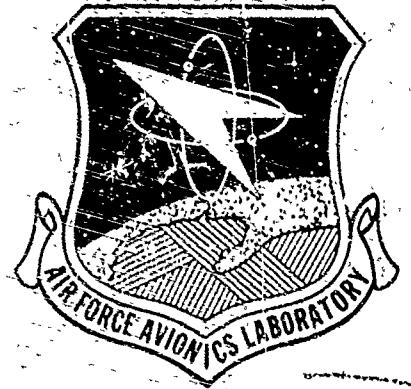


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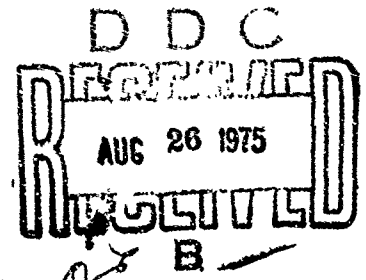
**CLOUD COVER STATISTICS FOR MOUNT
HALEAKALA, MAUI, HAWAII FOR THE
PERIOD: MAY 1972 - DECEMBER 1974**



*ELECTRO-OPTICS AND RECONNAISSANCE BRANCH
RECONNAISSANCE AND WEAPON DELIVERY DIVISION*

JULY 1975

TECHNICAL REPORT AFAL-TR-75-61



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AIR FORCE AVIONICS LABORATORY (405B)
AIR FORCE WRIGHT AERONAUTICAL LABORATORIES
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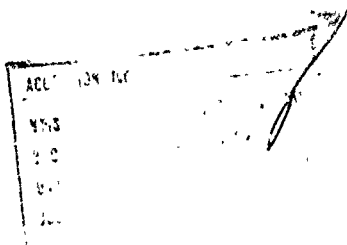
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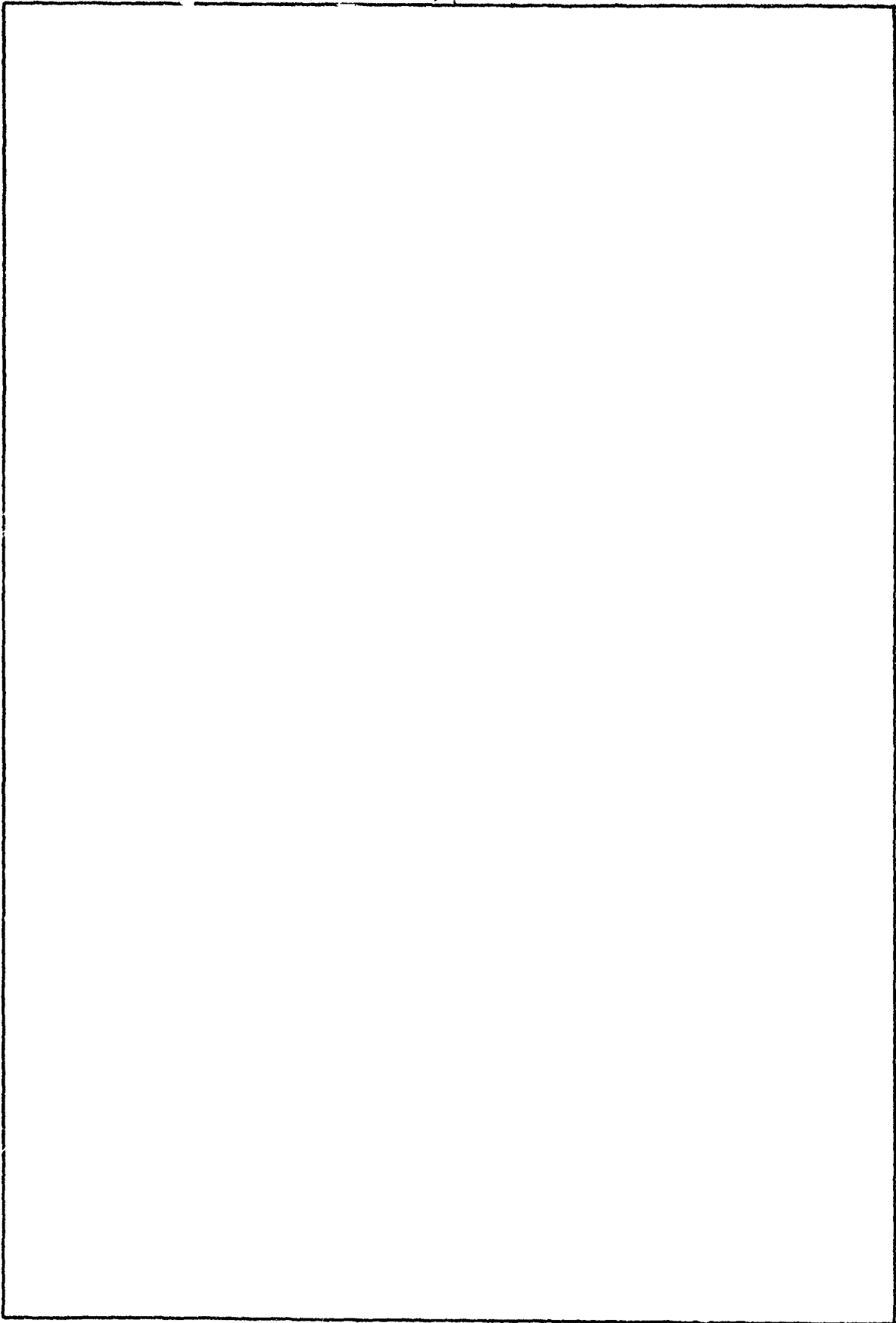
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Reconnaissance and Weapon Delivery Division



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Weather data for Mount Haleakala, Maui, Hawaii was obtained for the period, May 1972 - December 1974. This report contains information on the cloud cover statistics and estimated percent probabilities of cloud-free line-of-sight. The wind speed/direction and relative humidity data for the same 12 month period are given, however, due to the location of the instrumentation to measure these parameters, no attempt was made to summarize these data.		

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



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SECTION I
INTRODUCTION

In the course of site evaluation for a ground receiver station for the 405B Program (Space Laser Communications), weather data for the ARPA Maui Observation Station (AMOS) were obtained. The weather data, taken at four hour intervals, for May 1972 to December 1974 is listed in the Appendix.

Although cloud cover, wind speed/direction and relative humidity are given, only the cloud cover data was analyzed. It was learned¹ after tabulation of the data began that; "The relative humidity measurements were all taken inside the AMOS west dome. Prior to January 1974, the anemometer was located on a tower approximated 40 feet south of the front entrance to the Observatory; elevation was 50 feet above ground level. In late January, the sensor was moved to a position on the northeast corner of the main building. Elevation is about twenty feet above ground level." For this reason, the wind and relative humidity data are presented but not summarized.

The information presented in this report must be used with care, 32 months of cloud cover statistics cannot be considered adequate for

drawing any detailed conclusions on average cloud cover for a future time. The variability in the cloud cover is apparent in the tables in Section III. However, some general conclusions, as to which season of the year and hours of the day have the highest incidence of cloud cover, can be reached.

This report should be thought of as a summary of the past cloud cover statistics for Mount Haleakala. A more detailed climatological study will require hourly observations for a period of seven to ten years.

SECTION II
MONTHLY CLOUD COVER SUMMARIES

The monthly cloud cover summaries for the 32 months, May 1972 to December 1974, are presented in Table 1.

The percentage frequency of occurrence for eighths of cloud cover are given. Cloud cover observations were taken at four hour intervals beginning at 0000 hours local standard time (LST). Since observations were not normally taken on weekends, the number of observations for each observation time is given. Also given, are the percentage frequency occurrence of days when a "weather" event occurred during any of the observation times in a given day. A "weather" event is defined as:

- (1) fog
- (2) rain
- (3) both fog and rain in any given day
- (4) snow
- (5) hail

The summaries for the twelve months of the year are given in Table 2. Therefore, for the months of January, February, March and April, two months of data (1973 and 1974) are used to comprise a summary. And for the other eight months, three months of data (1972, 1973 and 1974) are used to comprise a summary.

TABLE 1

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(a)

MAY 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	50.00	0.00	10.00	5.00	10.00	0.00	5.00	15.00	5.00	20
4 LST	50.00	0.00	15.00	10.00	5.00	0.00	10.00	0.00	10.00	20
8 LST	50.00	0.00	20.00	10.00	0.00	0.00	0.00	0.00	20.00	10
12 LST	50.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	30.00	10
16 LST	40.00	10.00	0.00	10.00	0.00	0.00	0.00	0.00	40.00	10
20 LST	52.63	10.53	10.53	10.53	0.00	10.53	0.00	0.00	5.26	19
ALL HRS	49.44	4.49	10.11	7.87	4.49	2.25	3.37	3.37	14.61	89

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 0.00, RAIN = 5.00, FOG AND RAIN = 0.00, SNOW = 0.00 OR HAIL = 0.00

FOR 20 DAYS OF OBSERVATIONS

(b)

JUN 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	50.00	0.00	9.09	4.55	9.09	0.00	18.18	4.55	4.55	22
4 LST	45.45	0.00	13.64	4.55	4.55	4.55	13.64	4.55	9.09	22
8 LST	54.55	0.00	4.55	9.09	18.18	0.00	0.00	0.00	13.64	22
12 LST	15.00	5.00	10.00	20.00	10.00	5.00	10.00	0.00	25.00	20
16 LST	26.32	10.53	0.00	0.00	21.05	10.53	0.00	0.00	31.58	19
20 LST	58.82	5.88	0.00	0.00	5.88	0.00	0.00	17.65	11.76	17
ALL HRS	41.80	3.28	6.56	6.56	11.48	3.28	7.38	4.10	15.57	122

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 0.00, RAIN = 4.55, FOG AND RAIN = 4.55, SNOW = 0.00 OR HAIL = 0.00

