AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON:

UPPER AIR SECTION, CORRECTIONS AND ADDITIONS, March 1931.

I.—CORRECTIONS.

DIRECTION AND MEAN VELOCITY OF SURFACE AND UPPER WINDS.

Date and Time.	Station.	Dir. °	Speed m.p.h.
28th 6h	Malta Correct date 1st		
"	3000'	250	
13h	S.Farnboro' Surf.	270	13
"	1000'	275	17
"	2000'	285	21
16h	" A.C. Neph	280	
1st 13h	" C. "		100
13h	Renfrew 2000'	355	
17h	Plymouth Delete		
2nd 7h	Wy. Down 2000'	350	
12h	S.Farnboro 1000'	255	
12h	Sealand 4000'	195	
12h	Leuchars 5000'	275	46
17h	Bos. Down 1000'	250	
17h	Holyhead 8000	290	9
3rd 7h	Wy. Down Surf.	100	
12h	Holyhead 10,000'	270	
17h	Leuchars 1000'		14
"	3000'		13
4th 9h	Holyhead 14,000'	245	
7h	Sealand 2000'		38
6h	Leuchars 5000'	120	
9h	Sealand Time 8h		
13h	" 2 Nephs Read Holyhead		
17h	Leuchars 1000'		21
5th 8h	S.Farnboro' 5000		9
7h	" A.C. Neph		54
7h	Wy. Down 4000'		16
8h	Bos. Down 5000'	135	
12h	Cranwell 8000'	155	
12h	Cardington Surf.	100	14
"	1000'	105	17
"	2000'	115	19
17h	Malta 1000'		11
"	3000'	310	
"	5000'	310	
6th 8h	Wy. Down 6000'	75	
8h	Bos. Down Surf.	75	
12h	Cranwell 3000'	90	36
14h	Larkhill 4000'	95	
"	6000'	95	24
17h	Wy Down 3000'		50
"	5000'	Delete	
17h	U. Heyford 2000'	75	
7th 17h	S. Farnboro 2000'	75	
8th 12h	Renfrew Surf.	60	
9th 13h	Wy. Down 2000'	50	38
16h	Larkhill Time 14h		
12h	Leuchars Surf.	10	
"	1000'		25
18h	S.Farnboro' 4000'	30	
10th 12h	Felixstowe 2000'	330	
13h	Cranwell A.C. Neph		54
17h	S.Farnboro' 4000'	355	27
18h	Valentia 4000'	45	14
"	5000'	Delete	
11th 8h	Bos. Down 2000'		36
17h	Malta 3000'	240	19
12th 13h	Wy. Down 4000'		15
17h	Sealand 4000'	250	
13th 12h	U. Heyford Surf.		10
"	1000'		14
14th 6h	Sealand 16.000'	285	
15th 17h	Malta 2000'	250	
"	3000'	250	
"	4000'	Height 5000' 250	
16th 12h	Bos. Down 1000'	85	
"	2000'	100	
"	5000'	125	
17h	Plymouth 2000' }		
"	3000' } Delete		
"	4000' }		

Date and Time.	Station.	Dir. °	Speed m.p.h.
17th 7h	Wy. Down Neph		20
6h	Cranwell Surf.	105	
7h	Aldergrove 1000'		36
12h	Holyhead Surf.	140	
11h	Larkhill Type "d"		
18th 7h	Croydon 1000'		17
6h	Wy Down 1000'		19
6h	Sealand Surf.	150	12
12h	Croydon 2000'	170	
12h	Calshot 1000'		23
11h	Larkhill Type "d"		
16h	Plymouth Surf.	175	
19th 7h	Calshot Surf.		17
"	3000'	155	
6h	Cranwell 1000'	185	
7h	Renfrew Surf		5
10h	Croydon 2000'		25
12h	Renfrew 1000'	90	
17h	S.Farnboro' 4000'	170	
18h	Sealand Surf	115	
20th 7h	S.Farnboro' 8000'	170	
8h	Bos. Down 5000'		42
12h	Wy Down 2000'		24
12h	Bos. Down } See		
12h	Holyhead } Additions		
13h	Leuchars 1000'	140	
"	2000'		21
17h	Wy. Down 5000'		30
"	6000' Delete		
24th	Cranwell Read 7h 21st.		
1st	Renfrew 3000'	170	
21st 6h	Wy. Down 2000'		28
17h	Malta 1000'		27
"	3000'		10
"	7000'		21
"	10.000'		26
17h	Bos. Down 6000'		21
17h	Sealand Surf.		6
22nd 6h	Malta 2000'	340	29
13h	Sealand 1000'	140	
23rd 8h	Bos. Down 1000	80	
"	3000'	Height 280	10,000'
6h	Malta 3000'		11
"	7000'		17
"	10.000'		14
13h	Holyhead 1000'		11
18h	S.Farnboro 2nd A.C. Neph. Read C.C.		
24th 6h	Malta 1000'	70	
"	3000'		7
9h	Holyhead 5000'	55	
"	6000'	50	
7h	Leuchars Neph	30	
17h	Aldergrove 6000'	60	
25th 12h	Cardington 11.000'	Delete	
18h	Renfrew C. Neph	100	
26th 7h	Aldergrove Surf.	55	
"	2000'	175	
"	3000'	165	
"	4000'	165	
"	5000'	155	
12h	Cranwell 5000'	155	12
"	6000'	150	11
"	8000'	120	15
"	10,000'	145	15
"	12.000'	150	11
"	16.000'	160	23
12h	Renfrew 5000'		15
"	6000'	195	18
"	10.000'	170	
17h	S.Farnboro' 2000'	110	7
17h	Wy. Down Surf.	170	
17h	Bos. Down 4000	160	

Date and Time.	Station.	Dir. °	Speed m.p.h.
26th 16h	Plymouth 1000'		16
16h	Holyhead 24.500'	185	
17h	Leuchars 2000'	190	
17h	Malta 10.000'	330	
27th 8h	Bos. Down 1000'	180	
9h	Holyhead 1000'	200	
6h	Leuchars 1000'	275	13
7h	Aldergrove 2000	200	9
10h	Valentia Neph		45
12h	Bos. Down 19000'	240	
18h	Croydon Neph		50
16h	" "	C. 300 - 50	
18h	S.Farnboro' C. Neph	300	60
28th 6h	Malta 1000'	360	18
"	2000'	360	19
"	3000'	350	18
7h	Croydon Surf.		1
7h	S.Farnboro' 12.000'		15
8h	Bos. Down 8000'		10
6h	Cranwell 1000'	35	
"	2000'	20	
12h	Bos. Down 2000'	5	
17h	Leuchars 3000		15
29th 6h	Malta 1000'		22
17h	" 5000'		35
30th 7h	Croydon 5000		19
7h	Wy. Down Surf.	110	
13h	S.Farnboro' Neph.	210	
13h	Wy. Down 2000'	125	
17h	Cranwell 4000'	130	
"	6000'	160	

UPPER AIR TEMPERATURES.

Date and Time.	Station.	Observation
2nd 9h30m	Duxford	At 11.290': Wet bulb: -4.5°
3rd 13h45m	"	" 1010': Dry: -3.5°: Hum: 73%
5th 10h	"	" 6250': Wet -: 22°
13h30m	"	" 1080': " -: 34°: Hum: 84%
9th 9h	"	" 100': Dry -: 25°: - 96%.
10th 9h	"	" 1050': " -: 22°: - 100%
"	"	" 5780': Wet -: 3°
11th 9h45m	"	" 13.220': Dry -: -3°
12th 8h45m	"	" 2.990': Wet -: 22°: Hum. 92%
"	"	" 15.270': Dry -: -12°.
"	"	" 17.880': " -: -23°: Wet -: 23°.
"	"	" 20.050': " -: -32°: " -: -32°.
14th 10h15m	"	" 100': Wet -: 40°: Hum 84%.
"	"	" 17.610': Dry -: -23°: Wet: -23°
16th 8h30m	"	" 1730': Wet -: 30°: Hum. 85%
"	"	" 4630': Dry -: 25°
"	"	" 6200': Wet -: 20°: Hum. 61%
"	"	" 7870': Dry -: 20°
"	"	" 18050': Wet -: -10°.
19th 13h30m	"	" 971 mb: Height 1110'.
"	"	" 3180': Dry bulb: 45°: Hum 86%.
"	"	" 18450': Wet -: -5.5°.
20th 10h30m	"	" 1600': " -: 40°: Hum 36%.
21st 9h15m	"	" 4600': " -: 36°: - 92%.
23rd 9h15m	"	" 9730': " -: 16°.
25th 9h15m	"	" 16300': Dry -: -14°: Wet: -15°.
"	"	" 18610': " -: -25°: " -: -23°.
"	"	" 21120': " -: -31°: " -: -31°.
26th 13h30m	"	" 1100': Wet -: 48°: Hum 87%.
27th 13h30m	"	" 100': " -: 47.5°
15h45m	S.Farnborough	Haze top 895 mb.
30th 9h30m	Duxford	At 8210': Wet bulb: 11.5°: Hum 70%.
15h	S.Farnborough	Insert readings 908 mb: 3160': 29°: -: -

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON:

UPPER AIR SECTION, CORRECTIONS AND ADDITIONS, March 1931.

II.—ADDITIONS. (a) UPPER WINDS.

Place.	Cardington		Leuchars		Renfrew		Boscombe Down		Holyhead		Cranwell		Boscombe Down	
Date and Time.	12h 28th		6h 3rd		17h 16th		12h 20th b		12h 20th b		17h 21st		8h 30th	
Feet.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.
Surface.	255	12	10	4	125	8	155	12	150	3	235	8	125	14
1000	275	17	45	17	125	27	170	14	155	19	240	16	135	19
2000	295	14	70	10	130	32	160	16	155	24	245	21	145	24
3000	300	16			135	32	160	33	160	24	260	16	160	18
4000	295	15			135	31			165	31				
5000	295	19			145	26								
6000					165	27								

Place.	Malta		Malta		Malta	
Date and Time.	17h 1st		6h 6th		17h 10th	
Feet.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.	Dir. °	Speed m.p.h.
1000			110	15		
2000						
3000	260	38			290	8
5000	270	40			280	32
7000	270	39			280	33

II.—ADDITIONS. (b) UPPER AIR TEMPERATURES.

Station.	Pressure.	Height.	Temp. Dry.	Temp. Wet.	Rel. Hum. %	Station.	Pressure.	Height.	Temp. Dry.	Temp. Wet.	Rel. Hum. %
South Farnborough 11h. 14-3-31	mb.	Ft.	°F.	°F.		South Farnborough 11h 14-3-31 (Contd)	mb.	Ft.	°F	°F	
	1005	M.S.L.	–	–	–		466	19290	-26	-	-
	996.5	230	49	–	–		446	20300	-29	-	-
	976	800	46	-	–		428	21240	-33	-	-
	942	1750	41	–	-		410	22210	-36	-	-
	907	2750	37	-	-		393	23030	-42	-	-
	875	3700	34	-	-		377	24304	-45	-	-
	842	4700	28	-	-		361	25251	-51	-	-
	812	5630	25	-	–		346	26360	-53	-	-
	782	6700	21	-	-		331	27398	-58	-	-
	753	7570	18	-	–		317	28433	-61	-	-
	724	8580	16	–	-		302	29572	-63	-	-
	697	9590	12	–	–						
	671	10500	9	-	-						
	645	11.500	7	-	-						
	620	12500	2	-	-						
	596	13470	-2	–	-						
	572	14460	-8	–	-						
	549	12450	-12	-	-						
	528	16360	-17	–	–						
	507	17300	-20	-	-						
	486	18300	-22	-	-						

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M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, SUNDAY, 1st MARCH, 1931.

No. B. 25,301.
U.A.S. 4353.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

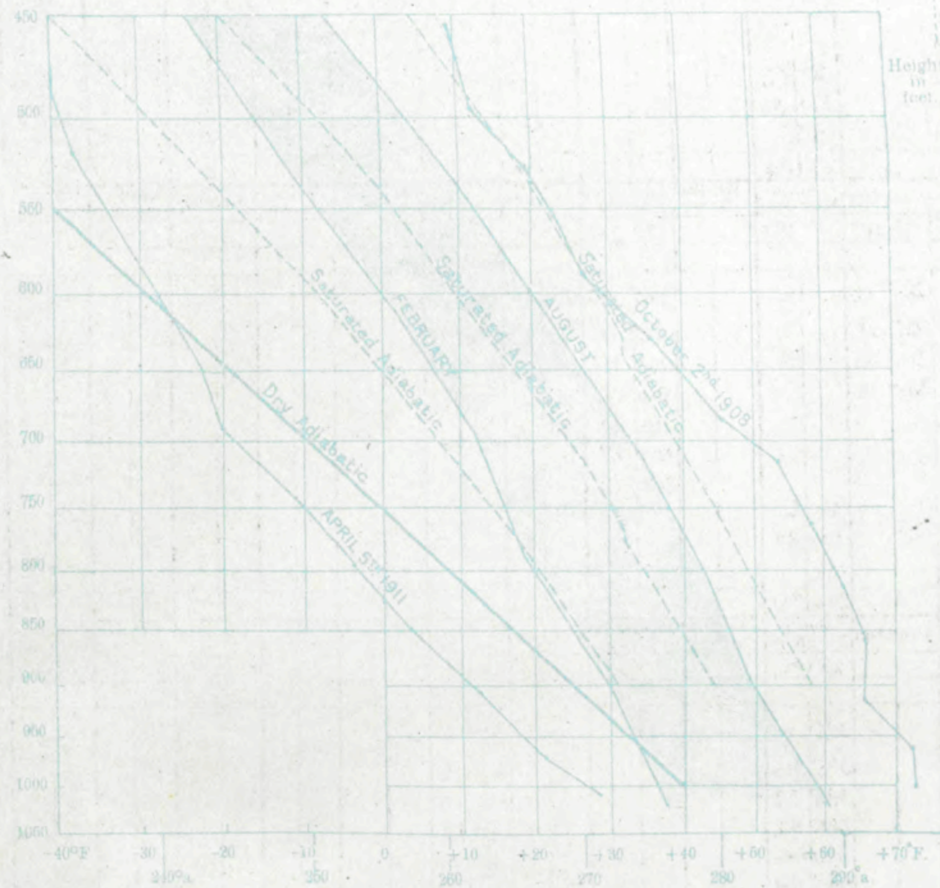
In Tables.

Directions are given in degrees, velocities in m.p.h.

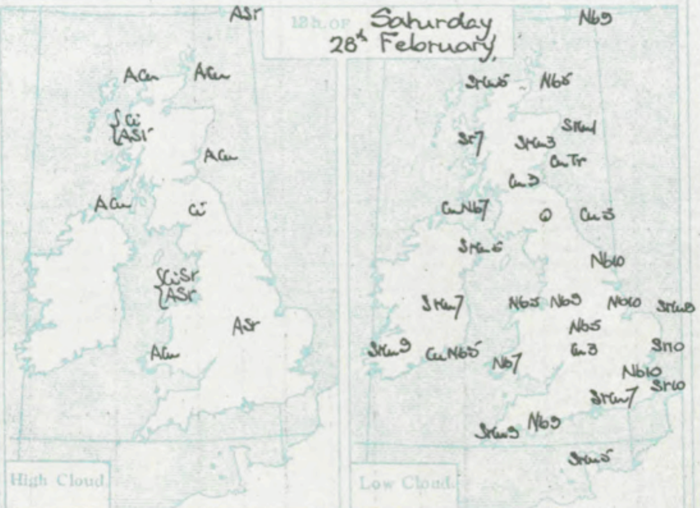
Speeds of high cloud are computed for an average height of 5 miles for cirro-type clouds (double lines) and 3 miles for Alto-type clouds (single line).

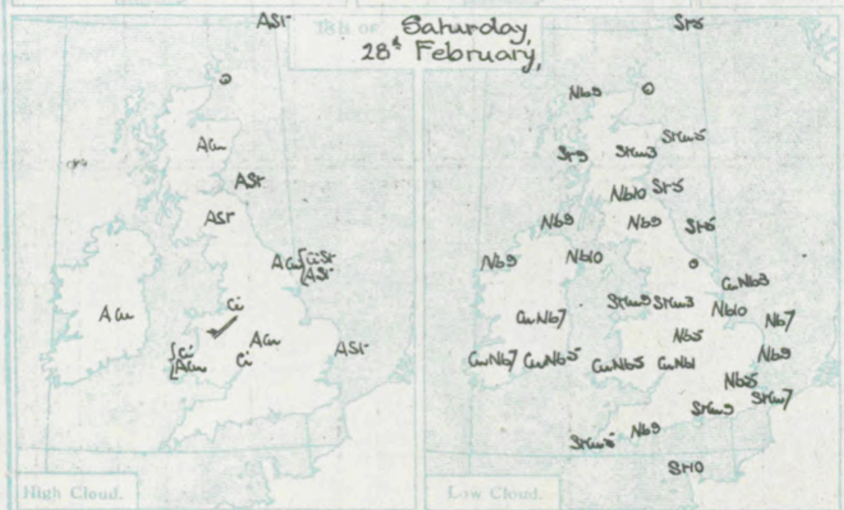
UPPER AIR TEMPERATURES.

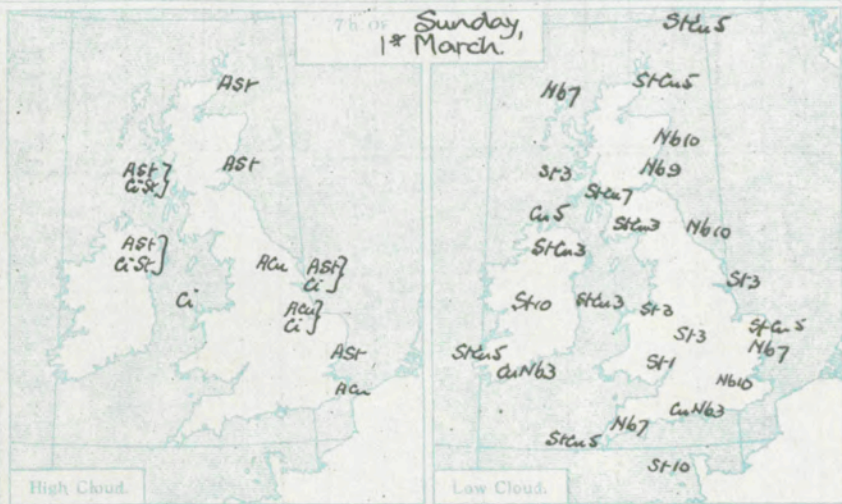
Saturday, 28th February, 1931.



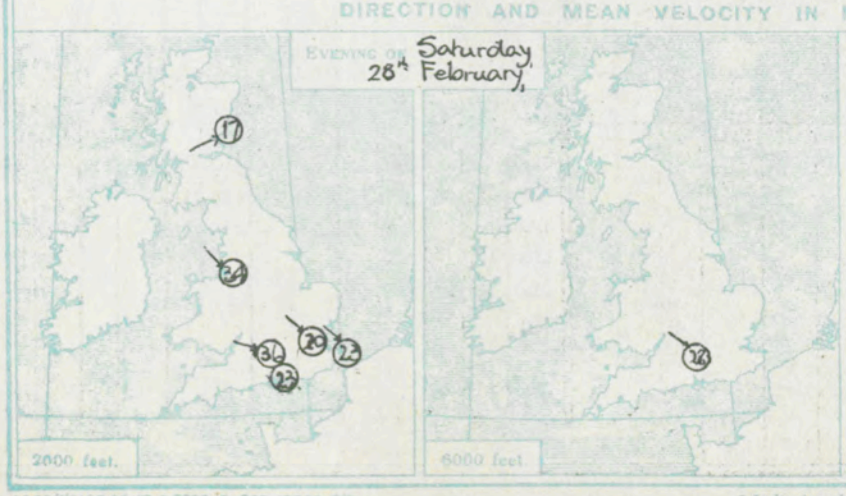
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

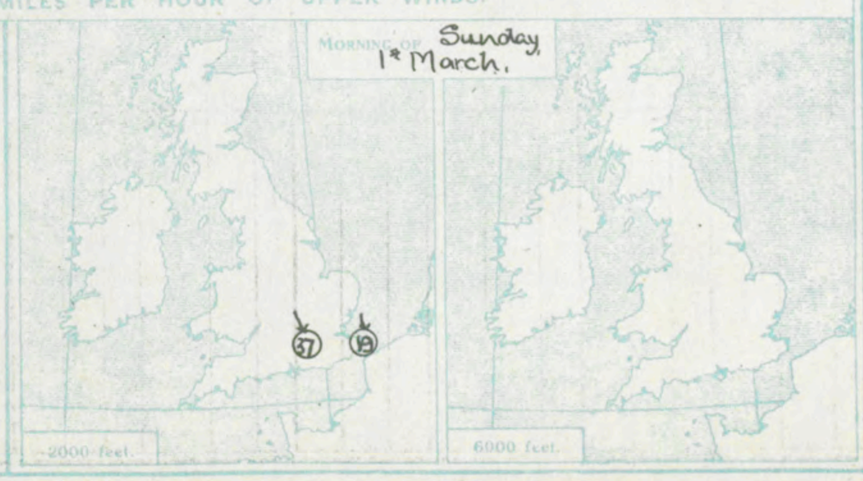






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.			13h 28m.				12h 28m.																		12h 23h				13h 28m.		12h 28m.								Time.
Type			b																						b														Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.			275	17			290	16																	350	26			280	12	265	15							Surf.
1000			285	21			290	26																	350	30			260	31	275	15							1000
2000							300	27																	260	26			260	33	290	14							2000
3000							305	27																					265	24									3000
4000																													270	17									4000
5000																													275	30									5000
6000																													285	33									6000
8000			16h	Ci																																			8000
10000			270	85																																			10000
12000			AGu																																				12000
Neph.			270	5/8																																			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.	17h 28m.		28m.				17h 28m.		17h 28m.		17h 28m.																17h 28m.		17h 28m.										Time.
Type.											b																												Type.
Feet																																							Feet
Surf.	260	12					280	16	270	21	280	10															330	14	230	10									Surf.
1000	285	21					275	30	285	27	290	17															320	31	240	18									1000
2000	305	20					280	36	290	23	305	23															310	34	250	17									2000
3000	305	15					280	34	285	27	300	28															315	45	275	10									3000
4000							295	32	285	27																	315	41	275	13									4000
5000							300	27																			315	36											5000
6000							300	28																															6000
8000			16h	Ci																							18h												8000
10000			300	85																							Ci												10000
12000			AGu																								220	25											12000
																											Ci St											
Neph.			260	36																							Calm												Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.			8h 15m								6h 15m																												Time.
Type.																																							Type.
Feet																																							Feet
Surf.			335	8							340	14																											Surf.
1000			345	25							350	26																											1000
2000			345	37							355	19																											2000
3000			345	42							360	12																											3000
4000			340	44							10	14																											4000
6000			340	49																																			5000
6000																																							6000
8000																																							8000
10000																																							10000
12000																									10h	Ci St			10h	Ci									12000
Neph																									320	7/8			350	8/8									Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.							LeHavre		Rome		Malta	
Time.							18h 28m.		18h 28m.		17h 28m.	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640							280	20	200	9	1,000'	
3,280							280	31	230	14	250	18
4,920									250	23	2,000'	
6,560											250	20
9,840											5,000'	
13,120											250	27
16,400												
19,680												

Place.	Palermo		Tripoli		Helder		Bizerta				Malta	
Time.	18h 28m.		18h 28m.		6h 10m		5h 15m				6h 28th	
											2000'	
1,640	-	-	280	8	320	38	270	20			290	40
3,280	280	13	260	17	210	41	270	35			3000'	
4,920	-	-	260	13	300	56	270	31			350	40
6,560	310	23									5000'	
9,840	280	20									250	27
13,120												
16,400												
19,680												

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. MONDAY, 2ND MARCH, 1931.

No. B. 25,302.

U.A.S. 4,354.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are drawn on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911 and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Table Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given. / 0—5 m.p.h. / 6—15 „ / 16—25 „ / 26—35 m.p.h. / 36—45 „ / 46—55 „ / 56—65 „ and so on.

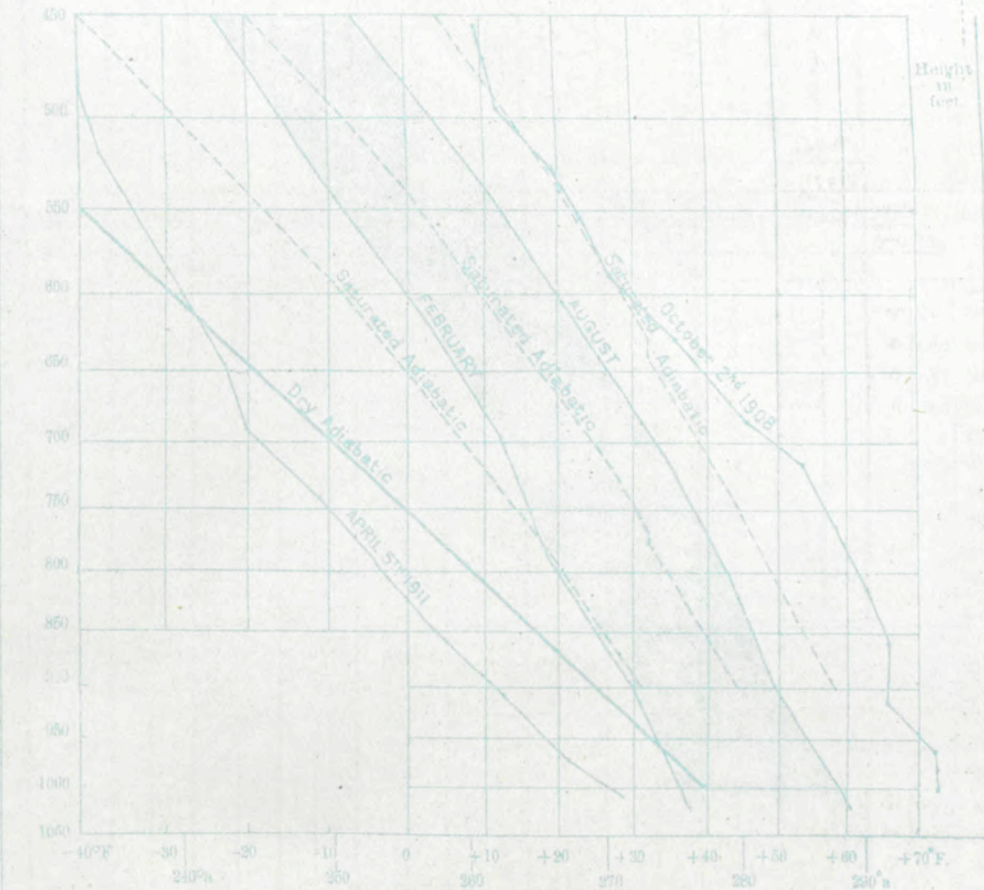
In Tables.

Directions are given in degrees, velocities in m.p.h.

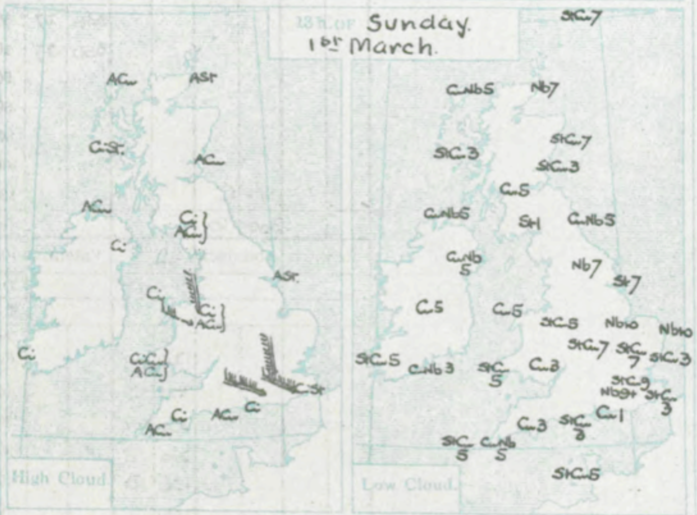
Speeds of high cloud are computed for an average height of .. miles for cirri type clouds (double lines) and 3 miles for alto type clouds (single line).

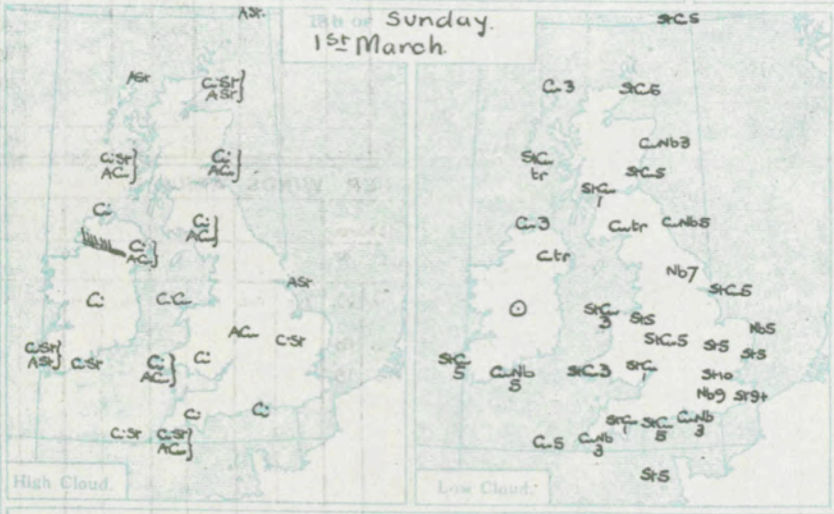
UPPER AIR TEMPERATURES.

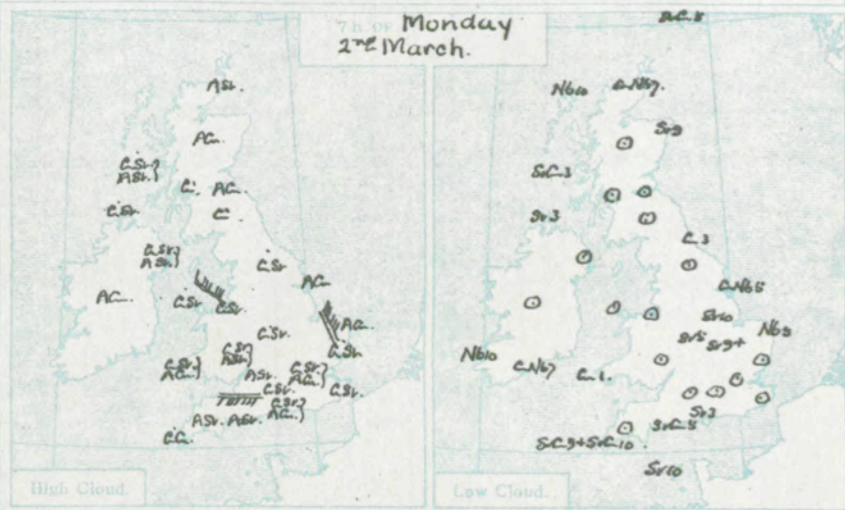
SUNDAY, 1ST MARCH, 1931.



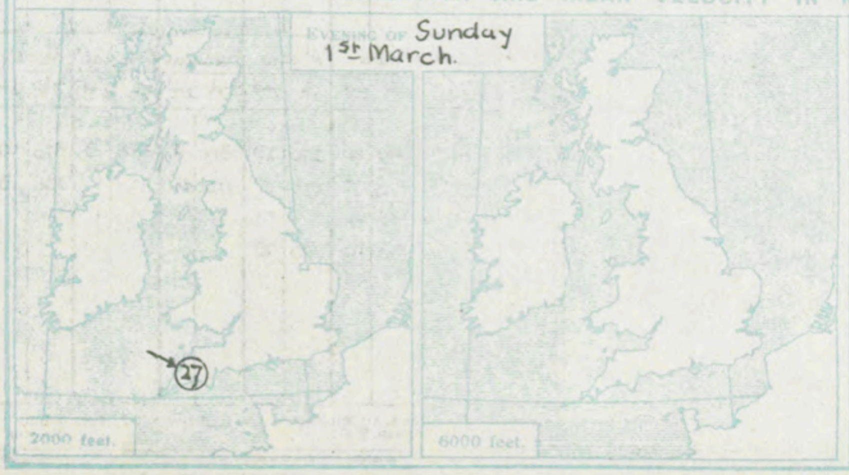
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

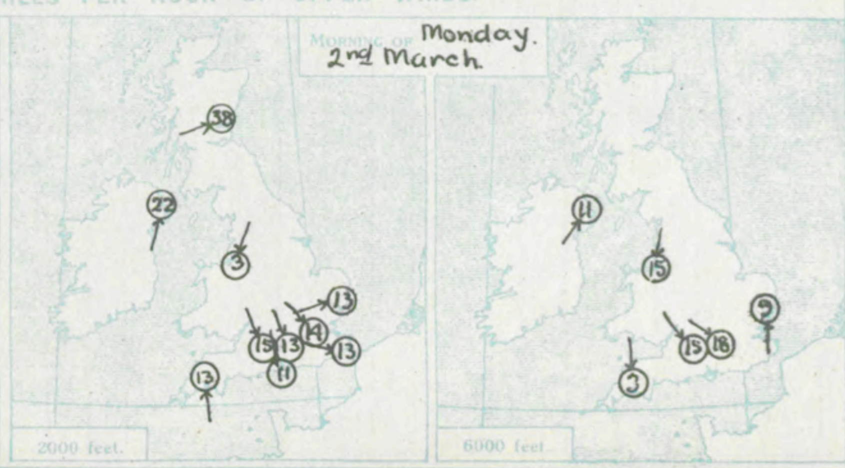






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	11h	1st.	12h	1st.			12h	1st			12h	1st			12h	1st					12h	1st	12h	1st			13h	1st	12h	1st	13h	1st			12h	1st			Time
Type																							b.				b.												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	300	16	290	20			290	20			315	24			275	12					300	25	315	20			325	30	345	15	335	6			340	20			Surf.
1000	315	23	305	19			295	36			336	27			295	12					306	23	325	24			330	41	360	23	360	15			345	22			1000
2000	320	28	306	23			300	21			340	28			310	21					310	36	335	30			325	31	5	35	305	23			350	33			2000
3000							300	30							315	29											325	40	10	47	5	27							3000
4000																													10	59	15	27							4000
5000																																							5000
6000																											13h	C.											6000
8000																											340	75					Kew						8000
10000																																							10000
12000			13h	C.							13h	C.															AC.						13h	C.					12000
Neph.			280	11							300	10															300	45					340	90					Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Calshot		Place.
Time.	10h	2nd.																					17h	1st													24h	1st	Time
Type.																																							Type
Feet																																							Feet
Surf.	250	6																					325	35													300	14	Surf.
1000	290	4																					325	48													330	28	1000
2000	280	9																					320	27													345	35	2000
3000	310	11																					320	45													345	27	3000
4000																							320	46													350	27	4000
5000																																							5000
6000																																							6000
8000																																							8000
10000			10h	2nd.											10h	2nd.																							10000
12000			C.												C.																18h	C.							12000
Neph			270	76											320	75															300	10							Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	7h	2nd	7h	2nd	7h	2nd	8h	2nd	7h	2nd	6h	2nd			7h	2nd							7h	2nd			7h	2nd	6h	2nd					7h	2nd			Time.
Type.					b.																																		Type.
Feet																																							Feet
Surf.	240	8	245	2	285	4	270	2	250	7	315	9			275	7							95	10			-	0	260	10					120	1			Surf.
1000	305	15	320	7	325	14	335	13	310	11	315	14			280	13							160	13			360	7	225	46					200	13			1000
2000	320	14	330	13	330	15	360	16	360	11	290	13			255	13							165	13			30	3	255	38					200	22			2000
3000	330	16	315	17	325	19			330	13	285	17	Shoebury-ness		215	15							135	11			50	8	245	35					210	19			3000
4000	320	19	320	17	335	17			325	14	290	19			215	11							150	7			35	11	245	23					190	13			4000
5000			320	15	330	18									190	15							190	5			20	9	245	35					215	12			5000
6000			305	18	320	15							C.	7h	185	9							360	3			20	15							225	11			6000
8000			320	24	300	23							270	75	230	7							15	5			345	15											8000
10000			10,000'		320	26									7,000'								7,000'				345	19											10000
12000			315	50	9,000'		10h	AC.	10h	AC.			10h	C.	C.	330	60											10h	C.							10h	C.			12000
Neph			16,000'		10h	C. 50	320	63	260	60			270	75	10h	C. 75											310	75	260	45					300	95			Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity	Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Genoa		Messina									
Time.	13h	1st	13h	1st								
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	360	19	280	16								
3,280	120	11	210	19								
4,920												
6,560												
9,840												
13,120												
16,400												
19,680												

Place.	Abbeville		Tours		Algiers		Barcelona		Compiègne		Lyons	
Time.	7h	2nd	7h	2nd	7h	2nd	7h	2nd	7h	2nd	7h	2nd
1,640	300	7	290	4	270	23	30	11	330	13	320	10
3,230	290	11	270	7	270	18	320	11	320	11	330	13
4,920	270	7	330	4	-	-			310	11		
6,560			320	16	270	23						
9,840												
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, TUESDAY, 3rd MARCH, 1931.

No. B. 25,303.
U.A.S. 4,355.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. *d* = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

——< No speed given.
—— 0— 5 m.p.h.
—— 6—15 "
—— 16—25 "
—— 26—35 m.p.h.
—— 36—45 "
—— 46—55 "
—— 56—65 "
and so on.

In Tables.

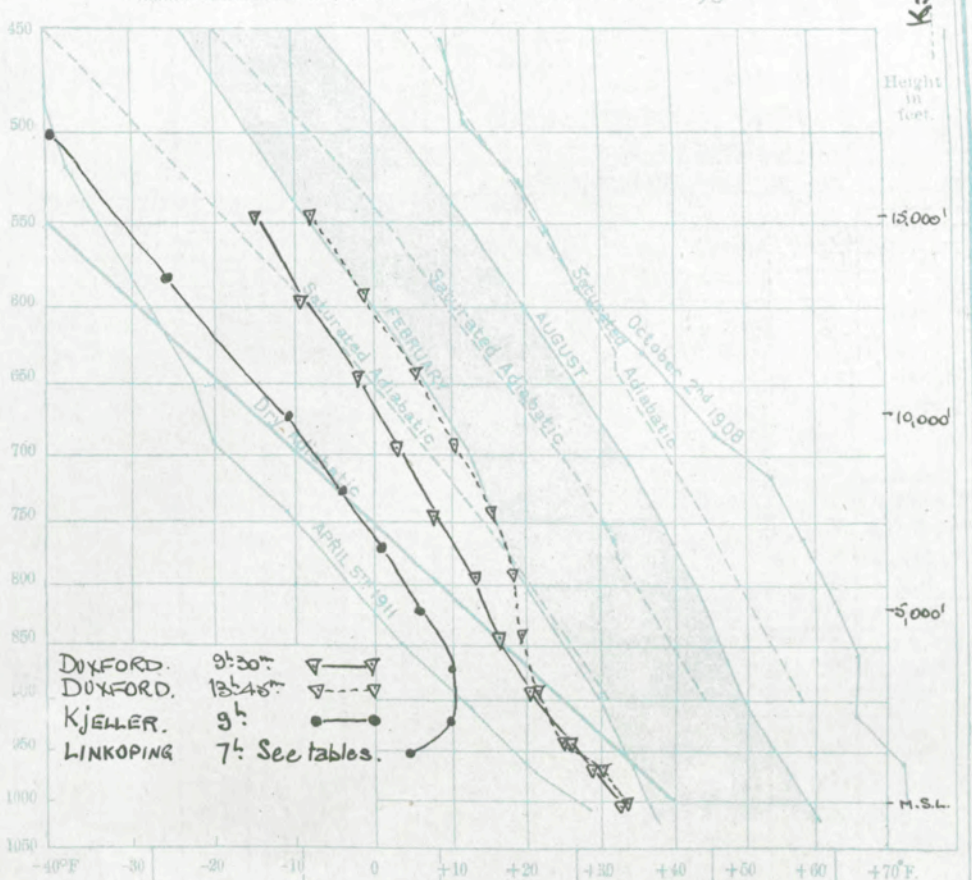
Directions are given in degrees, velocities in m.p.h.

Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

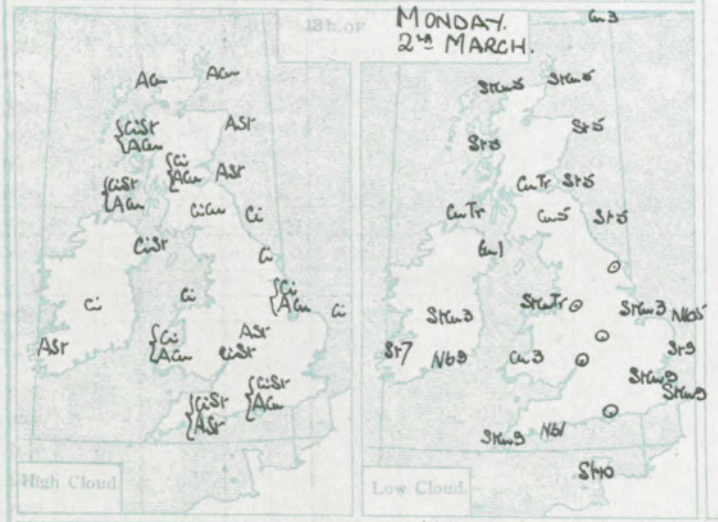
UPPER AIR TEMPERATURES.

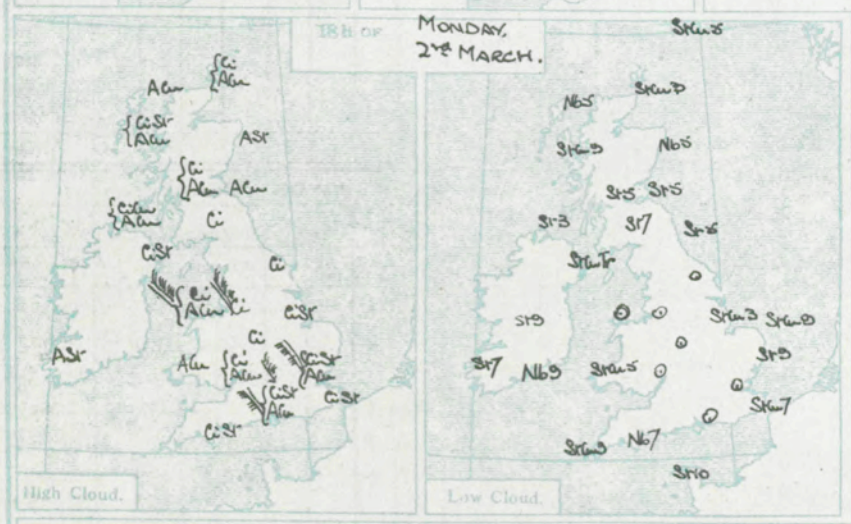
MONDAY, 2nd MARCH, 1931.

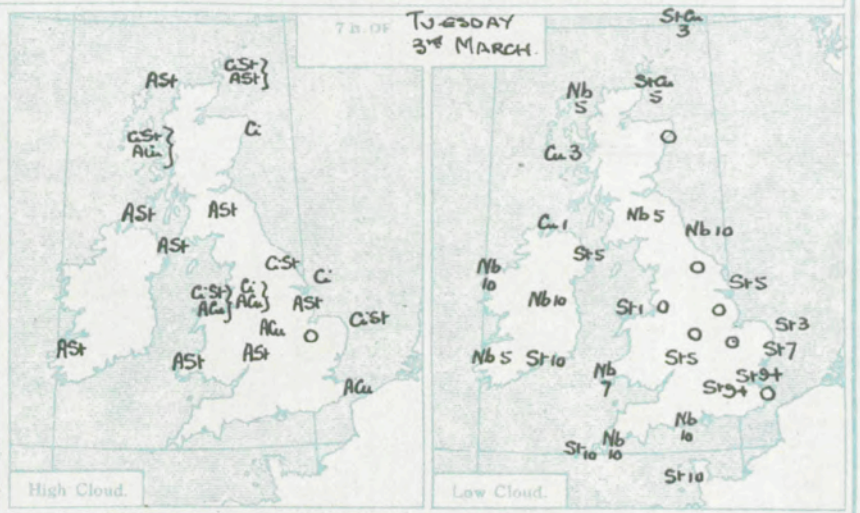
KJELLER.



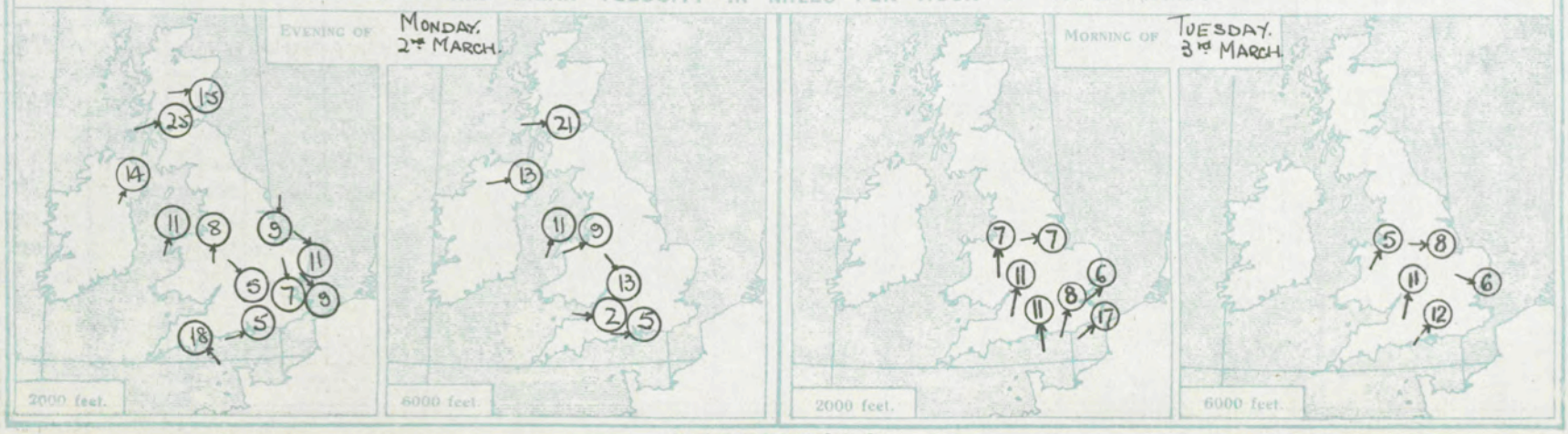
CLOUD FORMS, AMOUNTS AND MOVEMENTS.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.



⊖ *Indicates absence of cloud.*

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time	12h 2nd		12h 2nd		12h 2nd		12h 2nd		12h 2nd		13h 2nd				12h 2nd		12h 2nd		12h 2nd	
Type	b		b		b						b									
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	260	1	265	6	240	6	260	3	240	7	270	7			215	3	300	5	290	6
1000	260	12	265	9	240	7	270	5	270	7	245	10			255	8	350	14	260	7
2000	270	13	280	8	250	4	295	5	280	8	230	11					20	12	280	8
3000			295	7	315	6	340	5	275	6	240	12								
4000			275	7	270	8	300	5	280	6	245	20								
5000							295	9	235	13										
6000							320	13	230	13										
8000							10,000'		230	9										
10000							305	29	245	29										
12000			13h	Ci	13h	Ci	14,000' 300	37	13h	Ci										
Neph.			300	100	300	55	13h 320	Ci 100	300	100										

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Larkhill		Aldergrove		Valentia	
Time	12h 2nd		12h 2nd		12h 2nd		12h 2nd		12h 2nd		12h 2nd		13h 2nd					
Type			b						b		b		d					
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	315	5	135	12	195	13	–	0	245	12	245	16	290	2				
1000	290	8	135	19	200	17	215	6	260	26	240	28	305	6				
2000	300	10	145	19	200	15	185	5	260	44	240	17	300	5				
3000	305	9			205	10	240	3	265	44	250	27	300	4				
4000					210	11	150	1	270	48	250	18	275	4				
5000					215	10	260	3			255	20	300	7				
6000					210	9	255	3			255	23	325	10				
8000					265	7	10,000'				12h	Ci	315	11				
10000					300	22	330	15			320	90	255	29				
12000					16,000' 305	49	14,000' 315	54	13h	Ci	Ac		300	33				
Neph.					13h 290	Ci 100			290	90	320	27						

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time	17h 2nd		17h 2nd		17h 2nd		17h 2nd		17h 2nd		17h 2nd				17h 2nd		17h 2nd			
Type											b									
Feet Surf.	340	2	280	2	320	3	–	0	230	5	330	12			285	5	260	5		
1000	335	5	300	5	325	3	350	5	205	3	325	8			295	9	295	7		
2000	350	7	275	5	270	5	245	4	245	5	310	8			305	11	5	9		
3000	340	7			255	7	250	5	355	5	270	11			300	11	5	8		
4000					285	9	285	5	270	6	255	13								
5000					315	7	330	3	245	3										
6000	Kew				310	5	285	2	275	5										
8000	18h	Ci Cu	17h 10m	Ci	11,000'		7,000' 270	4	10,000' 330	24			WORTHY DOWN							
10000	310	80	300	105	300	26	18h 300	Acu 48	18h 310	Acu 60										
12000	As		16h	Ci	16h	Ci	16h	Acu	16h	Ci			18h	Acu						
Neph	310	51	300	115	300	70	300	54	310	100			310	54						

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia			
Time	16h 2nd		16h 2nd		17h 2nd		17h 2nd		18h 2nd		17h 2nd		16h 2nd					
Type			b															
Feet Surf.	285	2	120	12	200	10	230	2	335	10	250	6	230	6				
1000	290	2	130	17	195	13	200	5	255	19	255	21	240	9				
2000	310	5	135	18	210	11	180	5	260	15	250	25	235	14				
3000	345	11	145	13	225	10	195	6	270	18	250	29	235	14				
4000	350	6	175	13	230	13	240	9	275	21	255	28	250	17				
5000	310	11			220	15	245	10			270	22	250	18				
6000	325	13			225	11	255	9			275	21	260	13	Sealand			
8000	10,000'				240	9	12,000'						7,000'		18h	Ci		
10000	315	21			13,000' 305	39	305	34					265	11	300	85		
12000	16h	Ci			18h 290	Ci 80	16h	Ci	16h	Ci	16h	Acu	16h	Ci	Ac			
Neph.	300	100					300	90	290	65	310	36	300	75	300	60		

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Lympne		Lympne		Croydon		Felixstowe		Cranwell		Cardington	
Time	7h 3rd		7h 3rd		7h 3rd		8h 3rd		10h 3rd		6h 3rd		10h 3rd		7h 3rd		6h 3rd			
Type					b				b				b							
Feet Surf.	165	5	110	2	10	3	95	10	55	7	35	1	125	9	calm		230	4		
1000	145	5	145	11	145	19	135	17	125	4	calm		145	12	270	7	255	9		
2000	215	8	180	11	160	15	150	20	165	12	235	17	175	12	235	6	270	7		
3000	215	7	165	8	150	12	155	19	165	7	235	11	155	9	270	3	250	5		
4000			175	10	150	7	150	13	185	3	275	8	175	10	325	3	250	7		
5000			180	12	210	14	205	9	215	7	310	7	230	10	350	3	270	8		
6000			230	12	270	11			230	11			255	15	320	6	275	8		
8000			280	21	290	22			260	15			290	25	285	19				
10000			295	29	(7000')				(7000')						295	24				
12000															285	26				
Neph																				

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia	
Time	7h 3rd				9h 3rd		7h 3rd											
Type																		
Feet Surf.	105	1			95	10	140	5										
1000	160	11			125	10	180	14										
2000	200	11			125	13	190	7										
3000	200	9			135	17	160	5										
4000	165	7			180	14	160	8										
5000	165	7			235	9	190	5										
6000	175	9			250	5	225	5										
8000							280	11										
10000					Sealand		265	17										
12000					10h	Acu	10h	Ci										
Neph					270	54	290	80										

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station	Pressure (mb.)	Height above M.S.L. (Feet)	Temp. Dry (°F.)	Temp. Wet (°F.)	Relative Humidity (%)
DUXFORD. 9h 30m 2/3/31.	1013	M.S.L.	—	—	—
	1010	100	32	31	90
	973	1100	28	27	88
	950	1700	26	25	83
	900	3100	20	18	73
	850	4580	16	15	-
	800	6100	12	10	-
	750	7730	7	5.5	-
	700	9470	2	1	-
	650	11290	-3.5	-4	-
	600	13240	-10	-10	-
	550	15330	-16.5	-16.5	

StCu 10/10, 900ft to 930mb. ASt 3/10, not reached. Haze top not defined.

Station	Pressure (mb.)	Height above M.S.L. (Feet)	Temp. Dry (°F.)	Temp. Wet (°F.)	Relative Humidity (%)
DUXFORD. 13h 45m 2/3/31.	1013	M.S.L.	—	—	—
	1003	100	33	32	91
	983	1060	29.5	29	94
	950	1940	25.5	24.5	89
	900	3340	21	20	87
	850	4810	18	16.5	-
	800	6350	17	16	-
	750	8000	14.5	13	-
	700	9750	9	8.5	-
	650	11600	4.5	4	-
	600	13580	-2	-2	-
	550	15690	-9	-9	-

StCu 10/10, 987 to 870mb. ACu 9/10, not reached. Rime formed 987 to 870mb. Haze top not defined.

Station	Pressure (mb.)	Height above M.S.L. (Feet)	Temp. Dry (°F.)	Temp. Wet (°F.)	Relative Humidity (%)
LINKOPING. 7h 2/3/31	1004	M.S.L.	—	—	—
	965	?660	16	-	55
	927	1640	?	-	55
	883	3280	?10	-	55
	825	4920	5	-	55
	773	6560	0	-	55
	676	9840	-12	-	55

Inversion base 992mb; amount, 4°F

Station	Pressure (mb.)	Height above M.S.L. (Feet)	Temp. Dry (°F.)	Temp. Wet (°F.)	Relative Humidity (%)
KJELLER. 9h 2/3/31	1005	M.S.L.	—	—	—
	961	660	3	-	45
	923	1640	9	-	45
	879	3280	9	-	45
	825	4920	5	-	45
	772	6560	0	-	45
	722	8200	-6	-	45
	675	9840	-12	-	45
	586	13120	-26	-	45
	502	16400	-40	-	45

Inversion base 989mb; amount, 11°F.

UPPER WINDS ABROAD.

Place	Turin		Padua		Cheb		Ancona		Nancy		Malta	
Time	13h 2nd		13h 2nd		13h 2nd		13h 2nd		17h 2nd		17h 2nd	
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	-	-	-	-	-	-	-	-	120	13	1000'	
3,280	-	-	-	-	330	18	340	8	230	11	310	54
4,920	290	8	340	6	320	16	-	-	210	13	2000'	
6,560	300	9	340	8	330	24	340	5			310	52
9,840	320	19	340	9			230	3			3000'	
13,120											310	59
16,400												
19,680												

Place	Milan		Havre		Naples		Warsaw		Abbeville		Malta	
Time	18h 2nd		18h 2nd		7h 3rd		7h 3rd		7h 3rd		6h 3rd	
1,640	340	33	190	7	-	-	320	5	-	-	1000'	
3,280	360	21	190	11	-	-	320	16	230	8	310	23
4,920	30	15	230	4	20	7	320	26	210	3	2000'	
6,560					-	-	320	37			310	25
9,840					70	26	320	43			3000'	
13,120											310	31
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.
G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, WEDNESDAY, 4th MARCH, 1931.

No. B. 25,304.
U.A.S. 4.356.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given	26–35 m.p.h.
0–5 m.p.h.	36–45 "
6–15 "	46–55 "
16–25 "	56–65 "
	and so on.

In Tables.

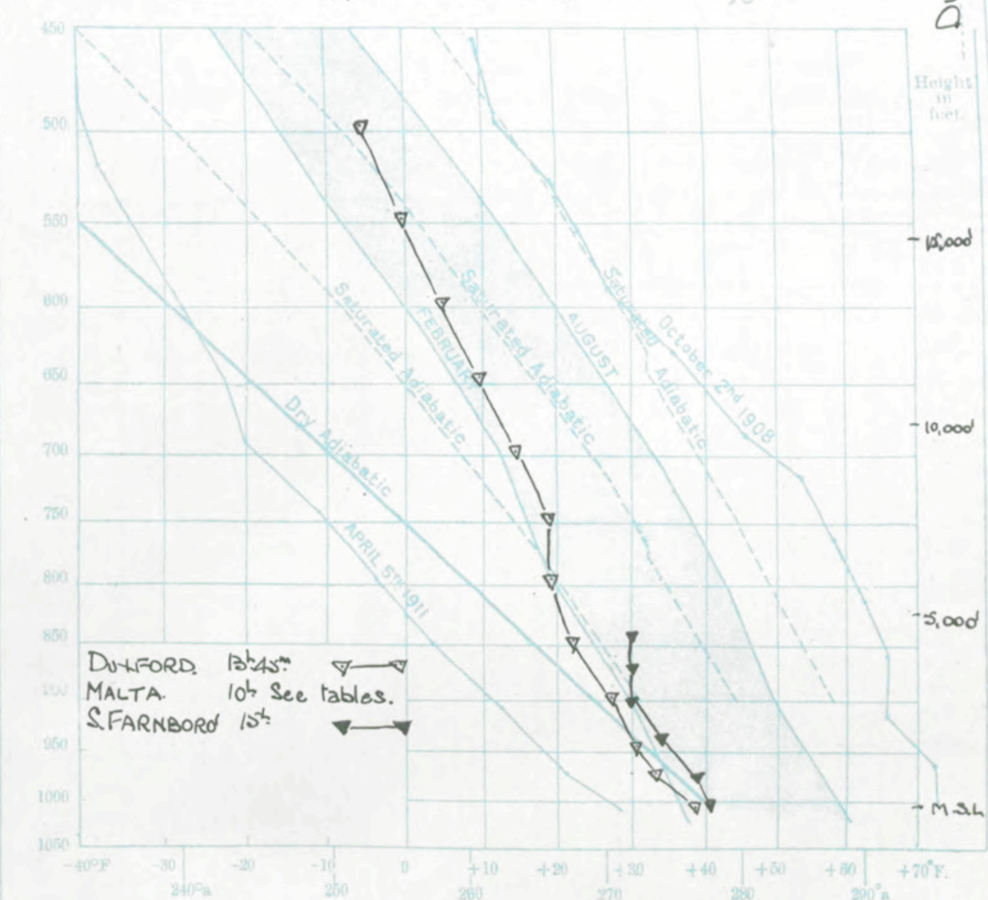
Directions are given in degrees, velocities in m.p.h.

Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

UPPER AIR TEMPERATURES.

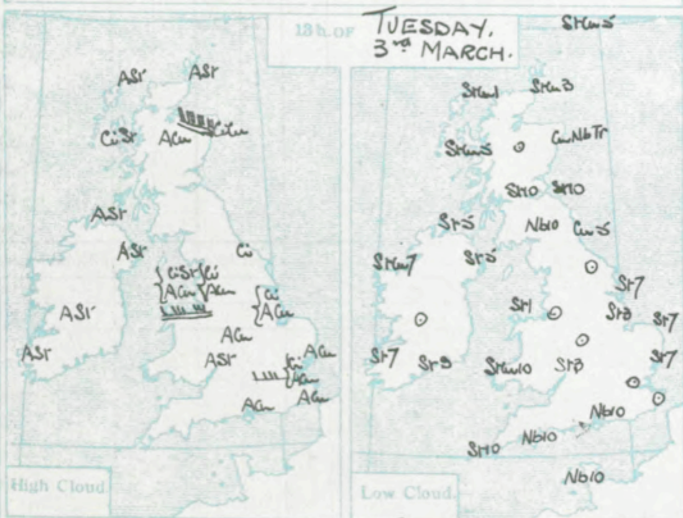
TUESDAY, 3rd MARCH, 1931.

DUXFORD

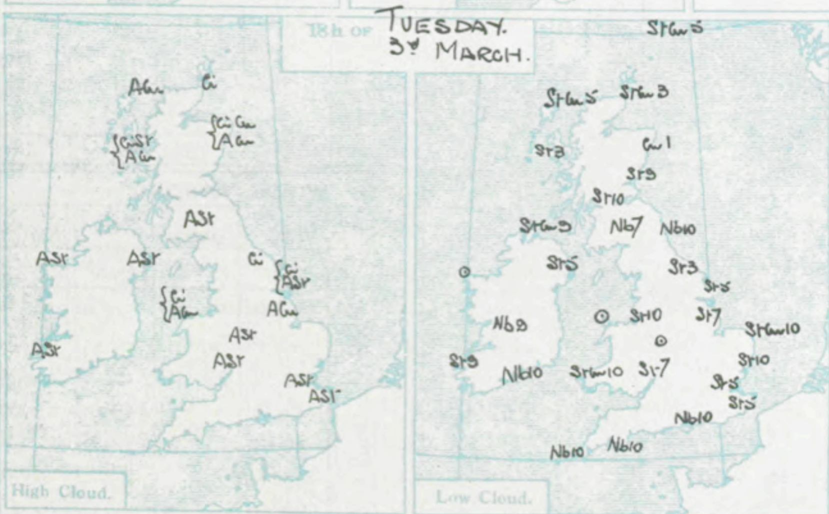


CLOUD FORMS, AMOUNTS AND MOVEMENTS.

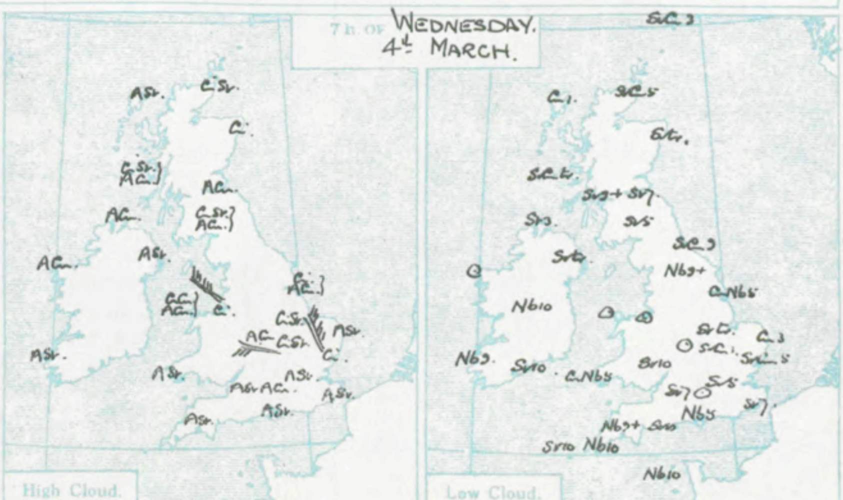
13h. of TUESDAY, 3rd MARCH.



