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London Weather Centre Memorandum No.11

Some Further Short Period Averages for
London Weather Centre

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In London Weather Memorandum No. 9 a series of 10 year averages were extracted for this office and although further information was available it did not cover the ten years 1958 to 1967.

Duration of rainfall was not regularly measured until 1962. The London Weather Centre Weekly Summary, which contains daily readings of relative humidity at 6 a.m. and 3 p.m. G.M.T. and the rainfall amount and duration between 6 a.m. and 6 p.m. G.M.T., was started in May 1964 and has been extended back to mid December 1962 to cover the winter 1962 - 63 period. It was therefore decided to use these figures to obtain some short period averages.

Although these periods are short (7 years for the duration of daily rainfall and 6 years for humidity and daytime rainfall (amount and duration)) they do give an answer to many enquiries received at this office and are usually acceptable provided the enquirer is informed of the short period of the averages.

Rainfall amounts are read at London Weather Centre in millimetres but are published in inches in the Weekly Summary. The definition of a 'trace' is less than 0.05 millimetres or 0.005 inches. On some days therefore the rainfall will be more than a trace when read in millimetres, and hence given a duration, but converts to less than 0.005 inches. On such occasions the rainfall is reported as a trace in inches but a duration is also quoted. In the table 'Number of days (6 a.m. to 6 p.m. GMT) with rainfall amount and duration in specified ranges' these days are in the column 'Less than 0.005 inches' (marked with an asterisk,*). The number of days when less than 0.05 millimetres of rain fell are in the box marked 'Trace' and no duration is attributed to such days.

From this table the following results may be noted:-

During the period 1963 to 1968 between 6 a.m. and 6 p.m. GMT

1. On 46% of the days there was no rainfall and on 70% of the days less than 0.005 inches fell between these hours.
2. On 80% of the days there was less than 1 hour's duration of rain, and on 87% less than 2 hours while only 2% had 6 hours or more.

The 'Distribution of duration of daily measurable rainfall' table shows that during the 7 years 1962 to 1968

On 70% of the days there was less than 1 hour's duration of rain, on 78% less than 2 hour's, on 93% less than 6 hour's but only 1% of the days had rain lasting 12 hours or more.

May 1969

Averages of Relative Humidity at 6 a.m. and 3 p.m. G.M.T.
and Rainfall amounts and duration between 6 a.m. and 6 p.m. G.M.T.
for the use with the London Weather Weekly Summary.
Period 1963 - 68 (6 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<u>Relative Humidity at 0600 and 1500 G.M.T.</u>													
At 0600 GMT %	83	82	79	82	80	80	81	84	85	85	83	83	82
At 1500 GMT %	75	70	56	56	54	56	55	57	60	67	71	75	63

Rainfall 0600 to 1800 G.M.T.

inches	0.57	0.55	0.86	1.16	1.21	1.45	1.12	1.16	1.33	1.10	0.95	1.12	12.58
millimetres	14.5	14.0	21.9	29.5	30.7	36.9	28.5	29.5	33.7	28.0	24.1	28.5	319.6
Duration(hours)	20.5	16.6	19.5	30.1	21.9	18.1	10.9	17.4	19.3	16.5	28.2	29.7	248.7

Number of days with rainfall equal to or greater than 0.01 inches ("rain working-days")

	7.5	7.8	7.7	10.5	10.5	9.5	6.7	10.0	9.5	7.7	9.3	11.3	108.0
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Average rainfall per "rain working-day"

inches	0.08	0.07	0.11	0.11	0.12	0.15	0.17	0.12	0.14	0.14	0.10	0.10	0.12
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Average duration of rainfall per "rain working-day"

hours	2.7	2.1	2.5	2.9	2.1	1.9	1.6	1.7	2.0	2.1	3.0	2.6	2.3
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N.B. (A "rain working-day" is defined for the purposes of these tables as "A day with 0.01 inches or more of rain falling between 0600 and 1800 G.M.T.")

Distribution of Rainfall Amounts and Duration between 6 a.m. and 6 p.m. GMT

Period 1963 - 8 (6 years)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
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Distribution of rainfall amounts (in inches) between 6 a.m. and 6 p.m. GMT

Inches/No. of days

1.30 and above													-
1.20 - 1.29						-	1		-				1
1.10 - 1.19						1	-		1			-	2
1.00 - 1.09						-	-		1			1	2
0.90 - 0.99						-	-		-			-	-
0.80 - 0.89						1	-		-			-	1
0.70 - 0.79			-		-	-	1	-	-			-	1
0.60 - 0.69			1		1	1	-	1	2	-	-	-	6
0.50 - 0.59			1	-	1	-	2	2	-	1	1	-	8
0.40 - 0.49		-	1	1	2	4	3	2	-	3	1	2	19
0.30 - 0.39	-	1	1	5	2	3	1	-	3	5	2	1	24
0.20 - 0.29	6	5	5	5	4	4	3	5	2	3	4	5	51
0.10 - 0.19	8	3	6	15	15	9	3	12	11	10	14	13	119
0.01 - 0.09	31	38	31	37	38	34	26	38	37	24	34	46	414
Trace	58	59	52	40	48	32	51	39	30	39	44	40	532
No rainfall	83	64	88	77	75	91	95	87	93	101	80	78	1012