FOR 22 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(c)
JUL 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	63.16	0.00	0.00	15.79	15.53	0.00	0.00	0.00	10.53	19
4 LST	63.16	0.00	5.26	5.26	0.00	5.26	0.00	0.00	21.05	19
8 LST	52.63	15.79	0.00	0.00	15.53	0.00	0.00	0.00	21.05	19
12 LST	5.26	26.32	15.79	5.26	15.79	0.00	5.26	0.00	26.32	19
16 LST	33.33	5.56	11.11	0.00	5.56	5.56	5.56	11.11	22.22	18
20 LST	55.56	0.00	5.56	11.11	0.00	5.56	11.11	5.56	5.56	18
ALL HRS	45.54	8.04	6.25	6.25	7.14	2.68	3.57	2.68	17.86	112

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 5.26, RAIN = 5.26, FOG AND RAIN = 5.26, SNOW = 0.00 OR HAIL = 0.00
FOR 19 DAYS OF OBSERVATIONS

(d)
AUG 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	82.61	0.00	0.00	4.35	0.00	0.00	0.00	8.70	4.35	23
4 LST	65.22	0.00	4.35	4.35	4.35	4.35	0.00	8.70	8.70	23
8 LST	69.57	13.04	0.00	0.00	0.00	0.00	0.00	0.00	17.39	23
12 LST	34.78	17.39	0.00	4.35	4.35	0.00	4.35	4.35	30.43	23
16 LST	75.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	15.00	20
20 LST	81.25	0.00	0.00	6.25	0.00	0.00	0.00	6.25	6.25	16
ALL HRS	67.19	5.47	.78	3.13	1.56	.78	1.56	5.47	14.06	128

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 4.35, RAIN = 0.00, FOG AND RAIN = 21.74, SNOW = 0.00 OR HAIL = 0.00
FOR 23 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(e)

SEP 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	85.00	0.00	5.00	0.00	0.00	0.00	0.00	5.00	5.00	20
4 LST	90.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	20
8 LST	80.00	0.00	5.00	0.00	5.00	0.00	0.00	5.00	5.00	20
12 LST	44.44	27.78	5.56	0.00	5.56	5.56	0.00	0.00	11.11	18
16 LST	55.00	0.00	5.00	0.00	5.00	0.00	0.00	15.00	20.00	20
20 LST	80.00	5.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	20
ALL HRS	72.88	5.03	4.24	.85	2.54	.95	.85	5.08	7.63	118

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 5.00, RAIN = 5.00, FOG AND RAIN = 5.00, SNOW = 0.00 OR HAIL = 0.00

FOR 20 DAYS OF OBSERVATIONS

(f)

OCT 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	74.19	0.00	0.00	0.00	3.23	0.00	0.00	3.23	19.35	31
4 LST	67.74	0.00	0.00	3.23	0.00	3.23	0.00	3.23	22.58	31
8 LST	61.29	9.68	3.23	3.23	6.45	0.00	3.23	3.23	9.68	31
12 LST	29.03	19.35	6.45	16.13	0.00	0.00	9.68	3.23	16.13	31
16 LST	46.67	10.00	10.00	3.73	10.00	0.00	6.67	0.00	13.33	30
20 LST	55.17	0.00	13.79	3.45	0.00	3.45	3.45	0.00	20.69	29
ALL HRS	55.74	6.56	5.46	4.92	3.28	1.09	3.83	2.19	16.94	183

PERCENTAGE FREQUENCY OF OCCUPRENCE OF DAYS WITH

FOG = 0.00, RAIN = 6.45, FOG AND RAIN = 19.35, SNOW = 0.00 OR HAIL = 0.00

FOR 31 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(g)

NOV 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	75.00	0.00	0.00	3.57	3.57	0.00	7.14	0.00	10.71	28
4 LST	82.14	0.00	0.00	0.00	0.00	3.57	7.14	0.00	7.14	28
8 LST	60.71	7.14	0.00	0.00	3.57	0.00	3.57	3.57	21.43	28
12 LST	60.71	10.71	3.57	0.00	7.14	0.00	0.00	7.14	10.71	28
16 LST	70.37	0.00	0.00	0.00	3.70	0.00	11.11	3.70	11.11	27
20 LST	84.46	0.00	3.85	3.85	0.00	0.00	3.85	0.00	0.00	26
ALL HRS	72.73	3.02	1.21	1.21	3.03	.61	5.45	2.42	10.30	165

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 10.71, RAIN = 7.14, FOG AND RAIN = 10.71, SNOW = 0.00 OR HAIL = 0.00

FOR 28 DAYS OF OBSERVATIONS

(h)

DEC 1972

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	57.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.86	21
4 LST	57.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.86	21
8 LST	50.00	9.09	0.00	0.00	0.00	0.00	0.00	0.00	40.91	22
12 LST	38.10	4.76	4.76	4.76	4.76	4.76	0.00	4.76	33.33	21
16 LST	57.14	0.00	4.76	9.52	4.76	0.00	0.00	0.00	23.81	21
20 LST	50.00	5.00	5.00	5.00	5.00	5.00	5.00	0.00	20.00	20
ALL HRS	51.59	3.17	2.38	3.17	2.38	1.59	.79	.79	34.13	126

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 22.73, RAIN = 4.55, FOG AND RAIN = 27.27, SNOW = 0.00 OR HAIL = 0.00

FOR 22 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(i)

JAN 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	86.67	9.00	6.67	0.00	0.00	3.33	0.00	0.00	3.33	30
4 LST	82.76	0.00	10.34	0.00	3.45	0.00	3.45	0.00	0.00	29
8 LST	73.33	10.00	6.67	0.00	3.33	0.00	0.00	0.00	6.67	30
12 LST	68.97	17.24	3.45	0.00	3.45	0.00	0.00	3.45	3.45	29
16 LST	80.33	0.00	3.33	0.00	0.00	0.00	6.67	3.33	3.33	30
20 LST	79.31	3.45	0.00	3.45	0.00	0.00	10.34	0.00	3.45	29
ALL HRS	79.10	5.08	5.08	.56	1.69	.56	3.39	1.13	3.39	177

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 0.00, RAIN = 3.33, FOG AND RAIN = 3.33, SNOW = 0.00 OR HAIL = 0.00
 FOR 30 DAYS OF OBSERVATIONS

(j)

FEB 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	85.71	7.14	0.00	0.00	0.00	0.00	3.57	0.00	3.57	28
4 LST	76.92	3.85	7.69	3.85	0.00	0.00	0.00	7.69	0.00	26
8 LST	84.62	0.00	0.00	0.00	3.85	0.00	0.00	0.00	11.54	26
12 LST	80.77	0.00	3.85	0.00	3.85	0.00	0.00	3.85	7.69	26
16 LST	77.78	3.70	3.70	3.70	3.70	0.00	3.70	0.00	3.70	27
20 LST	90.91	0.00	0.00	4.55	4.55	0.00	0.00	0.00	0.00	22
ALL HRS	82.58	2.58	2.58	1.94	2.58	0.00	1.29	1.94	4.52	155

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 7.14, RAIN = 0.00, FOG AND RAIN = 3.57, SNOW = 0.00 OR HAIL = 0.00
 FOR 28 DAYS OF OBSERVATIONS

AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(k)
 MAR 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	58.06	0.00	3.23	0.00	3.23	0.00	0.00	0.00	35.48	31
4 LST	54.84	0.00	0.00	3.23	0.00	0.00	3.23	0.00	38.71	31
8 LST	54.84	3.23	6.45	6.45	0.00	0.00	3.23	9.68	16.13	31
12 LST	33.33	3.70	3.70	18.52	11.11	11.11	11.11	0.00	7.41	27
16 LST	36.67	0.00	6.67	6.67	20.00	0.00	13.33	3.33	13.33	30
20 LST	61.29	0.00	6.45	0.00	3.23	6.45	6.45	0.00	16.13	31
ALL HRS	50.28	1.10	4.42	5.52	6.08	2.76	6.08	2.21	21.55	181

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 22.58, RAIN = 0.00, FOG AND RAIN = 25.81, SNOW = 3.23 OR HAIL = 0.00
 FOR 31 DAYS OF OBSERVATIONS

(1)
 APR 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	80.00	0.00	0.00	0.00	3.33	0.00	3.33	0.00	13.33	30
4 LST	86.67	0.00	0.00	0.00	0.00	0.00	3.33	0.00	10.00	30
8 LST	86.67	3.33	0.00	0.00	0.00	6.67	0.00	3.33	0.00	30
12 LST	73.33	6.67	3.33	3.33	6.67	3.33	3.33	0.00	0.00	30
16 LST	80.00	0.00	3.33	3.33	3.33	0.00	3.33	0.00	6.67	30
20 LST	89.29	3.57	0.00	0.00	3.57	3.57	0.00	0.00	0.00	28
ALL HRS	82.58	2.25	1.12	1.12	2.81	2.25	2.25	.56	5.06	178

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 6.67, RAIN = 6.67, FOG AND RAIN = 3.33, SNOW = 0.00 OR HAIL = 0.00
 FOR 30 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(m)
MAY 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	65.52	3.45	3.45	3.45	3.45	6.90	0.00	0.00	13.79	29
4 LST	72.41	0.00	0.00	10.34	0.00	3.45	0.00	0.00	13.79	29
8 LST	62.07	6.90	0.00	0.00	0.00	3.45	10.34	0.00	17.24	29
12 LST	37.93	0.00	10.34	3.45	3.45	6.90	10.34	3.45	24.14	29
16 LST	51.72	3.45	6.90	3.45	10.34	6.90	6.90	0.00	10.34	29
20 LST	82.14	0.00	0.00	3.57	3.57	0.00	3.57	3.57	3.57	28
ALL HRS	61.85	2.31	3.47	4.05	3.47	4.62	5.20	1.16	13.87	173

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 27.59, RAIN = 0.00, FOG AND RAIN = 6.90, SNOW = 0.00 OR HAIL = 0.00