18h. of TUESDAY, 3rd MARCH.

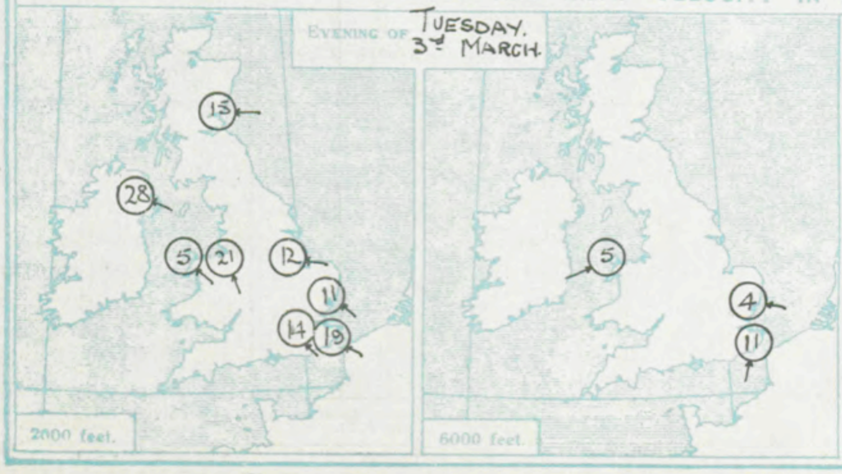


7h. of WEDNESDAY, 4th MARCH.

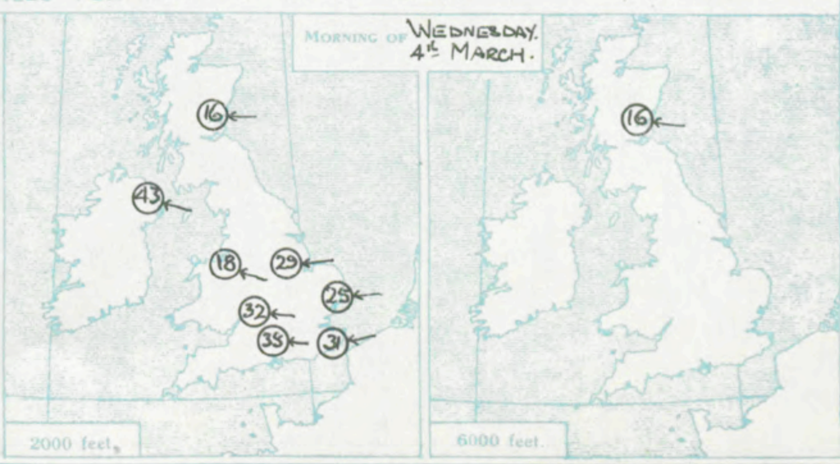


DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.

Evening of TUESDAY, 3rd MARCH.



Morning of WEDNESDAY, 4th MARCH.



⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Boscombe Down		Worthy Down		Calshot		Lympne		Shoeburyness		Felixstowe	
Time.	12h 3rd		12h 3rd		12h 3rd		12h 3rd				12h 3rd				12h 3rd	
Type			b		b		b				b				b	
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	140	8	110	8	105	9	140	10			180	7			145	2
1000	145	14	130	12	125	15	150	17			160	11			230	5
2000	145	12	145	18	150	19	150	15			150	13			220	9
3000	150	15	155	19							185	8			195	6
4000	190	10	175	11							165	11			210	6
5000	200	15	210	18							195	9			215	9
6000			230	19							255	15			230	11
8000			260	19							285	29			305	9
10000			Kew.								300	29			340	14
12000			13h	AC											(9,000')	
Neph.			270	36												

Place	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.	12h 3rd		12h 3rd		12h 3rd				12h 3rd		12h 3rd		12h 3rd		12h 3rd		12h 3rd						Time.
Type									b														Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	–	0	155	3	125	10			130	8	105	7	45	8	70	14	300	6					Surf.
1000	145	3	150	12	140	13			115	9	140	15	70	18	70	12	360	9					1000
2000	140	5	180	8	155	14			140	8	155	22	85	15	125	8	10	8					2000
3000	180	6	160	9	155	17			160	13	150	23	75	6			350	7					3000
4000	205	4	155	11	160	19			165	7	155	18	95	7									4000
5000	185	9	180	12	200	13			160	5	175	13											5000
6000	220	12	245	14					295	4													6000
8000	255	8	265	17					300	9													8000
10000			(7,000')						20	18													10000
12000											13h	Ci					13h	CiCu					12000
Neph.											270	70					290	110					Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe	
Time.	17h 3rd										17h 3rd				17h 3rd	
Type.											b					
Feet Surf.	115	12									65	9			100	5
1000	115	15									90	13			140	13
2000	120	14									120	19			130	11
3000	145	18									140	20			140	9
4000	150	16									155	17			160	8
5000											200	15			135	5
6000											215	11			110	4
8000																
10000																
12000																
Neph																

Place.	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia				Place.
Time.	17h 3rd				17h 3rd				16h 3rd		17h 3rd		17h 3rd		17h 3rd		17h 3rd						Time.
Type.																							Type
Feet Surf.	85	5			85	10			–	0	105	10	30	6	65	8	80	15					Feet Surf.
1000	110	13			105	10			160	2	125	23	75	12	80	16	95	24					1000
2000	105	12			120	13			125	5	140	21	90	15			115	28					2000
3000	115	11							95	6	145	21	100	23			125	26					3000
4000	155	10							90	9													4000
5000									–	0													5000
6000									240	5													6000
8000									10,000' 290	22													8000
10000									16,000' 280	34													10000
12000									15h-15m	CiCu	16h	AC											12000
Neph.									280	55	270	36											Neph.

Place.	South Farnboro.		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe	
Time.	9h 4th		8h 4th								6h 4th				7h 4th	
Type.																
Feet Surf.	85	11	75	8							80	12			85	18
1000	85	17	85	21							80	17			85	25
2000	95	33	100	35							85	31			90	25
3000	105	36									90	34			95	21
4000															95	22
5000															10h	
6000															Ci.	
8000															300	60
10000															7h	
12000															Ci.	
Neph															330	65

Place.	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Sealand		Aberdeen		Aldergrove		Valentia		Place.
Time.	6h 4th				6h 4th				9h 4th		7h 4th		6h 4th		9h 4th				6h 4th				Time.
Type.																							Type.
Feet Surf.	70	6			70	15			95	21	105	12	100	10	110	11			70	7			Feet Surf.
1000	95	27			85	25			115	24	120	33	95	14	120	35			105	31			1000
2000	95	29	10h		105	32			135	20	110	18	100	16	125	43			115	42			2000
3000	95	24	AC						135	15			90	16	125	47			120	34			3000
4000			290	33					165	7			90	15									4000
5000			AC						130	5			110	16									5000
6000			280	50					140	9													6000
8000			Ci. 290	55					195 (14000')	3													8000
10000			7h						235	10	7h		10h		10h				10h				10000
12000			Ci.						(20,000 ft) 260	20	Ci.		Ci.		AC				Cu.				12000
Neph			300	35							300	65	300	35	300	27			330	40			Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUXFORD. 13h 45m 3/3/31.	mb.	Feet.	°F.	°F.	%
	1009	M.S.L.	—	—	—
	1003	100	38	35	75
	970	1070	33	32	91
	950	1590	31	30	89
	900	3000	27.5	25	75
	850	4500	22	18	-
	800	6050	18	16	-
	750	7710	18	17	-
	700	9480	14	14	-
	650	11340	9	9	-
	600	13340	4.5	4.5	-
	550	15480	-1	-1	-
	500	17850	-5	-5	-
		M.S.L.	—	—	—

Thin St at 800 to 740mb; 735 to 710mb, and 600 to 570mb. Haze top 930mb. Rime at 735 to 710mb.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO'. 15h 3/3/31.	mb.	Feet.	°F.	°F.	%
	1009	M.S.L.	—	—	—
	1000.4	230	41	-	-
	975	890	39	-	-
	940	1860	34	-	-
	905	2850	30	-	-
	873	3800	30	-	-
	842	4740	30	-	-
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
MALTA. 10h 3/3/31.	mb.	Feet.	°F.	°F.	%
	1020	M.S.L.	—	—	—
	985	660	53	-	85
	960	1640	49	-	85
	903	3280	42	-	95
	849	4920	35	-	95
	758	6560	32	-	85
	749	8200	30	.	-
	703	9840	24	-	-
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Calais		Abbeville		Cheb		Barcelona		Zara		Malta	
Time.	13h 3rd		13h 3rd		13h 3rd		13h 3rd		18h 3rd		17h 3rd	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	150	7	140	31	-	-	300	11	-	-	3,000'	
3,280	80	9	160	8	220	11	280	19	340	9	300	16
4,920	120	20			280	24			340	9	5,000'	
6,560	180	32			240	13			340	13	310	36
9,840					250	19					7,000'	
13,120					300	26					310	40
16,400												
19,680												

Place.	Valenciennes		Calais.		Bizerta		Frankfurt		Cheb.		Malta.	
Time.	17h 3rd		17h 3rd		5h 4th		7h 4th		7h 4th		6h 4th	
1,640	150	14	120	14	280	18	79	13	-	-	(3000 ft) 290	11
3,280	170	14	170	13	300	20	90	13	10	11	(5000 ft)	
4,920	170	11	210	13	300	34	79	13	330	7	270	26
6,560	260	17	240	16			349	13	300	14	(8000 ft)	
9,840	270	25							300	33	280	25
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.
G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, THURSDAY, 5th MARCH, 1931. No. S. 25,905. U.A.S. 4,357.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS. (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 0— 5 m.p.h.
- 6—15 "
- 16—25 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 56—65 "
- and so on.

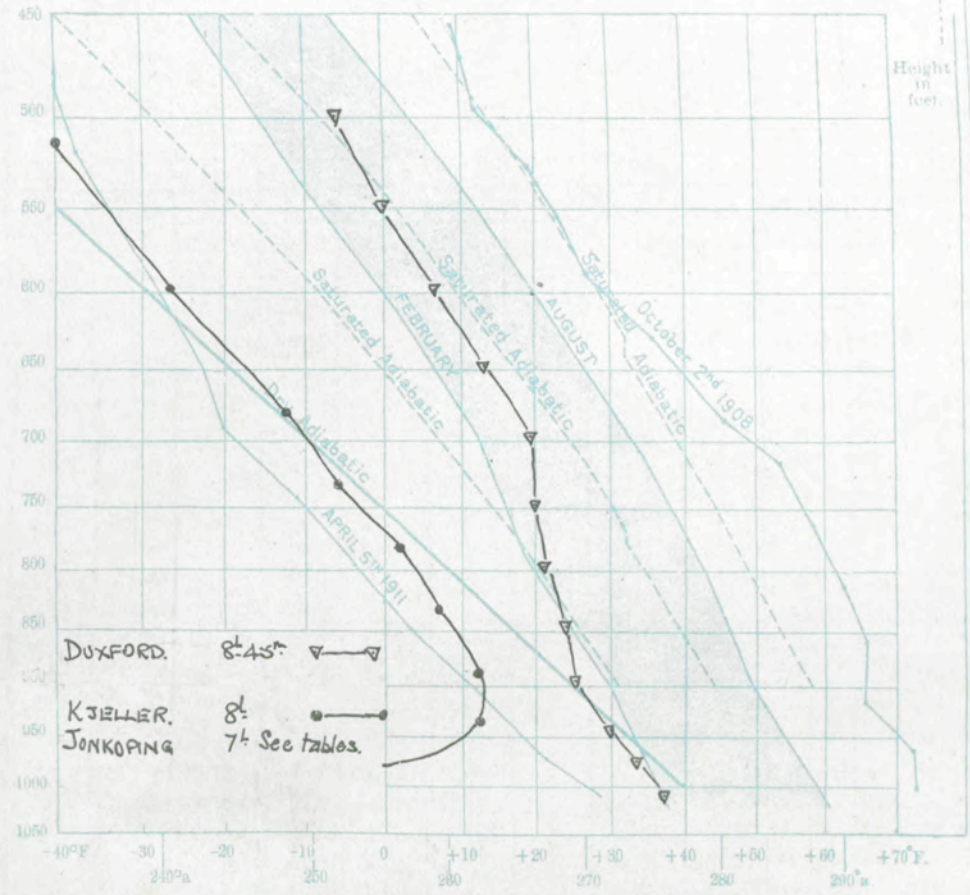
In Tables.

Directions are given in degrees, celestial, to m.p.h.

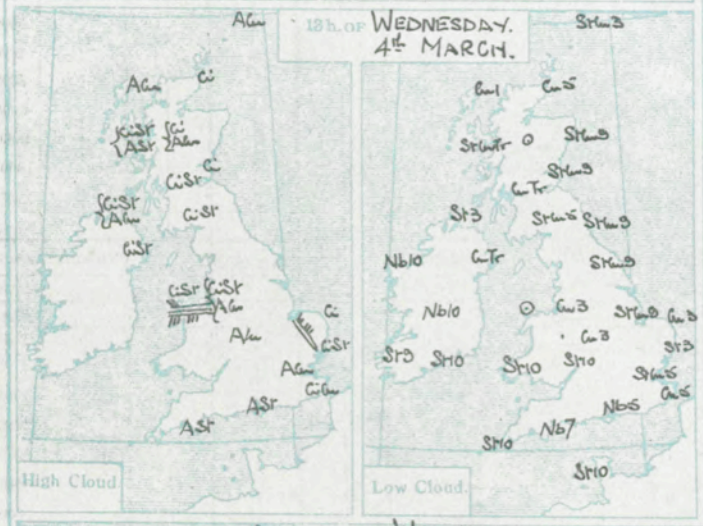
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

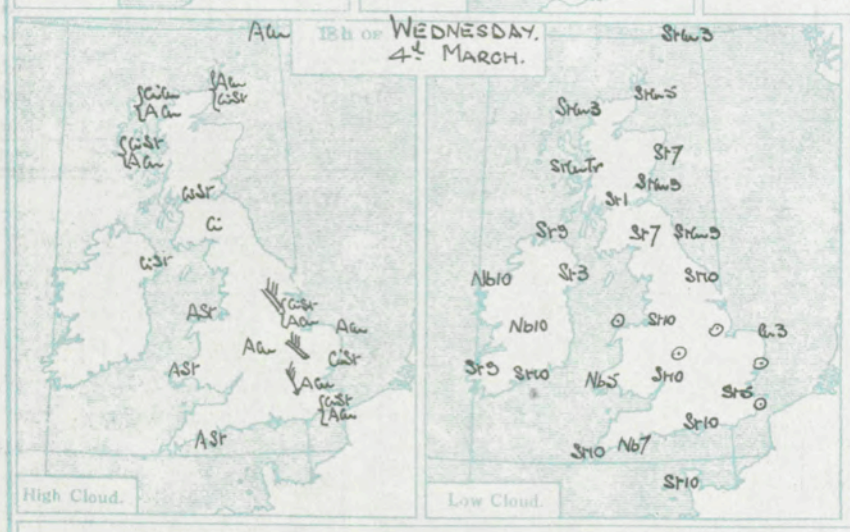
UPPER AIR TEMPERATURES.

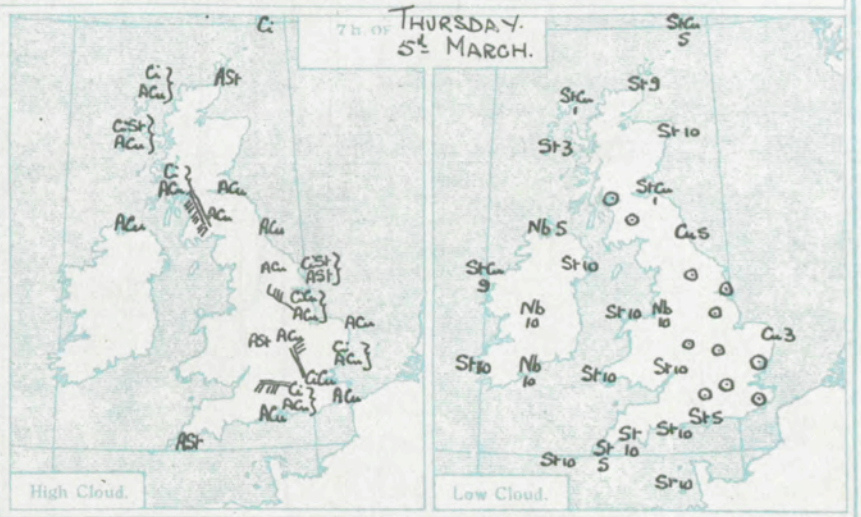
WEDNESDAY, 4th MARCH, 1931.



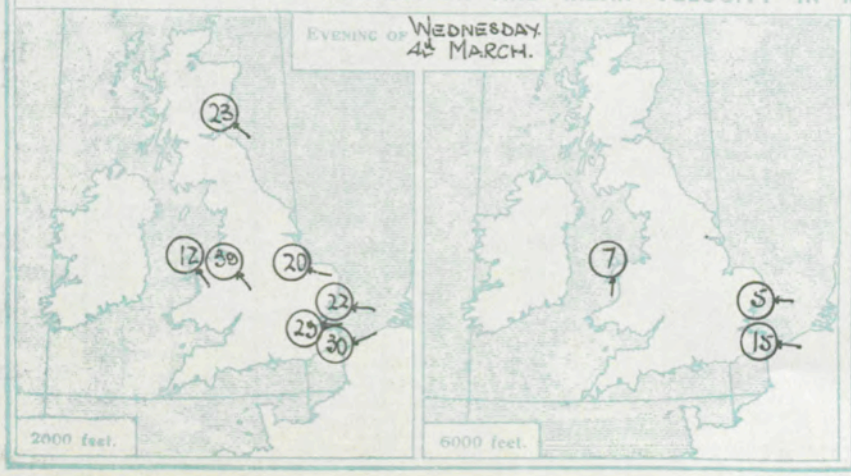
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

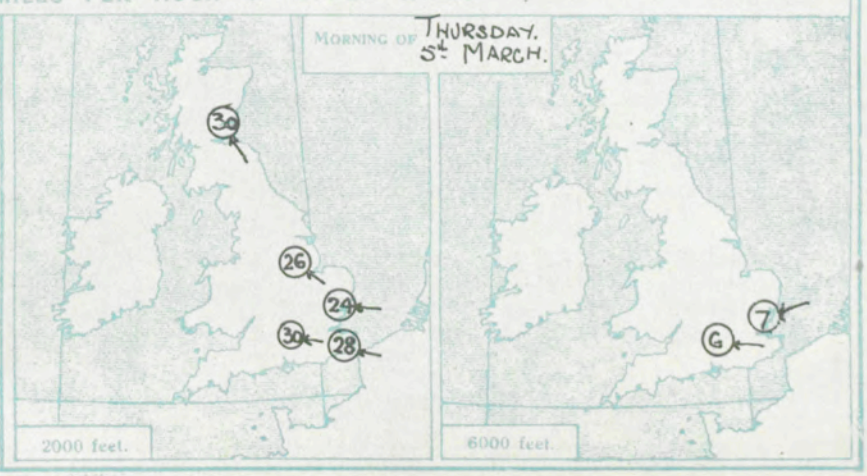






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ *Indicates absence of cloud.*

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	12h- 4h		12h- 4h								12h 4h				12h 4h		12h 4h		12h 4h		12h- 4h				12h 4h		12h 4h		12h 4h									Time.
Type	b		b								b				b				b						b		b											Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	90	15	80	12							80	19			80	20	90	16	100	19	105	13			105	20	120	20	100	15									Surf.
1000	85	16	100	27							85	18			85	26	100	24	100	22	100	14			115	15	125	24	110	18									1000
2000	95	25	95	17							85	19			95	25	105	22	105	27	105	28			130	19			120	21									2000
3000			95	23							90	24			110	17			105	27					140	14			120	23									3000
4000											95	22			105	18			110	26					140	19			130	23									4000
5000											70	9			100	9			110	19					-	-													5000
6000											325	7			75	7			110	14					175	5													6000
8000											310	7			7,000'				7,000'						205	5	13h	Cu											8000
10000											280	20			65	8			180	5					250	7	270	65											10000
12000															12h	Cu St									26,000'	10	AG												12000
Neph.															300	55									275	15	260	24											Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Place.
Time.	17h- 4h		17h- 4h								17h 4h				17h 4h		17h 4h		4h		4h				16h- 4h		17h- 4h		17h 4h		17h 4h								Time.
Type.											b																												Type
Feet																																							Feet
Surf.	80	24	80	12							80	18			80	20	95	13							120	10	110	20	125	12	85	10							Surf.
1000	80	15	75	21							75	24			85	25	100	17							130	11	120	32	120	31	115	19							1000
2000	100	29	90	24							75	30			100	22	110	20							135	12	135	39	120	23	120	23							2000
3000	105	29									110	31			110	18									145	15			120	21									3000
4000	110	32									110	24			110	17									175	15													4000
5000											115	20			115	15									180	9													5000
6000											105	15			95	5									185	7													6000
8000											320	8			325	6			16h	Cu Cu					245	7													8000
10000			17h 15m																300	25					12,000		Holyhead												10000
12000	16h	AG	AG												16h	Cu	18h	Cu	18h	Cu	16h	AG			265	15	16h 20m	Cu											12000
Neph	300	27	320	33											300	60	320	35	300	35	140	21			250	21	260	28											Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Shoebury-ness		Cranwell		Card-ington		Upper Heyford		Lympne		Holyhead		Sealand		Leuchars		Renfrew		Felixstowe		Alder-grove		Valentia		Place.
Time.	10h 5h		8h 5h		7h 5h		8h 5h				6h 5h		7h 5h		8h 5h		7h 5h		8h 5h				10h 5h						7h 5h		9h 5h								Time.
Type.	b				b																		b																Type.
Feet																																							Feet
Surf.	100	12	80	10	80	8	105	10			95	16	110	14	Shell		90	6	90	7			90	16					125	12	80	8							Surf.
1000	100	14	115	25	100	26	110	20			105	23	115	20	burst		120	28	115	23			95	20					145	25	115	15							1000
2000	125	25	115	30	120	27	125	27			125	28	120	24	Two		135	26	135	25			110	26					145	30	135	24							2000
3000	125	27	130	31	125	30	125	27			115	29	120	22	mirrors		130	24	135	22			115	20					135	30									3000
4000	130	35	140	14	135	26	130	15					120	19	10000'		130	14											140	27									4000
5000	120	37	140	1	125	11	125	10					125	15	315	20													140	17									5000
6000			125	6	160	3							95	7	16000'																								6000
8000			130	7									110	6	315	36																							8000
10000	Kew		(7000')		Farnboro'		Farnboro'		Worthy Dn				(7000')		20000'																7h	Cu Cu									10000
12000	7h	Cu Cu	7h	Ci	7h	ACu	10h	ACu	10h	Cu Cu	10h	ACu			330	26	7h	ACu																					12000
Neph	350	30	280	50	300	90	290	27	330	10	320	21					320	42													110	18	350	55							Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUXFORD. 8h 45m 4/3/31.	mb.	Feet.	°F.	°F.	%
	1012·2	M.S.L.	—	—	—
	1010	100	37	35	83
	973	1080	33·5	31·5	81
	950	1740	30	28	80
	900	3130	24·5	22	71
	850	4610	23·5	20	62
	800	6170	21	20	87
	750	7830	20	18	76
	700	9610	13·5	17	-
	650	11500	13	12	-
	600	13510	7	5	-
	550	15680	0	-1	-
	500	18040	-6	-6	-
	F. Cu 4/10, 830 to 820 mb. Ci not reached. Haze tops 910 and 890 mb.				
KJELLER. 8h 4/3/31.	1017	M.S.L.	—	—	—
	970	1320	-4	-	35
	932	2300	12	-	45
	886	3280	12	-	45
	830	4920	7	-	45
	778	6560	1	-	45
	727	8200	-6	-	45
	679	9840	-13	-	45
	591	13120	-24	-	45
	512	16400	-40	-	45

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
JONKOPING. 7h 4/3/31.	mb.	Feet.	°F.	°F.	%
	1013	M.S.L.	—	—	—
	1002	220	16	-	85
	977	880	16	-	75
	935	1860	12	-	75
	893	3280	7	-	75
	832	4920	1	-	65
	775	6560	-6	-	65
	?	8200	-18	-	65
	652	9840	-31	-	55
	616	13120	-44	-	45
	Inversion 1003 mb, amount 40°F.				

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F	°F.	%
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place	Malta		Cheb.		Vajnory		Barcelona		Toulouse		Malta	
Time.	7h 12h 4h		13h 4h		13h 4h		13h 4h		17h 4h		17h- 4h	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	1,000'		-	-	350	8	250	6	260	18	3,000'	
3,280	250	7	360	16	330	14	290	19	290	56	270	19
4,920	2,000'		20	8	330	16	290	24	300	34	7,000'	
6,560	270	16			300	15	260	13			270	35
9,840					300	29	260	26			10,000'	
13,120											300	40
16,400												
19,680												

Place	Cagliari		Palermo		Calais		Cheb		Bizerta		Malta	
Time.	18h 4th		18h 4th		7h 5th		7h 5th		6h 5th		6h 5th	
1,640	-	-	250	11	110	27	-	-	290	17	3000'	
3,280	320	21	280	34			50	16	310	25	280	30
4,920	310	24	-	-			50	17	310	23	7000'	
6,560	360	18	290	56			30	21			280	35
9,840							360	19			10000'	
13,120							330	41			290	45
16,400											16000'	
19,680											290	62

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, Friday, 6th March, 1931. No. B. 25,306. U.A.S. 4,358.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

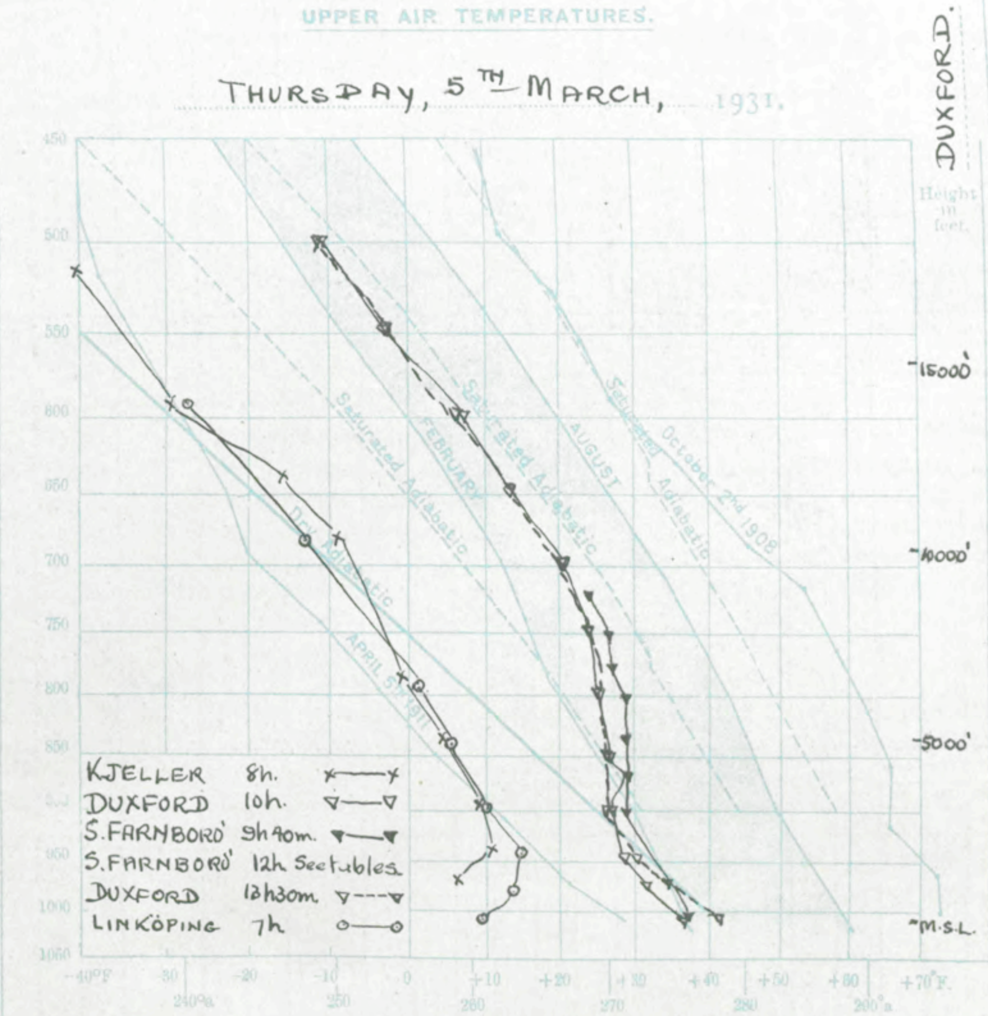
No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

In Tables.

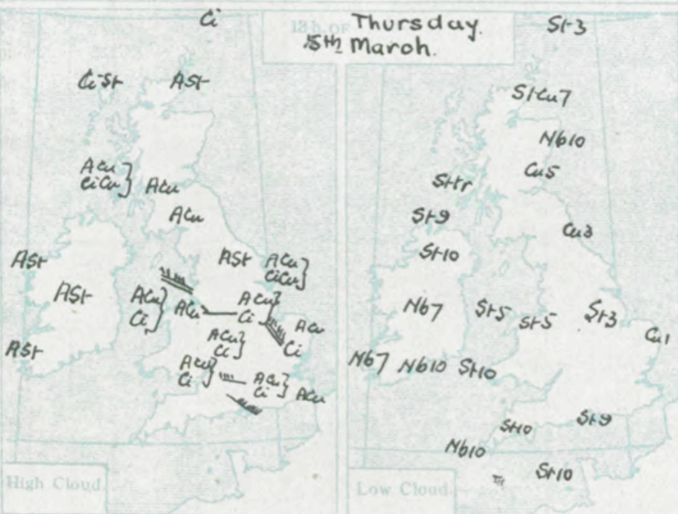
Directions are given in degrees, velocities in m.p.h.

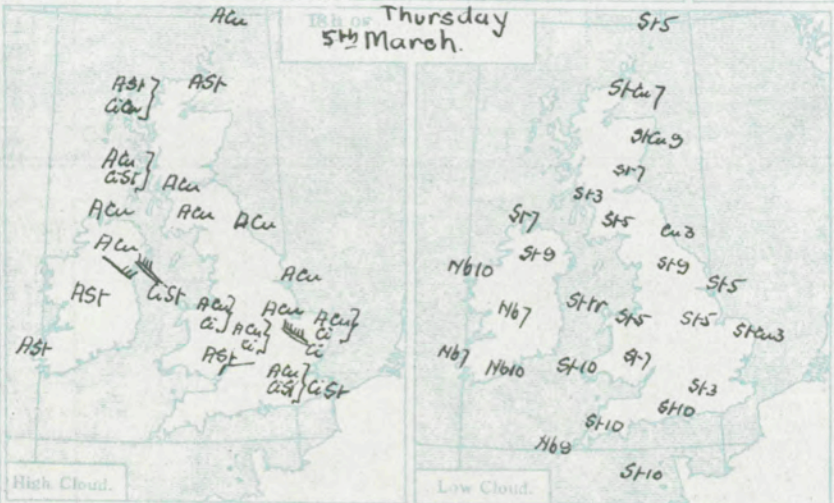
Speeds of high cloud are computed for an average height of 6 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

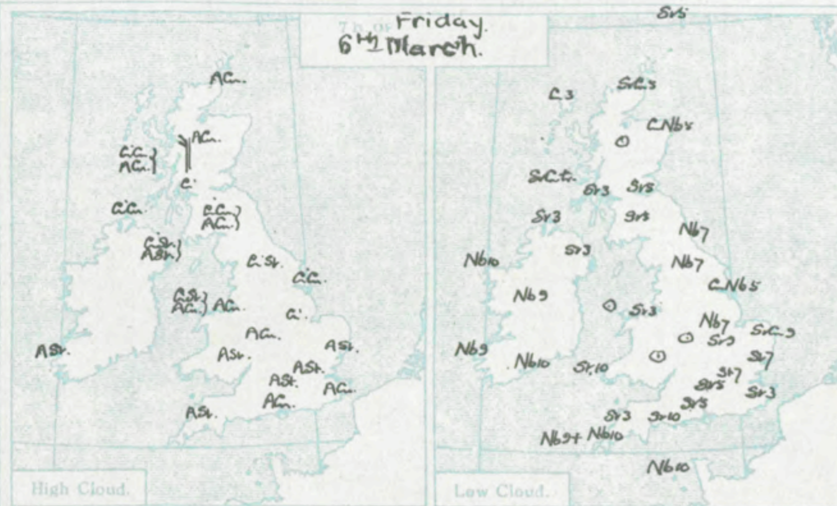
UPPER AIR TEMPERATURES.



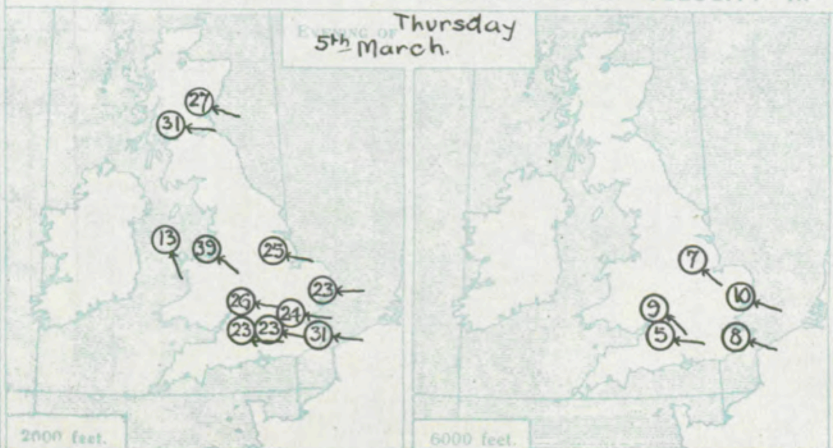
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

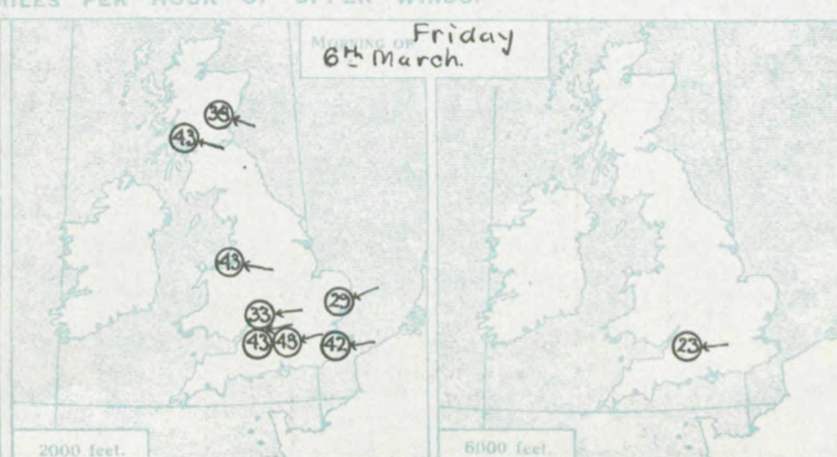






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place
Time.	12h 5M		12h 5M		12h 5M		12h 5M				12h 5M				12h 5M		12h 5M		12h 5M		12h 5M				12h 5M		12h 5M		12h 5M		12h 5M								Time.
Type			b		b		b				b				b		b		b										b		b								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	80	13	105	14	100	14	105	12			85	16			95	15	110	15	105	17	85	15			345	1	120	18	120	21	115	7							Surf.
1000	110	11	105	27	105	18	110	21			85	17			105	23	110	20	115	19	105	23			125	8	140	23	130	29	100	16							1000
2000	120	19	125	29	110	19	125	25			100	24			115	19	120	17			115	23			155	14			135	38	115	16							2000
3000	145	19	140	19	125	24	130	12			120	24			120	15	125	19			135	27			135	13			135	32	130	23							3000
4000	115	15	135	19							130	22			120	13	130	23			155	23																	4000
5000	140	10	120	11							130	15			145	13	150	16			125	15																	5000
6000	140	7	120	7							125	13			125	7	155	18			125	17																	6000
8000			295	3							340	4			260	7	105	15																					8000
10000	Kew		290	4							265	4	Felixstowe		240	10																							10000
12000	13h	Acu	13h	Acu			13h	Acu			265	7	13h	Ci	310 (16000')	15	13h	Acu																					12000
Neph.	Calm		280	39			140	78			300 (16000')	12	330	60	320 (17000')	17	270	9																					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia				Place.
Time.	17h 5M		15h 5M		17h 5M		17h 5M				17h 5M		15h 5M		17h 5M		17h 5M		5M		17h 5M				16h 5M		17h 15M		17h 5M		17h 5M		17h 5M						Time.
Type.					b								Double Theodolite																										Type
Feet																																							
Surf.	75	23	80	13	105	10	115	8			75	16	90	20	105	18	80	16			95	15			70	14	100	16	110	14	100	13	80	15					Feet Surf.
1000	80	29	80	24	105	26	105	20			70	29	90	26	90	25	90	25			95	20			105	8	115	26	110	24	95	29	110	38					1000
2000	105	24	105	23	100	23	100	24			100	31	100	20	95	23	105	25			105	26			150	13	125	39	110	27	100	31							2000
3000	115	23	125	24	95	25	100	24			130	21	100	14	100	19	115	25			125	21			140	11	140	31	110	31									3000
4000			110	21	115	24					105	15	130	14	105	14	105	18			115	18			125	9	135	32											4000
5000			140	14	125	12					110	15	110	14	115	11	130	7	16h	Ci	120	15																	5000
6000					105	5					120	8	120	10	125	10	135	7	300	35	140	9																	6000
8000					360	4					315	2	175	4	155	11	115	5			245	3					16h	Acu											8000
10000					360	3					345	8	105	2	285	7	(7000')		Felixstowe		(7000')						300	36											10000
12000			16h	Acu							330	7	300 (16000')	12	18h	Ci	16h	Acu	16h	Ci	18h	Acu			18h	Ci	18h	Ci			16h	Acu	16h	Acu					12000
Neph			280	18							(11000')		260 (14000')	14	320	60	280	9	330	65	270	12			310	70	290	55			140	27	120	30					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Tyrlone		Lympne		Croydon		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.	7h. 6m		7h. 6m		8h. 6m		8h. 6m		11h. 6m		7h. 6m		10h. 6m		7h. 6m		7h. 6m				7h. 6m				9h. 6m		7h. 6m		7h. 6m		7h. 6m								Time.
Type.					b																																	Type.
Feet																																							
Surf.	90	25	90	16	75	19	25	20	65	29	70	27	85	25	70	27	70	14			70	19			95	37	100	20	95	25	85	14							Feet Surf.
1000	100	38	80	23	80	35	85	38	65	19	75	47	75	26	75	34	90	30			80	25			95	37	105	29	110	35	100	30							1000
2000			80	48	85	43	85	44	80	32	80	42	75	38	75	29					85	33			105	41	110	43	110	36	115	43							2000
3000			85	47	90	50	95	39	85	41			75	41	85	36					95	47			120	33			105	34									3000
4000			95	47	100	38	100	40					90	55							100	39			120	19													4000
5000					95	21																															5000
6000					85	23																															6000
8000																																					8000
10000																	10h.														7h.						10000
12000																	Acu.														C.						12000
Neph																	90	60													350	20					Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUXFORD 10h. 5/3/1931.	mb.	Feet.	°F.	°F.	%
	1018	M.S.L.	—	—	—
	1014	100	37	345	79
	975	1080	33	33	100
	950	1780	30	30	100
	900	3190	28	27·5	95
	850	4690	28	25	71
	800	6250	25·5	22·5	70
	750	7920	24	24	100
	700	9710	21	19·5	83
	650	11610	13·5	13	—
	600	13620	8·5	7·5	—
	550	15780	-3	-3	—
	500	18130	-10	-11	—
	INVERSION. 900mb 28·0°F. 860mb 30·0°F.				
	Haze top 900mb. Thin St 780-725mb. Thin St. not reached				
K. TELLER 6h 5/3/31.	1025	M.S.L.	—	—	—
	971	1326	7	-	35
	945	2306	12	-	35
	899	3280	10	-	35
	841	4920	5	-	35
	788	6560	0	-	35
	737	8200	-8	-	35
	688	9840	-15	-	35
	598	13120	-29	-	35
	518	16400	-40	-	35
	INVERSION. Pressure 995m Amount 18°F				

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO' 5h. 5/3/31.	mb.	Feet.	°F.	°F.	%
	1015·5	M.S.L.	—	—	—
	1007	230	39	-	-
	903	3390	30	-	-
	871	4320	30	-	-
	840	5260	30	-	-
	809	6240	30	-	-
	780	7180	27·5	-	-
	752	8140	27	-	-
	725	9080	25	-	-
	Haze top 887mb.				
LINKOPING 7h 5/3/31.	1024	M.S.L.	—	—	—
	985	880	14	-	75
	947	1860	16	-	75
	901	3280	10	-	75
	843	4920	5	-	75
	789	6560	1	-	75
	684	9840	-13	-	75
	695	13120	-27	-	75
	517	16400	-42	-	65
	INVERSIONS (i) (ii) (iii) Press. at base 1010 963 938mb Amount 40 0° 0°F				

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO' 12h. 5/3/31.	mb.	Feet.	°F.	°F.	%
	1015	M.S.L.	—	—	—
	1006	230	44	"	"
	972	1400	38	"	"
	937	2380	34	"	"
	902	3370	31	"	"
	870	4320	32	"	"
	840	5230	31	"	"
	809	6200	28	"	"
	780	7160	27·5	"	"
	752	8130	27·5	-	-
	Haze top 887mb				
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUXFORD 13h30m. 5/3/31	mb.	Feet.	°F.	°F.	%
	1017	M.S.L.	—	—	—
	1013	100	42	38	86
	977	1080	35·5	34·5	91
	950	1810	31	30	89
	900	3230	27·5	27	94
	850	4740	27·5	25	78
	800	6300	26	21·5	55
	750	7990	24·5	23·5	89
	700	9760	20·5	19	83
	650	11640	13·5	13·5	-
	600	13660	7·5	7·5	-
	550	15800	-2	-2	-
	500	18160	-10·5	-10·5	-
	Haze top 836mb				
	Patch of Cu 1/10 935-905mb				
	Thin St 4/10 570-550mb. Cu St. 2/10 535-525mb				
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Rome		Palermo		Cheb		Prague		Palermo		Malta	
Time.	13h 5M		13h 5M		13h 5M		13h 5M		18h. 5M		17h 5M	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	180	13	270	20	-	-	10	4	260	9	290 (1000')	19
3,280	180	2	-	-	80	8	20	4	-	-	300 (2000')	20
4,920			290	35	60	16	20	8	-	-	5000'	
6,560					50	16	20	1	-	-	300	27
9,840					350	21			350	9	7000'	
13,120					310	37					340	39
16,400												
19,680												

Place.	Dijon.		Toulouse.		Abbeville.		Mesaina		Palermo.			
Time.	18h. 5M		18h. 5M		7h 6M		7h 6M		7h. 6M			
1,640	40	10	20	8	100	33	200	28	-	-		
3,280	-	-	130	9	110	39	-	-	230	18		
4,920	260	9	190	7	20	20	260	23	250	22		
6,560	230	7	270	9			280	23	260	31		
9,840												
13,120												
16,400												
19,680												

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. SATURDAY, 7TH MARCH, 1931.

No. B 25,307.
U.A.S. 4,359.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

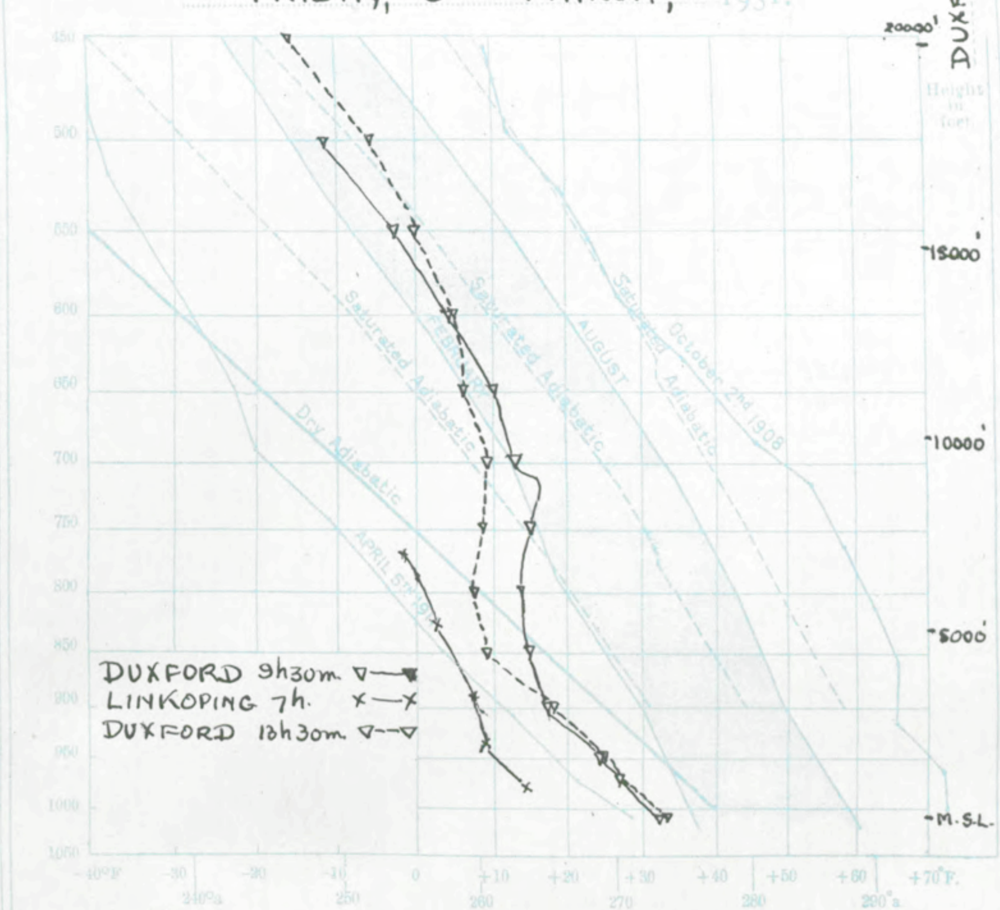
——• No speed given.	——‴ 26–35 m.p.h.
—— 0–5 m.p.h.	——‴ 36–45 "
——′ 6–15 "	——‴ 46–55 "
——″ 16–25 "	——‴ 56–65 "
	and so on.

In Tables.

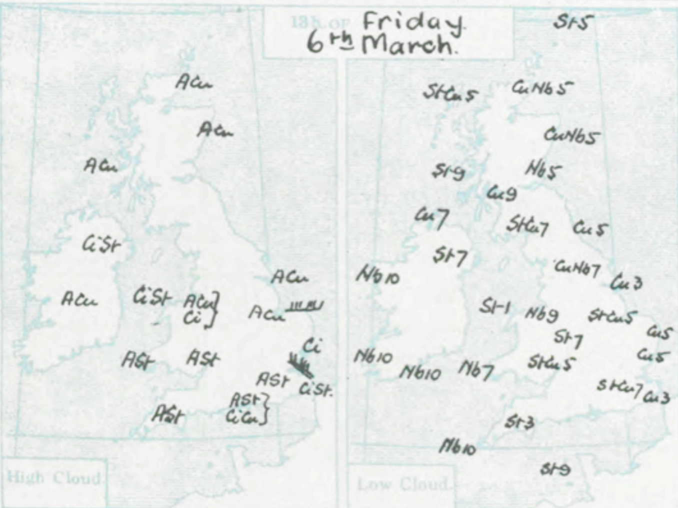
Directions are given in degrees, velocities in m.p.h.

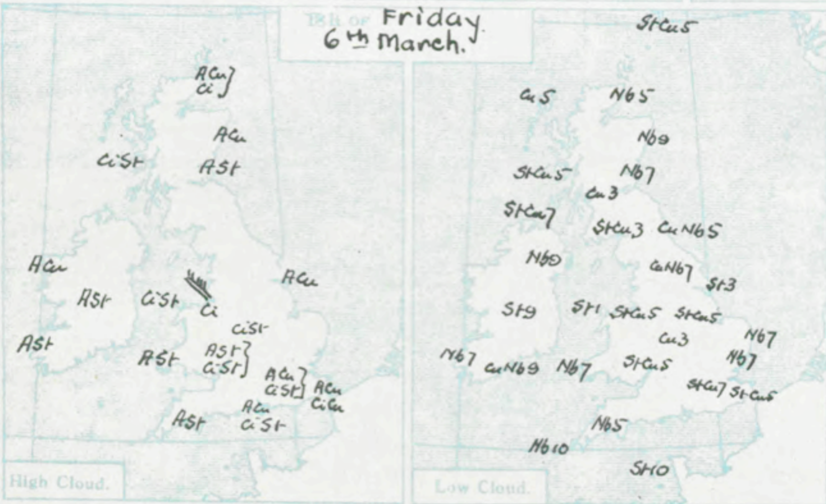
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

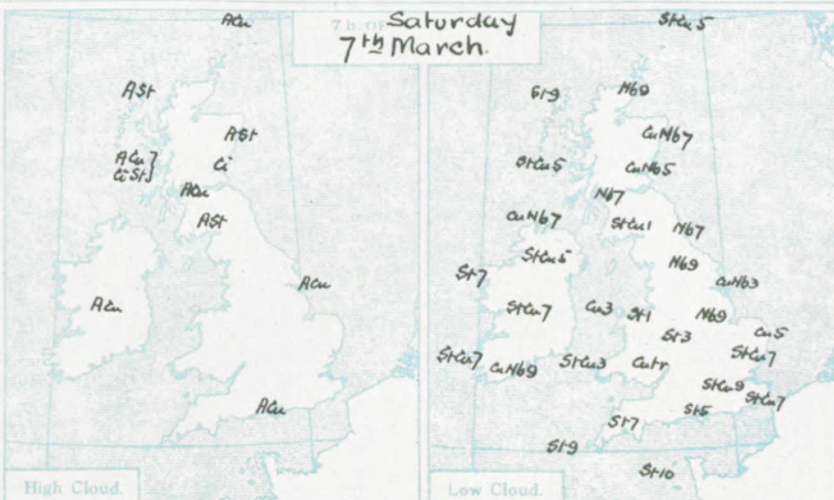
UPPER AIR TEMPERATURES.



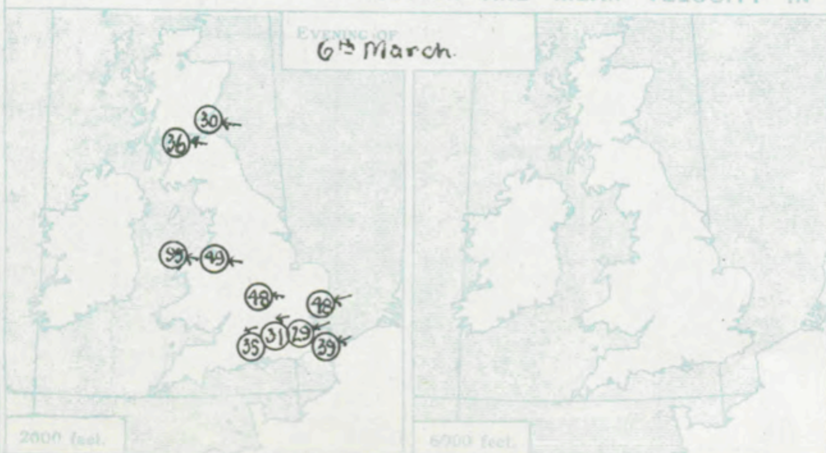
CLOUD FORMS, AMOUNTS AND MOVEMENTS.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.



⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time.	12h 6½				13h 6½		12h 6½				13h 6½				12h 6½		12h 6½		12h 6½	
Type							b				b				b		b			
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	65	30			65	22	85	25			75	33			80	27	90	20	80	23
1000	65	38			95	19	85	35			75	33			80	52	100	23	70	25
2000	75	44			75	23	80	36			70	27			75	45	90	35	85	26
3000					90	34	90	36			75	49			75	41				
4000					95	38	90	38			90	47			80	28				
5000							100	27			85	49			80	38				
6000							85	19												
8000							70	16												
10000							(7000')													
12000											13h	Ci					13h	Acu		
Neph.											320	50					90	72		

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Larkhill		Place.
Time.	12h 6½				12h 6½				13h 6½		12h 6½						14h 6½		Time.
Type					b						b						b		Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	75	25			80	45			115	15	90	24					75	25	Surf.
1000	75	27			95	49			110	19	85	33					85	36	1000
2000	85	31			95	53			105	35							85	35	2000
3000	85	35			95	38			105	40							85	38	3000
4000					115	19											65	31	4000
5000					75	9											100	29	5000
6000					85	25											?	?	6000
8000					80	25											40	8	8000
10000					(7000')												335	5	10000
12000																	315	7	12000
Neph.																	(11000')		Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Worthy Down		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.	17h 6½		17h 6½		17h 6½		17h 6½		14h 6½		17h 6½				17h 6½					
Type.					b				b		b									
Feet Surf.	75	28	75	21	70	25	75	20	60	26	60	28			65	29				
1000	70	18	75	35	75	31	75	33	65	42	65	41			75	43				
2000	70	29	80	31	75	41	75	35	75	38	70	39			75	48				
3000			75	39	75	52	80	32	80	35	75	42								
4000					75	52	85	40	85	35										
5000					75	50			85	35										
6000																				
8000																				
10000																				
12000																				
Neph																				

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia				Place.
Time.	17h 6½				16h 6½		17h 6½		17h 6½		17h 6½								Time.
Type.																			Type
Feet Surf.	70	25			100	43	95	25	105	13	90	20							Feet Surf.
1000	75	29			95	73	100	33	100	33	95	42							1000
2000	85	48			95	95	95	49	100	30	85	36							2000
3000	75	46			90	55	100	58	95	32	95	44							3000
4000	80	48																	4000
5000																			5000
6000																			6000
8000							16h	Ci											8000
10000							320	80											10000
12000							18h	Ci											12000
Neph							320	55											Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.	7h 7½						8h 7½				7h 7½				8h 7½		7h 7½			
Type.																				
Feet Surf.	50	24					55	25			70	26			60	27	80	8		
1000	65	17					60	33			65	25			65	25	90	25		
2000							70	36			65	47			75	12	75	30		
3000							80	44									75	33		
4000																				
5000																				
6000																				
8000																				
10000																				
12000																				
Neph																				

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.	7h 7½				9h 7½		7h 7½		7h 7½										Time.
Type.																			Type.
Feet Surf.	55	15			95	30	70	10	95	15									Feet Surf.
1000	65	25			85	25	80	24	90	23									1000
2000	80	40			85	33	95	31	85	23									2000
3000	80	43			85	45	95	38											3000
4000	75	46					95	42											4000
5000	75	41					85	48											5000
6000	80	33					85	50											6000
8000																			8000
10000																			10000
12000																			12000
Neph																			Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
DUXFORD 9h30m. 6/3/31.	1013	M.S.L.	—	—	—
	1009	100	33	31	90
	972	1070	27.5	24	62
	960	1690	24.5	23	82
	900	3070	17.5	16	-
	850	4530	14	12.5	-
	800	6070	13	11	-
	750	7700	14	10.5	-
	700	9480	12.5	11	-
	650	11320	10	9	-
	600	13310	4	3	-
	550	15470	-3	-2.5	-
	500	17810	-11	-11	-
	StCu 8/10 910–860 mb.				
	ASt 3/10 660–610 mb.				
	INVERSION – 800 mb 13°F				
	710 mb. 15°F				
	Rime formed 660–610 mb				
LINKOPING 7h. 6/3/31.	1023	M.S.L.	—	—	—
	979	880	14	-	65
	940	1860	9	-	65
	895	3280	7	-	65
	833	4920	3	-	75
	771	6560	-2	-	75

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
DUXFORD 13h30m 6/3/31.	1011	M.S.L.	—	—	--
	1007	100	33.5	32.5	91
	971	1060	27.5	24.5	67
	950	1630	24	22	75
	900	3030	18	17	-
	850	4490	9	8	-
	800	6000	7	5	-
	750	7640	8.5	6	-
	700	9380	9	6	-
	650	11230	6	5	-
	600	13210	4	3	-
	550	15360	0	-1	-
	500	17690	-6	-6	-
	450	20200	-16	-16	-
	StCu 9/10 840–795 mb.				
	INVERSION – 800 mb 7°F				
	700 mb 9°F				
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	--
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Abbeville		Bizerta		Palermo		Prague		Calais		Malta	
Time.	13h 6½		12h 6½		13h 6½		13h 6½		16h 6½		17h 6½	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	80	28	240	11	-	-	100	8	70	47	2000' 210	25
3,280	110	34	300	16	—	-	110	11	80	39	3000' 210	26
4,920	90	47	270	16	240	24	90	5	80	39	5000' 230	32
6,560			260	30	250	34	80	8				
9,840			230	34	260	44	290	18				
13,120							300	?				
16,400												
19,680												

Place.	Toulouse		Posen		Barcelona		Abbeville		Cracow		Malta	
Time.	18h 6½		17h 6½		7h 7½		7h 7½		7h 7½		6h 7½	
1,640	-	-	330	10	270	9	80	34	90	11	3000' 230	25
3,280	100	11	330	9	300	4	100	36	100	16	5000' 240	29
4,920	40	4	330	9	260	18	110	38	110	8	7000' 240	32
6,560	240	14	330	9	250	16			80	9		
9,840			100	17					230	13		
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. SUNDAY, 8TH MARCH, 1931. No. B. 25,308. U.A.S. 4,360.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

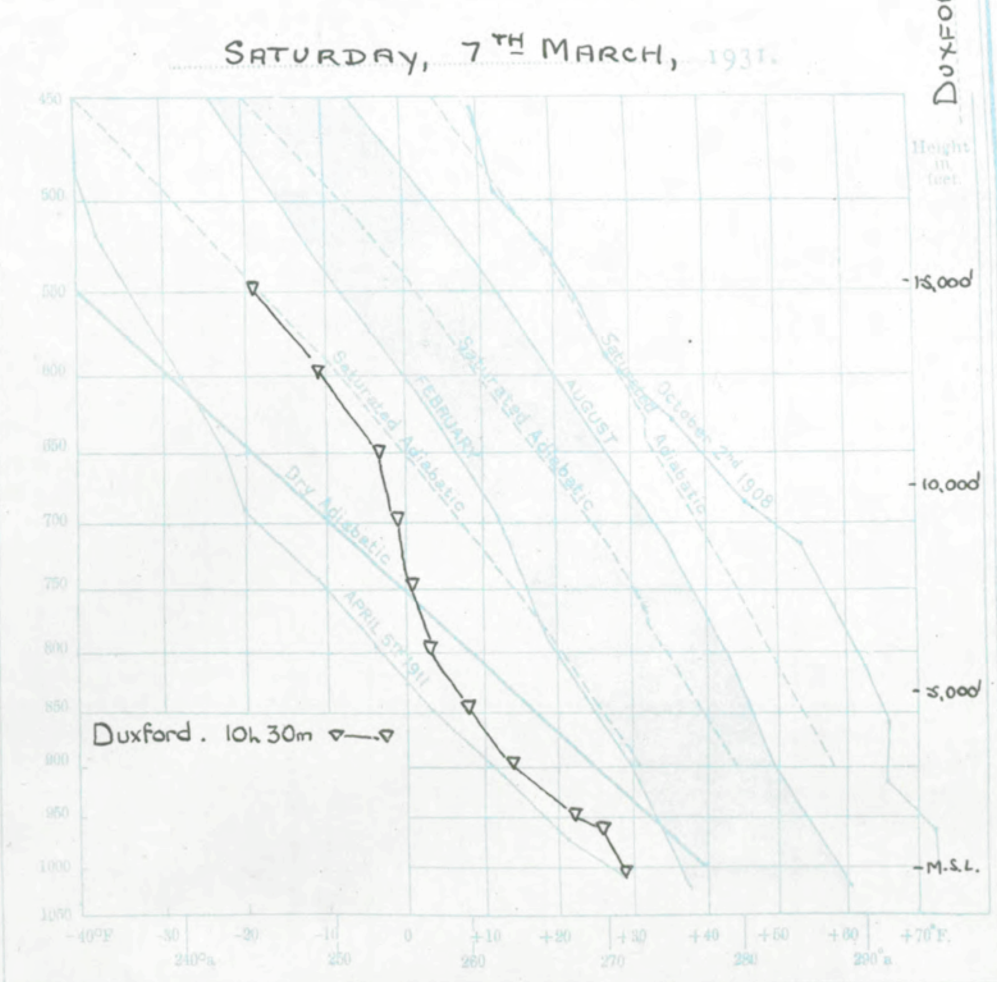
No speed given.	26—35 m.p.h.
0— 5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	56—65 „
	and so on.

In Tables.

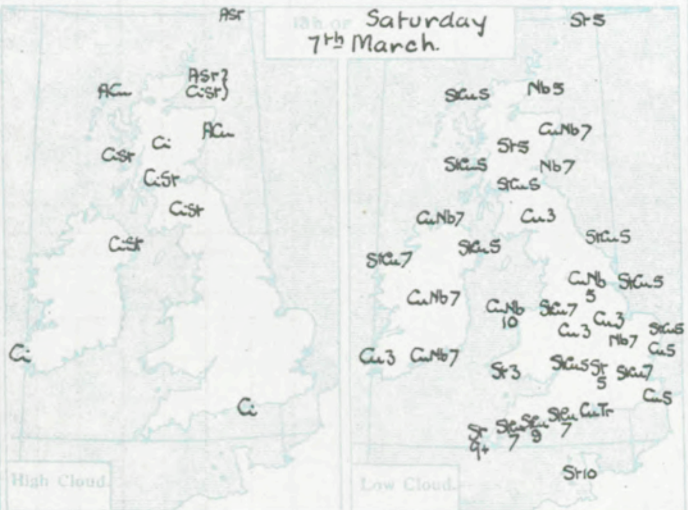
Directions are given in degrees, velocities in m.p.h.

