					
													PL (T3)																																					
													TH (T5)																																					
													PY (T2)																																					
													KK (T1)																																					
									—	60	70																																					
									—	60	94		CP (T6)																																					
																		MM (T3)																															
																		SP (T7)																															
																		NWW (T4)																															
																		PD (T5)																															
																		DM (T4)																															
									—	16	22																																					
									—	21	32		BN (T6)																																					
																		BK (T4)																															
																		BC (T5)																															
																		DK (T5)																															
																		BS (T2)																															
																		BP (T1)																															
									—	10	14																																					
									—	24	33		KC (T6)																																					
																		IM (T2)																															
									—	15	22																																					
									—	25	37		PS (T6)																																					
									—	10	14																																					
									—	14	20		SMP (T6)																																					
																		BCH (T4)																															
									—	17	37																																					
									—	—	17		ON-2 (T6)																																					
									—	24	53																																					
									—	13	29		ON-1 (T6)																																					
																		LP-2 (T2)																															
									—	44	80																																					
									—	37	67		HM (T6)																																					
																		RID (T4)																															
																		ASD (T3)																															
																		CHW (T5)																															
																		LP-1 (T2)																															
																		TC (T7)																															
																		PTW (T1)																															
									—	34	52		PKN (T6)																																					
																		SDM (T4)																															
																		SS (T1)																															
																		NN (T2)																															
																		KK TOLL																															
																		SPS (SW)																															
																		PL T3																															
																		KK T1																															
																		PY T2																															
																		LS T4																															
																		TH T5																															
									—	75	95																																					
																		SW (T7)																															
																		KK TEST																															
																		KK OBS																															
									—	1	1							CP (T6)																															
																		MISC (etc)																															
																		KK SPS																															

