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HOURLY RANGES OF THE
MAGNETIC ELEMENTS, DURING THE
POLAR YEAR 1932-3,
AT THE OBSERVATORIES OF
LERWICK AND ESKDALEMUIR

with a discussion by F. E. DIXON, B. A.

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HOURLY RANGES OF THE MAGNETIC ELEMENTS DURING THE POLAR YEAR 1932-3

AT THE OBSERVATORIES OF LERWICK AND ESKDALEMUIR

§1.—INTRODUCTION

Publication of this memoir, which was written before 1939, has been delayed owing to the war.

At the Warsaw meeting of the International Commission of Terrestrial Magnetism and Atmospheric Electricity in 1935, it was recommended that, to assist in the detailed study of magnetic conditions during the Polar Year (August, 1932 – August, 1933), hourly ranges of the three magnetic elements should be measured at a number of observatories situated near the auroral zone. Included amongst these observatories were Lerwick and Eskdalemuir.

The ranges for Lerwick and Eskdalemuir have been measured and are now printed in this memoir. Some observatories have published the data for H in the form $H_{r_H} \cdot 10^{-4}$ (i.e. the hourly range of the element multiplied by the mean value of the element and expressed in terms of the unit $10,000 \gamma^2$) and similarly with V. The actual ranges are published here, but to the tables the mean values expressed in the form $H_{r_H} \cdot 10^{-4}$ have been added to each row and each column.

§2.—INSTRUMENTS AND METHODS OF MEASUREMENT

Full details of the magnetographs with which the observations were made will be found in the 1932 and 1933 volumes of the *Observatories' Year Book*, which also include hourly mean values of the magnetic elements, daily ranges, diurnal inequalities and other data.

With the aid of a glass scale, graduated in millimetres, the hourly ranges were measured on the magnetograms to 0.1 mm. The figure thus obtained was multiplied by the scale value and the product rounded off to the nearest γ in the case of H and V, and to 0.1' in the case of D. Figures are bracketed which may be in error by 2γ or more (0.2' for D). Such cases arise from two main causes :

(a) Breaks in the record due to instrumental defect or lamp failure, and in exceptionally disturbed conditions to the variation exceeding the limits of registration. In such cases ranges were obtained from the auxiliary record, which was in some cases difficult to measure to the desired order of accuracy, the scale values being large. It is, however, unlikely that any error exceeds 5γ .

(b) Breaks in the record used as time marks [4 min. each two hours] and between the removal of one chart from the recording drum and the insertion of a new one. The resultant error is in most cases small, but may conceivably have exceeded 10γ in a few instances where rapid oscillations occurred.

Owing to the difficulty of measuring ranges less than 0.2 mm. all ranges of less than 1.5γ have been entered as 1γ . The scale values in use during the Polar Year in the case of the standard variometers were :

	H	D	V
	$\gamma/\text{mm.}$	'/mm.	$\gamma/\text{mm.}$
Lerwick	5.65 – 5.76	1.93	8.60 – 9.23
Eskdalemuir	4.56 – 4.60	1.00	3.65 – 4.25

Those for the auxiliary records were about $20\gamma/\text{mm.}$

§3.—NOTES ON THE TABLES

Tables 1—42 and 51—92 contain for Lerwick and Eskdalemuir respectively the actual ranges of the three elements, H, D and V, the 13 monthly tables for each element being grouped together, and a fourteenth table being added summarising the monthly tables and including also seasonal and annual means.

In Tables 43 – 8 and 93 – 8 the mean monthly, seasonal and annual values of the ranges for each hour are given for the internationally selected “ quiet ” and “ disturbed ” days.

To convert the figures into the form $H_r \cdot 10^{-4}$ or $V_r \cdot 10^{-4}$ the appropriate factors are :

					H	V
Lerwick	..	..	..	..	1.45	4.66
Eskdalemuir	..	..	..	..	1.66	4.49

Tables 49 and 99 include mean values for each day of $(H_r + V_r)10^{-4}$ as the most appropriate index of disturbance, and the last table for each observatory comprises the mean value for each hour of $(H_r + V_r)10^{-4}$ on “ all ”, “ quiet ” and “ disturbed ” days.

The seasons used in obtaining the averages were Winter, November to February ; Equinox, September, October, March, April ; and Summer, May to August. To obtain the summer averages the means of the figures for the two Augusts 1932 and 1933 were used.

In Table 14 a plus sign indicates that the figure immediately to its left should be thrown up in rounding off to a whole number and conversely for a minus sign.

§4.—MAGNETIC CONDITIONS DURING THE POLAR YEAR

In the paragraphs which follow the Lerwick figures will be first considered. In most cases the remarks also apply to the data for Eskdalemuir, and only where important differences exist will they be dealt with separately.

Although the 1932 and 1933 volumes of the *Observatories' Year Book* include a considerable amount of data for Lerwick and Eskdalemuir, all the summaries and averages are for the two calendar years. It is, therefore, thought appropriate to discuss here some of the principal features of the magnetic records for the period August 1932—August 1933.

Magnetic activity

The usual measure of magnetic activity is the expression $(H_r + V_r)/10,000\gamma^2$ where H_r and V_r are the mean daily ranges and H and V the corresponding mean values of the horizontal and vertical components of the earth's magnetic field. H, V, H_r , V_r , are all measured in γ (10^{-5} C.G.S. unit) and $(H_r + V_r)/10,000\gamma^2$ is, therefore, a pure number.

The values for each month of the Polar Year, together with the average monthly values for the period 1927 – 37, are given in Table I.

TABLE I—MONTHLY MEANS OF $(H_r + V_r)/10,000\gamma^2$ AT LERWICK

		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year
$\frac{H_r + V_r}{10,000\gamma^2}$	1932-3	694	708	611	324	512	464	585	635	709	861	536	456	526	586
	Mean 1927-37	555	638	719	464	435	364	572	673	727	687	573	560	555	579
Sunspot Number	1932-3	6.8	4.0	8.9	8.2	11.0	12.3	22.2	10.1	2.9	3.2	5.2	2.8	0.2	7.9

Although seven of the thirteen months had values below the average the mean for the year is slightly above that for the eleven-year period, owing to the considerable excesses in August 1932 and in May 1933. Other considerations suggest that activity was below average. Even the high figure for May is little more than half the highest monthly average recorded at Lerwick, 1,662 in April 1930 ; and of the years 1926 – 37 only 1928 and 1934 had no month with a higher average. August 1932 was, however, exceptionally disturbed and only 1930 has had an appreciably higher August value of $(H_r + V_r)/10,000\gamma^2$. Of the quiet months November is outstanding, but there have been eleven quieter months in the twelve years 1926 – 37, the most remarkable period being the winter of 1927 – 8 when the figures for successive months were 193, 334, 143 and 171, the January figure being the lowest on record.

Mean and extreme values of the magnetic elements

The mean values of the principal magnetic elements and geographical components are given in Table II, together with the annual secular change, taken as the difference between the means for the years 1933 and 1932.

TABLE II—MEAN VALUES AND SECULAR CHANGES

Element	Horizontal force H	Declination (west) D	Inclination (north) I	North component N	West component W	Vertical force V	Total force T
Lerwick—	γ	° ' ''	° ' ''	γ	γ	γ	γ
Mean value	14485	13 38.4	72 44.1	14076	3416	46607	48806
Secular change	—18	—12.1	+1.1	—5	—54	—3	—7
Eskdalemuir—							
Mean Value	16562	14 16.5	69 44.9	16050	4084	44890	47847
Secular change	—13	—11.6	+0.2	+2	—58	—26	—28

The mean values of H, D and V for quiet and disturbed days were :

	H		D		V	
	q	d	q	d	q	d
Lerwick	14487γ	14481γ	13° 38.4' 13° 38.0'		46609γ	46603γ
Eskdalemuir	16565γ	16557γ	14° 16.6' 14° 16.2'		44890γ	44889γ

In one respect the Polar Year showed a close resemblance to the normal. The differences between the mean values of N, W and V on all, quiet and disturbed days are given below together with the average differences at Eskdalemuir for the period 1915–36.

Element	Quiet day mean—All day mean			Quiet day mean—Disturbed day mean		
	N	W	V	N	W	V
Lerwick, 1932–3	+2.0	+0.6	1.7	+5.7	+3.2	+5.4
Eskdalemuir 1932–3	+3.0	+1.9	0.0	+6.9	+3.5	+0.7
1915–36	+3.2	+1.3	0.0	+9.2	+3.3	+0.4

Extreme values

The extreme values of H, D and V are given in Table III.

TABLE III—EXTREME VALUES OF THE MAGNETIC ELEMENTS

Element	Maximum	Minimum	Range
Lerwick—			
Horizontal force ..	15324γ May 1, 16h. 15m.	13513γ May 1, 21h. 33m.	1811γ
Declination ..	15° 23.6' May 1, 16h. 32 m.	12° 45.9' Oct. 21, 1h. 39m.	2° 37.7' (660γ)
Vertical force ..	47012γ May 1, 21h. 25m.	46199γ Aug. 28, 1932, 2h. 29m.	813γ
Eskdalemuir—			
Horizontal force ..	16916γ May 1, 16h. 8m.	16306γ May 2, 0h. 43m.	610γ
Declination ..	15° 3.2' May 1, 17h. 33m.	13° 44.3' Mar. 19, 21h. 16m.	1° 18.9' (330γ)
Vertical force ..	45222γ May 1, 16h. 18m.	44619γ May 1, 21h. 32m.	603γ

Although it is difficult to assess any "normal" for absolute annual ranges, those for the Polar Year were probably a little below the average, but slightly greater than would be expected from its position in the solar cycle. Sunspot frequency was at its minimum towards the end of 1933 but 1931, 1934, 1935 and 1936 all had smaller absolute ranges than the Polar Year.

Relation of magnetic disturbance with solar activity

The mean sunspot numbers for several years are given below, together with the values of $(HR_H + VR_V)/10,000\gamma^2$ at Lerwick

Year	1926	1927	1928	1929	1930	1931	1932	Polar Year	1933	1934	1935	1936	1937
Sunspot number	63.9	69.0	76.8	64.2	38.9	20.9	11.2	7.9	5.5	8.7	36.1	78.2	114.4
$\frac{HR_H + VR_V}{10,000\gamma^2}$	824	553	433	628	1,063	589	644	586	564	465	564	603	843

It is evident that solar activity was almost at a minimum during the Polar Year after a steady decrease from the 1928 maximum. The magnetic variations were less regular and the Polar Year was definitely more disturbed than would be expected from the sunspot numbers. The sunspot figures for individual months are incorporated in Table I, and show that after a temporary increase during the winter months solar activity was at its minimum in August 1933. The months with most sunspots, December to February, were all more disturbed than the average, and with the important exception of May the last five months had both very low sunspot numbers and less than average magnetic activity.

Tables IV and V summarise various other data for the two observatories, and Table VI includes the mean values for the months and seasons of the hourly ranges r_H , r_D and r_V , together with the corresponding values of $(Hr_H + Vr_V)10^{-4}$. Comparison of Tables V and VI shows that the month-to-month variation of the mean hourly ranges closely resembles that of the mean daily ranges.

TABLE IV

	Magnetic character figures						Mean character figures			Mean value of (HR _H +VR _V)/10,000γ ²					
Month	Number of						Ler- wick	Esk- dale- muir	Inter- national	All days		Quiet days		Disturbed days	
	“ 0 ” days L* E*		“ 1 ” days L* E*		“ 2 ” days L* E*					L* E*	L* E*	L* E*			
1932															
August ..	11	16	17	12	3	3	·74	·58	·67	694	366	177	185	2007	809
September ..	6	11	20	16	4	3	·93	·73	·73	708	346	201	148	1840	748
October ..	5	6	23	21	3	4	·94	·94	·73	611	294	193	125	1809	675
November ..	12	12	17	17	1	1	·63	·63	·58	324	185	113	83	772	392
December ..	11	8	17	20	3	3	·74	·84	·67	512	237	122	78	1666	663
1933															
January ..	12	12	18	18	1	1	·65	·65	·65	464	219	86	62	987	410
February ..	14	14	9	9	5	5	·68	·68	·65	585	288	89	76	1769	788
March ..	8	10	17	16	6	5	·94	·84	·71	635	330	136	102	1714	744
April ..	4	5	22	22	4	3	1·00	·93	·76	709	353	262	178	1371	575
May ..	11	10	17	19	3	2	·74	·74	·62	861	485	189	184	2025	1154
June ..	16	14	12	14	2	2	·53	·60	·55	536	296	186	170	1402	612
July ..	18	17	11	13	2	1	·48	·48	·54	456	277	218	202	1020	476
August ..	17	15	11	13	3	3	·55	·61	·60	526	303	218	179	1422	660
Year† ..	131	135	197	197	37	33	·73	·71	·65	586	306	168	136	1523	670
Mean 1927-37	121	125	209	209	35	30	·76	·74	·67	..	..	..	..	..	..

*L = Lerwick ; E = Eskdalemuir.

†In obtaining the annual figures the means of the figures for the two Augusts were used.

TABLE V—MEAN OF ABSOLUTE DAILY RANGE

Month				Mean daily range					
				Lerwick			Eskdalemuir		
				H	D	V	H	D	V
1932				γ		γ	γ		γ
August	..	..	..	116	19.2	113	91	16.9	48
September	..	..	..	97	20.2	122	79	16.1	48
October	..	..	..	86	21.1	104	73	15.8	39
November	..	..	..	46	14.6	55	51	10.9	23
December	..	..	..	76	19.9	86	55	13.3	33
1933									
January	..	..	..	67	17.2	79	56	12.6	29
February	..	..	..	84	21.1	99	64	15.6	40
March	..	..	..	114	19.8	101	81	15.7	43
April	..	..	..	109	23.2	118	85	18.6	47
May	..	..	..	175	24.0	130	99	17.4	71
June	..	..	..	94	17.9	86	72	14.8	39
June	..	..	..	82	15.9	73	73	13.7	35
August	..	..	..	98	20.6	83	75	16.6	39
Year* ..	..	..	..	95	19.6	95	73	15.1	41
Mean, 1927-37	..	..	..	119	22.0	98	86	17.0	48

*In obtaining the annual averages the means of the figures for the two Augusts were used.

TABLE VI—MEAN VALUES OF HOURLY RANGES AND OF $(Hr_H + Vr_V)/10,000\gamma^2$

Month and Season				r_H		r_D		r_V		$\frac{Hr_H + Vr_V}{10,000\gamma^2}$	
				Lerwick	Eskdalemuir	Lerwick	Eskdalemuir	Lerwick	Eskdalemuir	Lerwick	Eskdalemuir
1932				γ	γ			γ	γ		
August	..	..	..	17.7	18.1	3.6	2.8	12.9	5.2	86	53
September	..	..	..	17.0	16.9	3.7	2.8	13.7	5.3	89	52
October	..	..	..	14.5	14.4	3.5	2.5	11.1	4.2	73	43
November	..	..	..	10.2	11.4	2.8	2.1	7.2	2.8	49	31
December	..	..	..	12.8	12.1	3.3	2.2	9.4	3.3	62	35
1933											
January	..	..	..	12.9	12.8	3.2	2.4	9.8	3.2	64	36
February	..	..	..	15.2	15.1	3.6	2.8	11.6	4.3	76	44
March	..	..	..	19.1	17.2	3.8	3.0	12.4	4.9	85	51
April ..	..	..	..	18.9	17.7	3.7	3.0	13.6	5.2	91	53
May ..	..	..	..	21.2	17.6	3.7	2.8	15.5	7.3	103	62
June ..	..	..	..	14.5	14.9	2.6	2.2	9.9	4.3	67	44
July ..	..	..	..	12.8	13.7	2.2	2.0	8.5	4.0	59	41
August	..	..	..	15.3	14.9	3.0	2.5	9.7	4.3	67	44
Winter ..	..	..	..	12.8	12.8	3.2	2.4	9.5	3.4	63	37
Equinox	..	..	..	17.4	16.5	3.7	2.8	12.7	4.9	84	50
Summer*	..	..	..	16.3	15.7	3.0	2.4	11.3	5.1	76	49
Year* ..	..	..	..	15.5	15.0	3.3	2.5	11.2	4.5	74	45

*In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

No mention is made here of the principal magnetic disturbances, as they are dealt with fully in the *Observatories' Year Book*.

§5.—DIURNAL VARIATION OF DISTURBANCE

The chief value of hourly ranges is for the study of the diurnal variation of disturbance. Fig. 1 includes the mean values at each hour, for the months, seasons and year of the hourly ranges of the primary magnetic elements recorded at Lerwick. The curves for H and V are very similar with low values from 3h. to 13h. and two maxima, one at about 17h. and the other at midnight. The afternoon maximum is the more prominent in H, especially in summer. The D ranges also have two maxima, one just before noon and another just before midnight. The ranges do not vary solely with the intensity of disturbance. All the ranges include a contribution from the regular diurnal variation which is present on even the quietest days.

In Table VII are given the hourly rates of change of the "all-day" mean values at Lerwick. H and V change most rapidly from 13h. to 16h. and 20h. to 24h. during the rise to and fall from their afternoon maximum, the latter being especially noteworthy in the case of V. D's most rapid changes are from 10h. to 12h. and 18h. to 22h.

TABLE VII—HOURLY RANGES ARISING FROM THE DIURNAL VARIATION AT LERWICK—ALL DAYS

Element	Hour* ending at																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
H(γ)	2.6	0.6	1.4	3.0	1.9	0.6	1.7	5.0	5.6	4.3	0.7	3.6	6.6	7.3	6.4	5.3	1.6	0.5	1.3	2.4	5.0	4.0	2.5	2.9
D(γ)	0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.5	1.6	1.9	1.7	1.0	0.2	1.0	1.1	0.1	0.9	1.2	0.7	0.6	0.7	0.1	0.3
V(γ)	3.0	1.6	2.0	3.6	3.3	3.0	3.2	1.6	2.0	0.3	0.1	0.2	1.2	5.3	5.2	4.5	2.3	0.6	2.8	5.0	5.3	10.1	9.0	5.2

It is not permissible to subtract these figures from the mean hourly ranges to obtain figures fully representative of disturbance; such could be obtained only by measuring the ranges as departures from an average diurnal curve instead of a straight base line. Nevertheless it is possible to make certain deductions. First, the secondary maximum in the D ranges, just before noon, is due entirely to the regular diurnal variation. Secondly, the hour 1h. - 2h. is probably the most disturbed of the twenty-four. Thirdly, 8h. - 11h. is the quietest period of the day.

Frequency distribution of large ranges of declination

It is impossible to eliminate the effect of the regular diurnal variation from the mean values of the hourly ranges but, since that variation rarely produces ranges exceeding 5.0', the frequency of ranges as great as and greater than that figure gives a closer representation of the distribution of disturbance throughout the 24 hours.

Table VIII gives for Lerwick the frequencies of ranges greater than or equal to 5.0', 10.0' and 20.0' for the seasons and year, the frequencies being expressed as percentages of the number of days in the season or year.

TABLE VIII—FREQUENCY DISTRIBUTION OF HOURLY RANGES OF DECLINATION AT LERWICK

Season	Hour* ending at																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
(a) Percentage of ranges $\geq 5.0'$																								
Winter. . .	23	23	27	19	7	10	6	7	8	3	7	6	3	7	9	17	19	20	28	33	37	34	34	29
Equinox . .	33	35	29	21	16	12	11	9	8	6	4	3	7	11	11	21	22	23	25	35	38	34	37	38
Summer . .	24	24	19	15	7	9	11	7	9	9	7	4	4	6	7	9	7	7	17	22	17	19	21	25
Year . . .	27	27	25	18	10	10	9	8	9	6	6	4	5	8	9	15	16	17	23	30	30	29	31	31
(b) Percentage of ranges $\geq 10.0'$																								
Winter. . .	9	7	6	4	4	1	2	1	2	1	..	..	..	1	3	7	7	10	13	17	13	9	14	13
Equinox . .	11	13	11	4	3	2	1	1	1	..	..	..	2	1	1	8	11	12	11	14	17	14	18	12
Summer . .	7	7	9	5	0	1	1	1	..	..	..	..	1	1	3	4	3	8	6	7	6	7	8	8
Year . . .	9	9	8	5	3	1	1	1	1	..	..	..	1	1	2	6	7	8	11	12	12	10	13	11
(c) Percentage of ranges $\geq 20.0'$																								
Winter. . .	5	3	..	..	..	..	..	..	..	..	..	..	..	..	2	2	3	2	5	4	4	4	1	2
Equinox . .	2	2	2	0	2	..	..	..	..	..	..	..	..	..	..	4	4	4	1	7	4	3	3	2
Summer . .	1	2	1	1	..	..	..	..	..	..	..	..	..	..	..	1	2	2	3	3	4	1	4	1
Year . . .	2	2	1	0	1	..	..	..	..	..	..	..	..	..	1	2	3	2	3	5	4	3	3	2

The variation shown is quite simple. Ranges of 5.0' or more are few between 7h. and 15h. and their frequency increases slowly from 15h. to 20h. From 20h. to 2h. is the most disturbed period but, on the average, there is no outstanding hour and after 2h. conditions rapidly become quiet. If ranges of 10.0' or more are considered a similar variation is found, but

*Time G.M.T.

it is noteworthy that disturbance practically ceases at about sunrise for each season, although the end of the quiet period appears to be constant at 16h. The variation of incidence of the largest ranges is remarkably regular in view of their rarity and indicates a maximum somewhat earlier than that for less extreme ranges.

Hourly ranges on quiet and disturbed days

Fig. 2 includes the mean hourly ranges at Lerwick and Eskdalemuir of the primary magnetic elements on the internationally selected quiet and disturbed days.

Quiet days—Only in the case of V on quiet days is there any important difference in shape between the curves for the two observatories; at Eskdalemuir there is a well marked double maximum near noon, especially prominent in summer, whereas at Lerwick the greatest ranges are in the night hours and only in summer is there any evidence of a day maximum. The difference arises from the characteristics of the quiet-day variation of V, which is normally a double oscillation with minima near noon and midnight. The noon minimum is the more prominent at Eskdalemuir throughout the year, but at Lerwick only in summer, and the inequality range for Lerwick is larger than that for Eskdalemuir only in the winter.

The H ranges in winter show only small diurnal changes but in other seasons there is a prominent maximum shortly after noon and a secondary one at about 8h. Throughout the year 3h. – 4h. is the hour with the smallest average range.

D shows the largest variation with a marked maximum just before noon, a much less prominent one about 4 hours later, and with comparatively high values around midnight.

The quiet day variations are due primarily to the regular diurnal changes of the elements concerned. Comparison of the curves in Fig. 2 with the figures in Table VII shows good agreement in the times of maximum and minimum, although the ranges in the table are from the “all day” mean values and are therefore much larger than those for quiet days.

Disturbed days—The curves for disturbed days closely resemble in form those for all days (Fig. 1) except that the late morning secondary maximum in D is much less prominent, and that the values for 23h. – 24h. are higher than those for 0h. – 1h. The latter difference is caused by the selection of the disturbed days. The standard day for magnetic tabulations is the Greenwich day. Disturbance usually commences in the afternoon and it often happens that the morning of a “selected disturbed day” is quiet. Actually, as indicated by the frequency of large ranges of declination (see Table VII) there is only a slight decrease of activity after midnight.

§6.—COMPARISON OF HOURLY RANGES AT LERWICK AND ESKDALEMUIR

The ratios of the average hourly ranges at Lerwick to those at Eskdalemuir for each month of the Polar Year are set out in Table IX.

TABLE IX.—RATIO, LERWICK TO ESKDALEMUIR, OF THE MEAN HOURLY RANGES FOR EACH MONTH

Element	1932					1933								Year		
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.			
H	0.8	0.9	0.9	0.9	0.9	1.0	Quiet days		0.9	0.8	0.9	0.9	0.9	0.9	1.0	0.90
D	1.2	1.1	1.2	1.2	1.3	1.0	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.10
V	1.6	1.6	2.2	2.2	2.1	2.3	2.0	1.8	1.9	1.4	1.8	1.5	1.8	1.8	1.8	1.82
H	1.2	1.2	1.3	0.9	1.3	1.1	Disturbed days		1.1	1.3	1.3	1.5	1.0	1.1	1.2	1.20
D	1.3	1.4	1.5	1.4	1.6	1.5	1.4	1.4	1.3	1.5	1.3	1.2	1.3	1.3	1.3	1.41
V	2.9	2.9	3.0	2.9	3.1	3.3	3.0	2.8	2.9	2.0	2.7	2.7	2.7	2.7	2.7	2.74

Quiet days—The outstanding feature is that in only two months does the H ratio approach unity. The H ratio is very steady at about 0.9 and there is no evidence of any seasonal change. Similarly in D there is only a slight variation, but for January to May the figures are all below the average whereas August to December are all above it. The ratio is largest in the case of V and varies from 1.4 in May to 2.3 in January. There is a well marked seasonal variation with maximum in winter and comparatively low values in summer.

Disturbed days—All the ratios exceed unity except those for H in November and June, which were the months with least disturbance. The only month with a high ratio for H was May, the most disturbed. The ratios of the D ranges also tend to be high in the most disturbed and low in the least disturbed months, but in addition there is a definite seasonal variation with maximum in December and minimum in July. Except for May the D ratio is slightly larger than that for H. The excess of disturbance at Lerwick is most marked in V although it is least in the most disturbed month, May. As in D the highest values are those for the winter months.

Diurnal variation

In Table X are given the values of the ratio between the mean hourly ranges for each hour at the two observatories.

TABLE X.—RATIO, LERWICK TO ESKDALEMUIR, OF THE MEAN HOURLY RANGES FOR EACH HOUR

Element	Hour* ending at																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Quiet days																								
H	0.9	0.9	1.0	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.9	1.0	0.9	0.9	1.0	0.9	0.9	0.8	0.8	0.9	0.9	0.8	0.8
D	1.3	1.2	1.3	1.2	1.1	1.0	1.0	1.0	1.2	1.0	0.9	0.9	0.9	1.1	1.0	0.9	1.0	1.0	1.1	1.1	1.3	1.4	1.3	1.3
V	3.3	2.8	2.7	2.3	2.2	2.2	1.9	1.7	1.4	1.4	1.1	1.5	1.3	1.1	1.0	1.4	1.7	1.7	2.0	2.1	2.4	2.7	2.8	2.7
Disturbed days																								
H	1.4	1.7	2.0	1.5	1.3	1.1	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.3	1.5	1.3	1.6
D	1.5	1.6	1.4	1.4	1.3	1.2	1.3	1.2	1.3	1.2	1.1	1.0	1.1	1.3	1.3	1.5	1.6	1.4	1.5	1.5	1.5	1.6	1.6	1.4
V	3.3	3.2	3.2	2.9	3.0	2.7	2.6	2.6	2.3	2.5	2.4	2.7	2.4	2.3	2.4	2.5	2.6	2.1	2.8	2.6	3.0	2.9	2.9	3.3

Quiet days—Throughout the day the Lerwick H ranges are slightly smaller than those for Eskdalemuir, but the ratio of the ranges shows no regular variation.

The ratio of the D ranges varies quite regularly with high values during the night hours and a marked minimum near noon. It is at this time that declination is changing most rapidly in its increase to the maximum for the day, and the hourly ranges at Eskdalemuir become temporarily greater than those at Lerwick.

During the night hours the ratio of the V ranges is much greater than 1, and as in the case of D the ratio is at its lowest when the element is increasing rapidly to its afternoon maximum, but even then the Lerwick ranges are slightly the larger.

Disturbed days—The H ranges for Eskdalemuir are the larger from 7h. to 12h. when disturbance is slight, but are only about three quarters as great as those for Lerwick during the night hours.

The ratio of the D ranges shows a parallel variation but with a smaller range, and the ratio never falls below 1.

The variation of the V ratio is still smaller and it is always greater than 2, although the maximum 3.3 is the same as that for quiet days.

*Time G.M.T.