FOR 29 DAYS OF OBSERVATIONS

(n)
JUN 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	89.66	0.00	0.00	0.00	10.34	0.00	0.00	0.00	0.00	29
4 LST	75.86	0.00	10.34	3.45	3.45	0.00	3.45	0.00	3.45	29
8 LST	68.00	0.00	8.00	4.00	4.00	12.00	4.00	0.00	0.00	25
12 LST	60.00	4.00	12.00	8.00	4.00	8.00	0.00	4.00	0.00	25
16 LST	75.86	0.00	6.90	6.90	3.45	0.00	3.45	0.00	3.45	29
20 LST	89.66	0.00	0.00	6.90	0.00	0.00	3.45	0.00	0.00	29
ALL HRS	77.11	.60	6.02	4.82	4.22	3.01	2.41	.60	1.20	166

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 0.00, RAIN = 3.00, FOG AND RAIN = 0.00, SNOW = 0.00 OR HAIL = 0.00

FOR 29 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(o)
 JUL 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	80.95	0.00	0.00	9.52	0.00	0.00	4.76	4.76	0.00	21
4 LST	90.48	0.00	4.76	0.00	4.76	0.00	0.00	0.00	0.00	21
8 LST	90.48	0.00	0.00	0.00	0.00	0.00	4.76	4.76	0.00	21
12 LST	61.90	0.00	9.52	0.00	4.76	0.00	4.76	4.76	14.29	21
16 LST	52.38	0.00	9.52	4.76	4.76	0.00	4.76	0.00	23.81	21
20 LST	95.24	0.00	4.76	0.00	0.00	0.00	0.00	0.00	0.00	21
ALL HRS	76.57	0.00	4.76	2.38	2.38	0.00	3.17	2.38	6.35	126

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 23.81, RAIN = 0.00, FOG AND RAIN = 0.00, SNOW = 0.00 OR HAIL = 0.00
 FOR 21 DAYS OF OBSERVATIONS

(p)
 AUG 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	82.61	0.00	0.00	0.00	4.35	0.00	8.70	0.00	4.35	23
4 LST	78.26	0.00	0.00	8.70	8.70	0.00	4.35	0.00	0.00	23
8 LST	82.61	0.00	0.00	0.00	0.00	0.00	0.00	13.04	4.35	23
12 LST	60.87	4.35	0.00	0.00	8.70	4.35	8.70	8.70	4.35	23
16 LST	52.38	0.00	0.00	0.00	23.81	0.00	4.76	0.00	19.05	21
20 LST	72.22	0.00	0.00	0.00	5.56	0.00	16.67	0.00	5.56	18
ALL HRS	71.76	.76	0.00	1.53	8.40	.76	6.87	3.82	6.11	131

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 13.04, RAIN = 0.00, FOG AND RAIN = 4.35, SNOW = 0.00 OR HAIL = 0.00
 FOR 23 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(q)
 SEP 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	57.89	0.00	0.00	15.79	5.26	0.00	0.00	0.00	21.05	19
4 LST	63.16	0.00	5.26	10.53	10.53	0.00	5.26	0.00	5.26	19
8 LST	94.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.26	19
12 LST	78.95	5.26	0.00	0.00	5.26	0.00	5.26	0.00	5.26	19
16 LST	55.56	5.56	0.00	11.11	5.56	0.00	0.00	5.56	16.67	18
20 LST	52.94	5.88	11.76	0.00	11.76	0.00	0.00	0.00	17.65	17
ALL HRS	67.57	2.70	2.70	6.31	6.31	0.00	1.80	.90	11.71	111

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 21.05, RAIN = 5.26, FOG AND RAIN = 10.53, SNOW = 0.00 OR HAIL = 0.00
 FOR 19 DAYS OF OBSERVATIONS

(r)
 OCT 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	69.57	0.00	0.00	8.70	4.35	0.00	0.00	0.00	17.39	23
4 LST	65.22	0.00	0.00	8.70	4.35	8.70	0.00	0.00	13.04	23
8 LST	95.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35	23
12 LST	47.83	13.04	13.04	4.35	0.00	0.00	4.35	8.70	8.70	23
16 LST	50.00	0.00	22.22	0.00	0.00	0.00	0.00	5.56	22.22	18
20 LST	73.33	6.67	6.67	6.67	6.67	0.00	0.00	0.00	0.00	15
ALL HRS	67.20	3.20	6.40	4.80	2.40	1.60	.80	2.40	11.20	125

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 17.39, RAIN = 0.00, FOG AND RAIN = 8.70, SNOW = 0.00 OR HAIL = 0.00
 FOR 23 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(s)
NOV 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	21.05	15.79	10.53	10.53	5.26	5.26	10.53	5.26	15.79	19
4 LST	22.22	0.00	0.00	16.67	16.67	11.11	5.56	11.11	16.67	18
8 LST	55.00	5.00	0.00	0.00	0.00	0.00	5.00	5.00	30.00	20
12 LST	15.00	10.00	10.00	0.00	0.00	0.00	5.00	15.00	45.00	20
16 LST	20.00	0.00	5.00	0.00	20.00	0.00	0.00	5.00	50.00	20
20 LST	35.00	5.00	5.00	5.00	0.00	0.00	5.00	5.00	40.00	20
ALL HRS	28.21	5.98	5.13	5.13	6.84	2.56	5.13	7.69	33.33	117

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 20.00, RAIN = 0.00, FOG AND RAIN = 30.00, SNOW = 0.00 OR HAIL = 0.00
FOR 20 DAYS OF OBSERVATIONS

(t)
DEC 1973

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	37.50	0.00	25.00	0.00	0.00	0.00	12.50	0.00	25.00	8
4 LST	50.00	12.50	0.00	0.00	0.00	0.00	12.50	0.00	25.00	8
8 LST	71.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.57	7
12 LST	42.86	14.29	0.00	14.29	0.00	0.00	0.00	0.00	28.57	7
16 LST	28.57	0.00	14.29	14.29	0.00	0.00	0.00	0.00	42.86	7
20 LST	50.00	0.00	0.00	0.00	16.67	0.00	0.00	0.00	33.33	6
ALL HRS	46.51	4.65	6.98	4.65	2.33	0.00	4.65	0.00	30.23	43

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 12.50, RAIN = 0.00, FOG AND RAIN = 0.00, SNOW = 12.50 OR HAIL = 0.00
FOR 8 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(u)
 JAN 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	31.82	0.00	0.00	0.00	4.55	0.00	0.00	9.09	54.55	22
4 LST	19.18	0.00	0.00	9.09	0.00	4.55	13.64	0.00	54.55	22
8 LST	40.91	4.55	0.00	0.00	9.09	0.00	9.09	4.55	31.82	22
12 LST	27.27	4.55	9.09	9.09	0.00	4.55	0.00	4.55	40.91	22
16 LST	19.05	4.76	9.52	0.00	4.76	0.00	4.76	0.00	57.14	21
20 LST	40.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	55.00	20
ALL HRS	29.46	2.33	3.10	3.10	3.10	1.55	5.43	3.10	48.84	124

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 17.39, RAIN = 0.00, FOG AND RAIN = 52.17, SNOW = 0.00 OR HAIL = 0.00
 FOR 23 DAYS OF OBSERVATIONS

(v)
 FEB 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	71.43	4.76	0.00	4.76	4.76	0.00	4.76	0.00	9.52	21
4 LST	80.00	0.00	0.00	5.00	5.00	5.00	0.00	0.00	5.00	20
8 LST	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	20
12 LST	57.89	0.00	5.26	0.00	0.00	0.00	5.26	0.00	31.58	19
16 LST	63.16	0.00	0.00	0.00	5.26	0.00	10.53	0.00	21.05	19
20 LST	82.35	11.76	0.00	0.00	0.00	0.00	5.88	0.00	0.00	17
ALL HRS	75.00	2.59	.86	1.72	2.59	.86	4.31	0.00	12.07	116

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 19.05, RAIN = 0.00, FOG AND RAIN = 4.76, SNOW = 0.00 OR HAIL = 0.00
 FOR 21 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(w)
MAR 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	50.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	40.00	20
4 LST	55.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	40.00	20
8 LST	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	20
12 LST	40.00	0.00	5.00	0.00	15.00	0.00	0.00	5.00	35.00	20
16 LST	52.63	0.00	0.00	0.00	5.26	0.00	10.53	5.26	26.32	19
20 LST	63.16	0.00	0.00	0.00	5.26	0.00	0.00	0.00	31.58	19
ALL HRS	51.69	0.00	.85	0.00	5.08	0.00	2.54	2.54	37.29	118

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 5.00, RAIN = 0.00, FOG AND RAIN = 40.00, SNOW = 0.00 OR HAIL = 0.00
FOR 20 DAYS OF OBSERVATIONS

(x)
APR 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	50.00	0.00	0.00	0.00	4.55	0.00	4.55	0.00	40.91	22
4 LST	40.91	0.00	0.00	0.00	4.55	0.00	4.55	0.00	50.00	22
8 LST	61.90	0.00	0.00	0.00	0.00	0.00	4.76	0.00	33.33	21
12 LST	27.27	13.64	0.00	4.55	4.55	0.00	9.09	13.64	27.27	22
16 LST	33.33	0.00	0.00	0.00	4.76	4.76	0.00	0.00	57.14	21
20 LST	66.67	0.00	0.00	0.00	0.00	0.00	4.76	0.00	28.57	21
ALL HRS	46.51	2.33	0.00	.78	3.10	.78	4.65	2.33	39.53	129

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 9.09, RAIN = 4.55, FOG AND RAIN = 45.45, SNOW = 9.09 OR HAIL = 0.00
FOR 22 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