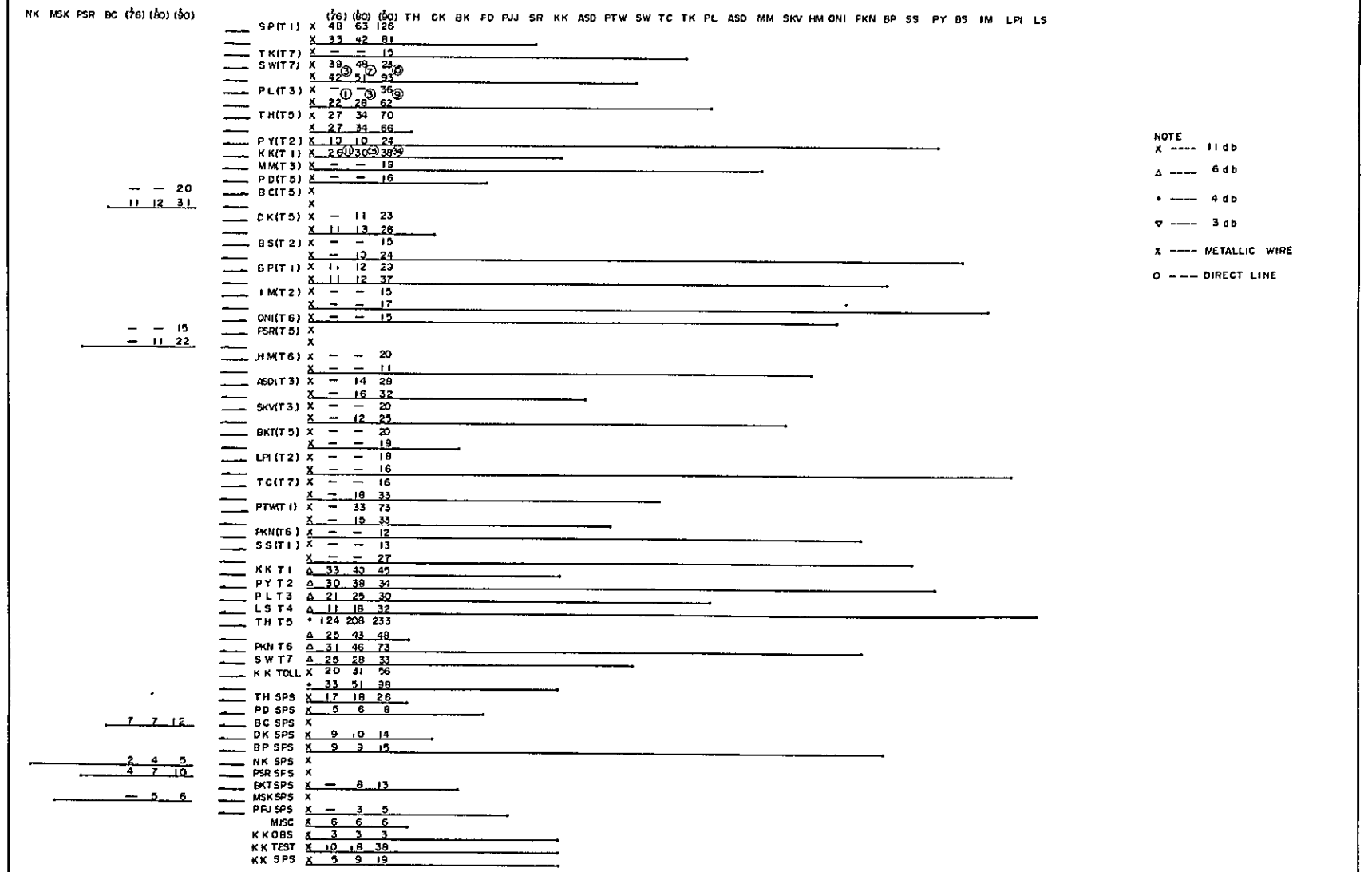
NOTE

X ——— 11db
Δ ——— 6db
• ——— 4db
▾ ——— 3db
X ——— METALLIC WIRE
O ——— DIRECT LINE

EX. NO 40 BKT EXCHANGE (T5) SUB. 0—6,500—14,000



