Table A-VII (1/18) METEOROLOGICAL DATA

Unit: Cal/cm^2/day

Station: SANA'A Element: Solar Radiation (1/3)

Month	Year	1979	1980	1981	1982	1982
Jan.	Max.	478	-	524	539	
	Min.	115	-	328	239	
	Av.	255	-	454	447	
Feb.	Max.	589	-	588	583	
	Min.	321	-	413	239	
	Av.	511	-	501	472	
Mar.	Max.	569	646	597	688	
	Min.	348	370	248	150	
	Av.	492	545	449	480	
Apr.	Max.	657	685	718	703	
	Min.	439	373	374	329	
	Av.	589	565	560	510	
May	Max.	669	717	733	696	
	Min.	322	425	299	299	
	Av.	536	600	554	591	
Jun.	Max.	685	684	718	688	
	Min.	419	437	524	404	
	Av.	575	578	629	585	
Jul.	Max.	581	634	658	628	
	Min.	319	359	284	314	
	Av.	448	485	493	480	
Aug.	Max.	629	625	658	658	
	Min.	293	299	329	209	
	Av.	428	468	502	492	
Sep.	Max.	649	645	643	628	
	Min.	231	363	419	509	
	Av.	533	570	580	590	
Oct.	Max.	615	588	673	-	
	Min.	400	340	404	-	
	Av.	506	527	557	-	
Nov.	Max.	-	512	583	-	
	Min.	-	346	419	-	
	Av.	-	463	502	-	
Dec.	Max.	-	519	583	-	
	Min.	-	407	394	-	
	Av.	-	456	486	-	

Date of issue: 31 Oct. 1984

YEMEN ARAB REPUBLIC
CIVIL AVIATION AND METEOROLOGICAL AUTHORITY
CLIMATOLOGICAL SECTION

Table A-VII (2/18) METEOROLOGICAL DATA

Unit: Cal/cm^2/day

Station: TAIZZ Element: Solar Radiation (2/3)

Month	Year	1979	1980	1981	1982	1982
Jan.	Max.	-	490	494	509	509
	Min.	-	308	337	73	145
	Av.	-	425	455	362	391
Feb.	Max.	-	521	560	538	-
	Min.	-	384	211	204	-
	Av.	-	485	450	389	-
Mar.	Max.	-	563	596	625	-
	Min.	-	363	247	131	-
	Av.	-	508	432	492	-
Apr.	Max.	-	599	625	596	-
	Min.	-	295	301	334	-
	Av.	-	498	474	507	-
May	Max.	-	596	644	611	640
	Min.	-	349	378	189	291
	Av.	-	499	536	475	514
Jun.	Max.	506	552	596	567	581
	Min.	353	320	477	320	261
	Av.	440	468	543	477	476
Jul.	Max.	486	545	538	-	540
	Min.	207	182	189	-	292
	Av.	297	404	405	-	423
Aug.	Max.	519	487	553	509	509
	Min.	317	291	320	118	204
	Av.	428	417	454	389	390
Sep.	Max.	544	523	582	552	509
	Min.	258	240	305	283	261
	Av.	431	443	465	415	393
Oct.	Max.	577	531	538	582	-
	Min.	297	327	371	364	-
	Av.	431	478	481	493	-
Nov.	Max.	491	494	509	509	465
	Min.	372	283	298	232	320
	Av.	458	420	445	384	-
Dec.	Max.	491	473	462	-	-
	Min.	275	320	223	-	-
	Av.	362	407	368	-	-

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Table A-VII (3/18) METEOROLOGICAL DATA

Unit: $Cal/cm^2/day$

Station: HUDAYDAH Element: Solar Radiation (3/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.		537	563	-	
	Min.		303	190	-	
	Av.		418	400	427	
Feb.	Max.		583	571		
	Min.		256	317		
	Av.		446	423		
Mar.	Max.		719	516		
	Min.		393	376		
	Av.		571	478		
Apr.	Max.		722	521		
	Min.	-	462	197		
	Av.	-	588	420		
May	Max.	-	712	611		
	Min.	-	439	338		
	Av.	-	587	440		
Jun.	Max.		628	506		
	Min.		272	197		
	Av.		510	364		
Jul.	Max.		659	408		
	Min.		368	151		
	Av.		536	255		
Aug.	Max.		628	422		
	Min.		313	197		
	Av.		508	281		
Sep.	Max.		572	394		
	Min.		257	127		
	Av.		465	301		
Oct.	Max.		590	394	515	
	Min.		409	253	378	
	Av.		518	324	421	
Nov.	Max.		568	492	-	
	Min.		406	295	-	
	Av.		485	422	-	
Dec.	Max.		568	530	454	
	Min.		310	363	257	
	Av.		414	452	384	

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Table A-VII (4/18) METEOROLOGICAL DATA