	(y) MAY 1974									
	0	1	2	3	4	5	6	7	8	# OBS
0 LST	45.45	0.00	0.00	4.55	13.64	4.55	4.55	0.00	27.27	22
4 LST	36.36	0.00	4.55	0.00	18.18	9.09	9.09	4.55	18.18	22
8 LST	72.73	0.00	0.00	0.00	0.00	0.00	0.00	4.55	22.73	22
12 LST	54.55	0.00	0.00	9.09	4.55	0.00	4.55	4.55	22.73	22
16 LST	28.57	0.00	4.76	4.76	0.00	9.09	9.52	4.76	47.62	21
20 LST	55.00	0.00	0.00	5.00	0.00	5.00	5.00	5.00	25.00	20
ALL HRS	48.84	0.00	1.55	3.88	6.20	3.10	5.43	3.88	27.13	129

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 13.64, RAIN = 9.09, FOG AND RAIN = 9.09, SNOW = 0.00 OR HAIL = 0.00

FOR 22 DAYS OF OBSERVATIONS

	(z) JUN 1974									
	0	1	2	3	4	5	6	7	8	# OBS
0 LST	66.67	0.00	0.00	6.67	13.33	6.67	0.00	0.00	6.67	15
4 LST	53.33	0.00	0.00	20.00	20.00	0.00	6.67	0.00	0.00	15
8 LST	65.00	0.00	5.00	5.00	0.00	0.00	0.00	15.00	10.00	20
12 LST	38.89	11.11	0.00	5.56	5.56	0.00	11.11	11.11	16.67	18
16 LST	20.00	0.00	5.00	25.00	5.00	5.00	0.00	5.00	35.00	20
20 LST	40.00	5.00	10.00	10.00	10.00	10.00	0.00	0.00	15.00	20
ALL HRS	46.30	2.78	3.70	12.04	8.33	3.70	2.78	5.56	14.81	108

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 20.00, RAIN = 5.00, FOG AND RAIN = 0.00, SNOW = 0.00 OR HAIL = 0.00

FOR 20 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(aa)
JUL 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	63.64	0.00	4.55	18.18	0.00	0.00	0.00	4.55	9.09	22
4 LST	54.55	0.00	4.55	9.09	4.55	9.09	0.00	4.55	13.64	22
8 LST	81.82	0.00	9.09	0.00	0.00	0.00	0.00	0.00	9.09	22
12 LST	63.64	4.55	0.00	9.09	0.00	4.55	4.55	0.00	13.64	22
16 LST	45.45	9.09	0.00	9.09	9.09	4.55	9.09	0.00	13.64	22
20 LST	71.43	4.76	0.00	0.00	9.52	4.76	0.00	4.76	4.76	21
ALL HRS	63.36	3.05	3.05	7.63	3.82	3.82	2.29	2.29	10.69	131

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 0.00, RAIN = 9.09, FOG AND RAIN = 9.09, SNOW = 0.00 OR HAIL = 0.00
FOR 22 DAYS OF OBSERVATIONS

(bb)
AUG 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	59.09	4.55	4.55	9.09	4.55	0.00	0.00	9.09	9.09	22
4 LST	59.09	4.55	0.00	9.09	9.09	4.55	0.00	9.09	4.55	22
8 LST	68.18	4.55	4.55	0.00	0.00	0.00	0.00	4.55	9.09	22
12 LST	47.62	4.76	4.76	4.76	14.29	0.00	4.76	0.00	19.05	21
16 LST	22.73	4.55	4.55	4.55	9.09	9.09	18.18	4.55	22.73	22
20 LST	52.38	0.00	0.00	4.76	14.29	4.76	4.76	4.76	14.29	21
ALL HRS	51.54	3.85	3.08	5.38	10.00	3.08	4.62	5.38	13.08	130

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 0.00, RAIN = 0.00, FOG AND RAIN = 8.70, SNOW = 0.00 OR HAIL = 0.00
FOR 23 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(cc)
 SEP 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	71.43	0.00	4.76	14.29	4.76	0.00	4.76	0.00	0.00	21
4 LST	57.14	0.00	19.05	0.00	0.00	4.76	4.76	0.00	14.29	21
8 LST	85.00	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	20
12 LST	15.00	0.00	0.00	20.00	5.00	5.00	0.00	10.00	45.00	20
16 LST	20.00	0.00	15.00	0.00	5.00	0.00	10.00	0.00	50.00	20
20 LST	85.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	5.00	20
ALL HRS	55.74	1.64	8.20	6.56	2.46	1.64	3.28	1.64	18.85	122

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 19.05, RAIN = 14.29, FOG AND RAIN = 14.29, SNOW = 0.00 OR HAIL = 0.00
 FOR 21 DAYS OF OBSERVATIONS

(dd)
 OCT 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	65.22	4.35	8.70	4.35	0.00	0.00	0.00	0.00	17.39	23
4 LST	52.17	0.00	8.70	17.39	8.70	0.00	0.00	4.35	8.70	23
8 LST	82.61	0.00	0.00	4.35	4.35	0.00	0.00	0.00	8.70	23
12 LST	34.78	8.70	13.04	13.04	0.00	4.35	0.00	4.35	21.74	23
16 LST	56.52	4.35	8.70	0.00	4.35	0.00	0.00	4.35	21.74	23
20 LST	65.00	0.00	5.00	5.00	0.00	0.00	0.00	5.00	20.00	20
ALL HRS	59.26	2.96	7.41	7.41	2.96	.74	0.00	2.96	16.30	135

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 13.04, RAIN = 4.35, FOG AND RAIN = 8.70, SNOW = 0.00 OR HAIL = 0.00
 FOR 23 DAYS OF OBSERVATIONS

TABLE 1 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(ee)
NOV 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	52.63	0.00	0.00	5.26	5.26	0.00	5.26	0.00	31.58	19
4 LST	57.89	0.00	5.26	5.26	5.26	5.26	0.00	0.00	21.05	19
8 LST	68.42	0.00	5.26	5.26	5.26	0.00	0.00	0.00	15.79	19
12 LST	50.00	0.00	5.56	11.11	0.00	5.56	5.56	0.00	22.22	18
16 LST	29.41	0.00	0.00	0.00	17.65	0.00	0.00	0.00	52.94	17
20 LST	62.50	0.00	0.00	6.25	0.00	0.00	0.00	0.00	31.25	16
ALL HRS	53.70	0.00	2.78	5.56	5.56	1.65	1.85	0.00	28.70	108

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 5.26, RAIN = 10.53, FOG AND RAIN = 36.84, SNOW = 0.00 OR HAIL = 0.00

FOR 19 DAYS OF OBSERVATIONS

(ff)
DEC 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	75.00	0.00	8.33	0.00	0.00	0.00	0.00	8.33	8.33	12
4 LST	61.54	0.00	0.00	7.69	0.00	0.00	7.69	0.00	23.08	13
8 LST	92.86	0.00	0.00	0.00	7.14	0.00	0.00	0.00	0.00	14
12 LST	93.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67	15
16 LST	83.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.67	12
20 LST	70.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	10.00	10
ALL HRS	80.26	0.00	1.32	3.95	1.32	0.00	1.32	1.32	10.53	76

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 12.50, RAIN = 6.25, FOG AND RAIN = 12.50, SNOW = 0.00 OR HAIL = 0.00

FOR 16 DAYS OF OBSERVATIONS

TABLE 2

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(a)
JAN 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	63.46	0.00	3.85	0.00	1.92	1.92	0.00	3.85	25.00	52
4 LST	54.90	0.00	5.88	3.92	1.96	1.96	7.84	0.00	23.53	51
8 LST	59.62	7.69	3.85	0.00	5.77	0.00	3.85	1.92	17.31	52
12 LST	50.98	11.76	5.88	3.92	1.96	1.96	0.00	3.92	19.61	51
16 LST	56.86	1.96	5.88	0.00	1.96	0.00	5.88	1.96	25.49	51
20 LST	63.27	2.04	0.00	2.04	0.00	0.00	8.16	0.00	24.49	49
ALL HRS	58.17	3.92	4.25	1.63	2.29	.98	4.25	1.96	22.55	306

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 7.55, RAIN = 1.83, FOG AND RAIN = 24.53, SNOW = 0.00 OR HAIL = 0.00

FOR 53 DAYS OF OBSERVATIONS

(b)
FEB 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	79.59	6.12	0.00	2.04	2.04	0.00	4.08	0.00	6.12	49
4 LST	78.26	2.17	4.35	4.35	2.17	2.17	0.00	4.35	2.17	46
8 LST	89.13	0.00	0.00	0.00	2.17	0.00	0.00	0.00	8.70	46
12 LST	71.11	0.00	4.44	0.00	2.22	0.00	2.22	2.22	17.78	45
16 LST	71.74	2.17	2.17	2.17	4.35	0.00	6.52	0.00	10.87	46
20 LST	87.18	5.13	0.00	2.56	2.56	0.00	2.56	0.00	0.00	39
ALL HRS	79.34	2.58	1.85	1.85	2.58	.37	2.58	1.11	7.75	271

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 12.24, RAIN = 0.00, FOG AND RAIN = 4.08, SNOW = 0.00 OR HAIL = 0.00

FOR 49 DAYS OF OBSERVATIONS

TABLE 2 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(c)
MAR 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	54.90	0.00	1.96	0.00	1.96	0.00	1.96	1.96	37.25	51
4 LST	54.90	0.00	0.00	1.96	1.96	0.00	1.96	0.00	39.22	51
8 LST	52.94	1.96	3.92	3.92	3.00	0.00	1.96	5.88	29.41	51
12 LST	36.17	2.13	4.25	10.64	12.77	6.38	6.38	2.13	19.15	47
16 LST	42.86	0.00	4.08	4.08	14.29	0.00	12.24	4.08	18.37	49
20 LST	62.00	0.00	4.00	0.00	4.00	4.00	4.00	0.00	22.00	50
ALL HRS	50.84	.67	3.01	3.34	5.69	1.67	4.68	2.34	27.76	299