To face p. 12

Plate 1

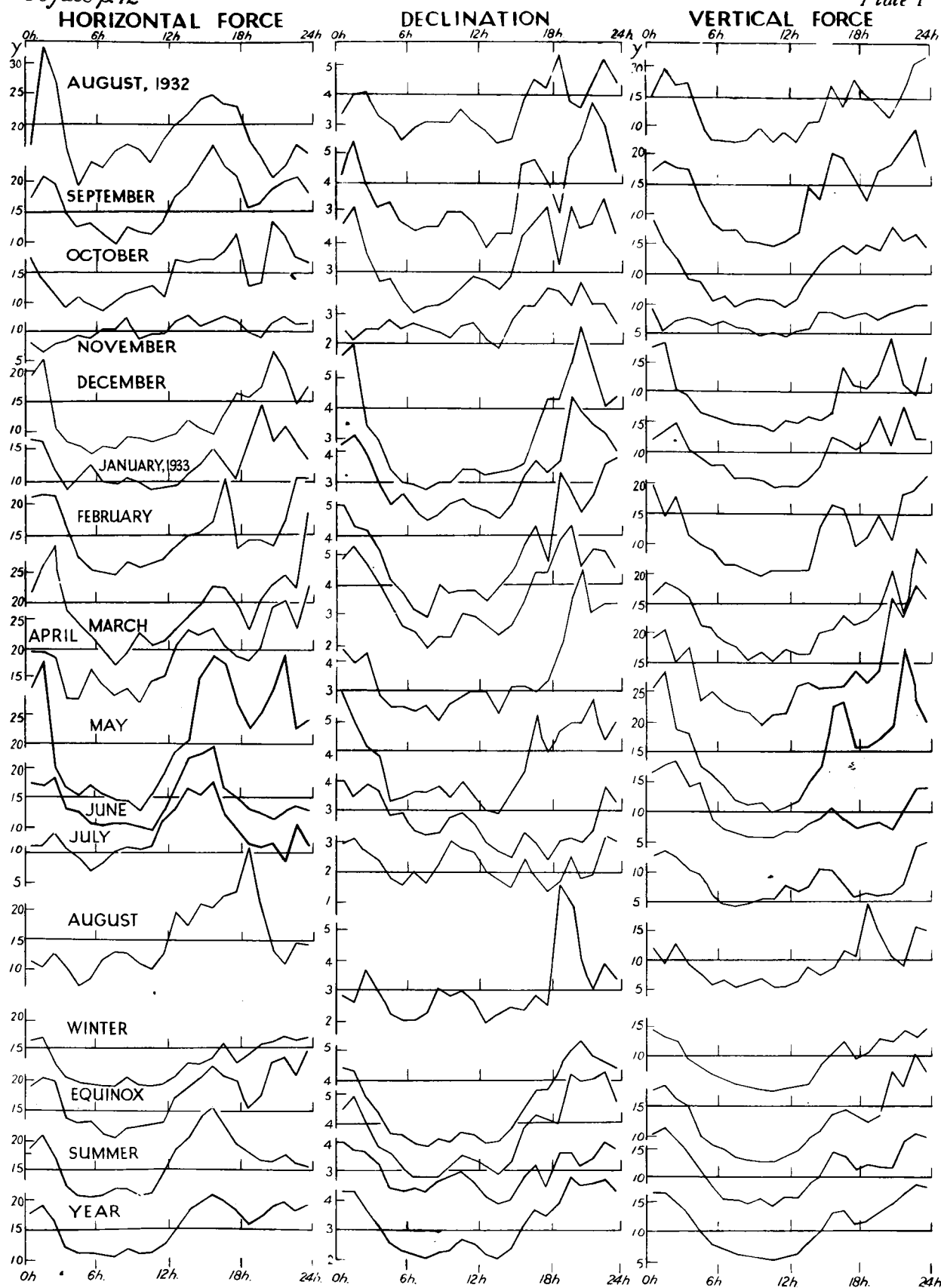
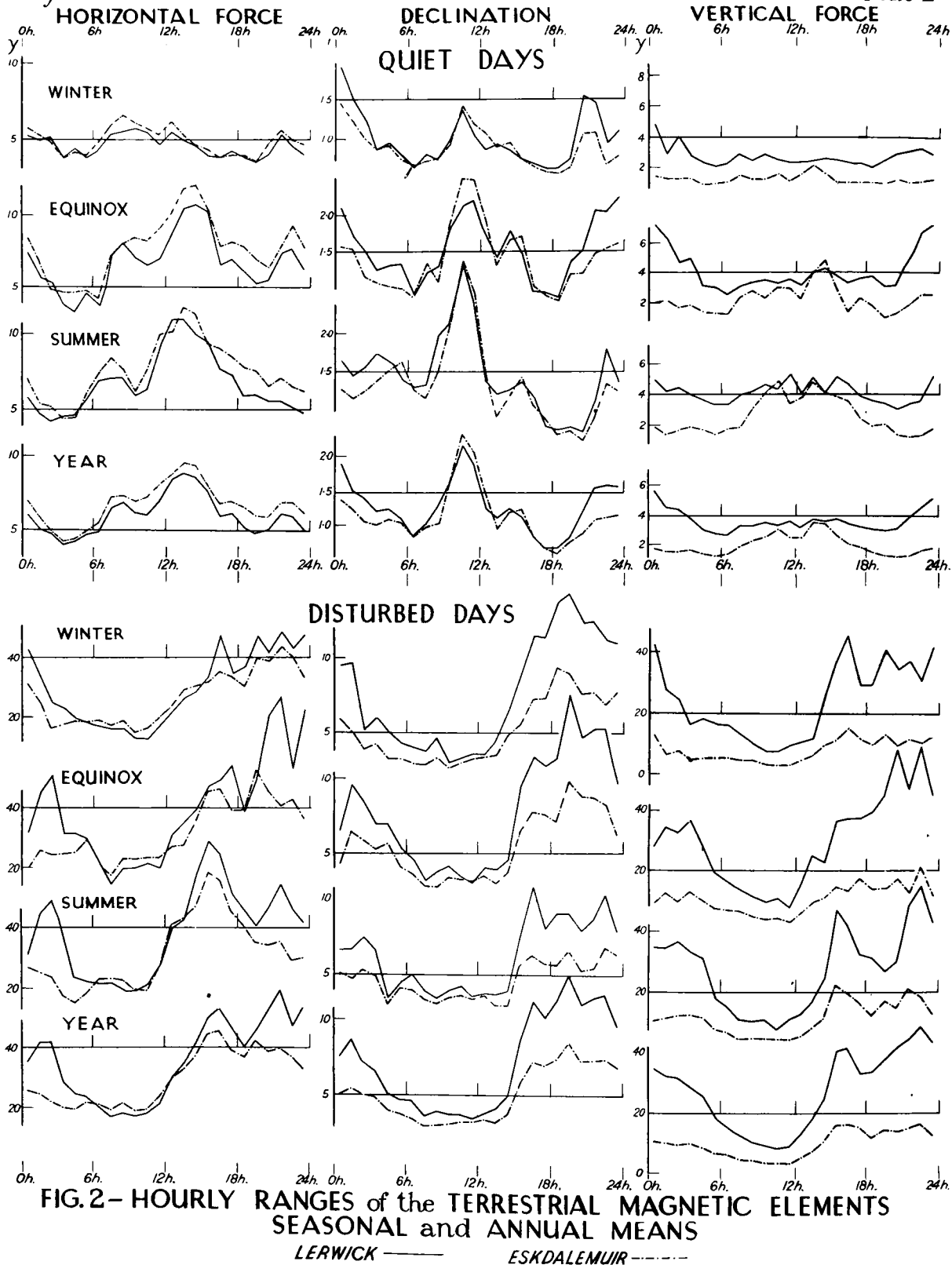


FIG.1 - MEAN HOURLY RANGES at LERWICK (ALL DAYS)

To face Table 1

Plate II



HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

1. LERWICK (r_H)

AUGUST, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	r_H 10,000; ²
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	11	7	18	5	(3)	9	6	8	10	17	11	10	18	15	44	36	(45)	29	17	17	8	19	(40)	29	18.0	26
2 D	7	49	(35)	24	(18)	24	27	15	16	14	17	37	50	36	35	62	46	11	22	35	10	47	52	22	29.6	43
3 D	17	15	11	9	9	17	56	35	(43)	27	74	29	(50)	45	12	23	52	34	21	12	26	62	17	103	33.3	48
4	145	29	11	39	38	29	17	11	(40)	15	12	21	35	27	17	32	36	21	10	9	(10)	5	4	2	25.6	37
5	2	1	1	5	15	11	11	11	28	79	28	35	11	6	10	6	6	20	21	6	13	15	14	17	15.5	22
6	17	6	6	11	14	3	5	9	9	13	10	11	(20)	11	29	16	6	15	11	5	8	6	11	7	10.8	16
7	3	3	2	4	3	5	6	10	7	6	6	5	10	29	20	11	13	10	6	6	6	6	4	7	7.8	11
8	5	6	16	5	7	5	3	11	6	6	6	3	10	22	22	13	25	15	11	6	6	6	1	5	9.1	13
9	3	4	5	5	11	17	16	25	11	7	8	6	13	10	2	7	13	5	5	6	6	6	2	1	8.3	12
10 Q	5	2	7	1	3	4	5	11	6	7	6	5	6	9	5	12	6	5	11	5	3	3	2	1	5.4	8
11	2	4	6	4	3	7	3	5	9	10	6	11	9	6	7	7	8	7	7	11	2	4	9	25	7.2	10
12	38	12	23	60	32	6	6	11	11	12	11	11	37	23	52	59	14	7	7	9	6	5	5	11	19.5	28
13	14	8	18	29	6	7	10	52	29	15	9	13	22	29	25	17	23	28	24	14	6	6	(41)	12	19.0	28
14	5	4	5	3	4	6	22	11	11	17	11	10	11	11	12	13	5	9	6	4	4	7	7	5	8.5	12
15	7	5	3	5	4	5	1	2	7	9	7	13	17	11	11	17	10	12	6	5	10	18	6	11	8.4	12
16 Q	11	12	4	5	5	5	5	7	7	10	3	16	14	13	5	2	3	6	5	4	5	5	3	3	6.6	10
17 Q	6	3	4	3	5	4	6	7	14	6	6	7	10	17	10	6	12	5	10	5	10	11	5	4	7.3	11
18 Q	4	6	3	3	4	11	3	4	7	7	1	6	13	6	6	10	5	4	6	5	9	7	6	5	5.9	9
19 Q	5	5	2	4	2	6	7	6	7	4	9	9	17	13	21	10	6	11	6	2	(4)	2	3	1	6.7	10
20	2	1	3	2	2	1	5	6	11	4	3	3	11	13	16	9	5	6	6	7	4	3	5	6	5.6	8
21	13	11	7	6	2	19	10	3	15	14	8	16	15	17	36	22	28	18	16	11	3	4	11	17	13.4	20
22	14	6	7	3	3	1	6	13	10	6	12	29	20	31	35	29	24	41	55	28	12	6	3	5	16.6	24
23	3	3	3	4	2	18	5	6	(10)	19	9	29	10	10	30	40	15	9	5	3	5	4	5	10	10.7	16
24	17	3	6	3	1	2	6	6	6	7	6	6	7	9	10	12	5	5	11	6	(4)	6	6	7	6.5	9
25	5	3	5	4	6	5	5	10	6	5	3	4	14	15	21	4	10	5	6	9	6	29	6	15	8.4	12
26	7	7	5	3	3	5	5	5	10	4	3	7	12	10	10	6	3	6	6	5	6	5	13	11	6.5	9
27 D	11	8	10	7	11	17	17	45	17	10	(15)	22	16	78	(89)	44	44	129	69	30	12	17	(109)	31	35.7	52
28 D	41	700	(517)	122	9	96	(56)	46	58	49	59	53	35	45	(46)	109	24	70	39	12	7	11	18	35	94.0	136
29 D	39	41	28	24	46	43	24	46	34	35	29	68	69	48	52	47	96	73	26	138	(29)	40	65	28	48.7	71
30	34	45	45	70	8	18	16	26	22	28	11	26	39	41	33	82	71	29	80	38	(89)	19	10	21	37.5	54
31	10	10	16	16	11	15	17	18	17	13	11	10	13	22	25	18	23	6	14	5	5	15	11	4	13.5	20
Mean r_H	16.2	32.2	26.8	15.7	2.4	13.6	12.2	15.3	16.1	15.3	13.2	17.2	20.2	22.0	24.4	25.0	21.8	21.3	17.6	14.7	10.8	12.9	16.1	14.9	17.7	..
Mean r_H 10,000; ²	23	48	39	23	14	20	18	22	23	22	19	25	29	32	35	36	32	31	26	21	16	19	23	22	..	26

Net 1 14 22 22 18 14 13 11 4 5 4 8 12 13 10 20 21 19 10

2. LERWICK (r_H)

SEPTEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	r_H 10,000 r^2
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	5	5	17	16	4	15	6	9	11	(14)	5	8	20	19	18	35	22	47	9	3	4	3	3	17	13.1	19
2	17	11	5	26	22	7	11	6	4	5	10	13	(17)	17	29	21	27	11	11	6	2	11	13	7	12.9	19
3 Q	6	3	2	5	1	4	6	10	9	3	2	7	13	11	(22)	28	13	10	6	10	6	9	10	5	8.4	12
4	7	6	4	6	5	2	5	5	9	3	3	11	9	4	10	9	6	11	15	17	11	11	28	13	8.7	13
5	6	1	2	2	2	3	3	6	10	6	6	14	15	17	33	34	33	10	4	5	2	3	6	6	9.5	14
6 D	15	7	7	10	10	14	29	18	(23)	11	17	38	38	102	69	77	103	34	16	22	34	12	18	5	30.4	44
7	5	3	3	1	3	10	11	6	13	25	11	11	16	5	5	12	6	13	(18)	6	12	34	(54)	14	12.4	18
8 D	7	13	76	64	(108)	22	(7)	10	12	8	7	13	13	14	(12)	23	16	21	(42)	28	41	31	6	30	26.0	38
9	39	20	(143)	85	15	27	10	11	6	5	11	19	13	12	13	11	21	11	13	5	38	25	13	3	23.7	34
10 Q	10	6	7	9	3	6	6	6	8	9	6	7	7	13	11	7	11	10	9	2	6	15	7	5	7.7	11
11 Q	7	12	14	2	3	5	3	6	4	3	5	6	8	10	(9)	11	7	9	3	2	6	7	5	6	6.4	9
12	2	6	6	2	5	5	3	4	3	(2)	2	6	6	11	11	6	6	5	7	6	3	11	26	8	6.3	9
13	2	2	3	10	13	7	5	11	(9)	9	9	9	10	5	(21)	26	22	10	10	3	4	7	5	6	9.1	13
14	6	3	1	6	5	10	5	11	(12)	7	4	12	12	6	3	7	8	23	(17)	9	10	12	6	5	8.3	12
15	5	5	2	3	2	1	6	15	9	10	13	7	(15)	17	10	10	14	5	6	4	5	6	29	11	8.7	13
16 Q	6	5	4	1	1	6	9	10	10	7	10	7	9	21	13	12	5	6	9	5	6	3	3	1	7.1	10
17 Q	1	2	2	3	3	6	6	10	6	1	3	9	5	10	9	10	7	5	3	6	2	3	6	13	5.5	8
18	11	5	3	6	6	4	12	11	7	7	17	16	12	6	12	34	(35)	22	9	9	6	5	23	55	13.9	20
19	22	29	7	10	15	11	15	6	15	11	28	23	10	22	29	41	17	19	15	10	9	25	17	6	17.1	25
20	3	47	49	21	12	21	(13)	17	23	17	6	7	11	16	24	23	23	7	5	11	7	23	28	18	18.0	26
21	(13)	6	11	10	11	6	16	6	9	8	5	7	4	9	10	2	3	6	7	15	(13)	6	28	17	9.5	14
22	11	5	5	7	35	23	10	4	9	28	17	14	35	13	12	21	17	23	(13)	11	(31)	30	12	17	16.8	24
23 D	10	25	(13)	11	10	15	10	11	45	(25)	15	22	30	27	55	37	46	126	137	57	90	45	39	29	38.7	56
24 D	23	28	18	42	15	68	45	9	9	22	22	16	81	40	85	95	67	22	26	86	60	17	86	116	45.7	66
25 D	27	113	(111)	22	14	32	(29)	25	41	32	(35)	29	50	92	64	121	58	85	17	63	66	147	76	52	58.4	85
26	69	61	24	10	20	19	22	29	(18)	28	29	35	9	6	17	7	(18)	10	9	22	34	38	29	16	24.1	35
27	127	133	17	13	11	6	17	10	18	12	17	17	21	36	43	35	(25)	24	9	19	(11)	6	23	18	27.8	40
28	11	9	6	14	5	6	12	6	6	8	6	7	16	12	(18)	13	18	15	8	7	7	6	5	5	9.4	14
29	20	51	19	5	2	3	3	7	6	(13)	(11)	11	15	4	17	7	13	8	8	34	32	16	7	29	14.2	21
30	26	11	6	11	6	10	12	21	7	8	6	6	7	13	9	12	18	16	3	4	5	41	21	6	11.9	17
Mean r_H	17.3	21.1	19.6	14.4	12.2	12.6	11.2	10.9	12.3	11.6	11.3	13.6	17.6	19.7	23.1	26.2	22.8	20.8	15.5	16.2	18.8	20.3	21.1	18.0	17.0	..
r_H 10,000 r^2	25	31	28	21	18	18	16	16	18	17	16	20	26	29	23	38	33	30	22	23	27	29	31	26	..	25

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

3. LERWICK (r_H)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	r_H 10,000 r^2
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	12	19	3	6	5	7	4	6	10	6	(6)	6	6	11	6	13	10	14	9	5	10	24	(28)	5	7	9.6
2	7	6	7	8	5	5	7	9	8	11	27	12	15	18	22	11	(17)	9	18	7	(6)	6	7	18	11.1	16
3	19	28	33	11	5	4	15	14	6	(10)	13	10	7	20	8	21	13	7	2	2	(6)	9	7	31	12.5	18
4	11	6	6	4	4	6	7	6	9	(9)	5	6	20	10	21	34	23	15	9	5	7	(23)	7	10	10.8	16
5	6	10	(15)	9	9	7	6	5	9	(8)	10	6	20	14	11	7	10	17	14	6	2	18	29	26	11.4	17
6 Q	7	7	3	5	3	1	1	3	5	6	(3)	6	11	10	17	15	7	6	6	12	19	19	10	7	7.9	11
7	23	17	4	2	1	1	3	5	7	7	6	7	(11)	7	11	5	8	5	5	3	3	4	2	3	6.3	9
8	6	3	3	2	3	4	4	6	7	8	4	6	7	7	13	6	7	7	15	40	9	7	17	17	8.7	13
9	18	17	7	7	4	6	5	9	9	6	12	15	17	17	27	40	13	8	12	18	6	18	18	21	13.7	20
10	26	11	6	11	8	10	15	10	(6)	14	9	13	17	23	(18)	30	53	22	6	6	32	15	6	5	15.5	22
11	7	8	4	5	5	5	(6)	6	11	18	10	7	12	7	9	11	10	3	14	11	33	27	31	10	11.3	16
12	17	10	4	6	5	5	5	7	6	7	7	4	5	3	7	9	11	12	9	9	18	7	10	9	8.0	12
13 Q	3	6	2	1	1	2	3	13	14	15	17	16	15	9	12	17	6	10	7	7	(7)	17	13	6	9.1	13
14 Q	4	3	3	2	3	1	1	5	9	7	6	4	7	9	11	7	4	14	5	5	5	5	14	6	5.8	8
15 D	4	22	(11)	18	(28)	13	(13)	20	(40)	31	47	28	(56)	24	(65)	66	64	300	46	35	(23)	24	(64)	40	45.1	65
16 D	34	35	25	16	(44)	52	28	20	27	12	26	22	7	11	(13)	28	28	19	4	3	2	3	7	5	19.6	28
17	32	11	7	5	7	7	12	9	(24)	7	(11)	7	2	26	11	23	22	30	14	22	44	47	11	6	17.5	25
18	22	18	17	6	5	4	2	3	6	7	7	5	11	7	13	6	6	12	7	5	7	5	6	16	8.5	12
19	(7)	5	4	6	6	26	(23)	10	(7)	(11)	7	6	13	25	7	11	6	10	6	5	6	10	9	9	9.8	14
20 D	5	6	3	5	5	7	6	9	11	8	18	11	24	24	29	30	90	51	(92)	28	261	294	88	131	51.5	75
21 D	155	120	108	62	(85)	20	17	29	26	42	16	19	(26)	22	18	17	20	6	6	13	10	4	5	5	35.4	51
22	(7)	3	4	6	5	3	5	7	9	(12)	(12)	(10)	(12)	(22)	(18)	(16)	(24)	(24)	(16)	(37)	(59)	(35)	(12)	(24)	16.0	23
23 D	(35)	(4)	(20)	(14)	(22)	(20)	(12)	(14)	(20)	(25)	(18)	(14)	(25)	(31)	(41)	(25)	(43)	(27)	(14)	(45)	(33)	(12)	(41)	(31)	24.4	35
24	(10)	(8)	(10)	(12)	(16)	(20)	(6)	(10)	(14)	(20)	10	16	57	62	9	15	9	7	29	30	48	12	(7)	10	18.6	27
25	3	3	4	5	8	6	11	16	13	8	5	7	11	13	(19)	22	6	4	5	12	11	5	5	5	8.7	13
26 Q	5	1	2	3	5	9	3	7	7	12	3	(7)	5	11	10	5	7	5	3	4	10	5	5	2	5.7	8
27	2	2	10	9	15	4	5	17	4	11	11	24	(35)	34	47	17	14	6	6	9	14	12	10	6	13.5	20
28 Q	10	5	3	6	19	15	5	10	8	8	5	8	4	3	6	1	2	2	2	3	1	2	1	1	5.4	8
29	3	2	5	5	5	6	3	2	7	7	3	5	7	5	6	7	5	2	(5)	4	5	14	26	13	6.3	9
30	10	11	(6)	16	5	17	11	17	11	12	39	15	23	13	14	9	22	4	2	7	27	30	13	11	14.4	21
31	18	11	8	3	4	5	15	13	7	8	(7)	6	13	7	7	6	5	3	5	4	3	7	(6)	18	7.9	11
Mean r_H	17.0	13.5	11.2	8.9	11.1	9.6	8.4	10.2	11.5	12.1	12.3	10.6	16.9	16.3	17.0	17.1	18.2	21.3	12.7	13.0	23.5	22.7	17.1	16.3	14.5	..
r_H 10,000 r^2	25	20	16	13	16	14	12	15	17	18	18	15	25	24	25	25	26	31	18	19	34	33	25	24	..	21

4. LERWICK (r_H)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	r_H 10,000 r^2	
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
1 D	(7)	7	14	18	26	24	55	34	26	9	11	17	36	30	17	17	18	11	6	9	7	7	6	4	11	17.5	25
2	(24)	12	9	6	10	13	(13)	13	20	(5)	15	23	18	15	7	4	6	6	22	10	5	4	4	3	11.1	16	
3	6	3	2	6	6	11	13	6	26	19	(17)	5	6	11	9	13	2	6	7	11	5	10	7	7	8.9	13	
4	11	5	6	5	17	10	6	7	10	11	10	(6)	6	10	14	10	17	17	14	20	17	28	(30)	24	13.0	19	
5	11	15	24	8	5	6	7	12	15	8	6	6	13	13	(6)	7	22	13	5	9	7	7	15	20	10.8	16	
6 Q	4	9	3	3	8	5	8	11	(6)	6	(6)	7	10	5	3	2	3	5	4	5	6	13	6	3	5.9	9	
7	18	6	2	2	4	3	2	3	7	6	3	5	6	10	11	7	(17)	26	6	8	6	5	3	3	7.0	10	
8	(3)	2	1	3	4	5	7	5	11	11	5	5	6	7	5	5	9	17	11	7	29	32	13	6	8.7	13	
9 Q	8	6	5	4	5	4	5	6	(9)	10	5	5	5	6	3	6	5	6	6	4	6	9	4	5	5.7	8	
10 Q	2	6	6	5	7	6	(6)	3	8	7	12	5	6	4	5	4	3	5	5	3	7	6	7	5	5.5	8	
11	5	7	6	4	5	3	5	5	8	6	7	6	5	13	5	6	7	7	6	13	(5)	3	2	5	6.0	9	
12	5	7	5	5	3	6	11	9	6	11	10	18	11	17	11	12	10	14	7	16	11	6	7	4	9.3	13	
13	7	3	7	9	10	7	9	7	9	7	7	9	12	11	9	15	17	9	14	6	6	15	7	5	9.0	13	
14 D	2	5	6	5	8	10	(11)	21	(24)	19	10	17	32	39	27	13	11	18	5	5	4	22	(27)	17	14.9	22	
15 D	7	4	3	5	3	31	13	6	11	7	(8)	3	5	15	8	9	6	17	19	9	19	15	(14)	25	10.9	16	
16 D	27	10	51	89	56	16	(28)	50	22	22	(40)	25	18	34	30	30	38	39	33	20	51	64	84	58	32.0	57	
17 D	11	7	6	4	10	23	(20)	11	22	14	18	17	40	41	(28)	17	(29)	6	17	44	52	38	7	6	20.3	29	
18	13	7	6	9	9	7	11	9	20	5	5	6	11	11	24	(11)	12	(10)	11	48	24	6	5	4	12.1	18	
19	5	13	12	8	7	6	7	7	13	11	8	10	6	6	15	6	13	6	(13)	10	9	11	18	32	10.5	15	
20	22	2	2	4	(7)	5	14	10	8	5	2	10	9	7	8	24	9	5	15	5	(2)	6	28	26	9.8	14	
21	6	4	3	3	3	6	5	6	13	(5)	5	6	5	3	3	9	12	6	2	2	6	14	6	5	5.7	8	
22 Q	2	3	5	4	3	7	3	11	4	(3)	4	6	(5)	6	4	5	6	6	3	4	5	2	1	1	4.3	6	
23	1	2	4	5	5	5	3	5	5	6	6	5	22	15	7	3	6	3	4	(3)	4	4	4	4	5.5	6	
24 Q	2	2	5	6	4	2	3	6	6	4	5	5	6	6	4	3	3	4	5	2	2	2	2	2	3.8	6	
25	1	2	2	4	6	11	7	8	7	6	9	7	(8)	7	11	44	(24)	18	19	7	(7)	9	15	23	10.9	16	
26	8	3	6	2	7	5	5	12	10	5	4	10	(7)	6	(8)	13	6	4	5	3	3	2	2	2	5.7	8	
27	2	2	3	4	14	6	3	3	10	5	3	6	7	7	3	4	6	5	5	7	5	7	3	3	5.1	7	
28	6	6	2	6	6	3	8	6	9	9	13	12	14	13	10	8	33	27	9	4	3	5	4	6	9.3	13	
29	(9)	14	(20)	6	7	15	13	14	13	11	17	12	(11)	7	39	17	12	23	11	6	9	10	6	19	13.4	19	
30	9	15	9	11	7	4	3	3	7	(9)	4	7	3	5	(6)	6	5	5	7	6	3	3	4	3	6.0	9	
Mean r_H	8.1	6.3	7.8	8.4	9.1	8.8	10.1	10.3	12.2	8.7	9.2	9.4	11.6	12.7	10.9	11.4	12.2	11.5	9.8	9.0	11.6	12.7	11.3	11.3	10.2	...	
r_H 10,000 r^2	12	2	11	12	13	13	15	15	18	13	13	14	17	18	16	17	18	17	14	13	17	18	16	16	...	15	

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

5. LERWICK (r_H)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr}{10,000r^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	4	3	3	6	5	6	5	6	(14)	10	11	12	(10)	8	5	8	(21)	14	25	11	8	12	6	12	9.4	14
2	5	7	4	7	2	5	5	3	6	5	2	4	5	7	5	4	5	7	(7)	32	33	12	3	2	7.4	11
3	4	3	3	14	5	4	(6)	3	6	7	(7)	6	6	5	3	4	4	1	5	11	12	8	7	9	6.0	9
4	10	12	9	10	12	5	4	6	7	8	(11)	7	5	6	5	12	17	5	6	5	7	4	6	7	7.7	11
5 Q	11	5	4	6	6	12	7	6	4	8	7	4	5	3	2	2	3	3	5	4	4	11	15	15	6.3	9
6	5	7	6	3	(7)	10	5	6	6	4	(6)	6	5	6	3	5	5	3	5	10	7	6	30	31	7.8	11
7 Q	11	5	8	4	1	3	5	6	3	3	2	3	5	5	3	3	2	3	2	2	3	2	4	5	3.7	5
8 D	7	5	4	6	(7)	12	(20)	20	(11)	10	10	14	17	15	20	9	14	13	(15)	10	11	35	33	12	13.7	20
9	25	17	12	18	25	6	21	16	20	37	17	16	12	23	15	17	24	10	6	24	23	21	10	5	17.5	25
10	18	33	21	7	8	5	13	11	(6)	10	5	13	9	25	16	11	(10)	11	29	13	6	7	15	15	12.9	19
11	5	2	2	3	3	3	6	2	6	6	4	7	12	6	6	3	4	5	3	5	13	19	8	6	5.8	8
12 Q	9	3	3	4	8	2	12	10	9	11	6	5	5	2	3	3	1	3	2	1	1	1	3	2	4.5	7
13	1	4	3	5	8	5	6	6	(6)	8	6	6	7	14	8	12	21	28	(7)	6	7	25	19	28	10.3	15
14 D	(17)	5	16	20	9	4	7	6	7	7	12	27	33	37	32	31	87	227	186	95	123	134	40	56	50.7	74
15 D	128	67	45	15	18	23	(6)	5	10	14	(9)	10	(6)	14	25	7	13	16	22	76	(153)	108	102	151	43.5	63
16 D	(218)	344	35	11	21	14	10	11	6	11	11	6	11	14	17	7	(32)	27	20	16	39	34	15	5	39.0	57
17 D	24	16	11	4	6	5	9	12	14	11	11	19	(34)	24	17	29	31	11	12	27	14	2	8	38	16.2	23
18	7	9	28	33	(17)	20	14	3	(13)	12	6	8	10	19	20	14	4	7	10	3	4	10	6	5	11.7	17
19	2	5	8	14	3	5	3	4	14	7	9	6	(9)	22	12	11	28	11	(10)	19	43	11	5	11.3	16	
20	6	12	9	2	6	(7)	10	12	10	12	10	6	4	7	5	7	(6)	5	4	3	2	2	3	3	6.1	9
21 Q	4	16	13	2	7	3	3	4	8	5	3	5	4	6	7	6	3	2	2	5	2	3	(3)	2	4.9	7
22	2	2	(6)	8	4	2	2	3	6	3	(5)	5	(7)	4	6	7	7	11	6	6	6	5	2	2	4.9	7
23 Q	2	2	2	5	3	3	5	5	6	5	8	5	5	6	4	3	3	4	5	6	4	5	5	7	4.5	7
24	8	9	2	4	3	3	2	2	2	(3)	11	5	9	5	(6)	3	(5)	5	6	7	6	5	2	3	4.8	7
25	3	3	4	3	6	5	(8)	4	3	16	11	12	(7)	15	20	15	(8)	13	7	37	49	22	8	12	12.1	18
26	25	49	20	7	11	7	11	11	15	(3)	5	10	5	7	6	11	6	14	14	13	21	15	5	6	12.4	18
27	(7)	31	31	8	9	5	(6)	7	10	8	17	12	14	14	6	15	13	8	8	24	11	12	7	18	12.5	18
28	6	6	3	2	(3)	10	6	6	8	(8)	10	6	10	16	23	20	12	9	23	11	50	53	29	10	14.2	21
29	4	2	4	3	4	2	6	5	10	(6)	5	6	4	12	12	6	3	3	3	4	10	12	5	3	5.6	8
30	2	5	3	6	4	5	6	7	(13)	8	(10)	11	10	14	11	6	7	6	20	14	25	11	18	37	10.8	16
31	28	18	9	12	7	7	15	23	23	11	8	11	11	11	11	14	(9)	14	14	45	33	14	(33)	32	17.1	25
Mean r_H	19.6	22.8	10.7	8.1	7.7	6.7	7.8	7.4	9.1	8.9	8.2	8.8	9.5	12.0	10.8	9.8	13.2	16.1	15.8	17.6	23.5	20.1	14.5	17.5	12.8	..
$\frac{Hr}{10,000r^2}$	28	33	16	12	11	10	11	11	13	13	12	13	14	17	16	14	19	23	23	26	34	29	21	25	..	19