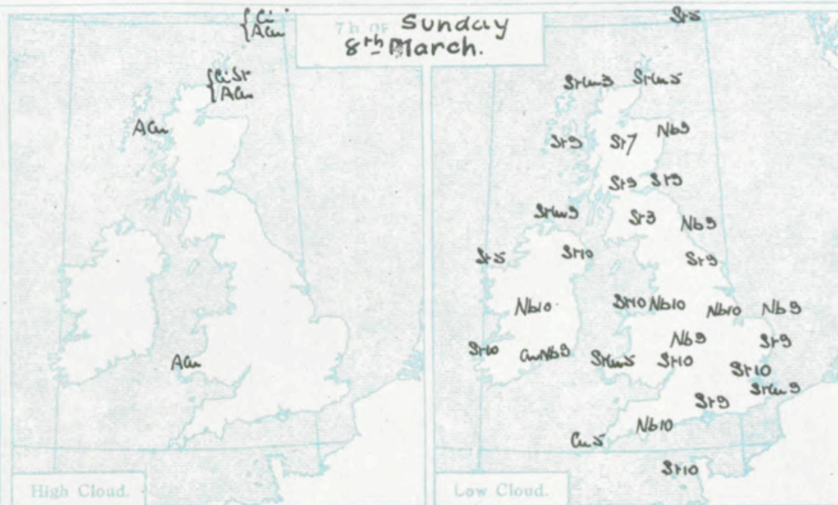
Speeds of high cloud are computed for an average height of 9 miles for cirro type clouds (double lines) and 5 miles for alto type clouds (single line).

UPPER AIR TEMPERATURES.

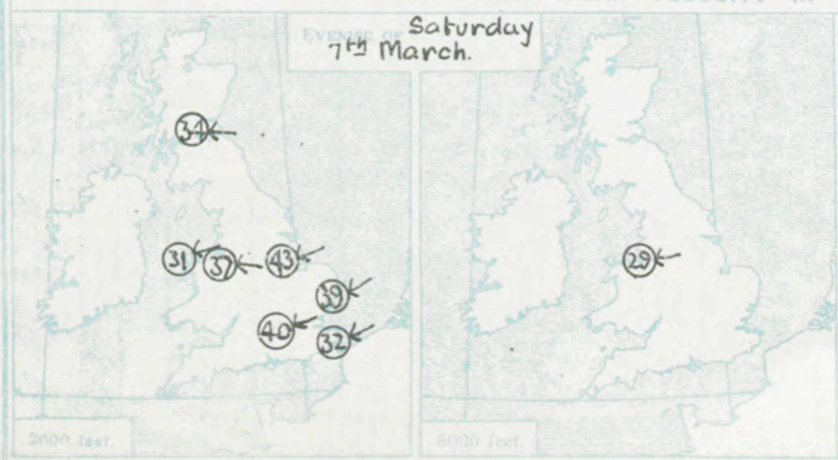


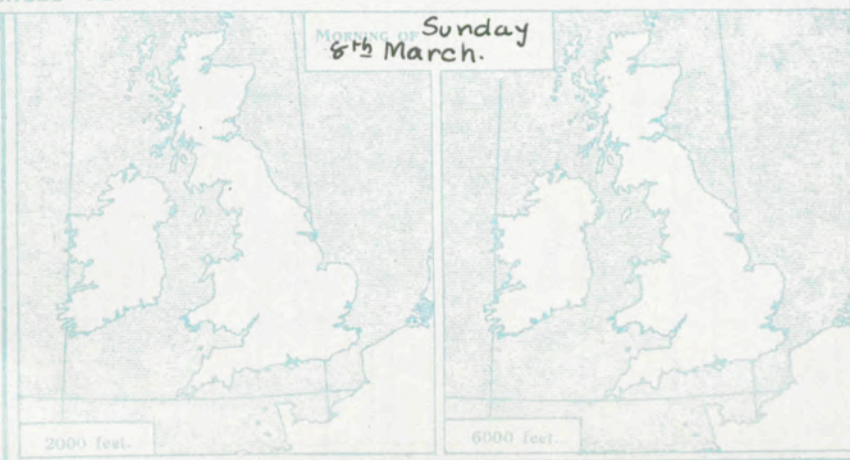
CLOUD FORMS, AMOUNTS AND MOVEMENTS.





DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time.	12h	7th	12h	7th			12h	7th			13h	7th			12h	7th	12h	7th	12h	7th
Type	b						b				b						b			
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	60	30	65	18			65	25			70	28			70	27	80	17	70	26
1000	65	35	60	31			60	34			60	25			75	33	85	26	65	22
2000	70	49	65	36			60	43			55	23			75	39	90	25	80	22
3000	75	64	70	28											80	36	90	39	90	28
4000															80	29	85	37		
5000																	85	47		
6000																				
8000																				
10000																				
12000																				
Neph.																				

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place
Time.	12h	7th	16h	7th	12h	7th	12h	7th											Time.
Type			b				b												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	60	19	65	17	80	26	90	12											Surf.
1000	60	36	80	17	85	13	95	18											1000
2000	65	30	85	23	85	16	105	23											2000
3000	80	23	95	23															3000
4000																			4000
5000																			5000
6000																			6000
8000																			8000
10000																			10000
12000																			12000
Neph.																			Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.			17h	7th							17h	7th			17h	7th	17h	7th		
Type.																				
Feet Surf.			65	20							70	22			70	28	75	17		
1000			70	29							65	20			75	37	75	43		
2000			65	40							75	32			75	39	80	43		
3000											70	35					80	37		
4000											75	37								
5000																				
6000																				
8000																				
10000											18h									
12000											Ci									
Neph											280	25								

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia				Place.
Time.			16h	7th	17h	7th	17h	7th			17h	7th							Time.
Type.			b																Type
Feet Surf.			65	17	85	31	100	19			60	8							Feet Surf.
1000			80	17	85	29	100	44			85	30							1000
2000			85	23	85	31	100	37			95	34							2000
3000			95	23	85	44	95	43			100	39							3000
4000							95	37			100	50							4000
5000							90	29											5000
6000							90	29											6000
8000							95	38											8000
10000							(7000ft)				17h-20m								10000
12000											ACu.								12000
Neph											70	28							Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.											7h	8th								
Type.																				
Feet Surf.											70	24								
1000											65	28								
2000																				
3000																				
4000																				
5000																				
6000																				
8000																				
10000																				
12000																				
Neph																				

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.																			Time.
Type.																			Type.
Feet Surf.																			Feet Surf.
1000																			1000
2000																			2000
3000																			3000
4000																			4000
5000																			5000
6000																			6000
8000																			8000
10000																			10000
12000																			12000
Neph																			Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
Duxford 10h 30m 7-3-31	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
	1007.4	M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
	1003	100	29.5	29.5	100?																		
	967	1050	26	24	77																		
	950	1510	23	21	74																		
	900	2900	(14)	12	-																		
	850	4350	8	7	-																		
	800	5870	3	2	-																		
	750	7490	1	0	-																		
	700	9200	-1	-2	-																		
	650	11,000	-4	-4	-																		
	600	12,950	-11	-11	-																		
	550	15010	-19	-19	-																		
	Haze top 805 mbs																						
	StCu 8/10 910-805 mbs																						
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Abbeville		Marignane				LeHavre		Naples		Malta	
Time.	13h	7th	12h	7th			18h	7th	17h	7th	17h	7th
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	70	18	150	23			70	23	180	30	1,000'	
3,280	100	23	180	25			80	20			250	37
4,920	90	20	180	14			90	3			280	47
6,560	70	11										
9,840												
13,120												
16,400												
19,680												
Place.	Marignane		Lyons		Barcelona		Rome				MALTA	
Time.	18h	7th	7h	8th	7h	8th	7h	8th			6h	8th
1,640	140	16	70	3	280	11	220	19			3,000'	
3,280			270	4	290	36					300	18
4,920					290	26					7,000'	
6,560											270	41
9,840											10,000'	
13,120											260	47
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.
G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, MONDAY, 9th MARCH, 1931. No. B. 25,309 U.A.S. 4,360.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1906, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

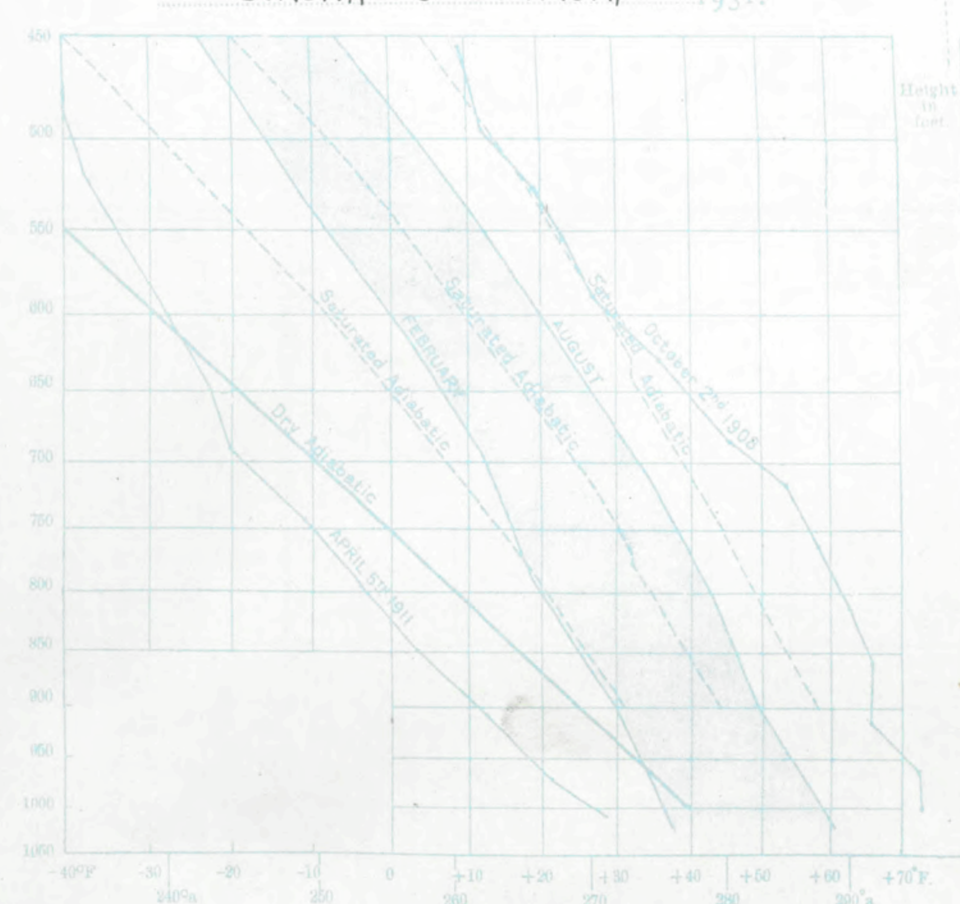
No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	56—65 „
	and so on.

In Tables.

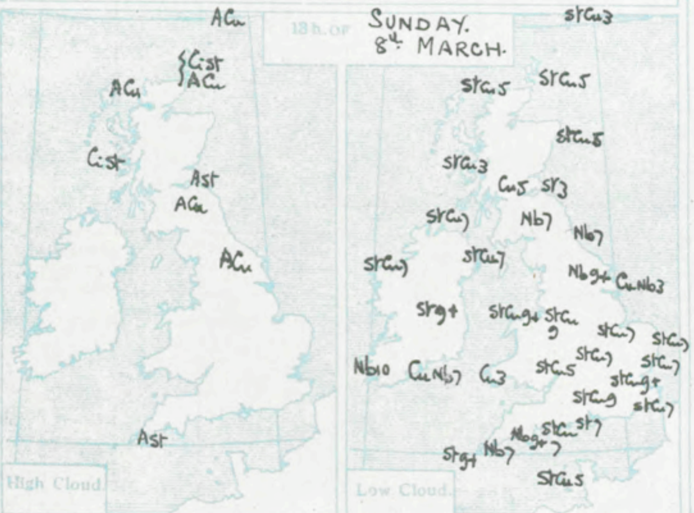
Directions are given in degrees, velocities in m.p.h.

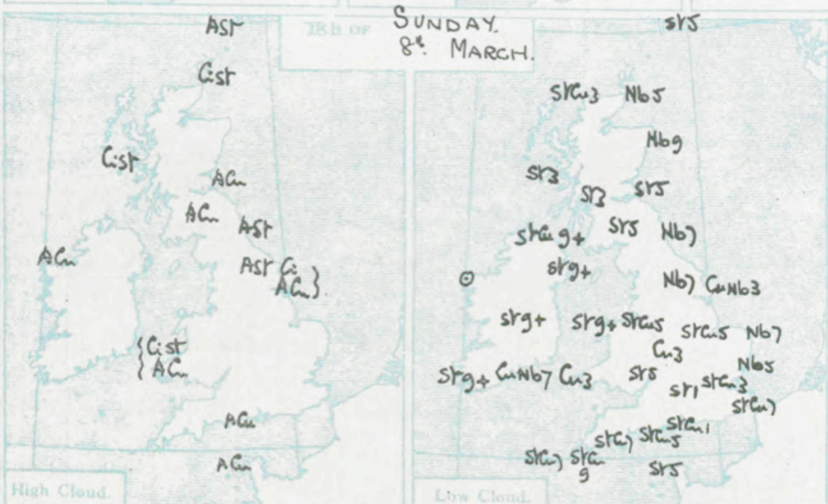
Speeds of high cloud are computed for an average height of „ miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

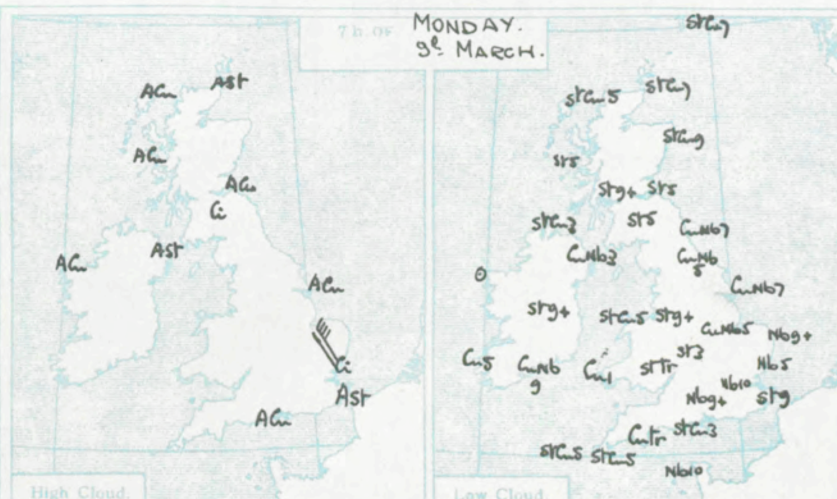
UPPER AIR TEMPERATURES.



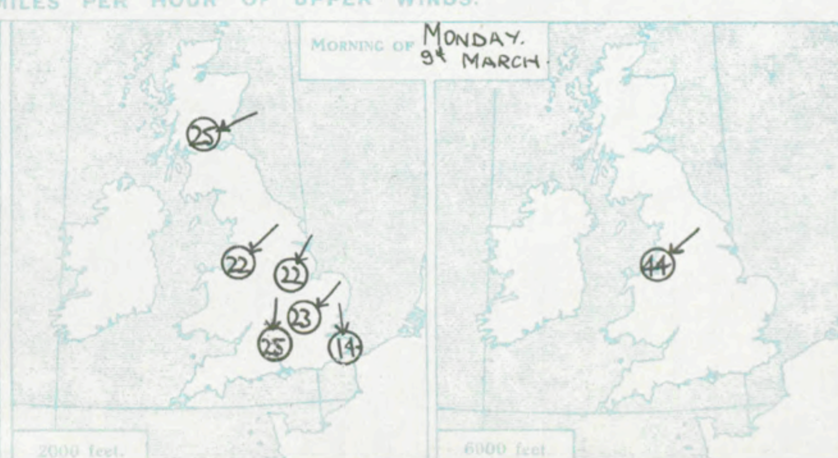
CLOUD FORMS, AMOUNTS AND MOVEMENTS.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.



⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place
Time.	11h.8m.		13h.8m.				12h.8m.				12h.8m.				13h.8m.						12h.8m.						12h.8m.		12h.8m.		12h.8m.								Time.
Type			b								b.																b.												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	60	25	85	20			85	20			65	29			65	20					75	15					100	14	85	10	105	13							Surf.
1000	75	7	80	35			85	27			70	23			60	27					75	17					95	17	60	13	70	23							1000
2000	65	26					70	26			75	27			65	33					75	16					105	27	70	33	80	29							2000
3000	65	36					60	29			120	28			60	30											95	28	70	33									3000
4000											120	24			55	25											90	27	65	29									4000
5000																																							5000
6000																																							6000
8000																																							8000
10000																																							10000
12000																																							12000
Neph.																																							Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia				Place.
Time.			17h.8m.																														17h.8m.						Time.
Type.																																							Type.
Feet																																							Feet
Surf.			65	14																													75	13					Surf.
1000			65	23																													90	24					1000
2000			65	32																													90	27					2000
3000			60	33																													85	32					3000
4000																																	85	39					4000
5000																																							5000
6000																																							6000
8000																																							8000
10000																																	16h. Ac						10000
12000																																							12000
Neph																																	90	60					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.			8h.9m.		7h.9m.		8h.9m.				7h.9m.						7h 9m.		8h.9m.						9h.9m.		6h.9m.				7h.9m.						10h.9m.		Time.
Type.					b																																		Type.
Feet																																							Feet
Surf.			350	8	360	10	15	10			340	9					20	7	10	13					55	25	10	10			35	8					60	12	Surf.
1000			25	21	360	19	20	14			350	17					30	18	35	24					50	14	40	27			45	21					60	21	1000
2000					5	25					345	14					40	22	40	23					58	21	45	22			65	25					85	26	2000
3000											335	6					50	31	35	24					60	21	50	19			70	31					80	20	3000
4000											35	4					60	30	35	27							45	29			65	33					80	35	4000
5000																											50	31									70	38	5000
6000																											45	44									50	15	6000
8000																											40	35											8000
10000																											(7000')												10000
12000																	7h Cu		10h. Ac Cu																10h Ac Cu				12000
Neph																	320	40	50	60															30	72			Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Jan Mayn		Manghouse		Rome		Palermo		Turin		Malta	
Time.	13h.8m.		12h.8m.		13h.8m.		13h.8m.		18h.8m.		17h.8m.	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	250	24	300	18	240	28	260	22	200	1	(1000') 290	25
3,280	250	18	300	14			280	31	210	17	(2000')	
4,920	250	20	330	34			290	31	240	6	290	27
6,560											(3000')	
9,840											290	28
13,120												
16,400												
19,680												

Place.	Rome		Calais		Abberille		Valencia		Nancy		Malta.	
Time.	18h.8m.		7h.9m.		7h.9m.		7h 9m.		6h 9m.		6h.9m.	
1,640	260	23	50	8	70	4	60	16	60	38	(1000')	
3,280	280	27	40	7	40	16	60	14	80	29	210	27
4,920					40	16					(2000')	
6,560											230	25
9,840											(3000')	
13,120											230	18
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, TUESDAY, 10TH MARCH, 1931.

No. S. 25,310.
U.A.S. 4,362.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. *d* = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

——• No speed given.
—— 0— 5 m.p.h.
——' 6—15 "
——" 16—25 "
——* 26—35 m.p.h.
—— 36—45 "
—— 46—55 "
—— 56—65 "
and so on.

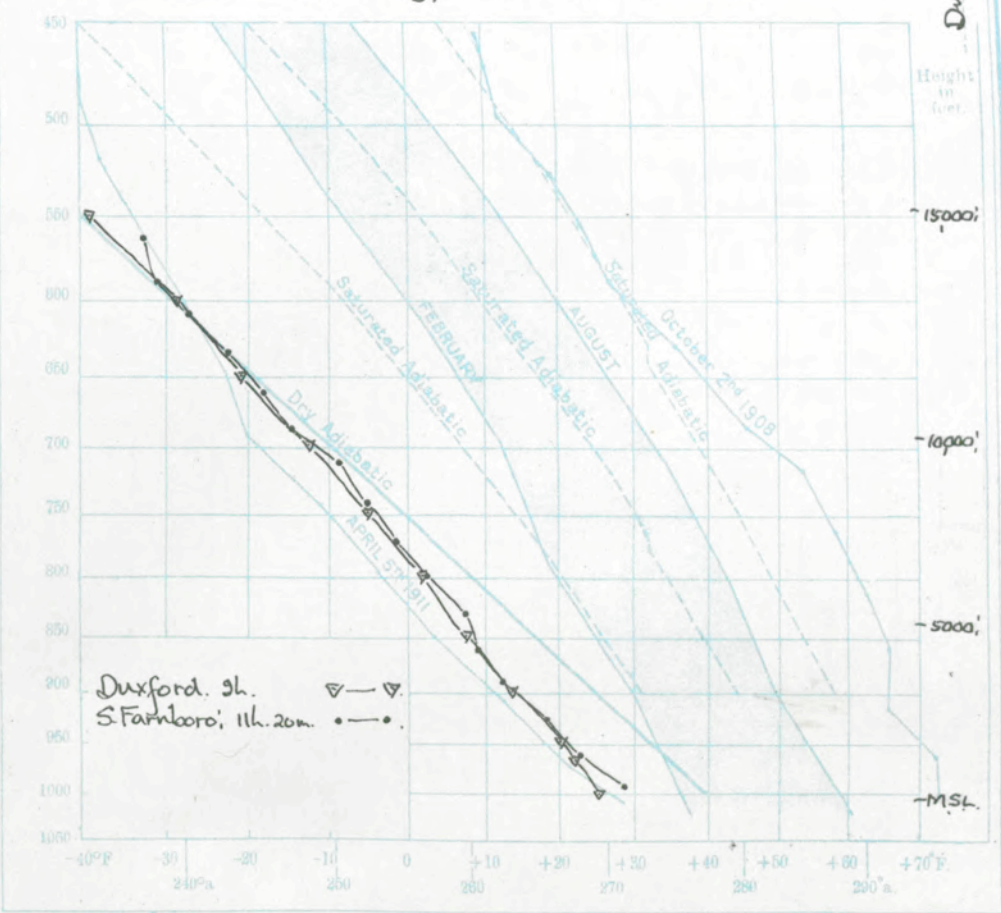
In Tables.

Directions are given in degrees, velocities in m.p.h.

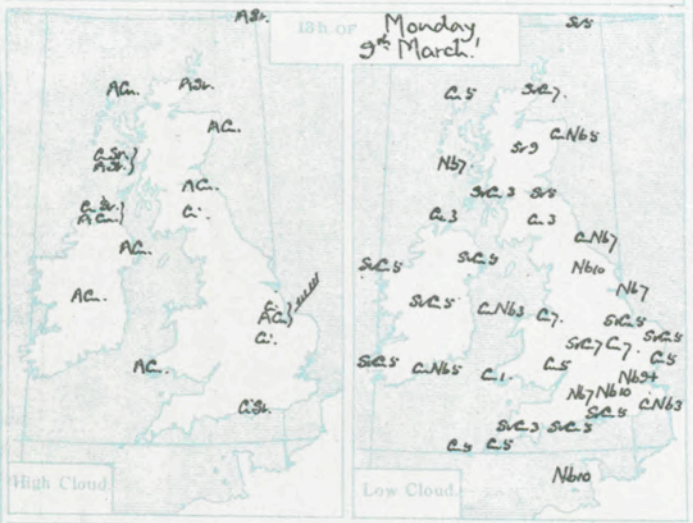
Speeds of high cloud are computed for an average height of 5 miles for curro type clouds (double lines) and 3 miles for alto type clouds (single line).

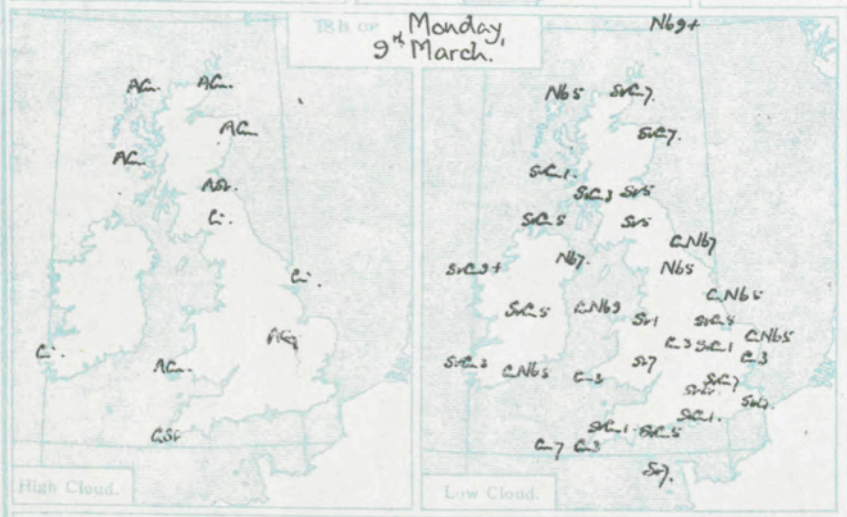
UPPER AIR TEMPERATURES.

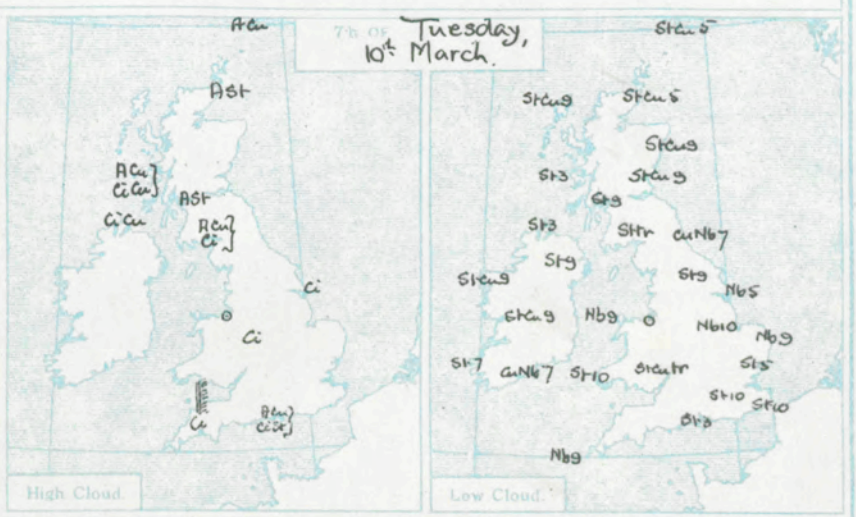
Monday, 9th March. 1931.



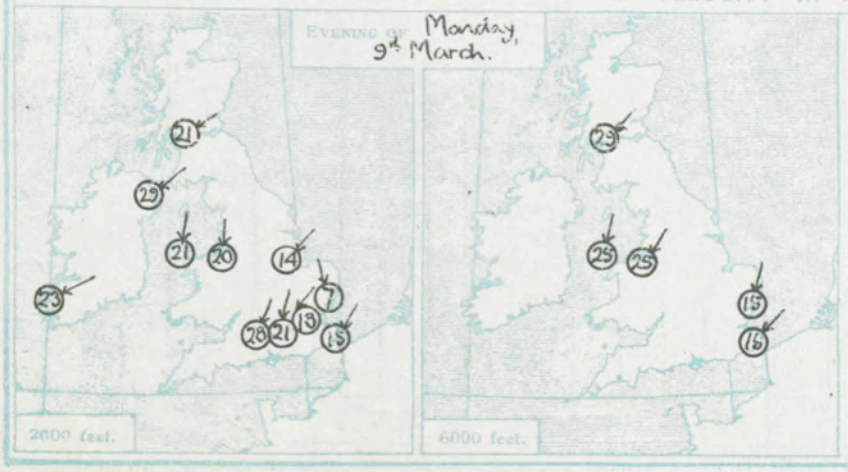
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

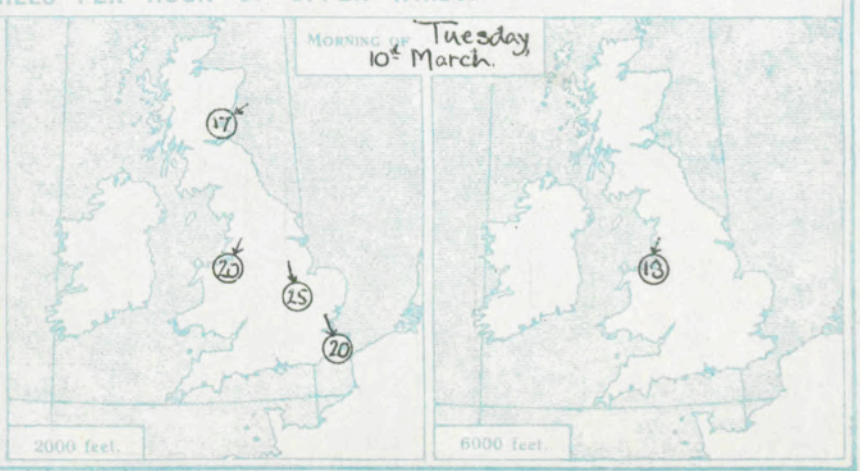






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊖ *Indicates absence of cloud.*

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Larkhill		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time					13h. 9'		12h. 9'				16h 9'				12h. 9'		12h 9'		12h 9'		12h 9'		16h 9'		12h. 9'		12h. 9'		12h. 9'		12h. 9'								Time
Type											b.						b		b				b.		b.		b.												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.					40	15	30	15			35	7			85	12	30	10	20	10	35	16	50	20	40	20	45	14	25	10	65	13							Surf.
1000					45	27	30	26			30	24			80	15	50	16	20	12	30	13	55	3	65	20	50	17	50	20	50	15							1000
2000					65	80	40	25			30	26			75	7	40	21	35	15	30	15	55	3	60	13	45	17	55	27	40	15							2000
3000							40	23			25	27			80	16	45	21	55	19					65	18	45	16	60	28									3000
4000							40	27			40	27			75	14	50	22							55	25			55	33									4000
5000											40	28			75	15	55	24							55	24													5000
6000																																							6000
8000																																							8000
10000																	13h								16h		14h												10000
12000																	AC								Ci		Ci												12000
Neph.																	40	63							50	80	50	75											Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Larkhill		Place.
Time.	7h 9'		18h. 9'		17h 9'		7h 9'				7h. 9'				16h 9'		7h. 9'				7h 9'		16h 9½		7h. 9'		17h 9'				7h. 9'		18h. 9'		18h 9'		16h 9½		Time.
Type.					b.						b.																										b		Type
Feet																																							Feet
Surf.	45	7	25	5	40	10	20	10			40	10			335	2	330	4			20	13	50	20	50	17	360	8			35	10	350	3	50	14	35	17	Surf.
1000	55	23	25	14	40	17	30	26			40	14			340	7	10	14			20	15	55	3	25	19	10	20			45	18	40	23	60	22	30	24	1000
2000	45	18	20	21	35	28	40	23			40	15			345	7	40	14			25	22	55	3	20	21	10	20			50	21	45	29	55	21	30	26	2000
3000	45	22	25	16	35	31	40	22			35	22			355	9					25	18			25	26	20	15			50	25			60	22	25	27	3000
4000			25	16	40	32	45	25			35	18			360	14					20	18			25	27	15	14			50	27			60	24	40	27	4000
5000					40	31	45	23			45	14			10	15					25	19			30	28	20	17			50	27			50	23	40	28	5000
6000							45	24			50 (2000')	15			20	15					25	19			35	25	25 (2000')	25			50 (2000')	29							6000
8000	Kew.						60	23			40	14			30	15											20	25			50	31							8000
10000	18h						55	20							30 (11000')	15																							10000
12000	C.						40	16							40	7																							12000
Neph	350	15																																					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Croydon		Lympne		Lympne		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	7h 10½		8h 10½						11h 10½		6h 10½		10h 10½						6h 10½				8h 10½		8h 10½		6h 10½		7h 10½								10h 10½		Time.
Type.																																							Type.
Feet																																							Feet
Surf.	280	5	305	4					305	10	315	4	286	5					325	7			5	2	45	19	340	4	360	3							335	12	Surf.
1000	305	21	340	17					305	11	325	13	315	10					340	14			10	6	45	21	5	18	40	15							350	14	1000
2000			345 (1500')	20							340	20	320	13					350	25					45	20	25	20	55	17							355	22	2000
3000																									40	35	30	20											3000
4000																									30	27	30	25											4000
5000																									15	30	25	25											5000
6000																									10	42	20	18											6000
8000																											25	22											8000
10000																																							10000
12000																							10h	Ci															12000
Neph																							360	90															Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
Duxford, 9h. 2/3/31.	mb.	Feet.	°F.	°F.	%
	1006	M.S.L.	—	—	—
	1002	100	25·5	25·5	100
	966	1050	21·5	21·5	100
	950	1490	20	19·5	94
	900	2870	13	12	—
	850	4210	7·5	7	—
	800	5810	1·5	1·5	—
	750	7400	-6	-6·5	—
	700	9090	-13	-13·5	—
	650	10860	-21	-21	—
	600	12750	-29	-29	—
	550	14770	-39	-39	—
	Haze top 266mb				
	Surface, 1030 - 803mb				
S Farnboro, 11h 20m. 24/3/31.	mb.	M.S.L.	—	—	—
	1005	M.S.L.	—	—	—
	997	230	29	-	-
	961	1150	23	-	-
	927	2120	18	-	-
	893	3060	12	-	-
	862	3960	9	-	-
	830	4880	7	-	-
	800	5830	2	-	-
	770	6720	-2	-	-
	741	7680	-6	-	-
	713	8600	-9	-	-
	686	9520	-15	-	-
	660	10420	-18	-	-
	635	11320	-23	-	-
	610	12250	-27	-	-
	587	13190	-31	-	-
	563	14140	-33	-	-
	mb.	M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Compiègne		Mainz		Rochefort.		Messina		St Inglevert		Malta	
Time.	12h. 9'		12h. 9'		13h. 9'		13h 9½		18h 9½		17h 9½	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	60	14	90	9	70	21	110	7	30	16	3000' 300	26
3,280	60	20	90	9	40	9	280	16	40	20	5000' 250	32
4,920	30	10	110	11	--	--	--	--	30	19	7000' 270	38
6,560	30	21			290	14	300	28				
9,840												
13,120												
16,400												
19,680												

Place.	Valenciennes		Ancona		Abbeville		Tunis		Tours		Malta	
Time.	18h 9½		18h 9½		7h 10½		6h 10½		7h 0½		6h 10½	
1,640	10	11	210	8	320	11	250	29	60	27	1000' 280	22
3,280	10	14	—	—	300	15	270	25	60	31	3000' 290	25
4,920	360	8	250	14			260	34	50	23	5000' 300	27
6,560			170	20			270	27	50	20		
9,840									260	17		
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry
Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S.
Director.

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, WEDNESDAY, 11TH MARCH, 1931.

No. B. 25,311.
U.A.S. 4,363.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	56—65 „
	and so on.

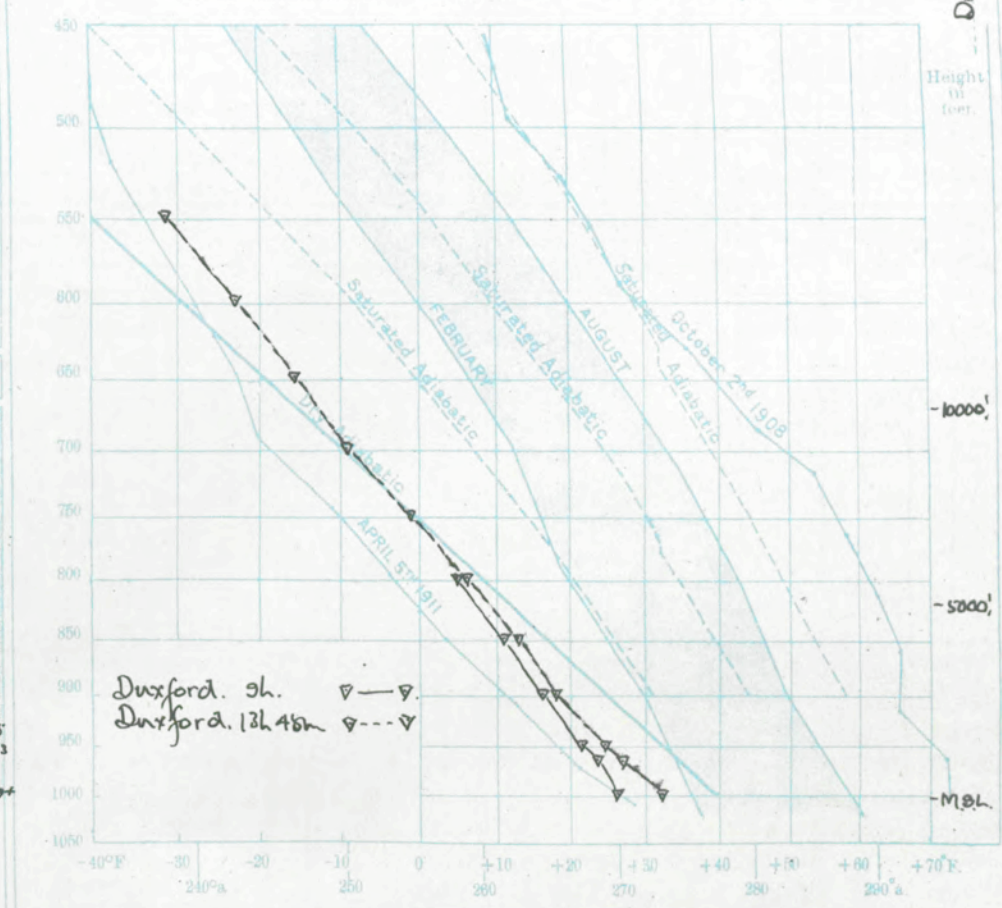
In Tables.

Directions are given in degrees, velocities in m.p.h.

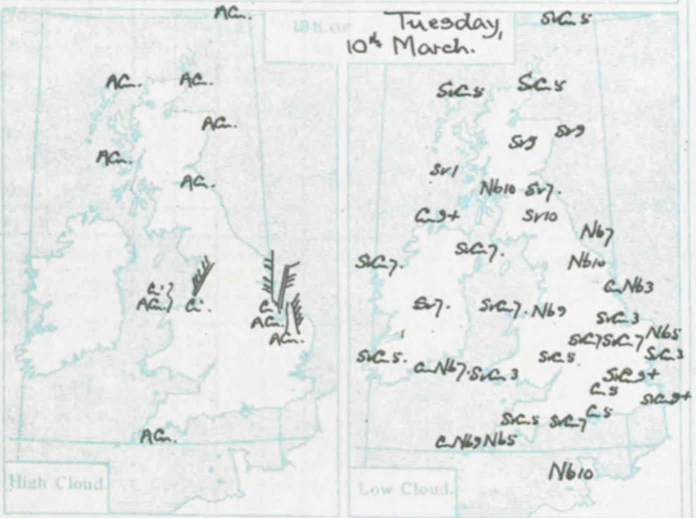
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

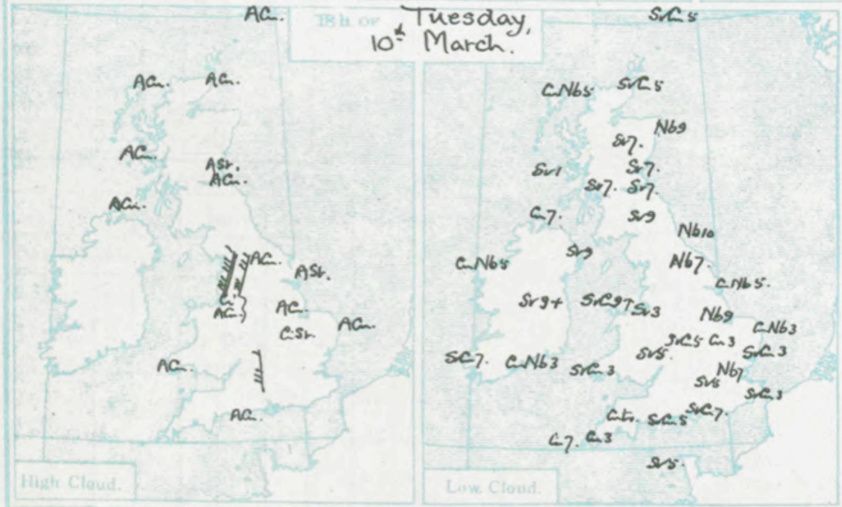
UPPER AIR TEMPERATURES.

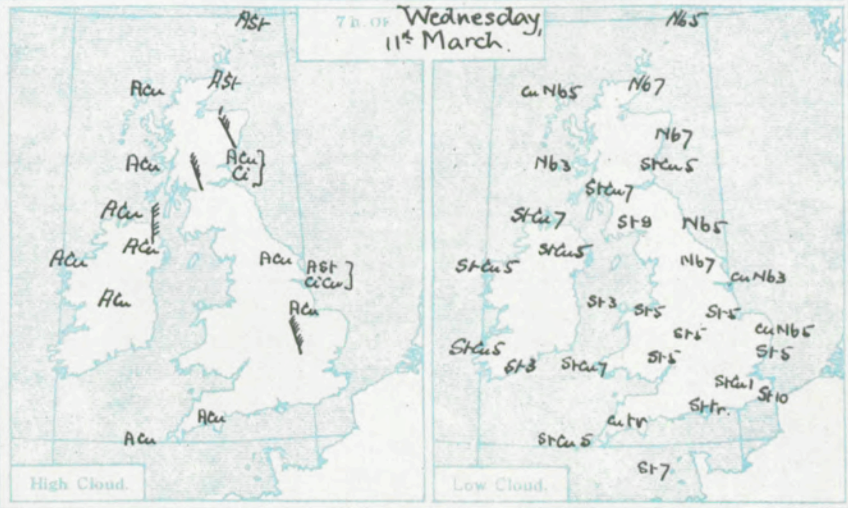
Tuesday, 10th March. 1931.



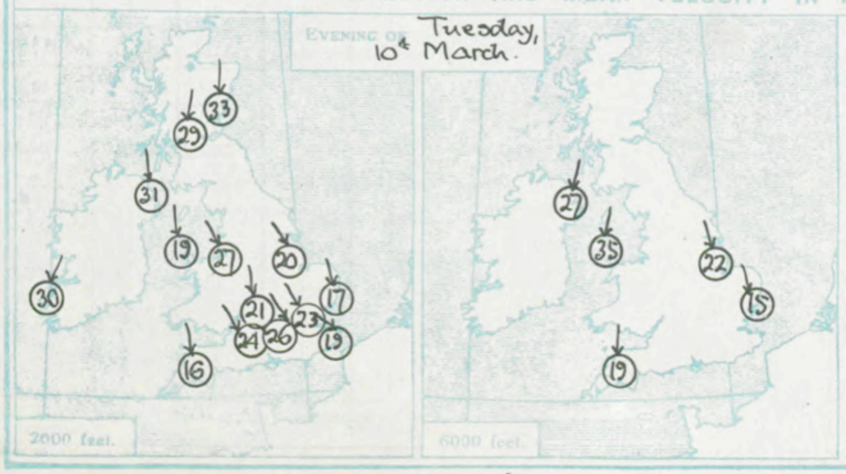
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

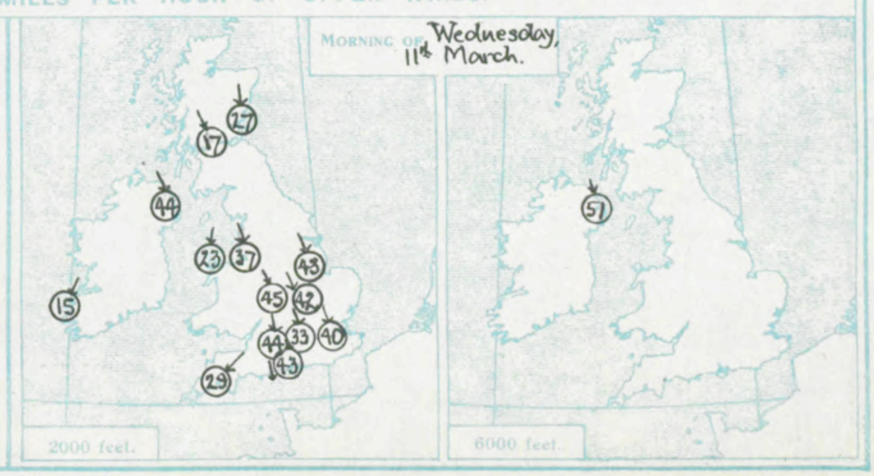






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time.			13h. 10'		13h. 10'		12h. 10'				13h 10'				12h. 10'		12h. 10'		12h. 10'	
Type			b		b		b										b		b.	
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.			340	7	340	11	310	14			335	10			325	7	325	15	335	14
1000			330	12	325	15	320	15			310	7			315	9	330	21	345	13
2000			340	17	335	15	320	15			310	16			?	15	345	20	350	18
3000			340	17	340	15	330	14			310	14							345	21
4000																			350	26
5000																			350	29
6000																	13h		355	20
8000																	C.			
10000																	10	45	12h.	
12000																	AC.		AC.	
Neph.																	360	48	350	48

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.	12h. 10'		12h 10'		12h. 10'		13h. 10'				12h. 10'								Time.
Type			b.		b.		b												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	335	10	360	10	25	16	360	15			260	3							Surf.
1000	330	11	5	13	30	19	350	21			315	7							1000
2000	335	12			25	23	355	22			325	13							2000
3000	350	14			20	29	355	12											3000
4000					15	29	355	29											4000
5000					10	28													5000
6000					10	24													6000
8000																			8000
10000																			10000
12000																			12000
Neph.																			Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.	17h 10'		17h. 10'		17h 10'						17h 10'				17h 10'		17h. 10'			
Type.					b.						b.									
Feet Surf.	280	8	290	4	330	14					335	10			330	10	310	9		
1000	320	20	315	15	330	20					330	11			330	13	320	18		
2000	330	23	330	26	330	24					310	19			345	17	330	20		
3000			345	25.	335	29					310	21			330	21	340	23		
4000					340	25					325	23			335	20	350	21		
5000															340	17	360	20		
6000															345	15	350	22		
8000															350	19				
10000							18h.								360	28			16h.	
12000							AC.												C.	
Neph							350	39											330	75

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia				Place.
Time.	17h. 10'		16h 10'		17h. 10'		17h 10'		17h. 10'		17h. 10'		18h. 10'		18h. 10'				Time.
Type.			b																Type
Feet Surf.	330	19	315	11	355	19	335	14	5	10	360	5	320	11	10	17			Feet Surf.
1000	335	19	340	17	360	17	335	27	25	15	20	21	350	24	10	18			1000
2000	350	21	350	16	350	19	335	27	10	33	20	29	355	31	20	30			2000
3000	345	31	350	14	360	32	350	25			25	31	360	35	30	34			3000
4000	345	28	360	7	360	37	5	27			30	34	10	32	30	34			4000
5000	345	26	15	12	10	38	16h. AC.						5	30	45	14			5000
6000			10	19	25	25	19	54					20	27					6000
8000					10 (9000')	37	18h. AC.												8000
10000					10	42.	20	60											10000
12000							C.												12000
Neph							20	75											Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Larkhill		Felixstowe		Cranwell		Cardington	
Time.	7h 11th		7h 11th		7h 11th		8h 11th		7h 11th		11h 11th		10h 11th		8h 11th		6h 11th		8h 11th	
Type.													b							
Feet Surf.	280	13	290	7	320	12	330	15	285	10	325	15	335	17	320	15	320	25	320	17
1000	325	24	330	28	340	35	335	27	340	31	330	23	345	29	310	31	330	36	335	31
2000	350	40	350	33	360	44	355	26	355	43	335	35	350	32			345	43	345	42
3000	355	42			360	34	360	33	350	34			360	36			355	42		
4000	350	45			355	38			350	27			5	30						
5000	350	43			360	33							5	36						
6000																				
8000																				
10000																				
12000																			10h	ACu
Neph																			350	78

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.	9h 11th		7h 11th		9h 11th		6h 11th		7h 11th		7h 11th				7h 11th		10h 11th		Time.
Type.																			Type.
Feet Surf.	330	16	Calm		15	23	350	15	330	15	325	2			Calm		30	16	Feet Surf.
1000	330	31	15	25	10	19	340	33	345	42	330	15			340	16	30	20	1000
2000	340	45	35	29	5	23	350	37	360	27	345	17			345	44	25	15	2000
3000	350	44			355	30	360	33			345	21			350	38			3000
4000	355	45			350	31	360	52			5	19			15	15			4000
5000							360	50							5	32			5000
6000															355	51			6000
8000																			8000
10000																			10000
12000									10h	ACu	10h	ACu			10h	ACu			12000
Neph									340	36	350	60			360	57			Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
Duxford. 9h. 10/3/31.	1004	M.S.L.	—	—	—	Duxford. 13h. 45m. 10/3/31.	1004	M.S.L.	—	—	—
	1000	100	26	26	100		1000	100	32	32	100
	964	1050	23	22	75		965	1050	26.5	26	94
	950	1430	21	20	87		950	1420	24	23	87
	900	2800	16	15	-		900	2870	17.5	16.5	-
	850	4260	10	9	-		850	4300	11.5	10.5	-
	800	5780	4	4	-		800	5800	5	4	-
							750	7400	-2	-2.5	-
							700	9100	-10	-10	-
							650	10890	-16.5	-16.5	-
							600	12800	-23	-23	-
							550	14830	-32	-32	-
	Haze top not defined. St 8/10, 970 – 950 mb. Dense black clouds forming in NNE.						Haze top not defined. StCu 9/10, 925 to 980 mb. Cu/Nb. base not defined to 660 mb. Ci. not reached.				
		M.S.L.	—	—	—			M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Lemberg.		Ancona.		Palermo.		Brest		Marignane		Tunis	
Time.	13h. 10'		13h. 10'		13h. 10'		14h 10th		17h 10th		6h 11th	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	190	19	250	20	250	23	330	6	240	6	320	11
3,280	190	24	~	~	~	-	330	23	200	32	280	18
4,920	220	24	270	29	270	34					260	36
6,560	210	24	270	26							260	52
9,840												
13,120												
16,400												
19,680												
Place.	Lyons		Toulouse		Maddalena		Pau		Mourmelon		Malta	
Time.	7h 11th		7h 11th		7h 11th		10h 11th		9h 11th		6h 11th	
1,640	20	6	320	4	–	–	70	13	280	20	200 (1000')	33
3,280	10	11	40	11	270	37	–	–	300	20	220 (3000')	27
4,920			40	8	–	–	90	18	300	23	260 (5000')	27
6,560					290	43			310	23		
9,840									330	25		
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.
G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, THURSDAY, 12TH MARCH. 1931.

No. B. 25,312.
U.A.S. 4364.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

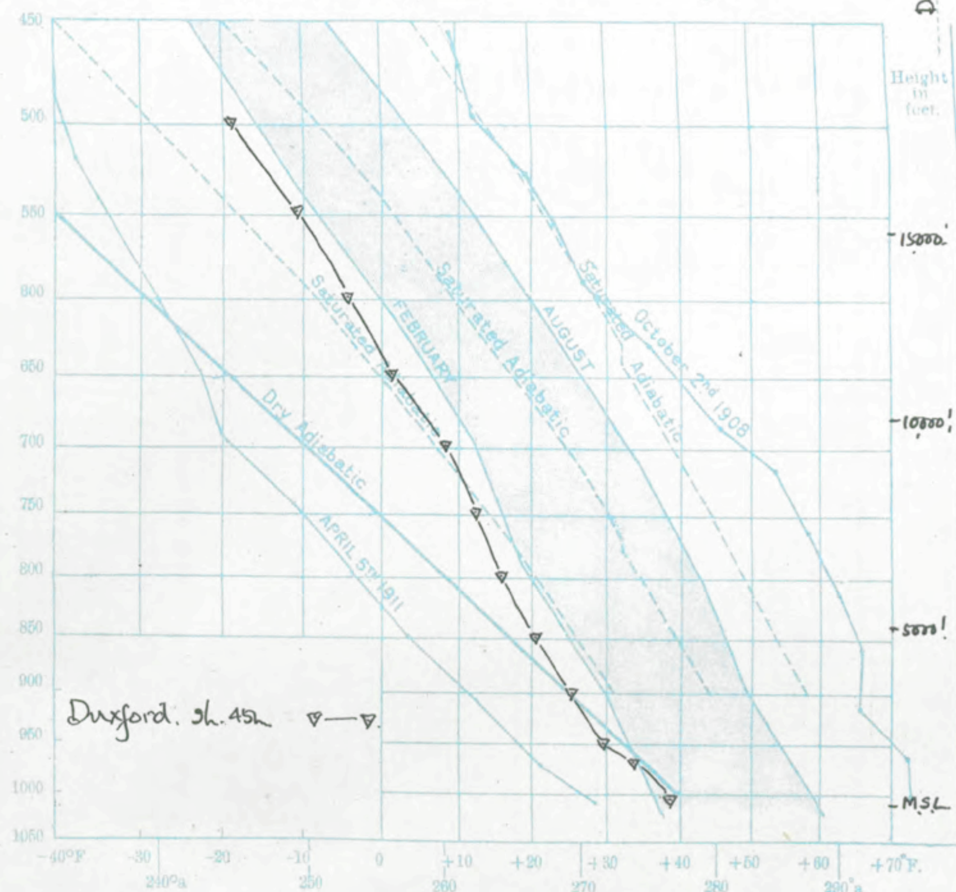
In Tables.

Directions are given in degrees, velocities in m.p.h.

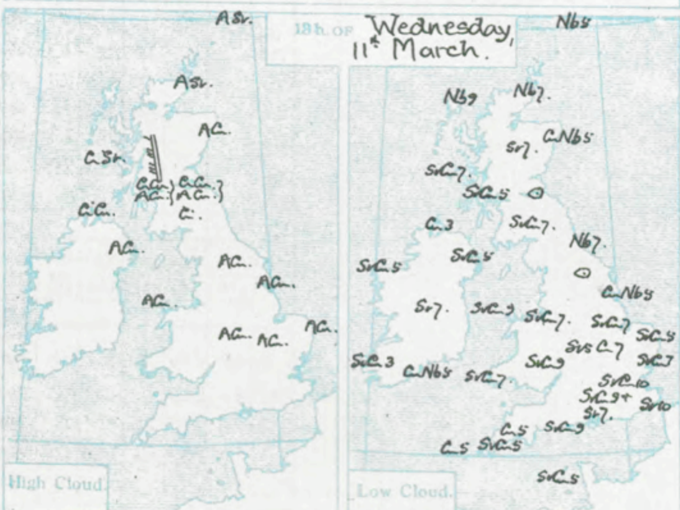
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

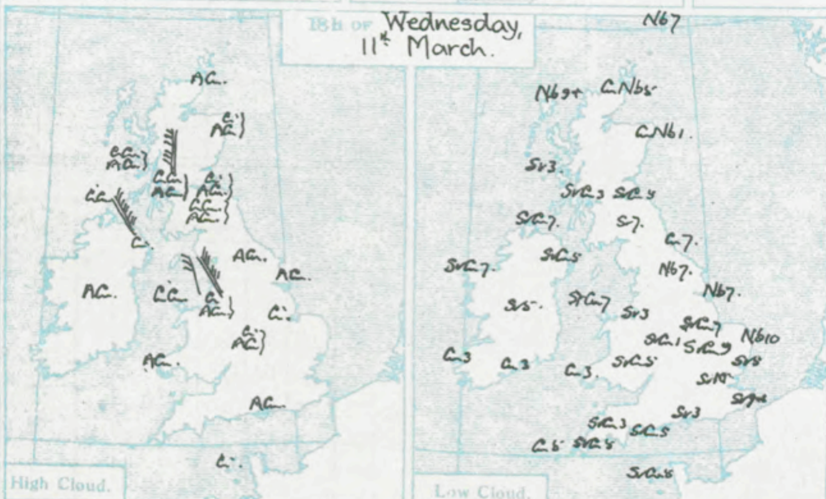
UPPER AIR TEMPERATURES.

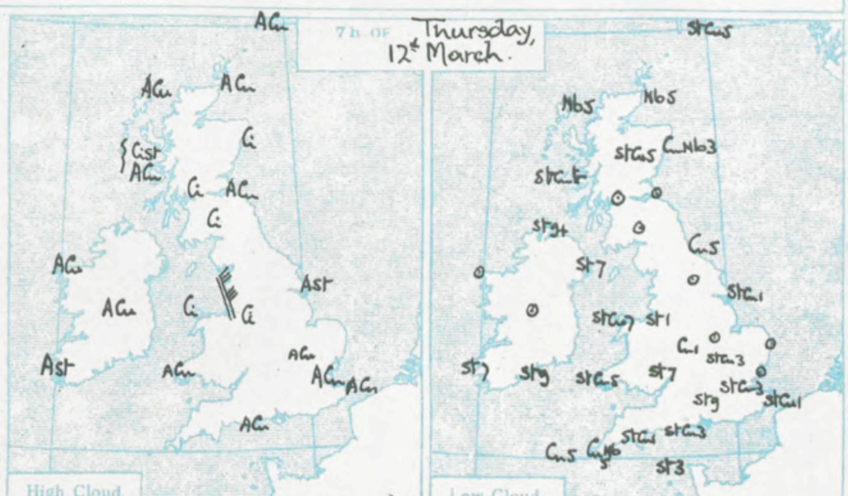
Wednesday, 11th March, 1931.



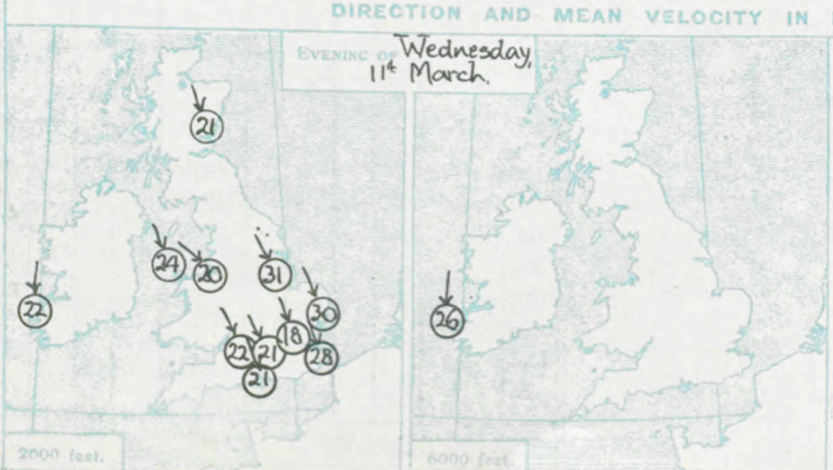
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

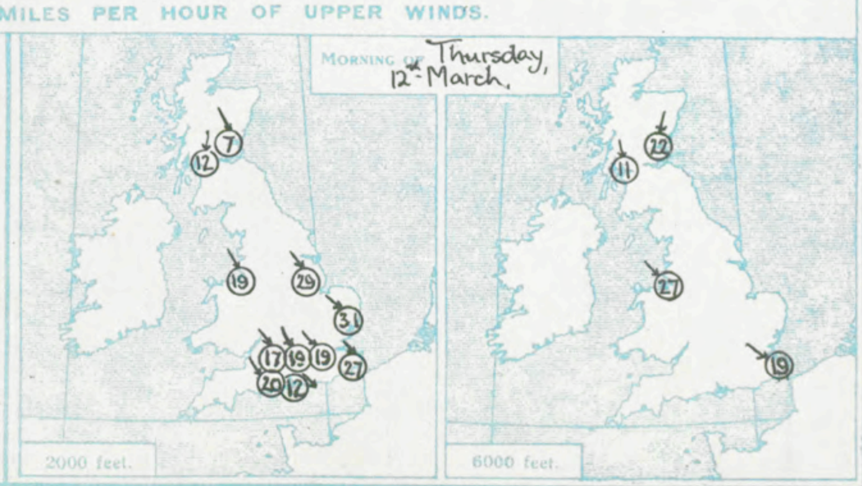






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	12h. 11m		13h. 11m		13h 11m		12h. 11m		12h. 11m		12h. 11m				12h. 11m		12h. 11m		12h. 11m		12h. 11m				12h. 11m		12h. 11m		12h. 11m		12h. 11m								Time.
Type	b				b.		b				b						b.		b						b		b.				b.								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	305	14	315	8	335	15	345	18	320	14	330	18			325	18	325	26	335	22	335	14			15	17	340	18	320	16	270	6							Surf.
1000	320	32	335	21	335	21	335	27	325	20	320	23			320	28	325	35	330	27	335	23			5	17	340	28	340	35	330	15							1000
2000			330	22	335	19	335	27	330	25	330	36			335	33	340	42	330	29	330	27			360	20	345	39	345	17	345	17							2000
3000			335	27	330	23	330	22	330	25							340	46	330	34	325	23			345	24	335	21	350	17	340	34							3000
4000			345	29	330	25			330	25											340	23			345	32	330	16			350	24							4000
5000					330	27			340	25											340	29									355	34							5000
6000									345	23																					-	-							6000
8000																															10	33							8000
10000																											16h.				13h.								10000
12000																											Ci.				CC.								12000
Neph.																											340	75			340	70							Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Calshot		Place.
Time.	17h. 11m		17h 11m		17h 11m		17h 11m		17h 11m		17h. 11m				17h 11m		17h 11m						16h. 11m		17h. 11m		17h. 11m		17h 11m		17h 11m				18h. 11m		24h 11m		Time.
Type.											b												b.																Type
Feet																																							Feet
Surf.	295	7	325	8	305	13	335	8	320	18	320	15			320	16	315	18					355	15	355	20	300	13	300	10	325	12			25	19	285	6	Surf.
1000	325	15	325	17	315	19	330	22	325	26	330	22			325	22	325	25					10	27	345	23	310	20	320	17	325	14			15	20	315	18	1000
2000	340	18	330	21	330	22	335	20	330	21	330	28			330	30	330	31							345	24	315	20	325	21					5	22	330	17	2000
3000			330	22	335	20	335	20	315	17	335	38					330	38							335	25	325	26					16h		360	18	335	17	3000
4000					340	22	335	25	325	22	335	39					330	38							325	25	330	31					AC		383	22	325	17	4000
5000					345	19	335	27																			325	35					360	42	15	15	340	21	5000
6000																											18h.						CC		10	26	325	25	6000
8000																											AC		Sea	land			360	55			315	29	8000
10000																											330	33	6h	Ci	16h						320	24	10000
12000																											Ci.		340	75	CC		Ci.						12000
Neph																											320	60			350	65	320	80					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Lympne		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Sealand		Croydon		Valentia		Place.
Time.	7h 12h		7h 12h		7h 12h		8h 12h		7h 12h		6h 12h		10h 12h		7h 12h		6h 12h		8h 12h		8h 12h		7h 12h		9h 12h		7h 12h		6h 12h		7h 12h		8h 12h		10h 12h		10h 12h		Time.
Type.					b								b														b												Type.
Feet																																							Feet
Surf.	Calm		280	5	290	7	295	8	305	3	290	3	295	3	285	10	280	7	300	10	295	10	75	6	10	13	320	7	305	12	270	2	330	4	305	8	180	4	Surf.
1000	315	22	320	17	320	20	325	24	320	21	300	21	300	10	315	25	325	25	335	20	305	13	320	10	5	9	340	18	330	17	325	11	335	17	320	13	Calm		1000
2000	325	19	330	19	335	17	330	20	320	12	320	27	305	11	320	31	335	29	335	17	325	13				345	9	335	19	350	21	5	12	330	19	325	20	Calm		2000
3000			325	20	330	18	315	16	315	15	305	26	305	19	320	31	330	27	325	19	335	15				330	10	330	21	355	23	30	13	330	17	325	16	340	10	3000
4000					325	19	315	21	325	17	300	28	315	19	320	27	325	26	325	22	335	17						340	22	10	22	30	13	335	17			325	8	4000
5000					330	22	330	20			295	25	330	21	325	27	330	28	335	22	340	19						330	25	10	25	30	9	340	19					5000
6000											310	19	325	23					330	22								325	27	15	22	355	11	340	29					6000
8000													320	20														10h	Ci	5	32	335	17	340	29					8000
10000													315	27														320	55					335	39					10000
12000													320	38														7h	Ci			10h	Ci	320	37					12000
Neph																												330	60			310	60							Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
Duxford. 9h45m. 11/3/'31.	mb.	Feet.	°F.	°F.	%
	1007.5	M.S.L.	—	—	—
	1004	100	39	35.5	71
	968	1080	34	33	91
	950	1680	29.5	27.5	86
	900	2990	25	23	77
	850	4480	20	18	73
	800	6010	15	13	-
	750	7660	12	10	-
	700	9400	8	7	-
	650	11250	1	0	-
	600	13220	-5	-5	-
	550	15330	-11	-11	-
	500	17640	-19	-19	-
	Haze top 968mb.				
	Sfc. 8/10, 950 - 880mb.				
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place	Abbeville.		Le Havre.		Brest		Toulouse		Milan		Malta.	
Time.	13h. 11m		18h. 11m		18h 11½		17h 11½		18h 11½		7h. 11m.	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	310	34	340	18	20	18	360	7	-	-	(580')	
3,280			340	23	30	14	360	9	-	-	250	38
4,920			340	23	30	11	350	9	360	23	(700ft)	
6,560			340	18					340	19	250	52.
9,840												
13,120												
16,400												
19,680												

Place	Tripoli		Toulouse		Lyons		Prague		Olomouc		Malta	
Time.	18h 11½		7h 12½		7h 12½		7h 12½		7h 12½		6h 12½	
1,640	260	19	80	7	10	8	230	24	200	18	1000' 350	9
3,280	260	31	110	4	30	16	250	34	240	24	3000' 260	27
4,920	260	31	280	16	60	?					7000' 270	24
6,560					80	8					10000' 290	20
9,840												
13,120												
16,400												
19,680												

Meteorological Office, Air Ministry, Kingsway, London, W.C 2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, FRIDAY, 13th MARCH, 1931.