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 15.69, RAIN = 0.00, FOG AND RAIN = 31.37, SNOW = 1.96 OR HAIL = 0.00
FOR 51 DAYS OF OBSERVATIONS

(d)
APR 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	67.31	0.00	0.00	0.00	3.85	0.00	3.85	0.00	25.00	52
4 LST	67.31	0.00	0.00	0.00	1.92	0.00	3.85	0.00	26.92	52
8 LST	76.47	1.96	0.00	0.00	0.00	3.92	1.96	1.96	13.73	51
12 LST	53.85	9.62	1.92	3.85	5.77	1.92	5.77	5.77	11.54	52
16 LST	60.78	0.00	1.96	1.96	3.92	1.96	1.96	0.00	27.45	51
20 LST	79.59	2.04	0.00	0.00	2.04	2.04	2.04	0.00	12.24	49
ALL HRS	67.43	2.28	.65	.98	2.93	1.63	3.26	1.30	19.54	307

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 7.69, RAIN = 5.77, FOG AND RAIN = 21.15, SNOW = 3.85 OR HAIL = 0.00
FOR 52 DAYS OF OBSERVATIONS

TABLE 2 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(e)
MAY 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	54.93	1.41	4.23	4.23	8.45	4.23	2.82	4.23	15.49	71
4 LST	54.93	0.00	5.63	7.04	7.04	4.23	5.63	1.41	14.08	71
8 LST	63.93	3.28	3.28	1.64	0.00	1.64	4.92	1.64	19.67	61
12 LST	45.90	1.64	4.92	4.92	4.92	3.28	6.56	3.28	24.59	61
16 LST	41.67	3.33	0.00	5.00	5.00	3.33	6.67	1.67	28.33	60
20 LST	65.67	2.99	2.99	3.97	1.49	4.48	2.99	2.99	10.45	67
ALL HRS	54.73	2.05	4.35	4.86	4.60	3.58	4.86	2.56	18.41	391

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 15.49, RAIN = 4.23, FOG AND RAIN = 5.63, SNOW = 0.00 OR HAIL = 0.00
FOR 71 DAYS OF OBSERVATIONS

(f)
JUN 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	71.21	0.00	3.03	3.03	10.61	1.52	6.06	1.52	3.03	66
4 LST	60.61	0.00	9.09	7.58	7.58	1.52	7.58	1.52	4.55	66
8 LST	62.69	0.00	5.97	5.97	7.46	4.48	1.49	4.48	7.46	67
12 LST	39.68	6.35	7.94	11.11	6.35	4.76	6.35	4.76	12.70	63
16 LST	45.59	2.94	4.41	10.29	8.82	4.41	1.47	1.47	20.59	68
20 LST	65.67	3.03	3.03	6.06	4.55	3.03	1.52	4.55	7.58	66
ALL HRS	57.83	2.02	5.56	7.32	7.58	3.28	4.04	3.03	9.34	396

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
FOG = 5.63, RAIN = 2.82, FOG AND RAIN = 1.41, SNOW = 0.00 OR HAIL = 0.00
FOR 71 DAYS OF OBSERVATIONS

TABLE 2. (CONTD)
AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(g)

JUL 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	69.35	0.00	1.61	14.52	3.23	0.00	1.61	3.23	6.45	62
4 LST	69.35	0.00	4.84	4.84	3.23	4.84	0.00	1.61	11.29	62
8 LST	75.81	4.84	3.23	0.00	3.23	0.00	1.61	1.61	9.68	62
12 LST	45.16	9.68	3.06	4.84	6.45	1.61	4.84	1.61	17.74	62
16 LST	44.26	4.92	6.56	4.92	6.56	3.28	6.56	3.28	19.67	61
20 LST	75.00	1.67	3.33	3.33	3.33	3.33	3.33	3.33	3.33	60
ALL HRS	63.14	3.52	4.61	5.42	4.34	2.17	2.98	2.44	11.38	369

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 9.68, RAIN = 4.84, FOG AND RAIN = 4.84, SNOW = 0.00 OR HAIL = 0.00
 FOR 62 DAYS OF OBSERVATIONS

(h)

AUG 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	75.00	1.47	1.47	4.41	2.94	0.00	2.94	5.88	5.88	68
4 LST	67.65	1.47	1.47	7.35	7.35	2.94	1.47	5.88	4.41	68
8 LST	73.53	5.88	1.47	0.00	2.94	0.00	0.00	5.88	10.29	68
12 LST	47.76	8.96	1.49	2.99	8.96	1.49	5.97	4.48	17.91	67
16 LST	49.21	1.59	1.59	1.59	11.11	3.17	9.52	3.17	19.05	63
20 LST	67.27	0.00	0.00	3.64	7.27	1.82	7.27	3.64	9.09	55
ALL HRS	63.50	3.34	1.29	3.34	6.68	1.54	4.37	4.88	11.05	369

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 5.88, RAIN = 0.00, FOG AND RAIN = 11.59, SNOW = 0.00 OR HAIL = 0.00
 FOR 69 DAYS OF OBSERVATIONS

TABLE 2 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(i)

SEP 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	71.67	0.00	3.33	10.00	3.33	0.00	1.67	1.67	8.33	60
4 LST	70.00	0.00	10.00	5.00	3.33	1.67	3.33	0.00	6.67	60
8 LST	86.44	3.39	3.39	0.00	1.69	0.00	0.00	1.69	3.39	59
12 LST	45.61	10.53	1.75	7.02	5.26	3.51	1.75	3.51	21.05	57
16 LST	43.10	1.72	6.90	3.45	5.17	0.00	3.45	6.90	29.31	58
20 LST	73.68	3.51	5.26	1.75	3.51	0.00	1.75	1.75	8.77	57
ALL HRS	65.24	3.13	5.13	4.56	3.70	.85	1.99	2.56	12.82	351

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 15.00, RAIN = 8.33, FOG AND RAIN = 10.00, SNOW = 0.00 OR HAIL = 0.00

FOR 60 DAYS OF OBSERVATIONS

(j)

OCT 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	70.13	1.30	2.60	3.90	2.60	0.00	0.00	1.30	18.18	77
4 LST	62.34	0.00	2.60	9.09	3.90	3.90	0.00	2.60	15.58	77
8 LST	77.92	3.90	1.30	2.60	3.90	0.00	1.30	1.30	7.79	77
12 LST	36.36	14.29	10.39	11.69	0.00	1.30	5.19	5.19	15.58	77
16 LST	50.70	5.63	12.60	1.41	5.63	0.00	2.82	2.82	18.31	71
20 LST	62.50	1.56	9.38	4.69	1.56	1.56	1.56	1.56	15.63	64
ALL HRS	60.05	4.51	6.32	5.64	2.93	1.13	1.81	2.48	15.12	443

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 9.09, RAIN = 3.90, FOG AND RAIN = 12.99, SNOW = 0.00 OR HAIL = 0.00

FOR 77 DAYS OF OBSERVATIONS

TABLE 2 (CONTD)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER

(k)

NOV 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	53.03	4.55	3.03	6.06	4.55	1.52	7.58	1.52	18.18	66
4 LST	58.46	0.00	1.54	6.15	6.15	6.15	4.62	3.08	13.85	65
8 LST	61.19	4.48	1.49	1.49	2.99	0.00	2.99	2.99	22.39	67
12 LST	43.94	7.58	6.06	3.03	3.03	1.52	3.03	7.58	24.24	66
16 LST	43.75	0.00	1.56	0.00	12.50	0.00	4.69	3.13	34.38	64
20 LST	64.52	1.61	3.23	4.84	0.00	0.00	3.23	1.61	20.97	62
ALL HRS	54.10	3.08	2.82	3.59	4.87	1.54	4.36	3.33	22.31	390

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 11.94, RAIN = 5.97, FOG AND RAIN = 23.88, SNOW = 0.00 OR HAIL = 0.00

FOR 67 DAYS OF OBSERVATIONS

(1)

DEC 1972, 1973 & 1974

	0	1	2	3	4	5	6	7	8	# OBS
0 LST	58.54	0.00	7.32	0.00	0.00	0.00	2.44	2.44	29.27	41
4 LST	57.14	2.38	0.00	2.38	0.00	0.00	4.76	0.00	33.33	42
8 LST	67.44	4.65	0.00	0.00	2.33	0.00	0.00	0.00	25.58	43
12 LST	58.14	4.65	2.33	4.65	2.33	2.33	0.00	2.33	23.26	43
16 LST	60.00	0.00	5.00	7.50	2.50	0.00	0.00	0.00	25.00	40
20 LST	55.56	2.78	2.78	8.33	5.56	2.78	2.78	0.00	19.44	36
ALL HRS	59.59	2.45	2.86	3.67	2.04	.82	1.63	.82	26.12	245

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH

FOG = 17.39, RAIN = 4.35, FOG AND RAIN = 17.39, SNOW = 2.17 OR HAIL = 0.00

FOR 46 DAYS OF OBSERVATIONS

SECTION III
ANNUAL CLOUD COVER SUMMARIES

The entries of "ALL HRS" in Table 1 for the twelve months in the years of 1973 and 1974 are presented in Table 3(a) and Table 3(b), respectively. Also given is the annual cloud cover statistics. The percentage frequency of occurrence of weather events are given the same as in Table 1, except on an annual basis, rather than on a monthly basis.

Table 3(c) gives the same information as Table 3(a) and Table 3(b), however it is for the entire 32 month period.

Table 4 gives the estimated percent probabilities of cloud-free line-of-sight (CFLOS). These CFLOS data were computed using a model developed by Iver Lund^{2,3} of the Air Force Cambridge Research Laboratories. Lund's model for eighths of cloud cover is given in Table 5, it makes no distinction between cloud types, it was received by the author from Mr. Lund on 4 September 1974.