Unit: Hour

Station: SANA'A

Element: Sunshine Duration (1/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	10.9	11.5	10.6	-	
	Min.	1.5	4.8	7.4	-	
	Av.	8.1	9.4	10.0	-	
Feb.	Max.	11.6	10.7	10.8	10.9	
	Min.	6.6	4.0	8.0	2.5	
	Av.	10.4	8.9	10.5	9.2	
Mar.	Max.	10.8	11.4	10.7	11.2	
	Min.	4.5	6.6	2.9	0.6	
	Av.	8.9	9.5	7.3	8.1	
Apr.	Max.	11.9	10.7	11.0	11.5	
	Min.	5.9	4.0	4.5	4.4	
	Av.	10.0	9.2	7.8	7.9	
May	Max.	12.9	11.9	-	11.6	
	Min.	3.9	4.0	-	3.0	
	Av.	9.3	9.8	-	9.6	
Jun.	Max.	11.9	11.7	11.6	11.1	
	Min.	6.0	5.3	5.5	6.1	
	Av.	9.7	9.4	10.8	9.5	
Jul.	Max.	11.0	11.4	11.0	11.0	
	Min.	0.6	4.2	4.3	2.2	
	Av.	7.4	7.8	7.9	8.0	
Aug.	Max.	11.3	11.5	11.5	11.0	
	Min.	1.0	2.5	5.0	1.5	
	Av.	6.6	7.7	8.3	6.5	
Sep.	Max.	11.1	11.1	11.2	11.4	
	Min.	1.2	5.3	7.9	0.8	
	Av.	8.9	10.0	10.3	9.3	
Oct.	Max.	-	11.2	11.1	10.8	
	Min.	-	1.8	8.5	0.7	
	Av.	-	10.0	10.3	8.7	
Nov.	Max.	10.8	10.8	10.7	10.5	
	Min.	8.5	6.7	9.9	1.9	
	Av.	10.3	10.2	10.5	8.7	
Dec.	Max.	-	10.5	10.8	10.5	
	Min.	-	8.6	8.0	2.2	
	Av.	-	10.0	10.1	7.2	

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Table A-VII (5/18) METEOROLOGICAL DATA

Unit: Hour

Station: TAIZZ Element: Sunshine Duration (2/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	10.8	10.6	11.0	10.8	
	Min.	0.5	3.5	5.8	0.0	
	Av.	6.6	8.1	9.7	7.1	
Feb.	Max.	11.8	11.0	11.1	10.7	
	Min.	6.8	6.3	3.1	2.8	
	Av.	9.5	9.4	8.8	7.9	
Mar.	Max.	10.9	10.6	10.9	11.7	
	Min.	0.0	5.8	2.0	0.0	
	Av.	8.0	9.3	7.7	8.6	
Apr.	Max.	11.4	11.7	11.1	11.6	
	Min.	6.3	3.4	3.3	5.5	
	Av.	9.7	8.7	8.3	9.0	
May	Max.	11.6	11.8	11.7	11.7	
	Min.	2.1	6.5	6.2	1.4	
	Av.	8.6	9.6	8.9	8.5	
Jun.	Max.	11.9	11.9	11.5	10.7	
	Min.	2.2	6.1	6.4	4.0	
	Av.	8.2	8.1	9.2	9.0	
Jul.	Max.	11.1	9.7	9.6	-	
	Min.	1.7	2.8	3.2	-	
	Av.	6.5	6.7	7.0	-	
Aug.	Max.	11.1	9.2	10.5	-	
	Min.	2.3	4.3	4.8	-	
	Av.	7.3	7.1	9.7	-	
Sep.	Max.	11.5	10.7	11.6	10.8	
	Min.	3.5	3.6	5.4	3.3	
	Av.	7.3	8.1	8.0	7.4	
Oct.	Max.	11.6	11.1	-	10.7	
	Min.	7.3	4.9	-	5.6	
	Av.	9.7	9.5	9.7	9.5	
Nov.	Max.	11.7	11.0	-	10.4	
	Min.	6.1	6.9	-	2.6	
	Av.	9.8	9.8	-	7.2	
Dec.	Max.	11.6	10.8	-	10.4	
	Min.	1.3	5.7	-	5.9	
	Av.	8.0	8.8	9.4	8.0	

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Table A-VII (6/18) METEOROLOGICAL DATA

Unit: Hour

Station: HUDAYDAH

Element: Sunshine Duration (3/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	-	10.3	10.4	10.0	
	Min.	-	3.9	6.6	4.2	
	Av.	-	9.1	9.4	8.4	
Feb.	Max.	-	10.7	10.2	11.9	
	Min.	-	4.5	4.2	7.1	
	Av.	-	7.8	9.2	9.7	
Mar.	Max.	-	10.6	10.8	10.9	
	Min.	-	4.5	2.4	3.5	
	Av.	-	8.8	8.3	9.3	
Apr.	Max.	11.1	10.6	11.6	10.1	
	Min.	7.8	5.9	0.6	4.1	
	Av.	10.2	9.0	8.8	8.1	
May	Max.	11.4	11.4	11.4	10.7	
	Min.	0.0	7.7	6.1	1.3	
	Av.	9.5	10.0	9.1	6.7	
Jun.	Max.	11.7	10.8	11.3	10.3	
	Min.	0.5	3.9	6.2	3.4	
	Av.	7.9	7.2	9.4	8.0	
Jul.	Max.	10.1	10.4	9.1	11.6	
	Min.	1.6	2.3	4.6	4.6	
	Av.	7.8	6.5	6.8	9.2	
Aug.	Max.	10.9	9.2	10.4	-	
	Min.	1.9	0.0	0.0	-	
	Av.	7.4	6.6	6.9	-	
Sep.	Max.	10.5	8.9	10.0	10.3	
	Min.	0.2	3.5	4.4	3.4	
	Av.	7.0	6.3	8.0	8.0	
Oct.	Max.	11.1	-	11.2	11.6	
	Min.	5.7	-	8.7	4.6	
	Av.	9.3	-	9.8	9.2	
Nov.	Max.	10.3	10.6	10.8	-	
	Min.	6.4	7.2	8.5	-	
	Av.	8.9	9.5	9.9	-	
Dec.	Max.	10.0	10.1	10.0	-	
	Min.	5.0	1.8	8.4	-	
	Av.	7.6	9.1	9.4	-	