EX. NO 41 CHW EXCHANGE (T5) SUB. 5,000 — 8,800 — 19,000



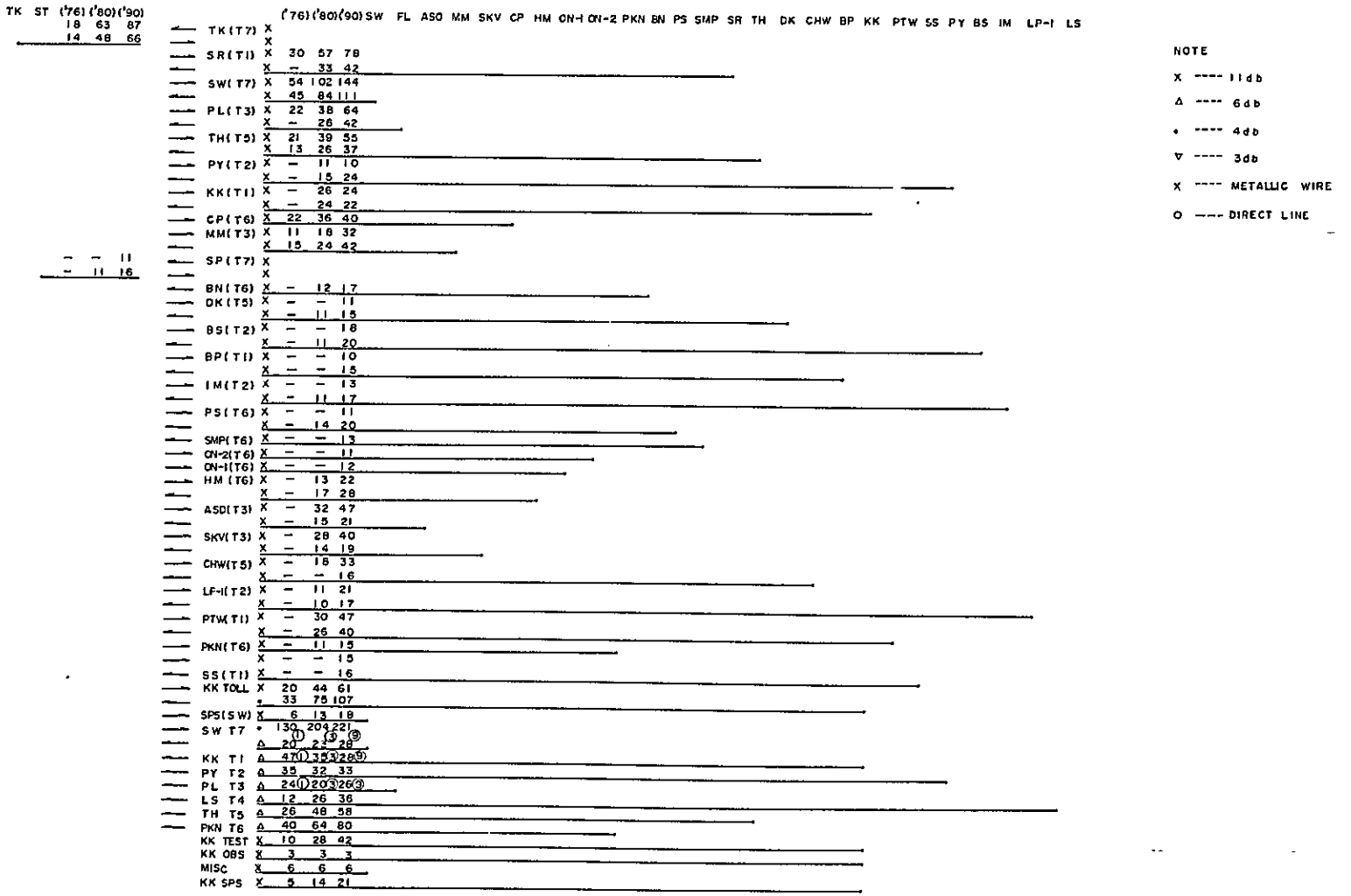
EX NO 42 LP-1 EXCHANGE (T2) SUB. 5,000 — 12,000 — 24,000