The results for an elevation angle of 50 degrees are given in Table 4. As can be seen by Table 5, there is little difference

in CFLOS for ± 20 degrees about the viewing elevation angle of 50 degrees. An increase in elevation angle will give an increase in percent probability of CFLOS and vice versa.

Table 4(a) and Table 4(b) give the estimated percent probabilities of CFLOS for 1973 and 1974, respectively. The data is separated by observation times for the months of the year, as well as averaged values for each observation time and each month.

Table 4(c) gives the same information as Table 4(a) and Table 4(b), however it is for the entire 32 month period.

As mentioned in Section I, the information presented in this report only gives an indication of the cloud climatology, due to short period of observation. This is evidenced in the variability of the CFLOS data for Table 4(a), Table 4(b) and Table 4(c).

TABLE 3 (a)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER
 ALL HOURS - 1973

	0	1	2	3	4	5	6	7	8	# OBS
JAN	79.10	5.08	5.08	.56	1.69	.56	3.39	1.13	3.39	177
FEB	82.58	2.58	2.58	1.94	2.58	0.00	1.29	1.94	4.52	155
MAR	50.28	1.10	4.42	5.52	6.08	2.76	6.08	2.21	21.55	181
APR	82.58	2.25	1.12	1.12	2.81	2.25	2.25	.56	5.06	178
MAY	61.85	2.31	3.47	4.05	3.47	4.62	5.20	1.16	13.87	173
JUN	77.11	.60	6.02	4.82	4.22	3.01	2.41	.60	1.20	166
JUL	78.57	0.00	4.76	2.38	2.38	0.00	3.17	2.38	6.35	126
AUG	71.76	.76	0.00	1.53	8.40	.76	6.87	3.82	6.11	131
SEP	67.57	2.70	2.70	6.31	6.31	0.00	1.80	.90	11.71	111
OCT	67.20	3.20	6.40	4.80	2.40	1.60	.80	2.40	11.20	125
NOV	28.21	5.98	5.13	5.13	6.84	2.56	5.13	7.69	33.33	117
DEC	46.51	4.65	6.98	4.65	2.33	0.00	4.65	0.00	30.23	43
ANN	68.09	2.44	3.86	3.39	4.10	1.72	3.57	2.02	10.81	1683

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 13.75, RAIN = 1.37, FOG AND RAIN = 8.25, SNOW = .69 OR HAIL = 0.00
 FOR 291 DAYS OF OBSERVATIONS

TABLE 3 (b)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER
 ALL HOURS - 1974

	0	1	2	3	4	5	6	7	8	# OBS
JAN	29.46	2.33	3.10	3.10	3.10	1.55	5.43	3.10	48.84	129
FEB	75.00	2.59	.86	1.72	2.59	.86	4.31	0.00	12.07	116
MAR	51.69	0.00	.85	0.00	5.08	0.00	2.54	2.54	37.29	118
APR	46.51	2.33	0.00	.78	3.10	.78	4.65	2.33	39.53	129
MAY	48.84	0.00	1.55	3.88	6.20	3.10	5.43	3.88	27.13	129
JUN	46.30	2.78	3.70	12.04	8.33	3.70	2.78	5.56	14.81	108
JUL	63.36	3.05	3.05	7.63	3.22	3.82	2.29	2.29	10.49	131
AUG	51.54	3.85	3.08	5.38	10.00	3.08	4.62	5.38	13.08	130
SEP	55.74	1.64	8.20	6.56	2.46	1.64	3.28	1.64	18.85	122
OCT	59.26	2.96	7.41	7.41	2.96	.74	0.00	2.96	16.30	135
NOV	53.70	0.00	2.78	5.56	5.56	1.85	1.85	0.00	28.70	108
DEC	80.26	0.00	1.32	3.95	1.32	0.00	1.32	1.32	10.53	76
ANN	54.23	1.89	3.07	4.92	4.61	1.82	3.28	2.66	23.62	1431

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 11.11, RAIN = 5.16, FOG AND RAIN = 20.24, SNOW = .79 OR HAIL = 0.00
 FOR 252 DAYS OF OBSERVATIONS

TABLE 3 (c)
 AMOS, MOUNT HALEAKALA, MAUI, HAWAII
 PERCENTAGE FREQUENCY OF OCCURRENCE OF EIGHTHS OF CLOUD COVER
 ALL HOURS, MAY 1972 - DEC 1974

	0	1	2	3	4	5	6	7	8	# OBS
JAN	58.17	3.92	4.25	1.63	2.29	.98	4.25	1.96	22.55	306
FEB	79.34	2.58	1.85	1.85	2.58	.37	2.58	1.11	7.75	271
MAR	50.84	.67	3.01	3.34	5.69	1.67	4.68	2.34	27.76	299
APR	67.43	2.28	.65	.98	2.93	1.63	3.26	1.33	19.54	307
MAY	54.73	2.05	4.35	4.86	4.60	3.58	4.86	2.56	18.41	391
JUN	57.83	2.02	5.56	7.32	7.53	3.23	4.04	3.03	9.34	396
JUL	63.14	3.52	4.61	5.42	4.34	2.17	2.98	2.44	11.38	369
AUG	63.50	3.34	1.29	3.34	6.68	1.54	4.37	4.88	11.05	389
SEP	65.24	3.13	5.13	4.56	3.70	.85	1.99	2.56	12.82	351
OCT	60.05	4.51	6.32	5.64	2.93	1.13	1.81	2.48	15.12	443
NOV	54.10	3.08	2.82	3.59	4.87	1.54	4.36	3.33	22.31	390
DEC	59.59	2.45	2.86	3.67	2.04	.82	1.63	.82	26.12	245
ANN	60.79	2.86	3.70	4.04	4.33	1.71	3.44	2.53	16.60	4157

PERCENTAGE FREQUENCY OF OCCURRENCE OF DAYS WITH
 FOG = 10.85, RAIN = 3.57, FOG AND RAIN = 13.46, SNOW = .55 OR HAIL = 0.00
 FOR 728 DAYS OF OBSERVATIONS

TABLE 4 (a)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

ESTIMATED PERCENT PROBABILITIES OF CLOUD-FREE LINE-OF-SIGHT - 1973

VIEWING ELEVATION ANGLE = 50 DEGREES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
0 LST (# OBS)	93.97 (30)	93.71 (28)	65.48 (31)	84.43 (30)	81.86 (29)	96.31 (29)	91.90 (21)	89.83 (23)	75.63 (19)	80.48 (23)	69.00 (19)	67.37 (8)	83.82 (290)
4 LST (# OBS)	95.24 (29)	92.12 (26)	61.68 (31)	88.33 (30)	83.34 (29)	91.48 (29)	97.19 (21)	93.13 (23)	86.47 (19)	81.30 (23)	62.56 (18)	69.75 (8)	84.51 (286)
8 LST (# OBS)	90.77 (30)	87.50 (26)	74.32 (31)	94.23 (30)	76.86 (29)	90.08 (25)	93.62 (21)	86.43 (23)	94.21 (19)	95.04 (23)	65.80 (20)	73.00 (7)	85.80 (284)
12 LST (# OBS)	91.41 (29)	88.00 (26)	76.19 (27)	93.17 (30)	64.66 (29)	89.36 (25)	78.24 (21)	81.17 (23)	90.11 (19)	80.30 (23)	44.10 (20)	69.71 (7)	80.07 (279)
16 LST (# OBS)	90.23 (30)	91.63 (27)	71.20 (30)	89.50 (30)	79.55 (29)	91.28 (29)	71.86 (21)	73.24 (21)	76.44 (18)	72.44 (18)	44.40 (20)	55.71 (7)	78.43 (280)
20 LST (# OBS)	90.21 (29)	97.00 (22)	77.35 (31)	96.61 (28)	90.14 (28)	96.14 (29)	98.43 (21)	84.67 (18)	78.18 (17)	94.93 (15)	55.20 (20)	64.33 (6)	87.12 (264)
ALL HRS (# OBS)	91.97 (177)	91.55 (155)	70.92 (181)	90.98 (178)	79.34 (173)	92.57 (166)	88.54 (126)	84.92 (131)	83.67 (111)	83.86 (125)	56.64 (117)	66.79 (43)	83.27 (1683)

TABLE 4 (b)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

ESTIMATED PERCENT PROBABILITIES OF CLOUD-FREE LINE-OF-SIGHT - 1974

VIEWING ELEVATION ANGLE = 50 DEGREES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
0 LST (# OBS)	42.18 (22)	85.76 (21)	56.95 (20)	58.45 (22)	66.05 (22)	85.87 (15)	83.91 (22)	81.14 (22)	92.38 (21)	81.13 (23)	65.47 (19)	84.92 (12)	73.01 (241)
4 LST (# OBS)	39.68 (22)	90.45 (20)	61.30 (20)	52.18 (22)	66.64 (22)	87.07 (15)	76.95 (22)	83.00 (22)	79.76 (21)	81.78 (23)	75.00 (19)	73.00 (13)	71.51 (241)
8 LST (# OBS)	60.18 (22)	94.45 (20)	53.50 (20)	66.47 (21)	75.32 (22)	78.55 (20)	89.64 (22)	84.59 (22)	97.90 (20)	89.17 (23)	81.68 (19)	97.14 (14)	80.24 (245)
12 LST (# OBS)	54.18 (22)	67.16 (19)	59.35 (20)	58.23 (22)	70.36 (22)	68.28 (18)	80.95 (22)	74.05 (21)	44.75 (20)	70.43 (23)	71.50 (14)	92.93 (15)	67.13 (242)
16 LST (# OBS)	42.14 (21)	73.53 (19)	65.26 (19)	44.35 (21)	46.62 (21)	55.65 (20)	75.23 (22)	59.55 (22)	45.70 (20)	73.96 (23)	46.24 (17)	83.83 (12)	58.79 (237)
20 LST (# OBS)	46.60 (20)	95.65 (17)	68.89 (19)	70.76 (21)	67.90 (20)	75.90 (20)	87.10 (21)	74.33 (21)	52.95 (20)	76.00 (20)	69.44 (16)	86.30 (10)	75.43 (225)
ALL MRS (# OBS)	47.55 (129)	84.47 (116)	60.77 (118)	57.96 (129)	65.59 (129)	74.30 (108)	82.43 (131)	76.14 (130)	75.75 (122)	78.81 (135)	68.56 (108)	86.72 (76)	71.03 (1431)