1-210 20 20 21 22 25 24 23 22 18 17 17 19 13 15 17 10 18 17 14 13 14 12 19 17

6. LERWICK (r_H)

JANUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr. r _H 10,000r ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	(21)	8	11	7	15	16	6	7	11	12	(9)	12	14	12	15	15	17	18	16	67	80	11	(40)	7	18.6	27
2	15	33	(51)	6	(11)	11	10	(5)	17	(14)	9	14	19	7	6	12	6	5	(27)	25	23	29	16	7	15.7	23
3	6	15	12	4	7	6	3	7	7	(5)	6	6	5	14	5	6	6	5	5	6	5	4	7	9	6.7	10
4 Q	(7)	8	3	2	5	2	(3)	3	(7)	(8)	6	4	6	7	10	5	5	6	4	3	(2)	5	(4)	3	4.9	7
5 Q	6	3	3	2	5	3	6	5	3	(3)	(12)	6	5	3	(6)	5	5	4	(2)	3	3	2	1	2	4.2	6
6	6	7	7	4	11	47	28	14	10	26	18	17	12	20	44	20	6	6	8	18	13	6	(18)	20	16.1	23
7	27	13	6	18	15	7	6	3	6	(3)	2	3	3	4	6	7	(21)	14	(18)	12	10	3	3	6	9.0	13
8	3	7	3	10	11	7	5	11	3	(8)	13	10	7	7	9	3	(3)	5	5	2	3	6	26	18	7.7	11
9	3	3	3	4	4	3	3	5	5	2	2	3	7	6	7	8	15	4	5	4	5	6	15	6	5.3	8
10 Q	3	2	3	3	4	3	2	2	5	(5)	4	1	2	7	6	4	5	5	5	6	3	5	2	5	3.8	6
11 Q	3	3	3	4	2	5	3	3	5	7	5	6	6	4	(2)	2	3	3	(3)	3	2	5	5	2	3.7	5
12	6	5	1	1	2	2	2	2	3	(5)	(7)	5	5	6	7	6	5	2	6	3	6	3	10	8	4.5	7
13	8	7	5	2	3	3	3	5	6	7	5	3	6	3	5	4	(4)	5	8	11	6	6	11	5	5.5	8
14	3	4	5	6	3	3	2	2	3	(4)	(5)	1	4	3	2	2	5	6	6	19	30	16	15	17	6.9	10
15	16	16	6	9	15	44	51	40	(38)	40	(12)	23	6	14	15	6	5	5	7	10	(12)	29	(28)	6	18.9	27
16	4	11	9	11	9	11	(6)	15	(16)	8	10	6	9	15	5	9	(15)	6	5	7	5	2	2	3	8.3	12
17	2	6	3	6	5	4	6	6	26	(15)	16	5	9	8	(6)	2	5	6	6	2	4	2	3	14	7.0	10
18	8	5	2	3	3	6	4	5	6	14	7	4	(6)	5	4	5	4	4	6	6	7	5	8	9	5.7	8
19 D	3	3	3	4	16	12	10	11	5	6	6	10	(6)	8	17	106	73	16	10	13	8	3	11	24	16.0	23
20	12	14	16	13	57	77	28	12	12	(9)	5	5	6	12	(5)	4	7	9	(4)	3	2	2	12	22	14.5	21
21 Q	(7)	2	2	3	4	1	2	4	5	3	4	7	5	5	7	4	3	4	3	3	11	10	4	6	4.5	7
22 D	5	3	5	5	10	10	22	15	(15)	6	11	6	11	15	38	45	33	51	163	292	29	133	29	23	40.6	52
23	49	24	11	5	6	9	11	14	6	8	(12)	7	(14)	17	12	20	5	7	15	51	12	34	55	51	19.0	28
24	124	123	21	23	10	11	7	7	(11)	(7)	5	27	(20)	16	11	7	12	13	10	11	(12)	11	6	9	21.4	31
25	11	16	23	3	10	6	11	17	10	14	7	11	11	12	17	23	8	25	15	5	29	6	(40)	23	14.7	21
26	10	7	56	27	15	8	20	16	15	16	14	10	11	21	42	11	12	17	25	33	34	16	(10)	18	19.3	28
27 D	58	65	(15)	8	17	38	16	21	16	13	14	18	11	23	31	44	(34)	29	23	33	72	134	37	49	34.2	50
28 D	40	22	39	15	19	17	12	14	22	14	(17)	18	20	20	12	45	12	28	35	14	(40)	21	36	40	23.8	35
29	19	27	12	6	15	9	8	11	(7)	(14)	5	5	15	21	21	19	17	17	(53)	29	18	15	10	6	15.8	23
30	7	14	11	45	11	10	10	10	(9)	10	10	9	12	16	6	24	(28)	6	4	4	12	34	22	6	13.7	20
31	23	24	7	5	10	5	4	11	(10)	(5)	6	9	(6)	12	(18)	7	18	20	6	5	5	28	11	6	10.9	16
Mean r _H	16.6	16.1	11.5	8.5	10.6	12.8	10.0	9.8	10.3	10.0	8.5	8.7	9.0	11.1	12.8	15.5	12.8	11.3	16.4	22.7	16.2	19.1	16.0	13.9	12.9	..
Hr. r _H 10,000r ²	24	23	16	12	15	19	15	14	15	15	12	13	13	16	19	22	19	16	23	31	23	28	23	20	..	19

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

7. LERWICK (r_H)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000r ²
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	7	4	3	3	2	2	2	2	5	(5)	11	8	6	10	6	6	4	4	5	3	5	6	17	6	5.5	8
2	10	8	5	4	17	5	6	14	15	(8)	5	11	(16)	22	6	12	(11)	16	19	15	10	23	6	2	11.1	16
3	2	5	4	3	4	3	4	6	5	(2)	(9)	4	9	6	5	13	5	3	3	7	10	2	10	32	6.5	9
4	14	6	2	1	2	2	3	4	4	7	6	3	6	4	6	6	(6)	7	28	28	10	16	5	7	7.6	11
5	(3)	18	33	18	4	3	10	6	5	3	2	6	6	4	5	5	6	2	(3)	2	(5)	3	3	4	6.6	10
6 Q	6	12	(19)	7	8	3	2	8	3	(5)	3	4	6	6	5	4	4	3	2	2	6	5	4	3	5.4	8
7	4	4	3	4	(8)	7	7	6	10	14	14	11	7	19	11	7	17	5	(8)	5	(5)	6	7	6	8.1	12
8	2	2	2	3	4	3	3	6	8	6	10	11	11	12	8	5	5	3	3	5	10	11	16	14	6.8	10
9	5	6	16	20	7	11	(3)	9	5	3	(4)	6	5	6	5	8	10	5	4	6	12	5	(6)	5	7.2	10
10	12	9	8	12	2	2	3	3	(7)	(2)	2	5	5	5	2	6	(6)	4	2	3	2	8	8	5	5.1	7
11 Q	6	2	3	1	2	3	1	3	2	(3)	3	2	2	5	6	3	4	5	7	4	3	5	6	3	3.5	5
12	3	4	3	2	4	4	5	5	8	8	7	7	(7)	6	8	4	3	3	3	2	2	3	2	2	4.4	6
13 Q	2	2	3	2	1	2	2	3	5	(3)	4	5	(7)	2	3	5	5	4	3	3	3	8	9	3	3.7	5
14	3	6	(4)	7	3	4	(5)	11	(14)	5	8	6	7	(11)	8	5	6	42	18	(23)	16	6	5	9.5	14	
15	4	8	9	6	7	18	6	6	(19)	7	(10)	11	11	12	(8)	28	28	18	(11)	4	7	23	29	13	12.6	18
16 Q	6	5	4	4	3	3	4	4	6	8	6	7	(7)	5	3	5	(5)	4	3	2	5	5	(5)	2	4.6	7
17 Q	3	2	2	2	1	2	2	3	(6)	6	3	3	(10)	6	3	3	4	3	2	4	1	2	1	2	3.2	5
18	2	2	1	1	1	1	2	1	5	6	6	6	7	5	18	11	6	6	10	8	28	17	6	13	7.0	10
19 D	11	11	14	6	6	6	(14)	17	9	11	17	38	40	67	68	22	27	18	34	62	29	28	(53)	171	32.5	47
20	131	182	68	10	6	6	11	11	11	32	25	22	40	33	20	35	10	23	(28)	28	16	11	21	43	34.3	50
21 D	16	17	68	101	60	39	10	11	28	10	6	7	17	28	72	99	310	24	18	29	16	28	113	73	50.0	73
22 D	68	58	68	74	45	45	44	16	26	27	16	18	16	40	40	32	17	39	45	24	23	17	55	74	38.6	56
23 D	146	16	(76)	55	22	14	28	25	17	20	11	10	18	22	29	40	97	72	15	78	32	61	22	79	41.9	61
24 D	37	15	10	14	14	10	11	8	20	11	(8)	45	39	28	27	51	50	20	41	23	(23)	70	119	27	30.0	43
25	23	17	20	28	29	15	17	18	22	(20)	31	23	22	21	19	46	17	18	34	11	14	50	75	37	26.1	38
26	29	136	107	35	37	32	28	10	8	19	32	14	27	28	31	14	17	15	12	12	50	29	(34)	24	32.5	47
27	6	14	17	23	9	7	11	10	7	(14)	19	17	(11)	8	14	3	13	16	10	10	(14)	24	(42)	22	14.2	21
28	17	11	7	14	5	4	5	6	(11)	3	6	2	5	10	7	5	4	9	5	5	(6)	7	17	18	7.9	11
Mean r _H	20.6	20.8	20.7	16.4	11.2	9.1	8.9	8.3	10.4	9.6	10.1	11.1	13.2	15.2	15.9	17.4	24.9	12.7	14.3	14.4	13.2	17.5	24.9	24.8	15.2	..
Hr _H 10,000r ²	30	30	30	24	16	13	13	12	15	14	15	16	19	22	23	25	36	18	21	21	19	25	36	36	..	22

8. LERWICK (r_H)

MARCH, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr_H}{10,000r^2}$
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	6	16	17	7	5	5	3	4	4	11	7	9	10	5	10	11	10	10	4	11	11	6	4	29	9.0	13
2	27	6	10	2	5	6	3	6	7	6	5	6	6	11	11	5	5	12	6	6	11	12	11	13	8.3	12
3	6	6	4	2	10	6	3	7	12	5	5	12	16	15	28	28	11	19	10	16	18	11	6	6	10.9	16
4	6	11	5	13	11	4	7	2	6	17	6	11	5	5	7	6	11	5	9	14	6	6	5	3	7.5	11
5 Q	3	3	1	3	3	4	3	8	5	4	6	3	5	9	5	9	2	2	3	6	3	6	5	2	4.2	6
6 Q	5	6	6	6	2	5	4	3	6	5	(6)	6	6	7	18	11	5	3	3	2	6	5	3	3	5.5	8
7 Q	3	3	3	2	2	4	1	1	3	9	5	6	11	11	10	6	3	6	2	2	5	23	11	5	5.7	8
8	7	5	6	5	3	1	4	6	6	6	2	7	16	23	9	7	7	6	9	6	(12)	11	6	10	7.5	11
9 Q	11	6	6	7	6	2	5	6	8	2	6	4	5	7	5	5	3	5	5	6	6	12	6	5	5.8	8
10	9	16	6	10	13	9	3	6	7	5	5	9	10	6	5	5	6	7	8	6	23	12	(7)	6	8.3	12
11	44	66	35	14	6	15	7	7	(7)	17	7	14	7	18	(12)	15	10	9	8	4	6	5	(10)	5	14.5	21
12	3	2	5	3	6	6	12	16	10	18	18	12	12	12	23	12	20	11	7	12	6	6	8	11	10.5	15
13	(11)	6	7	12	17	6	10	12	5	15	6	24	(21)	22	32	23	34	17	9	7	12	6	10	13.8	20	
14	7	6	5	6	17	26	(23)	22	7	15	3	8	22	12	9	27	20	11	7	5	6	3	3	3	11.4	17
15	7	5	6	3	7	9	11	6	(4)	10	7	18	7	15	15	4	6	3	3	2	2	6	(11)	5	7.2	10
16 Q	13	7	5	6	3	5	5	5	6	11	(7)	6	9	7	(9)	10	6	2	11	2	2	2	7	3	6.6	10
17	4	2	2	1	2	2	2	3	7	10	11	12	11	16	10	15	12	11	6	6	23	18	9	6	8.4	12
18 D	4	14	26	18	24	36	41	11	10	(21)	(16)	(18)	(23)	(14)	(41)	(48)	(23)	(28)	(41)	(16)	(16)	(14)	(161)	(437)	45.9	67
19 D	(62)	(106)	(37)	(23)	(21)	(14)	(11)	(9)	(16)	(23)	(14)	(23)	(39)	(28)	(25)	(69)	(69)	(18)	(83)	(214)	(205)	(363)	(51)	(21)	65.1	95
20 D	(37)	(258)	(221)	(41)	(60)	(28)	(21)	(18)	(14)	(28)	29	24	26	41	12	39	43	23	(16)	108	22	10	60	35	50.6	73
21	31	26	(20)	23	40	16	11	17	27	66	32	20	27	36	(51)	20	(51)	35	7	7	8	33	66	210	36.6	53
22	(149)	101	(182)	113	22	11	(16)	15	(16)	(25)	(11)	(31)	(35)	29	(35)	19	(38)	27	33	29	74	40	11	5	44.5	65
23 D	23	40	23	7	72	73	25	11	(18)	15	28	12	24	26	24	52	91	103	52	38	120	47	(28)	44	41.5	60
24 D	64	27	154	143	35	86	60	17	29	21	28	23	13	31	35	28	37	84	27	28	64	49	(62)	80	51.0	74
25	48	16	(50)	27	50	7	(22)	9	18	9	22	11	17	28	10	43	16	6	6	10	16	(16)	14	20.0	29	
26	10	6	7	5	5	4	12	18	38	19	8	6	5	7	10	22	(21)	24	(14)	7	5	5	9	7	11.4	17
27	5	6	4	4	5	9	12	14	16	16	26	21	(27)	35	40	41	52	62	23	22	7	7	5	11	19.6	28
28	11	7	20	22	(23)	13	6	10	(11)	18	16	12	11	26	20	31	28	36	(15)	13	23	6	29	27	18.1	26
29	22	18	9	9	7	6	4	9	(28)	(8)	10	17	29	23	(40)	22	23	9	(17)	23	7	11	40	36	17.8	26
30	6	2	26	12	18	11	5	11	6	9	8	12	21	12	26	18	6	5	5	6	5	7	10	15	10.9	16
31	22	24	11	12	7	7	6	6	(11)	15	(26)	22	7	14	23	24	17	8	23	9	7	5	7	15	13.6	20
Mean r_H	21.6	26.5	29.6	18.1	16.4	14.1	11.6	2.5	11.9	14.8	12.5	13.5	15.6	17.8	19.7	22.5	22.2	19.5	15.4	20.7	23.3	24.4	22.1	25.1	19.1	..
$\frac{Hr_H}{10,000r^2}$	31	38	43	26	24	20	17	14	17	21	18	20	23	26	29	33	32	28	22	30	34	35	32	51	..	28

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

9. LERWICK (r_H)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr_H}{10,000\gamma^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	6	11	(32)	12	27	18	19	6	11	7	20	24	13	11	17	32	6	7	12	14	22	8	12	30	15.7	23
2	11	4	3	5	10	1	6	4	(8)	6	7	10	13	11	9	9	(11)	11	7	21	13	15	24	33	10.5	15
3	16	16	6	5	9	25	6	17	27	12	17	32	(30)	17	18	11	8	10	9	10	13	11	28	15	15.3	22
4	19	67	72	28	10	14	12	6	20	10	5	11	6	16	11	17	5	10	11	16	13	6	4	13	16.7	24
5	6	16	13	11	8	6	5	6	9	11	11	5	19	20	7	10	14	11	15	15	13	11	12	9	11.0	16
6	31	34	44	4	6	15	5	10	9	11	11	17	(17)	15	22	18	(11)	13	(7)	8	15	15	14	6	14.9	22
7	7	11	5	18	(9)	19	7	10	(23)	9	34	11	49	44	29	44	40	34	23	24	46	20	3	7	21.9	32
8	8	9	7	7	8	6	16	11	13	8	(20)	7	17	14	16	22	17	29	33	19	11	7	11	14	13.7	20
9	24	9	(11)	6	11	7	8	28	(17)	25	(34)	22	12	36	(34)	35	14	6	7	10	11	8	5	11	16.3	24
10	10	5	2	5	9	13	9	17	5	5	19	12	20	18	29	61	7	10	17	10	6	4	3	3	12.5	18
11 Q	5	6	4	3	(4)	3	2	7	(16)	6	9	13	12	11	7	12	11	5	6	2	5	6	7	7	7.2	10
12 Q	3	6	5	5	2	5	4	11	9	7	5	6	8	10	6	9	6	5	4	5	3	1	1	1	5.3	8
13 Q	2	2	1	1	5	2	6	(12)	17	10	5	10	17	7	1	1	12	7	7	1	2	5	5	5	5.8	8
14	5	3	3	2	5	4	5	7	11	6	8	10	17	34	21	36	22	22	18	15	10	6	23	19	13.0	19
15 D	8	3	11	11	11	24	11	6	10	13	11	8	11	10	(34)	31	(16)	39	15	23	(176)	307	56	75	38.3	56
16 D	23	28	23	13	22	36	32	17	9	22	29	10	18	29	27	17	10	18	35	69	17	10	17	80	25.5	37
17 D	56	13	71	37	24	24	12	11	9	14	18	32	54	98	81	60	(46)	22	21	14	23	20	42	23	34.4	50
18	87	152	(40)	22	51	65	18	17	7	(12)	11	22	36	41	38	40	42	24	23	41	21	73	35	75	41.4	60
19 D	(34)	46	50	67	17	5	21	13	13	12	(23)	19	44	43	28	51	22	13	68	64	32	23	119	131	39.9	58
20	8	10	6	6	22	64	(72)	19	22	11	20	23	28	19	38	39	33	17	20	34	48	15	7	35	25.7	37
21	44	41	(39)	15	(17)	16	18	11	12	22	22	19	30	12	(27)	10	46	34	52	47	21	26	83	94	31.6	46
22	14	8	6	14	18	23	24	18	40	17	15	15	(36)	19	36	24	32	58	(23)	13	80	68	(19)	29	27.0	39
23	(30)	13	17	19	18	45	51	32	11	18	10	21	39	28	17	14	(17)	16	13	19	48	20	32	35	24.3	35
24	47	14	(15)	7	6	17	7	11	15	5	8	9	29	11	22	7	10	14	12	5	11	46	28	15.2	22	
25	15	11	(6)	5	7	6	9	10	12	5	10	13	18	39	(17)	18	26	28	11	10	10	6	10	10	13.0	19
26	(20)	12	(15)	3	2	5	13	14	7	5	6	26	14	19	28	26	14	25	22	30	(26)	9	4	2	14.5	21
27	3	2	5	6	5	5	4	6	11	7	10	10	11	5	11	7	(11)	9	11	5	12	34	24	11	9.4	14
28 Q	32	19	34	7	2	5	6	9	10	5	6	10	19	7	20	10	14	10	(12)	8	6	13	(16)	23	12.6	18
29 Q	7	7	3	2	3	2	3	10	7	4	10	6	6	16	7	12	8	7	11	7	11	5	6	13	7.2	10
30 D	10	6	3	4	7	5	5	6	11	11	7	11	6	11	28	9	90	44	22	32	113	90	39	80	27.1	39
Mean r_H	19.7	19.5	18.4	11.7	11.7	16.3	13.7	11.9	13.2	10.8	14.2	14.6	20.7	23.3	22.7	23.6	20.2	18.8	18.3	20.3	27.6	28.3	23.5	30.6	18.9	..
$\frac{Hr_H}{10,000\gamma^2}$	29	28	27	17	17	24	20	17	19	16	21	21	30	34	33	34	29	27	27	29	40	41	34	44	..	27

10. LERWICK (r_H)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	51	9	3	5	5	9	(28)	11	15	14	27	34	96	67	339	(533)	(533)	(331)	226	275	(473)	(644)	(271)	(258)	277.4	258
2	(477)	(473)	25	30	7	6	17	10	12	11	16	10	13	11	9	17	17	4	11	12	9	29	13	52.3	76	
3	14	49	59	7	8	15	16	23	7	8	14	28	13	30	(25)	22	22	20	34	24	6	3	6	10	19.2	28
4	17	5	18	17	17	15	12	11	10	14	6	7	5	14	(25)	46	29	23	13	46	11	9	5	5	15.8	23
5	9	7	5	13	17	34	(34)	5	22	11	12	18	(18)	22	(51)	14	17	23	12	22	15	12	18	30	18.4	27
6	22	62	79	28	39	29	15	11	21	16	10	35	12	33	18	10	7	9	12	23	13	6	5	57	23.8	35
7	53	83	7	6	9	17	5	11	13	10	18	17	15	17	28	12	6	5	6	5	3	4	2	6	14.9	22
8	6	5	7	6	7	5	6	10	6	6	11	11	18	21	18	21	(12)	19	15	6	3	6	4	2	9.6	14
9 Q	2	3	1	3	4	6	(10)	10	2	6	11	14	9	11	5	17	11	5	2	5	2	3	2	3	6.1	9
10 Q	7	7	3	6	6	4	11	16	14	10	7	12	6	4	1	7	3	7	5	2	5	5	2	5	6.5	9
11	6	11	12	3	7	3	6	10	9	11	5	11	(17)	14	13	29	3	11	18	9	5	3	1	2	9.1	13
12 Q	1	1	2	4	3	5	6	6	6	2	2	7	6	6	11	5	13	5	6	5	3	7	7	6	5.2	8
13	5	3	5	7	16	17	5	14	6	5	6	4	18	29	9	10	9	11	14	5	25	39	(7)	22	12.1	18
14	40	17	5	2	4	7	9	11	11	7	17	35	(18)	22	19	35	33	39	20	41	94	69	(96)	23	28.1	41
15	21	3	9	30	35	17	10	7	6	10	28	18	6	15	16	17	29	11	16	10	17	50	34	40	19.0	28
16	7	17	(7)	6	3	6	6	10	6	11	(10)	5	11	11	5	11	17	17	26	27	10	30	11	11	11.7	17
17	5	16	(16)	4	5	5	11	6	5	4	11	9	(11)	13	32	32	34	25	17	39	33	16	(59)	85	20.5	30
18 D	(22)	47	83	53	75	91	34	23	24	26	(17)	31	37	37	21	12	30	21	7	19	6	6	13	10	31.0	45
19	11	11	7	5	10	7	(7)	8	23	(9)	10	11	29	17	33	22	11	11	63	66	34	24	3	3	18.1	26
20	(4)	6	5	12	5	5	9	7	6	5	6	12	17	11	10	10	10	13	7	6	(7)	5	14	15	8.6	12
21	8	7	4	7	6	9	17	17	11	8	7	7	12	5	11	6	6	9	13	11	13	5	(6)	10	9.0	13
22	7	15	6	5	3	14	7	10	6	5	7	13	14	23	22	18	7	7	4	10	7	6	18	22	10.7	16
23	5	6	7	1	5	10	6	7	5	5	10	7	(15)	11	11	11	8	19	6	11	9	8	10	5	8.7	13
24 Q	2	2	2	3	6	5	7	7	6	5	6	6	12	20	19	14	(8)	9	8	11	6	8	7	13	8.0	12
25	15	11	6	6	7	6	6	11	9	6	8	11	18	18	(37)	17	17	16	22	5	11	15	6	6	12.1	18
26 Q	7	5	5	2	1	3	7	6	7	5	6	9	(16)	9	5	5	5	10	5	3	3	4	2	1	5.5	8
27	5	3	3	4	3	6	7	6	7	5	3	11	7	11	(18)	22	41	17	(47)	17	9	14	28	10	12.7	18
28	22	59	12	6	2	5	6	11	5	5	6	9	12	18	14	10	12	7	5	5	7	10	5	3	10.7	16
29 D	3	2	3	2	5	6	6	6	5	13	14	17	(38)	43	32	21	(17)	18	(12)	(17)	(63)	41	6	22	17.2	25
30 D	41	97	87	(73)	35	11	22	19	23	9	(29)	(23)	22	27	31	23	51	53	34	28	6	7	9	17	32.4	47
31 D	15	11	10	38	10	28	14	15	23	10	17	29	45	41	83	40	19	33	14	19	11	13	18	33	24.5	36
Mean r _H	29.4	34.0	16.2	12.7	11.8	13.1	11.7	10.8	10.7	8.8	11.5	15.2	18.9	20.4	31.2	34.5	33.5	26.5	22.4	25.3	29.7	35.2	22.7	24.1	21.2	..
Hr _H 10,000γ ²	43	49	23	18	17	19	17	16	16	13	17	22	27	30	45	50	49	38	32	37	43	51	33	35	..	31