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Table A-VII (7/18) METEOROLOGICAL DATA

Unit: Knots at 10 m height

Station: SANA'A

Element: Wind Speed (1/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	20	22	20	16	22
	Min.	-	-	-	-	-
	Av.	3	3	7	7	3
Feb.	Max.	26	26	22	26	22
	Min.	-	-	-	-	-
	Av.	4	4	3	4	4
Mar.	Max.	20	28	20	35	20
	Min.	-	-	-	-	-
	Av.	4	4	4	3	3
Apr.	Max.	30	20	20	22	45
	Min.	-	-	-	-	-
	Av.	4	4	4	2	3
May	Max.	32	24	20	18	13
	Min.	-	-	-	-	-
	Av.	4	5	7	3	3
Jun.	Max.	32	20	20	22	22
	Min.	-	-	-	-	-
	Av.	6	4	3	4	4
Jul.	Max.	40	32	28	18	20
	Min.	-	-	-	-	-
	Av.	5	8	4	3	4
Aug.	Max.	32	22	34	28	26
	Min.	-	-	-	-	-
	Av.	4	4	5	3	8
Sep.	Max.	22	20	20	22	22
	Min.	-	-	-	-	-
	Av.	5	7	7	4	3
Oct.	Max.	20	21	16	22	16
	Min.	-	-	-	-	-
	Av.	4	9	3	4	4
Nov.	Max.	20	20	18	20	20
	Min.	-	-	-	-	-
	Av.	3	7	3	3	3
Dec.	Max.	24	18	10	18	20
	Min.	-	-	-	-	-
	Av.	3	10	8	3	3

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Table A-VII (8/18) METEOROLOGICAL DATA

Unit: Knots at 10 m height

Station: TAIZZ

Element: Wind Speed (2/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	-	24	28	15	14
	Min.	-	-	-	-	-
	Av.	-	7	9	6	3
Feb.	Max.	20	18	18	22	13
	Min.	-	-	-	-	-
	Av.	9	7	9	7	3
Mar.	Max.	24	24	20	18	15
	Min.	-	-	-	-	-
	Av.	9	8	7	7	8
Apr.	Max.	30	24	25	22	35
	Min.	-	-	-	-	-
	Av.	8	9	9	7	6
May	Max.	22	45	20	22	28
	Min.	-	-	-	-	-
	Av.	6	13	8	6	7
Jun.	Max.	32	50	24	35	30
	Min.	-	-	-	-	-
	Av.	9	8	6	7	5
Jul.	Max.	40	34	25	12	28
	Min.	-	-	-	-	-
	Av.	10	12	12	8	8
Aug.	Max.	26	30	40	10	20
	Min.	-	-	-	-	-
	Av.	10	8	8	6	11
Sep.	Max.	24	23	24	25	30
	Min.	-	-	-	-	-
	Av.	10	8	6	5	16
Oct.	Max.	20	22	20	22	16
	Min.	-	-	-	-	-
	Av.	9	8	7	6	4
Nov.	Max.	20	20	22	26	16
	Min.	-	-	-	-	-
	Av.	10	10	6	5	5
Dec.	Max.	20	18	20	25	20
	Min.	-	-	-	-	-
	Av.	7	11	9	4	5

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Table A-VII (9/18) METEOROLOGICAL DATA

Unit: Knots at 10 m height

Station: HUDAYDAH

Element: Wind Speed (3/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	18	28	32	26	28
	Min.	-	-	-	-	-
	Av.	5	13	13	13	7
Feb.	Max.	-	30	28	30	22
	Min.	-	-	-	-	-
	Av.	-	12	9	11	6
Mar.	Max.	27	30	26	34	26
	Min.	-	-	-	-	-
	Av.	10	14	12	14	8
Apr.	Max.	25	30	24	30	22
	Min.	-	-	-	-	-
	Av.	10	12	12	12	6
May	Max.	40	24	22	24	20
	Min.	-	-	-	-	-
	Av.	8	7	11	9	6
Jun.	Max.	30	18	20	22	18
	Min.	-	-	-	-	-
	Av.	7	7	10	10	5
Jul.	Max.	19	26	22	32	26
	Min.	-	-	-	-	-
	Av.	6	7	8	8	6
Aug.	Max.	22	28	20	22	27
	Min.	-	-	-	-	-
	Av.	7	9	8	8	6
Sep.	Max.	20	20	24	30	24
	Min.	-	-	-	-	-
	Av.	7	6	7	7	-
Oct.	Max.	20	30	32	22	22
	Min.	-	-	-	-	-
	Av.	10	11	7	6	10
Nov.	Max.	28	26	24	24	24
	Min.	-	-	-	-	-
	Av.	6	12	11	6	17
Dec.	Max.	26	30	24	-	26
	Min.	-	-	-	-	-
	Av.	9	14	17	-	7