TABLE 4 (c)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

ESTIMATED PERCENT PROBABILITIES OF CLOUD-FREE LINE-OF-SIGHT, MAY 1972 - DEC 1974

VIEWING ELEVATION ANGLE = 50 DEGREES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
0 LST (# OBS)	72.06 (52)	90.31 (49)	62.14 (51)	73.44 (52)	75.73 (71)	88.18 (66)	86.60 (62)	86.57 (68)	86.47 (60)	79.84 (77)	74.48 (66)	68.73 (41)	79.28 (715)
4 LST (# OBS)	71.27 (51)	91.39 (46)	61.53 (51)	72.19 (52)	77.31 (71)	85.33 (66)	83.63 (62)	85.87 (68)	87.86 (60)	78.74 (77)	77.09 (65)	65.88 (42)	78.74 (711)
8 LST (# OBS)	77.83 (52)	90.52 (46)	66.16 (51)	70.78 (51)	76.26 (61)	83.21 (67)	86.90 (62)	84.51 (68)	93.78 (59)	88.61 (77)	73.81 (67)	74.88 (43)	81.95 (704)
12 LST (# OBS)	75.35 (51)	79.20 (45)	69.02 (47)	78.38 (52)	67.36 (61)	74.68 (63)	74.94 (62)	72.91 (67)	72.07 (57)	74.42 (77)	67.53 (66)	73.51 (43)	73.12 (691)
16 LST (# OBS)	70.43 (51)	84.15 (46)	68.90 (49)	70.78 (51)	64.82 (60)	72.19 (68)	71.05 (61)	70.51 (63)	63.28 (58)	75.63 (71)	60.02 (64)	73.65 (40)	70.16 (582)
20 LST (# OBS)	72.41 (49)	96.41 (39)	74.14 (50)	85.53 (49)	82.54 (67)	84.52 (66)	89.05 (60)	81.71 (55)	87.00 (57)	80.00 (64)	76.00 (62)	75.58 (36)	82.05 (654)
ALL HRS (# OBS)	73.24 (306)	88.52 (271)	66.92 (299)	77.11 (307)	74.29 (391)	81.36 (396)	82.02 (369)	80.45 (389)	81.84 (351)	79.58 (443)	71.49 (390)	71.97 (245)	77.56 (4157)

TABLE 5

PROBABILITIES OF CLOUD-FREE LINES-OF-SIGHT
 AS A FUNCTION OF ELEVATION ANGLE AND
 OBSERVED TOTAL SKY COVER, C (\approx K)

ELEV ANGLE α	K, SKY COVER (EIGHTHS)								
	0	1	2	3	4	5	6	7	8
90	1.00	.96	.89	.83	.77	.68	.55	.35	.08
80	.99	.96	.89	.82	.77	.67	.55	.35	.08
70	.99	.96	.88	.82	.76	.66	.54	.35	.08
60	.99	.95	.88	.82	.75	.65	.53	.34	.08
50	.99	.94	.87	.81	.73	.63	.52	.33	.08
40	.99	.93	.86	.78	.71	.60	.48	.32	.07
30	.98	.92	.83	.75	.66	.55	.43	.28	.06
20	.98	.88	.78	.68	.59	.48	.37	.24	.05
10	.97	.84	.72	.58	.47	.38	.28	.17	.03

APPENDIX

Table 6 is the weather data for 32 months. The column headings are; YR = year, JD = julian date, OT = observation time in local standard time (LST), CC = cloud cover in eighths coverage, WIND = wind direction in tens of degrees and wind speed in mph, RH = relative humidity and WX = weather during a JD where -0 = no weather, 1 = fog, 2 = rain, 3 = fog and rain during the same day, 4 = snow and 5 = hail. Missing data is depicted by CC = 9, WIND = 9999 and/or RH = 99. RH = 0 implies 100 percent relative humidity.

The wind direction conversion is as follows:

<u>Direction</u>	<u>Tens of Degrees</u>	<u>Direction</u>	<u>Tens of Degrees</u>
N	00	S	18
NNE	02	SSW	20
NE	05	SW	23
ENE	07	WSW	25
E	09	W	27
ESE	11	WNW	29
SE	14	NW	32
SSE	16	NNW	34

The computer also suppresses any leading 0's. For example, on julian date 23, 1973, Table 6(a), OT = 4, the wind of 8 implies a north wind at 8 mph.

TABLE 6 (b)

AMOS, MOUNT HALEAKALA, MAUI, HAWAII

WEATHER DATA FOR PER

YR	JD	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	WX				
73	32	0	0	0	9	4	0	710	8	2	0	510	19	12	0	504	16	16	0	510	12	20	0	520	99	-0
73	33	0	0	720	13	4	0	1114	13	11	0	514	10	12	0	510	15	16	0	0	20	20	0	2710	23	-0
73	34	0	0	3211	31	4	2	51A	40	8	9	9999	99	12	9	9999	99	16	0	0	24	20	0	510	22	1
73	35	0	0	9999	99	4	9	9999	99	8	9	9999	99	12	9	9999	99	16	0	3211	33	20	0	510	29	-0
73	36	0	0	1810	33	4	0	180A	38	8	0	1808	32	12	0	1806	30	16	1	902	14	20	9	9999	99	-0
73	37	0	0	506	21	4	0	510	43	8	0	0	4	12	0	513	6	16	0	510	8	20	9	9999	99	-0
73	38	0	0	711	8	4	0	1105	6	8	0	502	27	12	2	2	45	16	0	0	42	20	0	525	21	-0
73	39	0	0	719	25	4	0	519	28	8	0	520	33	12	0	510	50	16	4	528	56	20	3	528	48	1
73	40	0	0	738	58	4	7	730	86	8	8	924	99	12	0	918	47	16	0	512	42	20	0	9999	38	3
73	41	0	0	730	37	4	0	730	35	8	0	524	46	12	0	530	48	16	0	528	39	20	9	9999	99	-0
73	42	0	0	525	17	4	0	509	15	8	0	51A	37	12	0	720	99	16	0	920	37	20	0	918	34	-0
73	43	0	0	2312	7	4	0	2710	8	8	0	2512	10	12	0	2710	15	16	9	9999	99	20	9	9999	99	-0
73	44	0	0	15	17	4	0	720	32	8	0	726	8	12	0	918	38	16	0	1612	24	20	0	1413	13	-0
73	45	0	0	1410	15	4	0	1410	8	8	0	1406	10	12	0	1410	7	16	0	1414	9	20	0	1420	12	-0
73	46	0	0	2012	13	4	0	2312	99	8	0	1410	9	12	0	1410	10	16	0	1810	11	20	9	9999	99	-0
73	47	0	0	0	99	4	0	1408	2	8	0	1409	5	12	0	506	8	16	0	0	12	20	0	0	13	-0
73	48	0	0	507	18	4	0	710	22	8	0	1404	4	12	0	510	6	16	0	910	8	20	0	919	12	-0
73	49	0	0	1417	10	4	0	920	40	8	0	904	5	12	0	0	5	16	0	509	7	20	0	909	8	-0
73	50	0	0	1108	14	4	0	1110	10	8	0	1610	8	12	0	1806	12	16	0	1613	6	20	9	9999	99	-0
73	51	0	0	1820	14	4	9	9999	99	8	0	2309	15	12	0	18	40	16	8	16	60	20	4	20	53	-0
73	52	0	1	35	53	4	0	40	40	8	0	224	33	12	9	14	38	16	0	510	38	20	0	11	10	-0
73	53	0	0	19	14	4	3	341A	22	8	8	18	28	12	7	11	32	16	2	13	29	20	0	20	31	-0
73	54	0	1	203	32	4	1	7	25	8	0	4	27	12	4	8	40	16	0	0	37	20	0	4	36	-0
73	55	0	0	14	39	4	2	8	38	8	4	0	40	12	4	0	40	16	0	2710	43	20	0	8	40	-0
73	56	0	6	512	64	4	7	518	71	8	5	2308	43	12	8	1404	47	16	6	0	39	20	0	2711	38	-0
73	57	0	0	3201	30	4	0	3408	40	8	0	1406	30	12	0	1808	38	16	0	2311	35	20	0	2014	29	-0
73	58	0	0	290A	42	4	0	0	36	8	0	2510	14	12	0	2309	25	16	0	2302	32	20	0	3208	23	-0
73	59	0	0	0	18	4	0	3706	19	8	0	3206	9	12	0	0	15	16	0	0	17	20	0	0	20	-0
74	32	0	3	9999	98	4	8	9999	76	8	9	9979	99	12	9	9999	99	16	0	9999	65	20	0	9999	59	-0
74	35	0	4	9999	73	4	3	9999	61	8	0	0	82	12	8	0	88	16	4	9999	77	20	1	9999	71	1
74	36	0	1	9999	68	4	0	9999	63	8	0	0	62	12	8	0	81	16	8	9999	77	20	0	9999	69	-0
74	37	0	0	9999	62	4	0	9999	50	8	0	0	82	12	8	0	88	16	8	9999	84	20	0	9999	78	-0
74	38	0	0	9999	69	4	0	9999	66	8	0	506	68	12	8	506	76	16	9	9999	99	20	9	9999	99	-0
74	39	0	8	9999	98	4	8	9999	98	8	8	512	82	12	8	513	84	16	9	9999	99	20	9	9999	99	3
74	42	0	4	9999	85	4	0	9999	79	8	0	508	78	12	0	508	76	16	0	510	65	20	9	9999	99	-0
74	43	0	0	9999	64	4	0	9999	63	8	0	503	69	12	0	503	64	16	6	9999	65	20	0	9999	60	1
74	44	0	0	9999	60	4	0	9999	56	8	0	503	58	12	0	508	56	16	0	510	53	20	0	506	58	-0
74	45	0	0	9999	56	4	0	9999	48	8	0	0	35	12	0	0	52	16	0	0	42	20	0	9999	51	-0
74	46	0	0	9999	54	4	0	9999	56	8	0	1410	55	12	0	1426	52	16	6	1623	32	20	0	1625	38	-0
74	49	0	0	9999	41	4	0	9999	40	8	0	1624	42	12	0	1622	12	16	0	1620	35	20	0	1420	33	-0
74	50	0	0	9999	38	4	0	9999	44	8	0	2908	25	12	0	3406	33	16	0	3203	35	20	0	0	40	-0
74	51	0	0	9999	37	4	0	9999	37	8	0	0	18	12	0	0	22	16	0	1805	65	20	1	1405	56	-0
74	52	0	0	9999	50	4	0	9999	50	8	0	1605	65	12	2	504	58	16	0	905	58	20	0	1410	50	-0
74	53	0	0	9999	47	4	0	9999	53	8	0	1112	58	12	9	9999	99	16	0	1605	33	20	0	0	30	-0
74	56	0	8	1123	98	4	4	1130	84	8	0	1123	84	12	0	1124	55	16	0	1128	52	20	9	9999	99	1
74	57	0	0	1130	64	4	9	1620	58	8	0	1120	54	12	0	1416	53	16	0	1418	53	20	0	1418	45	-0
74	58	0	0	1420	49	4	0	1116	55	8	0	908	54	12	6	1404	55	16	8	708	40	20	6	517	58	-0
74	59	0	0	910	62	4	5	908	40	8	0	708	31	12	0	0	43	16	0	7	60	20	0	10	30	-0
74	60	0	0	235	33	4	0	0	38	8	0	0	22	12	8	0	64	16	0	6	64	20	0	3205	63	1