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

11. LERWICK (r_H)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr_H}{10,000\gamma^2}$	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	7	10	80	80	46	18	25	31	19	22	22	18	41	57	27	61	51	16	23	30	(56)	6	7	7	7	31.7	46
2	(8)	13	(6)	5	7	10	6	8	14	19	16	22	14	18	32	20	11	17	19	17	(11)	8	10	5	7	13.2	19
3	14	20	6	5	5	12	12	18	13	(11)	6	13	11	17	11	23	14	17	6	10	6	10	(10)	5	6	11.5	17
4	5	10	6	4	(5)	6	5	6	6	6	7	11	6	10	17	12	9	9	11	6	10	5	3	6	7.5	11	
5 Q	5	7	5	5	4	6	7	5	6	(6)	4	14	11	26	9	6	6	4	6	5	5	6	3	3	7.0	10	
6 Q	2	3	4	5	5	1	10	5	3	5	4	6	6	8	6	5	1	1	1	3	3	4	3	5	4.1	6	
7	5	5	1	6	6	8	6	3	2	6	6	9	21	10	(8)	17	10	7	3	6	6	5	7	11	7.5	11	
8	13	10	(13)	10	6	6	2	11	17	9	23	11	25	27	14	15	6	22	30	39	11	34	22	61	18.2	26	
9	48	57	(19)	39	33	21	23	16	6	5	11	7	17	34	27	35	27	17	6	12	11	6	10	7	20.6	30	
10	(11)	6	6	2	3	4	5	5	7	4	(11)	7	18	26	34	23	16	17	9	17	23	7	5	4	11.3	16	
11	(6)	3	4	7	6	5	7	11	8	8	5	7	14	9	11	10	10	9	10	3	8	16	4	4	7.7	11	
12	7	4	8	11	5	7	9	9	6	6	5	5	9	13	10	9	(8)	16	6	8	11	12	(26)	18	9.5	14	
13 D	19	82	94	72	93	21	24	27	7	13	19	34	(29)	56	(95)	78	38	35	29	21	(19)	97	110	86	42.2	72	
14 D	201	47	47	7	16	11	15	37	22	21	12	18	24	13	13	27	17	28	18	14	(11)	10	16	21	27.7	40	
15	23	104	(120)	11	11	9	12	6	9	11	6	12	11	17	18	20	18	19	11	9	(9)	13	(33)	8	21.7	31	
16 Q	6	7	7	5	6	11	5	3	13	8	9	7	11	3	(13)	6	20	11	(9)	6	7	13	6	5	8.2	12	
17	6	7	6	5	4	17	6	5	(7)	11	5	15	7	23	11	26	11	11	9	5	7	6	10	5	9.4	14	
18 Q	4	2	6	7	5	(5)	7	6	4	5	5	7	10	10	11	6	7	7	6	12	2	5	14	5	6.6	10	
19	13	5	4	7	11	10	3	9	23	17	6	47	38	12	27	18	15	11	10	21	18	28	13	8	15.6	23	
20 D	32	23	55	23	(17)	56	29	6	(25)	22	12	22	17	33	18	21	23	15	10	11	25	22	9	18	22.7	33	
21	(12)	11	5	10	(2)	11	16	5	7	6	5	11	11	35	21	22	6	5	11	9	4	10	6	10	10.5	15	
22	(11)	6	8	4	6	6	5	11	(3)	6	6	6	9	18	17	10	10	5	11	16	10	2	3	2	7.8	11	
23	2	(2)	(1)	(1)	(1)	3	11	11	7	2	6	10	10	7	11	5	11	11	6	3	11	5	5	10	6.3	9	
24 Q	10	7	(3)	5	6	9	9	11	11	5	5	11	14	10	6	5	3	8	6	11	5	3	(3)	(1)	7.0	10	
25	(1)	(2)	(1)	(1)	(5)	(1)	9	11	7	3	27	7	21	12	21	28	44	30	(39)	39	11	14	28	6	15.3	22	
26	6	10	17	10	13	10	7	5	16	10	14	5	5	22	10	24	15	19	6	(3)	(1)	(2)	1	(1)	9.7	14	
27	(2)	(3)	(2)	(2)	3	5	6	5	21	18	11	20	17	35	70	51	17	6	5	12	(1)	(2)	(3)	(4)	13.4	19	
28 D	21	29	16	11	10	11	12	6	5	9	6	8	34	39	68	40	40	40	50	17	34	17	(18)	34	24.0	35	
29	23	13	12	22	22	17	14	23	8	27	7	5	18	17	28	57	12	13	12	13	17	10	11	11	17.2	25	
30	10	3	10	18	12	10	10	6	11	6	6	14	(14)	28	10	27	22	11	11	5	5	6	5	17	11.5	17	
Mean r_H	17.8	17.0	18.9	13.2	12.7	10.8	10.5	10.7	10.5	10.2	9.6	13.1	16.7	21.5	22.2	23.6	16.4	14.8	13.1	12.6	11.7	12.8	13.5	13.0	14.5
$\frac{Hr_H}{10,000\gamma^2}$	26	25	27	19	19	16	15	16	15	15	14	19	24	31	32	34	24	21	19	18	17	19	20	19	..	21	

12. LERWICK (r_H)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	15	4	3	5	2	7	5	6	6	11	6	14	13	15	10	12	13	21	12	19	18	17	6	27	11.1	16
2	36	12	9	6	6	13	10	10	15	7	9	7	(10)	5	(12)	24	10	14	16	2	4	7	11	4	10.8	16
3	6	29	17	6	6	9	11	7	6	4	7	10	17	15	(7)	13	23	15	(16)	6	5	7	6	6	10.6	15
4	1	6	7	6	9	6	5	6	5	(3)	3	9	10	33	14	17	14	9	11	16	18	6	7	6	9.5	14
5	6	17	17	6	13	6	11	5	2	3	10	(31)	15	9	11	22	(12)	8	4	4	6	5	5	6	9.7	14
6	5	7	10	5	(13)	9	4	15	16	9	15	17	16	6	10	16	14	17	14	10	9	5	7	5	10.6	15
7	4	2	2	3	5	6	5	6	12	9	12	11	13	6	10	21	11	18	6	9	7	7	7	7	8.3	12
8	10	6	8	5	(5)	10	7	8	9	14	16	13	18	10	19	21	17	19	22	8	29	11	10	44	14.1	21
9 D	38	23	14	5	11	6	(19)	28	23	(26)	43	33	59	55	7	17	23	28	39	31	(19)	10	6	6	23.7	34
10	5	5	4	9	(17)	10	3	9	(14)	14	12	24	9	22	14	14	23	27	18	33	(45)	15	19	11	15.7	23
11	18	45	57	5	12	6	10	11	20	7	15	22	28	49	35	34	16	11	13	6	10	5	4	15	18.9	27
12	16	9	35	30	17	9	8	6	11	6	10	11	17	13	11	13	13	10	18	6	13	11	5	9	12.8	19
13 Q	6	6	5	2	3	9	6	2	5	8	6	12	5	11	11	22	11	11	5	8	6	4	5	3	7.2	10
14 Q	6	5	3	2	10	5	5	5	6	5	6	7	12	11	11	11	5	11	5	6	7	6	6	11	7.0	10
15 Q	4	2	2	2	1	5	6	7	1	2	9	6	10	6	15	13	5	7	6	6	6	2	1	5	5.4	8
16	2	1	2	2	5	5	4	5	9	11	10	21	10	16	25	11	14	18	6	11	18	11	9	3	9.5	14
17 D	10	18	5	6	3	9	8	7	6	11	10	23	32	49	33	41	17	7	6	10	23	17	14	6	15.5	22
18	14	34	17	15	(17)	9	11	15	11	10	13	17	6	11	29	17	22	18	25	14	17	6	3	2	14.7	21
19	3	6	5	10	7	2	5	6	5	5	6	11	10	34	7	13	6	7	7	11	7	10	17	8	8.7	13
20	13	23	2	13	7	5	7	2	23	10	6	5	6	11	17	18	6	10	3	5	6	6	6	5	9.0	13
21 Q	14	6	14	13	9	7	9	9	7	7	11	6	14	13	12	13	10	7	5	9	2	2	2	2	8.7	13
22	5	6	18	5	3	5	6	2	13	8	4	11	9	15	13	10	17	6	5	7	7	6	4	2	7.8	11
23 D	4	11	7	4	3	10	6	7	(8)	30	20	22	46	70	(92)	73	33	23	17	29	(17)	30	62	40	27.7	40
24 D	29	17	122	125	59	10	34	76	(47)	50	18	43	46	43	26	92	(69)	9	(6)	5	(9)	8	19	11	32.2	58
25	8	7	7	6	4	7	(11)	9	6	6	(11)	21	20	14	18	24	14	11	11	7	5	4	13	11	10.6	15
26	7	4	5	6	3	6	7	3	6	15	10	5	(19)	17	17	27	(27)	30	13	15	6	6	16	19	12.0	17
27 D	32	14	8	6	11	6	11	8	(19)	26	11	27	18	19	19	23	14	9	18	11	23	146	58	23.5	34	
28	10	6	3	3	9	7	7	17	10	13	5	7	10	11	22	7	(7)	7	14	10	6	11	6	10	9.1	13
29	6	5	3	11	6	5	6	9	7	9	14	12	14	17	(41)	15	18	11	10	6	2	5	7	4	10.1	15
30 Q	8	7	4	6	5	6	7	7	6	7	12	12	17	13	12	9	2	4	5	6	10	8	(10)	3	7.7	11
31	6	8	6	4	6	6	6	6	5	6	5	7	9	10	28	17	6	14	11	11	4	3	7	5	8.2	12
Mean r _H	11.2	11.3	13.6	10.7	9.3	7.1	8.4	10.3	10.9	10.8	11.0	15.5	17.4	20.3	19.6	21.8	16.3	13.7	11.6	11.0	11.6	8.8	14.4	11.4	12.8	..
Hr 10,000 ²	16	16	20	16	13	10	12	15	16	16	16	22	25	29	28	32	24	20	17	16	17	13	21	17	..	19

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

13. LERWICK (r_H)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr}{10,000}^2$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 Q	5	3	5	5	5	4	3	6	13	2	1	2	14	17	21	11	6	7	6	5	6	6	5	2	6.7	10
2	7	2	6	5	5	6	3	6	6	5	6	12	20	6	10	12	9	11	6	5	17	11	5	7.8	11	
3	5	2	3	5	5	12	6	5	5	1	2	10	12	11	5	6	5	12	2	6	3	4	2	3	5.5	8
4	2	2	1	1	2	1	5	6	4	6	10	6	17	17	5	4	5	10	12	13	6	6	6	12	6.6	10
5 D	16	10	3	1	5	13	17	17	12	6	28	24	50	51	131	105	39	161	462	63	58	43	24	38	57.4	82
6 D	16	16	116	87	29	37	35	23	17	22	12	39	40	22	32	25	(36)	28	51	34	8	3	5	5	30.7	45
7	17	17	22	18	12	9	5	12	12	2	5	17	28	10	10	5	12	18	12	3	3	6	7	24	11.9	17
8	6	10	14	5	3	5	6	7	(21)	11	12	19	23	12	6	10	9	16	6	9	3	5	16	22	10.7	16
9 Q	9	4	3	4	5	13	10	7	9	8	9	7	(22)	12	6	7	(24)	10	4	5	5	10	3	6	8.4	12
10 Q	7	5	9	9	5	3	7	12	12	5	5	12	(10)	6	(7)	11	(5)	6	7	6	8	3	3	7	7.1	10
11 Q	(4)	(5)	3	3	6	4	3	6	10	12	7	10	17	9	12	10	7	6	7	10	5	2	(12)	(9)	7.5	11
12	4	3	(3)	2	2	6	6	7	6	9	8	5	7	12	8	16	18	8	21	13	11	10	7	10	8.4	12
13 D	6	9	7	5	(5)	4	3	12	6	10	16	18	50	24	17	50	37	31	21	68	59	18	93	69	26.6	39
14	17	17	33	26	7	10	26	17	7	7	8	17	22	24	25	23	12	17	7	9	7	24	18	5	16.0	23
15	5	6	10	5	17	7	(12)	11	22	6	(17)	13	16	22	26	28	14	12	36	31	10	5	(5)	4	14.2	21
16	6	8	7	6	3	6	6	21	14	12	5	6	10	10	14	11	11	7	18	11	7	10	28	11	10.3	15
17	7	6	17	16	6	10	21	30	(26)	14	10	11	16	17	23	29	10	28	25	24	10	10	8	12	16.1	23
18 D	11	20	5	1	9	23	19	7	7	16	9	3	8	20	44	55	128	85	81	108	65	22	23	79	35.3	51
19	78	37	19	30	18	9	47	52	(12)	20	9	19	42	24	35	10	16	17	9	12	17	14	5	12	23.5	34
20	12	8	6	3	11	7	(13)	6	9	13	6	12	18	23	26	8	35	36	29	22	19	28	47	13	17.1	25
21 D	12	21	23	9	6	6	(23)	18	(18)	28	13	31	40	22	31	43	(107)	67	22	33	(32)	9	10	6	26.3	38
22	6	5	6	5	4	5	14	7	5	5	6	3	5	9	7	9	5	7	13	5	6	5	6	5	6.5	9
23	4	2	3	5	(6)	7	7	16	40	23	17	13	23	55	(72)	35	31	12	40	51	10	20	20	4	21.5	31
24	10	6	12	5	7	7	5	33	(44)	50	(14)	(27)	21	24	24	39	52	54	18	62	18	15	27	26	25.0	36
25	36	42	28	20	10	16	19	22	18	9	8	12	6	11	7	10	8	15	(12)	12	7	6	9	12	14.8	21
26	(21)	(27)	(13)	(17)	(19)	(15)	(13)	(13)	(8)	(10)	(19)	(12)	(29)	(19)	(12)	(13)	21	17	(14)	12	13	11	10	5	15.1	22
27	4	16	7	12	14	10	5	7	11	16	16	11	11	(8)	7	7	5	5	4	11	5	4	22	5	9.3	13
28	5	7	7	2	3	3	6	6	6	9	(10)	(8)	11	17	(14)	10	5	5	7	11	6	11	7	9	7.7	11
29	12	7	6	5	3	6	14	5	5	2	7	8	12	8	9	8	6	5	6	3	2	1	1	2	6.0	9
30	6	7	(6)	8	6	4	7	2	8	5	10	10	9	10	7	15	15	6	6	3	3	6	4	7	7.1	10
31 Q	7	2	2	2	1	1	4	6	(7)	3	9	6	10	11	(9)	11	10	8	12	5	11	16	(12)	7	7.2	10
Mean r_H	11.7	10.7	13.1	10.5	7.7	8.7	11.9	13.1	12.9	11.2	10.1	13.0	20.0	17.5	21.4	20.8	22.7	23.5	31.2	21.7	13.8	11.3	14.7	14.1	15.3	..
$\frac{Hr}{10,000}^2$	17	16	19	15	11	13	17	19	19	16	15	19	29	25	31	30	33	34	45	31	20	16	21	20	..	22

HOURLY RANGES OF HORIZONTAL FORCE
Monthly, seasonal and annual Means

14. LERWICK (r_H)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
1932	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
August	16.2	32.9	26.8	15.7	9.4	13.6	12.2	15.3	16.1	15.3	13.2	17.2	20.2	22.0	24.4	25.0	21.8	21.3	17.6	14.7	10.8	12.9	16.1	14.9	17.7	17.7
September	17.3	21.1	19.6	14.4	12.2	12.6	11.2	10.9	12.3	11.6	11.3	13.6	17.6	19.7	23.1	26.2	22.8	20.8	15.5	16.2	18.8	20.3	21.1	18.0	17.0	17.0
October	17.0	13.5	11.2	8.9	11.1	9.6	8.4	10.2	11.5	12.1	12.3	10.6	16.9	16.3	17.0	17.1	18.2	21.3	12.7	13.0	23.5	22.7	17.1	16.3	14.5	14.5
November	8.1	6.3	7.8	8.4	9.1	8.8	10.1	10.3	12.2	8.7	9.2	9.4	11.6	12.7	10.9	11.4	12.2	11.5	9.8	9.0	11.6	12.7	11.3	11.3	10.2	10.2
December	19.6	22.8	10.7	8.1	7.7	6.7	7.8	7.4	9.1	8.9	8.2	8.8	9.5	12.0	10.8	9.8	13.2	16.1	15.8	17.6	23.5	20.1	14.5	17.5	12.8	12.8
1933																										
January	16.6	16.1	11.5	8.5	10.6	12.8	10.0	9.8	10.3	10.0	8.5	8.7	9.0	11.1	12.8	15.5	12.8	11.3	16.4	22.7	16.2	19.1	16.0	13.9	12.9	12.9
February	20.6	20.8	20.7	16.4	11.2	9.1	8.9	8.3	10.4	9.6	10.1	11.1	13.2	15.2	15.9	17.4	24.9	12.7	14.3	14.4	13.2	17.5	24.9	24.8	15.2	15.2
March	21.6	26.5	29.6	18.1	16.4	14.1	11.6	9.5	11.9	14.8	12.5	13.5	15.6	17.8	19.7	22.5	22.2	19.5	15.4	20.7	23.3	24.4	22.1	35.1	19.1	19.1
April	19.7	19.5	18.4	11.7	11.7	16.3	13.7	11.9	13.2	10.8	14.2	14.6	20.7	23.3	22.7	23.6	20.2	18.8	18.3	20.3	27.6	28.3	23.5	30.6	18.9	18.9
May	29.4	34.0	16.2	12.7	11.8	13.1	11.7	10.8	10.7	8.8	11.5	15.2	18.9	20.4	31.2	34.5	33.5	26.5	22.4	25.3	29.7	35.2	22.7	24.1	21.2	21.2
June	17.8	17.0	18.9	13.2	12.7	10.8	10.5	10.7	10.5	10.2	9.6	13.1	16.7	21.5	22.2	23.6	16.4	14.8	13.1	12.6	11.7	12.8	13.5	13.0	14.5	14.5
July	11.2	11.3	13.6	10.7	9.3	7.1	8.4	10.3	10.9	10.8	11.0	15.5	17.4	20.3	19.6	21.8	16.3	13.7	11.6	11.0	11.6	8.8	14.4	11.4	12.8	12.8
August	11.7	10.7	13.1	10.5	7.7	8.7	11.9	13.1	12.9	11.2	10.1	13.0	20.0	17.5	21.4	20.8	22.7	23.5	31.2	21.7	13.8	11.3	14.7	14.1	15.3	15.3
Winter	16.2	16.5	12.7	10.3	9.7	9.3	9.2	8.9	10.5	9.3	9.0	9.5	10.8	12.7	12.6	13.5	15.8	12.9	14.1	15.9	16.1	17.3	16.7	16.9	12.8	12.8
Equinox	18.9	20.1	19.7	13.3	12.9	13.1	11.2	10.6	12.2	12.4	12.6	13.1	17.7	19.3	20.6	22.3	20.9	20.1	15.5	17.5	23.3	23.9	20.9	25.0	17.4	17.4
Summer*	18.1	21.0	17.1	12.4	10.6	10.5	10.7	11.5	11.7	10.8	10.9	14.7	18.3	20.5	24.0	25.7	22.1	19.3	17.9	16.8	16.3	17.2	16.5	15.7	16.3	16.3
Year *	17.7	19.2	16.5	12.0	11.0	11.0	10.4	10.4	11.5	10.8	10.8	12.4	15.6	17.5	19.1	20.5	19.6	17.5	15.8	16.7	18.6	19.5	18.0	19.2	15.5	15.5

Q and D denote the international "quiet" and "disturbed" days.

* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

15. LERWICK (r_D)

AUGUST, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
1	1.5	3.3	2.5	2.1	3.1	2.5	(2.7)	1.9	3.5	2.1	2.3	2.1	2.5	1.9	1.7	6.9	3.9	12.0	10.0	3.7	1.9	12.2	10.0	12.5	4.6
2 D	7.9	21.0	26.6	3.9	3.3	4.1	3.7	3.3	4.1	2.3	3.1	3.1	3.3	2.3	1.9	15.1	7.9	5.4	17.8	12.9	5.4	19.9	11.0	5.0	8.2
3 D	5.2	5.0	4.4	2.1	2.1	2.7	4.1	3.9	4.6	4.1	3.7	6.2	9.1	5.2	4.1	1.9	9.3	8.1	4.6	1.4	19.3	22.8	12.2	13.5	6.7
4	6.0	6.4	5.8	2.7	3.9	3.5	2.5	3.3	1.9	4.1	3.3	2.3	1.9	2.1	2.1	1.9	2.3	2.1	1.5	0.4	1.5	0.4	0.4	0.6	2.6
5	0.8	0.6	0.4	3.1	7.7	4.8	4.6	5.4	6.0	6.6	3.7	3.5	2.5	1.2	1.7	1.9	2.1	1.0	3.9	1.7	7.7	3.9	7.9	3.3	3.6
6	7.3	4.8	2.3	2.9	3.7	1.4	1.5	1.7	1.9	1.7	3.3	3.9	1.9	1.2	2.5	2.9	1.4	1.5	1.2	0.8	0.8	0.6	4.2	2.3	2.4
7	0.6	0.8	1.2	1.0	1.4	1.4	1.9	1.9	1.4	2.5	4.2	4.1	1.9	1.5	1.0	1.4	1.9	2.1	1.2	1.7	3.5	1.9	2.3	2.1	1.9
8	1.2	0.8	3.7	2.1	2.3	1.7	0.6	1.2	(1.2)	2.1	2.3	2.5	3.1	1.7	3.3	2.1	1.7	1.9	1.5	3.1	1.2	0.6	0.4	1.0	1.8
9	0.6	1.0	1.4	0.8	3.5	4.4	1.9	3.5	8.1	3.3	2.1	1.9	1.5	1.9	1.5	1.7	1.2	0.4	0.2	0.4	0.1	3.1	2.5	1.0	2.0
10 Q	0.8	1.5	2.9	1.4	1.5	2.3	1.4	1.2	2.1	0.8	1.9	2.5	2.3	1.5	1.5	1.4	1.5	1.4	1.9	0.6	0.4	0.8	0.4	0.4	1.4
11	1.2	1.5	1.9	1.7	1.4	2.5	1.7	1.9	1.7	1.9	1.5	2.3	2.5	1.0	0.8	1.4	1.5	1.2	1.5	1.7	1.7	1.7	2.1	11.0	2.1
12	4.1	4.2	4.6	20.3	16.0	5.4	2.3	1.5	4.2	2.7	3.7	3.9	5.8	3.3	1.7	5.6	2.3	1.7	1.4	0.6	1.5	1.7	1.2	5.6	4.4
13	7.3	4.4	10.2	7.7	1.7	1.2	5.2	7.7	3.3	2.1	2.9	3.1	2.7	1.5	2.3	2.1	1.7	4.2	6.6	1.5	1.4	2.1	10.2	5.0	4.1
14	2.1	1.2	1.7	1.7	2.3	1.5	3.7	5.4	3.7	5.6	3.9	2.1	2.1	1.4	3.5	1.7	3.5	1.4	1.2	1.2	1.0	2.1	2.5	1.9	2.4
15	0.6	1.5	1.7	1.9	1.5	1.7	1.9	0.6	1.9	2.9	1.9	3.7	1.5	1.4	2.1	2.1	1.9	1.4	0.6	1.0	5.2	4.4	1.4	2.3	2.0
16 Q	4.4	1.7	2.3	1.4	1.7	1.4	1.5	1.2	1.0	1.9	3.5	3.7	1.5	1.9	1.2	1.2	1.7	0.8	0.4	1.0	0.8	1.9	1.0	0.8	1.7
17 Q	2.1	1.4	1.4	1.5	1.9	1.7	1.2	1.5	2.1	2.3	3.3	3.7	1.9	0.8	1.9	1.9	1.4	0.6	1.9	1.5	1.9	1.9	2.1	0.6	1.8
18 Q	1.9	1.2	1.4	1.5	1.9	1.5	1.7	0.4	2.5	1.9	3.3	2.1	1.7	1.4	2.9	1.2	0.6	1.4	3.1	0.4	0.6	1.4	2.3	2.5	1.7
19 Q	1.4	1.0	1.2	0.6	1.5	0.6	0.8	0.6	1.4	1.7	3.1	2.1	2.7	1.5	1.4	1.7	1.4	1.4	0.6	1.2	1.2	2.5	1.2	1.2	1.4
20	0.4	0.2	0.4	0.6	1.7	0.6	0.4	1.4	1.2	1.5	4.1	1.9	1.9	1.0	0.4	1.9	0.8	1.4	2.1	1.9	1.9	1.5	1.5	1.7	1.3
21	3.3	2.3	4.4	4.2	3.7	2.3	4.2	5.0	2.1	4.8	3.9	4.2	1.9	3.5	3.1	3.7	3.3	2.1	3.5	1.2	1.7	1.5	7.5	5.4	3.5
22	6.1	2.3	1.7	1.9	1.4	1.5	3.7	5.0	2.3	2.7	5.2	3.9	1.5	5.0	5.2	2.7	3.7	7.7	19.5	5.8	3.9	1.9	1.2	1.7	4.1
23	1.5	1.4	1.9	1.4	1.0	3.5	3.5	2.1	2.7	1.9	3.9	3.3	1.4	0.8	2.5	4.1	0.6	0.4	0.4	0.4	1.0	0.8	1.4	2.5	1.9
24	2.7	1.2	3.3	1.4	1.0	1.2	1.5	1.5	0.4	3.1	2.1	2.5	1.9	0.6	2.7	1.2	1.2	0.8	2.5	1.5	0.8	1.7	5.8	4.2	1.9
25	2.5	1.5	1.9	1.4	2.9	1.7	1.9	1.9	(1.4)	1.4	2.3	3.3	1.9	1.5	1.9	2.3	1.4	0.6	0.4	1.2	0.8	6.2	1.4	2.9	1.9
26	3.7	3.7	1.5	1.2	1.4	1.2	0.8	2.1	1.5	0.8	1.7	1.9	2.1	1.4	1.9	0.6	1.0	0.4	1.2	0.6	1.4	0.8	6.0	3.3	1.8
27 D	1.5	3.7	2.1	1.9	1.4	2.9	4.1	3.7	5.2	7.7	4.2	4.8	3.9	4.1	4.8	3.5	6.6	22.8	6.9	6.9	7.7	31.3	17.6	7.6	7.6
28 D	6.0	23.2	16.8	7.7	5.6	6.4	16.6	12.9	3.9	4.1	13.5	3.9	5.8	3.9	4.4	13.3	12.0	26.8	4.2	1.9	1.5	3.3	15.4	9.6	9.6
29 D	7.3	9.5	3.3	5.2	6.6	4.2	3.9	5.4	5.2	6.0	7.7	2.9	6.0	11.4	(6.2)	8.5	25.7	8.7	13.7	40.0	9.7	16.0	21.2	3.7	2.9
30	7.5	9.1	10.0	11.4	2.1	1.9	2.1	5.4	6.0	6.2	4.4	2.3	3.5	4.1	4.2	21.2	33.0	5.0	17.6	13.7	(21.2)	8.9	4.1	5.6	8.8
31	6.0	4.1	1.9	3.7	1.7	1.5	1.7	3.1	7.7	4.1	2.9	2.5	1.5	3.3	1.4	1.5	1.9	2.1	2.1	3.1	2.3	2.3	1.5	0.8	2.7
Mean	3.4	4.0	4.1	3.3	3.0	2.4	2.9	3.1	3.1	3.1	3.6	3.1	2.8	2.4	2.5	3.9	4.5	4.2	5.3	3.8	3.6	4.4	5.2	4.4	3.6