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Table A-VII (10/18) METEOROLOGICAL DATA

Unit: °C

Station: SANA'A

Element: Temperatures (1/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	22.7	25.1	24.4	22.5	22.8
	Min.	5.0	6.4	6.3	7.0	5.7
	Av.	13.9	15.8	15.4	15.1	13.7
Feb.	Max.	25.4	26.4	25.3	23.5	-
	Min.	4.9	8.6	7.2	10.4	-
	Av.	15.2	17.5	16.5	17.3	-
Mar.	Max.	26.6	26.0	23.2	21.8	25.3
	Min.	10.4	11.3	11.1	12.0	11.0
	Av.	18.5	18.7	17.2	16.1	17.0
Apr.	Max.	27.2	26.9	24.8	25.0	25.6
	Min.	9.8	12.3	13.2	12.0	12.1
	Av.	18.5	19.6	19.0	18.5	18.5
May	Max.	27.3	27.9	27.3	27.0	29.6
	Min.	12.0	14.0	14.2	13.0	13.9
	Av.	19.7	21.0	20.8	20.0	21.1
Jun.	Max.	29.4	29.6	29.9	29.1	29.2
	Min.	13.9	15.3	14.6	14.9	15.2
	Av.	21.7	22.5	22.5	22.0	22.8
Jul.	Max.	29.5	29.3	29.2	29.0	31.2
	Min.	13.6	16.1	16.1	16.0	15.7
	Av.	21.6	22.7	22.7	22.4	20.9
Aug.	Max.	27.5	28.1	28.5	28.0	28.0
	Min.	14.7	15.2	15.2	15.0	16.2
	Av.	21.1	21.7	21.9	22.0	22.0
Sep.	Max.	27.2	29.9	26.9	26.5	26.0
	Min.	12.6	13.0	12.9	12.1	9.4
	Av.	19.9	21.0	19.9	19.0	19.9
Oct.	Max.	25.1	24.6	24.5	24.4	24.2
	Min.	8.0	9.2	8.6	10.3	3.0
	Av.	16.6	16.9	16.6	17.5	13.3
Nov.	Max.	22.9	22.8	23.6	23.0	21.8
	Min.	4.3	7.2	4.8	9.0	1.4
	Av.	13.6	15.0	14.2	16.0	12.0
Dec.	Max.	24.9	20.9	22.7	23.1	18.9
	Min.	6.0	4.2	2.5	7.2	0.6
	Av.	15.5	12.5	12.5	14.4	11.0

Table A-VII (11/18) METEOROLOGICAL DATA

Unit: °C

Station: TAIZZ

Element: Temperatures (2/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	-	24.7	25.6	24.0	24.3
	Min.	-	11.4	10.5	16.5	13.3
	Av.	-	19.6	18.0	19.4	18.8
Feb.	Max.	27.2	26.4	27.0	25.7	23.8
	Min.	16.8	10.9	11.1	14.3	14.9
	Av.	22.0	20.9	19.5	20.5	16.3
Mar.	Max.	29.0	28.8	27.0	24.8	26.8
	Min.	16.6	12.2	12.7	17.2	15.0
	Av.	22.8	22.8	19.9	21.5	20.7
Apr.	Max.	30.4	28.9	28.8	28.5	27.1
	Min.	18.2	15.0	15.4	12.2	17.0
	Av.	24.3	22.9	22.1	22.1	21.9
May	Max.	31.4	31.3	31.1	31.0	30.5
	Min.	18.8	17.5	17.6	18.0	18.6
	Av.	25.1	25.8	24.4	26.2	24.6
Jun.	Max.	33.1	23.4	33.0	32.7	32.3
	Min.	19.6	20.6	18.8	19.2	19.4
	Av.	26.4	22.0	25.8	26.0	25.8
Jul.	Max.	31.8	23.2	31.1	31.0	32.1
	Min.	19.9	18.2	20.8	20.4	19.2
	Av.	25.6	20.8	26.0	26.2	26.5
Aug.	Max.	30.8	29.6	31.4	30.4	30.8
	Min.	18.3	18.3	20.1	19.3	19.9
	Av.	24.6	24.2	25.8	25.0	26.1
Sep.	Max.	29.5	29.6	29.0	30.0	33.4
	Min.	16.0	16.3	17.0	18.0	18.0
	Av.	22.8	26.5	23.0	24.0	25.7
Oct.	Max.	28.2	29.4	28.8	28.0	28.8
	Min.	14.5	12.5	14.3	16.0	13.0
	Av.	21.4	20.3	21.6	21.3	20.3
Nov.	Max.	26.3	26.9	26.4	25.2	26.7
	Min.	11.2	11.5	20.5	15.0	10.2
	Av.	18.8	18.8	23.5	21.0	18.5
Dec.	Max.	25.1	24.8	25.0	25.6	24.7
	Min.	13.3	10.0	12.0	8.7	11.3
	Av.	19.2	18.1	18.3	16.4	17.8