No. B. 25,313,
U.A.S. 4.36S.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given
- 0— 5 m.p.h.
- 6—15 "
- 16—25 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 56—65 "

and so on.

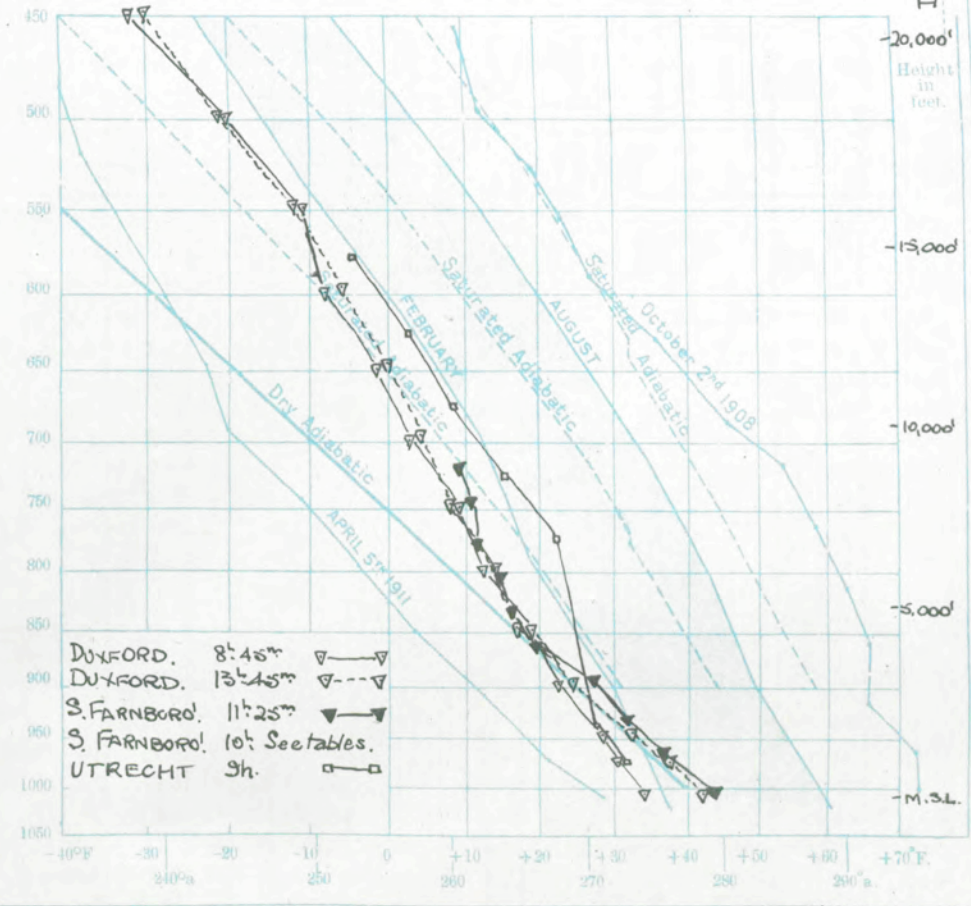
In Tables.

Directions are given in degrees, velocities in m.p.h.

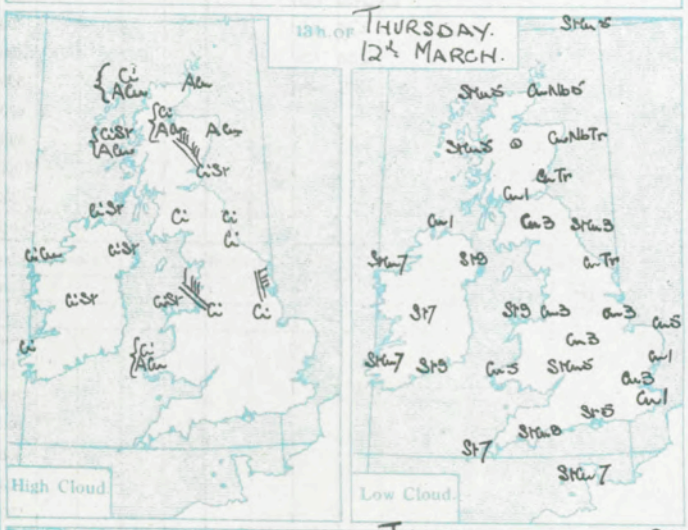
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

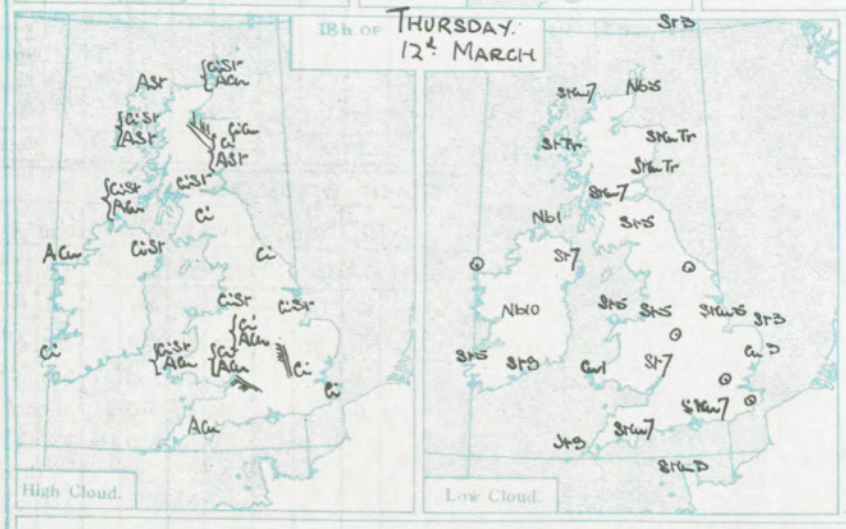
UPPER AIR TEMPERATURES.

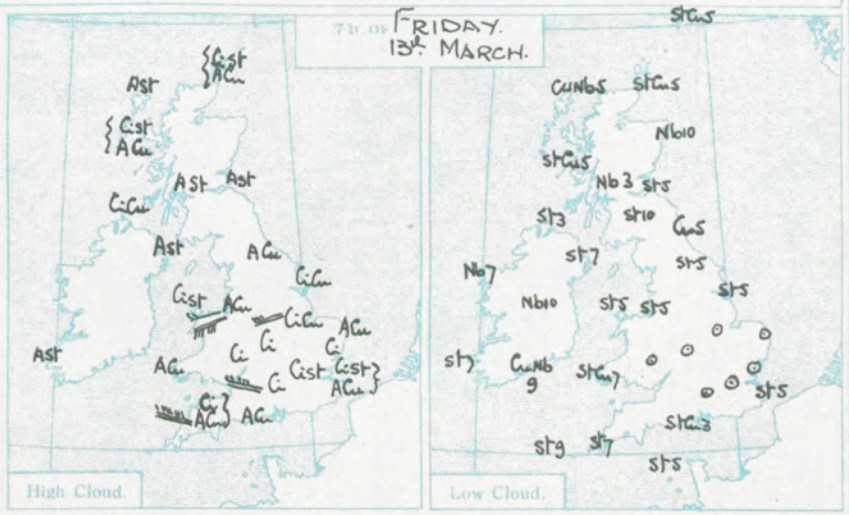
THURSDAY, 12th MARCH, 1931.



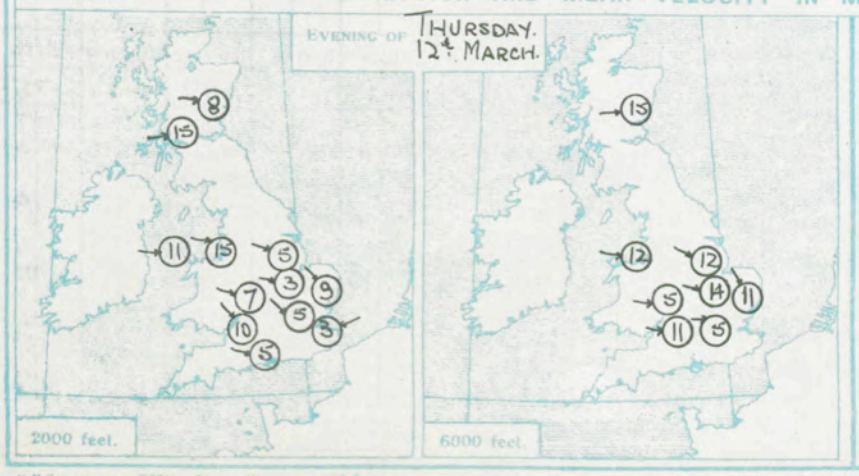
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

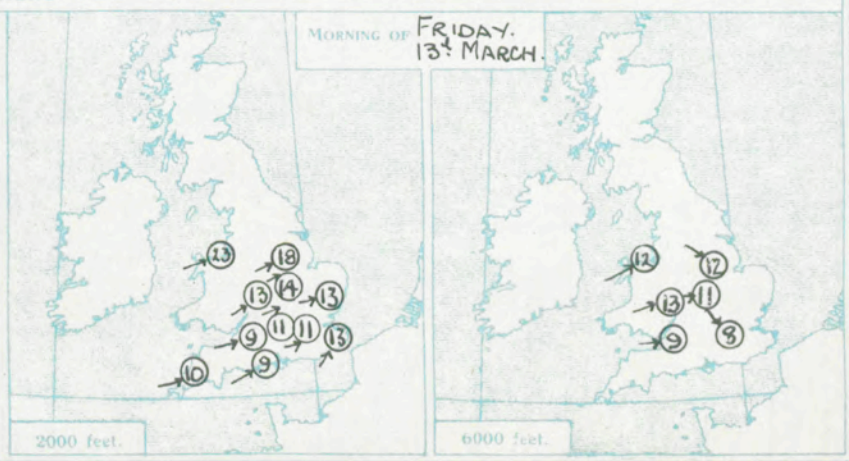






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press Kingsway W.C.2.

© Indicates absence of cloud.

Ps.25/2/2210. Mc.1/6. D.6008. Gp.908. 11780. 3/31.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	12½-12¾		12½-12¾		13½-12¾		12½-12¾		12½-12¾		12½-12¾				12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾		12½-12¾				Time
Type	b		b		b		b		b		b				b		b		b				b		b		b										Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	320	10	310	8	345	4	225	10	345	7	335	11			295	11	320	9	290	11	310	8	345	16	330	5	295	7	290	10	280	1	310	18	210	7			Surf.
1000	320	15	290	11	340	9	320	10	340	11	330	15			315	20	325	13	300	11	325	9		10	325	6	305	8	285	17	280	1	310	24	240	9			1000
2000	325	12	305	8	340	10	320	10			315	17			325	15	350	17	310	12	315	7	5	7	325	8	295	13	310	13	280	3	315	31	270	10			2000
3000	330	16	325	11	335	13	325	11	330	13	300	13			335	20	335	13	315	11	330	9	5	9	310	10	330	7	325	8	260	8	320	29	300	11			3000
4000	340	13	320	13	315	17	270	17							345	21	330	16	325	15	320	9	10	7	290	11	315	9	300	12	280	9	320	22	320	15			4000
5000	345	18			305	15	345	18									330	18	340	22							355	7	305	10	275	10	325	27					5000
6000							330	15									335	15	340	14							330	7	305	11	280	11							6000
8000							335	20									330	23	330	26							10,000ft 315	25	300	19	315	19							8000
10000							330	33									320	28	315	31							18,000 315	23	(7,000)										10000
12000							10½	Ac									13½	Ci	14,000								13½	Ci	13½	Ci	12½	Ci							12000
Neph.							340	45									340	40	320	41							510	40	310	60	310	70							Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Place.
Time.	17½ 12½		17½ 12½		17½ 12½		17½ 12½		17½ 12½		17½ 12½		15½ 12½		17½ 12½		17½ 12½		15½ 12½		17½ 12½				16½ 12½		17½ 12½		17½ 12½		17½ 12½								Time.
Type.			b								b		d						b																		Type.
Feet																																					Feet
Surf.	270	5	310	2	340	3	330	3	220	4	110	5	320	10	300	1	-	0	350	2	310	6			305	3	320	6	295	6	255	6							Surf.
1000	305	7	300	8	330	6	330	7	275	13	130	9	330	10	340	7	345	3	295	5	305	9			280	8	290	11	295	9	265	15							1000
2000	300	5	300	6	305	5	315	10	255	5	65	3	340	12	315	9	300	5	280	3	295	7			275	11	280	15	280	8	265	15							2000
3000	325	4	305	4	295	6	315	9	305	4	360	5	325	12	300	11	280	12	290	3	275	9			275	11	265	13	260	11	270	11							3000
4000	300	6	330	6	295	5	305	9	320	7	310	7	320	12	300	9	280	15	325	8	270	9			270	9	200	13	260	13	280	15							4000
5000	315	5	330	3	300	7	280	8	325	16	300	11	320	10	315	10	275	14	310	9	270	7			290	11	245	8	255	15	285	14							5000
6000			275	5			280	11					325	12	325	11	290	14	300	12	285	5					280	12	275	15									6000
8000			310	17									10,000 305	22	325	15	7,000 295	15	315	19							300	21											8000
10000			15½ Ac 340	27									14,000 310	40	325	20			9,000 310	26							295	19											10000
12000			18½	Ci	18½	Ci	16½	Ci					18,000														295	23	18½	Ci									12000
Neph			340	50	300	50	300	45					340	40															310	45									Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	7h 13½		8h 13½		7h 13½				7h 13½		6h 13½				7h 13½		7h 13½		8h 13½		9h 13½		8h 13½		9h 13½		7h 13½												Time.
Type.																																					Type.
Feet																																					Feet
Surf.	205	10	Calm		Calm				320	5	200	3			Calm		215	5	255	7	220	6	50	4	210	21	150	6											Surf.
1000	260	9	260	8	250	7			235	7	200	13			255	11	250	13	265	13	235	10	310	6	215	23	235	20											1000
2000	255	11	250	11	250	9			245	9	225	13			260	13	250	18	255	14	235	13	255	10			245	23											2000
3000	250	12	250	11	260	15			255	11	265	10			255	13	255	18	255	18	245	15	250	13			250	17											3000
4000	255	11	255	14	265	13			260	15	275	8			245	15	290	12	280	12	230	11	250	14			245	11											4000
5000	305	9			265	9									255	17	300	13	305	12	240	11					245	11											5000
6000	325	8			270	9									9h	Cu	305	12	270	11	250	13					240	12											6000
8000															250	75	255	10	300	14							9h 40	Ci											8000
10000															Cranwell	(7000')	305	21									250	60	Sea	Land									10000
12000					10h	Cu	10h	Ci							10h	Cu	10h	Ci	280 (16000')	25			7h	Ci			7h	Ac	10h	Ci									12000
Neph					290	50	270	60							240	30	270	30	265 (17000')	32			260	75			250	21	280	60									Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUNFORD. 8h 45m 12/3/31.	mb.	Feet.	°F.	°F.	%
	1009	M.S.L.	—	—	—
	1006	100	34.5	32.5	81
	970	1070	30.5	30.5	100
	950	1590	28	28	100
	900	2990	23	23	100
	850	4480	18.5	17.5	-
	800	6000	12.5	12	-
	750	7640	9	7	-
	700	9370	3.5	3	-
	650	11210	-1.5	-2	-
	600	13130	-8	-8.5	-
	550	15270	-11	-12.5	-
	500	17580	-20	?-20	-
	450	20050	-32.5	-32.5	-
	31m 3/10, 850 to 830 mb. Haze top 964 mb.				
UTRECHT 9h. 12·3·1931.	1004	M.S.L.	—	—	—
	979	660	32	-	85
	943	1640	28	-	85
	785	3280	23	-	85
	730	4920	16	-	85
	678	6560	9	-	65
	628	8200	3	-	55
	582	9840	-4	-	45

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO'. 10h. 12/3/31.	mb.	Feet.	°F.	°F.	%
	1010	M.S.L.	—	—	—
	1001.6	230	41	,	,
	979	870	38	,	,
	945	1750	33	,	,
	910	2750	28	,	,
	877	3760	26	,	,
	845	4700	21	,	,
	814	5650	18	,	,
	783	6640	16	,	,
	754	7600	13	,	,
	726	8600	10	,	,
	698	9550	7	,	,
	672	10450	5	,	,
	646	11450	3	,	,
	621	12430	2	,	,
	597	13400	1	,	,
	573	14410	-2	,	,
	550	15400	-8	,	,
	529	16350	-12	,	,
	508	17300	-13	,	,

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO'. 11h 25m 12/3/31.	mb.	Feet.	°F.	°F.	%
	1010	M.S.L.	—	—	—
	1002	230	44	,	,
	966	1220	37	,	,
	931	2190	32	,	,
	897	3160	27.5	,	,
	865	4100	20	,	,
	834	5000	16	,	,
	804	5950	14	,	,
	775	6800	12	,	,
	747	7830	11	,	,
	720	8730	8	,	,
	Cloud at 834 and 804 mb.				
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	1010	M.S.L.	—	—	—
	1007	100	42.5	36	54
	970	1090	38	35	75
	950	1650	33	30	72
	900	3050	25	22	66
	850	4570	17.5	15.5	-
	800	6090	14	12	-
	750	7710	8	7	-
	700	9460	4	3	-
	650	11300	0	-0.5	-
	600	13290	-6	-6.5	-
	550	15400	-12	-12	-
	500	17700	-21	-21	-
	450	20200	-30	-30	-
	Haze top 805 mb. Sfc. 3/10 855 ~ 810 mb				
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Abbeville		Compiegne		Barcelona		Tromso		Abbeville		Malta	
Time.	13½ 12½		12½ 12½		13½ 12½		12½ 12½		15h 12½		17½ 12½	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	290	31	290	10	70	6	70	22	330	9	3,000'	
3,280	320	17	300	9			90	23	300	11	210	33
4,920			330	16			100	27	310	11	5,000'	
6,560									330	14	210	27
9,840											7,000'	
13,120											210	21
16,400												
19,680												

Place.	Brest		Milan		Tunis		Toulouse		Vajnory		Malta	
Time.	15h 12½		15h 12½		7h 13½		7h 13½		7h 13½		6h 13½	
1,640	40	11	100	4	240	45	140	14	120	9	1000' 240	51
3,280	40	14	-	-	290	45	120	14	80	8		
4,920	40	11	230	10	290	47	80	7				
6,560	30	16	-	-	270	43	70	16				
9,840			300	19								
13,120												
16,400												
19,680												

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, SATURDAY, 14th MARCH, 1931.

No. B. 25,314.
U.A.S. 4,366.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 ,,
6—15 ,,	46—55 ,,
16—26 ,,	56—65 ,,
	and so on.

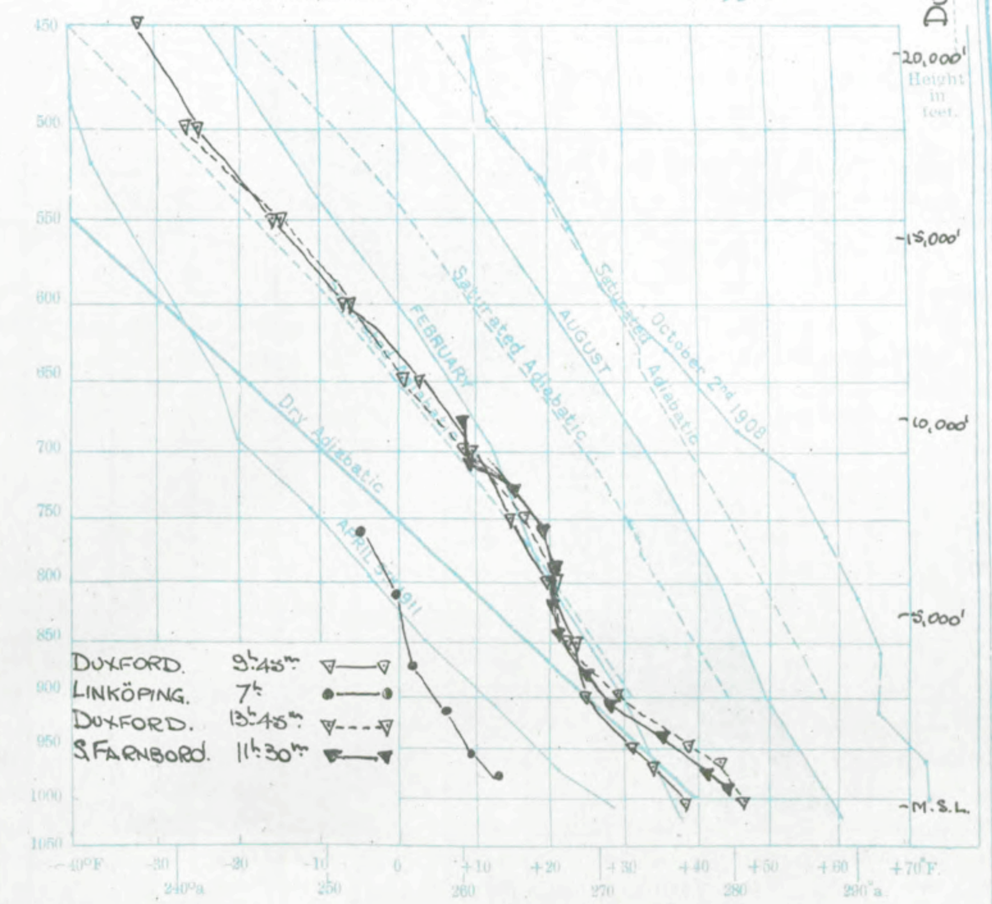
In Tables.

Directions are given in degrees, velocities in m.p.h.

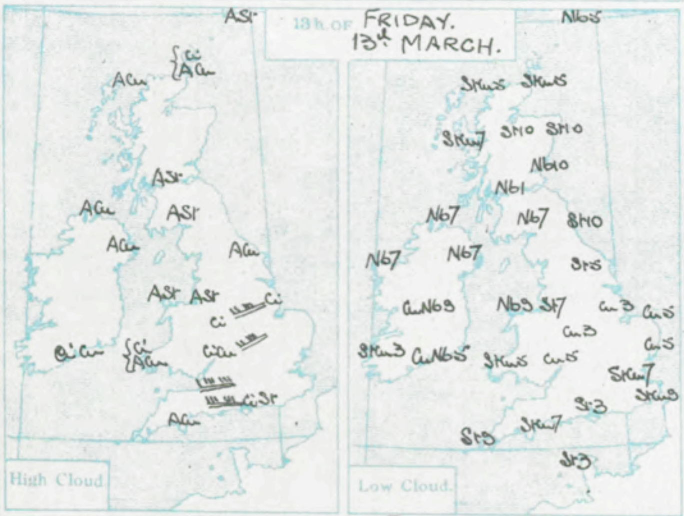
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

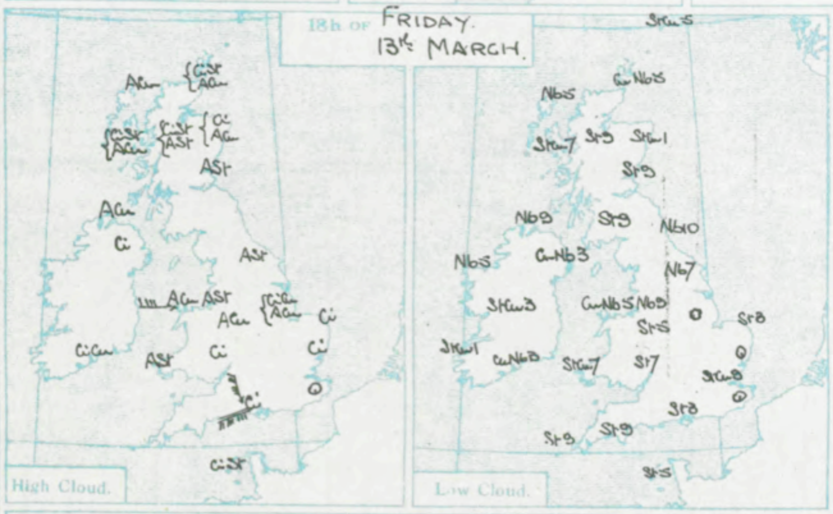
UPPER AIR TEMPERATURES.

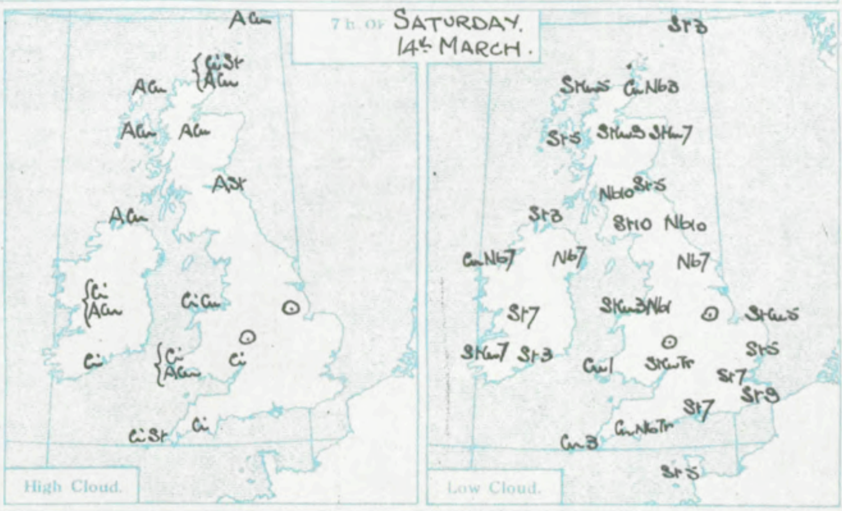
FRIDAY, 13th MARCH, 1931.



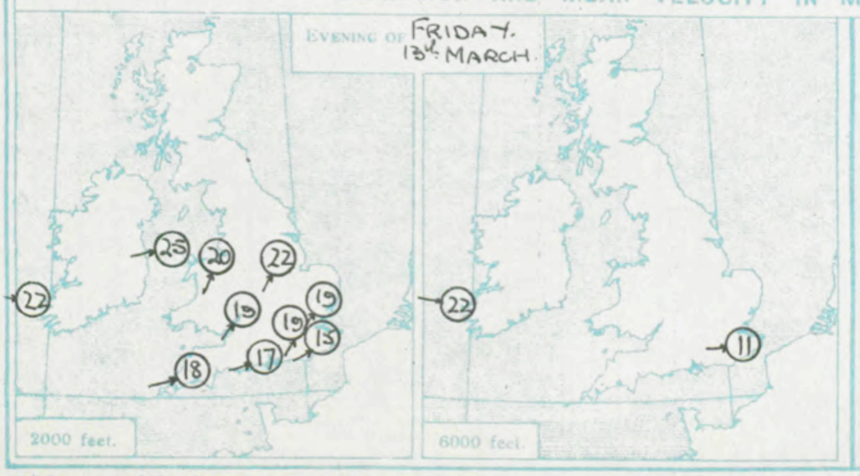
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

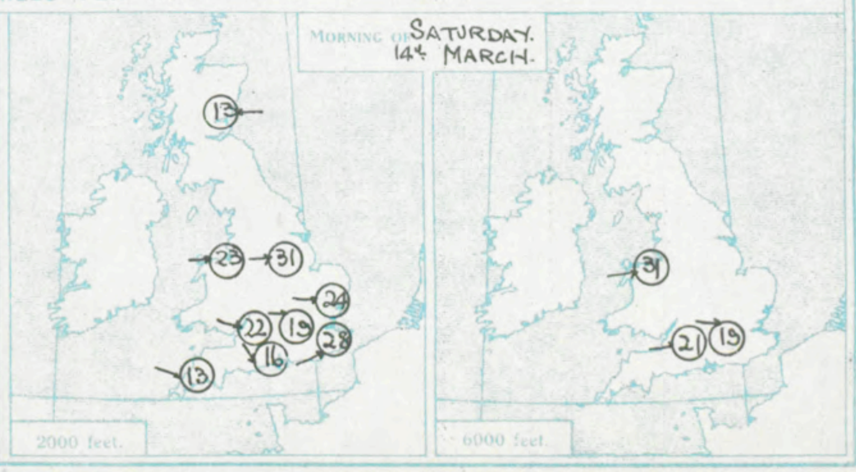






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H M Stationery Office Press Kingsway, W.C.2

⊙ Indicates absence of cloud.

Ps. 2512/2210 M. 11/L.D. 6005 Gp. 908 H.180 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	12½	13½			12½	13½	12½	13½	12½	13½	13½	13½			12½	13½	12½	13½	12½	13½	12½	13½	12½	13½			13½	13½					16½	13½					Time.
Type	b				b		b		b		b				b		b		b				b				b												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	235	13			270	12	260	8	215	12	210	12			210	8	230	13	240	11	210	20	205	7			180	10					40	5					Surf.
1000	230	13			250	19	250	18	220	12	215	13			220	13	235	18	240	14	215	24	225	8			195	15					60	11					1000
2000	240	15			235	13	230	13	245	13	225	16			240	15	245	17	225	14	225	17	235	10			220	15					70	11					2000
3000	240	17			225	17	230	17	265	13	220	15			240	14	235	17	230	17	235	15	265	15															3000
4000	230	14			225	19	230	20	248	15							225	15	230	20	235	19	255	18															4000
5000					220	22	220	13	240	13							235	11	230	15	230	17	255	20															5000
6000							250	7	235	15							240	21	240	19	230	17																	6000
8000																	245	21	280	18	250	21																	8000
10000																	255	30	12,000' 265	19																			10000
12000					13½	Ci sk	13½	Ci	13½	Ci							13½	Ci cu	13½	Ci																			12000
Neph.					270	7s	250	60	270	6s							250	50	240	50																			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Calshot		Place.
Time.	17½	13½	17½	13½	17½	13½	17½	13½	17½	13½	17½	13½	17½	13½	16½	13½	17½	13½			17½	13½	16½	13½	16½	13½	17½	13½					17½	13½	18½	13½	24½	13½	Time.
Type.			b		b						b		b										b																Type
Feet																																							Feet
Surf.	220	11	215	10	190	11	250	6	205	12	215	11	225	15	205	10	200	9			235	12	235	8	225	18	175	12					200	8	265	9	235	9	Surf.
1000	225	15	230	19	210	16	255	19	235	13	230	17	225	22	220	21	220	18			240	15	245	15	240	30	205	21					240	16	270	13	250	19	1000
2000	235	17	230	19	230	18	240	18	250	17	240	15	230	22	235	18	230	22			235	19	230	18	255	25	215	20					255	20	275	22	250	17	2000
3000	235	17	230	19	235	20	240	17	265	17	260	15	240	21	245	21	240	24			240	25			260	23							260	23	285	27	245	21	3000
4000					245	22	240	18	245	15	240	13	250	15	250	21	245	21															265	23	280	27	240	17	4000
5000											285	9	265	9																			255	20	280	24			5000
6000											270	11	265	12																			260	22	280	22			6000
8000									18½	Ci	265	11	7,000' 240	14																									8000
10000									250	80																													10000
12000									AS								16½	Ci							18½	ACu	16½	Ci											12000
Neph.									345	57							280	7s							270	42	270	6s											Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	10½	14½	7½	14½	7½	14½	8½	14½	7½	14½	6½	14½			7½	14½	7½	14½	8½	14½			7½	14½	9½	14½	6½	14½	7½	14½									Time.
Type.	b				b																		b																Type.
Feet																																							Feet
Surf.	250	16	240	5	220	6	220	8	230	8	230	12			230	8	240	8	235	11			90	3	240	15	225	8	350	2									Surf.
1000	260	16	260	20	240	16	265	18	265	18	230	25			260	27	285	31	260	17			295	13	265	21	260	20	65	13									1000
2000	260	19	270	19	260	16	285	22	320	16	240	28			275	24	270	31	270	25			290	13	270	21	270	23	90	13									2000
3000	265	19	270	18	265	18	280	22	265	15	265	24					275	25	275	22					265	24	275	27	90	15									3000
4000	275	19	285	17	275	19	270	20	275	15	275	25					270	28							260	27	270	33											4000
5000	270	17	275	17	270	19	260	21	280	20	285	22					270	25							270	25	265	31											5000
6000			275	19	260	25	265	21																	270	30	265	31											6000
8000			275	18	7,000' 270	21	280	21															10½	Ci	270	27	19,000' 275	35											8000
10000			315	25			290	14															300	30	275	29	16,000' 285	40											10000
12000																							7½	Ci	275	39	7½	ACu											12000
Neph																							280	12s			320	4s											Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUNFORD. 9h 45m 13/2/31.	mb.	Feet. M.S.L.	°F.	°F.	%
	1006·3		—	—	—
	1002	100	38s	32s	50
	965	1050	35	32	73
	950	1520	32	30	81
	900	2950	26	24	78
	850	4430	24	22	77
	800	6000	20	18s	82
	750	7640	16	15	-
	700	9400	10	5	-
	650	11270	3	2	-
	600	13280	-7	-7s	-
	550	15340	-15	-15	-
	500	17690	-24	-24	-
	450	21000	-32	-32	-

F. Cu 1/10, 860 to 850mb. Haze top 950mb.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUNFORD. 13h 45m 13/2/31	mb.	Feet. M.S.L.	°F.	°F.	%
	1004·6		—	—	—
	1002	100	47	40	53
	965	1010	43s	37	53
	950	1500	39	33	50
	900	2950	30	27	71
	850	4450	23	20	65
	800	6010	21	19	76
	750	7670	17	15	-
	700	9410	9	7	-
	650	11280	1	0	-
	600	13280	-7	-7s	-
	550	15390	-14	-14	-
	500	17680	-26	-26	-

3/10 Cu, base not defined to 850mb. Ci 7/10 not reached. Haze top 850mb.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO'. 11h 30m 13/2/31	mb.	Feet. M.S.L.	°F.	°F.	%
	1005·0		—	—	—
	994	220	45	"	"
	984	700	42	"	"
	948	1580	36s	"	"
	913	2890	29	"	"
	880	3550	26	"	"
	849	4450	22	"	"
	818	5430	21	"	"
	788	6390	21	"	"
	760	7300	19	"	"
	732	8260	16	"	"
	706	9200	9s	"	"
	680	10100	8	"	"

Cloud from 845 to 818 mb.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
LINKÖPING. 7h 13/2/31.		M.S.L.	—	—	—
	977	660	14	-	85
	953	1640	10	-	75
	916	3280	7	-	65
	871	4920	3	-	65
	813	6560	0	-	65
	760	8200	-4	-	65

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Prague		Cheb.		Turin		Taranto		Abbeville		Malta	
Time.	13½	13½	13½	13½	13½	13½	13½	13½	18½	13½	17½	13½
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	340	4	-	-	360	3	260	31	270	4	1,000'	
3,280	270	7	320	7	360	3	280	15	240	4	310	28
4,920	270	7	350	3	350	6	260	42	180	4	2,000'	
6,560	290	8			320	2					310	23
9,840	280	21									3,000'	
13,120	270	26									270	24
16,400												
19,680												

Place.	Dijon		Nancy.		Milan		Abbeville		Warsaw		Malta	
Time.	18½	13½	18½	13½	18½	13½	7½	14½	7½	14½	6½	14½
1,640	40	17	80	10	140	12	265	13	270	27	1,000'	
3,280	60	16	90	9	140	6	270	16	260	27	130	12
4,920	90	9	110	8	320	4	280	15	290	24	3,000'	
6,560			300	8					300	28	250	12
9,840			270	23							5,000'	
13,120			280	20							270	19
16,400											7,000'	
19,680											260	25

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, SUNDAY, 15th MARCH, 1931.

No. B. 25,315.
U.A.S. 4,367.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 0— 5 m.p.h.
- 6—15 "
- 16—25 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 55—65 "

and so on.

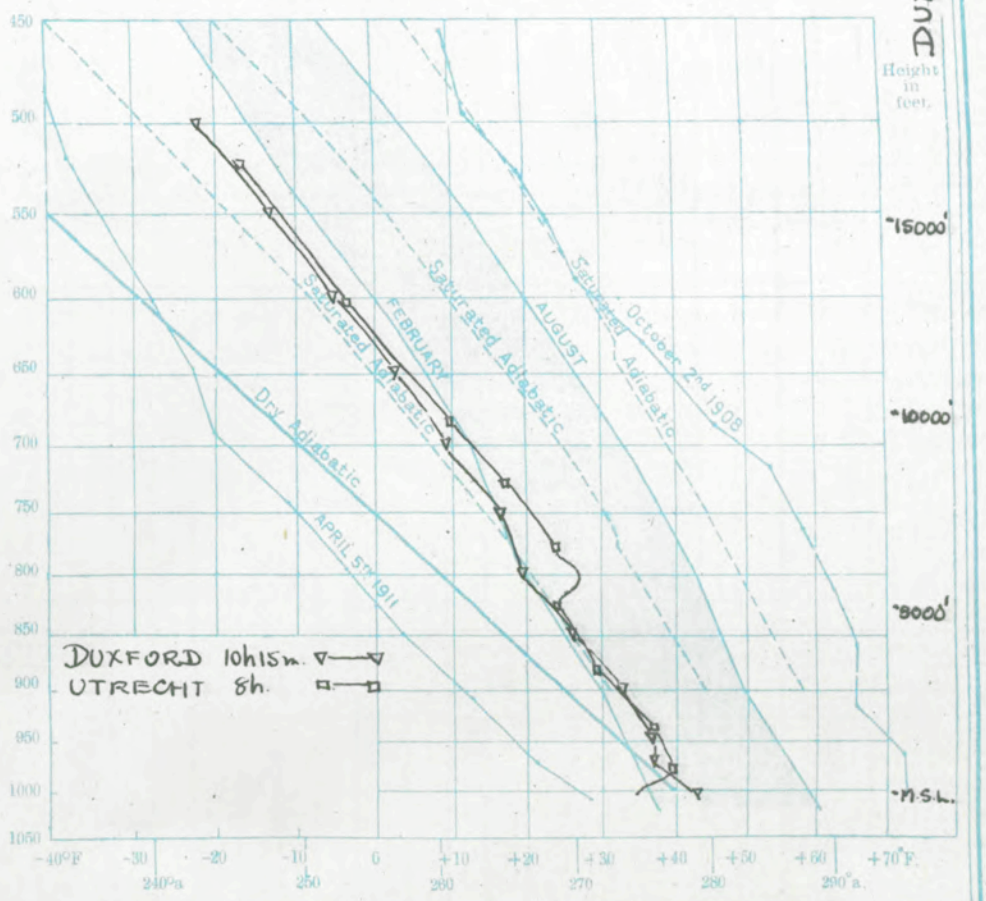
In Tables.

Directions are given in degrees, velocities in m.p.h.

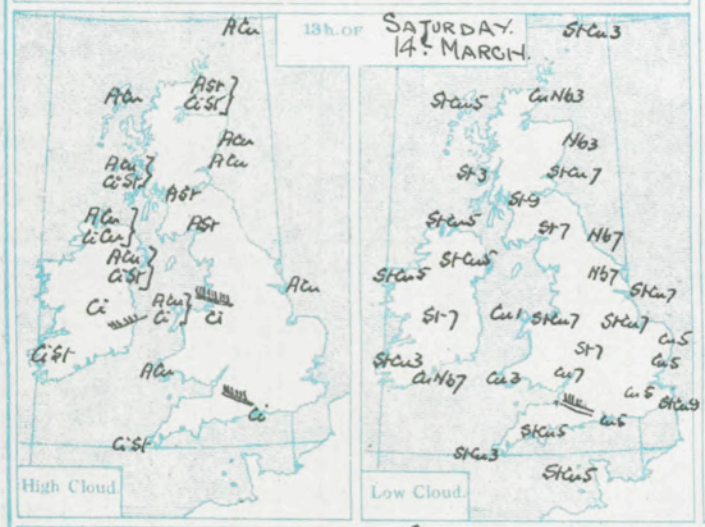
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

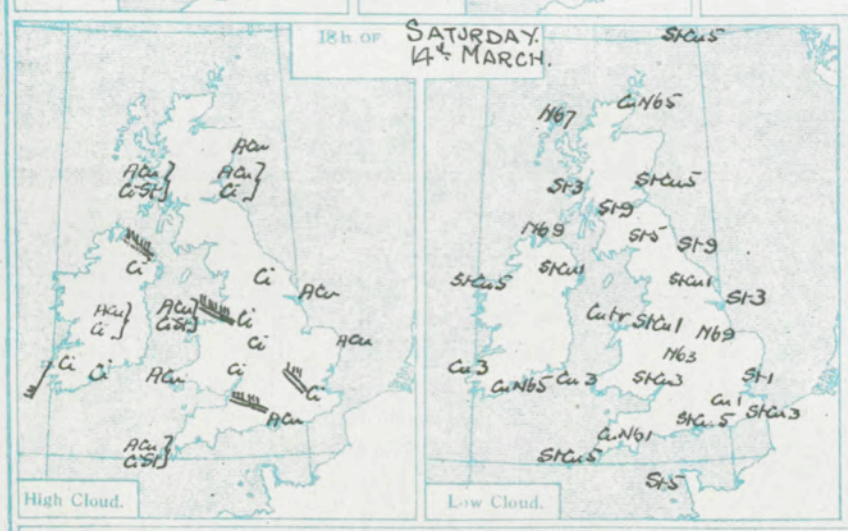
UPPER AIR TEMPERATURES.

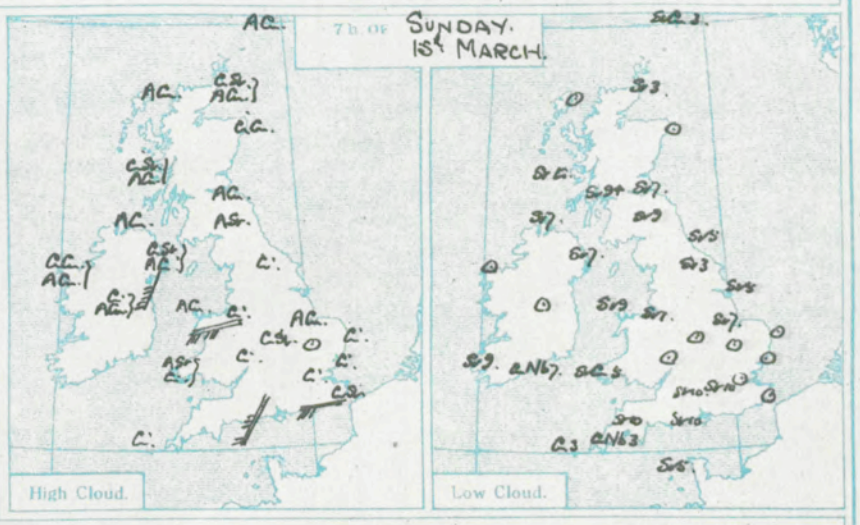
SATURDAY, 14th MARCH, 1931.



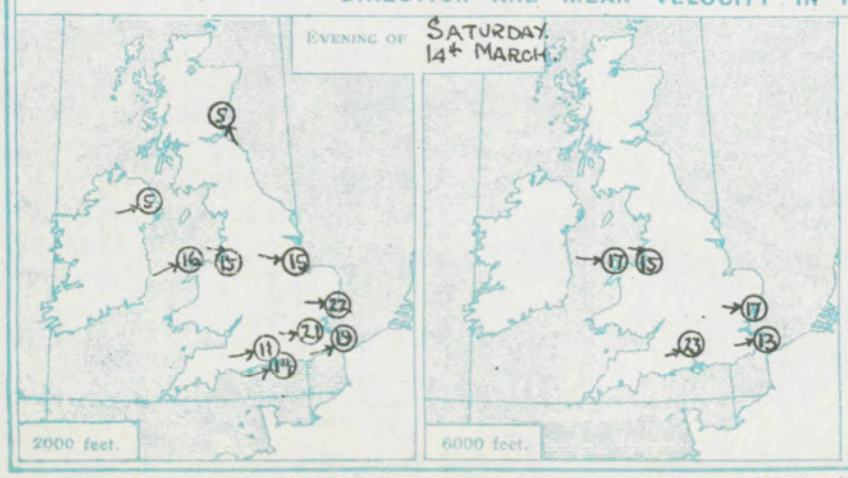
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

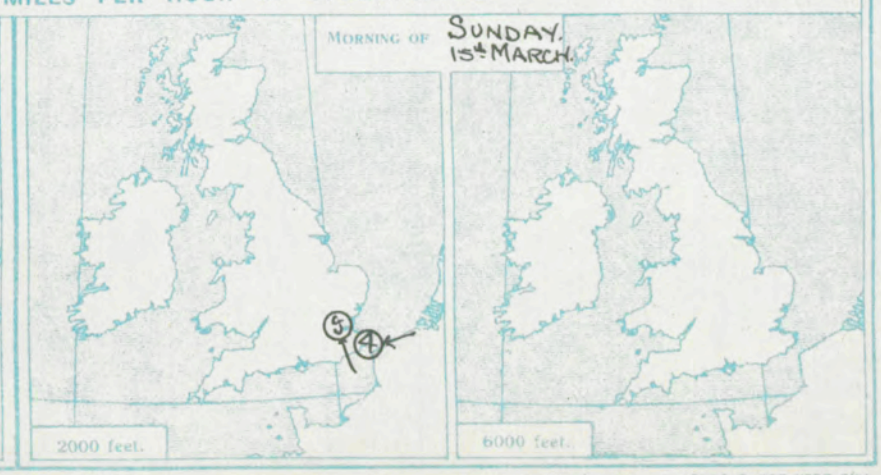






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

H.M. Stationery Office Press, Kingsway, W.C.2

Ps. 2512/2210. Wt. 118. D. 6008. Gp. 908. 11780. 3/31.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Lympne		Lympne	
Time.	12h 14th				12h 14½		14½		12h 14½		10. 14th	
Type	b				b				b		b	
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	255	15			235	15			240	15	230	10
1000	260	17			240	15			245	15	260	21
2000	260	17			250	12			260	16	260	25
3000	260	17			255	13			260	17	275	20
4000	255	18			255	20			260	15		
5000	260	18			270	35						
6000					265	25						
8000												
10000												
12000							13h	Ci				
Neph.							300	60				

Place	Shoeburyness		Felixstowe		Cranwell		Cardington		Upper Heyford		Plymouth	
Time.			12h 14½		12h 14½		12h 14½		12h 14½			
Type					b		b					
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.			270	7	245	15	255	11	260	12		
1000			265	15	255	22	250	15	250	11		
2000			270	17	260	18	260	15	250	19		
3000			275	17			265	15	265	23		
4000							275	17	270	23		
5000									270	23		
6000									275	23		
8000												
10000												
12000												
Neph.												

Place	Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place
Time.	12h 14½		12h 14½		12h 14½						12h 14½				Time.
Type	b		b												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	240	19	300	7	Calm						200	8			Surf.
1000	250	19	280	15	60	6					230	11			1000
2000	265	13	255	19	110	9									2000
3000	260	17	255	18	115	9									3000
4000	265	20			120	7									4000
5000	255	24													5000
6000	255	21													6000
8000	265	23													8000
10000	265 (9000')	26													10000
12000	13h	FrCu	13h	Ci											12000
Neph.	250	60	290	90											Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne	
Time.	17h 14½						17h 14½		17h 14½		17h 14½	
Type.											b	
Feet Surf.	280	10					260	7	220	16	225	11
1000	285	15					250	11	240	23	235	21
2000	275	21					260	11	260	14	255	19
3000	265	25					255	10	295	11	285	12
4000	260	21					255	12			295	15
5000							270	15			285	19
6000							255	23			265	13
8000											260	17
10000											(7000')	
12000	18h	Ci					18h	Ci				
Neph	330	45					290	60				

Place.	Shoeburyness.		Felixstowe		Cranwell		Cardington		Upper Heyford		Plymouth	
Time.			16h 14½		17h 14½							
Type.												
Feet Surf.			290	8	300	5						
1000			285	17	290	10						
2000			275	22	265	15						
3000			275	22	270	19						
4000			270	19	265	21						
5000			275	18	260	24						
6000			280	17								
8000												
10000												
12000												
Neph												

Place.	Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia		Calshot.		Place.
Time.	17h 14½		17h 14½		17h 14½				17h 14½				24h 14th		Time.
Type.															Type
Feet Surf.	215	16	250	7	Calm				Calm				200	8	Feet Surf.
1000	225	19	270	16	65	4			310	2			265	5	1000
2000	240	16	275	15	155	5			250	5			270	7	2000
3000	260	13	285	15	170	6							250	8	3000
4000	270	16	285	17	185	5							245	8	4000
5000	270	19	280	17									260	6	5000
6000	280	17	275	15									280	6	6000
8000	280	25	265	20									325	10	8000
10000	265	24	270	28									310	6	10000
12000			285	27					18h	Ci	16h	FrCu			12000
Neph			16h 290	Ci 50					310	60	200	33			Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne	
Time.	6h. 15th										6h. 15th	
Type.												
Feet Surf.	165	2									–	0
1000	100	7									50	4
2000	145	5									65	4
3000	300	3									15	1
4000	295	3									285	9
5000												
6000												
8000												
10000	10h.				7h.						6h.	
12000	Ci.				C.						C.	
Neph	250	30			210	50					260	30

Place.	Shoeburyness.		Felixstowe		Cranwell		Cardington		Upper Heyford		Plymouth	
Time.												
Type.												
Feet Surf.												
1000												
2000												
3000												
4000												
5000												
6000												
8000												
10000												
12000												
Neph												

Place.	Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place.
Time.															Time.
Type.															Type.
Feet Surf.															Feet Surf.
1000															1000
2000															2000
3000															3000
4000															4000
5000			10h.												5000
6000			C.												6000
8000			250	30											8000
10000			7h.								7h.				10000
12000			C.								FrCu.				12000
Neph			260	60							210	48			Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity.
	mb.	Feet.	°F.	°F.	%
DUXFORD 10h 15m 14·3·31	1004	M.S.L.	—	—	—
	1002	100	42	?	?
	967	1080	35·5	35	96
	950	1510	35·5	34	87
	900	2940	32	31	90
	850	4440	25	25	100
	800	6000	18·5	18	-
	750	7670	15	13	-
	700	9400	8	7	-
	650	11270	1	0	-
	600	13250	-7	-7·5	-
	550	15350	-14	-14	-
	500	17610	(-23)	(-23)	-
UTRECHT 8h. 14·3·31.	1002	M.S.L.	—	—	—
	980	660	39	-	35
	943	1640	36	-	35
	866	3280	28	-	55
	832	4920	23	-	65
	781	6560	23	-	15
	732	8200	16	-	15
	686	9840	9	-	15
	601	13120	-6	-	25
	525	16400	-18	-	45

INVERSIONS - (1) (2)
Press. at base 1002 836 mb
Amount 5° 4°F.
Temp. at base 37° 23°F
Depth 788' 885 Ft.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity.	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity.	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity.
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Warsaw		Lemberg		Posen		Nancy.		J. Mayen		Malta	
Time.	12h 14½		13h 14½		12h 14½		7h. 14th		13h. 14th		17h 14½	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	240	21	150	28	230	23	–	-	250	17	1000' 180	17
3,280	240	26	160	30	250	15	290	11	310	6	2000' 170	21
4,920	230	21	170	21	250	14	—	–	350	6	3000' 180	20
6,560	240	20	220	21	250	20	310	17	340	9		
9,840									360	20		
13,120												
16,400												
19,680												

Place.	Tours.		Warsaw		Olomouc.		Vilna.		Bizerta		Metz	
Time.	7h. 14		7h 15th		7h 15th		8h 15th		6h 15th		9h 15th	
1,640	–	-	280	30	240	3	250	28	230	25	70	21
3,280	50	4	280	31	270	14	250	27	220	36	70	18
4,920	--	-	290	26	-	-	250	30	220	38	60	13
6,560	330	7	300	25	50	21					30	9
9,840											240	9
13,120											280	2
16,400											250	13
19,680											250	25

Meteorological Office, Air Ministry. Kingsway, London, W.C.2. G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, MONDAY, 16TH MARCH, 1931.

No. B 25316

U.A.S. 4368.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

h = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings).

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 ,,
6—15 ,,	46—55 ,,
16—25 ,,	56—65 ,,
	and so on.

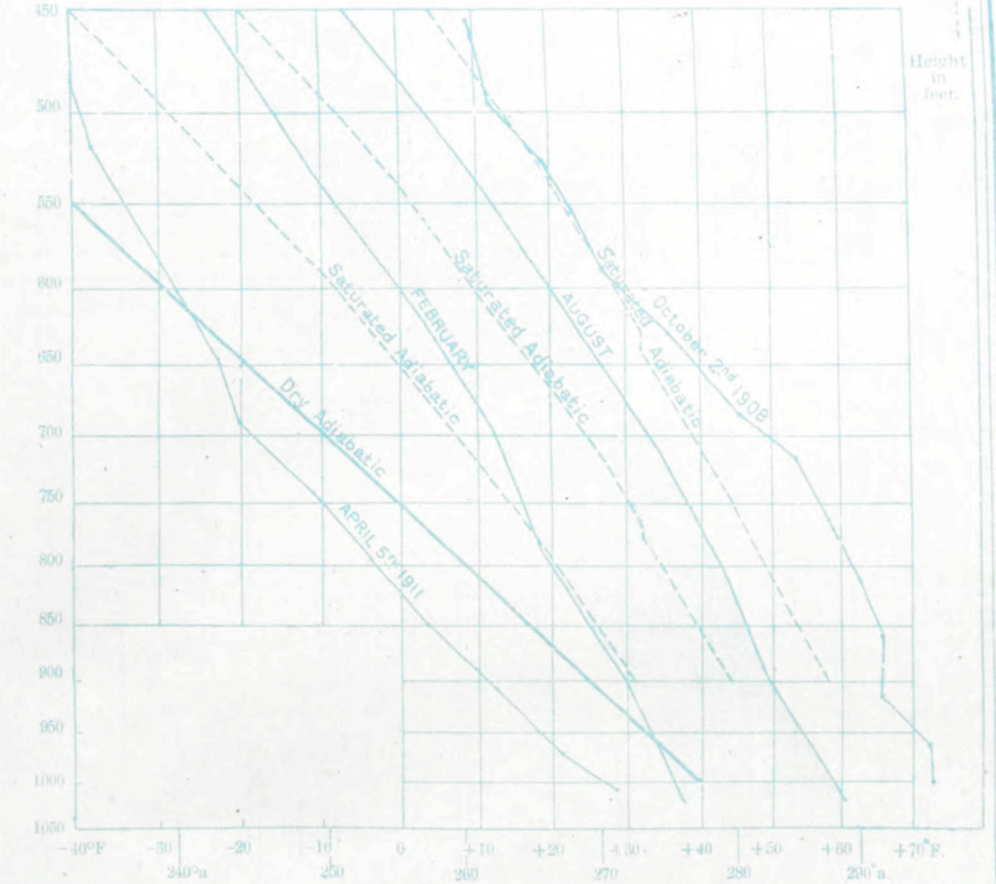
In Tables.

Directions are given in degrees, velocities in m.p.h.

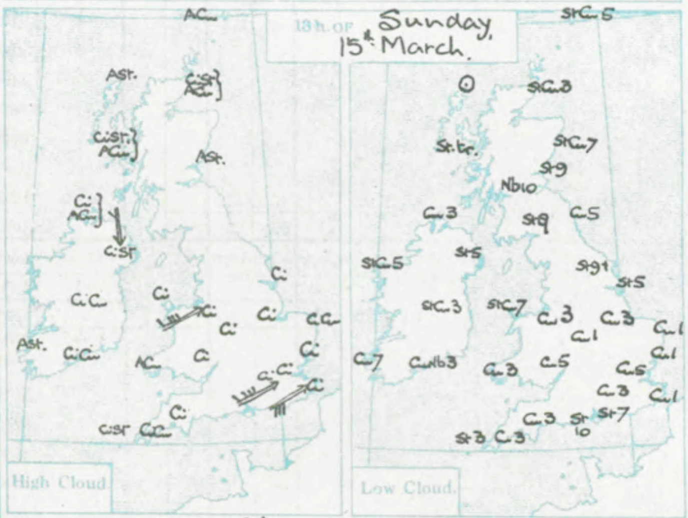
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

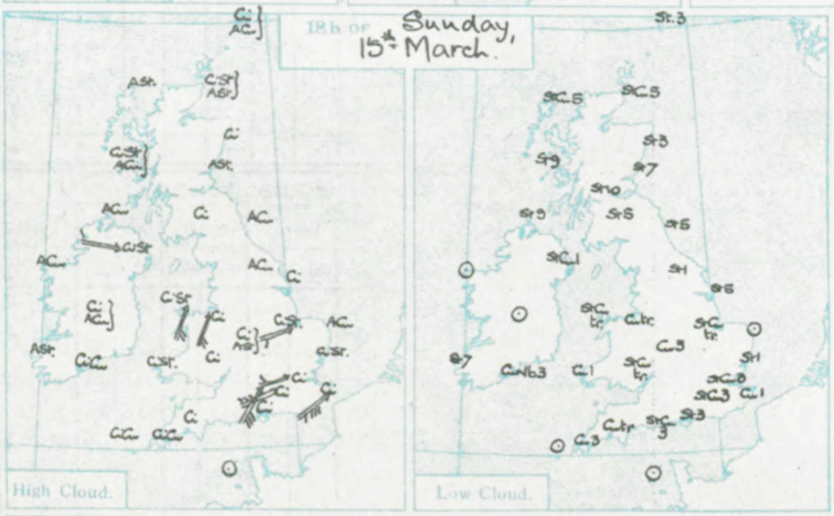
UPPER AIR TEMPERATURES.

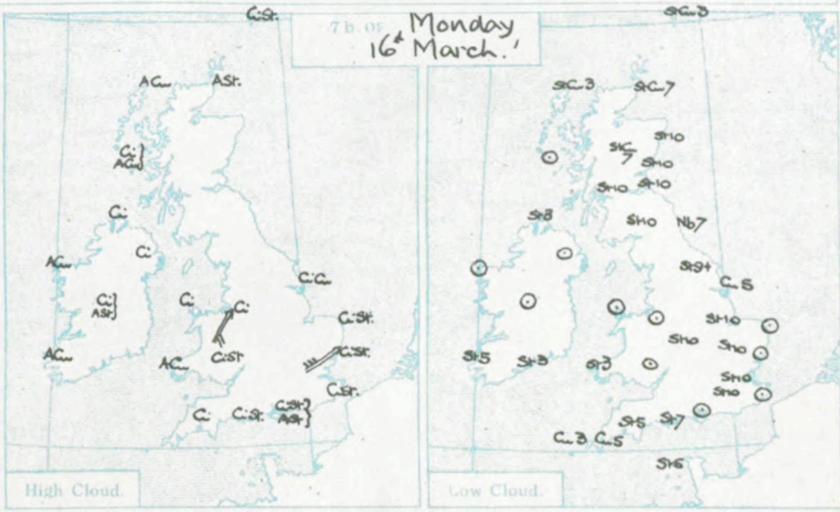
Sunday, 15th March. 1931.