16. LERWICK (r_D)

SEPTEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
1	1.4	1.2	5.4	6.4	1.4	1.7	1.9	1.9	1.7	1.7	4.1	1.7	1.7	2.7	1.9	2.1	1.7	7.9	3.5	1.0	1.0	1.2	1.0	7.7	2.7
2	5.6	5.8	3.3	5.8	3.5	1.7	2.1	1.7	1.5	1.4	3.1	2.9	2.1	3.3	1.4	3.3	1.4	1.0	1.7	0.2	1.5	8.5	1.9	1.7	2.8
3 Q	2.1	1.2	1.0	1.4	1.2	1.9	1.2	1.5	1.7	2.5	2.1	1.5	1.9	1.7	1.7	1.4	2.1	2.1	0.8	1.0	1.5	6.0	7.1	3.1	2.1
4	1.9	0.7	1.2	0.6	1.5	0.6	1.0	1.4	1.7	2.1	2.1	1.5	1.7	1.4	2.5	2.3	0.4	1.0	1.9	1.4	3.1	9.7	5.4	1.5	2.0
5	0.4	1.4	0.8	1.4	0.4	0.4	1.4	1.0	1.5	2.7	2.7	2.1	0.6	1.7	1.4	11.8	8.1	0.6	0.6	1.2	1.7	1.2	6.0	1.9	2.2
6 D	1.5	2.1	1.7	4.1	5.8	3.9	6.0	4.8	6.2	1.4	2.5	2.3	2.1	12.2	1.9	21.2	19.1	10.0	3.9	9.7	10.2	10.6	11.0	1.9	6.3
7	0.7	1.0	0.3	0.2	1.2	1.2	2.1	1.4	1.9	1.0	2.5	1.5	1.9	0.6	1.4	1.2	1.4	1.4	3.7	1.5	2.1	17.2	14.1	1.4	2.6
8 D	3.4	2.3	11.0	5.2	21.2	9.5	2.1	3.5	1.9	3.3	1.7	2.3	1.5	0.8	1.7	1.5	1.4	6.0	6.4	4.4	16.2	4.4	1.4	2.1	4.8
9	5.4	7.3	8.7	3.3	5.2	2.5	1.9	1.9	2.1	3.1	2.9	3.5	1.2	1.2	1.9	1.7	6.8	4.2	1.2	6.6	6.8	3.3	3.9	1.2	3.7
10 Q	1.9	1.7	2.1	1.2	1.2	1.7	0.6	1.5	1.5	2.9	2.3	1.9	1.0	0.8	1.9	1.5	1.7	0.8	0.6	1.4	2.1	7.3	1.5	5.4	1.9
11 Q	3.9	3.9	2.7	1.0	1.9	1.4	1.5	0.6	1.4	1.9	1.5	0.6	1.0	1.9	1.4	0.6	0.2	0.2	0.2	0.2	0.4	3.5	1.4	1.2	1.4
12	0.4	1.4	1.7	1.4	1.4	0.6	1.0	1.5	1.4	2.1	1.9	1.7	0.2	1.5	1.2	0.2	0.8	1.2	1.0	1.2	0.1	5.6	9.3	2.7	1.7
13	0.4	1.5	0.2	1.5	1.9	2.5	1.9	1.4	1.9	3.1	3.5	3.5	1.5	2.5	1.7	3.5	1.5	0.8	0.6	1.7	1.0	2.3	1.7	1.2	1.8
14	1.2	1.4	0.6	1.7	2.1	1.9	2.1	2.7	1.2	3.5	1.9	2.5	1.5	1.7	1.9	1.7	0.6	1.2	1.9	1.0	5.4	1.9	1.4	1.2	1.8
15	1.2	1.7	1.4	1.5	1.0	1.7	1.4	1.5	2.1	2.1	3.7	3.7	1.7	1.7	1.9	2.1	1.5	0.4	0.2	0.2	0.4	3.5	2.5	5.2	1.8
16 Q	0.8	0.6	0.8	0.4	0.6	0.8	0.4	0.6	1.9	4.4	3.5	2.5	1.4	1.7	2.5	2.7	0.2	1.5	0.6	0.4	0.2	0.6	0.4	0.2	1.2
17 Q	0.2	0.4	1.0	0.7	0.8	0.6	0.4	1.9	2.1	2.9	1.4	1.2	1.0	1.9	1.9	0.6	1.0	1.0	0.8	1.5	1.7	1.9	1.9	6.2	1.5
18	7.5	5.4	1.4	1.0	1.2	1.0	1.5	1.5	2.9	2.7	1.7	1.9	3.5	1.7	2.3	1.0	4.4	4.1	0.6	0.8	1.7	5.4	14.3	8.7	3.3
19	7.7	23.5	5.4	1.9	2.3	1.7	3.9	3.9	1.9	3.7	3.7	5.8	1.7	0.6	4.1	5.8	9.1	3.5	2.2	2.2	1.5	8.9	10.6	5.2	5.0
20	1.9	13.7	10.2	7.1	3.9	2.9	4.4	5.4	3.9	2.1	1.9	2.5	0.4	2.3	3.1	2.1	1.5	1.4	1.2	1.7	5.2	7.3	6.0	3.9	4.0
21	11.1	8.7	1.2	3.1	3.9	4.1	3.7	1.4	1.5	1.7	2.1	2.1	1.5	1.5	1.2	1.4	1.7	4.1	2.1	6.2	1.9	2.1	4.2	1.7	3.1
22	1.9	1.4	1.7	2.7	9.1	7.7	1.5	1.7	3.7	2.3	8.9	3.9	2.1	2.5	2.1	1.4	21.2	18.9	3.3	3.3	8.9	13.1	4.4	2.9	5.4
23 D	2.1	1.7	5.8	5.4	2.4	3.7	2.5	2.5	1.9	9.8	4.1	3.1	2.7	1.9	1.7	5.2	18.7	13.7	9.6	28.9	20.8	15.0	11.4	11.0	7.6
24 D	16.2	12.9	4.1	4.2	4.4	3.5	6.0	5.6	3.5	2.3	3.9	3.9	3.5	4.1	4.1	29.3	19.5	5.2	18.5	24.6	15.8	9.7	17.0	23.1	10.4
25 D	6.6	17.0	10.8	11.4	8.3	7.5	8.7	5.2	10.2	7.1	3.5	5.6	6.2	7.9	9.1	21.2	3.7	17.6	11.2	15.4	19.4	26.8	21.6	12.7	11.4
26	4.1	12.5	11.0	3.5	1.5	5.8	5.0	11.0	4.2	3.3	4.1	2.3	0.6	0.4	1.4	1.9	1.4	1.2	1.5	15.6	12.0	8.1	4.4	6.0	5.1
27	22.8	15.6	9.7	4.1	1.9	1.9	3.5	1.4	2.9	4.4	4.1	1.9	3.3	1.5	3.3	10.2	8.1	6.4	5.8	8.7	9.8	1.7	2.1	3.7	5.8
28	1.9	1.9	2.1	5.4	3.7	1.2	1.4	1.4	1.9	3.5	1.4	2.9	1.7	1.7	2.5	1.5	2.1	1.9	1.7	1.7	1.9	2.3	1.2	1.4	2.1
29	4.1	8.1	3.9	1.7	1.4	0.6	0.6	0.6	1.0	2.7	4.4	2.3	2.1	1.2	1.4	0.4	1.4	1.5	3.9	6.2	8.3	2.9	4.5	5.4	2.9
30	8.1	4.4	5.8	4.1	3.7	1.5	1.5	2.3	1.5	1.9	1.5	1.7	0.8	2.1	1.2	1.4	2.5	1.5	0.1	0.2	2.1	7.9	9.7	1.7	2.9
Mean	4.3	5.4	3.9	3.1	3.3	2.6	2.4	2.5	2.5	3.0	3.0	2.6	1.8	2.3	2.3	4.7	4.8	4.1	3.0	5.0	5.5	6.7	6.1	4.4	3.7

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

17. LERWICK (r_D)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
1	3.1	11.0	1.5	2.1	1.0	1.5	1.0	1.2	2.1	2.3	2.1	2.9	2.1	2.7	2.1	1.7	1.7	1.9	1.5	1.7	1.9	2.1	4.1	1.0	2.3
2	1.9	1.4	1.0	1.9	1.9	1.4	0.8	1.4	1.0	1.4	2.5	1.9	2.1	9.5	6.8	2.3	2.5	1.0	5.6	1.9	3.9	1.5	1.7	(5.0)	2.6
3	9.5	5.8	7.7	2.9	1.5	2.9	2.1	1.9	1.0	2.9	2.5	2.7	3.3	2.3	1.7	1.7	2.7	1.5	0.8	0.4	0.8	0.6	1.0	7.9	2.8
4	5.0	5.8	3.5	0.1	1.9	1.0	1.9	2.1	1.7	1.7	3.1	1.0	1.9	0.6	2.1	2.5	2.5	2.1	1.5	1.9	1.7	3.9	3.1	3.5	2.3
5	3.7	6.8	3.9	3.1	1.9	1.7	0.8	1.0	0.6	1.2	1.9	3.1	3.3	1.9	2.1	2.1	1.4	1.7	7.3	2.5	0.4	2.1	(3.9)	5.0	2.6
6 Q	4.1	3.5	1.9	1.9	0.6	0.6	0.4	0.4	0.6	1.5	1.9	1.9	1.9	1.7	1.4	1.7	0.4	1.2	1.0	6.8	4.6	4.6	4.8	2.9	2.2
7	(9.7)	5.8	1.9	1.9	0.2	0.2	0.4	1.2	0.6	1.0	2.9	2.5	2.1	1.0	0.6	0.6	0.4	1.2	1.0	0.4	0.8	0.6	1.0	1.9	1.7
8	0.8	1.7	1.0	1.2	3.3	2.5	0.8	0.8	1.0	2.1	2.1	2.5	1.9	1.4	1.2	1.9	0.8	1.7	3.9	7.5	3.5	3.5	2.1	0.6	2.1
9	4.2	3.3	1.7	1.9	1.9	0.4	0.4	0.2	0.2	0.6	3.7	3.7	1.9	1.4	3.5	(9.7)	3.7	1.9	1.9	2.7	1.9	5.0	13.3	10.6	3.3
10	5.2	1.9	4.1	3.3	5.8	3.1	1.9	1.7	2.1	1.7	2.5	3.5	4.1	1.7	3.5	(12.2)	11.2	6.8	1.9	(6.8)	7.7	2.3	1.9	3.9	4.2
11	3.3	2.5	3.7	3.7	1.9	2.1	1.0	1.7	1.7	1.9	3.1	2.7	2.1	0.8	1.0	1.0	1.0	1.7	3.3	4.1	10.6	3.9	7.7	7.7	3.1
12	9.7	4.1	4.2	3.5	1.9	1.0	1.4	1.0	1.0	1.0	2.1	2.3	1.9	1.5	1.5	1.0	1.0	1.4	1.0	1.9	6.0	3.9	1.5	4.6	2.5
13 Q	1.7	1.5	1.5	1.2	1.2	0.2	1.0	3.9	1.7	1.7	1.4	3.3	3.9	1.2	1.9	1.9	1.5	1.7	1.7	1.0	0.6	1.7	2.7	2.1	1.8
14 Q	1.5	1.2	0.6	0.8	0.8	0.6	0.4	0.4	0.2	0.2	2.1	3.1	1.9	1.2	1.4	0.8	0.6	1.5	0.8	0.8	0.6	1.9	3.9	1.9	1.2
15 D	2.1	2.1	(5.2)	(7.5)	4.1	3.9	2.1	2.1	6.8	6.8	6.9	2.1	(6.9)	7.3	17.4	28.8	24.3	24.1	15.6	17.4	10.7	13.9	16.2	7.9	10.0
16 D	5.8	14.7	5.0	5.8	6.9	7.7	8.7	7.3	8.1	3.7	2.5	4.8	1.9	1.9	3.9	6.0	12.0	12.7	1.7	0.4	0.6	0.8	1.5	4.8	5.4
17	5.6	7.7	3.1	3.1	2.1	1.5	1.7	1.5	2.3	2.5	1.5	3.3	3.5	6.0	3.5	1.9	9.1	20.7	6.0	9.8	14.7	11.0	3.7	11.2	5.7
18	17.9	12.9	5.8	1.9	1.5	1.2	0.4	0.4	0.6	1.5	1.4	1.0	1.5	1.2	0.8	1.7	1.7	6.8	5.0	1.0	1.9	1.2	2.1	3.7	3.1
19	1.9	1.4	1.0	1.9	1.7	4.1	3.5	2.1	1.5	1.4	2.5	3.5	1.7	1.0	1.7	2.1	1.9	2.3	1.0	1.7	1.4	1.5	1.9	2.3	2.0
20 D	1.4	1.4	1.2	0.8	1.4	1.4	0.4	1.2	1.9	1.0	1.9	3.7	5.2	3.5	6.2	6.4	15.4	17.2	15.2	15.9	6.6	32.2	37.1	13.7	8.0
21 D	13.7	29.0	27.6	11.8	18.3	6.6	3.9	7.5	5.2	4.8	1.9	4.1	2.7	3.1	1.9	3.5	2.1	1.9	1.4	4.8	2.1	1.7	0.6	0.4	6.7
22	0.4	0.4	0.8	0.6	1.4	1.0	0.8	1.7	1.5	1.2	4.1	2.3	3.3	2.1	1.4	3.3	5.8	7.5	6.6	21.6	17.3	13.5	6.9	3.5	4.5
23 D	7.3	13.5	5.2	4.1	1.9	2.1	1.5	1.5	2.5	6.0	3.5	3.7	1.7	1.0	5.6	7.5	24.5	30.1	2.1	24.5	6.9	2.7	11.8	5.6	7.4
24	0.8	3.1	1.7	6.0	5.4	1.4	1.7	2.5	1.7	3.9	3.3	3.5	5.2	6.0	2.1	0.6	1.7	5.4	10.2	7.5	10.4	5.0	7.7	3.3	4.2
25	1.9	1.7	1.9	1.7	3.1	2.9	1.9	1.5	1.7	2.3	3.5	1.9	3.3	2.1	3.1	11.4	3.1	0.8	0.4	2.5	2.5	1.4	(4.1)	2.1	2.6
26 Q	3.9	3.1	1.9	0.6	1.2	2.1	1.0	1.7	0.8	1.2	3.9	(2.3)	1.4	2.1	1.4	1.9	1.2	1.0	0.8	5.2	5.8	1.2	1.2	2.3	2.1
27	1.0	0.8	1.9	0.4	3.1	1.0	2.1	2.3	1.5	2.3	1.9	4.6	3.7	5.8	3.9	5.0	3.3	1.4	1.4	1.9	8.7	5.0	3.9	2.7	2.9
28 Q	2.5	0.8	1.4	1.2	3.9	3.9	1.5	1.4	1.7	1.7	1.5	1.7	1.4	1.5	1.4	1.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	1.2
29	0.2	0.1	1.5	1.5	0.4	1.2	0.6	0.8	1.0	1.4	2.1	1.9	0.8	0.4	1.5	1.0	0.2	0.1	0.2	1.4	1.2	5.4	14.5	5.8	1.9
30	7.3	3.9	5.8	1.7	1.9	3.3	5.8	2.3	5.6	2.3	4.1	5.0	3.5	1.4	2.1	6.4	5.8	0.2	0.4	5.6	5.2	7.7	4.1	2.1	3.9
31	5.2	4.1	1.9	2.1	1.4	1.7	1.4	1.7	1.2	1.5	1.5	2.5	1.7	1.7	2.1	2.5	1.9	0.4	0.6	0.4	0.2	1.4	0.6	1.7	1.7
Mean	4.6	5.1	3.6	2.7	2.8	2.1	1.7	1.9	2.0	2.2	2.6	2.9	2.7	2.5	2.9	4.3	4.7	5.2	3.3	5.2	4.5	4.6	5.5	4.3	3.5

18. LERWICK (r_D)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
1 D	2.5	3.7	2.9	9.1	16.2	9.3	6.2	13.5	10.8	(4.1)	5.4	6.4	6.6	3.7	1.7	3.3	2.7	2.3	2.1	1.4	4.8	3.9	2.1	1.9	5.3
2	5.6	7.5	6.9	4.8	3.3	3.5	3.1	3.3	5.2	1.7	3.5	4.2	1.9	1.5	1.4	1.9	1.0	0.6	5.8	2.3	0.8	1.4	0.6	1.2	3.0
3	1.5	1.2	0.8	1.4	1.5	2.5	2.1	2.7	1.9	3.9	2.1	2.7	1.5	1.9	1.5	0.6	0.4	0.6	0.8	2.3	1.5	0.6	1.9	1.2	1.6
4	2.5	2.7	2.3	2.5	4.8	5.8	3.3	1.9	2.1	3.5	1.9	(1.7)	(1.9)	0.8	1.4	1.0	2.3	7.1	5.6	9.1	4.1	8.9	3.7	8.3	3.7
5	3.7	3.3	6.4	5.4	1.4	2.1	1.7	2.9	1.5	2.1	2.5	2.1	1.5	1.7	1.5	1.7	8.3	6.0	2.3	2.3	4.6	2.7	5.4	3.9	3.2
6 Q	5.8	1.5	0.4	1.7	2.1	1.2	0.8	1.9	1.0	1.7	1.9	1.4	0.4	0.4	0.6	0.2	0.4	0.6	0.8	1.7	3.9	4.4	1.7	0.6	1.5
7	3.3	1.5	3.5	1.9	1.9	1.4	1.0	1.0	0.6	1.7	2.1	1.2	1.7	0.4	1.7	1.9	11.8	9.8	5.8	2.3	1.4	1.9	1.4	0.6	2.6
8	1.0	1.4	1.0	2.1	1.2	0.6	1.2	0.4	1.0	1.0	3.3	1.5	1.4	1.2	1.2	1.4	1.4	2.3	1.4	3.7	6.8	5.4	5.4	2.1	2.1
9 Q	1.7	1.5	1.5	1.0	1.0	0.8	0.8	1.2	1.2	1.9	2.3	1.4	0.8	0.6	0.6	0.4	0.4	1.0	1.9	0.6	5.0	1.9	0.6	1.9	1.3
10 Q	0.6	1.9	2.3	0.4	1.7	1.4	1.0	0.4	0.6	1.4	1.7	0.4	0.8	1.2	1.7	0.2	1.0	0.6	0.6	2.3	4.1	1.5	1.2	1.7	1.3
11	3.9	2.9	1.4	0.6	1.2	0.4	1.4	1.2	1.0	0.8	2.1	1.7	0.4	1.2	1.4	1.2	1.0	0.8	1.4	4.2	1.4	1.4	0.4	0.4	1.4
12	2.1	1.7	1.4	2.1	1.4	1.7	2.3	1.5	1.9	1.9	2.5	2.3	2.3	2.1	(1.9)	3.7	4.2	5.4	2.1	10.0	6.9	1.9	0.6	3.3	2.8
13	1.5	1.2	5.6	3.7	6.6	2.3	1.5	1.9	1.2	2.5	1.4	4.1	1.7	1.9	3.7	6.4	4.6	4.1	7.5	7.1	6.4	5.2	6.0	3.5	3.8
14 D	1.2	1.0	1.7	0.6	1.9	1.9	8.9	6.9	7.3	3.3	3.5	7.1	6.0	4.2	5.8	2.3	4.4	7.7	2.3	1.4	0.4	8.3	10.2	11.6	4.6
15 D	6.4	1.2	0.4	1.2	1.5	5.6	3.9	1.7	0.6	1.2	1.2	1.5	0.8	1.7	1.0	1.4	0.4	13.3	11.6	4.4	1.9	2.9	5.0	4.1	3.1
16 D	4.6	6.0	7.7	12.7	10.8	6.0	12.0	2.1	8.7	6.0	7.7	4.4	3.9	7.1	21.8	21.0	9.7	24.5	32.2	5.8	21.0	9.8	19.5	6.8	11.3
17 D	1.7	2.3	2.1	2.1	1.7	6.2	3.3	4.2	6.8	4.6	2.9	4.1	7.7	8.1	15.6	3.1	7.1	3.5	8.3	14.9	(13.5)	8.5	3.3	2.3	5.7
18	4.2	1.5	1.7	1.7	2.7	2.3	3.9	2.1	1.9	1.2	4.8	1.7	1.5	2.5	2.9	12.4	9.5	2.3	3.3	5.2	17.6	13.9	2.7	3.1	4.4
19	3.3	1.7	5.8	1.5	1.4	1.2	2.1	1.9	2.1	1.7	1.5	2.3	2.1	1.7	1.7	3.9	1.9	1.5	5.4	3.7	1.5	1.9	5.0	4.1	2.5
20	3.9	1.0	1.5	1.9	2.3	1.2	4.8	6.0	1.2	1.4	1.4	1.9	1.5	1.4	0.6	6.8	2.3	3.5	1.7	1.2	0.4	1.0	4.1	2.3	2.3
21	3.3	2.1	0.2	1.5	1.2	1.2	1.0	1.0	1.5	2.5	1.5	1.7	1.4	0.8	0.8	1.4	1.9	1.4	0.6	0.4	6.2	5.8	4.2	1.2	1.9
22 Q	1.0	1.5	1.0	1.5	0.8	0.6	1.0	0.8	1.4	1.2	1.7	0.8	(1.0)	0.4	0.4	1.4	3.5	1.9	1.2	1.4	1.4	1.0	0.4	0.2	1.1
23	0.2	0.4	1.0	2.9	1.0	0.8	0.6	0.4	0.6	0.8	1.5	1.4	1.7	1.0	1.5	1.4	0.4	0.4	0.2	0.4	0.4	0.4	0.6	0.8	0.9
24 Q	0.6	0.6	1.2	1.2	0.8	0.8	0.4	1.2	0.6	1.0	1.5	1.2	0.6	0.8	0.6	0.4	0.4	0.4	0.4	0.6	0.2	0.2	0.4	0.1	0.7
25	0.2	0.2	0.4	0.1	1.7	1.9	1.9	1.2	1.4	1.7	1.7	1.7	1.9	0.6	2.1	5.4	1.9	4.1	1.9	1.7	1.5	0.8	8.9	6.0	2.1
26	4.8	2.7	1.7	1.2	1.9	1.5	1.0	1.7	1.9	1.4	4.4	0.6	1.7	1.9	0.8	1.4	1.4	1.0	0.4	1.2	0.4	0.2	0.2	0.2	1.5
27	0.2	0.4	0.2	0.8	3.7	4.1	1.4	1.0	1.7	0.6	1.4	1.5	0.4	0.6	0.6	0.6	0.6	1.4	0.8	2.5	2.5	2.1	1.4	2.7	1.4
28	1.9	1.4	0.4	0.6	1.4	0.8	2.9	1.5	1.2	1.4	3.5	4.2	3.5	2.5	2.0	1.5	4.1	3.7	1.0	0.8	0.4	0.4	0.6	0.4	1.8
29	0.8	4.8	5.4	3.3	2.1	3.5	3.7	6.6	2.1	3.3	2.5	3.1	2.5	1.5	3.1	8.7	8.1	3.5	2.9	1.7	2.5	3.9	2.3	3.7	3.6
30	2.5	1.9	7.5	3.3	1.5	2.1	1.5	1.5	1.7	4.2	2.1	1.4	1.0	1.4	0.6	1.4	1.0	0.6	2.1	2.1	0.8	3.4	1.4	0.4	1.9
Mean	2.5	2.1	2.5	2.5	2.8	2.5	2.7	2.5	2.4	2.2	2.6	2.7	2.1	1.9	2.7	3.3	3.3	3.9	3.8	3.3	4.1	3.4	3.4	2.7	2.8

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

19. LERWICK (F_D)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	1.0	1.0	1.5	1.4	1.4	1.7	0.4	0.8	0.4	2.9	1.5	2.3	1.2	0.6	1.4	1.4	4.6	4.2	10.0	6.2	2.1	2.1	1.7	(2.3)	2.3
1	2.1	2.7	3.7	3.7	1.0	1.0	1.0	0.8	(1.5)	1.9	2.7	1.5	0.8	1.7	0.6	0.4	1.7	1.7	0.8	(10.4)	5.6	5.2	1.0	1.0	2.3
2	1.0	0.8	1.2	(4.1)	1.5	1.4	0.4	0.4	0.4	1.4	1.5	1.4	1.4	0.4	0.6	0.4	0.4	0.4	0.6	0.8	9.5	5.6	2.3	2.5	1.7
3	3.3	2.9	5.8	3.5	1.5	0.8	0.6	1.2	1.9	1.9	1.7	3.5	2.1	0.6	1.5	1.5	1.9	1.9	1.7	1.9	(1.9)	1.5	1.2	(1.5)	2.0
4	5.0	1.9	0.4	1.9	1.7	1.7	0.8	1.9	0.4	0.6	1.7	0.6	0.4	0.4	1.2	0.6	0.2	0.2	1.5	1.5	1.4	(8.1)	(5.2)	2.7	1.7
5 Q	3.9	3.1	2.1	0.2	0.8	0.8	0.8	1.4	0.6	1.5	(1.7)	(1.0)	1.4	0.6	1.5	0.4	0.4	0.1	0.4	0.4	1.0	0.8	13.1	8.4	1.9
6	5.4	1.9	3.5	0.4	0.8	1.0	1.0	1.6	0.2	0.4	1.9	0.6	1.0	0.8	0.4	0.4	0.2	0.1	0.1	0.4	0.4	0.6	0.4	1.5	1.0
7 Q	5.4	3.9	0.4	7.5	3.3	5.6	7.5	5.4	(3.5)	1.9	2.1	3.3	3.9	1.9	2.9	0.8	0.8	0.8	1.0	1.9	1.9	6.0	5.8	9.3	3.6
8 D	17.4	11.4	4.2	3.9	1.9	3.9	3.5	4.1	1.9	4.2	5.0	(1.9)	(2.3)	6.0	5.8	5.8	6.2	2.9	2.7	7.7	6.8	(5.2)	2.3	1.4	4.9
9	4.2	6.2	3.7	1.9	0.4	1.0	1.7	1.7	1.7	3.1	3.7	4.4	2.1	2.1	5.6	3.5	1.5	(10.6)	4.2	4.6	4.4	3.7	3.5	5.0	3.5
10	3.1	0.8	0.4	0.8	0.8	0.6	1.0	0.6	2.1	1.9	1.4	1.9	1.5	1.2	0.8	0.6	1.4	1.5	0.6	0.8	4.8	11.1	7.7	(2.7)	2.1
11 Q	2.9	1.0	1.7	1.9	4.1	1.4	1.2	1.9	1.9	0.6	1.9	1.2	1.2	0.6	0.6	1.0	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	1.1
12	0.1	0.4	1.0	1.4	(3.5)	1.5	0.1	0.6	0.6	0.6	1.5	3.5	1.7	3.7	1.4	1.5	7.7	12.0	(6.9)	1.9	5.2	6.9	9.7	12.0	3.6
13	5.2	2.9	4.1	3.7	2.7	0.8	1.4	1.7	1.7	0.8	3.7	3.7	3.9	5.8	2.5	7.5	27.9	47.4	20.4	18.9	32.6	34.4	13.5	18.7	11.1
14 D	(21.0)	9.3	11.4	12.0	5.4	2.1	3.7	1.9	3.1	3.7	3.7	3.5	1.9	1.5	5.6	1.9	3.7	4.8	11.6	(9.8)	24.9	7.7	13.5	16.8	7.5
15 D	28.9	76.0	(8.1)	6.0	3.9	5.4	3.3	1.9	3.5	1.7	2.9	2.5	3.9	1.5	1.9	3.9	7.7	12.5	14.7	8.7	17.4	12.7	6.8	1.9	9.9
16 D	22.8	18.9	2.5	1.0	1.9	4.1	1.9	1.0	2.2	3.3	1.7	6.2	3.1	5.8	3.9	9.7	5.8	5.0	9.5	(23.5)	7.5	1.7	3.4	5.8	6.3
17	1.0	2.9	9.6	7.7	5.8	1.9	1.7	3.7	1.7	1.2	1.9	1.4	5.5	2.1	2.1	1.7	1.2	0.4	2.1	1.7	1.0	1.4	1.4	1.5	2.4
18	0.4	0.6	3.7	3.5	0.4	0.4	0.6	0.8	0.8	1.9	1.7	1.0	1.2	1.2	1.5	2.9	13.3	0.8	1.2	(5.4)	17.4	5.2	1.7	1.9	2.9
19	1.2	6.6	5.4	0.6	1.7	1.5	1.5	1.7	1.4	1.7	1.7	0.6	1.0	0.8	0.4	0.4	1.0	0.6	0.4	0.2	0.2	0.4	0.4	0.6	1.3
20	1.7	3.3	(3.3)	0.8	0.6	0.6	0.4	0.2	0.2	1.9	0.4	0.6	1.2	1.7	0.4	1.4	0.6	0.2	0.2	0.2	0.2	0.4	0.2	0.4	0.9
21 Q	1.0	0.4	1.0	1.7	1.7	0.4	0.4	0.2	1.7	0.4	(1.0)	1.0	1.2	1.4	0.8	0.8	1.4	2.7	1.7	(9.1)	5.8	1.2	0.4	0.4	1.6
22	0.4	0.4	0.2	1.0	0.6	0.4	1.0	0.6	1.4	0.6	1.7	1.2	1.4	1.7	1.7	0.4	0.2	0.2	0.2	0.8	2.1	1.0	1.0	(3.5)	1.0
23 Q	2.5	1.0	1.4	1.0	0.4	0.8	0.6	0.8	0.4	0.4	1.0	0.4	1.2	0.8	1.0	1.4	0.4	0.4	0.8	3.7	2.0	2.1	0.2	0.4	1.0
24	1.4	1.5	1.7	0.2	0.4	0.8	1.5	0.8	1.0	0.4	1.9	2.5	2.5	1.7	2.3	2.7	1.0	3.7	1.4	11.6	9.7	9.7	1.0	4.6	2.7
25	8.7	15.1	3.1	2.1	2.7	1.9	1.7	1.9	1.5	0.6	2.3	2.7	1.0	1.7	1.4	2.3	2.1	2.9	7.9	6.9	9.7	5.8	1.7	3.1	3.8
26	4.1	7.5	12.5	12.4	1.7	1.2	0.6	1.5	3.5	1.9	1.7	3.1	1.4	1.9	2.1	1.7	(1.9)	1.7	3.7	10.8	1.9	3.3	1.5	2.3	3.6
27	4.1	1.7	1.5	0.8	1.4	1.2	1.5	0.8	1.0	1.0	2.1	2.5	3.1	1.9	6.6	1.7	1.7	7.3	11.2	3.5	12.9	11.6	9.3	5.6	4.0
28	5.4	1.0	0.8	1.7	0.4	0.6	0.6	0.7	0.4	1.4	1.7	1.2	1.2	1.4	1.2	3.9	1.7	0.8	0.6	0.6	3.9	3.9	1.9	0.6	1.6
29	0.2	0.8	0.6	2.3	2.1	1.7	1.2	0.4	1.9	1.9	2.1	1.9	3.9	2.7	1.5	3.5	0.4	1.7	4.1	9.8	9.3	(9.3)	8.9	10.6	3.5
30	13.5	3.9	4.1	3.1	1.9	2.7	2.5	1.2	3.9	2.1	1.9	1.9	1.0	3.9	1.2	1.9	1.9	2.7	5.8	10.2	8.1	2.7	6.0	7.7	4.0
31	5.8	6.2	3.4	3.0	1.9	1.6	1.5	1.4	1.6	1.6	2.0	2.0	1.8	1.9	2.0	2.2	3.3	4.3	4.3	5.6	6.8	5.5	4.1	4.4	3.3