Table A-VII (12/18) METEOROLOGICAL DATA

Unit: °C

Station: HUDAYDAH

Element: Temperatures (3/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	28.2	31.0	31.5	28.4	28.9
	Min.	17.8	23.0	27.0	22.5	21.0
	Av.	23.0	27.0	27.9	25.5	27.0
Feb.	Max.	29.7	30.1	30.0	29.5	29.4
	Min.	20.2	24.0	25.0	23.2	24.0
	Av.	25.0	27.1	28.0	27.7	26.1
Mar.	Max.	31.7	32.6	34.0	29.0	31.0
	Min.	23.8	25.4	26.0	24.8	24.7
	Av.	27.8	29.0	30.0	28.0	27.9
Apr.	Max.	34.3	32.2	35.0	32.1	32.7
	Min.	24.5	26.8	28.5	26.5	26.8
	Av.	29.5	25.5	32.3	29.4	30.2
May	Max.	37.4	34.4	36.0	34.3	38.9
	Min.	27.6	27.1	33.5	28.2	27.9
	Av.	32.5	30.7	35.7	32.0	32.5
Jun.	Max.	-	36.0	36.5	35.2	38.8
	Min.	-	30.0	32.0	28.3	27.8
	Av.	-	33.0	34.0	31.5	32.2
Jul.	Max.	-	36.2	38.0	36.0	39.1
	Min.	-	30.6	35.0	30.0	28.9
	Av.	-	33.4	37.0	33.1	33.7
Aug.	Max.	39.0	36.2	37.0	36.0	35.9
	Min.	31.2	29.2	32.0	30.0	29.4
	Av.	35.1	32.7	36.3	33.0	32.5
Sep.	Max.	37.9	38.4	38.5	36.0	38.2
	Min.	29.8	28.2	30.0	29.0	26.7
	Av.	33.9	33.3	34.3	33.0	32.5
Oct.	Max.	35.3	36.5	36.4	33.8	35.8
	Min.	27.1	26.7	30.5	26.0	25.3
	Av.	31.2	31.6	33.9	30.2	30.4
Nov.	Max.	31.6	33.5	32.6	31.4	31.4
	Min.	26.2	24.2	25.0	25.5	18.9
	Av.	28.9	28.9	29.6	27.5	25.4
Dec.	Max.	29.5	31.0	30.6	-	28.7
	Min.	27.7	20.8	22.5	-	19.8
	Av.	26.1	26.9	27.2	-	24.3

Table A-VII (13/18) METEOROLOGICAL DATA

Unit: %

Station: SANA'A Element: Relative Humidity (1/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	79	69	60	75	78
	Min.	29	18	11	30	26
	Av.	54	44	36	53	50
Feb.	Max.	65	71	63	78	84
	Min.	17	17	14	29	32
	Av.	41	44	39	54	60
Mar.	Max.	73	75	84	82	80
	Min.	21	19	31	44	31
	Av.	47	47	58	64	55
Apr.	Max.	50	66	71	86	93
	Min.	14	19	23	33	42
	Av.	32	43	47	59	70
May	Max.	65	69	61	68	87
	Min.	20	14	18	18	36
	Av.	43	42	40	43	58
Jun.	Max.	44	63	48	49	67
	Min.	11	11	9	11	27
	Av.	44	37	29	30	42
Jul.	Max.	61	73	63	60	68
	Min.	12	26	16	18	24
	Av.	37	50	40	43	42
Aug.	Max.	72	89	75	79	81
	Min.	21	33	20	23	33
	Av.	47	61	48	51	57
Sep.	Max.	59	51	48	66	51
	Min.	16	15	13	23	15
	Av.	38	33	31	44	33
Oct.	Max.	53	58	44	76	51
	Min.	23	17	14	31	15
	Av.	38	38	29	53	33
Nov.	Max.	72	57	53	84	50
	Min.	25	18	13	37	20
	Av.	49	38	33	61	35
Dec.	Max.	71	63	59	82	54
	Min.	21	15	11	30	14
	Av.	46	39	35	56	34

Table A-VII (14/18) METEOROLOGICAL DATA

Unit: %

Station: TAIZZ

Element: Relative Humidity (2/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	-	89	84	75	94
	Min.	-	42	28	52	46
	Av.	-	62	56	63	70
Feb.	Max.	81	81	91	75	90
	Min.	45	32	33	38	56
	Av.	63	53	62	56	74
Mar.	Max.	93	76	86	79	84
	Min.	50	31	41	44	48
	Av.	72	50	64	61	68
Apr.	Max.	86	73	85	81	91
	Min.	32	28	38	39	45
	Av.	59	51	61	60	79
May	Max.	71	69	78	79	77
	Min.	25	23	26	38	38
	Av.	48	46	51	59	58
Jun.	Max.	75	67	71	72	77
	Min.	27	26	26	30	34
	Av.	51	48	48	51	56
Jul.	Max.	76	69	73	72	74
	Min.	32	34	36	33	36
	Av.	54	55	55	53	57
Aug.	Max.	77	84	71	80	82
	Min.	36	40	31	39	37
	Av.	57	62	51	61	60
Sep.	Max.	74	76	78	79	75
	Min.	36	35	31	33	27
	Av.	55	56	55	57	51
Oct.	Max.	77	83	80	80	80
	Min.	28	26	27	32	27
	Av.	53	52	54	56	54
Nov.	Max.	82	71	75	90	72
	Min.	29	31	27	42	31
	Av.	56	51	51	66	52
Dec.	Max.	83	93	91	88	95
	Min.	40	37	34	46	43
	Av.	62	65	62	67	69