TABLE 6 (c)
AMOS, MOUNT HALEAKALA, MAUI, HAWAII

WEATHER DATA FOR MAR

YR	JD	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	OT	CC	WIND	RH	HX
73	60	0	0	2906	25	4	3	0	99	8	0	6	30	12	4	3204	38	16	0	910	42	23	0	910	27	-0
73	61	0	0	512	30	4	8	720	55	8	1	518	52	12	4	512	48	16	3	910	42	23	0	514	36	-0
73	62	0	0	718	27	4	0	720	30	8	0	520	38	12	0	520	41	16	9	9999	99	23	0	920	42	-0
73	63	0	0	912	25	4	0	520	23	8	0	518	29	12	0	518	37	16	0	920	39	20	0	518	44	-0
73	64	0	0	720	52	4	0	718	54	8	0	724	43	12	0	521	44	16	2	718	45	20	2	718	43	-0
73	65	0	0	722	52	4	0	720	53	8	0	922	31	12	5	598	30	16	7	930	50	20	5	926	46	-0
73	66	0	8	520	53	4	8	722	59	8	0	1108	95	12	8	1602	98	16	2	910	68	20	0	925	52	1
73	67	0	8	530	58	4	8	535	98	8	8	1140	85	12	6	1122	93	16	3	930	93	20	2	920	59	3
73	68	0	0	518	62	4	0	513	44	8	2	510	51	12	3	510	44	16	0	10	30	20	0	512	28	-0
73	69	0	2	720	45	4	0	724	49	8	3	535	52	12	3	515	55	16	4	922	62	20	6	921	65	1
73	70	0	8	1118	93	4	8	1415	93	8	7	716	93	12	4	908	68	16	3	710	66	20	0	0	64	3
73	71	0	0	1610	71	4	0	1115	79	8	6	1116	70	12	1	1636	60	16	0	1805	45	20	4	1804	50	4
73	72	0	4	2510	56	4	0	904	51	8	0	0	71	12	9	9999	99	16	4	0	58	20	0	12	50	-0
73	73	0	0	3214	52	4	0	3214	55	8	3	3410	63	12	3	2912	50	16	0	3220	50	20	0	20	49	-0
73	74	0	0	3210	45	4	0	3214	43	8	0	3204	46	12	6	0	50	16	0	0	56	20	0	0	39	-0
73	75	0	0	0	42	4	8	518	98	8	3	512	72	12	5	520	59	16	6	523	60	20	8	523	62	1
73	76	0	8	528	98	4	8	525	98	8	8	518	98	12	3	716	65	16	8	522	64	20	8	530	65	3
73	77	0	0	530	48	4	0	534	40	8	0	525	51	12	9	9999	99	16	6	528	63	20	5	937	47	-0
73	78	0	0	740	75	4	0	740	82	8	8	934	40	12	8	938	40	16	3	924	38	20	8	920	38	-0
73	79	0	8	930	40	4	8	1140	87	8	8	922	50	12	9	9999	99	16	4	710	55	20	0	913	53	1
73	80	0	0	910	52	4	0	510	57	8	0	514	16	12	9	9999	99	16	6	0	53	20	0	510	29	1
73	81	0	0	512	32	4	0	517	38	8	3	516	93	12	5	510	79	16	4	0	59	20	0	511	57	1
73	82	0	8	518	98	4	6	514	80	8	7	512	93	12	6	512	93	16	8	510	66	20	8	512	63	3
73	83	0	8	910	98	4	8	908	98	8	0	706	40	12	3	0	90	16	6	0	89	20	0	510	43	1
73	84	0	0	512	45	4	0	522	49	8	7	726	97	12	3	724	30	16	0	910	36	20	0	920	42	3
73	85	0	0	920	57	4	0	722	68	8	0	916	60	12	0	914	63	16	8	912	65	20	8	912	61	-0
73	86	0	0	715	21	4	0	710	44	8	0	710	50	12	0	506	44	16	4	506	46	20	0	214	23	-0
73	87	0	8	518	98	4	8	520	98	8	0	724	56	12	0	716	26	16	0	520	52	20	0	520	53	3
73	88	0	0	722	56	4	0	910	48	8	0	910	44	12	0	912	14	16	0	922	55	20	0	930	52	-0
73	89	0	8	920	98	4	8	930	98	8	8	918	97	12	3	510	93	16	4	0	60	20	6	920	62	3
73	90	0	8	3212	98	4	8	508	98	8	2	1125	97	12	2	914	72	16	0	910	64	20	0	912	56	3
74	63	0	0	0	50	4	0	0	50	8	8	910	54	12	7	910	65	16	0	905	70	20	8	918	70	1
74	64	0	8	920	98	4	8	1110	98	8	8	1422	88	12	8	924	87	16	6	1130	78	20	8	1120	70	3
74	65	0	8	1140	98	4	8	1135	98	8	8	1132	69	12	8	1122	70	16	4	1118	70	20	0	1420	56	3
74	66	0	0	1118	62	4	0	1125	63	8	8	920	67	12	0	1416	67	16	0	1410	65	20	0	1418	60	3
74	67	0	0	1418	63	4	8	1120	98	8	8	1424	67	12	0	1808	61	16	7	1403	65	20	0	505	48	3
74	70	0	0	0	52	4	0	2504	50	8	0	2302	41	12	4	2316	63	16	0	2320	51	20	0	2320	52	-0
74	71	0	8	2515	60	4	8	2905	68	8	8	2306	69	12	8	2310	74	16	8	2310	75	20	8	2310	75	3
74	72	0	8	3210	98	4	8	20	80	8	8	3418	71	12	8	2732	70	16	9	2905	73	20	9	2310	73	3
74	73	0	8	2910	98	4	8	2920	98	8	8	2712	71	12	8	0	70	16	8	2503	67	20	8	2305	55	3
74	74	0	8	2508	63	4	4	2506	58	8	0	0	55	12	0	2708	60	16	0	2310	58	20	0	2310	55	-0
74	77	0	8	3415	58	4	8	2510	70	8	8	0	68	12	8	0	78	16	8	3	77	20	8	205	77	3
74	78	0	6	2906	70	4	0	0	74	8	0	0	74	12	4	0	76	16	8	0	73	20	0	908	68	-0
74	79	0	0	0	65	4	0	0	53	8	0	0	52	12	8	0	76	16	8	0	72	20	8	0	64	-0
74	80	0	8	2510	60	4	8	2320	79	8	8	2308	76	12	4	2310	44	16	0	2712	44	20	0	2309	62	-0
74	81	0	7	2515	60	4	0	2318	58	8	0	2316	74	12	2	2322	71	16	6	2320	72	20	4	2305	73	-0
74	84	0	0	708	58	4	0	1610	65	8	0	1408	65	12	0	1402	54	16	0	1410	58	20	0	1405	54	-0
74	85	0	0	1608	50	4	0	2004	48	8	0	2010	58	12	0	0	56	16	0	0	60	20	0	2707	64	-0
74	86	0	0	2306	60	4	0	902	56	8	0	0	44	12	0	0	46	16	0	0	53	20	0	0	60	-0
74	87	0	0	704	58	4	0	0	66	8	0	0	62	12	0	2508	51	16	0	1810	56	20	0	2308	52	-0
74	88	0	0	2010	50	4	0	2308	50	8	0	2308	48	12	0	2708	59	16	0	1403	60	20	0	2710	56	-0

REFERENCES

1. L. Twist, Letter dated 19 November 1974.
2. I. Lund and M. Shanklin, "Photogrammetrically Determined Cloud-Free Lines-of-Sight Through the Atmosphere," J. Appl. Meteo., Vol. 11, 1972, p. 773.
3. I. Lund and M. Shanklin, "Universal Methods for Estimating Probabilities of Cloud-Free Lines-of-Sight Through the Atmosphere," J. Appl. Meteo., Vol 12, 1973, p. 28.

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