20. LERWICK (r_D)

JANUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	4.1	4.6	2.3	3.5	1.7	4.6	1.9	1.7	1.7	1.9	2.7	3.5	2.5	2.3	0.8	2.9	8.1	6.2	5.8	(25.0)	(27.0)	1.9	7.5	3.5	5.3
1 D	1.9	3.7	4.4	5.0	1.9	3.3	1.7	0.6	2.9	4.8	5.0	1.9	3.5	0.4	0.4	0.8	0.6	1.4	3.9	3.9	6.4	9.3	3.9	0.4	3.0
2	3.7	5.2	5.8	1.9	2.9	1.7	0.4	1.5	1.5	1.2	1.0	1.7	2.7	2.3	0.6	0.4	0.4	0.4	0.8	0.4	1.2	0.2	3.9	3.1	1.9
3	4.1	3.9	0.8	0.4	0.2	1.2	0.4	0.4	0.4	1.5	1.5	1.4	0.8	1.2	1.9	0.4	0.8	1.2	0.6	0.4	0.2	0.6	0.8	1.7	1.1
4 Q	1.5	0.8	0.4	0.4	0.8	0.6	1.2	0.4	0.6	0.6	1.0	(1.2)	0.6	0.6	0.6	1.0	1.0	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.6
5	1.2	1.7	2.3	2.7	3.3	3.5	4.2	1.5	2.1	1.9	(7.7)	1.9	2.3	3.7	17.2	4.1	1.9	0.4	5.8	2.9	5.0	1.9	4.2	4.2	3.7
6	5.0	4.1	1.0	5.6	4.2	1.9	0.8	1.0	1.0	1.2	1.9	1.0	1.2	1.9	0.4	1.7	3.9	(10.0)	5.0	3.9	1.5	1.5	0.4	2.1	2.6
7	3.7	1.7	0.8	1.7	1.9	2.1	1.7	1.0	0.6	2.1	4.6	0.6	1.5	1.7	1.2	1.4	0.4	0.4	0.4	0.2	0.2	0.8	0.4	1.9	1.4
8	1.0	0.8	1.9	1.0	0.6	0.4	0.2	1.4	0.4	0.4	1.5	0.8	1.0	0.8	0.4	1.9	1.9	1.4	0.2	1.7	1.9	2.1	1.9	1.9	1.1
9 Q	1.0	0.4	1.0	0.4	0.6	0.2	0.2	0.2	0.6	0.8	0.8	1.2	0.8	0.6	0.2	0.4	0.4	0.4	0.4	0.4	1.5	0.6	1.9	0.8	0.7
10	1.7	1.9	1.2	1.2	0.2	0.2	0.6	0.8	1.0	1.2	1.2	1.7	1.7	1.5	1.4	0.4	1.5	0.2	0.8	0.6	0.8	0.6	0.4	0.6	1.0
11 Q	1.4	1.9	1.7	1.0	0.2	0.2	0.2	0.1	0.2	0.6	0.4	1.9	1.5	0.2	1.4	1.5	0.2	0.1	0.6	0.2	0.8	0.4	1.7	1.7	0.8
12	1.7	2.1	1.9	0.4	0.4	1.0	0.6	1.0	1.4	2.5	1.2	1.7	1.5	1.0	0.2	0.4	0.2	1.2	1.9	0.8	1.9	1.7	(2.1)	0.4	1.2
13	0.4	2.3	3.1	0.4	0.2	0.2	0.2	0.4	0.2	0.2	1.7	1.4	0.2	0.4	0.2	0.1	0.2	0.6	0.6	(5.2)	9.3	(9.3)	5.2	6.4	2.0
14	5.8	6.8	1.9	2.3	3.1	18.9	15.4	4.6	11.6	13.5	3.9	6.8	0.6	2.5	3.7	1.9	0.8	1.0	1.9	2.1	2.9	(7.7)	12.2	2.5	5.6
15	1.7	5.4	6.8	1.4	1.0	2.5	1.9	2.5	2.5	1.9	1.9	1.9	3.1	0.6	1.9	2.7	1.7	0.2	0.8	1.4	1.4	0.4	0.2	0.4	1.9
16	0.6	1.4	0.6	1.9	0.6	0.4	0.6	1.0	0.6	3.1	1.9	1.7	0.4	1.7	1.0	1.2	1.0	0.2	0.2	0.6	0.2	0.2	0.2	2.1	1.0
17	1.7	1.5	1.2	1.7	1.7	1.2	1.5	1.0	0.6	0.4	0.8	1.4	0.8	0.4	1.5	0.8	0.6	0.2	1.7	7.5	6.2	1.9	1.9	2.1	1.7
18 D	0.2	0.2	0.4	2.1	3.7	2.1	3.9	1.7	1.7	1.4	0.8	1.7	(4.1)	1.9	4.2	28.0	24.1	4.8	4.8	6.8	6.6	1.9	(7.9)	(7.1)	5.1
19	4.6	7.7	2.1	6.0	15.6	7.3	5.4	6.6	1.9	2.3	1.7	1.7	1.6	1.7	1.9	0.8	0.4	0.2	0.2	0.8	0.2	0.2	4.1	5.0	3.3
20	1.9	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	1.7	1.6	0.8	1.5	1.2	1.0	0.2	0.2	0.4	0.2	3.9	1.7	1.7	1.2	0.9
21 Q	1.0	0.8	0.8	1.6	1.7	1.9	3.9	4.1	1.7	1.9	1.9	1.7	1.7	1.0	5.6	6.8	7.7	17.0	19.3	41.7	16.2	28.4	15.4	6.8	7.9
22 D	10.4	4.1	4.6	2.3	1.9	1.9	3.5	3.3	1.7	3.9	(1.9)	1.2	4.4	2.9	2.3	2.7	1.4	3.9	8.7	18.1	2.3	6.6	15.2	11.8	5.0
23	17.0	25.3	3.9	2.5	2.1	1.9	1.9	1.7	2.1	2.5	1.7	2.9	1.9	2.1	4.1	1.5	4.2	3.9	1.7	2.9	4.4	3.5	3.7	5.0	4.3
24	7.1	11.4	7.7	3.9	1.9	1.4	0.4	1.7	5.6	4.8	2.9	3.3	1.4	1.2	2.1	1.9	3.9	3.1	1.9	1.4	7.7	1.7	11.2	7.7	4.1
25	5.8	1.4	17.4	9.3	2.3	3.9	1.9	1.7	1.9	3.9	5.4	1.9	5.8	3.7	2.1	4.1	3.5	5.8	8.7	(12.9)	7.9	9.8	7.7	5.0	5.6
26	18.3	9.7	5.2	4.8	3.1	5.8	1.9	3.7	3.5	3.5	1.9	5.2	2.7	1.5	2.1	6.0	15.8	9.8	7.9	(17.3)	13.3	35.3	11.2	13.5	8.5
27 D	3.7	7.7	15.2	6.8	4.6	4.2	1.9	1.7	3.5	2.7	5.6	3.9	0.2	8.9	5.8	11.6	15.2	(15.4)	11.6	11.4	15.4	9.7	7.7	(15.4)	7.9
28	(7.7)	9.7	6.8	1.7	1.9	2.5	2.3	1.7	1.5	0.6	1.4	1.9	2.9	1.7	3.7	4.6	7.7	6.8	15.6	5.8	(7.9)	3.9	2.7	4.2	4.5
29	4.4	4.8	12.2	11.6	1.9	1.7	1.7	1.9	1.5	1.7	4.1	3.9	3.1	1.7	0.8	3.7	1.2	0.8	0.6	0.4	8.5	6.8	3.9	3.9	3.6
30	5.8	5.8	4.2	3.7	1.9	1.9	1.2	1.2	1.5	1.9	1.9	2.9	3.3	3.1	1.7	1.7	4.2	(3.9)	1.9	0.4	1.9	4.4	1.9	2.3	2.7
Mean	4.2	4.5	3.9	2.9	2.2	2.6	2.0	1.7	1.9	2.3	2.4	2.2	2.0	1.8	2.3	3.2	3.7	3.3	3.7	5.8	5.3	5.0	4.6	4.0	3.2

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

21. LERWICK (r_D)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	1.7	1.9	1.0	1.4	1.0	0.6	0.4	0.4	0.8	1.2	1.6	2.5	1.5	0.8	1.7	0.4	0.4	0.6	0.8	0.6	0.4	1.9	5.8	3.9	1.4
2	3.9	3.7	3.7	1.0	2.9	3.7	1.7	2.9	3.9	5.8	1.9	1.7	2.1	1.5	0.6	0.8	4.4	4.1	1.9	4.8	2.3	3.7	1.9	2.7	2.8
3	1.4	1.0	3.1	0.4	0.4	0.4	1.0	0.6	0.4	0.4	1.7	2.1	0.6	1.7	1.2	0.6	1.0	0.4	0.4	0.4	0.4	1.5	3.9	13.9	1.7
4	2.5	1.7	0.8	0.2	0.4	0.8	0.6	0.4	1.0	1.9	1.6	1.0	1.7	1.0	1.9	0.4	1.7	3.1	8.9	5.8	3.1	2.5	2.3	1.7	2.0
5	1.7	5.8	5.8	7.7	2.1	1.7	0.8	0.4	1.9	2.9	1.7	1.2	1.7	0.8	0.8	0.4	0.6	0.4	0.2	0.2	0.6	0.2	0.2	0.2	1.7
6 Q	0.2	(4.8)	5.0	1.5	1.4	1.2	0.4	0.2	0.2	1.4	1.0	1.0	1.2	0.8	1.5	0.8	0.2	0.4	0.2	0.2	1.9	1.7	0.2	0.4	1.2
7	1.0	0.8	0.6	0.6	2.9	3.7	1.2	1.4	1.5	1.9	0.8	3.9	1.9	2.3	1.7	0.6	0.4	2.1	0.2	0.6	0.4	0.4	0.6	0.2	1.3
8	0.2	0.2	0.2	0.8	1.7	1.7	0.6	0.8	1.0	1.5	1.7	1.9	1.4	1.9	1.0	0.4	0.2	0.2	0.2	0.6	3.9	5.2	3.5	3.5	1.4
9	3.7	1.5	7.5	5.4	2.9	3.7	1.5	0.6	0.6	0.8	(1.5)	3.9	1.5	1.5	0.4	1.4	3.3	0.6	0.6	1.5	3.7	1.9	1.9	1.7	2.2
10	2.1	3.7	1.7	1.7	0.2	1.9	0.8	1.0	0.2	1.0	1.0	0.6	1.5	0.8	0.4	0.2	0.2	0.2	0.6	0.4	0.2	7.9	2.7	1.2	1.3
11 Q	1.5	0.2	0.4	0.2	0.2	0.4	0.2	0.2	1.0	0.2	0.4	0.2	0.2	0.4	0.2	1.4	0.2	0.4	0.4	1.0	2.1	1.4	1.9	1.4	0.7
12	0.4	1.0	0.6	0.4	0.4	0.6	0.6	1.2	2.9	1.7	1.0	1.5	0.6	0.4	1.4	0.4	0.8	0.6	1.2	0.2	0.6	0.4	1.2	0.8	0.8
13 Q	1.0	0.2	0.2	0.4	0.4	0.4	0.2	0.2	0.2	0.8	1.4	0.4	0.8	1.4	0.4	0.2	0.2	2.5	0.2	0.6	1.4	1.5	1.0	1.9	0.7
14	1.7	2.3	1.5	2.1	1.9	1.4	1.0	1.5	0.8	1.5	1.9	1.7	1.2	1.7	2.1	0.8	0.8	1.0	3.7	12.5	13.3	5.6	1.7	1.5	2.7
15	3.5	3.7	4.2	1.0	1.9	4.8	1.9	1.7	1.9	1.9	1.7	1.9	1.0	2.1	1.2	5.8	9.7	6.8	2.3	1.0	3.9	4.2	5.2	3.9	3.2
16 Q	0.8	1.7	0.6	0.2	0.6	0.6	0.6	1.2	0.4	1.0	1.0	1.2	0.8	1.2	0.8	0.4	0.6	0.2	0.6	0.2	0.6	0.4	0.4	0.2	0.7
17 Q	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.8	0.4	1.5	1.5	0.6	0.4	0.8	1.7	1.0	0.6	0.2	0.2	0.2	0.2	0.2	0.4	0.5
18	1.0	1.0	0.4	0.2	0.1	0.1	0.1	0.1	0.1	1.9	1.9	0.4	1.5	0.8	1.9	0.8	1.7	1.2	1.5	1.5	8.7	6.8	2.3	5.4	1.7
19 D	3.7	(5.2)	10.6	7.7	1.7	1.5	1.5	1.9	1.7	1.9	4.1	7.7	3.7	13.3	8.3	10.4	5.4	3.9	30.9	(15.4)	(14.3)	6.8	8.7	(31.8)	8.4
20	30.9	24.1	16.4	4.4	2.5	1.2	1.7	3.1	4.8	2.9	3.1	5.6	2.9	1.9	1.9	6.9	1.9	3.9	9.5	9.5	2.1	1.7	5.7	7.1	6.5
21 D	4.2	3.9	9.7	(14.5)	14.3	4.2	2.9	1.9	7.3	1.9	5.8	1.9	3.9	3.1	21.2	(18.3)	39.6	2.3	25.1	16.4	3.7	28.2	32.8	22.1	12.1
22 D	23.0	29.0	7.7	9.7	(11.0)	7.7	5.2	2.1	5.8	3.3	3.7	4.1	3.9	7.3	8.9	9.7	2.9	16.2	24.5	20.8	7.5	3.9	13.5	17.4	10.4
23 D	(23.0)	1.9	6.2	8.3	3.9	4.1	3.7	7.5	8.5	6.6	3.1	1.0	4.4	4.2	4.8	16.4	31.5	17.3	13.3	32.6	6.8	8.5	16.6	13.1	10.3
24 D	9.1	5.0	4.8	5.8	3.7	2.3	2.9	9.3	10.0	4.4	3.9	1.7	3.1	5.6	4.6	(16.4)	8.5	12.7	16.2	9.5	(9.5)	27.0	19.1	9.7	8.5
25	8.9	5.0	6.2	4.8	4.4	1.7	2.5	1.7	4.8	2.9	5.8	1.9	3.7	1.5	1.7	4.8	2.7	3.1	20.3	10.2	7.7	10.6	13.9	17.4	6.2
26	4.8	6.8	8.9	9.5	1.9	5.4	4.8	3.1	1.7	3.5	3.9	3.7	2.5	3.7	5.4	1.5	3.5	1.7	3.5	1.7	30.7	(11.4)	5.8	6.4	5.7
27	1.7	2.7	6.6	5.8	3.1	1.5	1.2	1.0	1.9	1.9	2.5	3.9	3.7	0.8	1.0	1.0	0.4	1.2	2.9	0.6	3.7	4.8	10.2	3.9	2.8
28	1.9	1.9	1.9	1.7	1.4	0.6	0.8	0.8	0.6	1.5	1.7	1.7	0.4	0.2	0.6	1.0	0.8	1.0	0.6	0.4	0.8	0.8	16.2	10.8	2.1
Mean	5.0	4.3	4.2	3.5	2.5	2.1	1.5	1.3	2.4	2.1	2.2	2.2	1.9	2.3	2.8	3.7	4.4	3.2	6.1	5.4	4.8	5.4	6.4	6.6	3.6

22. LERWICK (r_D)

MARCH, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	1.5	4.8	6.0	3.9	1.7	0.6	0.6	0.8	1.0	1.9	2.7	1.9	3.9	0.6	1.2	1.9	1.2	1.7	0.4	(9.8)	8.7	1.4	1.0	2.9	2.6
2	3.1	1.7	5.4	1.4	1.0	0.4	0.4	0.6	1.7	1.7	1.9	3.5	3.5	1.0	1.7	1.7	1.4	0.6	1.7	(3.9)	1	6.9	3.9	2.1	2.3
3	1.7	1.7	0.8	0.8	1.7	1.0	0.8	1.7	3.7	1.7	2.9	1.7	4.8	1.4	0.7	1.7	1.9	4.4	0.8	7.1	7.7	3.1	1.4	1.8	2.4
4	1.7	7.1	7.7	1.9	0.8	0.8	1.0	0.6	1.9	1.2	2.3	2.5	1.0	1.0	0.4	0.6	0.2	0.4	1.9	3.1	1.4	0.4	1.9	1.0	1.8
5 Q	0.2	0.4	0.6	1.5	0.8	0.4	0.4	0.6	0.6	1.9	1.5	1.9	1.7	0.6	0.6	1.7	1.9	0.8	0.4	1.9	1.9	1.7	1.2	0.6	1.1
6 Q	1.0	3.1	0.8	1.7	1.0	1.0	1.2	1.0	1.0	2.7	1.5	2.5	1.5	1.7	3.9	1.9	0.2	1.0	0.8	0.4	1.9	1.0	0.6	0.2	1.4
7 Q	0.2	0.2	0.4	0.2	0.2	0.4	0.2	0.4	0.4	1.9	1.9	1.9	1.7	1.7	1.7	1.5	0.6	0.6	0.6	0.8	0.4	0.8	5.0	6.0	1.2
8	4.1	3.9	3.9	0.4	0.2	0.2	0.4	1.2	1.0	1.5	2.9	3.7	2.7	1.7	1.7	2.1	1.2	1.2	0.2	0.2	0.4	1.7	3.1	3.9	1.8
9 Q	2.7	1.7	1.0	1.9	1.9	1.0	0.4	1.7	1.4	0.6	3.5	1.7	0.6	0.6	1.7	1.7	0.4	0.2	0.4	1.0	1.0	0.8	2.1	1.5	1.3
10	1.9	1.9	1.5	3.1	2.9	1.9	0.2	0.8	0.8	3.1	3.1	3.1	1.9	0.4	1.7	1.9	1.4	1.5	1.5	1.0	4.1	(4.4)	2.9	(3.9)	2.0
11	(11.8)	12.5	5.8	4.4	1.7	1.4	1.4	0.4	1.0	1.4	3.7	3.7	2.5	1.9	1.5	1.0	1.2	1.0	1.9	1.0	1.9	1.2	1.7	0.6	2.8
12	0.4	0.4	1.7	1.5	1.4	1.0	3.3	1.9	1.7	1.5	3.7	2.1	1.9	1.2	1.7	2.3	1.9	1.4	1.5	1.4	1.2	0.4	1.0	1.0	1.6
13	1.7	0.4	1.0	1.9	3.7	2.1	0.8	2.1	1.7	1.9	1.9	4.4	3.3	1.4	2.9	2.9	1.7	3.9	1.5	2.1	1.5	1.7	1.7	1.0	2.1
14	1.5	1.0	1.0	2.9	5.2	7.7	5.8	2.9	2.1	1.2	1.9	3.9	1.5	1.2	1.4	1.4	3.5	0.8	2.7	0.8	1.0	0.4	0.2	0.2	2.2
15	0.4	0.4	1.4	0.4	1.2	1.0	1.7	1.7	1.0	0.6	4.3	2.9	3.1	3.7	0.4	1.9	1.6	1.0	0.4	0.2	0.2	3.7	3.7	(3.1)	1.7
16 Q	5.4	3.5	1.2	0.8	0.8	1.2	1.0	1.0	1.5	0.4	1.0	1.9	1.2	0.6	0.8	1.9	1.9	1.0	1.9	1.4	0.4	1.2	1.9	0.4	1.4
17	1.0	2.1	0.2	0.4	0.2	0.2	0.8	1.2	0.8	3.9	2.5	2.5	2.9	2.9	3.3	0.4	0.6	1.7	1.2	7.7	3.3	2.1	1.2	1.8	
18 D	1.5	1.9	9.5	18.5	21.2	18.9	5.2	1.9	2.1	4.1	5.2	2.1	2.7	1.7	2.9	2.9	10.8	2.7	8.9	4.2	0.6	1.7	29.5	25.7	7.8
19 D	11.8	18.7	3.7	7.3	3.9	1.9	2.7	1.4	1.9	3.1	3.5	3.3	3.9	1.9	2.1	6.0	3.5	3.7	49.8	33.0	(11.0)	46.9	7.7	5.8	9.9
20 D	9.1	29.9	22.2	12.5	6.9	4.6	3.3	1.9	3.5	5.8	3.7	3.5	2.5	1.9	1.7	3.5	20.8	7.5	17.6	47.7	9.5	4.8	13.5	11.8	10.4
21	13.7	9.7	7.9	6.2	7.5	2.9	4.6	6.6	4.8	3.7	3.9	3.1	1.9	3.9	7.9	3.7	9.5	7.7	1.5	1.4	1.4	11.6	5.8	16.4	6.1
22	28.9	16.8	16.2	7.7	5.4	6.6	1.9	2.7	5.6	1.7	5.8	(3.7)	5.8	6.8	4.8	5.2	7.7	11.6	7.9	3.9	13.5	5.8	2.9	3.1	7.6
23 D	7.7	6.9	3.7	7.5	11.2	11.2	6.8	1.9	2.5	3.5	5.4	1.7	5.4	5.8	2.3	20.5	25.1	15.4	17.2	20.1	27.0	13.9	11.6	6.0	10.0
24 D	9.8	9.5	13.5	13.5	0.6	5.8	13.3	(3.9)	5.8	(3.9)	3.7	3.9	2.1	3.5	7.9	7.3	10.2	28.8	11.0	10.8	17.9	21.0	15.6	5.6	9.5
25	7.3	8.1	11.2	8.3	7.7	1.7	7.3	3.9	5.8	2.7	2.7	1.2	2.9	3.1	3.5	7.7	3.7	1.7	3.7	3.9	3.7	4.4	7.3	2.7	4.8
26	2.9	2.3	1.9	1.2	1.0	0.4	3.7	1.9	2.3	2.9	1.9	2.5	0.8	0.4	0.8	1.2	1.2	2.7	1.5	0.6	1.0	0.8	0.6	0.8	1.6
27	1.5	1.4	0.6	0.4	0.4	0.8	2.5	4.1	2.1	3.3	3.7	3.9	5.4	9.7	2.9	5.2	4.4	17.2	9.7	3.7	5.8	2.1	1.0	4.1	4.0
28	4.1	1.9	1.4	9.7	3.9	1.5	1.5	1.7	1.0	1.9	1.7	3.5	2.9	4.2	3.5	2.9	3.1	9.7	4.1	8.7	4.4	6.8	7.9	7.7	4.2
29	5.2	3.1	2.9	1.9	2.7	1.0	0.6	1.7	3.1	3.3	2.5	4.6	1.9	1.7	5.8	3.1	9.1	1.9	5.8	5.8	1.5	3.1	13.9	5.0	3.8
30	0.8	1.9	6.0	2.1	1.9	0.6	1.0	(2.7)	(2.9)	3.5	2.7	3.5	3.5	0.8	4.1	1.5	2.1	1.5	0.6	0.4	0.6	2.1	5.0	8.5	2.5
31	2.9	5.4	4.8	1.7	3.1	1.2	1.4	1.7	1.7	2.1	3.5	3.9	0.6	0.8	1.7	2.3	1.9	2.7	10.6	6.6	0.8	0.6	1.7	7.7	3.0
Mean	4.8	5.3	4.7	4.1	3.3	2.6	2.4	1.2	2.2	2.2	3.0	2.9	2.6	2.3	2.6	3.4	4.4	4.4	5.5	6.0	4.6	5.2	5.1	4.6	3.8

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

23. LERWICK (r_D)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	2.9	3.3	5.6	3.1	3.3	1.9	1.7	0.6	1.4	3.7	2.7	1.7	1.7	1.2	1.9	4.1	1.9	(4.1)	2.7	7.5	4.2	2.1	1.9	9.7	3.1
2	2.1	1.7	1.9	2.3	2.9	0.2	1.2	0.6	1.7	(4.8)	1.9	2.9	2.7	1.4	2.1	3.9	1.9	1.2	1.5	11.8	5.6	4.8	1.9	6.2	2.9
3	5.8	2.7	3.9	1.5	3.1	2.9	0.6	2.3	1.7	3.9	2.7	4.8	4.6	2.7	1.9	1.9	1.0	1.7	1.9	4.4	3.3	3.9	5.2	1.7	2.9
4	4.2	5.8	19.5	9.7	3.7	1.9	0.8	1.2	1.7	1.9	1.9	3.9	1.9	1.7	1.9	1.2	0.8	0.8	3.9	1.9	1.7	1.5	0.2	0.6	3.1
5	1.7	6.2	4.6	1.0	1.7	1.7	1.2	0.6	1.5	1.9	2.7	1.9	2.9	1.7	1.9	1.7	3.9	2.3	1.0	2.3	1.9	2.1	2.3	3.1	2.2
6	3.1	5.8	3.9	0.8	1.4	1.5	1.7	1.9	3.7	1.9	3.9	1.9	2.7	1.4	1.9	1.5	1.9	1.9	0.4	1.9	12.7	9.7	5.6	5.6	3.3
7	1.9	2.1	3.9	4.1	5.6	3.7	0.4	(3.1)	1.5	3.9	3.9	3.3	3.7	2.7	1.7	12.5	10.4	1.7	2.5	5.8	(17.4)	15.4	1.7	2.1	4.8
8	1.4	5.0	6.0	1.9	1.0	1.0	2.1	1.9	3.5	1.9	(1.9)	1.7	1.9	1.0	1.9	2.9	1.9	1.9	(20.3)	4.2	1.7	3.9	1.5	2.7	3.5
9	5.6	3.9	1.7	1.2	1.7	1.7	3.7	3.7	5.6	3.1	4.1	3.5	0.6	1.9	2.5	3.9	1.4	1.0	1.0	1.9	1.0	0.8	1.4	3.3	2.5
10	5.8	1.0	0.8	0.8	1.2	1.9	3.1	2.9	1.5	1.5	3.9	3.9	1.0	1.7	6.8	1.9	0.4	(1.9)	5.8	1.5	1.9	0.6	0.4	0.4	2.2
11 Q	0.4	0.8	1.5	1.0	0.2	1.2	1.7	1.9	2.5	1.9	2.5	3.5	1.7	1.9	1.7	1.9	1.5	1.7	0.4	0.4	1.9	1.4	2.3	1.7	1.6
12 Q	1.7	1.7	1.5	1.4	1.5	1.7	1.2	0.4	1.4	1.7	1.7	2.1	1.7	0.8	1.7	1.7	1.4	0.4	0.4	0.2	0.4	0.4	0.8	0.2	1.2
13 Q	0.8	0.8	0.2	0.2	0.4	1.5	1.9	1.9	1.2	0.6	1.7	2.3	2.1	1.9	1.9	0.6	0.2	0.6	0.4	1.0	0.6	0.8	0.2	0.6	1.0
14	0.2	0.4	0.6	0.6	1.0	1.4	1.4	1.5	1.2	1.9	3.1	5.4	3.3	1.7	2.9	1.9	1.2	1.9	3.1	3.9	3.9	2.9	7.3	2.3	2.3
15 D	2.5	1.2	3.1	1.9	1.9	4.1	2.9	1.2	0.4	4.4	2.3	2.9	1.9	0.8	2.1	1.5	1.9	3.7	6.7	(8.9)	30.5	28.6	10.8	7.7	5.7
16 D	3.1	9.5	(10.6)	6.8	5.8	5.4	3.9	1.9	3.1	5.4	4.2	1.9	2.9	3.5	9.5	1.9	1.7	2.7	7.3	26.1	16.4	0.8	9.8	12.7	6.5
17 D	13.5	7.7	10.6	7.1	6.9	1.5	4.1	5.0	2.3	1.7	3.5	1.9	14.9	8.7	7.1	5.6	7.3	1.9	3.9	5.8	6.8	6.8	12.7	12.0	6.6
18	16.6	12.4	4.2	6.4	3.9	7.5	2.1	8.5	2.5	1.4	2.9	3.9	2.9	3.3	3.9	3.7	7.5	3.7	11.6	6.8	4.4	15.8	9.7	15.8	6.7
19 D	11.6	8.7	15.6	3.3	2.7	1.2	7.3	1.7	3.1	4.4	2.7	3.9	10.4	6.2	2.5	9.3	2.9	4.2	12.7	9.7	6.6	9.3	9.7	14.1	6.8
20	(3.9)	2.1	1.2	2.9	3.1	9.1	7.7	6.8	2.9	1.7	4.8	1.7	2.7	1.7	(6.0)	4.8	4.8	1.9	3.9	18.1	5.0	5.0	3.9	2.1	4.5
21	3.7	7.7	3.9	4.8	2.9	1.7	1.9	1.7	1.4	3.9	3.7	3.5	2.3	1.5	1.9	1.9	1.7	1.5	19.4	7.5	5.8	2.3	24.9	23.1	5.6
22	5.0	5.8	2.3	3.5	3.7	1.9	4.1	6.8	3.3	6.0	2.9	1.9	2.9	2.5	9.7	6.8	7.5	12.7	1.9	0.8	19.3	18.5	2.3	1.9	5.6
23	2.1	2.9	1.9	3.9	1.7	7.3	5.0	4.6	1.7	1.9	3.5	4.2	4.2	3.9	4.1	2.1	3.7	3.9	1.9	21.4	22.2	6.8	9.7	(16.4)	5.9
24	6.6	1.9	2.7	1.9	1.4	0.8	1.5	1.5	1.5	1.9	1.9	2.5	1.0	1.0	1.9	6.6	1.9	2.5	1.9	4.2	1.0	2.5	9.1	5.8	2.7
25	4.8	1.0	1.9	1.9	1.5	1.5	1.4	3.5	1.2	2.3	1.7	3.5	1.9	2.1	1.7	1.9	9.3	5.8	2.9	1.9	1.7	1.7	1.9	(4.8)	2.7
26	(10.6)	8.9	1.7	2.1	0.4	1.4	1.9	3.9	1.9	1.0	(2.9)	4.8	(1.9)	5.0	1.9	1.2	1.9	3.7	1.9	18.1	7.7	3.7	3.9	0.8	3.9
27	1.5	1.4	2.7	1.9	1.9	1.7	0.6	1.0	1.9	1.9	1.9	3.9	1.5	1.2	1.7	1.7	1.2	1.7	5.8	5.4	2.3	2.1	19.3	(8.7)	3.1
28 Q	3.3	3.3	8.1	5.6	5.0	3.7	0.8	0.6	1.9	2.1	1.9	2.1	3.9	1.0	2.9	1.7	0.8	0.6	1.9	1.5	1.9	(3.7)	2.1	5.4	2.7
29 Q	3.9	0.6	0.4	0.4	1.0	0.8	0.6	0.6	0.2	1.9	3.7	3.9	1.0	2.1	1.7	0.4	1.0	0.2	2.7	0.6	1.9	0.4	1.2	2.1	1.4
30 D	0.4	2.1	1.9	0.6	1.2	1.0	0.4	1.9	1.9	1.9	1.9	1.9	0.2	0.6	0.8	0.2	4.8	6.6	3.9	1.9	22.0	13.3	15.6	7.7	3.9
Mean	4.4	3.9	4.3	2.8	2.5	2.5	2.3	2.5	2.0	2.6	2.8	3.0	3.0	2.3	3.1	3.1	3.0	3.3	4.3	6.2	7.1	5.7	6.0	6.0	3.7