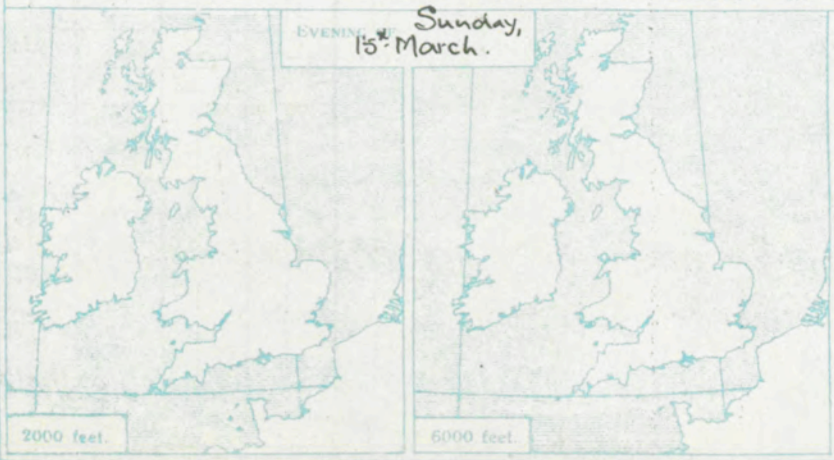
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

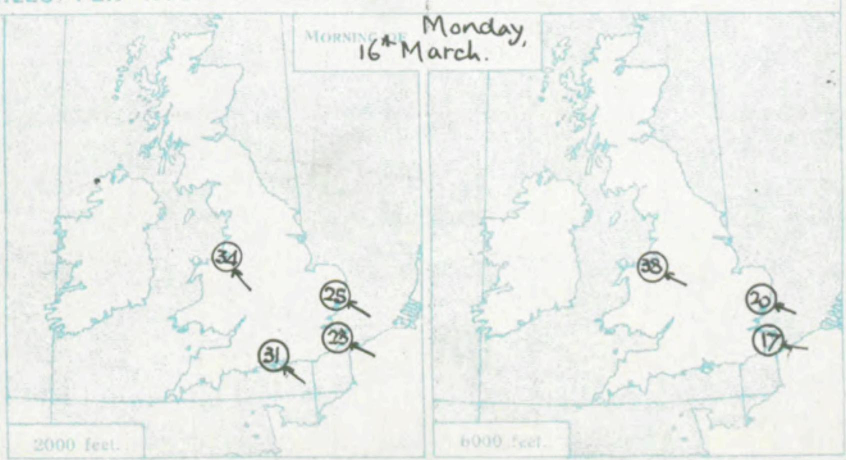






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

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Ps 2512/2210 Wt 110 D.6000 Gp 906 1180 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place
Time.			12h	15h											12h	15h											11h	15h	12h	15h					12h	15h			Time
Type																											b.										Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	150	7	120	4											100	5											155	9	-	0					185	16			Surf.
1000	150	14	150	6											155	6											150	13	100	3					200	18			1000
2000	145	19	140	10											165	3											165	13	175	7					185	11			2000
3000	110	11	125	11											100	3											175	9							175	15			3000
4000	105	13	120	10											10	5											210	7											4000
5000	70	13													335	7											210	10											5000
6000	90	18													355	7											180	15											6000
8000															Calm												195	8											8000
10000															Calm												270	1					Sea mod.						10000
12000			13h	Ci							13h	Ci															135	8					13h	Ci	13h	Ci			12000
Neph.			230	40							240	30															16,000ft.						250	40	360	10			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.			16h	15h	16h	15h																																Time.
Type.					b.																																	Type.
Feet																																					Feet
Surf.			140	5	140	10																																	Surf.
1000			120	12	145	12																																	1000
2000			115	10	135	10																																	2000
3000			105	8	100	9																																	3000
4000			110	7	95	16	Worthy Down																																	4000
5000			80	11	90	16																																	5000
6000			80	15	100	16	16h	Ci.																			16h	Ci.											6000
8000					95	14	190	40																			240	25											8000
10000					160	10																																	10000
12000	18h	Ci.	18h	Ci.	170	7	18h	Ci.	16h	Ci.	18h	Ci.					18h.	Ci.							18h.	Ci.	18h	Ci.					18h.	Ci.					12000
Neph	240	15	230	30	11,000'		190	30	260	30	220	40					240	10							200	20	200	25					310	5					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.							7h	16h	7h	16h	6h	16h			6h	16h									8h	16h	6h	16h											Time.
Type.																																							Type.
Feet																																							Feet
Surf.							60	12	45	6	35	15			75	11									95	18	125	3											Surf.
1000							90	36	95	25	86	28			85	23									120	25	130	28											1000
2000									105	31	96	28			95	25									130	24	125	34											2000
3000									105	31	90	23			100	21									120	20	125	29											3000
4000											95	17			100	17									115	16	120	28											4000
5000											85	24			100	18									115	17	115	34											5000
6000											105	17			100	20									110	23	110	38											6000
8000											115	20													110	31	105	33											8000
10000											7,000'																10h. 210	Ci. 13											10000
12000			10h	Ci											7h	Ci	10h	Ci	10h	Ci	10h	Ci.			10h	AC.	10h	Ci	7h	Ci									12000
Neph			190	55											230	35	180	25	200	15					150	27	160	?75	220	25									Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Malta		Padua		Tours		Cagliari		Palermo		Malta	
Time.	13h	15h	18h	15h	18h	15h	18h	15h	18h	15h	17h	15h
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	1,000'		-	-	160	23	-	-	200	13	2,000'	
3,280	200	32	10	6	180	23	270	12	220	24	290	23
4,920			360	9	270	18	280	14	230	26	3,000'	
6,560	3,000'		340	9			290	19			290	28
9,840	220	33									4000'	
13,120											290	24
16,400	5,000' 210	57										
19,680	7,000' 210	54										

Place.	Prague		Tripoli		Cagliari		Lemberg		Tours		Malta	
Time.	7h	16h	7h	16h	7h	16h	7h	16h	7h	16h	6h	16h
1,640	90	11	-	-	-	-	290	28	100	27	1,000'	
3,280	70	10	300	21	280	21	290	31	80	11	310	26
4,920	40	10	-	-	-	-	340	53	90	14	3,000'	
6,560	300	14	250	28	290	27	310	13	170	7	300	40
9,840	320	27			-	-					5,000'	
13,120					280	20					280	44
16,400											7,000'	
19,680											280	29

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. TUESDAY, 17TH MARCH, 1931.

No. B. 25,317.
U.A.S. 4,369.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

——◦ No speed given.
—— 0— 5 m.p.h.
—— 6—15 „
—— 16—25 „
—— 26—35 m.p.h.
—— 36—45 „
—— 46—55 „
—— 56—65 „
and so on.

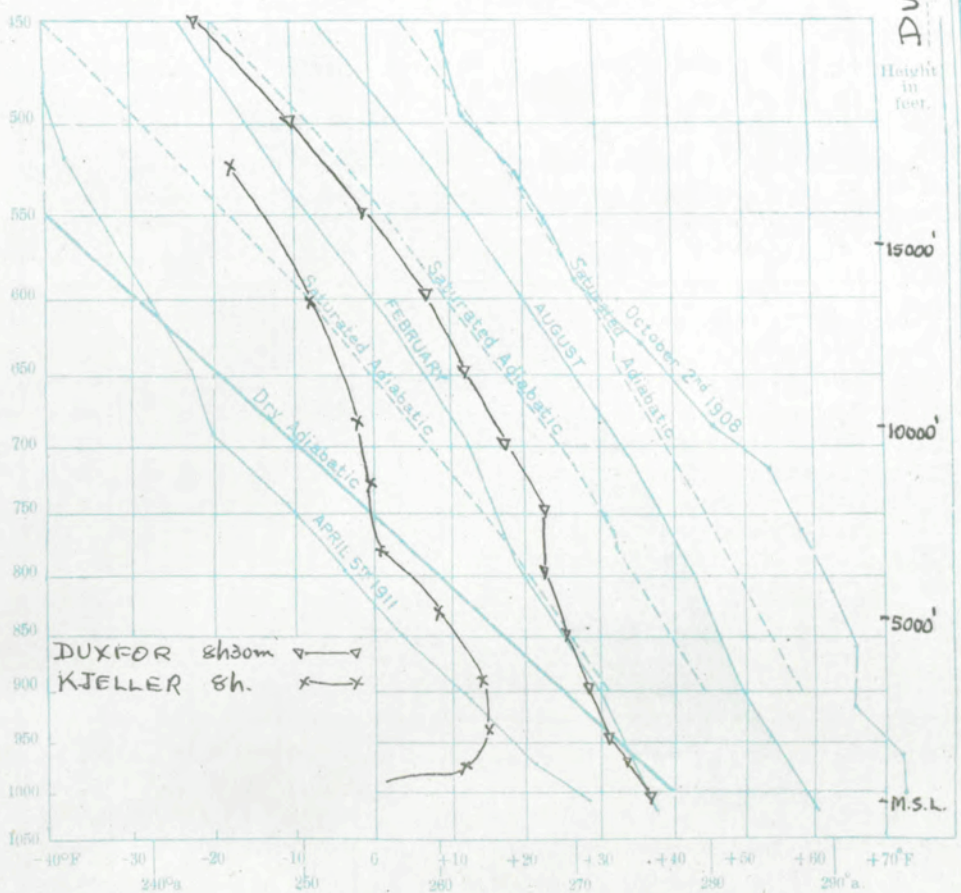
In Tables.

Directions are given in degrees, velocities in m.p.h.

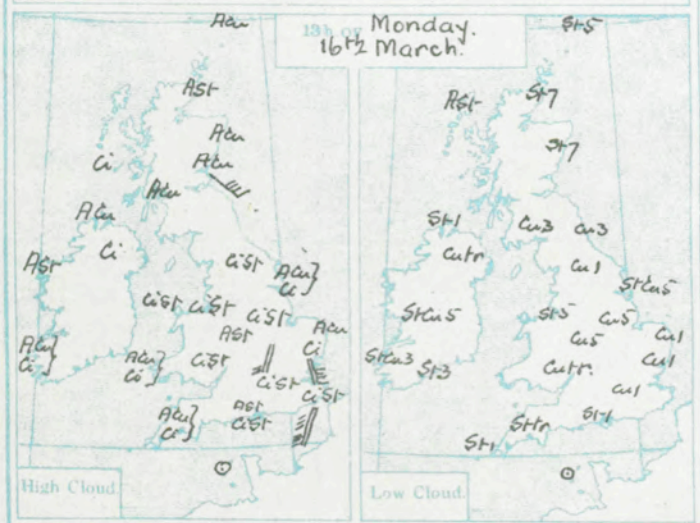
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

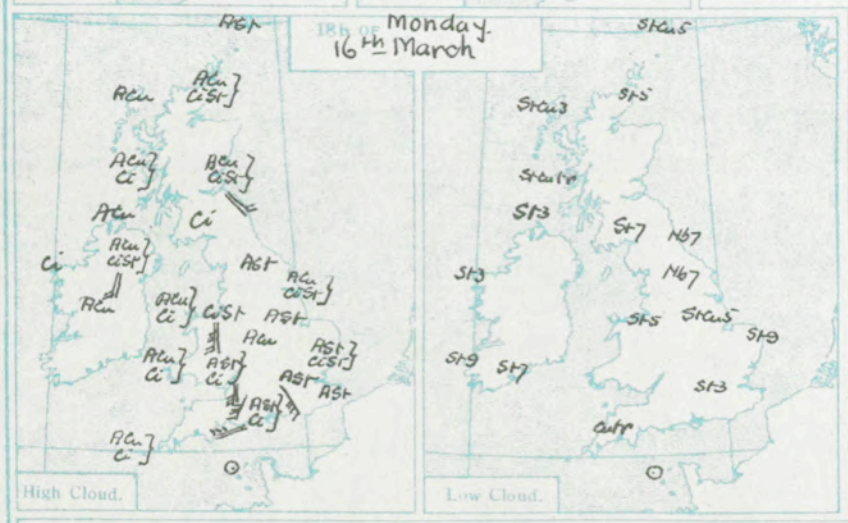
UPPER AIR TEMPERATURES.

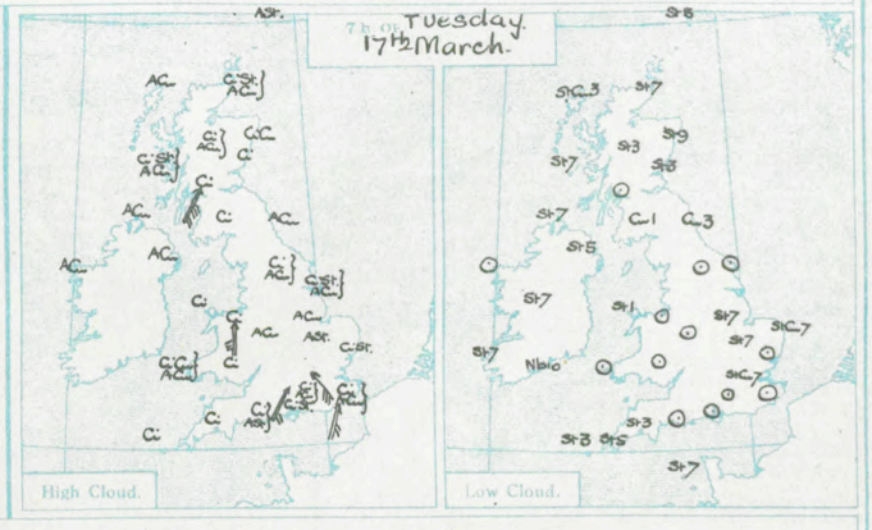
MONDAY, 16TH MARCH, 1931.



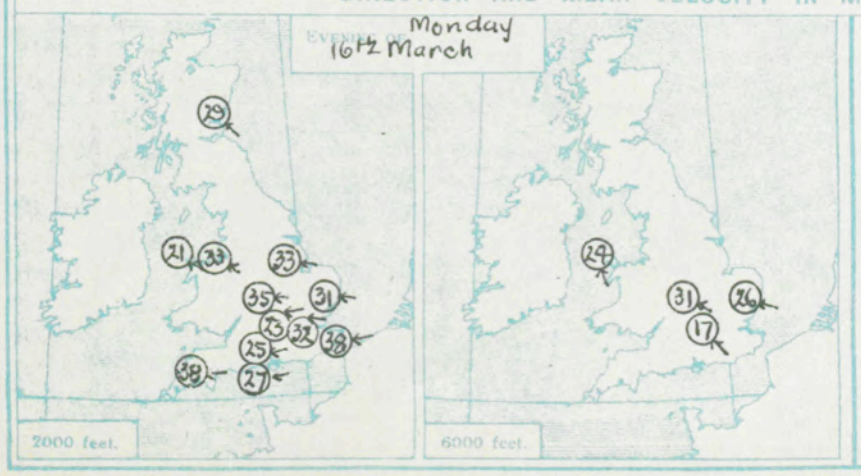
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

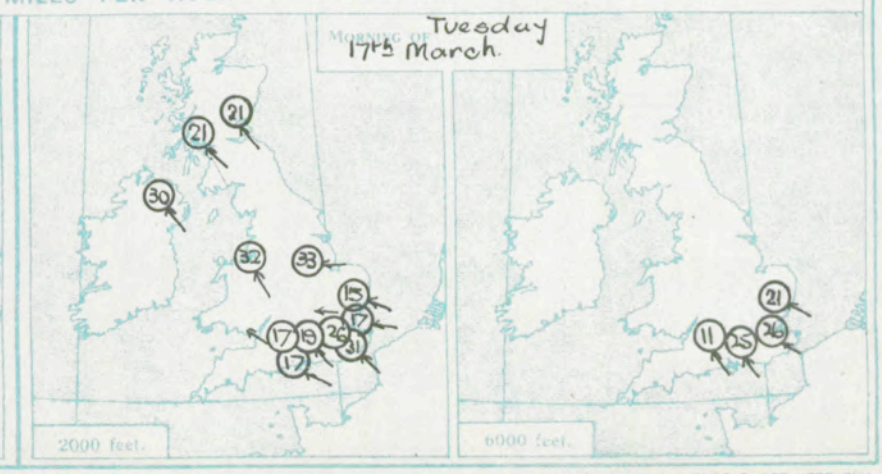






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2.

© Indicates absence of cloud.

Ps 2512/2210 No. 118 D 6008. Gp 906. 11780. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place
Time.	12h16½		13h16½		13h16½		12h16½		12h16½		12h16½				12h16½		12h16½		12h16½		12h16½		12h16½		12h16½		13h16½		12h16½						12h16½				Time
Type	b										b						b		b				b				b												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	70	19	70	15	75	15	75	13	85	23	70	20			75	17	100	17	90	20	90	15	110	22	95	21	130	17	80	8					120	21			Surf.
1000	75	24	80	20	80	21	75	25	85	25	70	19			80	29	100	27	90	30	85	19	120	35	110	19	120	24	115	10					115	7			1000
2000	95	19	85	31	85	23	110	30	85	44	80	24			95	29	110	24	90	27	90	25			125	16	120	32	135	14					130	23			2000
3000	105	30	95	19	90	23	105	32	90	45	85	27			95	27	110	25	100	33	95	26			145	22			145	19					135	45			3000
4000	115	33	110	25	100	30	105	39	95	45	105	32			100	26	110	27	105	33					155	27									140	36			4000
5000					125	26	175	27			105	29			115	29			105	31					160	19									135	39			5000
6000					130	23	135	22							115	27			125	32					150	21													6000
8000					155	26	140	24							115	30			130	28					160	12													8000
10000					155	26	(7000')								(7000')				140	23	Card-ington				(6900')														10000
12000					155	25					13h	Ci			13h	Ci			155	25	13h	Cist							13h	ACu									12000
Neph.					(11000')						190	60			170	45			145	29 (15000')	190	25							110	36									Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Aberdeen		Place.
Time.	17h16½		17h16½		18h16½		17h16½		17h16½		17h16½				17h16½		16h16½				17h16½		17h16½		17h16½		17h16½		17h16½								16½		Time.
Type.					b						b												b																Type
Feet																																							Feet
Surf.	85	19	75	17	80	15	75	10	85	25	70	27			70	20	90	17			90	16	110	22	90	22	110	15	120	15									Surf.
1000	75	12	75	27	80	30	75	21	85	25	65	28			80	28	90	25			90	25	105	41	105	18	115	32	125	27									1000
2000	95	32	85	23	90	30	85	25	80	27	90	38			95	31	105	33			95	35	90	38	125	21	125	33	125	29									2000
3000	115	24	100	28	115	26	105	27	95	25	130	24			110	34	120	31			100	27	130	24	150	22	130	30											3000
4000	130	25	120	26	120	22	130	24			140	23			110	28	105	35			105	29	140	23	180	19													4000
5000	150	29	135	23	130	25									125	23	130	20			130	26			150	16													5000
6000			140	17	125	24									115	26					135	31			155	24													6000
8000			145	20	16h	Ci	16h	Cicu	16h	Ci															145	34	16h	Ci											8000
10000	South Farnboro'		150 (9000')	14	180	30	170	30	250	20															155	33	180	45											10000
12000	16h	ACu	17h	Ast	18h	Ci	18h	ACu	18h	Ci					16h	Ci									(9000')		16h	Ci	18h	Ci	16h	Ci	18h	Ci			15h	ACu	12000
Neph.	190	54	150	45	180	30	190	36	240	30					190	35											180	50	150	25	205	50	190	25			160	108	Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury ness.		Felix-stowe		Cranwell		Card-ington		Shoebury-ness		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.	7h	17½	7h	17½	6h	17½	8h	17½	7h	17½	6h	17½	8h	17½	7h	17½	6h	17½			7h	17½	7h	17½	8h	17½	6h	17½	6h	17½	7h	17½			7h	17½			Time.
Type.					b.																		b																Type.
Feet																																							Feet
Surf.	65	4	60	7	65	3	75	10	85	15	100	20			115	18	110	12			100	15	110	24	95	12	140	7	130	14	70	14			110	14			Surf.
1000	115	19	105	21	105	18	105	28	110	27	105	27	shell burst		120	21	115	31			115	22	115	25	140	15	130	28	145	21	115	17			125	46			1000
2000	115	26	120	19	105	17	120	17	100	17	125	31	1 mirrow		120	15	125	33			105	17			160	24	150	32	150	21	145	21			145	30			2000
3000	100	27	105	34	105	22	105	21	110	22	110	21			115	17	120	20			100	25			160	20	145	35	155	23	170	27							3000
4000	135	31	135	27	130	22	125	24	130	22	125	31			120	18					135	26			145	15	150	47											4000
5000			145	23	140	17	155	19							120	19					140	22			165	15	155	44											5000
6000			135	25	150	11	150	10			7h	C:			130	21					140	26			160	19	10h	C:											6000
8000			135	22	100	5					190	20			135 150	22 22					155	27			170	25	220	45									Kew		8000
10000			(7,000 ft.)		140	5																			195 (16,000 ft.)	9													10000
12000	10h	ACu	10h	Ci	7h	C:	10h	C:	10h	C:	10h	ACu	160	20	10h	C:	10h	ACu							10h	C:	7h	C:	10h	C:	10h	ACu					7h	ACu	12000
Neph	190	23	7h 170	ACu 48	210	30	210	25	250	40	190	30			160	40	110	36							200	40	180	30	230	30	260	24					120	27	Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

DUXFORD 8h30m 16/3/31

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	1014	M.S.L.	—	—	—
	1010	100	37·5	36	88
	973	1080	34	33·5	95
	950	1730	31·5	33?	?
	900	3150	29·5	29	95
	850	4630	25·2	24	90
	800	6200	23	22	88
	750	7870	23	19	-
	700	9650	18	15	-
	650	11570	12	9	-
	600	13510	7	4	-
	550	15700	0·5	-1·5	-
	500	18060	-10	-10·2	-
	450	20560	-21	-21	-

Haze top 950mb
Cu 3/10 960 – 945 mb.

K. TELLER 8h. 16/3/31.

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	-	M.S.L.	—	—	—
	980	660	12	-	88
	943	1640	16	-	85
	897	3280	14	-	85
	839	4920	9	-	85
	788	6560	1	-	85
	737	8200	0	-	85
	688	9840	-2	-	85
	602	13120	-8	-	85
	524	16400	-17	-	85

INVERSIONS (1) (2)
Press. at base 989 770mb
Amount 11° 20°F.

UPPER WINDS ABROAD.

Place.	Cheb		Barcelona		Abbeville		Prague		Calais		Malta	
Time.	13h16½		13h16½		13h16½		13h16½		15h16½		17h16½	
Feet.	Dir	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	-	-	80	1	90	25	50	7	80	36	3000'	
3,280	60	16	310	1	120	18	110	4	120	34	250	20
4,920	100	14					60	9	130	36	7000'	
6,560	50	19					310	8			280	30
9,840											10000'	
13,120											270	36
16,400											13000'	
19,680											260	35

Place.	Romilly						Abbeville		Lyons		Malta	
Time.	16h16½						7h	17½	7h	17½	6h	17½
1,640	80	21					130	34	-	-	1,000 ft.	
3,280	80	22					130	28	160	31	200	30
4,920	130	22							340	10	3,000 ft.	
6,560									70	5	210	24
9,840											5,000 ft.	
13,120											220	25
16,400											7,000 ft.	
19,680											230	22

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.
G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, WEDNESDAY, 18TH MARCH, 1931.

No. B. 25,318.
U.A.S. 4,370.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 8th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 1— 5 m.p.h.
- 6—15 „
- 16—25 „
- 26—35 m.p.h.
- 36—45 „
- 46—55 „
- 56—65 „

and so on.

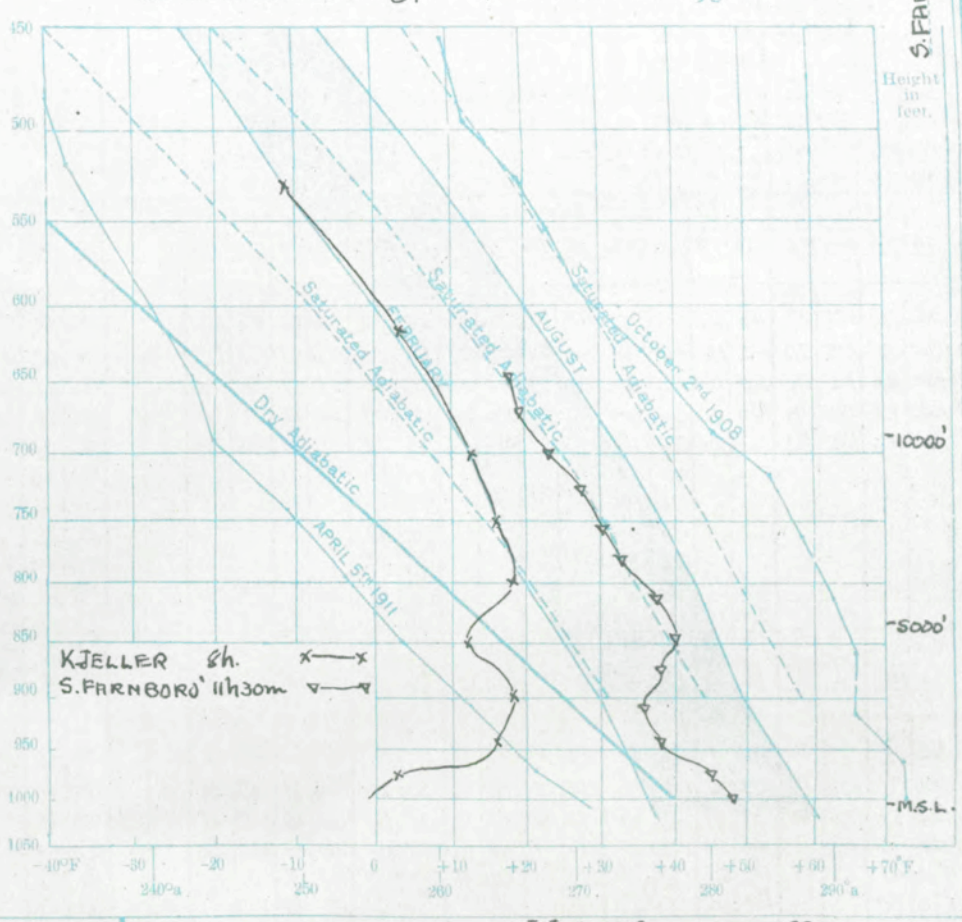
In Tables.

Directions are given in degrees, velocities in m.p.h.

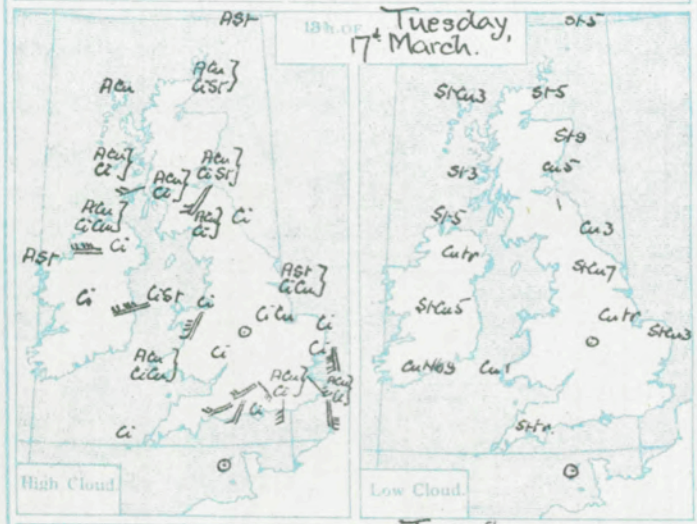
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

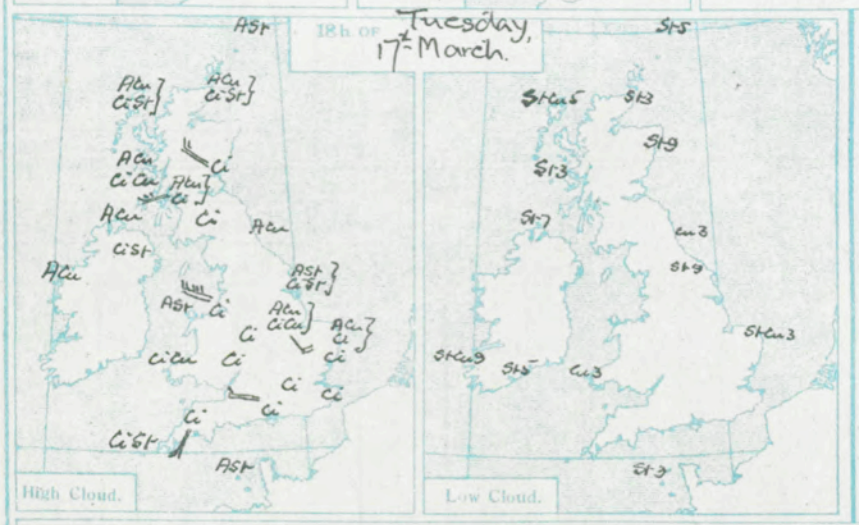
UPPER AIR TEMPERATURES.

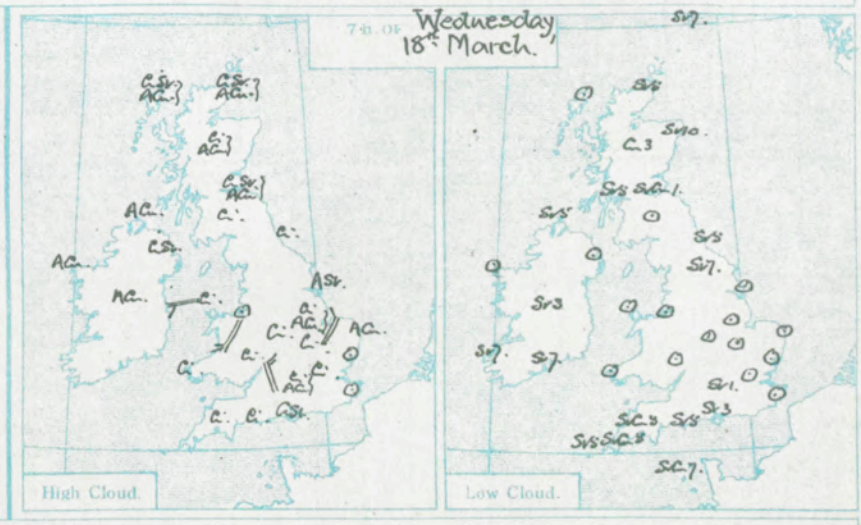
Tuesday, 17th March. 1931.



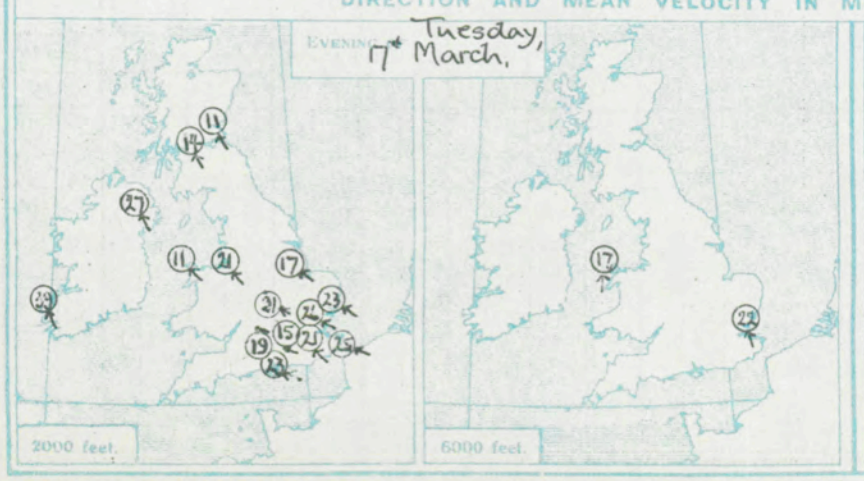
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

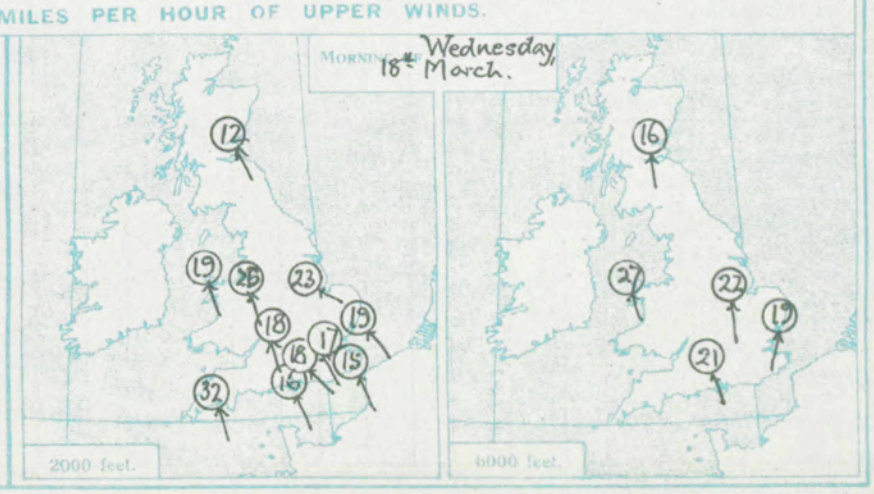






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2

⊖ Indicates absence of cloud.

Ps 25/2/22/0 We 118 D 6008 Gp 908 11780 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness		Felixstowe		Cranwell		Cardington	
Time	11h 17th		12h 17½		12h 17½		12h 17½		13h 17½		11h 17th		11h 17½		12h 17½		12h 17½		12h 17½	
Type	b		b								b.						b		b	
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	95	15	80	15	105	10	100	10	110	14	90	18	Shell		105	18	125	17	110	17
1000	115	15	95	18	100	13	100	18	95	25	95	22	burst		115	19	115	19	105	19
2000	105	26	110	23	115	21	100	20	100	25	135	28	1 mirror		120	19	125	23	100	23
3000	115	31	130	24	130	25	130	25	125	21	120	30	145	20	130	23	125	20		
4000	135	31	120	31	135	14	135	19	135	18			(15000')		140	21	130	23		
5000	145	27	125	34	140	10	140	14	130	7			170	22	145	21				
6000					140	8	135	8	125	9			(18000')							
8000			13h	Ci	175	6	180	8	145	3	Boscombe		190	10			Worthy			
10000	Kew		290	25	130	8	145	6	145	7	Down		(22000')				Down			
12000	13h	ACu	13h	ACu	225 (20000')	12	125	11	135	11	13h	Ci			13h	Ci	13h	Ci		
Neph.	130	33	140	27	260 (20000')	20	135 (13000')	13	145 (15000')	5	210	20			160	50	240	25		

Place	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Croydon		Place
Time	12h 17½		12h 17½		12h 17½		13h 17½		12h 17½		12h 17½		12h 17½		13h 17½		12h 17½		Time
Type					b		b		b		b								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	130	13	95	25	190	6	130	17	135	10	85	6	150	15	90	13	85	15	Surf.
1000	110	16	95	18	155	12	130	22	140	18	110	7	180	26	125	23	100	27	1000
2000	110	15			155	21	135	30	145	19	135	27	190	27	135	35	95	16	2000
3000	135	22			170	25	145	35			170	23			155	32	105	25	3000
4000	145	25			165	21	145	34							195	18	115	33	4000
5000					150	16													5000
6000					145	20													6000
8000					155	31													8000
10000					180 (9000')	9													10000
12000					13h	Ci	13h	Ci	13h	Ci	13h	ACu			13h	Ci	13h	ACu	12000
Neph.					250	55	210	40	220	25	240	18			270	50	180	30	Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.	17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		17h 17½			
Type.					b						b		d.							
Feet Surf.	95	11	105	12	115	10	100	8	115	22	85	18	80	22	95	10	115	12		
1000	125	9	105	20	110	16	110	19	100	21	95	27	105	26	115	27	120	17		
2000	130	21	115	15	110	19	120	19	120	23	115	25	130	26	125	23	125	17		
3000	155	19	125	19	135	19	135	18	125	20	140	29	135	24	120	21	155	23		
4000	145	25	135	21	150	16	155	16			150	32	135	28			145	16		
5000							150	11					140	36						
6000							175	14					160	22						
8000							155	9					160	33						
10000							175	9					Shell 1 mi	burst rror						
12000					18h	Ci	16h	Ci					180 (18000') 220 (19000')	29 14	16h	Ci	18h	ACu	18h	Ci
Neph					240	15	220	20					[illegible] (20000')	(10)	170	30	150	18	290	35

Place.	Upper Heyford		Valentia		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Larkhill		Lympne		Place.
Time.	17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		17h 17½		18h 17½		11h 17½		13h 17½		Time.
Type.																	b		Type
Feet Surf.	95	12	125	16	65	6	115	11	130	12	120	5	120	13	100	13	105	17	Feet Surf.
1000	100	21	135	35	115	11	120	17	140	23	120	15	135	21	110	17	110	21	1000
2000	125	21	150	39	125	11	135	21	145	11	145	14	145	27	110	24	130	17	2000
3000	160	15	160	42	150	15	160	25	195	15	180	17	145	33	130	33	135	31	3000
4000	150	21			155	15			190	19	165	23			155	18			4000
5000	140	23			170	21			185	22					150	12			5000
6000					180	17									145	10			6000
8000					175	18	16h	Ci	16h	Ci	16h	CiCu			165	10			8000
10000	Plymouth		Plymouth				280	50	220	30	250	25			165	4			10000
12000	16h	Ci	18h	Ci			18h	Ci	18h	Ci	18h	Ci			225 (20000')	12	13h	Ci	12000
Neph	210	20	210	25			280	50	320	25	250	30			270 (20000')	18	180	40	Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington	
Time.	7h 18th		7h 18th		6h 18th		8h 18th		7h 18th		6h 18th		7h 18th		7h 18th		6h 18th			
Type.					b.															
Feet Surf.	125	3	–	0	100	5	90	10	95	23	95	15	–	0	115	10	90	3		
1000	140	7	130	19	125	9	120	21	130	19	140	18	130	19	135	21	135	19		
2000	145	17	125	18	135	17	135	14	140	16	145	15	125	18	135	19	120	23		
3000	180	15			145	21	145	21	155	18	165	15	10h. 18th		140	22	135	23		
4000	170	21			160	21	155	26	155	21	220	11	Shell burst.		175	20	145	17		
5000	175	21			160	22	160	29					One mirror. (12000ft)		190	22	155	17	10h.	
6000					165	21	Biggin Hill		Worthy Down				170 (15000ft)	16.	195	19	170	22	Ci.	
8000					145	21							180 (20000ft)	8					30	.2
10000	10h.		10h		150	25	10h.		10h				215	12			7h		7h	
12000	AC		C.		7h Ci		CC		Ci								Ci		Ci	
Neph	170	33	20	20	340	20	180	80	360	15							–	0	30	5

Place.	Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Lympne		Aldergrove		Croydon		Place.
Time.	9h 18th		7h 18th		8h 18th		6h 18th		6h 18th		7h 18th		10h 18th				11h 18th		Time.
Type.													b				b		Type.
Feet Surf.	85	12	100	25	120	5	15	1	–	0.	80	5	125	13			90	10	Feet Surf.
1000	115	17	125	35	135	15	145	27	115	3	105	17	140	13			135	15	1000
2000	145	18	145	32	150	19	135	26	150	12			140	18			150	21	2000
3000	160	14	135	29	155	23	145	28	175	17			150	21			155	21	3000
4000	165	19			160	23			170	12			155	23			165	23	4000
5000	160	17			155	20	10h.		175	15							175	21	5000
6000					145 (6000')	27	C.		170 (7000')	16									6000
8000					150	35	210	10	175	17									8000
10000			10h.		7h.		7h.												10000
12000			AC		C.		C.												12000
Neph			190	36	260	10	210	15											Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
S. FARNBORO' 11h30m. 17.3.31	1012	M.S.L.	—	—	—
	1004	230	48	-	-
	983	790	45	-	-
	949	1750	38	-	-
	914	2750	36	-	-
	881	3740	38	-	-
	849	4730	40	-	-
	818	5710	37	-	-
	787	6730	33	-	-
	758	7700	30	-	-
	729	8710	27	-	-
	702	9700	23	-	-
	675	10710	19	-	-
	650	11680	18	-	-
	Haze top 914mb				
	Very bumpy at 914mb.				
KJELLER 8h 17.3.31.	–	M.S.L.	—	—	—
	987	660	3	-	45
	950	1640	16	-	55
	902	3280	18	-	55
	855	4920	12	-	55
	803	6560	18	-	45
	753	8200	16	-	45
	704	9840	12	-	45
	617	13120	3	-	45
	539	16400	-11	-	45
	INVERSIONS - (1) (2)				
	Press. at base 999 845 mb				
	Amount 22° 5°F				

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%		mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Calais		Cheb		Naples		Zara		LeHavre.		Malta.	
Time.	13h 17½		13h 17½		13h 17½		13h 17th		18h. 17th		17h 17th	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	120	26	–	–	210	13	–	–	120	18	(3000ft) 50	17
3,280	140	41	100	20	120	6	250	4	260	16	(6000ft)	
4,920	–	–	100	23	–	–	70	20	–	–	240	18
6,560	150	23			70	2	100	28	150	14	(10000ft)	
9,840									–	–	250	18
13,120									160	11	(13000ft)	
16,400									–	–	290	25
19,680									200	4		

Place.	Palermo		Bordeaux		Algiers.		Zara.		Prague.		Tours	
Time.	18h. 17th		18h. 17th		4h. 18th		7h. 18th		7h. 18th		7h 18th	
1,640	–	–	100	18	260	17	–	–	130	14	150	29
3,280	350	6	140	20	310	18	180	2	140	14	210	59
4,920	–	–	–	–	300	18	–	–	140	17	170	16
6,560	320	13	20	17	320	25	150	17	130	21	150	16
9,840	350	9	–	–	290	34	160	16				
13,120			220	19								
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.
G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, THURSDAY, 19TH MARCH, 1931.

No. B. 25319

U.A.S. 4371.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

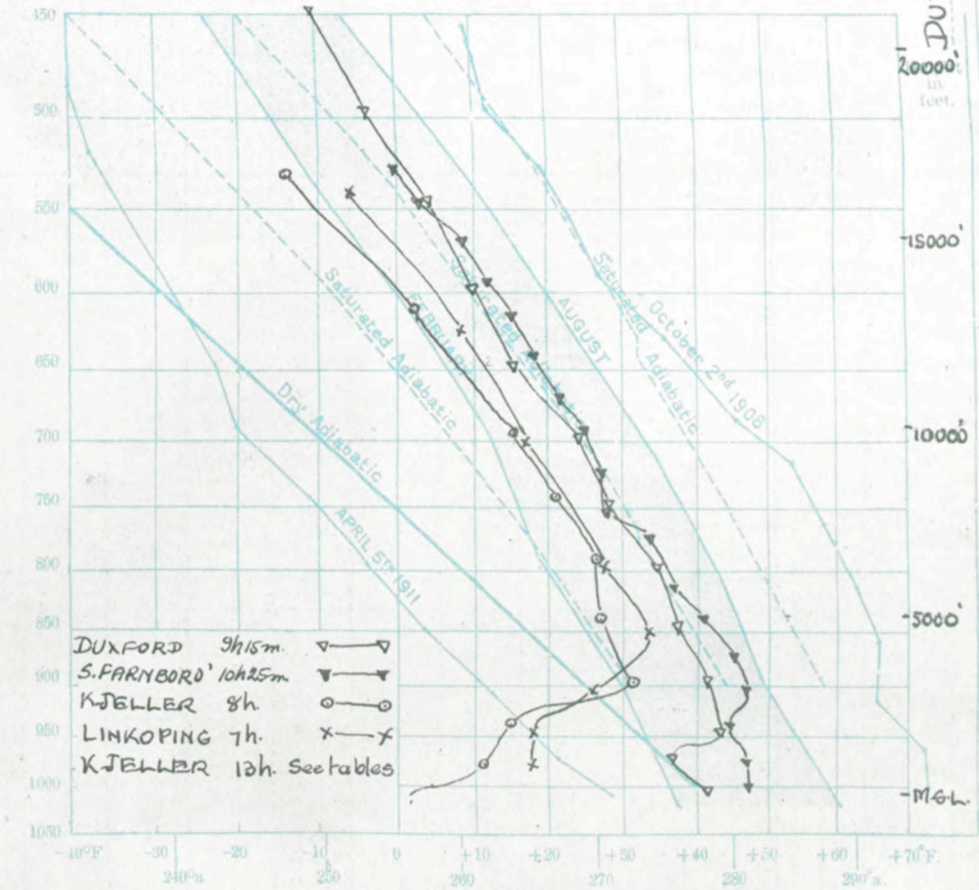
In Tables.

Directions are given in degrees, velocities in m.p.h.

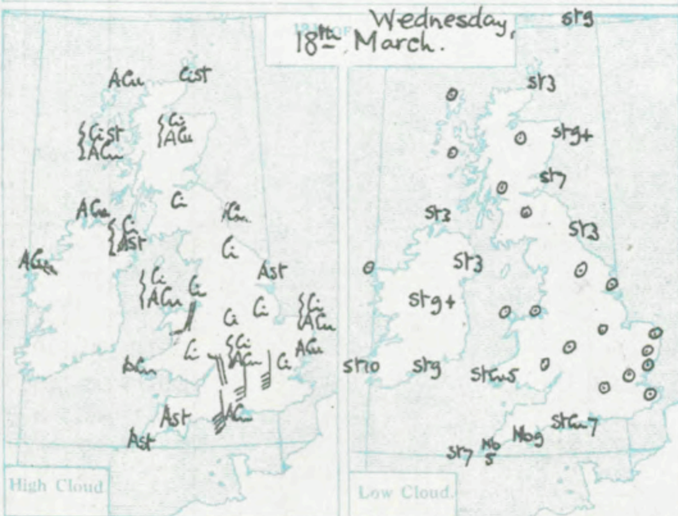
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

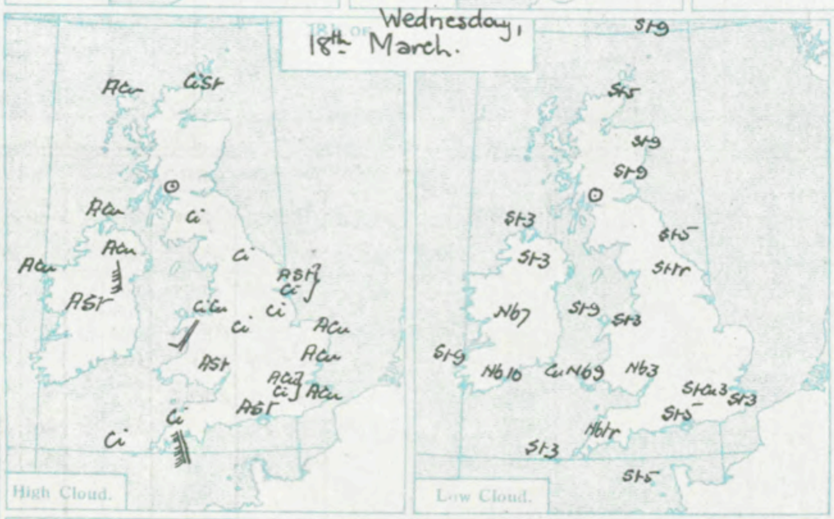
UPPER AIR TEMPERATURES.

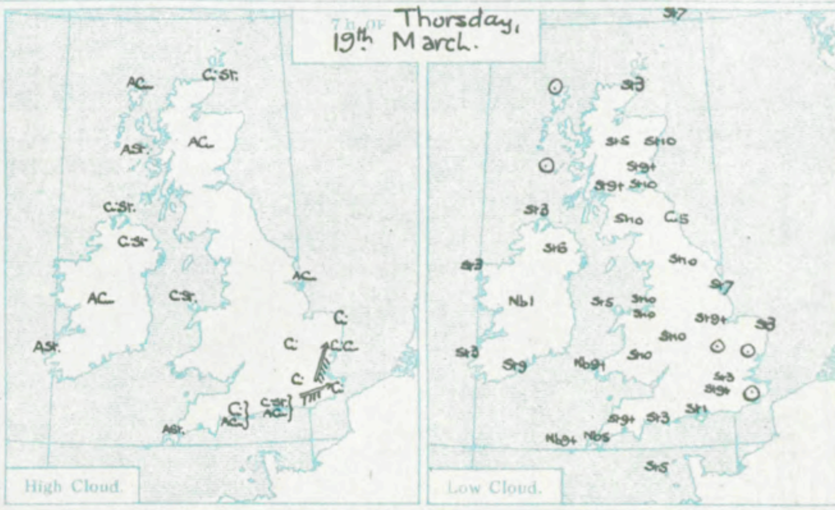
Wednesday, 18TH MARCH, 1931.



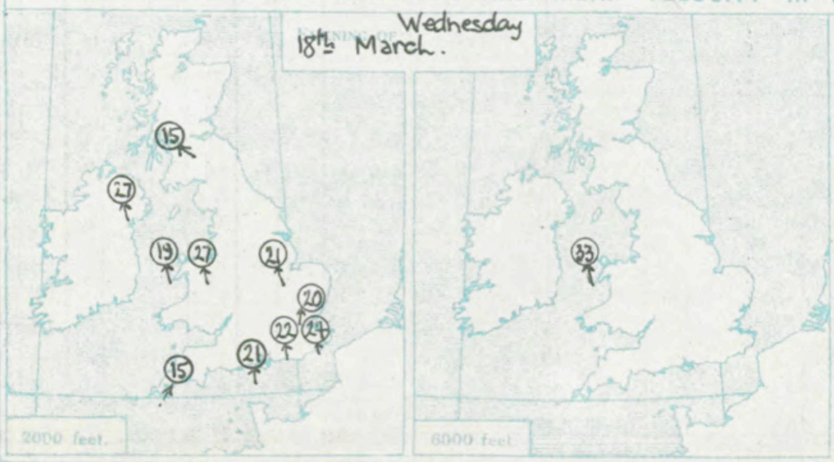
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

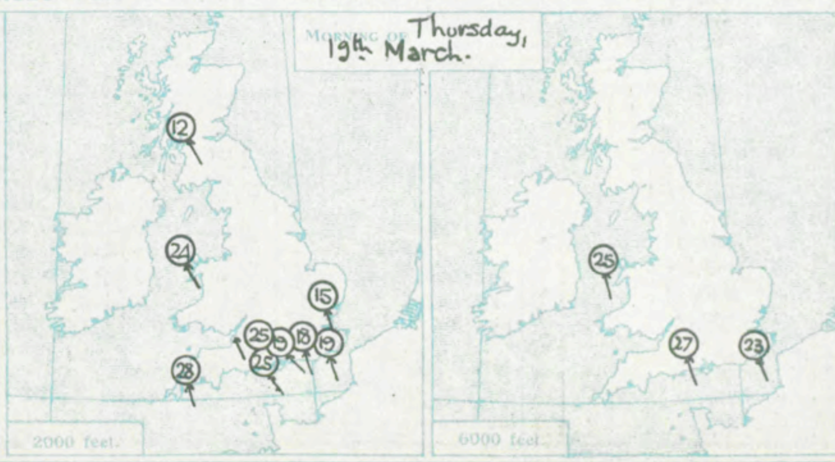






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press Kingsway W.C.2

⊙ Indicates absence of cloud.

Ps. 2512/2210. m. 116. 2/5000. Gp. 906. 11780. 2/31.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Larkhill		Place
Time.	12h 18½		13h 18½		12h 18½		12h 18½		12h 18½		13h 18½				12h 18½		12h 18½		12h 18½		12h 18½				12h 18½		12h 18½		12h 18½		12h 18½						11h 18½		Time
Type			b		b		b				b				b		b		b						b		b				b								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	95	11	130	12	95	10	130	13	100	22	130	12			115	8	105	13	90	11	90	10			95	11	155	12	110	10	65	8	80	12			100	13	Surf.
1000	140	9	120	15	125	14	130	16	120	?	165	15			130	21	105	18	100	12	105	9			135	12	140	17	125	13	80	11	190	12			110	14	1000
2000	180	21	125	29	155	20	130	16	150	27	185	16			165	25	150	23	155	15	145	29			165	23	145	28	155	17			175	15			145	23	2000
3000	170	25	155	32	165	27			150	23	180	21			170	25	175	10	165	19	160	27			180	18	180	32									160	28	3000
4000			155	38	170	25			160	21	185	23			180	19	175	15	170	23	165	25			175	23	160	25									165	28	4000
5000					175	25	13h	Ac	165	27	190	28			185	17	175	10	190	22	165	27			165	27	160	31									175	28	5000
6000					170	21	180	66	170	25							170	21	195	17					165	26											170	22	6000
8000			13h	Ci	205	19	worthy Down										160	19	180	15	card-ington				170	27											205	18	8000
10000			20	25	205	16											160	17	170	11					155	27											200	20	10000
12000			13h	Ac	13h	Ci	13h	Ac											165 20 (16000')		13h	Ac			155	23	13h	Ci											12000
Neph.			170	27	250	15	170	45											210 (2000')	9	160	18			(11000')		200	15											Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia				Place.
Time.	17h 18½								17h 18½		17h 18½				17h 18½		17h 18½						16h 18½		17h 18½		17h 18½		17h 18½		17h 18½		17h 18½						Time.
Type.											b																												Type
Feet																																							Feet
Surf.	180	12							110	14	125	7			110	7	85	10					165	15	85	6	115	8	70	6	85	7	90	13					Surf.
1000	175	16							170	22	160	18			165	16	120	17					210	15	150	19	135	27	120	15	90	17	115	27					1000
2000	175	22							176	21	175	24			185	20	155	21					205	15	155	19	160	27			130	15	155	27					2000
3000	180	27									185	25			185	21	185	20							165	23	165	27			170	15	165	19					3000
4000	190	25									195	29			185	21	190	16							165	26													4000
5000	195	26													195	21	190	18							165	31													5000
6000																									160	33													6000
8000																											16h	Ci											8000
10000	Kew																										210	20											10000
12000	18h	Ac	16h	Ac																			18h	Ci			18h	Ci Cu					17h	Ac					12000
Neph	230	24	180	24																			190	90			210	10					160	57					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Lympne		Croydon		Place.
Time.	7h	19½	8h	19½	7h	19½	8h	19½	7h	19½	6h	19½			7h	19½	6h	19½					7h	19½	8h	19½					7h	19½			10h	19½	10h	19½	Time.
Type.					b																														b		b		Type.
Feet																																							Feet
Surf.	170	7	125	5	110	7	95	10	95	7	100	11			145	3	-	0					120	17	95	6					90	15			115	11	125	13	Surf.
1000	155	20	150	20	140	20	130	32	145	22	155	18			155	17	195	7					140	23	130	21					85	15			140	15	145	15	1000
2000	160	18	140	19	150	25	140	33	155	25	165	19			155	15							165	28	150	24					140	12			150	22	155	15	2000
3000	160	24	15	24	150	28	150	28	165	25	170	19			170	17									165	29									155	22	155	28	3000
4000	160	28			160	28	155	31	155	28	165	15			180	21									165	29											155	29	4000
5000					160	27	155	35	160	27	160	21			190	21									170	30											155	22	5000
6000					160	27	160	36			165	23			7h	C.C.									175	25											165	37	6000
8000											165 165	18 18	Lympne		190	55									165	33													8000
10000											175	17													(7,000ft)													10000
12000	10h	Ci	10h	Ci	10h	Ci	10h	Ci	10h	Ci	(9,000ft) 7h	Ci			10h	Ci	10h	C.Cu			10h	Ci			10h	Ci									10h	Ci					12000
Neph	300	45	240	40	210	35	250	75	250	70	260	45	260	45	190	50					260	40			180	40									190	55					Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
DUXFORD 9h 15m. 18.3.31.	mb.	Feet.	°F.	°F.	%
	1011·5	M.S.L.	—	—	—
	1008	100	42	38	65
	971	1100	375	35	78
	950	1690	485	375	54
	900	3130	42	36	57
	850	4650	38·5	31	44
	800	6250	35	32	75
	750	7950	29	265	79
	700	9750	245	22	76
	650	11670	16	14	-
	600	13700	10	8	-
	550	15890	4	2·5	-
	500	18290	-3	-4	-
	450	20890	-10	-10·5	-
	INVERSION - 1000 fr. 37·5°F. 584 mb. 44·0°F				
	Haze top 630 mb. Cloud nil				
KJELLER 6h 18·3·31	-	M.S.L.	—	—	—
	963	1320	12	-	55
	945	2306	16	-	45
	900	3280	32	-	45
	844	4920	28	-	35
	794	6560	27	-	35
	746	8200	21	-	35
	698	9840	16	-	35
	611	13120	3	-	35
	534	16400	-13	-	35
	INVERSION - Press. at base 1018 mb Amount 290 F				

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
S. FARNBORO' 10h 25m. 18·3·31.	mb.	Feet.	°F.	°F.	%
	1010	M.S.L.	—	—	—
	1001	230	48	"	"
	978	900	48	"	"
	944	1600	45	"	"
	909	2840	48	"	"
	877	3800	46	"	"
	844	4800	41	"	"
	814	5790	37	"	"
	783	6780	34	"	"
	754	7760	28	"	"
	726	8800	27	"	"
	698	9810	28	"	"
	672	10790	23	"	"
	646	11800	19	"	"
	621	12800	16	"	"
	597	13790	12	"	"
	573	14790	9	"	"
	550	15810	3	"	"
	529	16800	6	"	"
LINKOPING 7h. 18·3·31	-	M.S.L.	—	—	—
	987	882	19	"	85
	951	1862	19	"	85
	908	3280	27	"	75
	852	4920	34	"	75
	800	6560	28	"	55
	-	8200	-	"	-
	703	9840	18	"	55
	629	13120	9	"	45
	593	16400	-6	"	45
	INVERSION - Pressure 944 mb Temp ? Total rise 13°F				

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
KJELLER 13h. 18·3·31.	mb.	Feet.	°F.	°F.	%
	-	M.S.L.	—	—	—
	981	1326	25	-	65
	944	2306	25	"	55
	900	3280	28	"	55
	846	4920	30	"	45
	795	6560	28	"	45
	747	8200	23	"	45
	701	9840	19	"	45
	613	13120	5	"	45
	538	16400	-9	"	45
	INVERSION - Pressure 920 mb. Amount 7°F.				

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Paris		Warszw		Prague		Cagliari		Malta		Turin	
Time.	12h 18½		13h 18½		13h 18½		13h 18½		12h 18½		18h	18½
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	150	7	160	9	130	12	110	4	1000' 40	9	-	-
3,280	180	18	200	16	140	17	260	3	2000' 360	5	-	-
4,920			180	4	160	13	290	6	3000'		50	9
6,560			340	4	140	14			330	6	40	9
9,840					150	3					120	16
13,120												
16,400												
19,680												

Place.	Calais		Valenciennes		Prague		Posen		Bizerta		Malta	
Time.	18h	18½	18h	18½	7h	19½	7h	19½	7h	19½	6h	19½
1,640	180	23	150	24	140	9	80	7	180	27	3,000ft.	
3,280	220	27	220	18	180	8	80	7	190	16	130	6
4,920	220	13	200	25	50	13	80	9	310	7	7,000ft.	
6,560	210	14	190	18	-	-	80	11	250	14	330	11
9,840					180	6	100	11			10,000ft.	
13,120											310	17
16,400											12,000ft.	
19,680											320	30

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, Friday, 20th March 1931.

No. B. 25320
U.A.S. 4372

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0—5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

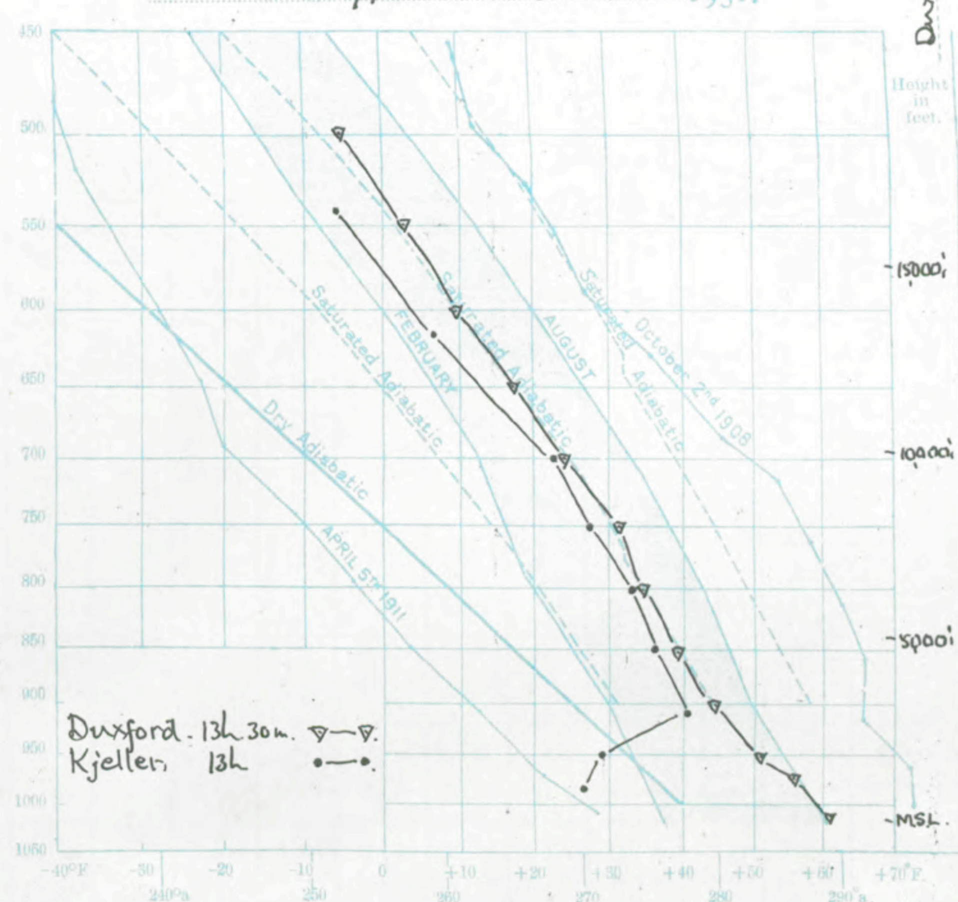
In Tables.