Table A-VII (15/18) METEOROLOGICAL DATA

Unit: %

Station: HUDAYDAH

Element: Relative Humidity (3/3)

Month	Year	1979	1980	1981	1982	1983
Jan.	Max.	82	84	91	84	80
	Min.	65	61	75	63	63
	Av.	74	73	78	72	72
Feb.	Max.	86	82	92	84	81
	Min.	77	63	65	61	60
	Av.	82	73	77	69	71
Mar.	Max.	85	82	94	83	76
	Min.	60	61	70	68	58
	Av.	73	71	80	74	67
Apr.	Max.	83	81	96	83	82
	Min.	61	56	70	56	59
	Av.	72	69	77	77	70
May	Max.	78	80	91	80	81
	Min.	56	54	66	58	58
	Av.	67	67	75	67	70
Jun.	Max.	-	77	89	81	81
	Min.	-	54	65	55	63
	Av.	-	65	78	64	74
Jul.	Max.	-	75	83	77	82
	Min.	-	52	65	55	62
	Av.	-	63	70	64	72
Aug.	Max.	66	80	89	76	80
	Min.	50	50	61	54	55
	Av.	58	65	68	63	68
Sep.	Max.	75	80	88	77	78
	Min.	51	57	63	54	56
	Av.	63	63	71	63	67
Oct.	Max.	76	77	85	81	74
	Min.	59	55	65	55	52
	Av.	68	66	72	64	63
Nov.	Max.	76	79	88	83	76
	Min.	57	50	66	60	50
	Av.	67	65	76	68	63
Dec.	Max.	85	78	95	-	85
	Min.	60	52	65	-	60
	Av.	73	65	76	-	73

Table A-VII (16/18) METEOROLOGICAL DATA

Unit: mm

Station: SANA'A Airport

Element: Precipitation (1/3)

Month \ Year	1975	1976	1977	1978	1979	1980	1981	1982	1983
Jan.	1.5	0.0	8.7	1.6	15.6	0.0	-	24.8	30.9
Feb.	2.0	0.0	0.0	7.5	1.0	24.3	-	19.4	11.2
Mar.	35.8	45.8	6.7	15.3	15.8	35.8	114.4	75.3	54.9
Apr.	109.4	33.5	5.9	28.1	0.2	27.3	10.7	35.9	88.5
May	0.0	36.9	75.1	11.4	9.7	2.0	12.4	92.3	7.9
Jun.	0.1	0.0	0.8	8.1	4.0	0.0	-	0.0	0.0
Jul.	35.0	18.3	21.7	46.6	8.2	50.6	29.6	30.0	8.0
Aug.	84.1	3.7	81.2	1.0	25.2	21.4	124.3	33.4	68.9
Sep.	13.8	0.0	16.8	0.5	0.0	0.0	-	0.0	0.0
Oct.	0.0	0.0	127.3	0.0	0.0	1.8	-	40.3	0.0
Nov.	0.0	33.7	0.0	5.7	0.0	0.0	-	-	0.0
Dec.	0.0	0.0	1.6	-	0.0	0.0	-	-	0.0

Table A-VII (17/18) METEOROLOGICAL DATA

Unit: mm

Station: TAIZZ Airport

Element: Precipitation (2/3)

Month \ Year	1975	1976	1977	1978	1979	1980	1981	1982	1983
Jan.		0.0	0.0	19.8	10.0	13.4	-	10.5	83.9
Feb.		0.0	0.0	-	1.4	0.0	-	0.9	57.0
Mar.		10.9	46.9	-	6.0	10.5	153.1	37.1	0.8
Apr.		75.8	104.9	0.0	79.1	152.8	39.4	10.3	83.6
May		19.6	127.9	31.7	17.4	42.5	32.4	13.4	222.1
Jun.		31.6	53.7	0.0	32.4	48.9	33.2	19.8	105.2
Jul.		32.0	68.1	50.4	107.2	38.6	22.7	19.4	107.8
Aug.		20.2	169.1	65.1	52.4	82.9	30.7	114.2	267.2
Sep.		46.4	60.5	16.6	63.2	102.1	92.9	89.6	33.9
Oct.		17.4	-	20.3	44.1	16.2	-	0.0	72.9
Nov.		4.6	0.0	-	10.8	0.0	-	-	1.8
Dec.		0.0	0.0	12.0	0.0	0.0	-	-	0.0