24. LERWICK (r_D)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1 D	8.3	1.7	1.4	2.1	0.6	3.9	5.6	3.5	4.8	2.5	5.2	5.2	8.7	7.1	18.7	52.9	109.2	70.3	21.8	30.9	37.6	64.3	(33.8)	19.3	21.6
2	(65.6)	13.9	7.7	4.8	1.7	1.5	2.9	1.9	2.7	3.1	1.0	2.7	1.2	(2.5)	4.8	2.3	1.0	1.9	0.2	0.2	1.0	12.5	6.8	6.8	6.3
3	4.6	3.5	4.2	1.9	1.9	1.7	3.7	3.7	1.7	2.8	2.1	1.7	1.5	3.1	3.3	2.1	1.0	1.9	16.2	6.1	1.5	0.8	7.7	5.6	3.5
4	2.1	3.7	5.8	3.9	3.9	3.7	3.9	9.7	4.8	1.9	2.7	1.0	1.7	0.8	1.7	3.5	2.9	3.9	24.7	28.8	4.8	1.7	0.2	0.6	5.1
5	3.9	2.1	1.2	1.7	1.7	6.2	2.5	4.1	2.9	2.9	2.7	1.9	2.9	1.4	1.2	1.9	1.7	1.9	1.9	9.5	13.3	5.8	3.7	9.7	3.7
6	1.5	(17.4)	12.5	6.9	3.7	3.9	1.9	1.4	2.5	5.8	1.9	2.3	2.9	7.7	5.8	1.9	2.3	1.7	0.6	9.7	7.5	2.9	3.9	23.1	5.5
7	14.5	4.2	2.9	1.7	1.9	1.4	1.9	4.8	2.9	3.9	1.7	2.9	1.5	1.7	3.7	1.7	1.7	0.4	0.4	0.6	1.5	1.0	1.2	1.2	2.6
8	1.0	2.5	1.5	3.7	1.0	1.7	1.9	1.9	3.1	2.3	1.9	1.9	1.0	1.0	1.9	1.2	1.7	1.9	1.5	1.7	0.6	0.6	1.5	0.4	1.6
9 Q	0.2	0.2	1.2	1.0	1.5	0.8	1.0	1.2	0.8	1.7	2.9	2.3	1.9	0.6	1.0	1.7	1.2	0.4	0.2	0.4	0.6	0.6	0.4	1.0	1.0
10 Q	1.2	1.9	0.8	2.3	2.3	1.4	1.5	1.9	(3.9)	0.2	1.9	1.7	1.0	1.0	1.5	1.0	1.4	0.4	0.8	0.2	0.8	0.4	0.4	0.8	1.3
11	1.0	5.8	4.6	1.7	3.7	1.0	0.8	1.7	2.7	4.2	3.5	1.9	1.2	1.7	1.0	2.3	2.1	1.0	3.3	0.6	0.2	0.2	0.2	0.6	2.0
12 Q	0.2	0.2	0.4	1.9	1.7	1.5	0.2	0.2	1.9	1.9	2.9	3.9	0.8	1.9	1.0	2.3	0.8	0.2	0.6	0.2	0.4	1.9	3.9	0.2	1.3
13	1.9	1.9	1.7	2.3	3.9	1.9	5.8	0.8	1.9	3.5	4.4	2.9	1.5	1.5	0.8	1.4	1.9	1.5	1.9	0.8	11.0	6.8	1.9	4.2	2.8
14	15.2	8.5	1.7	1.2	2.1	0.4	1.5	2.9	3.9	1.4	3.7	3.3	2.7	1.0	1.0	1.4	3.9	1.2	9.8	(9.8)	(22.0)	9.5	3.9	7.7	5.0
15	2.3	1.4	1.7	6.8	6.4	4.8	4.2	1.9	6.2	1.0	1.9	2.3	1.5	1.0	1.0	1.0	1.7	1.7	4.8	3.7	1.2	10.0	(8.7)	13.3	3.8
16	4.6	6.2	2.1	1.9	1.0	1.9	0.6	1.0	1.0	2.1	2.5	1.9	1.7	0.6	0.4	1.0	1.0	2.7	9.8	3.9	1.9	(6.2)	2.5	3.1	2.6
17	5.6	3.9	2.3	1.0	1.4	0.4	2.9	1.9	1.7	1.9	2.9	1.7	1.0	1.5	2.7	2.7	1.9	1.9	(4.8)	(5.0)	5.8	4.6	9.1	8.3	3.2
18 D	10.4	11.6	12.9	14.9	8.7	8.9	6.9	(6.8)	(6.8)	4.2	(5.8)	(1.9)	3.3	1.9	1.9	1.9	2.1	0.8	9.7	9.7	2.1	3.9	4.1	2.7	6.0
19	1.7	1.7	0.4	4.2	1.0	1.7	1.5	2.9	3.5	1.9	2.9	1.9	3.7	1.9	2.9	1.0	0.6	1.2	9.7	(9.3)	7.1	7.7	1.0	0.8	3.0
20	0.6	1.9	2.5	4.4	1.9	1.9	1.9	1.9	1.7	1.2	1.5	2.9	1.7	1.5	1.0	0.8	1.7	1.5	0.6	3.6	0.6	5.6	1.5	1.9	1.8
21	2.5	1.7	2.9	3.1	1.5	2.5	1.7	1.7	1.7	1.7	1.7	0.8	1.2	2.1	1.7	0.6	0.6	1.0	1.7	2.9	1.0	1.0	1.7	1.2	1.7
22	4.4	7.7	3.9	1.7	2.3	1.5	2.3	1.9	1.9	1.0	4.1	3.1	1.5	1.7	3.1	1.7	2.5	2.9	1.7	1.7	1.4	1.7	5.8	6.0	2.8
23	3.1	1.7	2.1	1.9	1.0	1.2	1.7	2.1	2.5	4.1	3.3	1.2	1.0	1.7	3.1	1.7	1.7	1.0	1.5	1.7	1.7	2.1	2.5	1.4	2.0
24 Q	0.8	0.6	1.9	2.1	1.7	1.5	1.7	2.1	3.1	2.5	2.3	2.5	2.9	3.1	2.3	1.4	1.0	0.8	0.4	0.4	1.0	1.0	2.3	1.7	1.7
25	2.1	6.9	5.2	1.9	1.4	0.6	1.7	1.7	1.9	2.1	3.9	4.1	1.2	1.0	2.7	1.2	1.2	0.6	1.4	0.4	0.4	1.5	1.0	0.8	2.0
26 Q	1.0	1.7	1.7	1.0	1.9	0.4	0.6	1.0	2.9	2.5	2.3	1.9	0.2	0.4	1.0	1.7	1.4	0.2	0.2	0.2	0.1	0.2	0.2	0.2	1.0
27	1.0	0.8	1.0	1.5	1.4	1.2	1.5	0.6	1.5	1.5	3.9	3.5	1.5	0.8	1.0	1.0	2.1	3.9	6.9	4.1	1.0	7.3	15.8	6.0	2.9
28	3.9	12.7	7.5	7.7	1.2	1.0	2.1	2.9	1.9	2.1	3.5	1.9	0.6	0.8	1.7	0.8	1.0	0.8	0.6	0.4	0.8	1.0	0.2	0.2	2.4
29 D	0.6	0.4	0.2	1.4	1.9	2.1	5.6	1.5	1.0	3.9	3.9	3.1	1.9	1.9	1.4	2.3	4.1	3.7	2.3	2.3	24.7	9.7	1.4	6.0	3.6
30 D	10.2	22.6	26.6	16.2	2.5	5.2	3.9	6.8	5.8	1.0	3.9	2.9	4.6	2.1	2.1	2.1	4.6	6.0	1.9	3.5	1.0	1.0	1.5	9.5	6.1
31 D	5.8	(2.1)	3.7	9.7	2.9	6.8	5.0	2.9	1.9	2.3	3.5	2.9	1.9	2.7	5.8	2.1	1.0	0.8	2.3	5.6	1.9	3.5	5.8	9.7	3.9
Mean	5.2	4.9	4.1	3.8	2.3	2.4	2.6	2.6	2.8	2.4	3.0	2.5	2.0	1.9	2.7	3.3	5.3	3.9	4.7	5.0	5.0	5.7	4.3	5.0	3.7

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

25. LERWICK (Γ_D)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1 D	3.9	(2.7)	15.8	26.1	9.7	7.5	4.1	4.6	1.9	2.9	3.5	3.1	2.9	2.7	1.9	(8.3)	8.3	1.9	1.0	8.7	(6.8)	1.9	1.9	2.3	5.6
2	2.3	1.9	5.8	1.9	1.9	1.9	1.7	1.9	2.7	4.2	1.5	3.1	2.5	1.9	2.3	1.7	1.6	1.9	1.9	1.0	1.9	1.7	2.9	0.8	2.2
3	4.4	3.7	3.1	1.9	0.8	1.9	1.4	3.7	1.9	1.9	1.9	2.3	1.7	1.4	2.1	1.7	1.0	0.8	0.4	2.7	1.9	1.7	1.0	0.8	1.9
4	1.0	5.0	4.8	1.5	0.4	1.2	1.0	1.0	2.9	2.1	2.9	1.5	0.8	0.8	0.4	1.7	1.0	0.6	1.7	1.7	1.5	0.8	1.0	1.2	1.6
5 Q	4.8	2.3	2.3	1.9	1.9	1.4	1.4	(2.3)	2.9	2.3	2.5	3.7	0.2	1.4	0.6	1.9	0.8	0.4	0.4	0.6	0.4	0.6	0.6	1.5	1.6
6 Q	1.0	0.6	0.8	1.7	2.3	3.5	1.7	1.7	1.2	2.1	1.7	1.9	1.2	1.0	0.2	0.4	1.4	0.6	0.4	0.2	0.2	1.0	1.2	1.0	1.2
7	1.4	0.8	0.4	1.2	1.9	1.5	1.7	1.4	1.9	2.9	2.3	1.9	0.8	1.0	0.8	1.9	1.7	0.4	1.0	1.0	0.8	0.6	1.9	2.9	1.4
8	1.9	1.9	1.7	1.7	3.9	7.5	1.9	2.5	4.4	3.1	5.8	2.9	1.9	1.0	1.9	2.1	1.5	1.2	2.1	4.4	2.1	3.7	6.8	8.1	3.2
9	6.8	6.8	3.1	2.7	4.8	5.4	7.7	3.9	5.8	2.9	2.7	1.9	1.9	1.7	2.3	0.8	1.9	1.4	1.2	1.4	1.0	0.2	0.4	1.0	2.9
10	3.5	1.9	1.0	1.7	1.7	0.4	0.4	1.7	0.8	0.8	3.1	2.9	3.1	1.9	1.2	1.2	3.3	1.2	1.5	5.2	2.3	0.8	1.0	0.6	1.8
11	0.4	0.4	2.9	1.9	3.1	0.8	1.4	1.9	1.9	1.9	2.7	1.7	1.7	1.7	0.8	0.4	0.4	0.4	0.2	0.2	2.9	1.4	1.0	0.4	1.4
12	3.9	3.9	0.2	1.9	1.9	1.9	0.4	0.8	1.7	1.5	1.9	2.1	1.7	0.6	1.0	0.4	0.8	1.0	0.4	0.6	2.9	1.5	6.6	4.8	1.9
13 D	10.0	7.3	12.4	18.5	6.8	8.9	(10.4)	10.4	2.3	1.9	4.1	4.8	2.9	3.9	5.2	5.6	7.3	5.0	16.4	4.8	3.7	18.5	34.7	19.7	2.4
14 D	18.5	9.5	8.1	1.9	1.9	2.5	5.0	4.4	2.7	2.5	1.9	1.7	1.9	3.7	1.4	1.0	1.5	1.9	5.8	3.1	1.0	1.9	9.3	4.8	4.1
15	3.9	(13.5)	17.4	1.9	2.7	1.4	0.8	1.7	1.5	2.9	2.9	1.4	1.7	1.7	0.8	1.0	1.7	1.9	1.9	1.0	0.8	3.9	1.9	1.4	3.0
16 Q	1.0	1.2	1.4	1.0	1.2	1.5	(1.9)	1.2	3.1	3.9	3.9	2.9	1.5	0.8	0.6	1.9	1.5	0.4	1.7	1.5	0.4	1.9	2.7	0.8	1.7
17	0.6	0.8	1.0	1.0	1.9	1.5	1.9	1.7	1.9	3.7	1.5	2.1	0.8	1.9	1.0	2.7	0.4	1.7	0.4	0.6	0.6	1.9	1.9	0.8	1.4
18 Q	0.6	0.6	1.7	1.7	1.7	2.9	1.9	1.2	1.9	2.9	3.9	1.9	1.0	0.6	0.4	1.2	0.6	1.0	1.0	0.4	1.2	4.1	1.7	1.5	1.5
19	3.1	1.4	1.2	1.0	1.7	1.9	1.5	1.9	3.7	3.3	3.9	1.9	2.3	1.0	1.4	1.9	1.9	1.7	1.9	5.2	(7.5)	7.5	3.9	5.8	2.9
20 D	5.0	9.3	7.7	5.6	4.8	12.0	5.0	1.9	2.9	7.7	4.8	3.9	1.0	1.7	1.5	3.9	3.9	1.7	0.8	2.3	1.9	1.2	1.9	1.9	3.9
21	4.8	1.7	1.7	1.7	1.4	1.5	(2.9)	2.5	1.5	1.9	1.9	3.1	1.2	1.7	0.8	0.4	0.4	0.2	1.7	1.2	0.6	1.9	1.9	8.7	2.0
22	6.9	1.9	2.9	1.9	1.9	1.2	0.6	1.9	(1.4)	2.1	2.7	1.9	2.7	0.4	0.6	1.2	0.4	1.9	1.5	0.6	0.4	0.8	0.6	0.4	1.6
23	0.4	0.2	1.7	1.9	1.0	0.8	0.4	1.4	0.4	2.7	2.9	1.7	1.9	0.4	0.6	1.0	1.7	0.4	0.4	0.8	1.7	0.6	4.2	2.7	1.3
24 Q	1.2	2.5	1.2	1.4	0.8	0.4	1.5	1.7	1.5	0.4	3.9	3.7	1.0	1.0	1.0	1.0	1.4	0.6	0.4	0.4	0.8	1.2	1.5	0.4	1.3
25	0.8	0.8	1.2	2.1	3.5	0.6	0.6	0.4	1.4	2.7	5.8	3.3	4.1	1.0	0.8	1.0	3.5	1.0	1.9	6.8	4.1	2.9	10.6	3.9	2.7
26	5.6	7.7	2.9	1.9	4.6	3.9	1.5	0.6	1.7	2.5	2.5	1.9	2.7	2.3	1.2	1.5	1.9	1.9	1.9	1.4	0.4	0.8	0.8	1.9	2.3
27	0.4	1.0	1.5	1.7	1.2	1.9	1.7	1.7	1.5	3.7	2.5	2.3	2.9	3.1	5.2	6.3	2.9	2.7	1.7	1.9	0.6	0.6	0.8	1.9	2.2
28 D	14.5	2.7	1.9	2.7	4.2	2.9	2.9	1.2	2.1	2.9	1.2	1.9	3.3	(3.9)	3.3	9.3	3.7	3.9	2.3	10.8	8.3	3.5	(11.6)	4.5	4.5
29	5.8	6.9	3.9	10.4	4.4	2.5	2.9	1.9	5.0	5.8	1.7	3.7	2.1	3.9	1.9	3.3	1.9	2.7	2.9	1.5	1.9	1.2	1.5	3.9	3.5
30	2.5	1.9	2.7	3.1	3.5	4.6	1.7	1.9	3.9	1.9	2.9	(3.9)	2.5	1.2	1.5	1.9	0.8	1.9	0.8	0.4	0.4	0.8	1.9	2.7	2.1
Mean	4.0	3.4	3.8	3.6	2.8	2.9	2.3	2.2	2.3	2.8	2.9	2.6	1.9	1.7	1.5	2.3	2.0	1.4	2.0	2.1	2.0	2.4	3.8	3.3	2.6

26. LERWICK (Γ_D)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	0.8	0.6	1.9	1.9	1.0	1.0	0.8	1.9	1.2	0.8	1.5	2.7	2.1	0.6	0.8	1.0	1.2	1.0	1.4	1.5	4.8	2.9	3.9	12.4	2.1
2	7.5	2.1	1.4	1.7	0.6	0.2	3.1	2.3	3.9	3.5	1.5	3.7	1.9	0.8	1.0	1.2	2.5	0.6	0.4	0.8	0.4	1.0	1.7	1.9	1.9
3	3.7	10.4	1.5	1.5	1.9	0.6	3.7	0.6	1.2	2.9	2.5	1.9	1.9	1.2	1.0	1.0	0.6	0.6	1.7	0.6	1.4	1.2	1.0	1.2	1.9
4	0.6	1.9	4.1	2.1	3.9	1.5	1.2	1.7	1.2	1.9	1.9	2.9	1.9	0.6	1.7	1.2	0.6	0.4	0.8	7.7	5.6	1.7	0.8	1.2	2.0
5	1.7	5.8	5.0	5.8	1.2	1.5	1.0	1.9	1.9	2.3	1.9	1.9	1.7	0.4	0.6	0.8	2.5	0.6	1.0	0.4	0.4	0.2	0.4	0.4	1.7
6	1.9	2.1	2.9	3.5	2.1	1.7	1.5	1.9	1.2	5.4	2.9	1.7	1.2	1.4	0.8	1.2	1.7	0.2	2.9	1.4	1.5	1.7	0.8	0.4	1.8
7	1.0	0.4	0.4	1.0	1.2	1.7	0.8	0.4	1.0	4.8	1.0	2.3	0.4	1.0	0.6	1.0	0.8	1.9	0.4	0.4	0.6	1.7	0.6	1.9	1.1
8	2.7	0.8	0.8	1.7	0.8	0.8	0.6	1.7	1.7	3.1	(1.9)	(2.9)	3.5	1.9	0.8	1.9	2.7	1.9	1.0	0.6	1.9	0.8	2.9	9.3	2.0
9 D	8.9	9.7	3.9	1.9	1.9	1.9	5.8	3.1	5.6	5.6	4.2	3.7	4.6	5.2	1.9	1.9	1.5	1.9	6.9	6.6	2.1	1.2	2.3	1.9	3.9
10	1.7	3.5	1.2	2.7	3.5	1.9	2.1	0.8	2.3	3.9	3.9	1.7	0.8	1.4	1.9	1.9	1.7	1.9	3.3	12.5	6.8	7.7	7.7	3.7	3.4
11	5.4	2.3	4.6	3.5	1.9	0.8	1.9	2.5	5.8	1.9	5.6	3.7	1.4	4.4	3.9	6.9	1.5	2.1	1.7	0.8	0.6	0.8	0.4	2.9	2.8
12	2.5	1.0	6.0	3.5	5.2	1.9	1.7	0.8	2.3	1.7	2.7	1.9	1.4	1.0	1.5	1.4	0.8	0.6	1.9	1.7	1.4	1.7	0.8	1.7	2.0
13 Q	3.1	3.9	1.5	1.9	1.5	1.2	1.2	1.4	1.9	1.9	1.9	0.8	1.9	1.5	1.7	1.7	1.2	0.4	0.8	0.6	1.0	1.4	3.9	1.7	1.7
14 Q	3.7	2.3	2.1	0.6	0.8	0.8	1.9	1.9	1.2	2.9	2.5	2.5	1.2	0.6	1.0	0.4	0.4	0.2	0.8	2.9	0.8	1.0	3.1	4.6	1.7
15 Q	2.1	0.8	1.9	1.2	1.7	1.0	0.8	1.5	0.8	1.9	3.9	1.9	1.0	0.8	1.5	1.7	0.4	1.9	0.6	1.2	0.8	1.5	1.9	1.0	1.4
16	0.8	1.0	0.8	0.2	0.6	1.4	1.9	1.0	2.7	(3.9)	1.9	1.9	1.2	1.2	1.0	1.0	0.6	1.0	1.7	1.9	1.7	1.0	0.8	0.6	1.3
17 D	3.5	5.8	4.8	0.8	1.4	1.9	1.7	1.4	1.5	1.7	5.8	2.9	5.4	3.8	5.4	2.1	(1.9)	1.9	0.8	0.8	5.8	4.6	5.8	4.2	3.2
18	6.8	15.4	2.9	5.6	4.1	3.3	3.5	2.7	3.5	2.1	2.5	2.1	1.7	1.5	1.4	0.8	0.6	1.0	3.9	2.1	3.9	0.8	0.4	3.0	
19	0.6	1.7	1.0	3.3	1.9	1.9	1.5	1.5	1.2	1.4	3.1	3.7	1.2	1.2	0.6	3.9	0.8	0.8	0.6	0.2	1.2	3.3	3.5	4.4	1.9
20	7.7	5.0	0.4	1.9	1.0	2.5	1.5	1.2	3.5	3.9	2.3	4.1	1.7	1.2	1.9	4.6	2.5	1.7	0.8	0.2	1.2	2.9	2.5	0.6	2.4
21 Q	1.7	1.7	1.9	5.6	2.9	1.9	1.2	1.2	1.7	1.9	2.9	2.3	1.2	0.8	1.0	0.8	1.7	1.7	1.0	0.4	0.6	0.6	0.6	0.4	1.6
22	1.5	0.8	9.7	2.9	0.8	1.0	2.5	1.0	1.0	1.2	3.1	2.1	1.7	0.8	1.0	2.3	1.9	0.6	1.7	1.9	0.1	0.6	0.2	0.8	1.7
23 D	1.7	3.9	2.9	1.5	0.8	2.7	0.6	0.8	1.7	2.9	3.7	3.9	3.9	5.3	3.1	3.9	1.7	3.3	1.9						
24 D	5.6	5.0	10.0	7.7	3.9	2.1	9.1	3.7	6.4	7.7	4.6	6.2	4.6	1.7	3.1	19.1	10.8	0.8	1.5	0.6	0.4	1.9	3.5	1.7	5.1
25	0.8	0.6	1.0	0.6	1.5	0.8	0.4	1.9	1.9	1.0	2.1	4.6	2.5	1.9	1.9	1.9	2.5	1.2	1.0	1.0	2.0	1.7	4.8	2.5	1.8
26	2.1	0.8	1.2	1.7	0.6	2.1	1.9	1.0	1.7	1.9	2.9	1.9	1.9	2.5	1.5	0.4	3.5	5.0	1.0	2.1	0.8	1.5	3.7	8.3	2.2
27 D	3.7	2.9	1.9	1.7	2.7	1.9	2.3	1.0	1.7	7.7	2.5	3.9	1.7	1.7	2.1	1.5	1.7	1.7	0.6	5.8	4.4	1.9	19.3	6.8	3.5
28	1.9	0.6	1.4	0.4	1.0	3.1	0.6	1.7	1.9	1.7	2.3	2.7	2.3	1.0	0.8	2.3	1.9	1.0	3.9	2.9	1.2	0.6	0.2	2.1	1.6
29	1.7	0.2	1.9	4.8	1.9	0.6	1.7	1.0	2.3	2.9	1.5	2.9	0.8	0.6	1.4	1.4	1.7	0.6	1.5	1.2	0.6	0.6	0.8	1.4	1.5
30 Q	1.2	1.9	1.9	1.4	1.2	1.2	1.7	1.0	1.9	2.3	3.9	1.0	1.7	1.9	0.2	1.0	1.0	0.2	0.2	1.7	0.8	2.3	1.9	0.4	1.4
31	1.7	1.2	1.0	1.0	0.8	1.7	1.2	1.9	2.3	2.9	0.8	1.0	1.9	1.0	0.4	1.2	0.4	0.2	6.0	5.4	0.8	0.4	0.2	1.2	1.5
Mean	2.9	3.1	2.7	2.4	1.8	1.6	2.0	1.6	2.3	3.0	2.8	2.7	2.0	1.7	1.5	2.4	1.8	1.3	1.7	2.5	1.8	1.9	1.2	3.0	2.2

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

27. LERWICK (r_D)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	1.5	1.0	1.7	2.9	1.9	1.9	1.7	0.4	2.3	2.7	2.3	1.9	1.9	1.0	1.9	1.4	1.5	0.6	1.0	0.6	1.0	0.4	1.0	1.2	1.5
1 Q	0.4	0.8	0.4	1.7	2.1	1.7	1.2	1.2	1.5	3.9	3.3	3.3	1.0	1.7	1.7	0.8	1.7	1.0	1.5	0.6	2.1	8.5	3.7	1.0	1.9
2	1.2	1.9	4.1	1.9	4.1	1.9	0.8	1.4	2.9	1.0	3.9	1.9	1.2	1.4	1.4	1.0	1.2	1.0	0.6	1.4	0.8	1.9	1.7	0.4	1.7
3	0.8	1.2	1.0	0.6	1.2	1.5	0.4	1.2	1.0	3.9	1.4	1.0	0.8	1.2	1.0	1.7	0.2	0.6	0.8	0.8	1.2	0.6	1.9	4.6	1.3
4 D	1.4	1.7	0.6	0.6	1.9	1.9	3.5	(3.9)	(6.0)	1.9	8.5	5.6	8.7	11.4	9.1	12.0	10.0	17.4	93.6	16.6	5.8	1.9	1.9	3.3	9.5
5 D	3.9	3.1	13.5	14.3	3.5	3.7	3.7	4.1	2.7	3.3	3.3	1.9	2.7	3.5	1.7	1.7	3.9	(6.9)	8.3	4.1	1.9	0.4	0.6	0.6	4.1
6 D	1.9	2.9	3.9	2.9	1.9	0.6	0.8	1.5	1.4	(1.9)	1.9	2.3	1.0	0.8	1.4	0.8	1.4	3.9	0.2	0.2	0.2	1.2	5.6	5.8	1.9
7	1.9	4.1	3.9	5.8	1.9	0.8	0.4	2.7	(1.9)	3.5	3.9	2.7	1.7	1.7	1.9	1.9	3.1	0.6	0.4	1.0	0.8	0.8	6.9	3.3	2.4
8 Q	2.9	0.4	0.6	1.7	1.0	1.2	0.2	0.6	1.0	3.7	3.9	2.3	1.4	1.0	3.1	2.7	1.0	1.9	1.0	1.4	1.0	0.6	4.8	5.2	1.9
9 Q	0.6	1.2	3.9	3.9	1.7	1.0	0.6	1.0	1.9	2.9	2.3	3.3	3.1	1.4	3.7	2.3	2.3	1.5	0.4	0.2	0.4	0.4	0.4	0.6	1.7
10 Q	1.2	3.1	1.2	0.6	1.7	2.5	1.9	2.1	1.7	1.7	3.9	3.1	1.7	0.8	1.0	1.7	1.4	0.8	1.0	1.4	1.0	0.6	1.9	1.7	1.7
11 Q	0.6	1.0	1.2	1.2	1.7	1.7	0.2	0.4	12.1	1.9	1.9	1.7	1.5	1.4	1.7	1.7	1.7	0.8	1.9	0.6	0.6	1.7	1.9	2.9	1.8
12 D	5.6	1.2	0.6	0.8	1.7	1.7	0.7	1.7	5.2	6.6	4.1	7.7	3.3	1.7	0.8	7.5	3.7	1.9	8.9	36.7	21.2	6.9	25.9	16.8	7.2
13 D	3.3	5.6	9.5	8.7	1.9	1.7	3.7	3.5	1.9	2.1	3.3	3.9	0.8	1.2	4.1	2.1	1.9	3.7	1.5	1.0	2.9	12.4	8.5	1.9	3.8
14	1.0	3.7	4.8	3.5	0.6	3.5	3.9	1.7	3.1	1.9	(2.9)	(2.9)	0.8	5.0	1.9	1.7	1.9	1.0	12.7	9.3	1.7	1.5	2.5	0.6	3.1
15	4.1	3.7	6.6	1.5	1.9	1.2	1.7	1.9	2.9	2.9	2.1	1.6	1.7	1.5	2.7	1.4	1.5	0.6	1.7	1.7	1.7	1.0	3.3	1.5	2.2
16	1.9	1.2	7.1	4.8	3.5	2.7	6.9	4.8	5.8	1.9	1.7	1.9	1.9	1.7	2.9	1.9	0.6	0.8	5.8	5.0	4.6	1.0	1.0	1.9	3.1
17 D	3.9	3.3	0.8	0.4	0.8	5.4	7.7	6.8	2.7	2.9	1.9	1.5	0.4	1.7	2.3	2.1	5.4	13.5	14.5	24.7	(23.9)	(7.7)	(5.6)	14.3	6.4
18 D	16.0	3.9	15.8	5.9	6.6	2.9	3.7	5.0	1.9	3.7	2.1	2.9	1.7	2.9	2.7	1.5	0.6	1.5	1.4	1.5	7.7	1.9	1.4	3.1	4.1
19	4.8	3.9	3.1	1.7	2.7	1.7	0.8	2.1	1.2	3.3	2.1	2.1	1.0	3.5	1.9	1.5	1.0	3.7	8.5	5.8	4.6	16.8	15.2	3.9	4.0
20	2.1	3.9	2.1	3.9	3.9	1.9	2.1	3.7	1.9	3.7	3.5	3.9	5.8	5.8	3.5	3.9	22.2	1.7	0.8	19.9	(11.2)	3.5	0.8	3.1	4.9
21 D	2.3	0.8	3.7	1.7	1.5	1.9	1.9	1.7	3.5	0.6	1.5	0.4	0.8	0.6	1.7	1.7	1.0	0.2	0.8	1.7	0.8	0.2	0.4	0.4	1.3
22	0.4	0.2	0.6	1.0	1.2	1.9	2.1	1.9	2.1	5.8	1.7	1.4	1.7	1.9	5.6	3.5	3.7	3.7	22.2	20.5	1.7	(8.7)	9.3	1.9	4.4
23	1.5	2.9	3.7	5.8	1.4	1.7	1.5	1.9	8.9	1.7	(3.9)	(1.9)	1.7	1.5	1.9	1.9	9.5	4.6	7.7	12.7	13.3	1.9	3.1	11.2	4.5
24	7.5	9.3	5.0	2.7	6.4	2.9	2.1	1.9	4.1	1.0	2.7	1.0	0.8	2.7	1.7	1.7	0.2	0.4	2.9	1.9	0.8	0.6	0.8	1.5	2.6
25	6.2	(4.8)	10.6	4.1	6.2	5.6	1.9	2.9	1.9	2.9	3.7	5.6	1.9	2.5	1.7	1.7	2.7	0.8	1.7	5.2	4.1	2.7	1.9	1.7	3.5
26	1.2	4.6	0.6	1.7	0.8	1.5	1.4	1.4	1.9	3.9	1.9	2.5	1.7	0.6	1.9	1.2	0.2	0.2	0.6	1.9	1.5	0.8	1.9	3.1	1.6
27	0.6	0.8	1.9	1.2	0.2	0.2	0.2	0.4	1.9	1.9	2.5	2.9	1.5	1.0	1.0	1.7	0.4	0.6	0.4	0.2	0.4	5.0	1.9	1.0	1.2
28	2.9	1.2	1.0	1.2	1.2	1.0	1.9	1.9	1.5	1.7	2.5	1.9	1.7	1.7	1.7	1.5	0.2	0.2	0.4	0.6	0.2	0.2	0.2	0.4	1.3
29	1.9	3.9	1.4	1.0	1.7	1.7	1.0	1.7	1.2	1.4	2.9	1.9	1.9	1.5	1.9	1.0	0.8	1.5	0.2	0.4	0.8	0.4	0.6	3.7	1.6
30	1.9	0.4	0.2	0.4	0.2	0.2	0.4	0.6	(1.9)	2.7	2.7	2.1	0.6	1.9	1.5	0.6	0.8	1.0	0.4	0.4	3.5	1.9	3.9	1.7	1.3
31 Q	2.8	2.6	3.7	2.9	2.2	2.0	2.0	2.2	3.0	2.8	2.9	2.6	1.9	2.2	2.4	2.3	2.8	2.5	6.6	5.8	4.0	3.0	3.9	3.4	3.0