Directions are given in degrees, velocities in m.p.h.

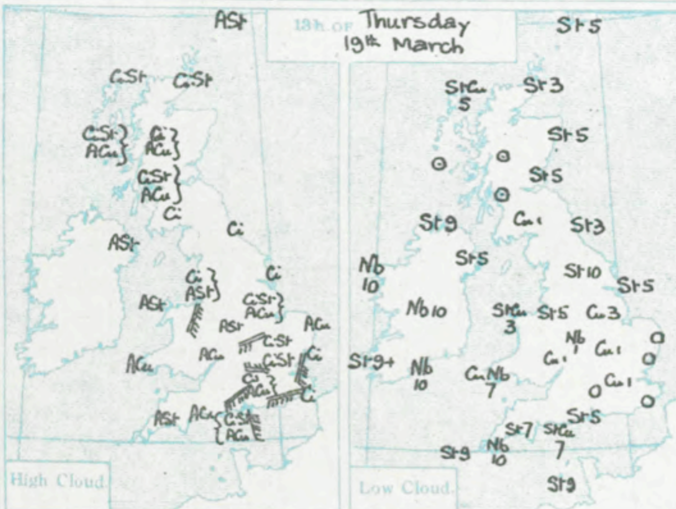
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

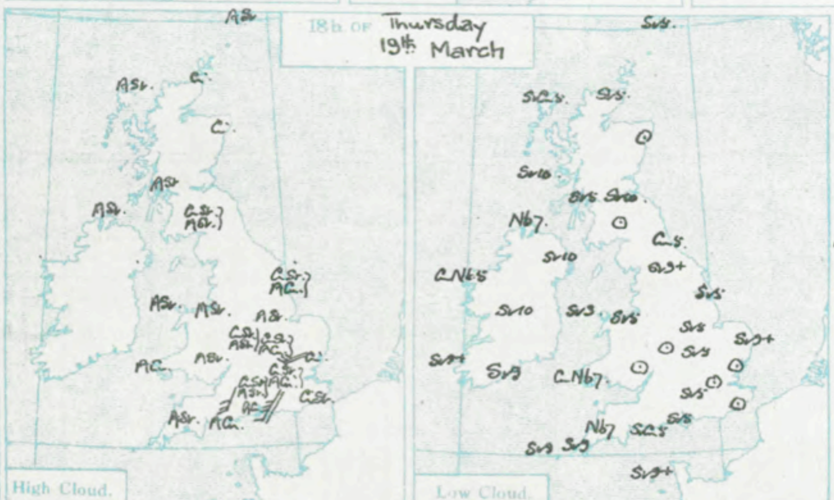
UPPER AIR TEMPERATURES.

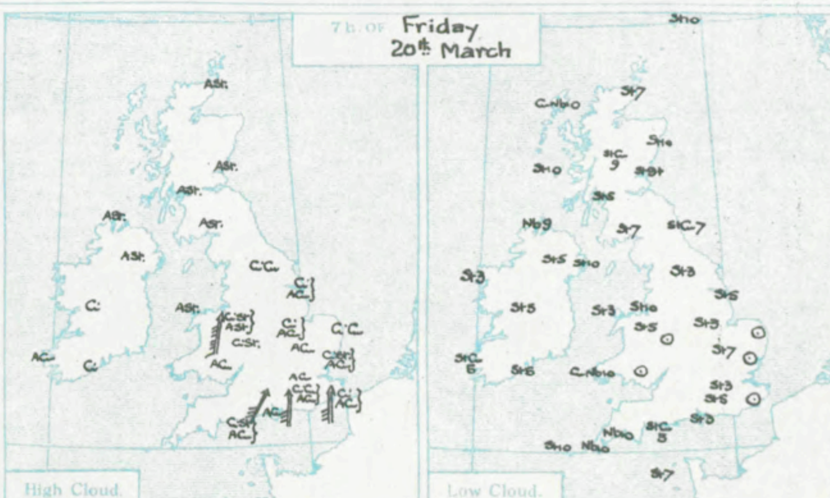
Thursday, 19th March 1931.



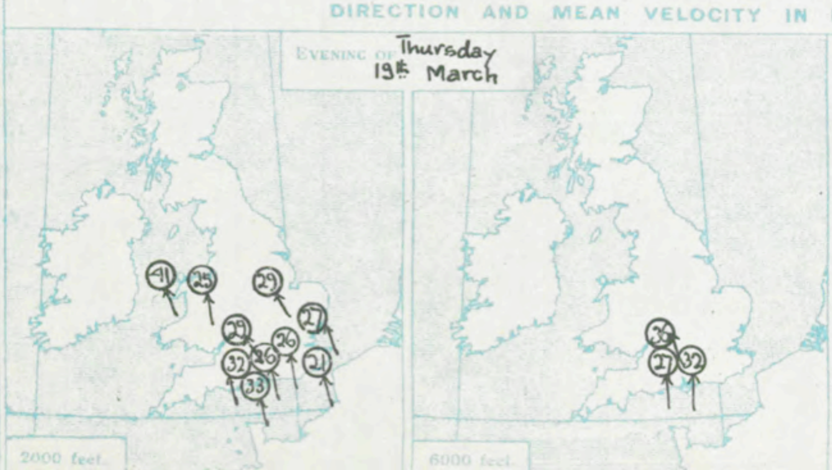
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

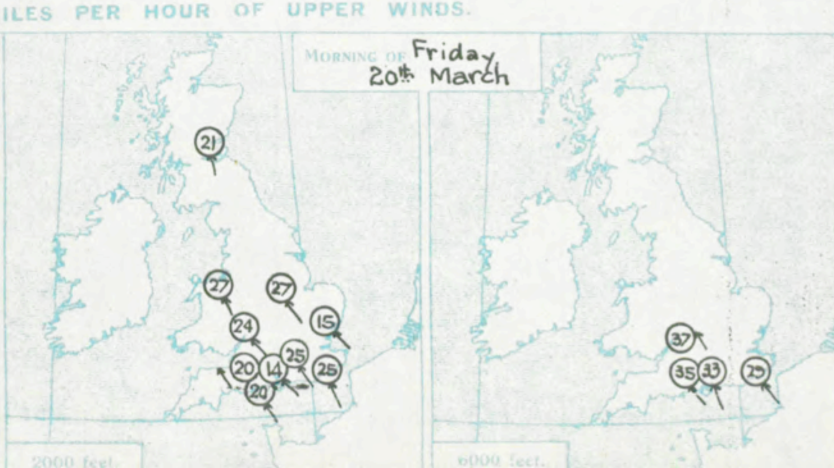






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Larkhill		Felixstowe		Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia		Place
Time.	12h. 19m		12h. 19m		12h. 19m		12h. 19m		12h. 19m		12h. 19m		11h. 19m		12h. 19m		12h. 19m		12h. 19m		13h. 19m				12h. 19m		12h. 19m		13h. 19m		12h. 19m		12h. 19m						Time
Type			b.		b.						b				b.				b						b		b.				b.								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	125	15	145	15	125	20	135	15	115	25	115	10	110	20	140	4	125	13	150	17	130	13			110	20	130	11	70	5	70	5	80	12					Surf.
1000	145	14	140	14	135	27	130	31	140	31	145	17	125	25	130	17	135	16	140	18	135	26			125	27	125	24	30	6	85	10	140	3					1000
2000	150	16	145	25	140	31	140	35	150	27	155	30	135	35	140	20	140	22	145	23	145	25			140	25			220	9			170	17					2000
3000			150	28	155	27	150	39	150	26	155	31	155	37	150	19	155	32	155	28					165	47													3000
4000			16h.		155	35	155	47	150	31	150	21	150	37	155	19	175	19	160	28	16h				160	34													4000
5000			c.c.		160	30	150	59	155	36	145	27	155	37	140	24	180	20	160	30	c.c.				165	31													5000
6000			240	50	160	34	145	57	155	37	16h		155	34	16h				165	27	240	30			170	32													6000
8000			Ac.				Worthy Down				c.		(7000)		c.						Ac.																		8000
10000	13h.		210	27	170	28	c.c.	13h.	175	29	270	35	165	33	220	30			165	26	210	21			160	31													10000
12000	C.		13h.		(11000) 165	28	200	55	165	26	13h.		Kew		13h.				170	21	13h.				165	25	13h.												12000
			C.		170	27	13h.	Ac.	13h.		Ac.		13h.		c.				(2000) 170	26	C.						c.												
Neph	260	45	240	60	200	39	190	18	160	75	260	45	280	60	190	50			250	35	240	50					210	60											Neph

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe		Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia		Calshot.		Place.
Time.	17h. 19m		17h. 19m		17h. 19m		17h. 19m		17h. 19m		17h. 19m				17h. 19m		17h. 19m				18h. 19m				17h. 19m		18h. 19m				17h. 19m						24h. 19m		Time.
Type.					b.						b.																												Type.
Feet																																							Feet
Surf.	135	11	120	10	135	14	125	15	120	17	125	10			110	11	135	14			125	10			145	15	125	15			80	6					90	17	Surf.
1000	145	20	130	19	125	25	125	24	120	30	135	19			135	27	135	22			130	22			145	28	135	36			95	21					260	15	1000
2000	155	26	145	26	145	32	140	41	145	33	145	21			145	27	140	29			130	29			155	25	145	41									170	26	2000
3000	170	23	170	22	150	30	150	28	145	31	155	23			145	20	140	31			150	27			155	39	150	42									150	19	3000
4000	180	19	180	26	160	24	155	22			170	18			145	21	160	34			165	28			155	37											170	15	4000
5000	180	23	175	27	175	24	170	36									170	29			170	31			170	47											155	17	5000
6000			180	32	175	27	170	40													165	36																	6000
8000	Kew.		165	29	(7000) 165	28	165	41																															8000
10000	18h.		18h.				16h.																																10000
12000	C.		Ac.				C.								18h. C.																								12000
Neph	220	45	200	33			210	35							230	30																							Neph

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Lympne		Felixstowe		Cranwell		Cardington		Upper Heyford		Larkhill		Holyhead		Sealand		Leuchars		Renfrew		Croydon		Aldergrove		Valentia		Place.
Time.	7h. 20½m		7h. 20½m		6h. 20½m		8h. 20½m		7h. 20½m		6h. 20½m		11h. 20½m		7h. 20½m		6h. 20½m				8h. 20½m		9h. 20½m		9h. 20½m		7h. 20½m		6h. 20½m		7h. 20½m		11h. 20½m		7h. 20½m		10h. 20½m		Time.
Type.					b.								b.																										Type.
Feet																																							Feet
Surf.	155	9	115	2	110	5	140	16	110	14	120	15	130	11	140	11	125	4			125	10	130	12	130	2	140	2	30	3	55	5	140	10	110	12	140	25	Surf.
1000	165	19	150	22	140	20	140	26	150	21	155	18	155	13	155	19	155	23			145	17	160	25	165	19	145	23	140	11	125	11	150	11	145	25	145	56	1000
2000	135	25	135	14	145	20	155	24	135	20	160	25	195	10	145	15	145	27			145	24	165	27	165	21	150	27	170	21			180	23			135	70	2000
3000	145	19	145	16	150	21	145	23	140	22	145	23	180	17	165	17	145	23			150	22	155	32	160	29	140	30	180	29			165	22					3000
4000			145	20	150	23	140	30	140	25	140	20	165	24	165	23	150	27			145	8	145	30			140	33					165	25					4000
5000			145	24	145	31	145	22			145	22	165	33	155	20					145	37	150	39									155	27					5000
6000			165	33	140	35					145	29			7h.	Ac.	7h.	Ac.	10h.	Ac.	150	37					10h.	Ac.					150	30					6000
8000			175	28							145	27			220	27	190	27	170	39							190	39									South Farnboro		8000
10000			10h.	C.							160	23																											10000
12000	10h.	Ac.	200 7h.	70 C.	7h.	C.					7h. 180	C. 30			10h.	Ac.	10h.	Ac.	10h.	C.							7h.	C.									10h.	Ac.	12000
Neph	170	52	180	60	200	30					170	25			220	30	190	36	170	40							190	70									150	42	Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
Duxford. 13h. 30m. 19/3/31.	mb.	Feet.	°F.	°F.	%
	1010	M.S.L.	—	—	—
	1008	100	62	55	64
	971	1011	57	50·5	63
	950	1720	52	48	76
	900	3180	45·5	43	90
	850	4710	40	37	78
	800	6340	35	32	82
	750	8030	22	27·5	61
	700	9880	24·5	-	-
	650	11800	18·5	15·5	-
	600	13850	10	8	-
	550	16030	3	1	-
	500	18450	-5	-5	-
	Haze top 850mb.				
	Cu. 3/10, 875 - 835mb.				
	Asc. 9/10, not reached.				
Kjeller, 13h. 12/3/31.		M.S.L.	—	—	—
	985	1326	28	-	65
	949	2306	30	-	65
	905	3280	41	-	65
	849	4920	37	-	55
	800	6560	34	-	55
	750	8200	28	-	55
	704	9840	23	-	55
	618	13120	7	-	45
	541	16400	-6	-	45
	Inversion - 960mb. Amount 14°F.				

UPPER WINDS ABROAD.

Place.	Prague.		Cheb.		Abbeville.		Utrecht.		Messina		Malta		
Time.	13h. 19m		13h. 19m		13h. 19m		13h 19½m		18h 19½m		17h 19½m		
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	
1,640	150	4	-	-	140	21	160	11	200	19	3,000		ft.
3,280	120	9	110	5	150	16	160	14	-	-	130	11	
4,920	150	7	-	-	150	11	170	18	180	3	5,000		ft.
6,560	140	7	110	9			170	18	-	-	160	7	
9,840	180	6	60	14			180	13	320	14	7,000		ft.
13,120	160	7	90	37			190	4			320	5	
16,400	180	14					270	3					
19,680							270	14					

Place.	Tripoli.		Velliko-Gradiske.		Tours		Abbeville		Olomouc		Malta		
Time.	18h	19½h	7h	20½h	7h	20½h	7h	20½h	7h	20½h	6h	20½h	
1,640	100	23	200	12	110	29	170	20	120	10	1,000		ft.
3,280	140	19	230	3	140	25	160	10	150	14	140	28	
4,920	-	-	270	9	160	28	140	15	120	12	2,000		ft.
6,560	180	5	340	9	170	41					140	30	
9,840			330	8							3,000		ft.
13,120			340	16							130	32	
16,400			330	16									
19,680													

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, SATURDAY, 21st MARCH, 1931.

No. B. 25321
U.A.S. 4373

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 0— 5 m.p.h.
- 6—15 "
- 16—25 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 56—65 "
- and so on.

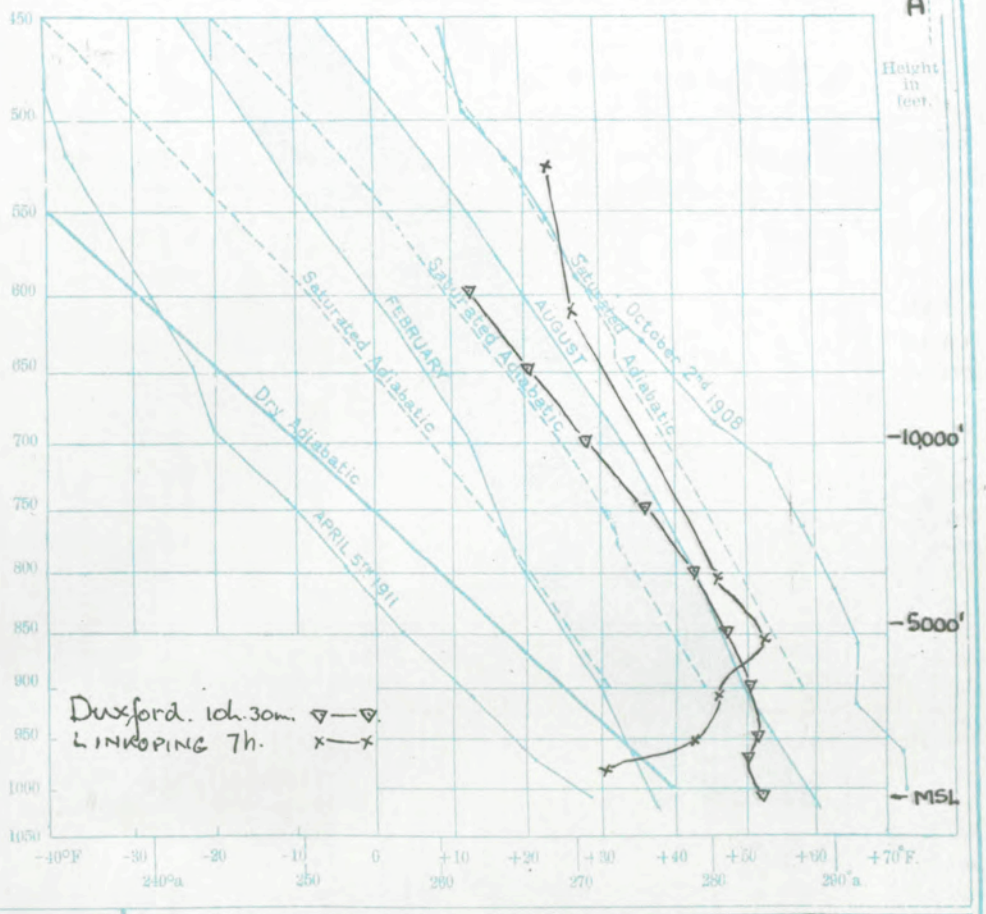
In Tables.

Directions are given in degrees, velocities in m.p.h.

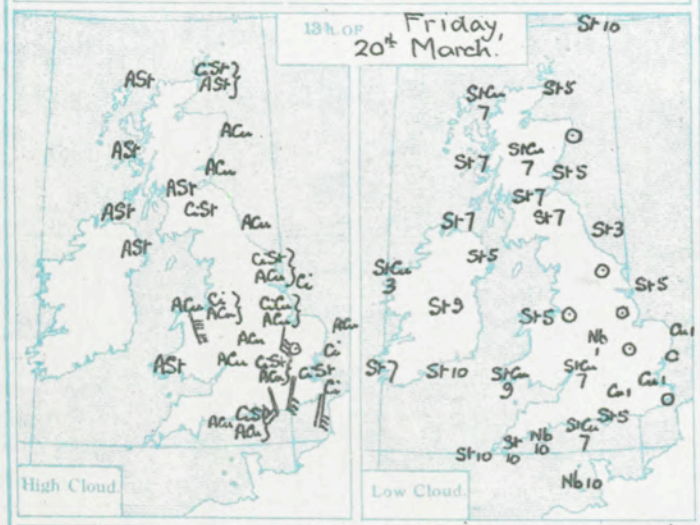
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

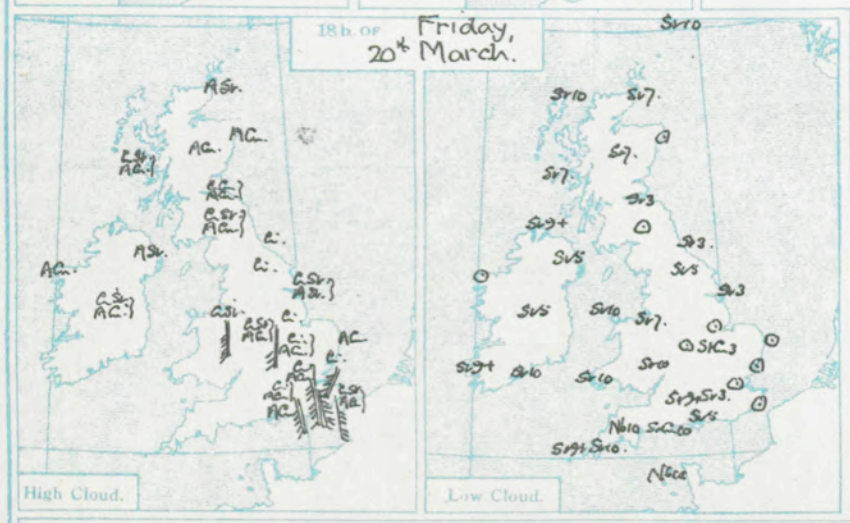
UPPER AIR TEMPERATURES.

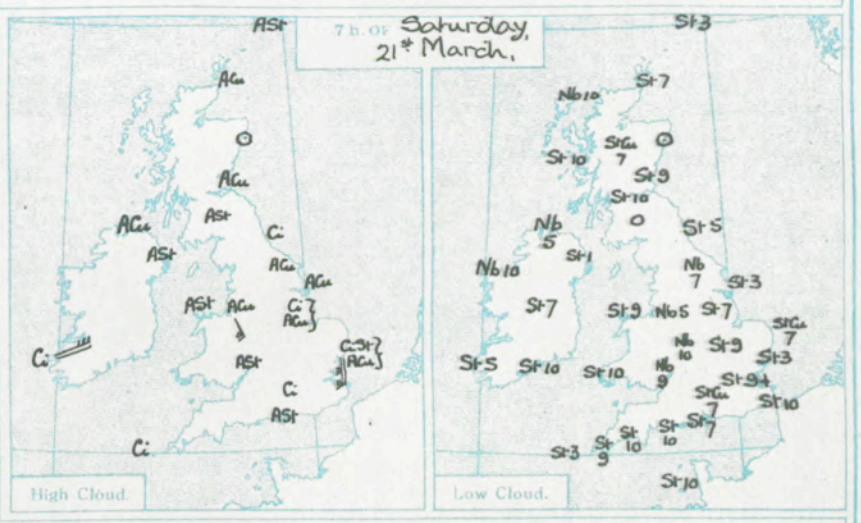
Friday, 20th March, 1931.



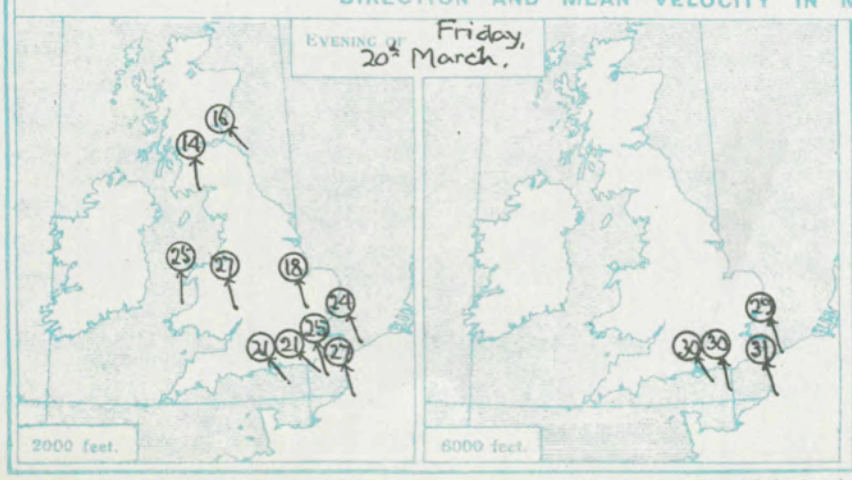
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

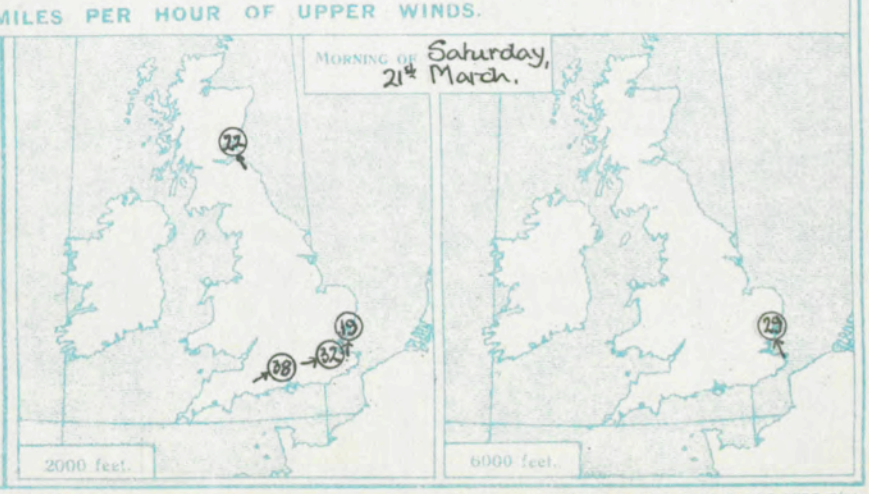






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2.

⊖ Indicates absence of cloud.

Ps 2512/2210. Wt.118. D.6008. Gp.908. 11780. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Larkhill		Holyhead		Sealand		Leuchars		Renfrow		Aber-deen		Alder-grove		Valentia		Place
Time.	12h.20m		13h.20m		12h.20m		12h.20m		12h.20m		12h.20m				12h.20m		12h.20m		12h.20m		12h.20m		11h20m		:20m		12h.20m		13h.20m										Time.
Type			b.		b.		b.				b				b.		b		b.						b		b.										Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	200	13	180	13	155	17	240	12	115	17	145	11			135	8	130	12	155	10	170	15	130	13	150	10	140	9	80	5									Surf.
1000	170	11	160	11	160	17	155	12	165	15	160	11			155	17	140	19	155	8	115	24	155	16	150	3	140	16	190	9							1000
2000	155	17	145	19	170	25	170	14	165	21	185	12			155	14	150	28	155	15	160	25	170	24	155	19	155	26	165	29							2000
3000	175	15			170	28	160	16	155	30	180	16			175	17	160	29	160	10	155	26	165	29	165	24			175	23							3000
4000	165	21			160	35	160	33			185	32			175	22	170	24	165	26	155	27	160	36	160	24			175	25							4000
5000					150	38					190	35			175	23	170	25	160	30	160	39	150	42	165	31			180	20							5000
6000					155	38					185	37			190	22	160	28	165	39	160	39	150	37													6000
8000					(8000) 160	35					(8000) 180	39					(7000) 155	32	150	27																	8000
10000	13h.		13h.		12h.		12h. Kew				13h.						13h.								13h.		13h.										10000
12000	Cu.		AC.		AC.		Cu.				Cu.						AC.										Cu.										12000
Neph.	170	25	150	21	160	78	160	45			170	35					190	33							160	60	180	70									Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Cranwell)		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Place.
Time.	17h 20m		17h. 20m		17h 20m		17h. 20m		24h20m½		17h 20m				17h. 20m		17h. 20m		24h20m½						16h. 20m		17h 20m		17h 20m		17h. 20m								Time.
Type.					b						b.																										Type.
Feet																																					Feet
Surf.	115	18	125	8	140	11	120	10	130	13	100	12			115	6	125	10	125	2					195	10	115	5	60	6	90	7							Surf.
1000	115	19	120	15	135	21	125	21	170	29	125	17			150	19	120	16	165	21					180	26	140	19	135	15	118	13							1000
2000	140	25	125	21	130	21	135	31	175	33	145	27			155	24	150	18	145	17					170	25	155	27	130	16	160	14							2000
3000	135	27	110	33	125	20	130	25	170	31	155	39			155	23	160	16	145	25					165	21	155	30	160	17	105	15							3000
4000	140	30	135	30	135	33	140	27			155	35			160	21	175	22	150	27					165	21	160	27											4000
5000	155	33	145	30	135	33	145	31			155	29			160	25																							5000
6000	6h		150	30	135	30	140	39			155	31			155	29			carrington																				6000
8000	AC. 170	54	(7000) 155	29	Kew						155	37			8h 220	6h 60																							8000
10000	18h		18h.		18h.				6h		6h 18h.	42			18h		18h.		6h								18h.		18h		16h								10000
12000	Cu.		Cu.		AC.				Cu.		AC.				CSh		Cu.		AC.								Cu.		Cu.		AC.								12000
Neph.	170	60	150	55	160	69			220	30	170	60			220	55	180	35	160	20							170	60	190	45	190	36							Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.	10h 21st		7h 21st		6h 21st										7h 21st										8h 21st				7h 21st										Time.
Type.					b																																		Type.
Feet																																							Feet
Surf.	210	15	225	14	215	10									140	4									185	10			40	5									Surf.
1000	240	29	245	27	240	23									185	23									195	23			135	13									1000
2000			250	32	245	38									175	19													155	22									2000
3000			265	37	250	30									160	22													160	25									3000
4000			265	48	255	27									150	31																							4000
5000															160	31																							5000
6000															155	29																							6000
8000																																							8000
10000																																							10000
12000															7h CSh		10h	ACu							7h	ACu	10h	ACu							7h	Cu			12000
Neph															180	65	180	48							160	30	170	54							60	20			Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
Duxford. 10h. 30m. 20/3/31.	mb.	Feet.	°F.	°F.	%
	1008	M.S.L.	—	—	—
	1005	100	52	48	75
	968	1100	50	47	80
	950	1600	51	46	68
	900	3070	50	42·8	55
	850	4610	47	38·3	48
	800	6250	42	34	47
	750	7990	35	32	76
	700	9790	27·8	25	76
	650	11710	20	19	89
	600	13760	12	10	-
	Haze tops 950 & 650mb				
	Cu. 3/10 1640 - 620mb.				
	Inversion:- 968 mb. 50°. 950mb. 51°.				
Linkoping. 7h 20/3/31.		M.S.L.	—	—	—
	988	882	30	-	85
	951	1862	43	-	75
	909	3280	46	-	75
	856	4920	52	-	65
	805	6560	45	-	65
	612	12120	36	-	55
	529	16400	23	-	55
	Inversion: 1013 mb Amount 34°F.				

UPPER WINDS ABROAD.

Place.	Nables.		Vajnory.		Rome.		Rome		Tours		MALTA	
Time.	13h. 20m		13h. 20m		13h. 20m		18h20m½		17h20m½		17h 20m	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	180	9	180	6	130	11	140	15			100	0'
											130	35
3,280	240	9	200	11	160	8	150	9	160	14	200	0'
											130	30
4,920	—	-	200	10	—	-	120	7	170	27		
6,560	230	6	200	10	210	7			170	31		
9,840			200	7								
13,120			180	6								
16,400												
19,680												

Place.	Strucbcing		Abbeville		Sortavala		Abbeville		Cagliari		MALTA	
Time.	18h20m½		7h 21st		7h 21st		7h 21st		7h 21st		6h 21st	
1,640	-	-	270	27	320	7	270	27	280	17	100	0'
											110	24
3,280	100	19	280	29	330	12	280	29	280	15		
4,920	-	-			330	10			280	13		
6,560	70	17			330	8						
9,840	80	36										
13,120												
16,400												
19,680												

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. Simpson. C.B. D.Sc., F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, Sunday, 22nd March, 1931. No. B. 25,322. U.A.S. 4,374.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

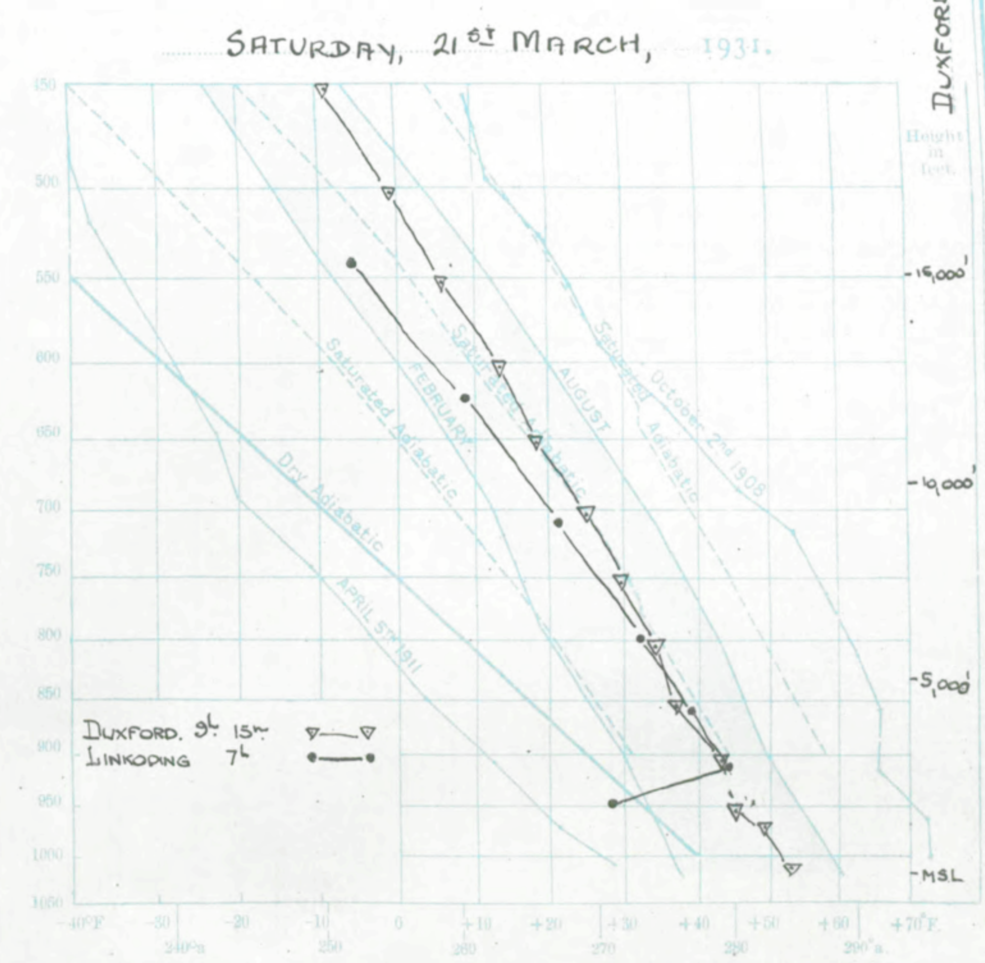
No speed given.	26—35 m.p.h.
0— 5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	56—65 „
	and so on.

In Tables.

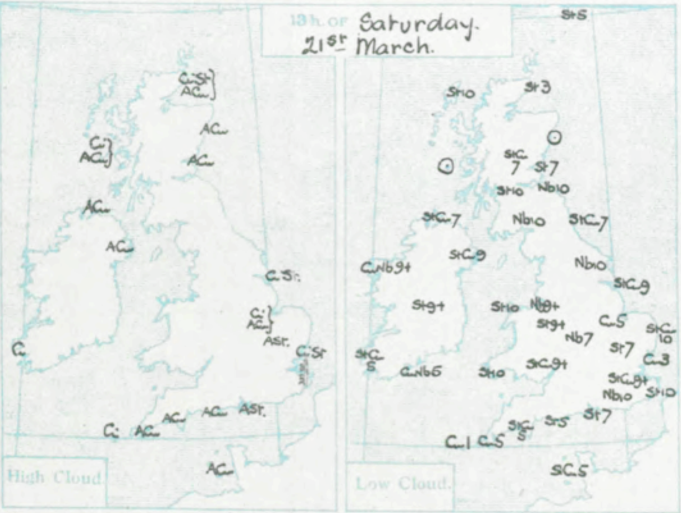
Directions are given in degrees, velocities in m.p.h.

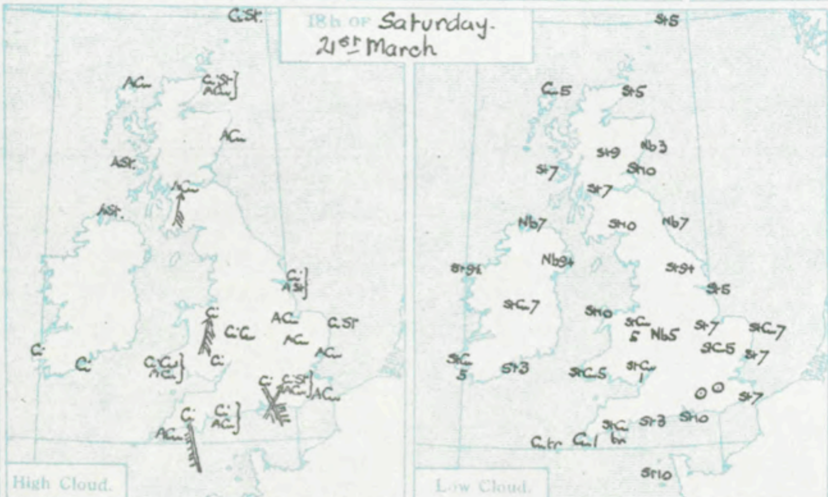
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

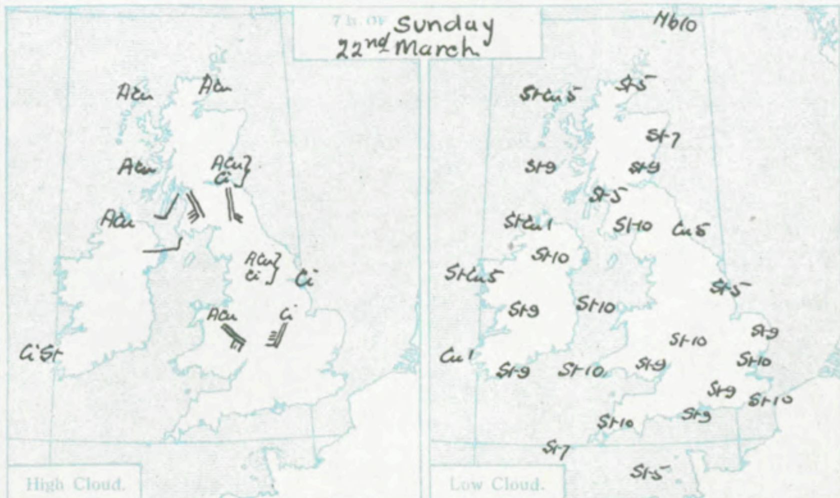
UPPER AIR TEMPERATURES.



CLOUD FORMS, AMOUNTS AND MOVEMENTS.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.

H.M. Stationery Office Press, Kingsway, W.C.2.

⊙ Indicates absence of cloud.

Ps 2512/2210. Wt.116. D.6008. Gp.908. 11780. 3/31.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	13h	21st					12h	21st							13h	21st	12h	21st	12h	21st							13h	21st	12h	21st					13h	21st			Time
Type																	b.																				Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	220	17					210	10							220	17	215	14	235	16							-	0	110	3					-	0			Surf.
1000	240	8					210	17							235	21	235	18	230	26							235	9	180	8					145	9			1000
2000															265	19			235	28							225	17	195	14					150	9			2000
3000															255	22			235	19							220	21	190	19									3000
4000																			235	16									175	25									4000
5000																			240	14									170	30									5000
6000																																							6000
8000																																							8000
10000																																			10h	Acu			8000
12000															13h	C.S.																			15o	4-7			10000
Neph.															180	65																			10h	Ci			12000
																																			15o	30			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Boscombe Down		Place.
Time.	17h	21st	18h	21st			17h	21st	24h	21st					17h	21st							17h	21st			17h	21st											Time.
Type.																																							Type.
Feet																																							Feet
Surf.	190	12	205	10			225	10	Cul	m					220	16							190	17			250	?											Surf.
1000	220	17	210	17			225	12	225	13					235	21							235	15			240	13											1000
2000	240	22	245	19			230	11	220	15					250	21							230	17			225	16											2000
3000	250	22	260	20			240	20	220	15					255	18							235	16			215	16											3000
4000			250	22			235	21	215	18					260	19							230	18			210	13											4000
5000			240	17			230	20	215	16					265	17																							5000
6000			240	22	16h	Ci	230	31															16h	Ci			16h	Ci									16h	Ci	6000
8000			230	19	210	30	215	22															160	60			200	50									150	55	8000
10000			(7,000')				210	17																															10000
12000	18h	Ci	18h	Ci	18h	ASt	205	21															18h	Ci			18h	Ci			18h	Ac.					18h	Ci	12000
Neph	220	25	150	55	190	18																	160	75			190	50			190	27					150	45	Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.																																						Time.
Type.																																							Type.
Feet																																							Feet
Surf.																																							Surf.
1000																																							1000
2000																																							2000
3000																																							3000
4000																																							4000
5000																															10h	Ci							5000
6000																															10h	Ci							6000
8000																															150	35							8000
10000																															10h	Acu							10000
12000																															210	15							12000
Neph																	7h	Ci									10h	Ci	10h	Ci	7h	Ci			10h	Acu			Neph.
																	200	45									140	30	170	25	150	35			90	15			

UPPER AIR TEMPERATURES AND HUMIDITIES.

Dunford. 9h. 15m. 21/3/31.

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	1007·2	M.S.L.	—	—	—
	1004	100	52·5	52	97
	968	1100	49	47·5	90
	950	1600	45	44	96
	900	3050	43	42	96
	880	4600	37	34	76
	800	6200	33·5	33	95
	780	7900	29·5	28·5	91
	700	9700	24·5	24	95
	650	11630	18	17	-
	600	13670	12·5	11·5	-
	550	15870	6	5	-
	500	18290	-1	-2	-
	450	20850	-8	-9	-

*C. 9/10 955 - 930 mb. C 1/10 not reached
StC. 5/10 880 - 850 mb
As. 9/10 810 - 780 mb

Linkoping 7h 21/3/31

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	-	M.S.L.	—	—	—
	987	882	?	-	65
	949	1862	28	-	65
	907	3280	43	-	65
	851	4920	39	-	55
	799	6560	32	-	55
	703	9840	21	-	55
	619	13120	9	-	45
	544	16400	-6	-	45

Inversion:
Pressure at base · 1011 mb.
Amount = 18°F.

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

Station	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Warsaw		Lemberg		Barcelona		Tours		Brest		Malta	
Time.	13h	21st	13h	21st	13h	21st	17h	21st	18h	21st	17h	21st.
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	170	31	170	17	300	9	240	16	210	25	1000' 130	17
3,280	160	29	170	12	280	19	220	16	210	23	3000' 170	6
4,920	70	24	180	14	270	22	250	14	210	35	7000' 210	13
6,560	180	22	180	13	260	21			210	25	10000' 220	16
9,840	180	23	210	16	260	27						
13,120					250	23						
16,400					250	24						
19,680												

Place.	Ancona		Messina		Bizerta		Helsingfors				Malta	
Time.	18h	21st	18h	21st	6h	22nd	7h	22nd			6h	22nd
											1000'	
1,640	200	7	170	24	330	19	310	6			3500	30
3,280	230	7	170	13	340	23	310	9			20000'	
4,920												
6,560												
9,840												
13,120												
16,400												
19,680												

Meteorological Office. Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON. C.B. D.Sc. F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, MONDAY, 23RD MARCH, 1931.

No. B. 25,323.
U.A.S. 4,375.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.
0— 5 m.p.h.
6—15 "
16—25 "
26—35 m.p.h.
36—45 "
46—55 "
56—65 "
and so on.

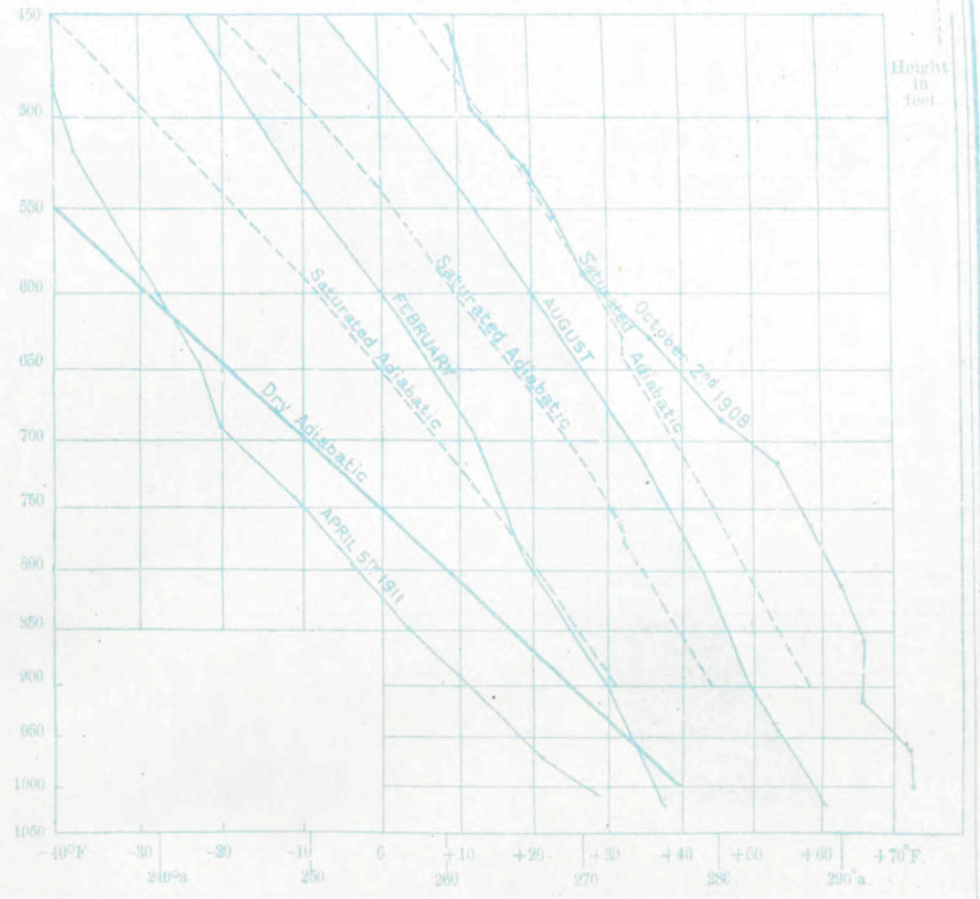
In Tables.

Directions are given in degrees, velocities in m.p.h.

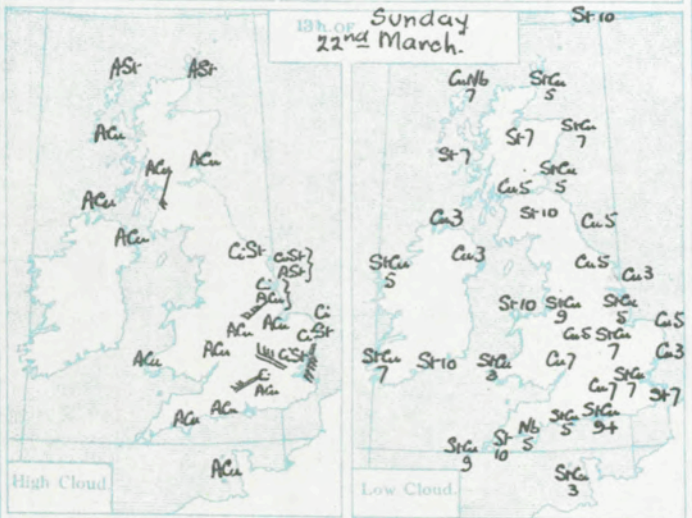
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

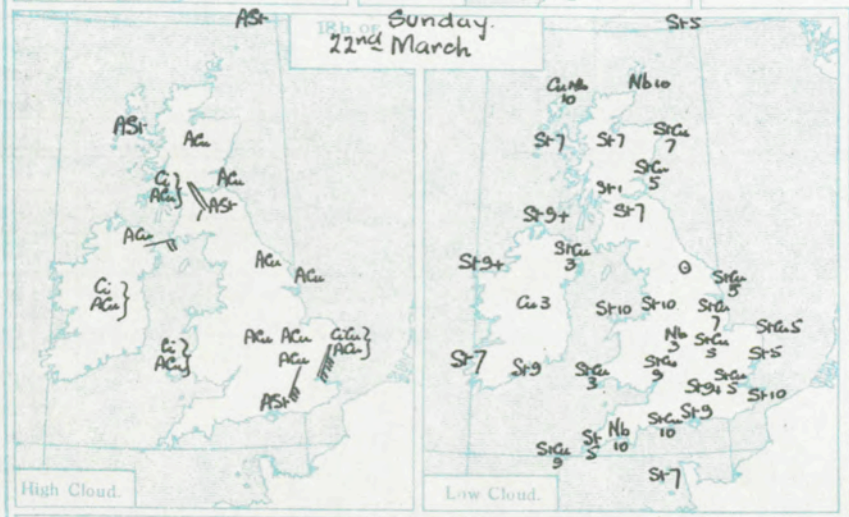
UPPER AIR TEMPERATURES.

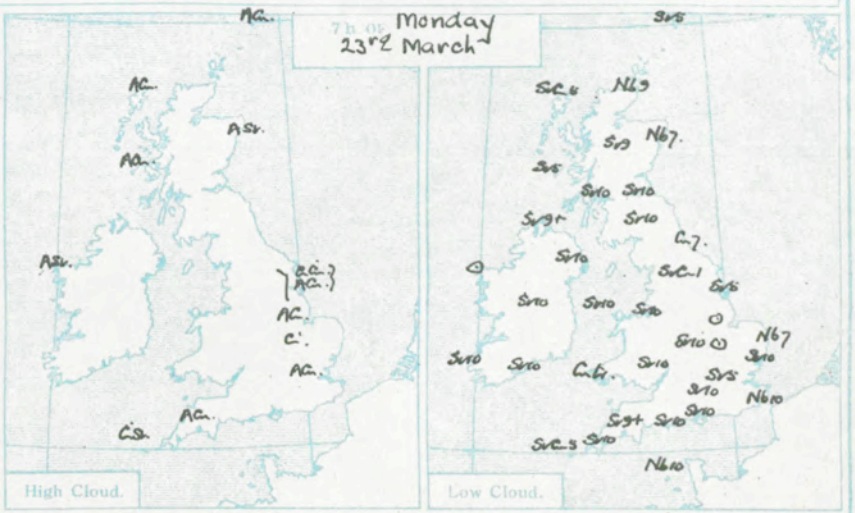
SUNDAY, 22ND MARCH, 1931.



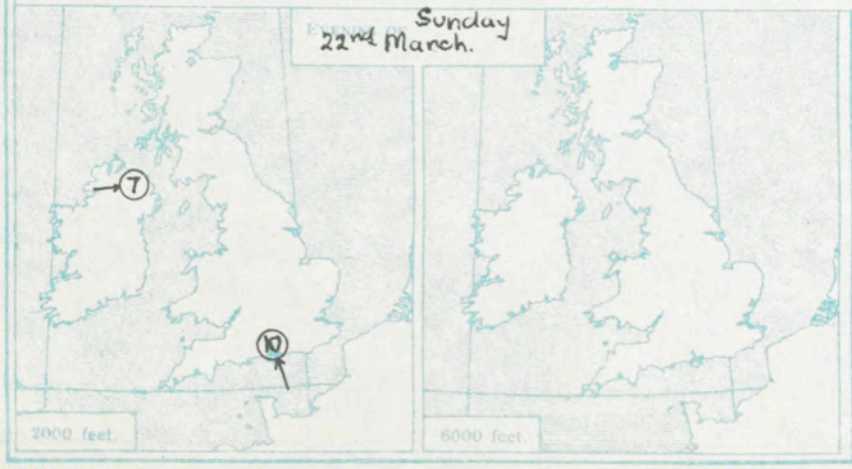
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

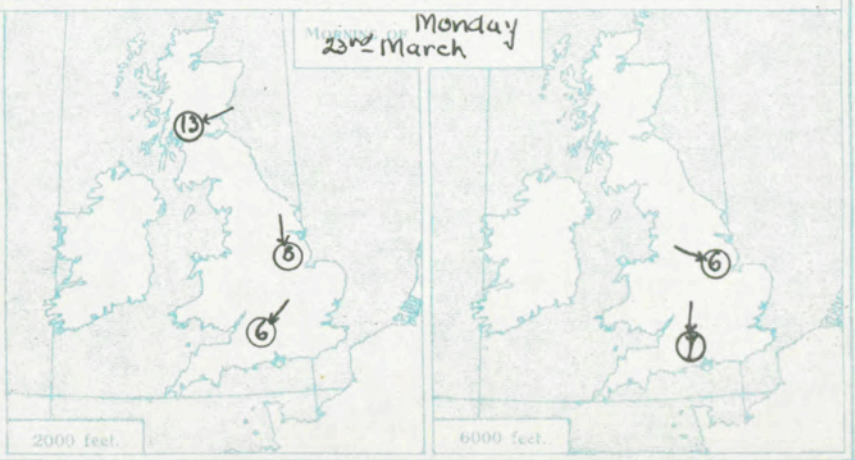






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2.

⊙ Indicates absence of cloud.

Ps 2512/2210. Wt. 118. D. 6008. Gp. 908. 11780. 3/31.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time	12h 22m		12h 22m						12h 22m						13h 22m						12h 22m						13h 22m		12h 22m		12h 22m				13h 22m				Time
Type																																	6				Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	225	8	205	11					115	13					190	9					Calm						170	3	250	15	275	8			210	8			Surf.
1000	205	14	200	10					165	13					235	11					200	5					190	5	275	15	270	14			225	9			1000
2000			180	17					185	17					225	12					190	12					135	5	265	9	275	15			210	5			2000
3000			200	18					175	16					225	13											105	3			275	19			205	6			3000
4000			200	15					185	13					215	14															275	21			215	8			4000
5000									185	15																													5000
6000									185	19																													6000
8000			13h	Acu					195	17																													8000
10000	Kew		230	33					210	17																													10000
12000	13h	Cist	13h	Ci			13h	Acu							13h	Cist	13h	Acu													13h	Acu							12000
Neph.	300	40	240	35			220	33							200	55	220	48													210	18							Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Place.
Time.									17h 22m																								17h 22m						Time.
Type.																																							Type.
Feet																																							Feet
Surf.									115	10																					215	6							Surf.
1000									140	9																					230	9							1000
2000									140	10																					260	7							2000
3000																															16h	Ci	255	9					3000
4000	Kew																														160	35	270	6					4000
5000	18h	Acu																													16h	Acu							5000
6000	240	30																													210	27							6000
8000	Biggin Hill																														18h	Acu	16h	Acu					8000
10000																															330	21	70	18					10000
12000	16h	Acu													18h	Ccu											16h	Acu	16h	Acu	18h	Ci	18h	Acu					12000
Neph.	220	45													210	55											230	21	230	21	150	10	70	24					Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Croydon		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.	7h. 23m				7h. 23m		8h. 23m		10h. 23m								6h. 23m														7h. 23m								Time.
Type.					7	6.																																	Type.
Feet																																							Feet
Surf.	190	1			—	0	30	3	—	0							320	7													250	2							Surf.
1000	20	2			45	7	300	8	50	2							345	9													20	9							1000
2000					45	6	65	5									350	8													60	13							2000
3000							45	4									360	7													65	14							3000
4000							40	5									340	5																					4000
5000							35	7									275	6																					5000
6000							10	7									290	6																					6000
8000							290	7									AC	02.																					8000
10000							330	7							10h.		300	15																					10000
12000															Cu.		7h																						12000
Neph															220	65	360	6																					Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Ancona		Abbeville.		Le Havre.		Cracow.		Milan.		Malta.	
Time.	7h 23m		7h. 23m		7h. 23m		7h 23m		7h. 23m		19h 22m	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	—	—	230	7	230	7	250	11	320	2	(1000 ft)	
3,280	360	5	220	13	220	13	340	12	—	—	310	25
4,920	—	—	230	19	230	19	240	11	—	—	(2000 ft)	
6,560	—	—							50	3	330	33
9,840	300	24									(5000 ft)	
13,120											320	33
16,400												
19,680												

Place	Sodankyla		Sortavala		Lemberg		Lublin.		Helsingfors		Malta.	
Time.	7h 23m		7h 23m		7h 23m		6h 23m		7h. 23m		6h. 23m	
1,640	310	10	260	7	250	19	250	13	250	6	(3000 ft)	
3,280	310	11	260	9	260	19	270	9	250	7	350	7
4,920	290	9	240	6	260	18	250	9	270	7	(7000 ft)	
6,560	280	9	230	6	260	16	240	13	260	9	360	11
9,840					190	26	190	8	250	11	(10000 ft)	
13,120							220	9	260	13	310	9
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, TUESDAY, 24th MARCH, 1931.

No. B. 25,324.
U.A.S. 4,376.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

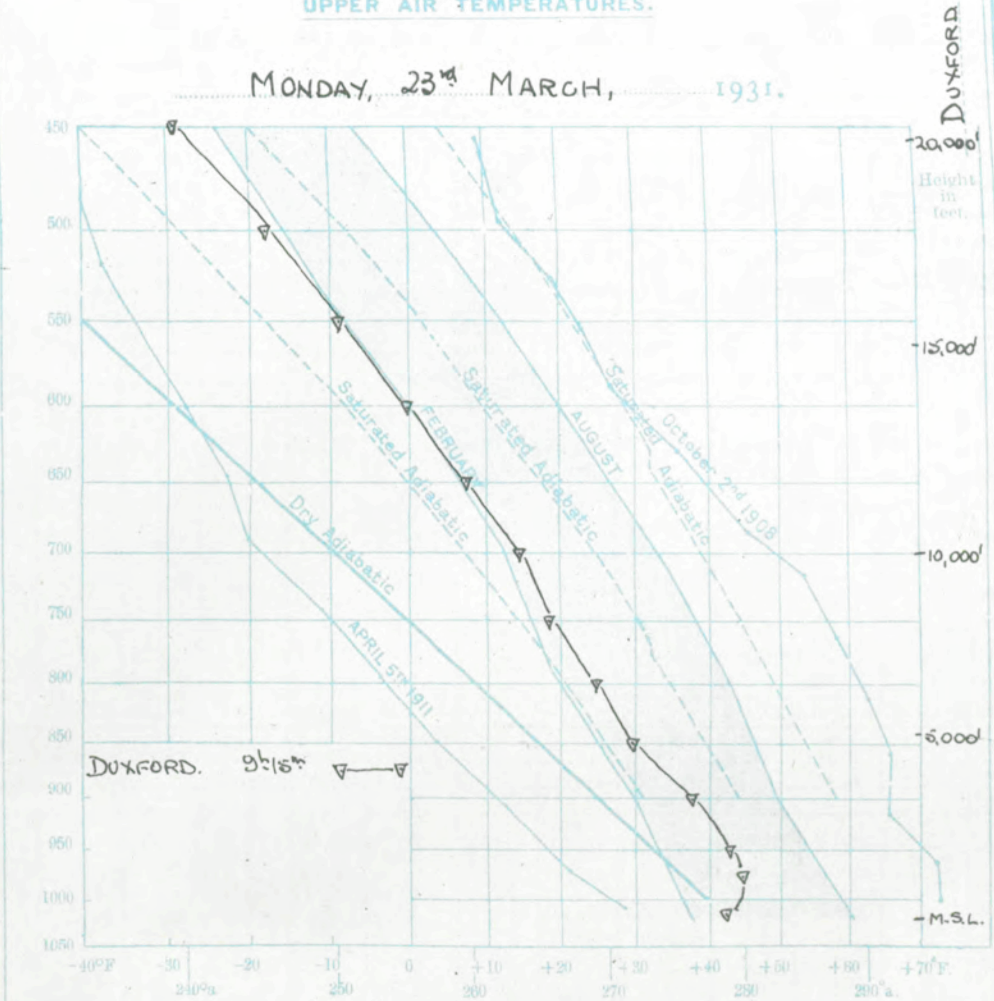
——∘	No speed given.	——‴	26—35 m.p.h.
——	0—5 m.p.h.	——'‴	36—45 „
——′	6—15 „	——″‴	46—55 „
——″	16—25 „	——‴‴	56—65 „
			and so on.

In Tables.

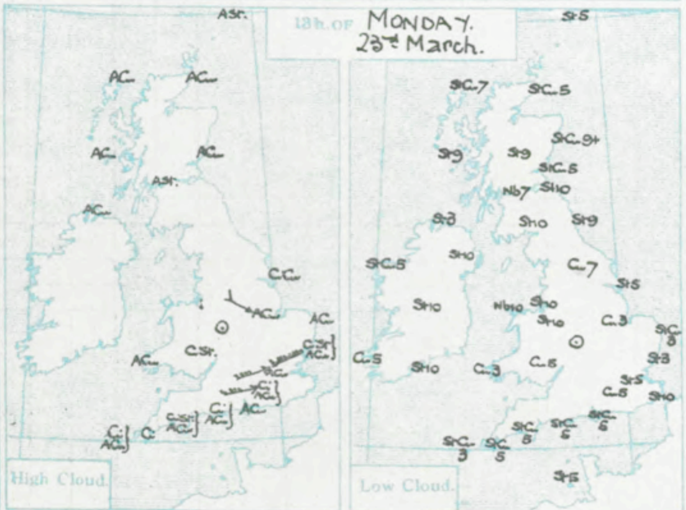
Directions are given in degrees, velocities in m.p.h.

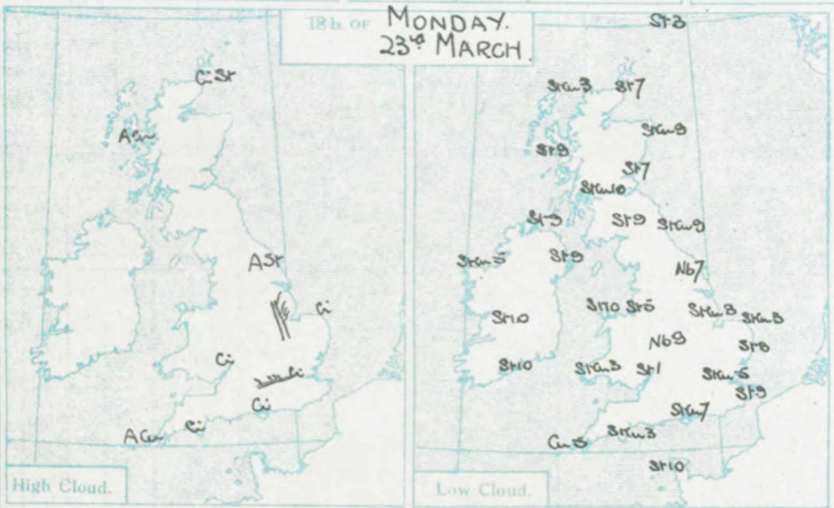
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

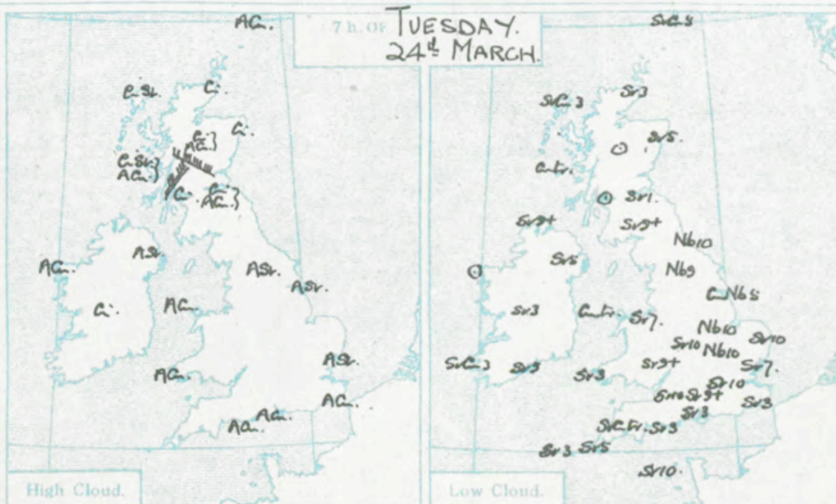
UPPER AIR TEMPERATURES.