Distribution of rainfall duration (in hours) between 6 a.m. to 6 p.m. GMT

Hours/No. of days

12.0														1
11.0 - 11.9										1				2
10.0 - 10.9										1		1	2	4
9.0 - 9.9										-		-	1	3
8.0 - 8.9	2	1	-	2	-					-		1	-	6
7.0 - 7.9	3	-	2	3	1	1		1	-	2	5	-	18	
6.0 - 6.9	-	1	-	3	1	2	1	3	-	3	-	3	17	
5.0 - 5.9	3	2	2	5	2	2	1	1	3	1	5	5	32	
4.0 - 4.9	4	3	2	3	3	1	1	3	4	-	3	2	29	
3.0 - 3.9	6	5	5	8	6	6	1	4	5	3	7	10	66	
2.0 - 2.9	4	6	7	11	12	6	6	6	6	10	12	10	96	
1.0 - 1.9	14	12	4	14	18	20	15	12	12	14	12	18	165	
0.1 - 0.9	18	22	24	18	27	23	19	36	28	17	17	22	271	
Nil	132	118	137	113	115	119	142	120	120	136	117	113	1482	

Number of days (6 a.m. to 6 p.m. GMT) with rainfall amount and duration in specified ranges
(6 years 1963 - 1968)

Duration (hrs)	Amount (ins)	Less *	0.01	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	TOTAL
		than 0.005	to 0.09	to 0.19	to 0.29	to 0.39	to 0.49	to 0.59	to 0.69	to 0.79	to 0.89	to 0.99	to 1.09	to 1.19	to 1.29	and above	
12.0		-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
11.0 to 11.9		-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	2
10.0 to 10.9		-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	4
9.0 to 9.9		-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	3
8.0 to 8.9		-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	6
7.0 to 7.9		-	1	1	9	4	2	-	1	-	-	-	-	-	-	-	18
6.0 to 6.9		-	1	4	3	1	3	3	-	1	-	-	-	-	-	-	17
5.0 to 5.9		-	6	10	7	4	2	1	2	-	-	-	-	-	-	-	32
4.0 to 4.9		-	6	12	3	4	2	-	2	-	-	-	-	-	-	-	29
3.0 to 3.9		-	22	26	9	4	3	1	-	-	-	-	-	1	-	-	66
2.0 to 2.9		-	54	27	7	4	3	1	-	-	-	-	-	-	-	-	96
1.0 to 1.9		4	128	23	6	-	2	1	-	-	-	-	-	-	1	-	165
0.1 to 0.9		58	195	14	4	-	-	-	-	-	-	-	-	-	-	-	271
TOTAL		62	414	119	51	24	19	8	6	1	1	-	2	2	1	-	

TRACE

470

NUMBER OF DRY DAYS

1012

Distribution of duration of daily measurable rainfall

Period 1962 - 68 (7 years)

Duration (Hours)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Nil	126	120	134	110	103	131	138	116	107	131	107	106	1429
0.1 - 0.9	22	28	27	26	37	24	26	42	38	29	27	32	358
1.0 - 1.9	16	13	12	10	24	20	21	16	20	13	13	19	197
2.0 - 2.9	9	12	12	19	16	9	10	11	11	15	17	14	155
3.0 - 3.9	14	8	12	13	8	8	8	9	7	8	9	11	115
4.0 - 4.9	4	3	2	3	9	1	6	9	6	5	9	8	65
5.0 - 5.9	5	3	3	5	9	9	2	6	7	7	4	7	67
6.0 - 6.9	8	2	3	4	4	5	2	3	4	3	6	2	46
7.0 - 7.9	4	6	5	6	-	1	1	-	2	3	6	6	40
8.0 - 8.9	3	1	-	6	3	-	2	2	5	1	2	7	32
9.0 - 9.9	2	1	2	2	-	1	-	1	-	-	2	-	11
10.0 - 10.9	1	-	2	3	2	-	-	1	1	-	3	1	14
11.0 - 11.9	3	-	-	1	-	-	1	-	-	2	2	2	11
12.0 - 12.9		-	-	-	1	-	-	-	-		2	-	3
13.0 - 13.9		1	-	1	-	-	-	-	-		-	1	3
14.0 - 14.9			-	-	1	-	-	-	-		-	1	2
15.0 - 15.9			1	-	-	-	-	-	-		-	-	1
16.0 - 16.9			-	1	-	-	-	1	-		-	-	2
17.0 - 17.9			-			1			-		1		2
18.0 - 18.9			-						-				-
19.0 - 19.9			-						-				-
20.0 - 20.9			1						1				2
21.0 - 21.9			-						1				1
22.0 - 22.9			1										1
23.0 - 23.9													
24.0													
Longest duration in a day (hours)	11.4	13.5	22.1	16.5	14.7	17.7	11.7	16.4	21.8	11.3	17.5	14.0	22.1