LP-2 (76) (80) (90)

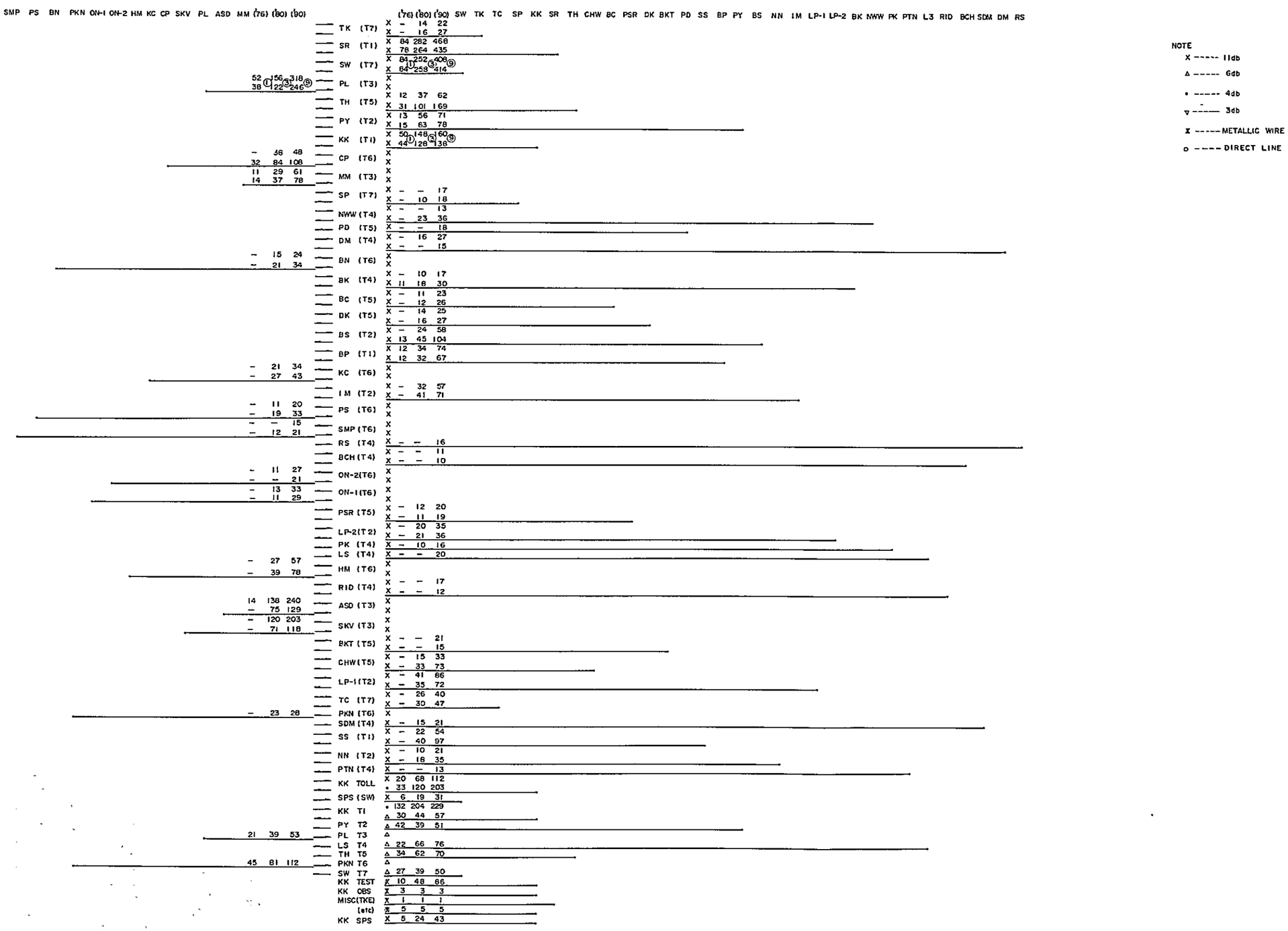
			(76)	(80)	(90)
		X	30	54	96
	SR (T1)	X	33	57	108
		X	① 45	③ 75	⑨
	SW (T7)	X	39	60	105
		X	① 22	③ 36	⑨ 80
	PL (T3)	X	20	36	78
		X	11	19	34
	TH (T5)	X	15	26	46
		X	16	36	49
	PY (T2)	X	17	39	53
		X	① 22	③ 32	⑨ 36
	KK (T1)	X	① 26	③ 38	⑨ 46
		X	—	22	30
	CP (T6)	X	26	38	54
		X	—	—	16
	MM (T3)	X	—	12	27
	NWW (T4)	X	13	18	30
	DM (T4)	X	—	—	15
		X	—	—	16
	BN (T6)	X	—	—	18
		X	10	10	18
	BK (T4)	X	12	12	20
	BC (T5)	X	—	—	10
	DK (T5)	X	—	—	11
		X	17	29	72
	BS (T2)	X	14	24	58
		X	—	11	27
	BP (T1)	X	10	15	34
		X	—	13	21
	KC (T6)	X	13	23	37
		X	—	27	50
	IM (T2)	X	10	29	55
		X	—	11	19
	PS (T6)	X	—	11	21
	RS (T4)	X	—	—	10
	BCH (T4)	X	—	—	11
		X	—	—	16
	ON2 (T6)	X	—	—	10
		X	—	—	18
	ON1 (T6)	X	—	—	14
— 11 19		X			
— 17 30	LP2 (T2)	X			
	PK (T4)	X	—	—	13
	LS (T4)	X	—	11	25
		X	—	16	34
	HM (T6)	X	—	19	40
		X	—	—	10
	RID (T4)	X	—	—	12
		X	—	33	61
	ASD (T3)	X	—	24	44
		X	—	28	50
	SKV (T3)	X	—	20	38
		X	—	—	16
	CHW (T5)	X	—	—	18
		X	—	10	17
	TC (T7)	X	—	11	21
		X	—	35	72
	PTW (T1)	X	—	41	86
	PKN (T6)	X	—	10	19
	SDM (T4)	X	—	—	12
		X	—	22	61
	SS (T1)	X	—	19	51
		X	—	—	11
	NN (T2)	X	—	14	28
	PTN (T4)	X	—	—	10
		X	20	39	68
	KK TOLL	•	33	66	120
	SPS (LS)	X	6	12	19
		•	170	184	221
	PY T2	Δ	34	21	28
	KK T1	Δ	35	39	51
	PL T3	Δ	26	25	38
	LS T4	Δ	14	47	55
	TH T5	Δ	25	50	62
	PKN T6	Δ	39	66	82
	SW T7	Δ	21	32	38
	KK TEST	X	10	24	48
	KK OBS	X	3	3	3
1 1 1	MISC	X	6	6	6
	TK (T7)	X	—	—	11
	KK SPS	X	5	12	24