Table A-VII (18/18) METEOROLOGICAL DATA

Unit: mm

Station: HUDAYDAH Element: Precipitation (3/3)

Month \ Year	1975	1976	1977	1978	1979	1980	1981	1982	1983
Jan.	-	-	-	48.2	2.0	3.3	0.0	13.9	
Feb.	-	-	-	0.4	0.0	0.0	0.0	0.0	
Mar.	-	7.8	-	0.0	1.3	0.0	0.0	-	
Apr.	-	0.2	-	0.1	0.0	0.0	1.6	0.0	
May	-	-	-	0.0	0.0	0.0	0.0	0.0	
Jun.	-	-	-	0.0	0.0	7.4	0.0	0.0	
Jul.	1.6	-	-	120.6	0.0	0.0	0.0	0.0	
Aug.	51.2	-	17.4	0.0	0.0	0.0	0.0	-	
Sep.	56.3	-	-	0.0	1.0	0.0	0.0	-	
Oct.	11.2	-	34.5	1.0	26.0	0.0	0.0	11.0	
Nov.	0.0	-	11.5	2.1	0.0	0.0	0.0	-	
Dec.	9.6	-	15.0	78.0	0.0	0.0	0.0	-	

ANNEX-Ⅷ NAMES OF YEMENI OFFICIALS INVOLVED

Names of Yemeni Officials Involved

Name	Position/Section
H.E. Ahmed Mohamed Al-Anesi	Minister of MOC
H.E. Mohamed Mohamed Al-Arashy	Deputy Minister, MOC
Mr. Abdulla Al-Khourabi	DG of Projects, MOC
Mr. Abdulla Al-Kabus	DG of Communications, MOC
Mr. Abdulla Nehimi	General Manager, PTC
Mr. Mohamed A Al-Kassous	Deputy Manager, PTC
Mr. Ali Ahmed Al-Mkhaphy	Director, TAIZZ Region, MOC
Mr. Ahamed Nasser	Director, HUDAYDAH Region, MOC
Mr. Ahamed Al-Wargi	Director, DHAMAR Region, MOC
Mr. Mohsen Al-Damari	Director, IBB Region, MOC
Mr. Abdulla Al-Hajaji	Director, HAJJAH Region, MOC
Mr. Abdulla Al-Hamami	Director of O/M, PTC
Mr. Mohamed Al-Nahari	Director of Finance, PTC
Mr. Mohamed Al-Athory	Director of Telecommunications Institute, PTC
Mr. Mohamed Al-Geez	PTC (counterpart)
Mr. Abdul Rahman Al-Moain	PTC (-ditto-)
Mr. Ahamed Al-Adadi	Frequency Manager, MOC
Mr. Abdul Kader Yassien	MOC
Mr. Mohamed Al-Assry	Director Assistance, HUDAYDAH Region, MOC
Mr. Samy Hanna Reheb	ITU Project Cordinator, MOC
Mr. H.J. Mirchandani	ITU Expert, MOC
Mr. T.K. Ramaswamy	Project Director, PTC

ANNEX-Ⅸ LIST OF COLLECTED DATA

List of Collected Data

1. 7 Maps (Map 1 - Map 6, Map 7I-7IV, Map 7VI) Yemen A.R.

2. Eleventh Annual Report;
   Central Bank of Yemen, Research Department, 1982

3. Summary, Final Results of the Cooperative Population Census;
   Central Planning Organization, Feb. 1981

4. Evaluation and Analysis of 1975 Population and Housing Census Concerning Population Distribution and Internal Migration in Yemen A.R.;
   Central Planning Organization, May 1983

5. Population Study, Population Projections by Sex and Age for the Yemen A.R. for the Period 1975 - 2010;
   Central Planning Organization, May 1984

6. The Second Five-Year Plan 1982 - 1986;
   Central Planning Organization

7. Information on Tax (In Arabic)

8. - ditto -

9. - ditto -

10. Geologic Map of the Yemen A.R.;
    Department of the Interior

11. Distribution of Population Aggregates (Mahalah) by Population;
    Central Planning Organization

12. Tax information (an extract, in Arabic)

13. - ditto -

14. Technical information of existing towers, aerials and stations' locations; MOC/PTC

15. Geographic information of existing stations; MOC/PTC

16. Yearly Busy Hour Computation for existing 3 exchanges; MOC/PTC

17. Directorate of Operation and Maintenance Chart Book;
    PTC, Aug. 1984

18. Directorate of Operation and Maintenance Traffic Book of Sana'a E10B Exchange; PTC, Aug. 1984

19. Existing Telephone Network in Yemen A.R. (an extract)

20. Information of exchange type, manufacturer etc.

21. Information of interfacing between switching and analog microwave system; MOC/PTC

22. Information of PCM between exchange and satellite: MOC/PTC

23. A.C. mains conditions; Yemen General Electricity Corp.

24. Local cost; MOC/PTC

25. Number of employee (in Arabic); MOC/PTC

26. Meteorology data;
Civil Aviation and Meteorology Authority

27. Information of Typical cost for self-supporting tower; MOC/TPTC

28. Average life times: MOC/PTC

29. Revenue and investment of PTC, 1982 and 1983; MOC/PTC

30. MOC Annual Report (5 years); MOC

31. Information of registration and progressive total of work orders as of 15/11/1984 for E-10B exchanges; MOC/PTC

32. Telephone' tariff in Yemen A.R.

33. Signalling; PTC

ANNEX-X TECHNICAL COMPARISON FOR PLAN-A AND PLAN-B

Technical Comparison for Plan-A and Plan-B

The following summarize advantages/disadvantages as a result of technical comparison between Plan-A and Plan-B. Detailed explanations for each item are given in the following paragraphs.