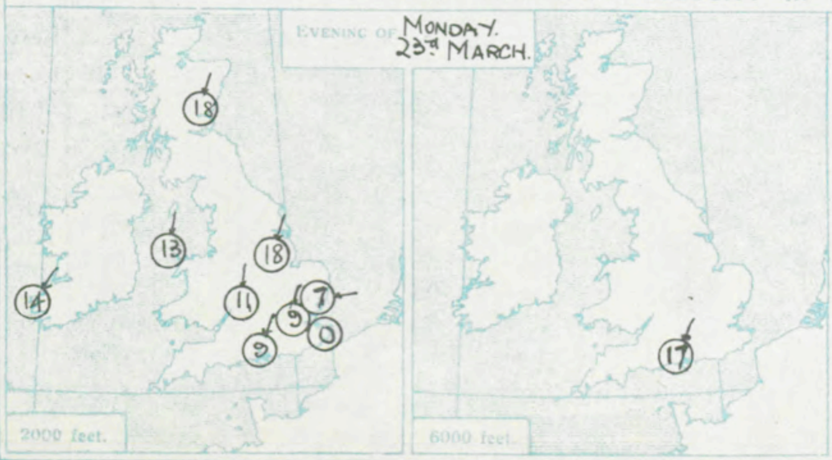
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

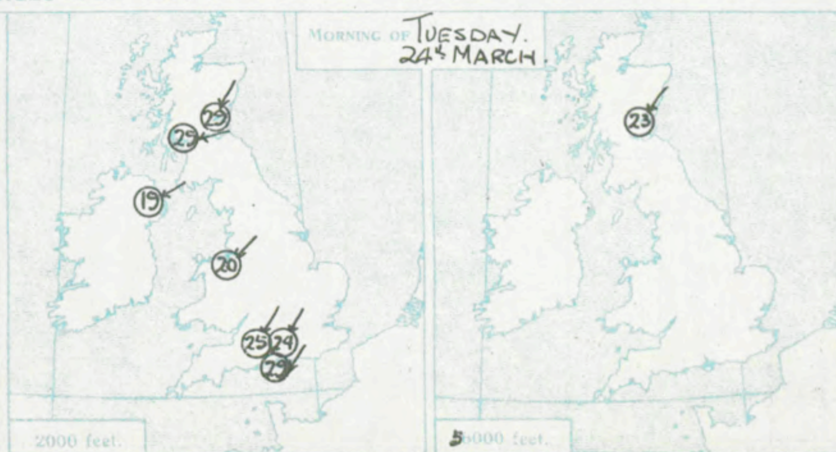






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





⊙ Indicates absence of cloud.

H.M. Stationery Office Press, Kingsway, W.C.2.

Ps 2412/2210 Wt 18.2.6000 Gp 908 1180 3/30

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Calshot		Shoeburyness		Felixstowe	
Time.	12h 23rd		12h 23rd		12h 23rd		12h 23rd		13h 23rd		14h 23rd					
Type					b		b									
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	55	2	-	0	100	4	60	7	300	9	130	7				
1000	85	5	20	3	55	7	40	14	65	7	85	9				
2000	95	5	70	8	55	7	50	12	25	5	45	9				
3000	55	6	35	6					25	5	40	11				
4000	35	6	315	1					35	4	30	9				
5000			25	3					30	3	15	7				
6000			45	14							340	3				
8000											285	5				
10000	Kew										310	5				
12000	13h	ACu	13h	ACu	13h	ACu					275 (14,000')	11				
Neph.	210	45	250	39	200	15					240	25				

Place	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia	
Time.	12h 23rd		12h 23rd		12h 23rd		12h 23rd		13h 23rd				12h 23rd								13h 23rd	
Type	b						b															
Feet	Dir	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surf.	335	6	5	5	340	10	120	10	355	7			20	10							325	6
1000	5	7	15	5	10	9	90	14	355	17			25	13							30	7
2000	5	9	30	5	20	9	75	9					30	19							50	9
3000	345	5	15	5	40	8															45	11
4000	360	4	15	5																		
5000	350	7	5	6																		
6000	345	7	360	4																		
8000	7,000' 345	7	280	5																		
10000			310	6																		
12000	13h	ACu	13,000' 275	5	13h	CiSt																
Neph.	300	15			270	60																

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe	
Time.	17h 23rd		18h 23rd		17h 23rd		17h 23rd		17h 23rd		17h 23rd				17h 23rd	
Type.					b											
Feet Surf.	85	8	-	0	30	7	20	10	115	7	-	0			-	0
1000	95	13	95	9	45	11	30	19	110	8	-	0			95	7
2000	55	9	60	11	65	16	40	18	50	9	-	0				
3000	40	11	50	16	60	17	45	19	35	13	45	6				
4000	45	13			55	13	45	21	40	17	25	11				
5000					55	17			40	17	360	13				
6000									35	17						
8000			18h	ACu												
10000	Kew		270	45	Croydon											
12000	18h	Ci	18h	ACu	16h	ACu	16h	Ci							16h	ACu
Neph	250	40	270	45	240	36	230	50							230	45

Place.	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aldergrove		Valentia	
Time.	17h 23rd		23rd		17h 23rd				17h 23rd		17h 23rd		17h 23rd						18h 23rd	
Type.																				
Feet Surf.	45	13			5	5			5	4	305	10	55	7					20	12
1000	45	18			5	11			355	11	335	15	35	19					40	15
2000	30	18			20	11			10	13			25	18					50	14
3000	5	16			25	11													50	14
4000	355	10			40	11													70	13
5000	345	10																	60	12
6000																				
8000																				
10000																				
12000			18h	Ci																
Neph.			340	40																

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoeburyness.		Felixstowe	
Time.	7h. 24th		7h. 24th		7h. 24th		8h. 24th		7h. 24th						7h. 24th	
Type.					b											
Feet Surf.	10	9	20	8	25	11	20	14	35	11					15	9
1000	25	10	40 (1500')	18	25	19	30	26	35	25					20	23
2000			35	24	35	25	45	25	35	29						
3000					35	27	55	24	45	23						
4000																
5000																
6000																
8000																
10000																
12000																
Neph																

Place.	Cranwell		Cardington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Aldergrove		Valentia	
Time.									9h. 24th		6h. 24th		7h. 24th		7h. 24th				7h. 24th			
Type.																						
Feet Surf.									55	25	10	5	330	2	30	4			50	11		
1000									65	24	45	17	15	25	60	14			70	17		
2000									70	29	55	20	35	29	65	29			60	19		
3000									60	28			50	27	60	27			20	19		
4000									40	21			50	29	55	19						
5000									5	27			45	23								
6000									100	31												
8000									55	29												
10000									60	27			7h.		7h.							
12000									65	27			ACu.		Ci.							
Neph									Ci: 50	(est.) 80			300	108	50	60						

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
DUXFORD. 23/3/31. 9h 15m.	1014·7	M.S.L.	—	—	—
	1011	100	42·5	41·5	92
	973	1090	45	42·5	80
	950	1770	43·5	40·5	78
	900	3200	37·5	36	88
	850	4710	30	29	91
	800	6280	25	23	80
	750	7950	18·5	17	-
	700	9730	15	?	-
	650	11600	7	6	-
	600	13600	-1	-2	-
	550	15750	-9	-10	-
	500	18050	-18	-18·5	-
	450	20580	-29	?-28	-

Inversion:-
Ground, 42·5°F.
1000 feet, 45°F.
Haze top 810mb.
St 9/10, 100 feet to 2250 feet.
F.Cu 5/10, 880 to 850mb.
CuNb 4/10, 910 to 750mb.
Ci Cu not reached.

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Paris		Abbeville		Barcelona		Prague		Milan.		Malta	
Time.	12h 23rd		13h 23rd		13h 23rd		13h 23rd		18h. 23rd		17h 23rd	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	190	16	160	8	220	9	290	8	-	-	3,000'	
3,280	190	16					270	11	70	3	360	6
4,920									-	-	7,000'	
6,560									280	4	290	5
9,840											10,000'	
13,120											300	13
16,400											16,000'	
19,680											250	36

Place.	Dijon.		Ancona.		Messina		Genoa.		Sortavala		Malta.	
Time.	18h. 23rd		18h. 23rd		7h 24th		7h. 24th		7h. 24th		6h. 24th	
1,640	160	9	270	6	-	-	-	-	120	4	(1000ft) 80	11
3,280	190	16	—	-	160	3	-	-	150	3	(2000ft) 90	11
4,920	180	20	230	20	-	-	-	-	180	1	(3000ft) 90	8
6,560			270	17	140	5	160	5	90	3		
9,840					240	31	120	6	60	2		
13,120							-	-	230	7		
16,400							140	11	260	9		
19,680									250	11		

Meteorological Office, Air Ministry. Kingsway, London, W.C.2. G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. WEDNESDAY, 25th MARCH, 1931.

No. B. 25,325.
U.A.S. 4,377.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0— 5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	56—65 „
	and so on.

In Tables.

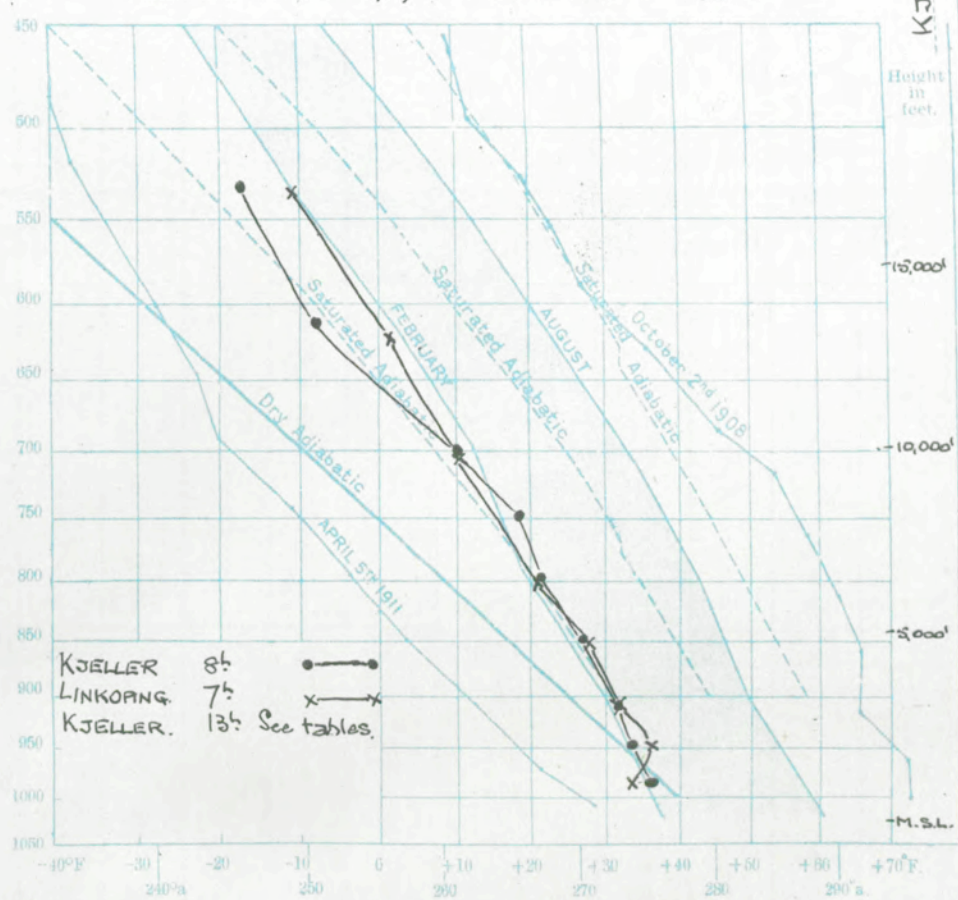
Directions are given in degrees, velocities in m.p.h.

Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

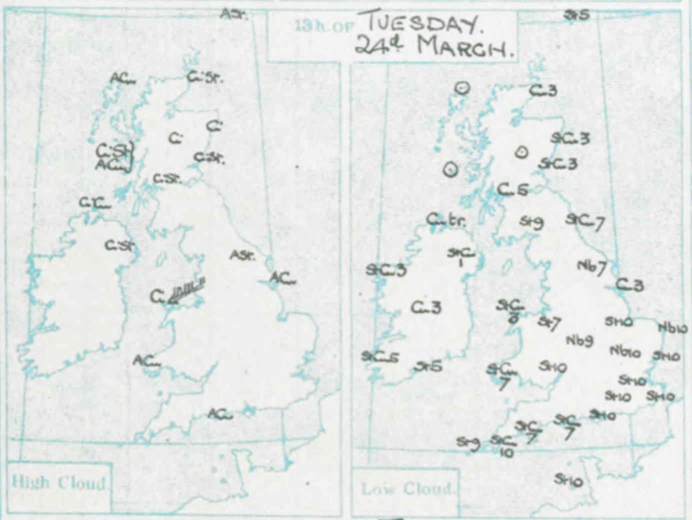
UPPER AIR TEMPERATURES.

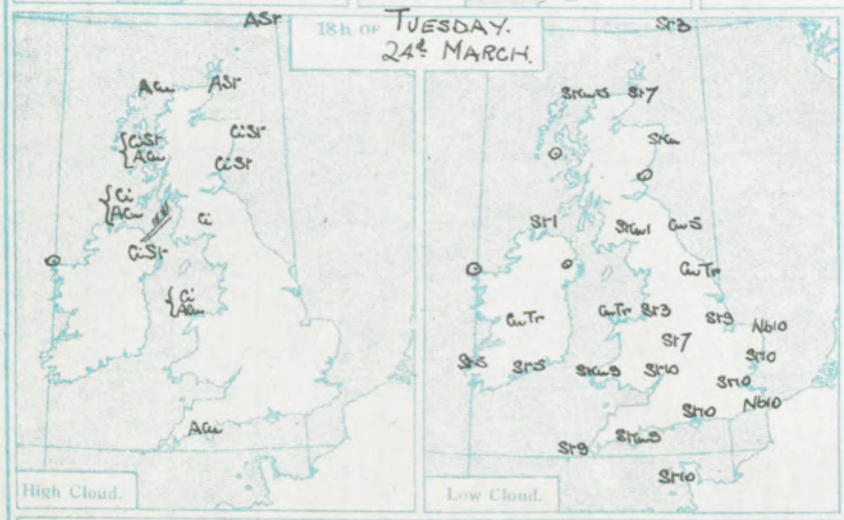
TUESDAY, 24th MARCH, 1931.

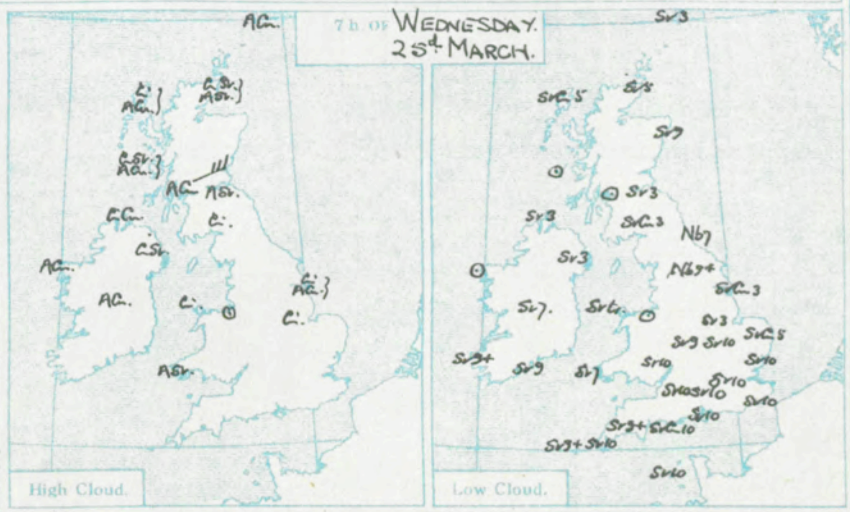
KJELLER.



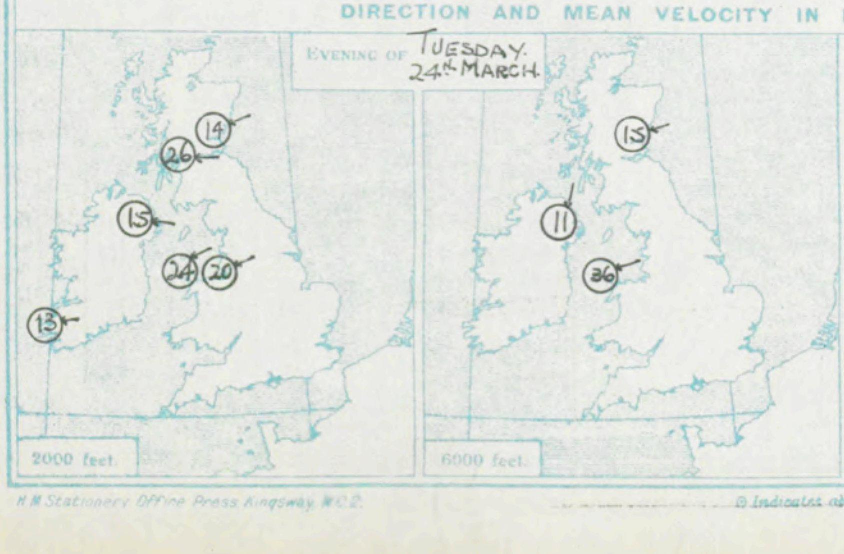
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

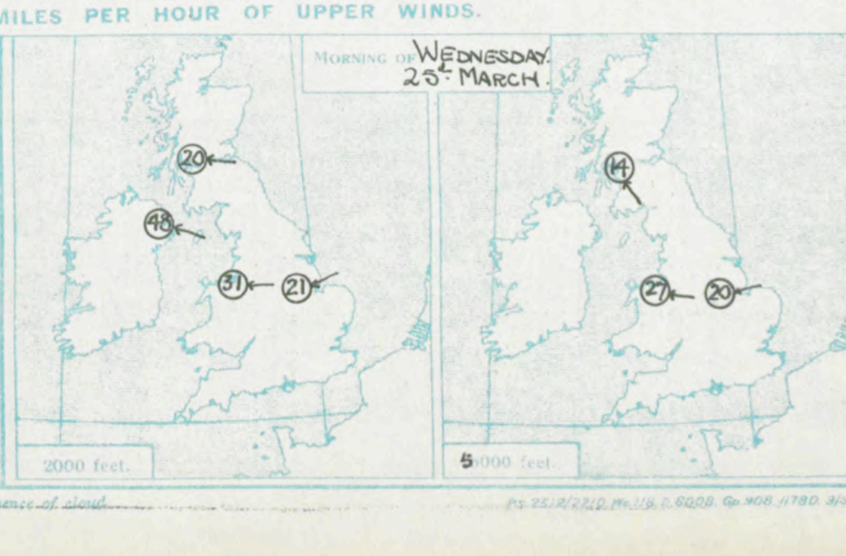






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2.

⊙ Indicates absence of cloud.

Ps. 2512/2210. Wt. 11/9. 6,600. Gp. 408. 11180. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place
Time.	12h 24m				12h 24m		12h 24m										12h 24m						12h 24m		12h 24m		13h 24m		12h 24m		12h 24m		13h 24m		12h 24m		13h 24m		Time.
Type					b		b																		b		b		b		b								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	25	15			35	16	30	17									30	19					80	15	60	27	45	19	80	10	80	11	60	10	85	12	75	20	Surf.
1000	30	17			40	25	35	28									35	20					75	21	65	33	50	19	55	20	75	20	40	10	80	24	90	16	1000
2000																									75	23	50	16	40	22	75	24	70	8	60	14	105	12	2000
3000																									80	20	(1,050')		30	19	75	19	50	6	50	14			3000
4000																																	45	10	55	17			4000
5000																																	45	9	90	15			5000
6000																																	35	13	80	21			6000
8000																																	40	11	10,000' 65	23			8000
10000																																			14,000' 65	30			10000
12000																									13h	Ci									18,000'				12000
Neph.																									60	80									70	47			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia				Place.
Time.					17h 24m		17h 24m		17h 24m								17h 24m								16h 24m		17h 24m		17h 24m		17h 24m		17h 24m		18h 24m				Time.
Type.																																							Type.
Feet																																							Feet
Surf.					35	15	25	15	25	17							35	24							75	25	65	4	85	7	65	8	60	5	85	8			Surf.
1000					30	23	30	25	30	18							35	29							75	15	60	18	85	15	80	28	90	8	70	13			1000
2000																									65	25	65	20	60	14	90	26	100	15	85	13			2000
3000																									65	24	65	30	60	15			80	23	90	8			3000
4000																									70	26			65	17			90	27	75	5			4000
5000																									80	35			60	15			85	20					5000
6000																									75	36			75	15			10	11					6000
8000																									70	26			75	20			7,000'						8000
10000																									65	31			90,000' 65	17			80	18					10000
12000																															16h	Ci	18h	Ci					12000
Neph																															30	45	40	60					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.																	6h. 25m								9h. 25m		6h. 25m				7h. 25m				7h. 25m				Time.
Type.																																							Type.
Feet																																							Feet
Surf.																	45	7							80	31	—	0			60	5			10	5			Surf.
1000																	60	26							105	19	95	18			85	20			85	31			1000
2000																	75	21							125	19	100	31			100	20			115	48			2000
3000																	75	14							120	19	110	31			120	14							3000
4000																	80	20							130	26	115	31			120	11							4000
5000																	85	20							130	23	120	27			150	14							5000
6000																									120	21													6000
8000																									125	21													8000
10000																									120	27	10h Ci												10000
12000																																							12000
Neph																											100	50											Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet. M.S.L.	°F. —	°F. —	% —
LINKOPING. 7h 24/3/31.	1021·5	M.S.L.	—	—	—
	984	880	34	-	76
	948	1860	26	-	82
	907	3280	32	-	88
	849	4920	27	-	88
	800	6560	21	-	88
	701	9840	10	-	88
	616	13120	1	-	88
	539	16400	-11	-	88
Inversion base pressure 770 mb; amount 2°F.					
KJELLER. 8h 24/3/31.	1024	M.S.L.	—	—	—
	982	1320	36	-	66
	947	2300	34	-	66
	903	3280	32	-	66
	848	4920	27	-	66
	797	6560	21	-	66
	748	8200	18	-	66
	700	9840	10	-	66
	611	13120	-8	-	66
	535	16400	-17	-	66
Inversions:- (1). (2). Base press: 973 691 Amount: 4°F 0°F.					
KJELLER. 13h 24/3/31.	1023	M.S.L.	—	—	—
	984	1320	41	-	35
	949	2300	37	-	45
	904	3280	32	-	66
	847	4920	27	-	66
	796	6560	18	-	66
	747	8200	14	-	66
	699	9840	7	-	66
	611	13120	-4	-	66
	534	16400	-16	-	66

UPPER WINDS ABROAD.

Place.	Madrid		Messina		Leghorn		Prague		Lyons.		Malta.	
Time.	13h 24m		13h 24m		13h 24m		13h 24m		18h. 24m		7h. 24m	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	-	-	200	11	-	-	-	-	50	14	(2000ft)	
3,280	350	3	210	13	70	11	100	3	40	16	30	7
4,920					-	-	40	7	50	11	(3000ft)	
6,560					90	8	360	8	80	9	10	6
9,840							10	9	160	6	(6000ft)	
13,120							360	4			10	10
16,400												
19,680												

Place	Ancona.		Tripoli.		Toulouse.		Reims		Bordeaux		Malta.	
Time.	18h. 24m		18h. 24m		7h. 25m		9h. 25m		7h. 25m		6h. 25m	
1,640	-	-	150	9	110	7	120	23	130	11	(3000ft)	
3,280	160	4	280	10	110	11	90	16	110	14	310	7
4,920	210	9	-	-	120	9	90	15	120	18	(5000ft)	
6,560	230	14	280	21	120	4	90	14	120	18	300	18
9,840									120	20	(10000ft)	
13,120									120	11	290	7
16,400											(16000ft)	
19,680											290	23

Meteorological Office, Air Ministry, Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, THURSDAY, 26th MARCH, 1931.

No. B. 25,326.
U.A.S. 4,378.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

No speed given.	26—35 m.p.h.
0— 5 m.p.h.	36—45 "
6—15 "	46—55 "
16—25 "	56—65 "
	and so on.

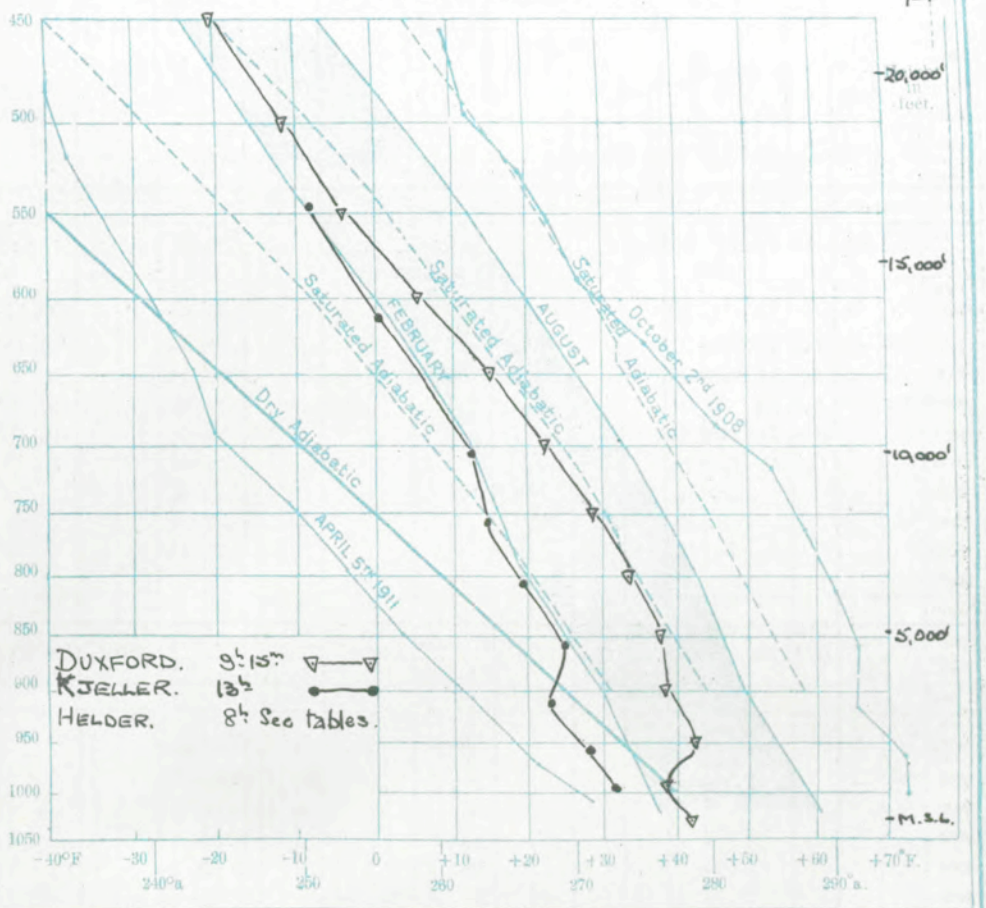
In Tables.

Directions are given in degrees, velocities in m.p.h.

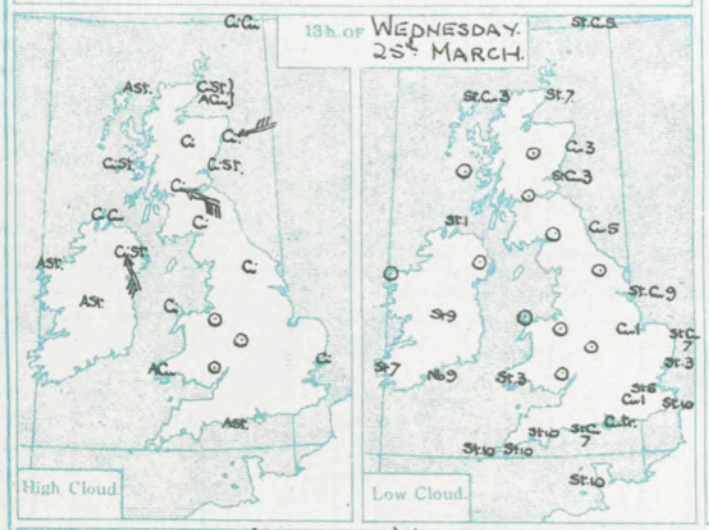
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

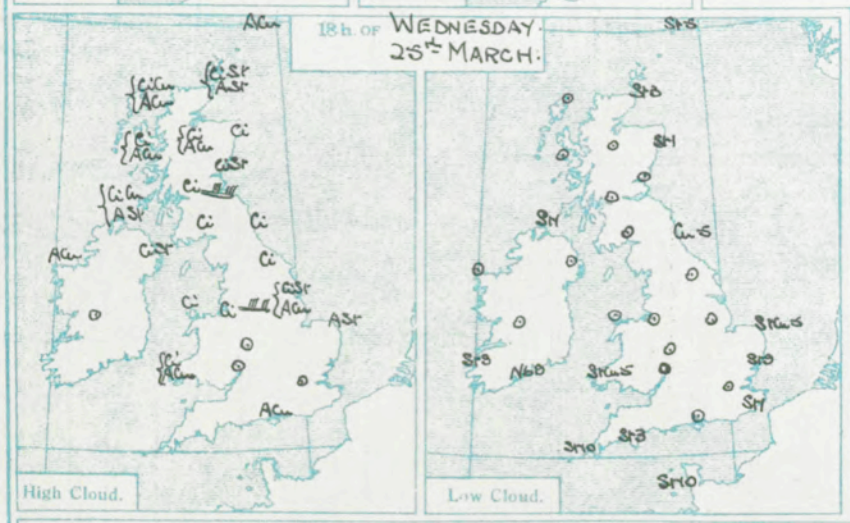
UPPER AIR TEMPERATURES.

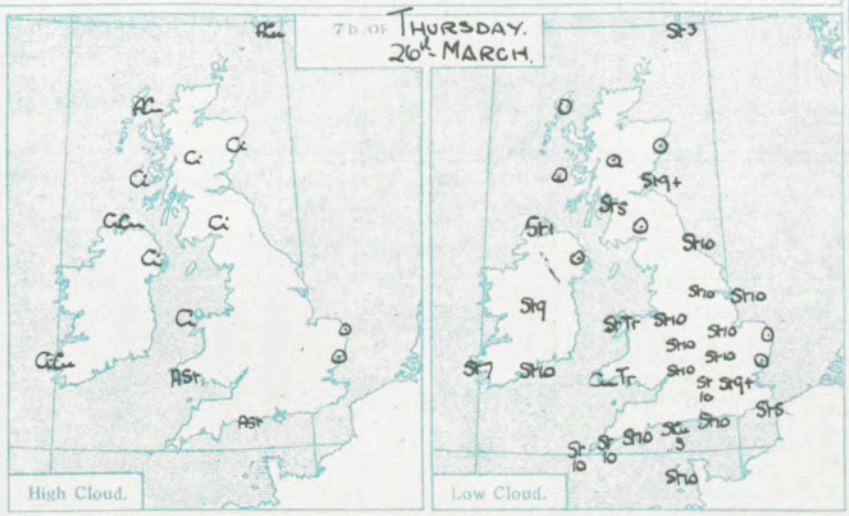
WEDNESDAY, 25th MARCH, 1931.



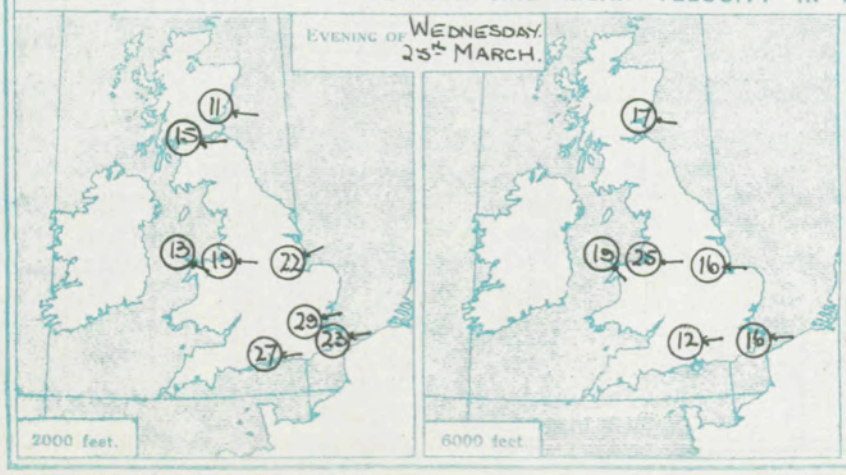
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

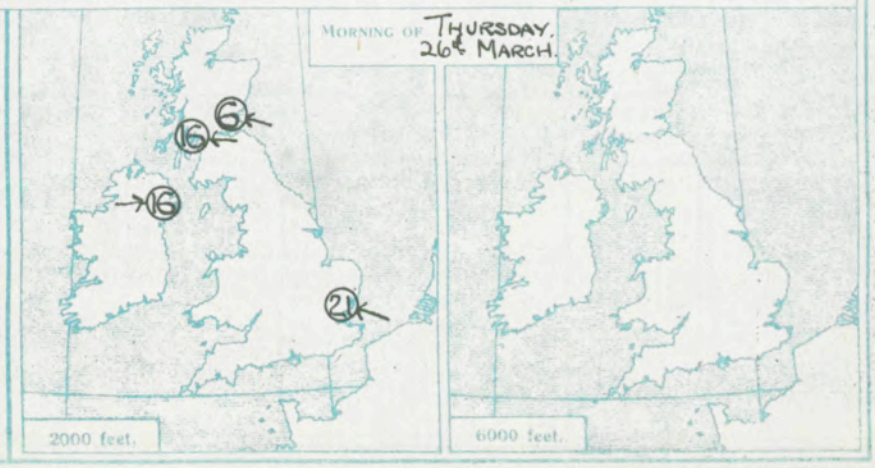






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2

⊖ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.			13h 25m		12h 25m		12h 25m		12h 25m						12h 25m		12h 25m		12h 25m		12h 25m				12h 25m		12h 25m		13h 25m		12h 25m		16h 25m		12h 25m				Time
Type			b		b												b		b						b		b				b								Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.			70	15	70	18	65	13	80	18					70	20	60	12	50	13	50	15			85	35	130	7	100	10	55	11	130	14	75	16			Surf.
1000			70	17	65	23	75	26	65	16					70	15	60	16	55	18	65	10			90	21	105	11	90	9	75	20	175	11	95	19			1000
2000					80	25			95	26					70	16	60	17	80	20	85	25			?	?	105	15	125	6			195	8	135	28			2000
3000					90	25			100	27							85	18	90	20	100	23			130	18	120	24	120	10			175	9	145	24			3000
4000									110	25							90	21	105	23	100	20			140	21	135	33	120	9			170	7	100	23			4000
5000																	90	25	100	22	95	27			130	21			115	8			165	7	140	17			5000
6000																	90	23	90	25	100	26			125	25			120	8			120	3	135	35			6000
8000																	85	24	110	22	110	24			125	23			115	7			15 (19,000') 3		140	47			8000
10000																			90 (11,000')	11	115	25			125 (16,000')	33			(7,000')				65	11					10000
12000																			100	24					16,000						13½	Ci	13½	Ci	13½	Ci			12000
Neph.																									135	29			100	50	80	35	130	35					Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia		Calshot		Place.
Time.	17h 25m		17h 25m		17h 25m				17h 25m		17h 25m						?16h 25m				17h 25m				16h 25m		17h 25m		17h 25m		17h 25m						24h 25m		Time.
Type.					b																																		Type.
Feet																																							Feet
Surf.	75	16	70	12	65	15			65	17	30	23					50	13			30	15			75	21	100	12	90	5	80	10					65	10	Surf.
1000	65	26	65	25	60	21			75	21	60	28					70	16			45	15			100	21	105	18	105	10	85	21					90	24	1000
2000	75	23	80	29	80	25			90	27	85	23					65	22			75	17			125	13	115	19	110	11	105	15					75	27	2000
3000	80	24	95	19	90	21			95	24	85	26					80	13			100	17			130	18	130	21	120	12	140	11					90	10	3000
4000			130	12	105	15			105	16	90	16					70	11			115	21			145	23	130	23	115	11	165	16					80	9	4000
5000			120	13	105	12			140	8	90	13					115	8			115	21			150	21	130	25	115	15	155	21					70	9	5000
6000					110	12					90	16					105	16							135	19	115	25	120	17							120	11	6000
8000					120	13											65	20							125	16			125	18	16½	Ci					85	14	8000
10000					115	18											50	13							135	19			125	19	100	50					130	9	10000
12000																									135	33	18½	Ci			18½	Ci					85 (15,000ft)	19	12000
Neph																											110	50			110	60							Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	10h 26th										10h 26th				7h 26th		7h 26th								9h 26th		7h 26th		6h 26th		7h 26th				7h 26th				Time.
Type.	b										b																												Type.
Feet																																							Feet
Surf.	80	12									50	10			35	6	85	3							-	0	150	14	-	0	40	2			355	8			Surf.
1000	60	12									75	9			80	17	100	14							330	5	150	18	90	5	80	13			130	19			1000
2000											105	7			100	21									50	3			100	6	95	10			275	10			2000
3000											110	9													195	7									265	13			3000
4000											125	13													175	7									265	17			4000
5000											125	8													175	7									255	23			5000
6000											130	19													160	9													6000
8000											115	16													150	17													8000
10000											95	12													145	20													10000
12000											105 (12,000ft)	13													165 (21,000ft)	20													12000
Neph																																							Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

DUXFORD. 25/3/31. 2h 18m.

Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
mb.	Feet.	°F.	°F.	%
1032	M.S.L.	—	—	—
1029	100	42	40	84
991	1030	38	37	88
950	2210	42	37	63
900	3640	37	32	61
850	5170	37	?	?
800	6750	33	31	71
750	8450	28	25	78
700	10240	22	19	73
650	12140	14	13	—
600	14150	6	4	—
550	16300	-4	-5	—
500	18610	-12	-13	—
450	21120	-21	-21	—

Inversion:- 1000ft, 38°F. 960mb, 44°F.
F.Cu. 6/10, 960 to 950mb.
Ci 1/10, not reached.
Haze top 960mb.

KOELLER. 13h 25/3/31.

Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
1035	M.S.L.	—	—	—
986	1320	32	-	85
959	2300	28	-	85
812	3280	23	-	85
856	4920	25	-	85
803	6560	19	-	85
753	8200	14	-	85
706	9840	12	-	85
618	13120	0	-	85
570	16400	-8	-	85

HELDER. 8h 25/3/31.

Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
1032	M.S.L.	—	—	—
1005	680	39	-	80
969	1660	38	-	78
911	3280	43	-	72
854	4920	37	-	72
803	6560	34	-	72
756	8200	27	-	72
709	9840	19	-	72

Inversion:-
Base press: 984mb
" Temp: 37°F.
Amount 9°F; depth, 1450ft.

UPPER WINDS ABROAD.

Place.	Prague		Olomouc		Barcelona		Bordeaux		Padua		Malta	
Time.	13h 25m		13h 25m		13h 25m		17h 25m		18h 25m		17h 26m	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	340	9	320	20	30	3	10	2	230	3	3,000ft	
3,280	350	24	320	19	30	5	?	8	50	5	310	17
4,920					360	4	-	-	60	8	5,000ft	
6,560					70	3	100	13			320	19
9,840					110	2	-	-			7,000ft	
13,120					40	2	-	-			310	25
16,400							70	16				
19,680												

Place.	Tours		Naples		Lyons		Toulouse		Tunis		Malta	
Time.	17h 25m		18h 25m		7h 26th		7h 26th		6h 26th		6h 26th	
1,640	50	7	180	19	330	5	-	-	340	11	1000ft	
3,280	60	7	-	-	180	24	100	4	330	14	320	17
4,920	-	-	110	19	30	6	-	-	330	14	3000ft	
6,560	80	9			10	9	120	4	360	16	330	20
9,840									330	23	5,000ft	
13,120									300	31	320	24
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, FRIDAY, 27TH MARCH, 1931.

No. B. 25,327.
U.A.S. 4,379.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

——∘ No speed given.	26—35 m.p.h.
—— 0—5 m.p.h.	36—45 „
6—15 „	46—55 „
16—25 „	55—65 „
	and so on.

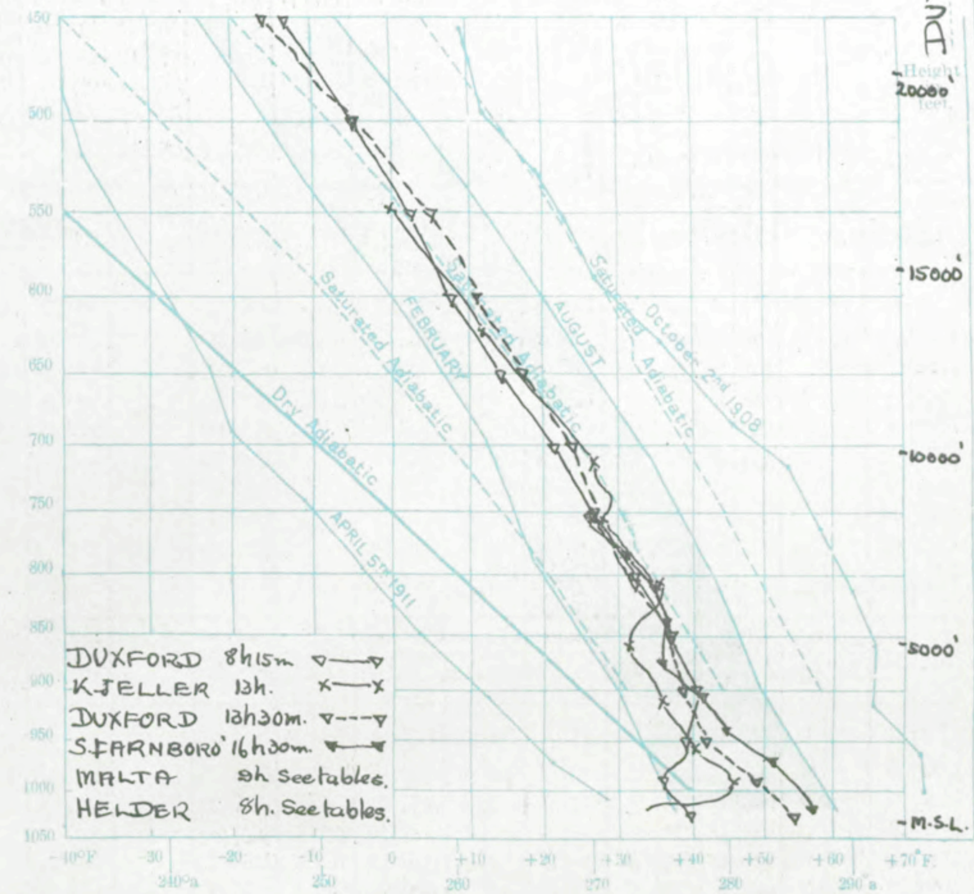
In Tables.

Directions are given in degrees, velocities in m.p.h.

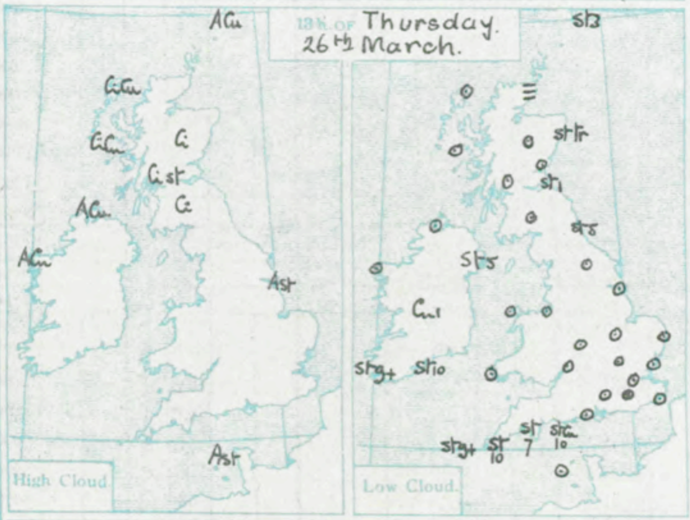
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

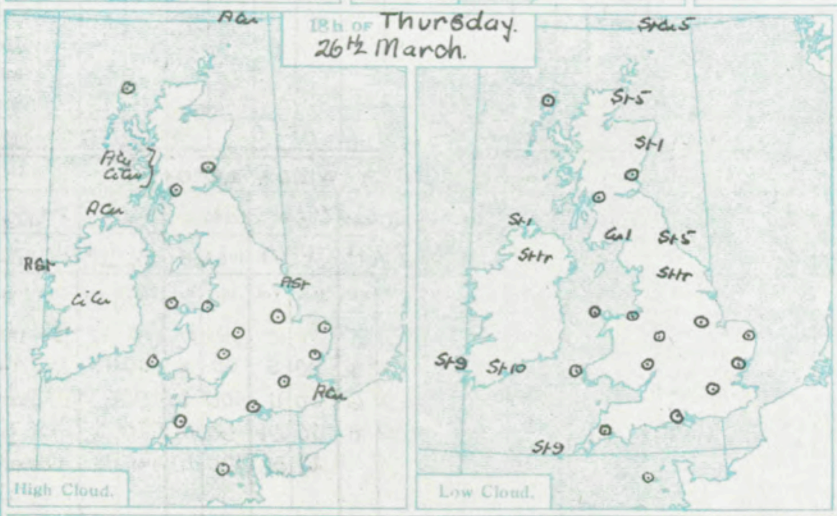
UPPER AIR TEMPERATURES.

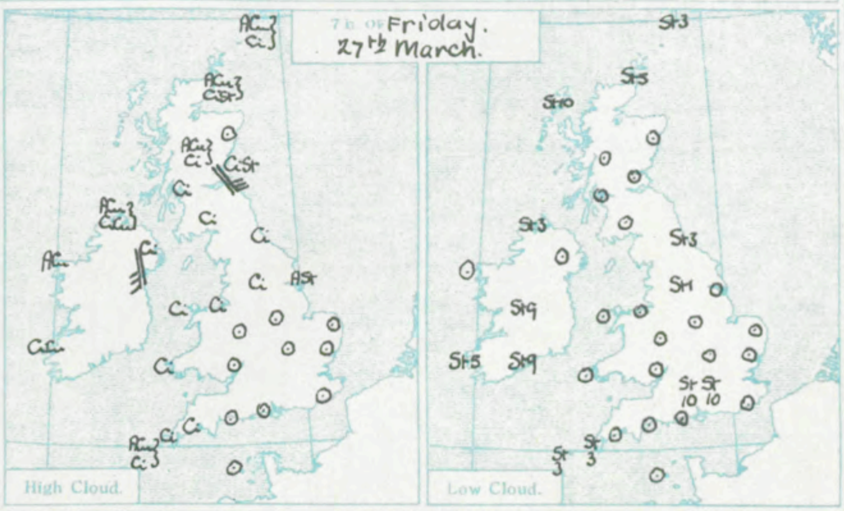
THURSDAY, 26TH MARCH, 1931.



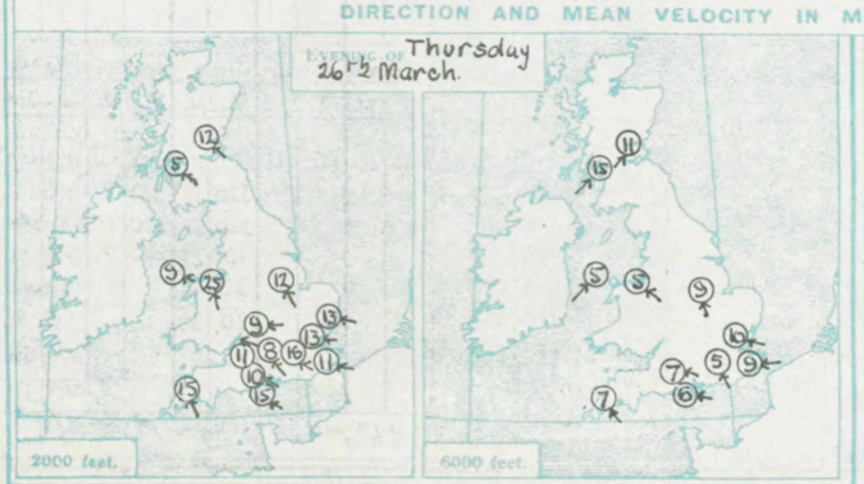
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

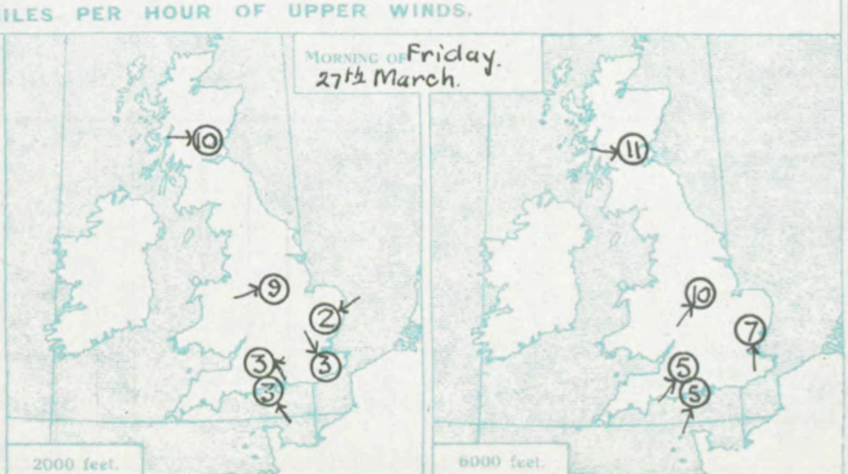






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2

⊙ Indicates absence of cloud.

Ps 2512/2210. Wt 118. D.6008. Gp 908. 11780. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Upper Heyford		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Shoebury-ness		Place
Time.	12h 26½		12h 26½		13h 26½		12h 26½		12h 26½		12h 26½		12h 26½		12h 26½		12h 26½		12h 26½		12h 26½		11h 26½		11h 26½		12h 26½		12h 26½		12h 26½						12h 26½		Time
Type	b				b		b				b		d		b		b		b								b								d		Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	95	12	45	8	85	10	80	10	120	3	60	10	60	12	70	10	100	8	95	8	80	18	95	7	calm		155	14	20	2	60	9							80	14	Surf.
1000	65	10	80	9	65	13	55	6	60	9	70	11	80	14	95	17	100	10	100	14	90	6	75	10	10	A	140	19	110	A	80	8							85	16	1000
2000	100	15			90	20	100	16	115	17	90	9	105	12	105	11	115	12	110	13	115	11	95	12	50	5	140	19	115	1	140	5							105	12	2000
3000	130	17					135	16	140	17	105	9	245	14	125	11	130	11	125	12	100	12	110	16	160	5			240	11	170	7							105	14	3000
4000	105	9					105	18	125	15	110	11	130	11	140	11	130	7	105	8	105	8	100	11	150	3			200	16	200	17							120	16	4000
5000	105	10					105	12	120	13	125	13	130	12					130	9	140	8	115	9	160	5			180	18	195	18							145	12	5000
6000	120	8					105	8			125	17	150	16					140	12	150	9	155	7	180	9			165	15	?	?							145	14	6000
8000	110	12					80	7			115	17	140	12					125	11	125	8	120	11	160	15			175	9	185	15							130	17	8000
10000	115	13					115	9			95	12							115	17	115	8	110	10	165	16			190	6	165	15							105	14	10000
12000	125	16									120	16							145	9					170 (20,000')	25			190	9	155	13							145 (20,000')	20	12000
Neph.	(41000')										(16000') 120	19													175 (25,500')	43			(14,000')		(11000')								(25,000') 125	24	Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.	17h 26½		17h 26½		17h 26½		17h 26½		15h 26½		17h 26½		17h 26½		17h 26½		17h 26½				17h 26½		16h 26½		16h 26½		17h 26½		17h 26½		17h 26½								Time.
Type.					b						b		d										b																Type.
Feet																																							Feet
Surf.	70	11	75	4	120	3	120	7	130	9	40	13	?	?	70	8	85	8			100	5	100	23	295	5	150	5	80	5	110	3							Surf.
1000	85	13	70	7	140	7	135	10	90	13	65	17	85	12	105	13	85	11			95	7	125	?	50	3	150	15	195	3	95	7							1000
2000	120	16	?	?	110	11	135	10	125	15	105	11	95	13	115	13	150	12			95	9	195	15	115	9	155	25	140	12	130	5							2000
3000	155	7	140	8	120	10	130	9	150	13	115	10	125	12	125	10	165	15			120	9	170	6	115	6	175	15	210	5	175	8							3000
4000	180	5			140	5	115	10	155	15	120	13	135	11	135	10	160	11			120	15	150	12	195	3	155	10	275	9	195	9							4000
5000	125	9			120	5	150	10	140	10	115	9	125	10			155	7					140	9	230	4	140	9	245	13	245	7							5000
6000	150	5					110	7	115	6	100	9	120	10			175	9					130	7	225	5	135	5	235	11	235	15							6000
8000	160	11					70	5	90	3	105	12	125	9			175	10							180	11			245	15	220	13							8000
10000	130	12					125	8	110	10	135	12	135	10			160	10							195	15			220	10									10000
12000							140	10	135 (16,000')	19	125	11	(9,000')				(9000')								180 (20,000')	29			195	12									12000
Neph							135 (14,000')	7	145 (20,000')	29															225 (24,000')	53			225 (16,000')	19									Neph.

Place.	Croydon		Lympne		Worthy Down		Boscombe Down		Calshot		Lympne		Calshot		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Valentia		Place.
Time.	10h 27½		10h 27½		7h 27½		8h 27½		7h 27½		6h 27½		24h 28½		7h 27½		6h 27½				6h 27½				9h 27½				6h 27½								7h 27½		Time.
Type.											b																												Type.
Feet																																							Feet
Surf.	315	2	-	0	20	1	50	3	25	6	50	11	55	4	85	2	-	0			-	0			165	3			250	10					60	4			Surf.
1000	80	5	-	0	150	7	165	3	130	7	360	6	105	17	110	4	260	7			-	0			120	11			-	-					185	7			1000
2000	115	4	-	0	155	3	185	5	135	3	315	3	125	16	65	2	255	9			345	3			220	13			280	10					220	1			2000
3000	235	5	-	0	190	7	170	13	135	5	-	0	145	14	125	6	240	9			85	7			235	14			280	9					210	9			3000
4000	235	5	-	0	185	9	195	7	185	9	-	0	135	11	135	4	205	12			-	0			220	11			280	11					195	10			4000
5000	255	7	220	9	245	8	220	5	245	11			140	13	180	8	215	9			-	0			165	7			295	11					160	13			5000
6000	230	7	195	12	220	5	235	9	195	5			155	11	180	7	225	10							195	6			285	11					184				6000
8000	240	11	235	10	225	11	225	8																	225	14			290	10					180	36			8000
10000	245	13	250	10	215	7	240	12					170	9	180	8									215	10	7h		275	11					7h		10h		10000
12000	(9,000ft)		250	33			235	31					(7,000ft)												260	27	C:		310	13					C:		C:		12000
Neph			(4,000ft)				20,000ft																		(20,000ft)		(16,000ft)												Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
DUXFORD 09h 26·3·1931.	mb.	Feet.	°F.	°F.	%
	1037	M.S.L.	—	—	—
	1029	100	40·5	38·5	84
	991	1090	37	36	92
	950	2190	40	37·5	83
	900	3620	41	31·5	32
	850	5170	37	28	31
	800	6620	33	-	-
	760	8080	27	25	82
	700	10230	20·5	18	63
	650	12100	14·5	12	-
	600	14150	8	6	-
	550	16330	2·5	1	-
	500	18700	-5	-5	-
	450	21900	-13	-13	-
	400	24200	-28	-28	-
	Haze top 975mb Fr. Cu 3/10 600 to 870mb				

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
KETTLER 18h. 26.3.31	1024	M.S.L.	—	—	—
	990	1320	46	-	55
	953	2300	41	-	55
	910	3280	37	-	55
	855	4920	32	-	55
	803	6560	36	-	55
	755	8200	28	-	55
	708	9840	27	-	55
	621	13120	12	-	48
	576	16400	0	-	35
	INVERSIONS:- (1) (2) (3)				
	Base pressure 1014 850 765mb				
	Amount 13° 4° 2°F				

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
HELDER 8h. 26.3.31.	mb.	Feet.	°F.	°F.	%
	1035	M.S.L.	—	—	—
	1009	680	41	-	58
	972	1660	39	-	55
	914	3280	39	-	55
	860	4920	36	-	55
	806	6560	32	-	55
	758	8200	28	-	55
	711	9840	25	-	55
	625	13120	19	-	55
	548	16400	1	-	25
	INVERSIONS:- (1) (2)				
	Base pressure 1034 956mb				
	" temp. 36° 46°F				
	Amount 5° 2°F				
	Depth 885 760ft				

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
S. FARN BARD 16h30m 26.3.31	mb.	Feet.	°F.	°F.	%
	1029	M.S.L.	—	—	—
	1021	230	58	-	75
	971	1590	52·5	-	75
	936	2600	45·5	-	85
	901	3610	42	-	85
	869	4580	36	-	65
	838	5520	36·5	-	95
	808	6440	35	-	75
	779	7450	31	-	-
	747	8400	27·5	-	-
	Haze top 883mb				

Station.	Pressure	Height above M.S.L.	Temp. Dry	Temp. Wet	Relative Humidity
MALTA 09h 26·3·1931.	mb.	Feet.	°F.	°F.	%
	1018	M.S.L.	-	-	-
	982	660	57	-	75
	958	1640	54	-	75
	902	3280	46	-	85
	850	4920	40	-	85
	798	6560	35	-	65
	750	8200	29	-	95
	704	9840	23	-	75

UPPER WINDS ABROAD.

Place.	Calais		Barcelona		Cheb		Calais		Nancy		Malta	
Time.	13h 26½		13h 26½		13h 26½		14h 26½		18h 26½		17h 26½	
Feet.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	70	9	150	3	-	-	80	31	70	19	(3,000ft)	
3,280	90	10	20	4	90	5	90	8	60	13	330	16
4,920			20	6	80	11	100	10	90	13	(7,000ft)	
6,560			360	8	20	24	90	14	70	21	340	22
9,840					20	36	120	10	160	19	(10,000ft)	
13,120											220	33
16,400												
19,680												

Place.	Brest		Mulhouse		Milan		Cheb		Toulouse		Malta	
Time.	7h 27½		7h 27½		7h 27½		7h 27½		7h 27½		6h 27½	
1,640	140	20	70	20	140	11	-	-	290	11	(1,000ft)	
3,280	150	14					320	13	310	9	40	12
4,920							360	22	320	11	(3,000ft)	
6,560							10	29	140	7	340	16
9,840							20	45			(5,000ft)	
13,120							20	38			330	26
16,400											(7,000ft)	
19,680											350	34

Meteorological Office, Air Ministry, Kingsway, London, W.C.2. G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION. SATURDAY, 28TH MARCH, 1931.

No. B. 25,328.
U.A.S. 4,380.

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Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

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The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page

The sloping straight line shows the adiabatic change for dry air.

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b = balloon with tail. d = double theodolite ascent.

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	and so on.

In Tables.

Directions are given in degrees, velocities in m.p.h.