NOTE
- X ------ 11db
- ▽ ------ 6db
- • ------ 4db
- ▽ ------ 3db
- X ------ METALLIC WIRE
- o ------ DIRECT LINE

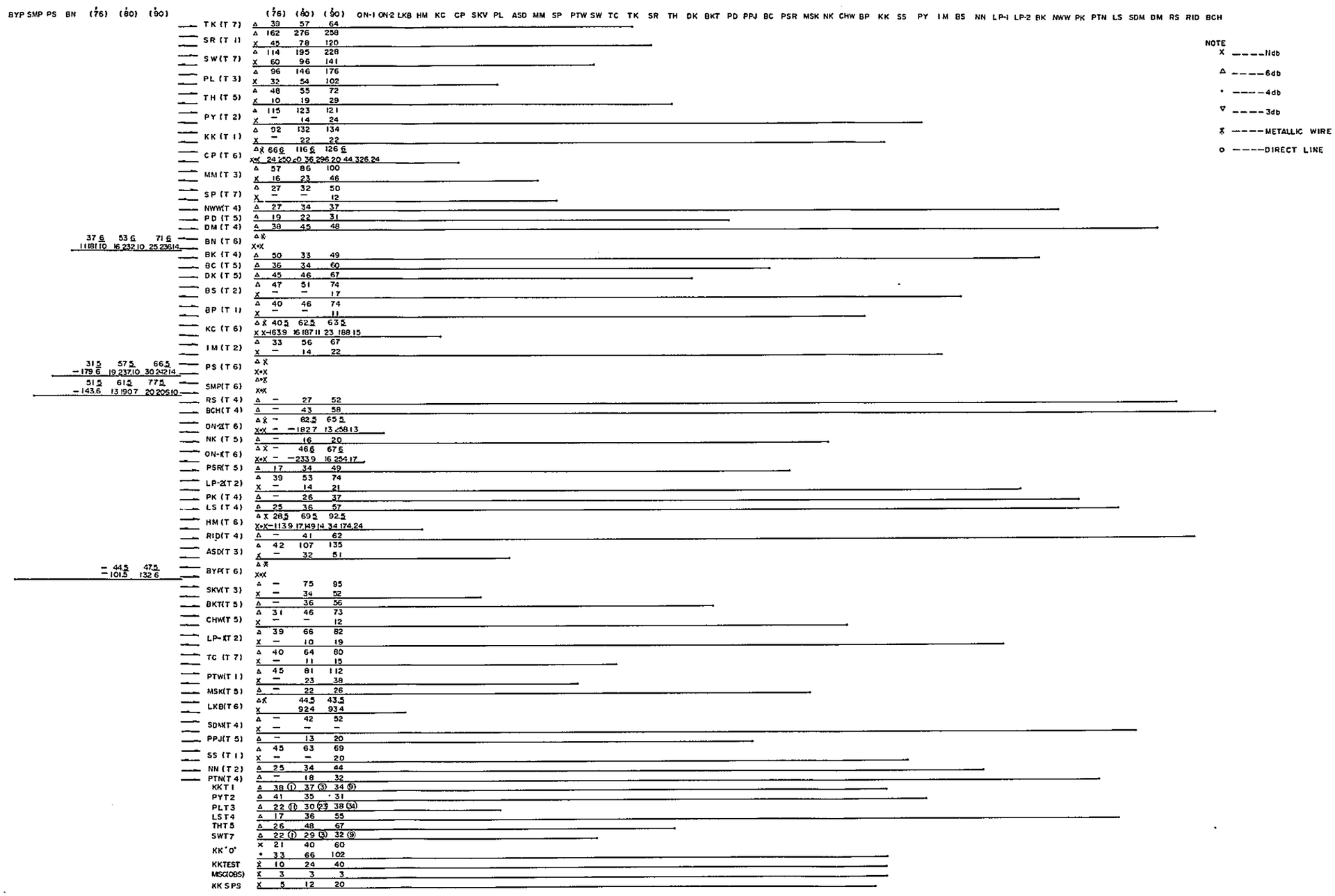
EX. NO. 43 TC EXCHANGE (T 7) SUB. 5,000—14,000—21,000