Item	Plan-A	Plan-B
- Flexibility for Message Areas and Charging	X	O
- Capacity of Directory Numbers	O	O
- Radio Frequency Utilization	O	X

Note O: Advantageous
X: Disadvantageous

1 Flexibility for Message Areas and Charging

1-1 Message Areas

The number of message areas in objective 6 Governorates are estimated as shown below. It is to be desired that the existing main switching facilities could discriminate their depending message areas for the routing and charging purposes. In the following table, "Initial" means the minimum number of message areas required at the commissioning of this project.

Sub-Network	No. of Message Areas Initial	Final	Exchange
SANA'A	23	30	SANA'A
DHAMAR	5	5	"
HAJJAH	9	16	"
(Sub-Total)	(37)	(51)	
TAIZZ	13	15	TAIZZ
IBB	4	10	"
(Sub-Total)	(17)	(25)	
HUDAYDAH	14	17	HUDAYDAH

The above-mentioned figures are roughly obtained, based on the number of Districts, bearing the present tariff system in mind. That is, in the case of small Districts, two or more are grouped into one message area so that its diameter reaches approximately 25km. On the contrary, larger District whose diameter is over 25km is counted as one message area. Therefore, it is noted that any social and economic relations, i.e., community of interest, among Districts are not taken into account.

In Plan-B, such discrimination will be relatively easily realized. In Plan-A, however, the number of message areas is limited by the function of the existing switching system. One E-10B parent exchange can discriminate maximum 32 "geographical zones" for the moment and some are already assigned for its depending line concentrators.

1-2 Charging Control

Charging function is closely related to the discriminating function for message areas. In other words, the availability of charging control presupposes the capability of message area discrimination. Therefore, Plan-B is desirable in order to apply the present tariff system to new rural telecommunications network.

In Plan-B, newly introduced switching system will have the charging capability for calls originated from new rural subscribers.

2 Capacity of Directory Numbers

2-1 Capacity of Present Numbering Plan

At present, objective 6 Governorates are covered by 4 trunk areas (trunk codes: "2", "3", "4" and "7") and 6-digit directory numbers are assigned to the existing subscribers except those accommodated in EMD/RFT switching system.

It means that each trunk area could have the subscriber line capacity of 1,000,000 from the viewpoint of numbering plan. Even though the directory numbering of 0XXXXX and 1XXXXX is prohibited in order to avoid the complicated routing function requirement, the capacity remains to be 800,000 for each trunk area.

2-2 Rough Estimate of Telephone Demand

The following give the roughly estimated telephone demand in the whole of Yemen A.R. In this calculation, basic figures, i.e., resident population and per capita GDP as of 1984, and their annual growth rates are quoted from "The Second Five-Year Plan". On the other hand, telephone density for each year is obtained by the correlation between telephone density and per capita GDP recorded in 56 countries in 1981.

Year	Resident Pop. (Thou.)	Per Capita GDP (US$)	Telephone Density	No. of Tel. (Thou.)
(Growth Rate)	(2.8%)	(4.2%)	-	-
1984	7,879	447	0.49	38.6
1994	10,384	674	0.86	89.3
2004	13,687	1,017	1.51	206.7
2014	18,041	1,535	2.66	479.9
2024	23,779	2,317	4.67	1,110.5

Needless to say, the most critical trunk area to telephones' increase is to be SANA'A area with trunk code "2". The reason is that around 50% of total telephones in Yemen A.R. concentrate in this area at present and this trend will certainly continue in the future.

Although such a large-scale concentration ratio and the discrepancy between estimated value and recorded one in 1984 (approximately 1.3 times) are considered, present numbering plan has sufficient capacity to meet the telephone demand for the coming 40 years, even in SANA'A trunk area.

2-3 Directory Numbering for New Rural Subscribers

The directory numbering for new rural subscribers is to be made according to the present numbering plan, in principle, because major modification of present one will not be necessitated for very long term, as mentioned above. This is to avoid unnecessary troubles caused by a numbering change.

The following is proposed by this project as directory number to be assigned for new rural subscribers.

ABCXXX (6 digits)

where, Code "A" : To be fixed depending on the switching systems in which rural subscribers are accommodated.

Code "BC": To be assigned to each message area individually, out of the present vacant codes. These two digits are useful not only for easy discrimination of message areas but also for charging control.

This directory numbering plan could be realized by both Plan-A and Plan-B.

3 Radio Frequency Utilization

In Plan-B, more repeating sections are to be required to cover all objective areas, compared with in Plan-A. This means that Plan-B requires more radio frequency bands. Therefore, when further system expansion is considered, it is concluded that Plan-A is preferable.