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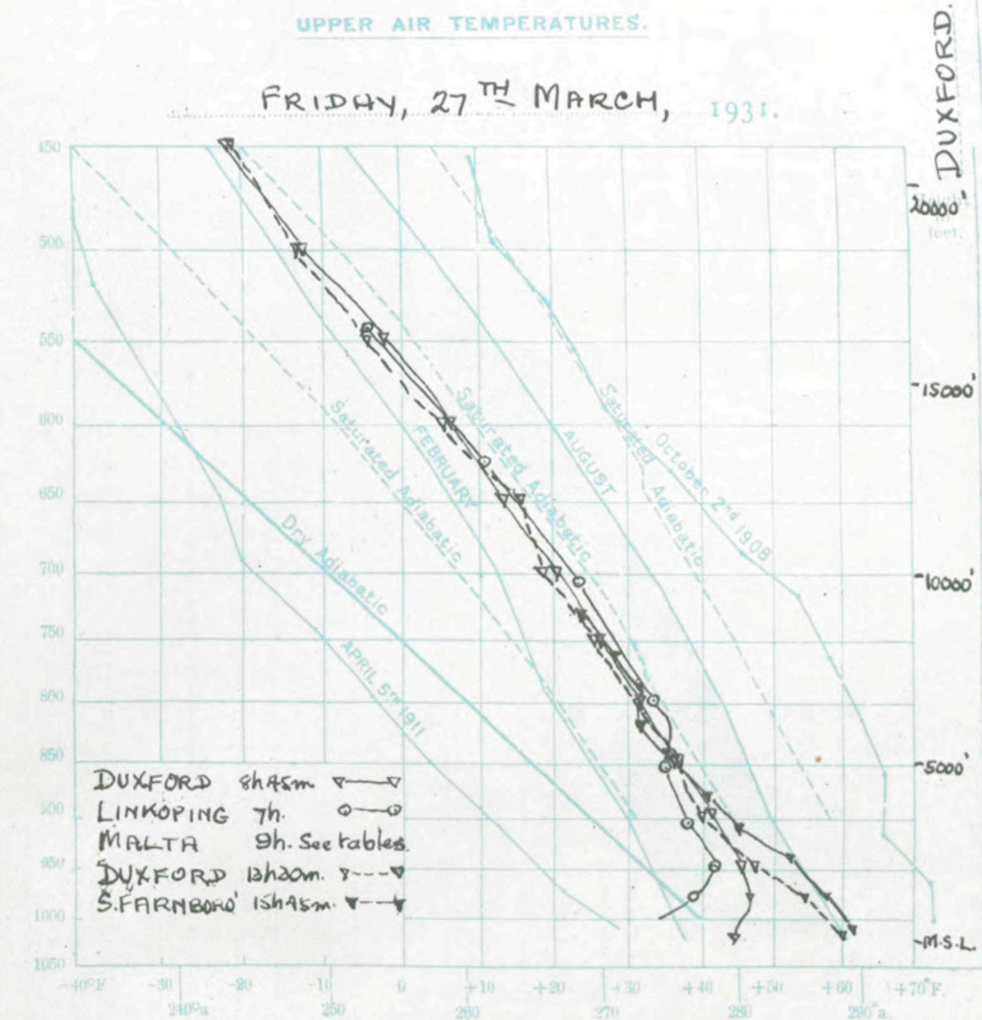
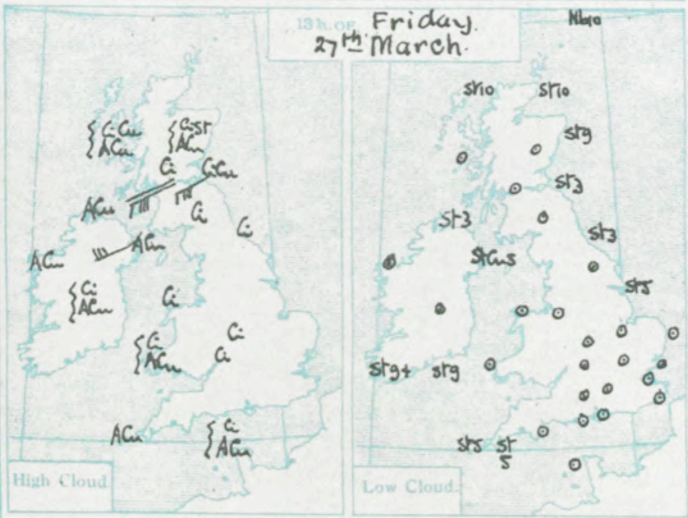
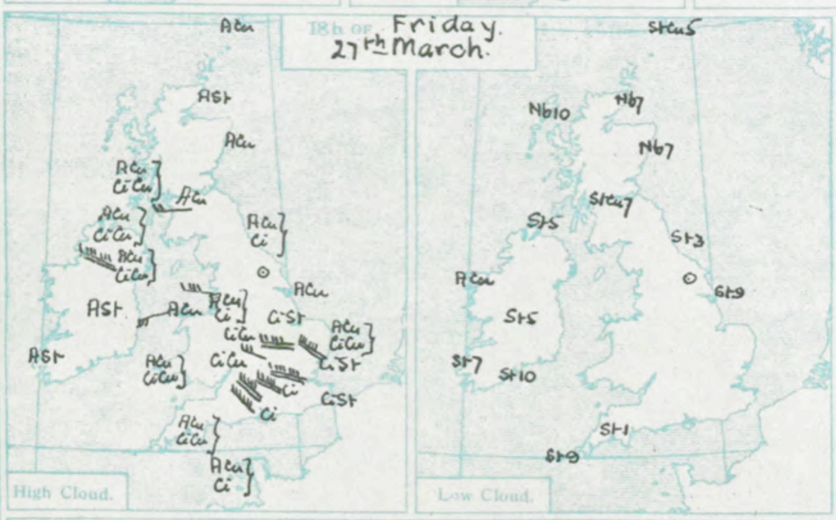
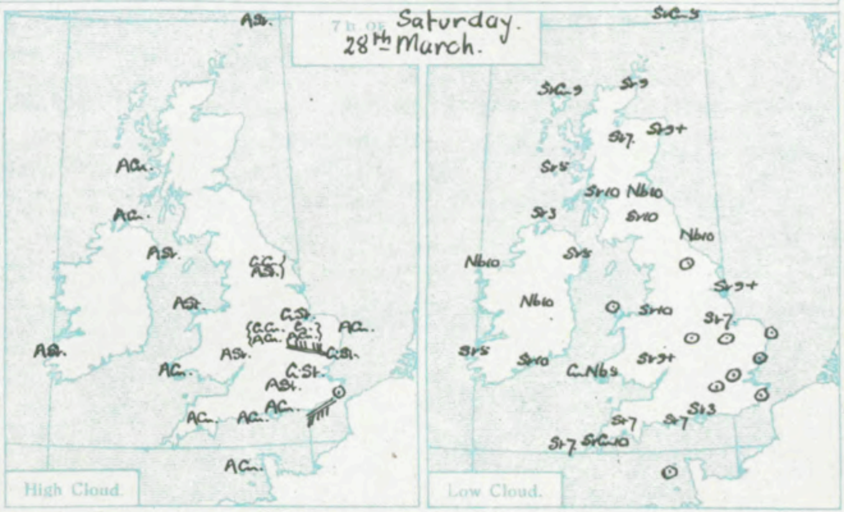
UPPER AIR TEMPERATURES.



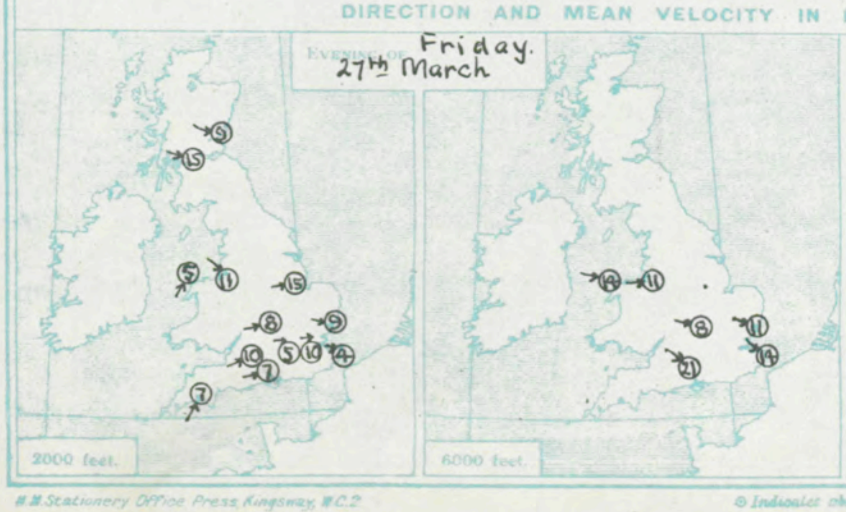
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

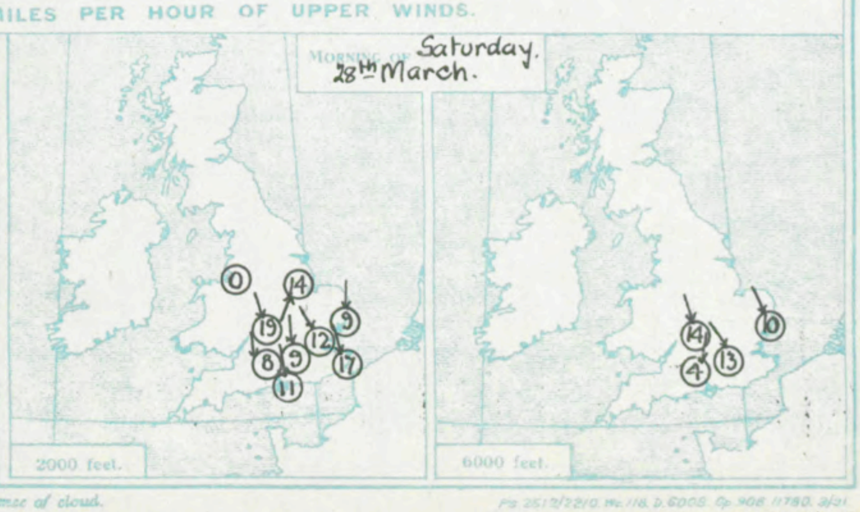






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2

⊙ Indicates absence of cloud.

Fs 2612/7210 Wt. 116 D.6005 Gp. 906 11780 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aberdeen		Alder-grove		Larkhill		Place
Time.	12h 27½		13h 27½		12h 27½		12h 27½		12h 27½		12h 27½				12h 27½		12h 27½		12h 27½		12h 27½		12h 27½		11h 27½		12h 27½		12h 27½		12h 27½				13h 27½		11h 27½		Time
Type							b										b								b				b								b		Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	Calm		110	2	215	1	130	2	115	8	140	5			140	3	250	5	Calm		210	2	245	3	200	12	330	5	250	5	255	12			280	2	160	3	Surf.
1000	Calm		105	2	210	3	185	5	140	7	120	5			125	7	235	11	190	2	205	4	175	7	200	13	320	6	295	11	240	10			165	10	160	7	1000
2000	Calm		155	3	170	3	205	5	145	5	175	3			330	4	240	8	230	9	220	6	215	9	220	11	300	7	270	15	250	14			210	9	230	4	2000
3000	Calm		260	5	215	7	205	8	295	5	265	5			305	6	240	11	245	10	235	9	180	5	240	11	270	11	285	17	280	11			205	9	195	7	3000
4000			250	11	225	8	200	6	225	5	265	7			260	7	255	13	250	9	225	9	155	3	250	17	255	14	275	18	275	15			180	9	200	5	4000
5000			260	7	265	9	260	8	255	5	250	10					265	12	240	9	275	5	215	5	225	13			270	17					180	8	220	5	5000
6000			250	7	275	9	265	16	275	11	255	14					270	9	240	14	280	12	230	7	205	15			270	17							260	17	6000
8000			275	17			255	19	270	17	270	11					270	14	275	20	245	17			230	8											245	17	8000
10000							245	18	260	11	255	14					260	14	255	17	(9000')				265	8											240	14	10000
12000							290 (16000')	29	255 (16000')	29	275	15					(9000')		260 (16000')	28					240 (16000')	21			13h	Acu	13h	Ci			13h	Acu	250 (16000')	25	12000
Neph.							290 (19000')	37	305 (20000')	40	265 (19000')	23							255 (20000')	30					280 (21400')	57			250	42	250	45			260	21	300 (20000')	74	Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.	16h 27½		17h 27½		17h 27½		17h 27½		24h 27		17h 27½				17h 27½		17h 27½		27½		17h 27½		17h 27½		16h 27½		17h 27½		17h 27½		17h 27½		27½						Time.
Type.					b																																Type.
Feet																																					Feet
Surf.	330	4	300	2	200	8	215	7	255	2	180	6			160	1	225	8			255	5	235	2	200	5	300	7	345	2	225	8							Surf.
1000	310	7	290	5	215	11	225	11	285	15	210	11			225	5	255	14			255	7	235	6	195	8	330	10	350	7	270	9							1000
2000	270	10	275	5	220	10	265	7	305	9	285	4			285	9	270	15			260	8	215	7	210	5	320	11	285	15	295	9							2000
3000	275	11	270	7	300	9	275	9	310	7	310	11			310	13	280	16			265	9	180	10	265	5	250	11	295	19	305	8							3000
4000	255	9	265	9	320	11	295	11	325	9	310	11			315	11	285	15			285	9	165	5	280	15	250	17	305	17									4000
5000	265	13	255	10	330	16	315	15	315	9	300	11			280	11			16h	Ci	295	11	195	3	285	15	265	22											5000
6000	16h	Ci					320	21	315	13	315	14			290	11			270	35	285	8			285	14	265	11											6000
8000	300	15					16h	Ci	305	16	320	15			315	15			16h	Ci	305	11			260	11	16h	Acu	16h	Acu							Upper Heyford		8000
10000	Kew		Croydon				320	50	295	17	(7000')				16h 320	45h 50	Holyhead		270	55	(7000')				275	15	270	42	300	27									10000
12000	18h	Ci	16h	Cilu			18h	Acu	16h	Ci					16h	Ci	16h	Acu	16h	Ci Cilu	18h	Acu	16h	Acu	245	18	16h	Acu	16h	Acu	18h	Acu	18h	Ci Cilu			16h	Ci	12000
Neph	280	75	310	70			320	60	250	40					320	60	260	38	270	45	300	33	290	39	265 (14400')	22	260	30	300	42	270	21	290	75			300	55	Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Lympne		Croydon		Aberdeen		Alder-grove		Valentia		Place.
Time.	7h. 28'		7h. 28'		7h. 28'		8h. 28'		6h 28'		6h. 28'				7h. 28'		6h. 28'				8h. 28'						7h. 28'		11h. 28'		10h 28'								Time.
Type.					b						b																				b.								Type.
Feet																																					Feet
Surf.	255	3	265	2	-	0	15	7	310	4	350	10			335	4	345	9			325	7					-	0	-	0	260	1							Surf.
1000	10	13	5	10	20	13	15	18	355	9	355	15			15	9	350	17			345	15					-	0	20	4	15	5							1000
2000	335	12	350	9	350	8	355	20	350	11	340	17			5	9	200	14			345	19					-	0	350	9	345	9							2000
3000	330	13	350	9	340	8	5	17	345	9	340	12			355	11					335	18									330	7							3000
4000	340	17	345	12	355	9	5	13	355	9	340	10			10	11					350	26									310	9							4000
5000	330	13	350	12	360	5	20	5			330	9			10	7					340	21									330	12							5000
6000			320	13			25	4							330	10					340	14									320	8							6000
8000			310	9			235	5					Felixstowe		340	13					330	10									300	11							8000
10000			300	10							7h.		7h.		350	23															310	10							10000
12000			295	13							Cu.		Cu.		Th.																315	11							12000
Neph											230	50	330	75	300	70																							Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
DUXFORD 08h 45m. 27·3·31	1028	M.S.L.	—	—	—
	1025	100	44	35	26
	988	1090	46	40	55
	950	2110	45	35	33
	900	3580	41	30	35
	850	5700	36·5	28	41
	800	6690	31	30	91
	750	8380	26	25·5	96
	700	10170	20	18	77
	650	12050	12·5	11	—
	600	14100	5·5	4·5	—
	550	16250	-2·5	-3	—
	500	18090	-12·5	-12·5	—
	450	21180	-22	-22	—
	430	22190	-27	-27	—
	INVERSION - Ground 44°F 1000ft. 46·5° Haze tops 1000ft, 920mb, 650mb				
LINKOPING 7h. 27·3·31.	1023	M.S.L.	—	—	—
	982	880	39	-	55
	961	1860	41	-	45
	909	3280	37	-	45
	852	4920	34	-	45
	800	6560	32	-	45
	705	9840	23	-	35
	626	13120	10	-	35
	545	16400	-4	-	35
	INVERSIONS-				
	Base pressure		1001		823mb
	amount		7°		2°F

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
DUXFORD 13h30m. 27.3.31	1025	M.S.L.	1	—	—
	1022	100	60	47	37
	988	1110	54·5	43	38
	950	2100	47·5	39	46
	900	3550	39·5	34·5	63
	850	5090	36·5	27	32
	800	6680	30·5	28	77
	750	8380	25	22·5	75
	700	10170	18	15·5	-
	650	12070	14	12	-
	600	14090	5·5	4	-
	550	16240	-1·5	-6	-
	500	18550	-13·5	-13·5	-
	450	21150	-22	-22	-
	Haze top 900mb Fr Cu 1/10 base not defined to 910mb Ci 1/10 not reached.				

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
SOUTH FARNBORO' 15h 45m. 27·3·31	1024	M.S.L.	1	1	1
	1015	230	61	-	-
	983	1160	57	-	-
	947	2200	52	-	-
	912	3220	44	-	-
	879	4200	40	-	-
	848	5150	35	-	-
	817	6130	31	-	-
	787	7120	31	-	-
	759	8150	27·5	-	-
	731	9020	23	-	-
	Haze top 929mb				

Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
MALTA 9h. 27·3·1931.	1017	M.S.L.	—	—	—
	992	660	51	-	85
	958	1640	47	-	85
	900	3280	41	-	95
	847	4920	36	-	85
	796	6560	28	-	-
	746	8200	23	-	-
	701	9840	16	-	-

UPPER WINDS ABROAD.

Place.	Calais		Helder		Barcelona		Brest.		Nancy.		Malta.	
Time.	13h 27½		13h 27½		13h 27½		18h. 27'		18h. 27'		17h. 27'	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	270	8	210	4	280	4	-	-	50	15	(1000ft)	
3,280	230	7	290	4	320	13	250	9	80	18	300	15
4,920			290	16	320	13	-	-	30	3	(3000ft)	
6,560			270	17	340	6	280	4			310	35
9,840					20	6	50	4			(5000ft)	
13,120					70	6					340	34
,400					110	16						
19,680					100	23						

Place.	Madrid.		Kairouan		Cracow.		Cheb.		Clermont		Malta.	
Time.	13h 27'		7h 28'		7h. 28'		7h. 28'		7h. 28'		6h. 28'	
1,640	-	-	330	16	260	26	-	-	-	0	360	11
3,280	60	4	330	18	270	20	310	11	-	0	260	12
4,920	?	4	330	20	160	16	330	20	350	11	350	11
6,560	20	4	310	20	290	15	-	-	340	11		
9,840	40	7			280	16	310	17	360	16		
13,120	360	18					300	27				
16,400	360	25										
19,680	350	30										

Meteorological Office, Air Ministry. Kingsway, London, W.C.2. G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, Sunday, 29th March, 1931.

No. S. 25329.
U.A.S. 4381.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 0— 5 m.p.h.
- 6—15 "
- 16—26 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 56—65 "

and so on.

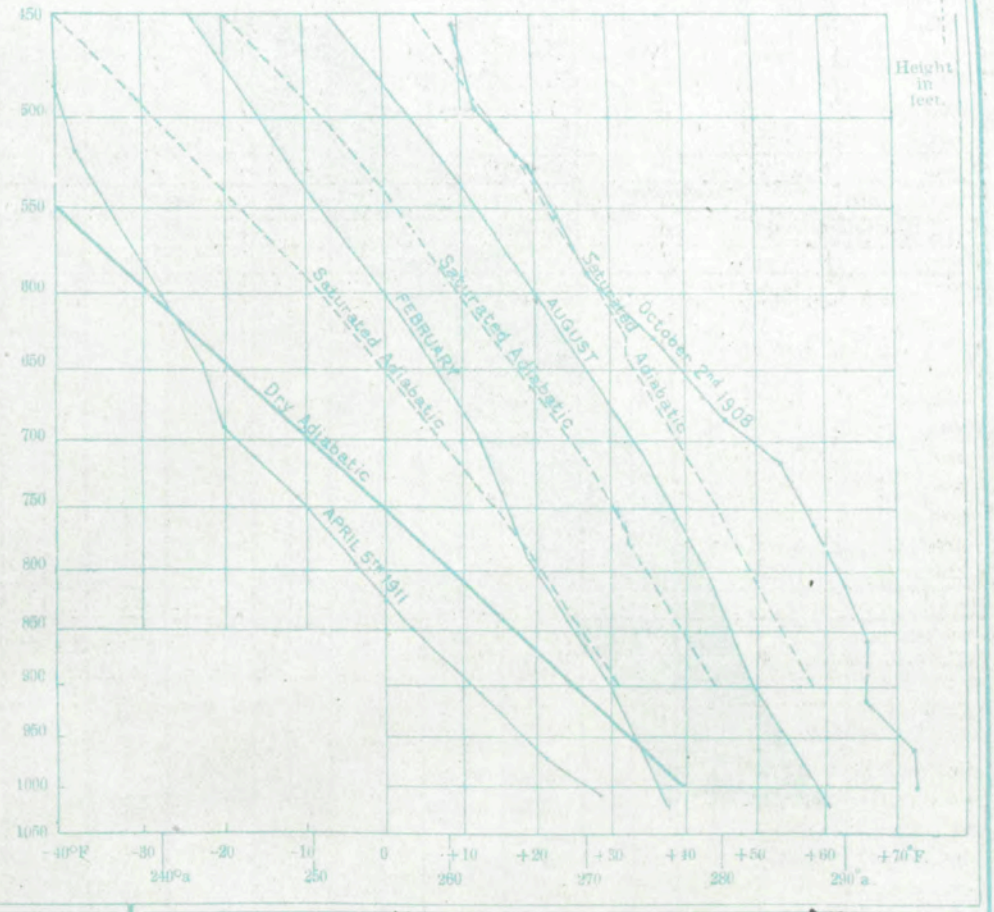
In Tables.

Directions are given in degrees, velocities in m.p.h.

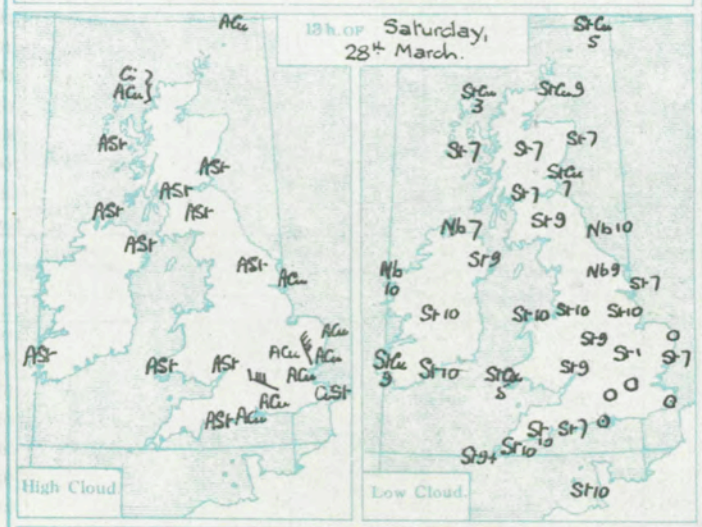
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

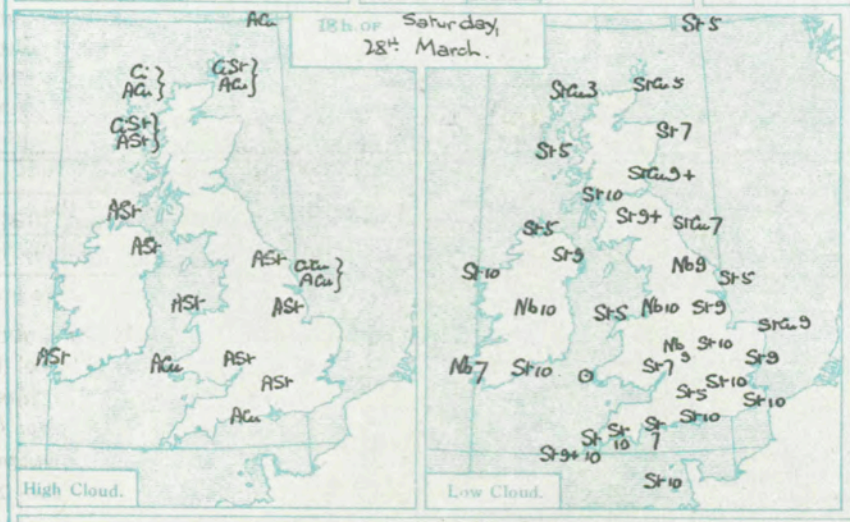
UPPER AIR TEMPERATURES.

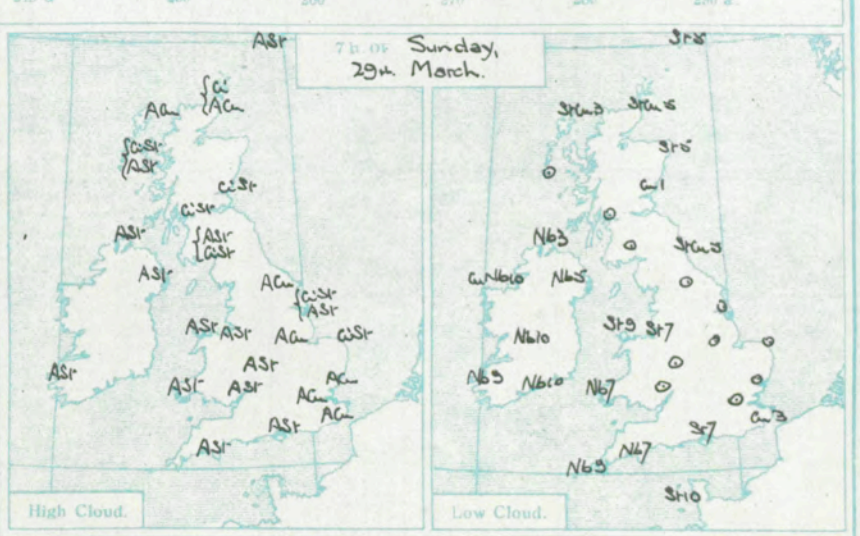
Saturday, 28th March. 1931.



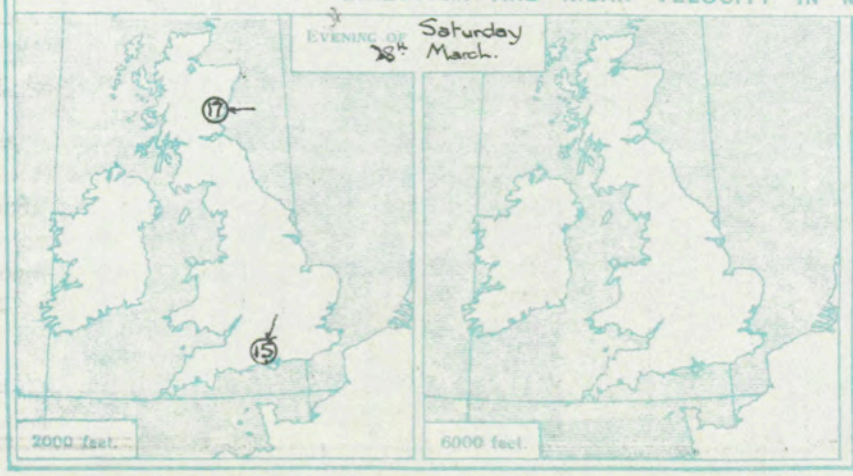
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

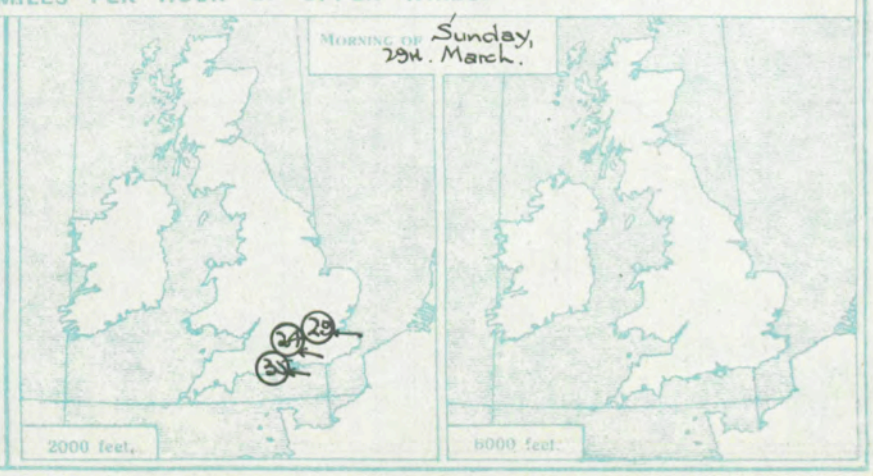






DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.





H.M. Stationery Office Press, Kingsway, W.C.2

© Indicates absence of cloud.

Fo. 251.2/22/0. m. 118. D.6008. Gp. 306. 1/1780. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	12h 28m		12h 28m				12h 28m		11h 28m		12h 28m				12h 28m		12h 28m				12h 28m								12h 28m										Time.
Type	b														b		b																						Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	290	5	350	2			345	5	325	7	145	1			55	15	55	14			40	10							50	5									Surf.
1000	355	7	360	6			355	6	25	8	calm				55	13	60	14			35	13							60	14									1000
2000	30	7	75	2			50	13	50	8	355	6			40	7					35	9							75	20									2000
3000			355	5			20	9	55	3	350	9			30	3													75	19									3000
4000			275	3			30	5	60	3	330	12																											4000
5000							230	3	35	3	320	13																													5000
6000							190	6	330	3	335	13																													6000
8000									320	16	325	11																													8000
10000									310	15	(7000')																														10000
12000			13h	Acu					310	16					13h	Acu																									12000
Neph.			300	42					(11000')						340	48																									Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.	17h 28m		17h 28m						17h 28m																				17h 28m										Time.
Type.																																							Type.
Feet Surf.	65	20	65	15					340	15																															Feet Surf.
1000	70	29	70	12					360	16																			70	10									1000
2000									20	15																			70	15									2000
3000									25	9																			85	17									3000
4000																													90	35									4000
5000																																							5000
6000																																							6000
8000																																							8000
10000																																							10000
12000											16h	Acu																											12000
Neph											300	51																											Neph.

Place.	Croydon		South Farnboro		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	7h 29½		7h 29½						7h 29½		6h 28½				28½														29½										Time.
Type.											b																												Type.
Feet Surf.	120	15	110	12					115	36	100	20																													Feet Surf.
1000	105	21	115	25					110	30	90	23																													1000
2000	110	29	120	24					115	35	90	30																													2000
3000	115	37	120	42					125	31																															3000
4000	115	41	120	33					130	25																															4000
5000																																							5000
6000																																							6000
8000																																							8000
10000															7h	Cu													7h	Cu									10000
12000															300	60													330	30									12000
Neph															10½	Acu													10½	Cu									Neph.
															300	42													330	30									

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Calais		Abbeville		Warsaw		Madrid		Valencia		Malta	
Time.	13h 28m		13h 28m		13h 28m		13h 28m		18h 28m		17h 28m	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	340	10	350	3	260	35	-	-	30	20	3000'	
3,280	340	7	350	7	260	56	140	3	20	18	300	10
4,920					270	34	190	3			7000'	
6,560					280	41	260	7			310	18
9,840							20	3			10000'	
13,120							290	7			330	25
16,400							270	9				
19,680							280	20				

Place.	Brest		Dijon		Lyons		Warsaw		Paris		Malta	
Time.	18h 28m		18h 28m		17h 28m		7h 29h		9h 29½		6h 28m	
1,640	210	25	210	5	20	14	20	30	100	23	1000'	
3,280	210	23	-	-	350	12	20	31	90	34	280	14
4,920	210	23	350	8	320	13	20	31			2000'	
6,560	210	25	350	13	240	7	20	31			290	27
9,840	210	25	330	27			360	27			3,000'	
13,120											300	29
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. SIMPSON, C.B., D.Sc., F.R.S., Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, MONDAY, 30th MARCH, 1931.

No. B. 25,330.
U.A.S. 4,382.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions. See Title Page.

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

- No speed given.
- 0— 5 m.p.h.
- 6—15 "
- 16—25 "
- 26—35 m.p.h.
- 36—45 "
- 46—55 "
- 56—65 "

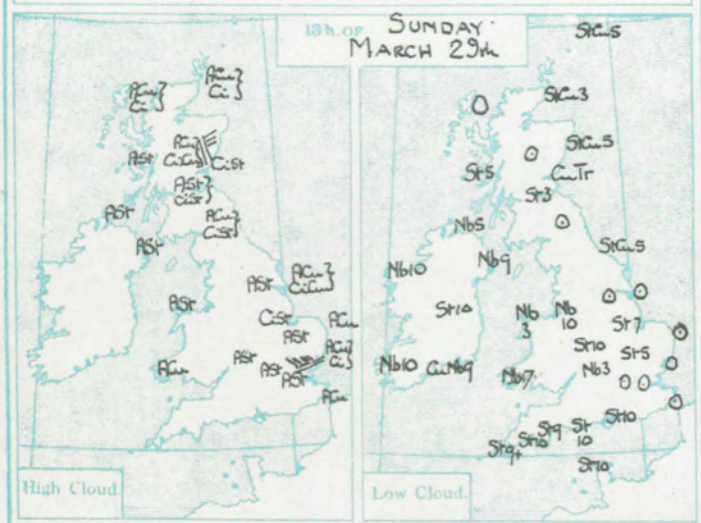
and so on.

In Tables.

Directions are given in degrees, velocities in m.p.h.

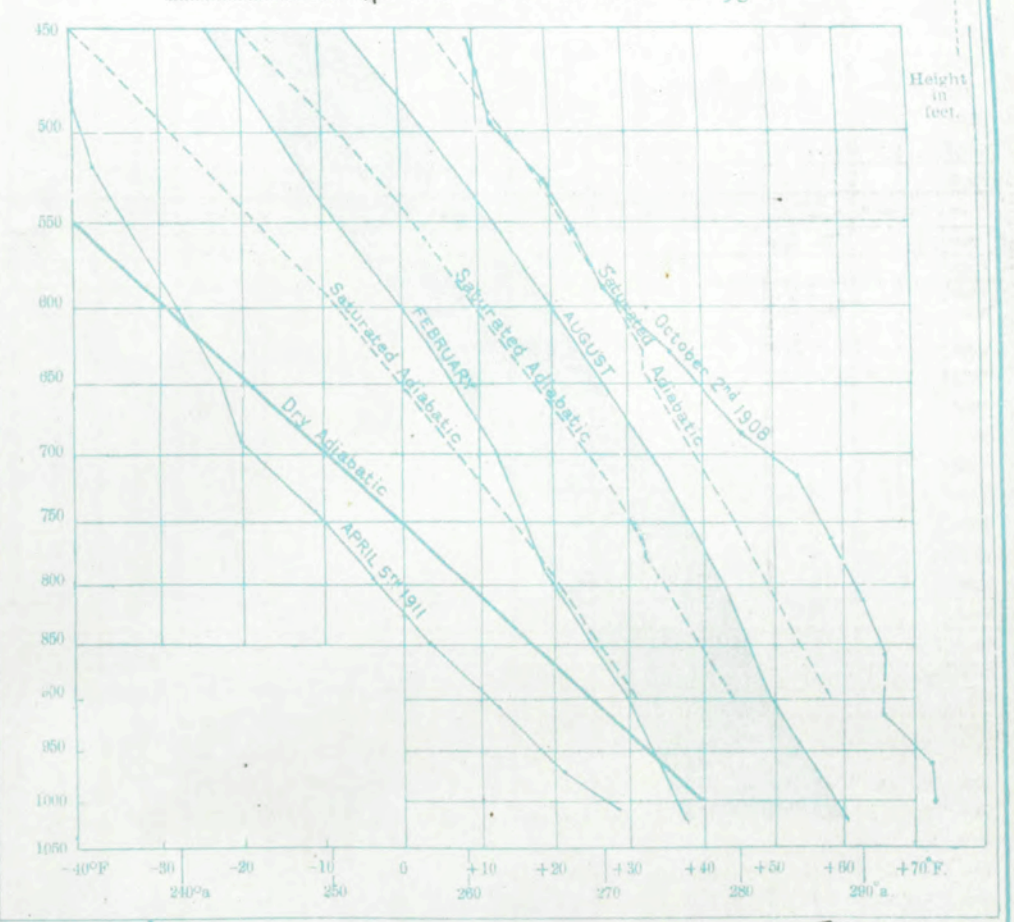
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

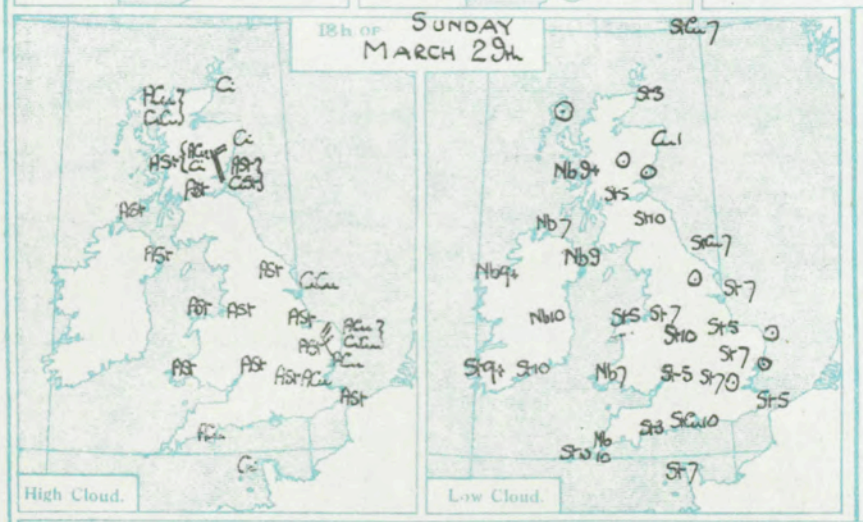
CLOUD FORMS, AMOUNTS AND MOVEMENTS.

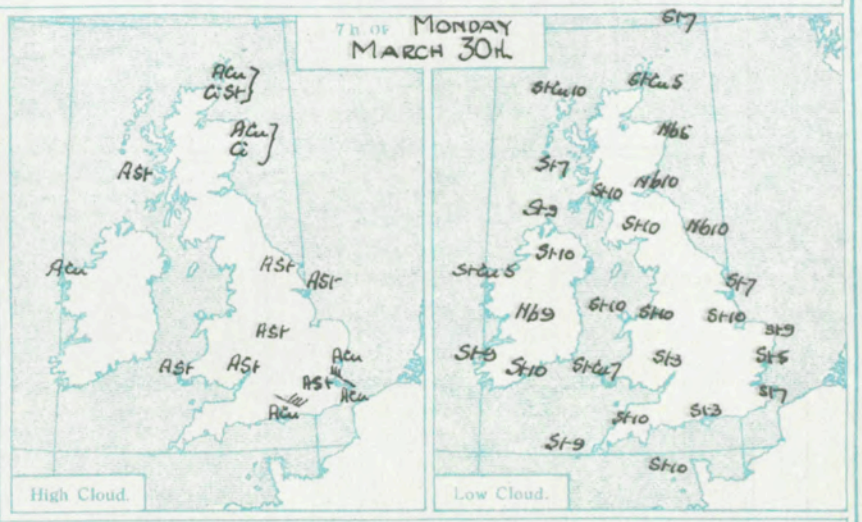


UPPER AIR TEMPERATURES.

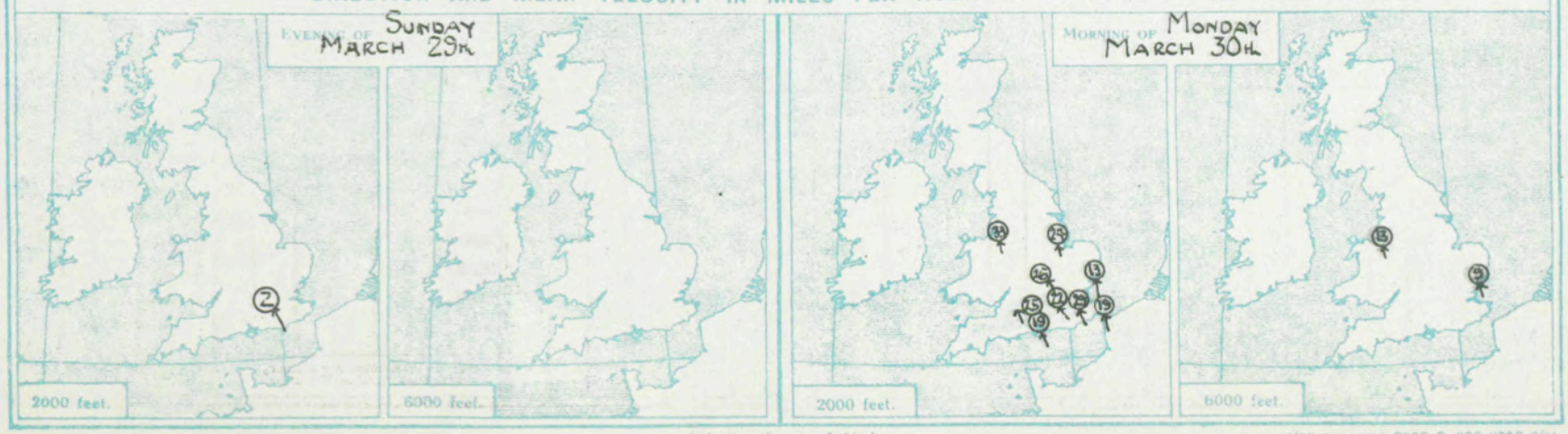
SUNDAY, 29th MARCH, 1931.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.



⊙ Indicates absence of cloud.

H.M. Stationery Office Press, Kingsway, W.C.2.

Pts. 25121/2210. Wt. 116. D. 6005. Gp. 908. 11/30. 3/31

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.			12h 29h				12h 29h		12h 29h		12h 29h				12h 29h						12h 29h						12h 29h		12h 29h		12h 29h								Time.
Type			b								b																												Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.			145	17			130	20	130	31	90	18			120	14					115	14					145	20	120	10	135	13							Surf.
1000			135	25			125	26	115	22	95	23			125	17					125	17					145	37	140	12	150	11							1000
2000			125	23			125	31	115	35	115	25			135	22					140	13					150	33	170	11	145	15							2000
3000			130	29			130	36	115	25	125	43			135	22													185	25	170	23							3000
4000			135	35							120	41			130	21													195	17	160	23							4000
5000											115	35			130	21													195	15	150	19							5000
6000											130	31			120	21													165	15	165	19							6000
8000											205	7			13h														165	15	170	12							8000
10000											125	8			Ac-Cu														170	11									10000
12000															280	36													12h Ci-Cu										12000
Neph.															Ci-Cu 240	55													290 35 12h Ci 330 25										Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia			Place.
Time.			17h 29h														24h 29h																						Time.
Type																																							Type
Feet																																							Feet
Surf.			130	10													125	9																					Surf.
1000			115	35													130	20																					1000
2000			135	20													140	28																					2000
3000																	155	26																					3000
4000																	185	25																					4000
5000															18h		185	20											18h										5000
6000															Ac-Cu														Ci										6000
8000															300	30													300	20									8000
10000															10h														10h										10000
12000															Ac-Cu														Ci										12000
Neph															290	36													300	25									Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Croydon		Calshot		Lympne		Larkhill		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Lympne?		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place.
Time.	7h 30h		7h 30h		7h 30h		10h 30'		6h 30h		6h 30h		9h 30h		7h 30h		6h 30h				6h 30h		11h 30'		9h 30h		6h 30h												Time.
Type.					b						b		b																										Type.
Feet																																							Feet
Surf.	145	12	125	8	210	12	120	16	115	21	110	12	135	16	120	17	120	10			125	9	105	12	95	9	135	15											Surf.
1000	150	25	130	17	125	21	115	17	135	24	130	17	130	22	135	16	140	20			125	18	130	15	145	12	150	27											1000
2000	150	29	145	22	155	25	130	27	150	19	160	19	135	25	165	13	165	24			150	26	130	23	160	14	165	33											2000
3000	150	23	145	20	150	17	135	31	160	13			140	26	150	11	160	22			155	27	125	20			175	21											3000
4000	140	21			155	17	135	28	150	15			140	24	135	13	150	22			165	17					165	18											4000
5000	130	14			150	16			160	16					135	13	155	18									165	13											5000
6000															160	9											165	13											6000
8000															190	7																							8000
10000															(7000')																								10000
12000					10h	Ac-Cu					10h	Ac-Cu																												12000
Neph					120	42					300	30																											Neph.

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity	Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —		mb.	Feet. M.S.L.	°F. —	°F. —	% —
		M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—			M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	Lyons		Marignane		Turin		Milan		Ancona		Malta	
Time.	12h 29h		12h 29h		17h 29h		17h 29h		17h 29h		17h 29h	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	10	14	340	27	170	4	20	32	70	4	200 0' 290	25
3,280			330	24	190	7	10	28	—	—	300 0' 290	31
4,920			—	—	180	8			340	9	500 0' 300	25
6,560			340	16					340	12		
9,840												
13,120												
16,400												
19,680												

Place.	Abbeville		Tours		Warsaw		Helsingfors		Milan		Malta	
Time.	7h 30h		7h 30h		7h 30h		7h 30h		7h 30h		6h 30h	
1,640	130	25	110	16	10	21	40	6	140	24	300 0' 320	19
3,280	100	21	40	9	10	24	40	5	140	19	700 0' 300	29
4,920	130	7	360	9	10	29	30	6	160	29	1000 0' 300	35
6,560			350	14	10	28	40	8			160 0' 290	33
9,840							40	8				
13,120							40	13				
16,400							40	13				
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

G. C. Simpson, C.B., D.Sc., F.R.S. Director

M.O. Form 2372.

AIR MINISTRY.

DAILY WEATHER REPORT OF THE METEOROLOGICAL OFFICE, LONDON.

UPPER AIR SECTION, TUESDAY, 31ST MARCH, 1931.

No. 8. 25,331.
U.A.S. 4383.

DIAGRAM OF UPPER AIR TEMPERATURE.

Pressure and temperature are plotted on logarithmic scales so that all changes of temperature according to the dry adiabatic law are represented by parallel straight lines.

The curves for April 5th, 1911, and October 2nd, 1908, show extremes of temperature in the South of England.

The curves marked February and August show normal values for these months.

The broken lines show adiabatic changes for saturated air rising under specified conditions, See Title Page

The sloping straight line shows the adiabatic change for dry air.

UPPER WINDS.

All observations of upper winds from British Stations are obtained by single theodolite pilot balloon ascent, except where otherwise specified in the tables on the reverse side.

b = balloon with tail. d = double theodolite ascent.

CLOUD MOVEMENTS (Nephoscope readings)

On Charts.

Movements are indicated thus:—

——— No speed given.
——— 0— 5 m.p.h.
——— 6—15 "
——— 16—25 "
——— 26—35 m.p.h.
——— 36—45 "
——— 46—55 "
——— 56—65 "
and so on.

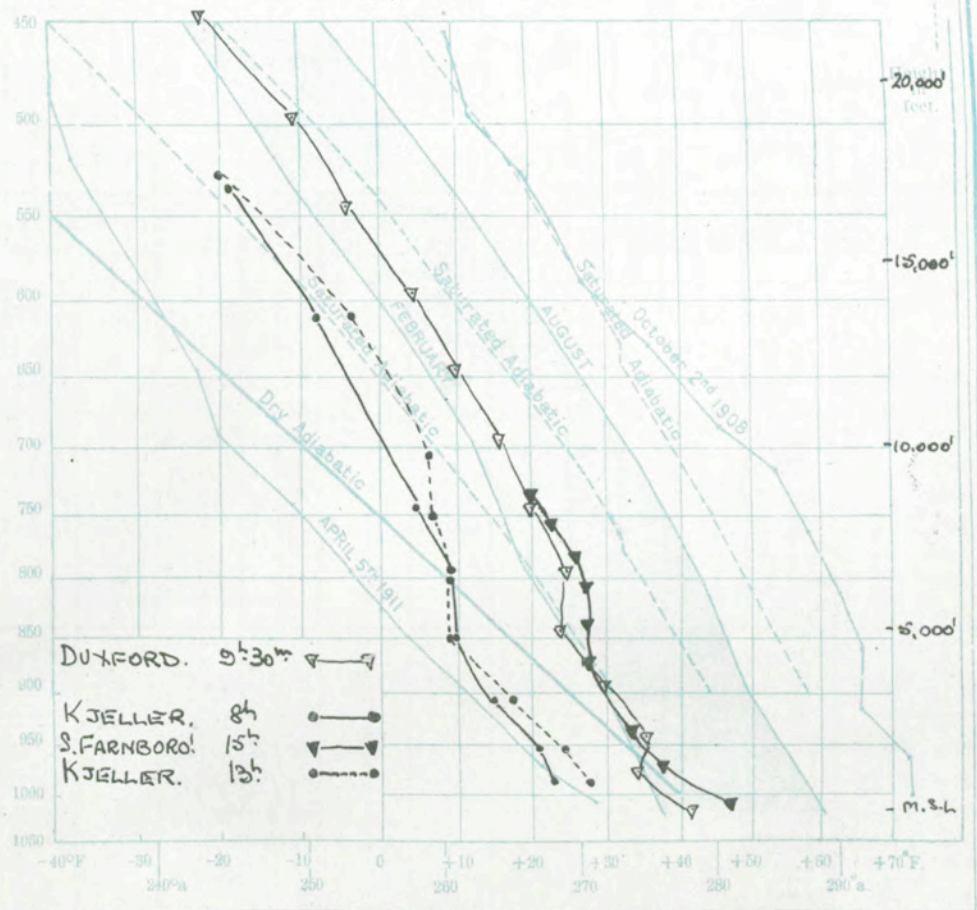
In Tables.

Directions are given in degrees, velocities in m.p.h.

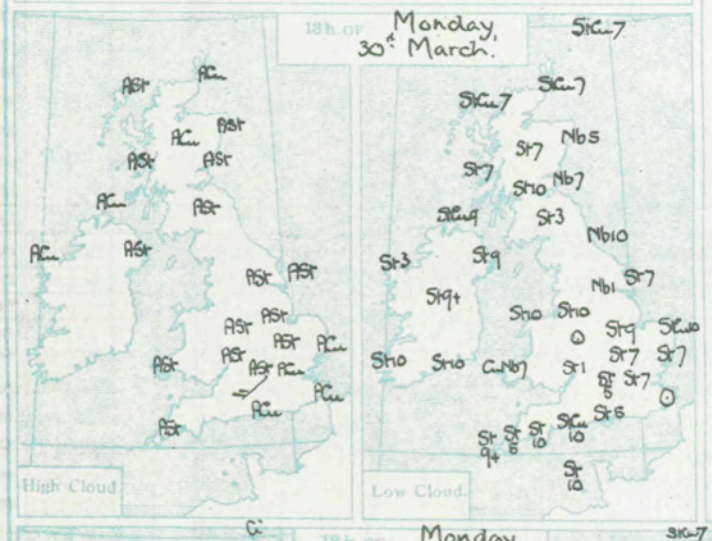
Speeds of high cloud are computed for an average height of 5 miles for cirro type clouds (double lines) and 3 miles for alto type clouds (single line).

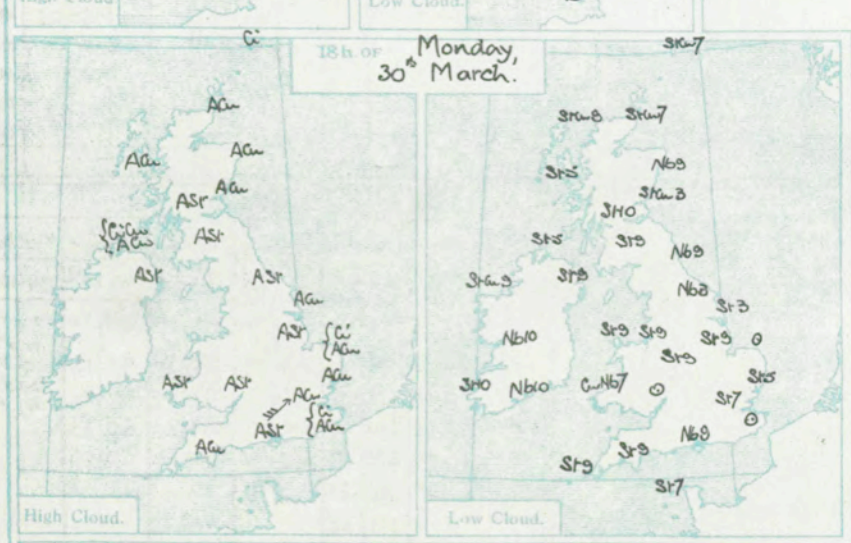
UPPER AIR TEMPERATURES.

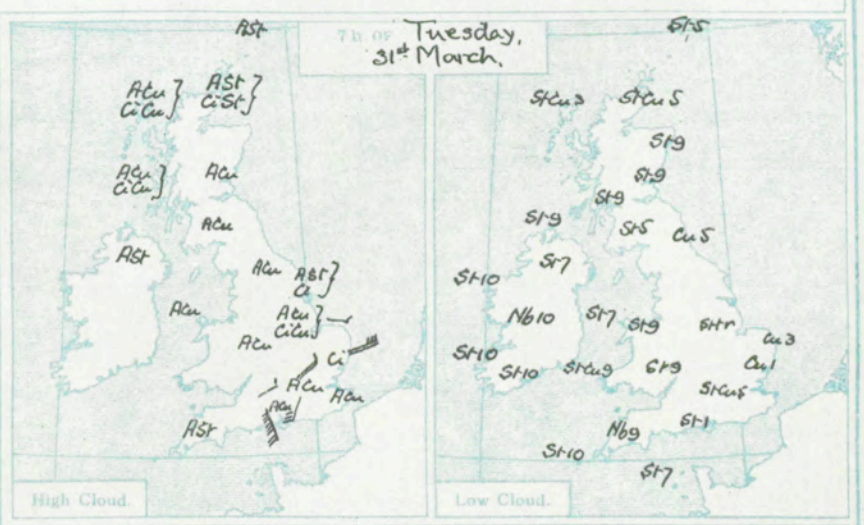
Monday, 30th March. 1931.



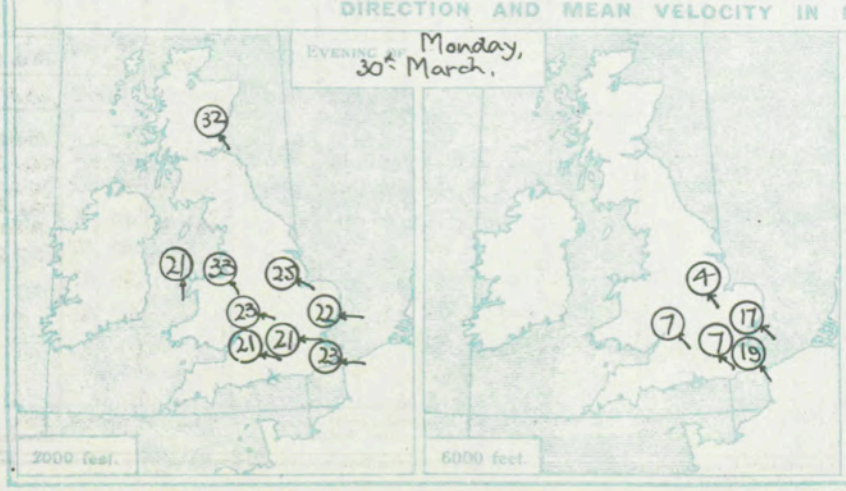
CLOUD FORMS, AMOUNTS AND MOVEMENTS.







DIRECTION AND MEAN VELOCITY IN MILES PER HOUR OF UPPER WINDS.



H.M. Stationery Office Press, Kingsway, W.C.2.

⊙ Indicates absence of cloud.

DIRECTION (degrees from N.) and MEAN VELOCITY (m.p.h.) of SURFACE and UPPER WINDS at specified heights above M.S.L.—BRITISH.

Place	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Aber-deen		Alder-grove		Valentia		Place
Time.	12h 30m		12h 30m		13h 30m		12h 30m		12h 30m		12h 30m				13h 30m		12h 30m		12h 30m		12h 30m				12h 30m		13h 30m		13h 30m										Time
Type			b		b		b				b						b								b														Type
Feet	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Feet
Surf.	120	20	110	17	145	15	125	15	120	24	100	15			120	16	120	17	135	13	130	12			165	11	140	17	140	12									Surf.
1000	125	23	120	21	135	19	125	15	115	27	95	17			120	18	130	16	115	10	135	18			160	22	145	36	140	25									1000
2000	135	35	120	21	175	18	130	25	110	22	115	21			120	14	130	17	130	16	135	23			140	26	150	30											2000
3000	140	29	120	29	130	24	140	21	135	19	130	25			115	15	140	21	135	27	140	24																	3000
4000	135	25	150	20	150	20			170	15	135	27			130	19	135	23	135	29	150	23																	4000
5000	145	25			160	13					160	15			160	13	155	22	145	20																			5000
6000	140	9			140	13					150	21			170	15			145	11																			6000
8000	7,000' 150	11	16h	Acu							170	9			205	8																							8000
10000			23h	24																																			10000
12000			13h	Acu																																			12000
Neph.			270	21																																			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Plymouth		Holyhead		Sealand		Leuchars		Renfrew		Alder-grove		Valentia				Place.
Time.	17h 30m		17h 30m		18h 30m		17h 30m		29h 30m		17h 30m				17h 30m		17h 30m				17h 30m				17h 30m		17h 30m		17h 30m		17h 30m								Time.
Type.					b						b																												Type
Feet																																							Feet
Surf.	80	17	140	9	130	12	110	10	105	20	70	16			95	17	110	17			120	12			150	18	130	21	125	15	65	9							Surf.
1000	100	17	125	17	130	19	115	17	115	23	85	21			95	25	115	17			125	18			160	24	135	29	135	30	105	18							1000
2000	120	22	115	21	120	24	125	21	130	25	105	23			110	22	125	25			130	23			175	21	145	33	145	32									2000
3000	130	19	120	28	125	24	160	10	155	23	125	21			110	16	135	21			130	25																	3000
4000	135	18	130	23					160	21	125	20			140	17	?180	20			135	25																	4000
5000			145	17							165	19			130	15	145	11			145	15																	5000
6000			140	7							165	19			150	17	150	4			145	7																	6000
8000	.		45	2							135	13			7,000' 155	13					100	7																	8000
10000			90	2																																			10000
12000			18h	Acu																																			12000
Neph			230	27																																			Neph.

Place.	Croydon		South Farnboro'		Worthy Down		Boscombe Down		Calshot		Lympne		Shoebury-ness.		Felix-stowe		Cranwell		Card-ington		Upper Heyford		Croydon		Holyhead		Sealand		Leuchars		Renfrew		Lympne		Alder-grove		Lairkhill		Place.
Time.	7h 31st		7h 31st		7h 31st		8h 31st		7h 31st		6h 31st		9h 31st		7h 31st		7h 31st		31st		6h 31st		10h 31st		9h 31st		6h 31st		7h 31st		7h 31st		10h 31st				9h 31st		Time.
Type.					b						b												b										b				b		Type.
Feet																																							Feet
Surf.	90	14	100	14	90	12	105	15	95	19	95	20	shell burst		110	20	120	20			95	12	120	22	125	14	125	22	130	12	85	6	130	19			105	18	Surf.
1000	110	28	110	17	105	27	105	29	110	30	100	28	one mirror		105	29	130	32			110	16	115	25	140	17	135	34	140	20	115	17	115	17			110	26	1000
2000	115	35	120	29	130	27	130	31	125	27	115	26	12000'		110	31	130	37			115	31	125	29	150	41	145	50			135	29	100	21			130	30	2000
3000	110	17	125	23	135	27	135	20	135	23	120	28	95	14	110	27	140	24			125	29	125	27	165	39	150	49			145	18	95	20			140	27	3000
4000	120	17	130	23	140	26	145	17	130	21	110	19	14000'		130	21	125	20					120	17	160	27	150	44					95	22			140	29	4000
5000			145	22	150	28	135	23			85	10	20	16	125	21							135	11	165	22							100	21			150	25	5000
6000			160	21	150	26	130	21			100	15	18000'		118	17									155	15							105	21					6000
8000			145	14	155	27	10h 310	Acu 13	worthy		105	12	355	14	110	17									155	20							115	17					8000
10000			115	8	(7000')		Kew		Down		100	9	Felixstowe		(7000')										(7000')								110	13					10000
12000	7h	Acu	9h	Acu	7h	Acu	7h	CiCu	10h	Ci			9h	Ci	7h	Ci	7h	Acu	9h	Acu					10h	CiCu							65	7					12000
Neph	200	27	90	30	60	15	40	10	220	30			40	55	60	35	100	12	120	30					180	25													Neph

UPPER AIR TEMPERATURES AND HUMIDITIES.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	1026	M.S.L.	—	—	—
	1022	100	42	37	65
	986	1080	35	33	75
	950	2060	36	29	41
	900	3480	30	26	62
	850	4980	24	21	67
	800	6550	25	22	69
	750	8210	20	19	83
	700	9990	16	14	-
	650	11860	10	8	-
	600	13880	3	2	-
	550	15990	-3	-4	-
	500	18340	-11	-11	-
	450	20880	-22	-22	-

DUNFORD. 9h 30m. 30/3/31.

Inversions:- 988mb. 35°F. 950 " 36°F. 850 " 24°F. 800 " 25°F.

Haze tops 950mb. Strat. 1/10, 970 to 710mb. and 620 to 580mb. Ci 1/10 not reached.
Snow air 800 and 800mb
Rime at 620 and 580.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	1022	M.S.L.	—	—	—
	1014	230	47	-	"
	978	1210	38	-	"
	943	2200	34	-	"
	878	4150	27	-	"
	844	5150	27	-	"
	813	6050	27	-	"
	784	7000	26	-	"
	756	7950	23	-	"
	742	8400	20	-	"

FARNBORO. 15h. 30/3/31.

Thin cloud layers at 844mb. Rain cloud layers at 742 and rain falling not reaching ground.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	1033	M.S.L.	—	—	—
	993	1320	23	-	65
	956	2300	21	-	65
	910	3280	16	-	65
	852	4920	10	-	65
	800	6560	9	-	65
	749	8200	5	-	55
	?660	9840	1	-	55
	611	13120	-8	-	55
	532	16400	-19	-	55

KJELLER. 8h. 30/3/31.

Station.	Pressure.	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
	998	M.S.L.	—	—	—
	958	1326	28	-	45
	912	2306	18	-	45
	854	3280	9	-	55
	803	4920	9	-	55
	751	6560	7	-	55
	705	8200	7	-	45
	615	13120	-4	-	45
	535	16400	-20	-	45

KJELLER. 13h. 30/3/31.

Station	Pressure	Height above M.S.L.	Temp. Dry.	Temp. Wet.	Relative Humidity
	mb.	Feet.	°F.	°F.	%
		M.S.L.	—	—	—

UPPER WINDS ABROAD.

Place.	St Inglevert		Barcelona		Madrid		Vaiary		Dijon		Malta	
Time.	13h 30m		13h 30m		13h 30m		13h 30m		18h 30m		17h 30m	
Feet.	Dir	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
1,640	100	36	170	8	210	4	300	16	40	13	100 3000'	
3,280	120	19	170	8	-	-	320	15	60	16	230 2000'	4
4,920	150	17	210	13	210	9	310	21	60	13	250	4
6,560			270	14	210	14	300	19	20	10		
9,840			290	24								
13,120			310	22								
16,400			330	27								
19,680												

Place.	Ancona		Tripoli		Paris		Messina		Helsing-fors		Malta	
Time.	18h 30m		18h 30m		6h 31st		7h 31st		7h 31st		6h 31st	
1,640	210	5	340	10	10	23	180	16	40	12	3000' 310	9
3,280	260	6	290	18	80	16	260	11	40	13	7000' 300	22
4,920	320	32	—	—			260	8	50	11	10000' 290	26
6,560			270	16					50	10		
9,840									50	13		
13,120									60	16		
16,400												
19,680												

Meteorological Office, Air Ministry. Kingsway, London, W.C.2.

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