EX. NO.44 PTW EXCHANGE (T1) SUB. 5,000 — 24,000 — 43,000



EX. NO.45 PKN T6 EXCHANGE SUB. 5,000→12,000→20,000



EX. NO. 46 MSK EXCHANGE (T5) SUB. 0 — 3,200 — 4,400

	(76)	(80)	(90)	PSR	BC	CHW	TH	SW	KK	PY	LS	PL	PKN	NK
TH (T5)	X	—	12	15										
	X	—	13	17										
BC (T5)	X	—	--	11										
KK TOLL	X	—	15	19										
SPS (CHW)	X	—	5	6										
TH T5	•	—	102	136										
	Δ	—	38	44										
KK T1	Δ	—	33	②41	⑨									
PY T2	Δ	—	21	27										
PL T3	Δ	—	25	②33	⑨									
LS T4	Δ	—	10	13										
PKN T6	Δ	—	22	26										
SW T7	Δ	—	24	②29	⑨									
KK TOLL	•	—	23	29										
KK TEST	⅋	—	8	10										
KK OBS	⅋	—	3	3										
MISC	X	—	5	5										
MISC (TKE)	⅋	—	1	1										
KK SPS	X	—	4	5										

NOTE

X ----11db

Δ ----6db

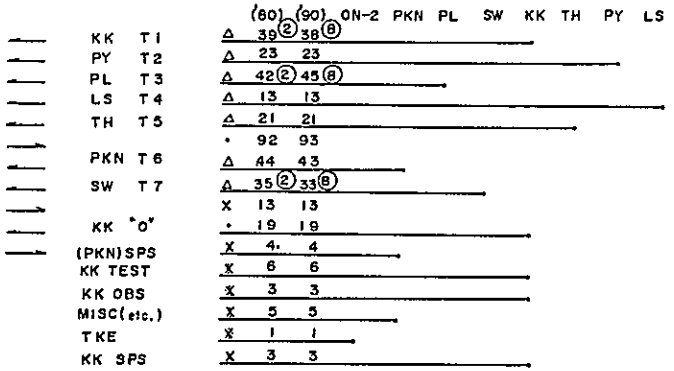
• ----4db

▽----3db

⅋ ----METALLIC WIRE

O --- DIRECT LINE

EX. NO 47 LKB. EXCHANGE (T6) SUB. 0—→2,500—→2,500



NOTE

X —— 11 db

Δ ---- 6 db

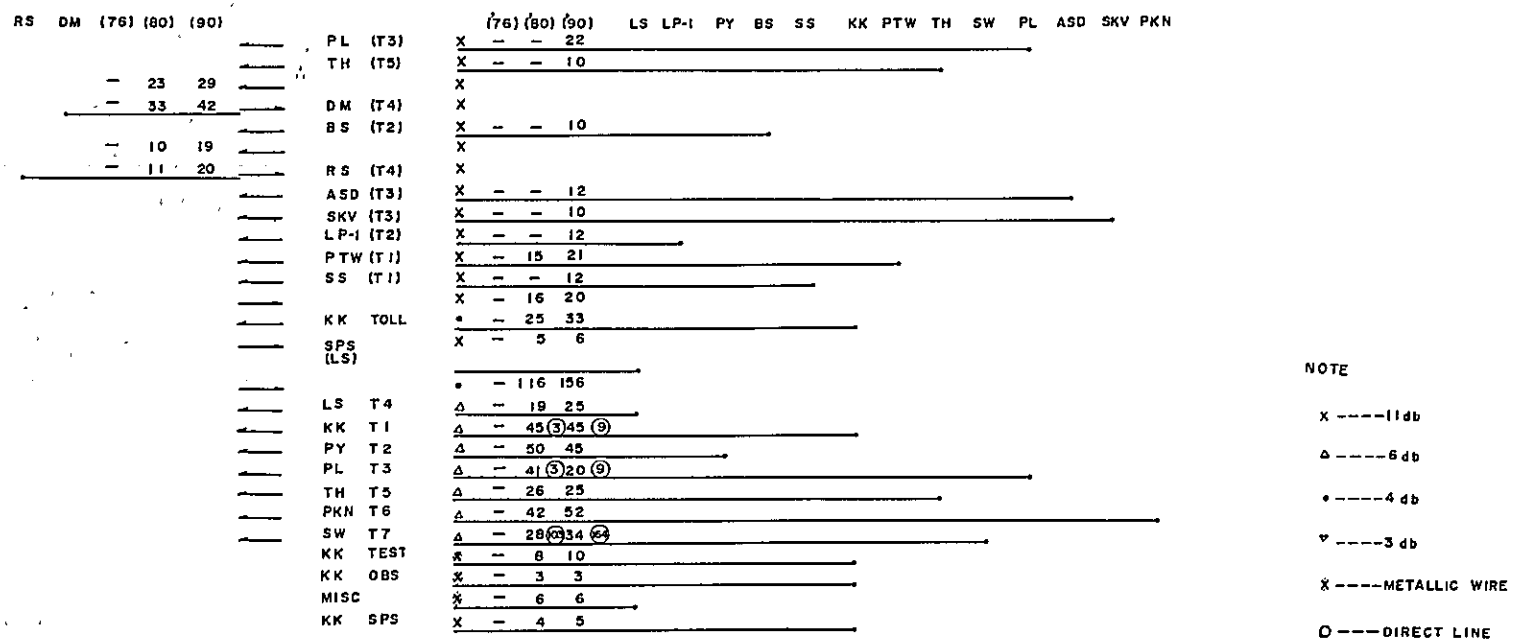
• ---- 4 db

▽ ---- 3 db

⊼ ---- METALLIC WIRE

O ---- DIRECT LINE

EX. NO. 48 SDM EXCHANGE (T4) SUB. 0 — 3,600 — 5,000



NOTE

X ----11db

Δ ----6db

• ----4db

▽ ----3db

⁂ ----METALLIC WIRE

O ---DIRECT LINE

EX. NO 49 PPJ EXCHANGE (T5) SUB. 0 — 1,700 — 3,800

	(76)	('80)	('90)	PD	DK	TH	CHW	KK	PY	LS	SW	PL	PKN
TH (T5)	X	—	—	10									
	X	—	—	15									
PD (T5)	X	—	12	22									
KK T1	△	—	22	(2)40	(9)								
PY T2	△	—	14	24									
PL T3	△	—	18	(2)33	(9)								
LS T4	△	—	7	11									
	•	—	65	108									
TH T5	△	—	23	42									
PKN T6	△	—	13	20									
SW T7	△	—	10	(2)25	(9)								
	X	—	10	17									
KK TOLL	•	—	15	26									
SPS (CHW)	X	—	3	5									
KK TEST	X	—	4	8									
KK OBS	X	—	3	3									
MISC	X	—	6	6									
TKE	X	—	1	1									
KK SPS	X	—	2	4									

NOTE

X---- 11 db

△---- 6 db

•---- 4 db

▽---- 3 db

X----METALLIC WIRE

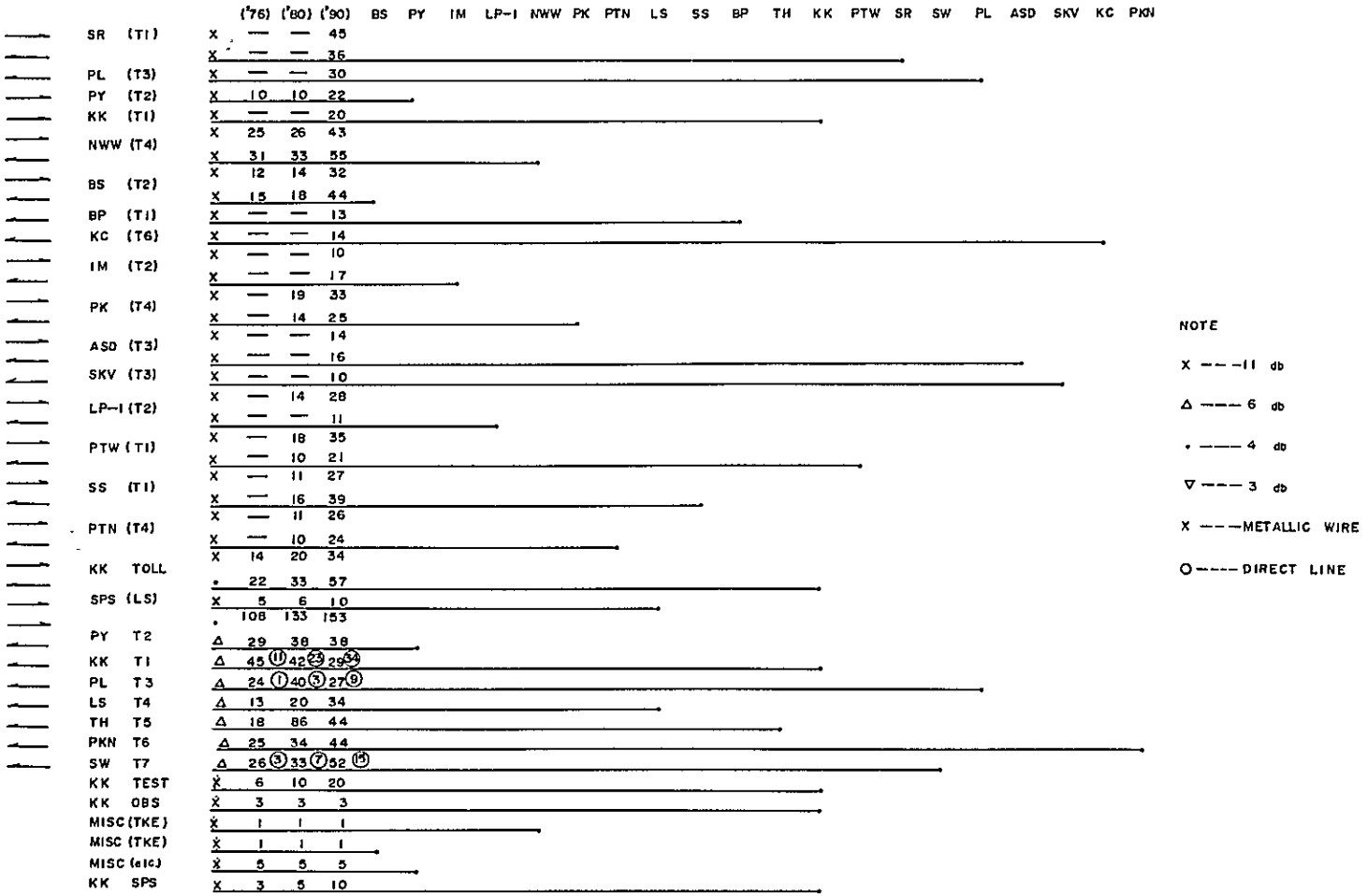
O--- DIRECT LINE

EX. NO.50 SS EXCHANGE (TI) SUB. 5,000—10,000—25,000

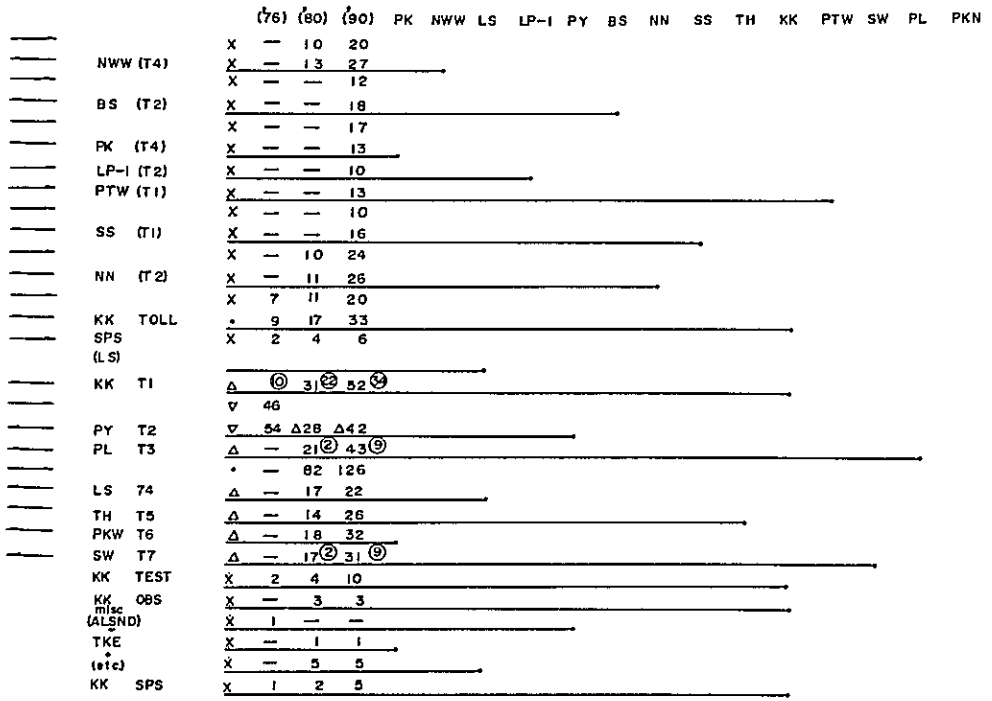
BKT	DK	TH	BC	CHW	BP	(76)	(80)	(90)		(76)	(80)	(90)	KK	PTW	SR	SW	TC	PL	ASD	MM	SKV	CP	HM	KC	ON-1	ON-2	PKN	BN	PS	PY	BS	NN	IM	LP-1	LP-2	NWW	PK	PTN	LS	RID	BCH	SDM	DM
									SR (T1)	X 30	45	93			X – (3) 42 (20) 90 (4)																														
									SW (T7)	X 36	48	99			X 30 (4) 39 (2) 81 (11)																														
									PL (T3)	X 24	32	80			X – (3) 24 (5) 64 (10)																														
						12	16	35	TH (T5)	X																																		
						–	(2) 11	(3) 26	(5)	X																																		
									PY (T2)	X 15	28	44																																
										X 32	40	67																																
									KK (T1)	X 26	30	44																																
										X – (3) 22 (7) 32 (13)																																		
									CP (T6)	X –	–	24																																
										X –	–	28																																
									MM (T3)	X –	–	16																																
										X –	–	14																																
									NWW (T2)	X 13	16	32																																
										X 13	15	30																																
									DM (T4)	X –	–	15																																
									BN (T6)	X –	–	10																																
										X –	–	13																																
									BK (T4)	X –	–	14																																
										X 11	–	19																																
						–	–	14	BC (T5)	X																																		
						–	–	12		X																																
						–	–	15	DK (T5)	X																																		
						–	–	14		X																																
									BS (T2)	X 22	31	93																																
										X 21 (5) 30 (8) 91 (5)																																				
						12	14	38	BP (T1)	X																																		
						13	16	43		X																																		
									KC (T6)	X –	15	32																																
										X –	12	24																																
									IM (T2)	X –	24	55																																
										X –	16	39																																
									PS (T6)	X –	–	10																																
										X –	–	15																																
									BCH (T4)	X –	–	15																																
									ON-2 (T6)	X –	–	14																																
									ON-1 (T6)	X –	–	15																																
									LP-2 (T2)	X –	16	34																																
										X –	–	20																																
									PK (T4)	X –	–	21																																
										X –	–	13																																
									LS (T4)	X –	–	16																																
										X –	10	28																																
									HM (T6)	X –	–	20																																
									RID (T4)	X –	–	16																																
										X –	28	61																																
									ASD (T3)	X –	15	35																																
									SKV (T3)	X –	23	50																																
										X –	13	30																																
						–	–	12	BKT (T5)	X																																		
						–	–	22		X																																
						–	–	13	CHW (T5)	X																																		
									LP-1 (T2)	X –	19	51																																
										X –	22	61																																
									TC (T7)	X –	–	16																																
										X –	–	15																																
									PTW (T1)	X –	40	97																																
										X –	22	54																																
									PKN (T6)	X –	–	20																																
									SDM (T4)	X –	–	12																																
									NN (T2)	X –	16	39																																
										X –	11	27																																
									PTN (T4)	X –	–	16																																
										X –	–	10																																
									KK TOLL	X 20	34	70																																
										• 33	57	124																																
									SPS (SW)	X 6	10	20																																
									KK T1	• 149	198	189																																
										▲ 56	22	33																																
									PY T2	▲ 38	32	40																																
									PL T3	▲ 33	23	31																																
									LS T4	▲ 13	44	66																																
						29	38	49	TH T5	▲																																		
									PKN T6	▲ 45	63	69																																
									SW T7	▲ 17	28	38																																
									KK TEST	X 10	20	50																																
									KK OBS	X 3	3	3																																
						1	1	1	BPPY (TKE)	X 1	1	1																																
									KKMISC(etc)	X 5	5	5																																
									KK SPS	X 5	10	25																																

NOTE
- X ——— 11db
- Δ ——— 6db
- • ——— 4db
- ▽ ——— 3db
- x ——— METALLIC WIRE
- o ——— DIRECT LINE

EX. NO 51 NN EXCHANGE (T2) SUB. 3,000—5,000—10,000



EX NO 52 PTN EXCHANGE (T4) SUB. 800——2,000——5,000



NOTE

X ——— 11 db

Δ ——— 6 db

• ——— 4 db

▽ ——— 3 db

X· ———METALLIC WIRE

O ——— DIRECT LINE