HOURLY RANGES OF DECLINATION
Monthly, seasonal and annual means

28. LERWICK (r_D)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1932	3.4	4.0	4.1	3.3	3.0	2.4	2.9	3.1	3.1	3.1	3.6	3.1	2.8	2.4	2.5	3.9	4.5	4.2	5.3	3.8	3.6	4.4	5.2	4.4	3.6
August	4.3	5.4	3.9	3.1	3.3	2.6	2.4	2.5	2.5	3.0	3.0	2.6	1.8	2.3	2.3	4.7	4.8	4.1	3.0	5.0	5.5	6.7	6.1	4.4	3.7
September	4.6	5.1	3.6	2.7	2.8	2.1	1.7	1.9	2.0	2.2	2.6	2.9	2.7	2.5	2.9	4.3	4.7	5.2	3.3	5.2	4.5	4.6	5.5	4.3	3.5
October	2.5	2.1	2.5	2.5	2.8	2.5	2.7	2.5	2.4	2.2	2.6	2.7	2.1	1.9	2.7	3.3	3.3	3.9	3.8	3.3	4.1	3.4	3.4	2.7	2.8
November	5.8	6.2	3.4	3.0	1.9	1.6	1.5	1.4	1.6	1.6	2.0	2.0	1.8	1.9	2.0	2.2	3.3	4.3	4.3	5.6	6.8	5.5	4.1	4.4	3.3
December	4.2	4.5	3.9	2.9	2.2	2.6	2.0	1.7	1.9	2.3	2.4	2.2	2.0	1.8	2.3	3.3	3.7	3.3	3.7	5.8	5.3	5.0	4.6	4.0	3.2
1933	5.0	4.3	4.2	3.5	2.5	2.1	1.5	1.3	2.4	2.1	2.2	2.2	1.9	2.3	2.8	3.7	4.4	3.2	6.1	5.4	4.8	5.4	6.4	6.6	3.6
January	4.8	5.3	4.7	4.1	3.3	2.6	2.4	1.9	2.2	2.2	3.0	2.9	2.6	2.3	2.6	3.4	4.4	4.4	5.5	6.0	4.6	5.2	5.1	4.6	3.8
February	4.4	3.9	4.3	2.8	2.5	2.5	2.3	2.5	2.0	2.6	2.8	3.0	3.0	2.3	3.1	3.1	3.0	3.3	4.3	6.2	7.1	5.7	6.0	6.0	3.7
March	5.9	4.9	4.1	3.8	2.3	2.4	2.6	2.6	2.8	2.4	3.0	2.5	2.0	1.9	2.7	3.3	5.3	3.9	4.7	5.0	5.0	5.7	4.3	5.0	3.7
April	4.0	3.4	3.8	3.6	2.8	2.9	2.3	2.2	2.3	2.8	2.9	2.6	1.9	1.7	1.5	2.3	2.0	1.4	2.0	2.1	2.0	2.4	3.8	3.3	2.6
May	2.9	3.1	2.7	2.4	1.8	1.6	2.0	1.6	2.3	3.0	2.8	2.7	2.0	1.7	1.5	2.4	1.8	1.3	1.7	2.5	1.8	1.9	3.2	3.0	2.2
June	2.8	2.6	3.7	2.9	2.2	2.0	2.0	2.2	3.0	2.8	2.9	2.6	1.9	2.2	2.4	2.3	2.8	2.5	6.6	5.8	4.0	3.0	3.9	3.4	3.0
August	4.4	4.3	3.5	3.0	2.3	2.2	1.9	1.8	2.1	2.0	2.3	2.2	1.9	2.0	2.5	3.1	3.7	3.7	4.4	5.0	5.3	4.8	4.6	4.4	3.2
Winter	4.5	4.9	4.1	3.2	3.0	2.5	2.2	2.2	2.2	2.5	2.9	2.8	2.5	2.3	2.7	3.9	4.3	4.2	4.0	5.6	5.4	5.5	5.7	4.8	3.7
Equinox	4.0	3.7	3.6	3.2	2.4	2.3	2.4	2.3	2.6	2.8	3.0	2.6	2.1	1.9	2.0	2.8	3.2	2.5	3.6	3.6	3.2	3.4	4.0	3.8	3.0
Summer*	4.3	4.3	3.7	3.1	2.6	2.3	2.2	2.1	2.3	2.4	2.7	2.6	2.2	2.1	2.4	3.2	3.7	3.5	4.0	4.6	4.6	4.7	4.3	4.3	3.3
Year*																									

Q and D denote the international "quiet" and "disturbed" days.

* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

29. LERWICK (r_v)

AUGUST, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_v	$\frac{v_{r_v}}{10,000\gamma^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	9	14	9	24	11	4	4	4	6	7	6	6	4	14	8	37	14	73	(38)	(26)	(34)	55	19	24	18.7	87
2 D	(31)	(34)	58	52	7	7	9	9	4	6	8	14	13	12	8	84	34	17	29	36	17	59	26	16	24.6	115
3 D	15	7	34	17	5	8	15	16	14	19	13	13	20	17	5	9	26	16	10	20	10	39	33	(94)	19.8	92
4	(66)	49	34	9	28	21	(21)	12	15	22	8	15	9	9	9	8	16	9	10	7	3	3	3	2	16.1	75
5	1	2	2	8	8	33	8	11	8	28	15	18	3	11	10	4	3	6	8	7	17	9	24	13	10.7	50
6	9	19	16	13	7	3	3	1	7	(27)	(14)	(14)	(9)	(12)	(5)	(14)	(9)	(3)	(10)	(3)	(15)	(15)	(17)	(20)	11.0	51
7	(15)	(7)	(5)	(10)	(10)	(3)	(5)	(3)	(12)	(10)	(9)	(10)	(9)	(9)	(7)	(9)	(2)	(3)	(7)	(3)	(2)	(2)	(5)	(3)	6.7	31
8	(2)	(5)	(10)	(10)	(3)	(7)	(3)	(2)	(2)	(5)	5	3	3	4	3	7	8	8	10	10	7	3	3	3	5.4	25
9	2	2	2	2	7	15	9	13	7	14	9	6	8	7	3	2	2	3	2	3	3	2	3	6	5.5	26
10 Q	1	3	7	6	5	3	2	6	2	7	7	6	3	2	4	1	5	3	6	5	1	1	1	2	3.7	17
11	2	2	3	3	2	3	3	3	3	4	9	2	4	3	3	3	2	8	4	5	3	3	9	(46)	5.5	26
12	17	16	17	(46)	60	26	17	3	4	7	9	3	7	10	17	43	17	9	4	2	6	2	4	16	15.1	70
13	23	3	17	33	25	4	4	10	(12)	7	3	4	6	6	17	9	7	18	9	13	11	12	39	17	12.9	60
14	9	4	4	4	3	2	4	8	3	7	9	5	3	9	9	4	3	8	3	6	2	4	12	8	5.5	26
15	8	3	2	2	3	3	4	4	3	5	6	4	7	8	9	4	9	6	5	8	6	9	4	12	5.6	26
16 Q	8	6	5	3	2	2	2	3	3	2	3	4	7	6	4	4	1	2	9	2	3	4	1	3	3.7	17
17 Q	6	3	1	3	2	3	2	4	3	1	3	7	3	5	7	5	6	4	5	3	5	5	3	2	3.8	18
18 Q	1	6	5	5	2	8	9	3	6	2	8	4	3	3	9	8	4	2	2	3	8	3	9	4	4.9	23
19 Q	6	3	2	3	1	1	3	9	5	2	3	8	3	9	5	8	6	4	4	1	1	1	2	2	3.8	18
20	1	1	1	2	3	1	2	4	3	2	3	3	3	2	3	5	7	6	3	3	9	4	5	5	3.4	16
21	17	16	15	8	9	5	17	9	3	5	1	5	6	9	7	17	9	15	16	9	9	5	26	42	11.7	55
22	25	26	9	9	3	3	3	7	5	5	6	11	9	13	(32)	26	16	28	38	16	9	8	4	5	13.2	62
23	4	2	2	3	3	4	3	3	5	6	7	16	4	10	17	16	27	9	5	2	6	2	6	13	7.3	34
24	4	6	4	4	3	3	4	4	4	3	2	3	1	1	4	3	3	5	2	6	4	4	8	8	3.9	18
25	6	5	8	2	5	2	4	6	5	3	4	2	5	8	3	3	3	4	4	4	4	16	3	15	5.2	24
26	9	6	5	4	4	4	1	4	2	1	7	4	5	8	5	3	1	4	3	4	3	3	16	7	4.7	22
27 D	7	4	3	5	6	9	11	7	9	11	5	16	6	12	(43)	49	33	76	54	24	30	51	205	81	31.5	147
28 D	36	246	138	145	71	15	24	18	48	37	26	16	12	28	23	48	46	130	99	27	12	9	49	114	59.0	275
29 D	95	19	23	24	17	15	14	19	11	22	9	15	31	46	32	28	58	22	26	137	33	100	69	25	37.1	173
30	15	41	43	61	34	16	10	11	9	15	9	23	12	14	8	53	34	41	41	22	66	20	6	53	27.4	128
31	14	33	27	7	9	6	18	7	9	(6)	6	7	7	15	(5)	8	10	6	12	9	10	31	15	8	11.9	55
Mean r_v	15.0	19.1	16.5	17.0	11.5	7.8	7.6	7.2	7.5	9.6	7.5	8.6	7.3	10.4	10.5	16.8	13.6	17.9	15.4	13.7	11.3	15.6	20.4	21.6	12.9	..
$\frac{v_{r_v}}{10,000\gamma^2}$	70	89	77	79	54	36	35	34	35	45	35	40	34	49	49	78	63	83	72	64	53	73	95	101	..	60

30. LERWICK (r_v)

SEPTEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_v	$\frac{V_{r_v}}{10,000\gamma^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	3	5	13	9	5	3	6	5	(3)	(3)	3	4	9	23	10	16	13	11	22	8	1	3	4	28	8.7	41
2	37	40	14	9	9	9	5	2	3	2	2	3	11	15	12	7	17	4	5	3	1	9	11	8	9.9	46
3 Q	9	7	5	3	3	1	3	6	7	(3)	4	3	5	6	7	6	9	9	9	6	3	3	25	6	6.2	29
4	7	5	3	3	4	2	3	2	5	7	3	9	2	5	3	2	3	4	6	7	9	20	35	34	7.6	35
5	11	6	2	1	2	1	2	2	3	5	7	3	4	3	8	54	38	13	11	6	1	3	7	9	8.4	39
6 D	6	3	2	5	9	14	11	8	8	8	5	15	8	163	53	46	35	60	15	44	68	13	10	15	26.0	121
7	7	5	2	2	3	3	5	4	2	8	3	7	4	6	2	7	4	3	15	8	9	30	23	17	7.5	35
8 D	3	4	48	138	108	44	22	13	16	6	6	2	2	3	5	7	9	53	17	37	16	15	5	27	25.3	118
9	41	22	88	24	40	15	17	7	6	3	3	4	9	3	7	3	19	12	9	7	11	13	7	10	15.8	74
10 Q	6	3	5	5	3	3	2	1	1	2	1	2	2	2	3	3	3	7	1	2	3	13	2	11	3.6	17
11 Q	7	4	8	3	3	2	2	1	1	2	5	2	3	3	4	2	2	2	2	1	4	8	2	2	3.1	14
12	1	5	4	3	4	2	1	1	3	3	2	6	2	6	2	3	3	2	3	3	2	8	14	3	3.6	17
13	3	3	3	3	12	6	2	3	6	3	(4)	2	2	5	4	5	6	8	6	4	(5)	6	5	3	4.7	22
14	3	3	2	4	(3)	6	8	7	3	4	4	3	2	5	2	3	5	9	(13)	6	9	4	3	2	4.7	22
15	4	3	3	3	3	1	3	5	7	(5)	6	8	8	9	9	9	5	3	6	3	4	3	14	9	5.5	26
16 Q	4	6	2	1	1	3	1	6	6	3	4	4	3	5	3	5	3	6	3	3	3	1	1	1	3.3	15
17 Q	1	2	1	2	1	4	2	4	(9)	(4)	2	1	4	3	2	1	4	1	2	3	2	1	2	26	3.5	16
18	9	14	3	5	2	2	5	4	5	1	5	8	3	3	3	13	30	24	8	7	4	4	88	51	12.5	58
19	17	77	28	35	13	5	3	4	6	16	(4)	9	11	3	25	52	38	20	13	16	9	114	65	14	24.9	116
20	3	34	69	28	3	22	8	28	10	4	7	1	2	9	23	11	16	8	7	6	4	9	26	15	14.7	69
21	26	27	5	7	15	5	6	15	3	(2)	4	5	2	3	3	6	1	3	7	10	5	11	36	9	9.0	42
22	11	6	5	7	34	23	16	7	3	6	9	3	3	4	3	1	31	27	8	11	22	19	25	15	12.8	60
23 D	18	13	8	3	18	5	8	7	11	9	8	9	14	14	11	58	62	68	76	90	147	65	(49)	16	32.8	153
24 D	26	20	21	44	24	9	8	17	7	9	8	3	17	16	34	153	103	26	42	97	88	28	139	117	44.0	205
25 D	65	101	23	87	12	16	11	19	12	13	9	13	26	100	77	75	49	63	40	77	(43)	133	59	36	48.3	225
26	34	20	38	31	8	35	34	17	(7)	9	9	9	6	2	7	6	5	3	6	17	44	18	17	24	16.9	79
27	109	56	63	26	5	9	6	7	6	5	6	6	(19)	3	14	26	(45)	9	5	9	9	1	9	6	19.1	89
28	7	5	9	9	3	4	4	3	3	5	3	3	3	13	(9)	7	8	13	3	3	2	7	4	3	5.5	26
29	15	56	35	11	2	1	3	2	2	6	4	3	7	3	7	3	3	2	3	(30)	26	14	14	20	11.3	53
30	26	16	21	12	8	3	7	9	6	(6)	3	9	9	2	15	5	15	11	3	3	2	59	42	9	12.5	58
Mean r_v	17.3	19.0	17.8	17.5	12.0	8.6	7.1	7.2	5.7	5.4	4.8	5.3	6.8	14.6	12.3	20.2	19.5	16.1	12.1	17.5	18.5	21.2	24.8	18.2	13.7	..
$\frac{V_{r_v}}{10,000\gamma^2}$	81	89	83	81	56	40	33	34	27	25	22	25	32	68	57	94	91	75	56	81	86	99	116	85	..	64

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

31. LERWICK (r_v)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_v	Vr_v 10,000 r_v^2
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	6	29	25	4	2	3	6	2	2	2	3	3	7	9	8	5	4	2	4	3	8	16	15	4	7.2	34
2	3	3	2	3	1	2	3	2	4	3	7	11	3	29	20	9	1	2	13	7	9	9	3	26	7.3	34
3	31	38	27	16	9	2	5	5	3	4	3	2	5	14	9	2	6	3	2	2	3	3	6	27	9.5	44
4	14	10	2	11	5	4	3	2	2	3	3	3	6	2	6	11	15	5	6	8	2	7	14	5	6.2	29
5	3	21	18	3	8	3	7	2	1	2	1	6	2	5	(9)	5	3	8	6	5	2	16	16	33	7.7	36
6 Q	7	14	9	5	3	2	2	1	1	3	4	6	7	3	5	3	3	2	3	6	6	9	3	3	4.6	21
7	48	34	9	2	1	1	1	3	2	2	5	3	3	3	3	4	3	2	2	1	1	2	4	9	6.2	29
8	3	3	3	4	3	4	8	3	2	1	2	3	3	3	5	2	1	7	25	16	13	11	10	6	5.9	27
9	22	16	3	6	2	3	2	3	2	2	3	4	3	3	9	42	35	10	8	10	7	8	14	43	10.8	50
10	28	14	6	16	3	5	11	6	2	7	3	3	3	6	15	33	14	34	2	3	32	10	3	3	10.9	51
11	3	9	3	5	3	3	3	3	6	5	4	4	3	3	3	3	3	3	9	8	16	21	25	16	6.8	32
12	30	22	10	6	6	2	1	3	2	2	2	1	3	4	3	4	3	7	3	7	16	4	4	15	6.7	31
13 Q	7	3	3	1	1	2	1	6	4	3	5	3	3	6	8	9	5	5	3	3	3	11	13	5	4.7	22
14 Q	4	3	1	2	3	2	2	2	1	3	1	3	2	3	2	1	1	6	1	2	3	5	16	9	3.3	15
15 D	3	6	19	8	29	12	11	7	16	9	34	5	18	26	60	119	40	53	138	41	30	40	65	49	34.9	163
16 D	33	18	29	40	28	15	18	16	23	8	16	8	7	5	13	9	18	16	10	3	1	1	6	7	14.5	68
17	52	21	21	6	5	3	3	3	9	6	5	4	5	32	13	11	21	18	11	23	62	24	8	27	16.3	76
18	52	27	31	16	3	3	1	1	3	2	1	2	3	1	6	3	4	3	6	3	4	9	9	13	8.6	40
19	9	8	4	3	3	7	12	8	5	(2)	2	4	9	3	4	2	4	2	2	6	8	3	7	1	4.9	23
20 D	8	4	5	1	1	2	1	3	1	2	7	5	6	7	14	36	89	55	126	50	132	126	121	(48)	35.4	165
21 D	(106)	95	(92)	60	(93)	31	29	22	(35)	42	14	8	9	17	(6)	8	12	10	2	18	23	5	3	2	30.9	144
22	1	4	1	1	2	2	1	3	2	6	4	3	(5)	14	6	13	20	23	31	97	(78)	58	35	18	17.8	83
23 D	39	18	34	23	16	6	4	10	9	13	10	6	7	36	25	68	102	11	55	12	11	48	32	25.5	119	
24	16	3	3	10	10	5	7	2	10	11	6	5	25	19	7	7	8	7	16	26	37	9	2	6	10.7	50
25	6	7	6	3	4	5	3	14	4	15	3	5	9	10	10	16	35	8	1	9	9	2	6	3	8.0	37
26 Q	5	6	3	2	2	8	7	3	3	6	1	5	6	4	4	3	3	4	3	2	1	3	2	4	3.7	17
27	3	3	5	8	7	3	4	6	3	6	7	14	10	16	35	28	14	5	3	13	3	10	15	9	9.6	45
28 Q	24	13	6	7	9	8	7	5	5	3	3	3	2	3	1	1	3	3	3	2	2	2	2	1	11.8	23
29	2	1	4	3	3	4	2	1	2	2	1	1	(2)	2	3	3	3	3	4	3	3	31	19	10	4.7	22
30	6	5	2	8	3	8	16	3	10	11	10	10	4	10	23	8	17	9	5	4	22	18	10	3	9.4	44
31	8	17	13	8	4	3	6	5	2	3	3	3	6	9	6	4	4	3	3	2	2	3	3	12	5.5	26
Mean r_v	18.8	15.3	12.9	9.4	8.8	5.6	6.1	4.8	5.7	6.0	5.7	4.8	6.0	9.0	11.4	13.8	14.8	13.5	14.9	14.1	17.7	15.7	16.4	14.5	11.1	..
Vr_v 10,000 r_v^2	88	71	60	44	41	26	28	22	27	28	27	22	28	42	53	64	69	63	69	66	83	73	76	68	..	52

32. LERWICK (r_v)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	Vr _v 10,000r _v ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	5	8	4	9	58	25	40	35	22	(9)	20	8	11	17	8	4	3	3	5	3	5	13	6	25	14.4	67
2	26	6	23	23	8	8	9	4	8	6	4	9	15	5	3	1	1	11	10	4	3	4	2	8.1	38	
3	2	2	3	3	2	5	7	8	9	5	9	5	2	7	4	4	2	2	4	6	3	8	3	8	4.7	22
4	5	3	2	3	16	14	4	3	(6)	3	(3)	3	2	2	2	1	9	17	7	23	11	(44)	14	9.4	44	
5	14	9	26	15	14	10	6	4	3	2	5	(5)	4	3	2	6	10	5	2	6	7	2	17	8.3	39	
6 Q	8	4	5	4	1	3	3	5	3	4	3	5	3	2	4	3	2	3	3	3	4	4	6	1	3.6	17
7	17	6	3	2	2	3	1	1	3	3	1	2	2	3	4	8	13	7	10	3	4	5	2	1	4.4	21
8	1	2	2	4	2	3	2	2	2	3	1	2	2	3	3	2	3	8	4	5	18	7	9	4	4.4	21
9 Q	7	4	8	3	3	2	2	4	4	5	2	1	2	2	4	4	3	3	2	2	5	4	4	3	3.5	16
10 Q	4	2	7	3	4	4	2	2	5	2	2	2	3	1	3	2	1	2	2	3	4	3	5	4	3.0	14
11	6	7	6	3	1	2	3	2	4	2	3	4	2	4	2	2	3	4	3	10	6	1	1	1	3.4	16
12	3	7	4	2	3	3	3	3	2	5	4	8	(6)	8	6	9	10	17	6	10	7	4	4	3	5.7	27
13	2	1	11	10	11	7	6	3	4	4	4	7	3	8	7	5	8	10	6	8	6	10	6	2	6.2	29
14 D	3	2	2	2	4	3	13	9	11	11	9	6	27	10	6	17	9	18	16	4	6	31	47	40	12.7	59
15 D	16	9	4	2	2	18	13	5	5	4	4	2	5	6	4	6	3	10	17	8	8	8	18	18	7.7	36
16 D	17	4	(29)	76	40	14	33	25	20	18	18	11	9	21	77	50	44	38	64	11	42	43	41	40	32.7	152
17 D	69	11	8	4	2	7	8	8	9	5	9	7	18	21	(44)	28	13	8	14	40	27	11	4	5	15.8	74
18	5	10	6	6	6	8	6	4	6	4	4	3	6	4	14	15	10	5	10	7	48	19	10	3	9.1	42
19	3	10	16	10	1	3	3	4	4	3	2	5	(4)	8	5	11	14	6	7	6	6	18	29	7.7	36	
20	18	10	6	2	4	1	7	8	3	3	2	2	3	4	4	16	5	6	10	4	2	4	25	10	6.6	31
21	4	4	4	3	3	3	2	3	4	4	3	4	2	2	2	5	4	4	1	3	3	14	5	2	3.7	17
22 Q	2	3	4	2	1	4	3	5	3	3	2	2	4	3	4	3	6	4	2	4	2	2	2	1	3.0	14
23	1	3	5	8	2	2	3	3	3	3	2	2	4	5	3	2	4	3	2	3	3	2	2	2	3.0	14
24 Q	1	2	2	3	1	2	1	2	3	2	3	2	2	2	2	3	2	3	2	2	2	2	1	1	2.0	9
25	1	2	2	3	4	6	4	4	5	4	5	4	4	3	3	19	10	11	9	4	4	5	8	29	6.4	30
26	12	4	2	2	4	4	2	4	4	3	3	7	3	4	3	5	4	4	2	2	2	1	1	1	3.5	16
27	2	1	2	15	5	4	1	4	4	3	4	3	3	3	3	2	3	3	2	7	6	5	3	2	3.7	17
28	7	8	3	2	4	2	8	4	4	4	5	6	(9)	5	3	4	19	18	16	6	4	2	3	3	6.2	29
29	4	18	10	9	3	9	8	11	8	(9)	7	3	6	5	25	10	10	14	7	10	10	9	2	24	9.6	45
30	10	6	8	10	2	4	4	4	7	4	6	3	2	5	5	3	2	3	6	6	3	3	2	2	4.6	21
Mean r _v	9.2	5.6	7.2	7.7	7.4	6.1	7.0	6.0	5.9	4.8	4.9	4.5	5.6	5.9	8.6	8.3	7.7	8.0	8.4	7.3	8.7	9.1	9.9	9.9	7.2	..
Vr _v 10,000r _v ²	43	26	34	36	35	28	33	28	27	22	23	21	26	27	40	39	36	37	39	34	41	42	46	46	..	34

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

33. LERWICK (r_v)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _r 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	2	4	3	4	3	3	3	4	4	4	4	7	5	4	4	4	17	10	17	19	3	9	3	5	6.0	28
2	2	6	4	3	3	2	3	1	2	4	4	2	3	2	2	3	2	4	5	31	26	11	3	2	5.4	25
3	3	3	2	16	9	5	4	2	1	3	2	(3)	(3)	2	2	1	1	1	3	7	7	11	8	9	4.5	21
4	14	7	8	21	7	6	2	2	3	5	4	4	3	4	4	4	6	2	3	3	2	3	1	3	5.0	23
5 Q	16	2	3	3	3	5	7	2	2	4	3	2	1	1	1	1	1	1	2	3	4	6	5	5	3.5	16
6	6	11	7	3	2	4	3	3	2	4	3	4	3	2	2	3	2	1	2	5	3	3	27	13	4.9	23
7 Q	6	4	5	5	2	1	1	2	1	3	1	1	1	1	1	3	1	1	1	1	1	1	2	3	2.0	2
8 D	4	3	2	8	7	12	11	13	8	5	3	5	7	7	5	5	4	7	(8)	5	5	24	38	32	9.5	44
9	40	29	26	6	10	8	12	11	15	4	7	6	4	8	(9)	15	13	10	14	17	6	7	5	4	11.9	55
10	38	27	13	14	2	3	3	5	2	4	3	(4)	5	14	5	5	8	6	10	6	4	4	8	8	8.2	38
11	1	1	1	1	1	2	3	1	3	2	2	2	8	6	3	2	3	3	2	2	4	12	9	5	3.3	15
12 Q	9	3	1	4	8	3	5	6	5	7	2	3	2	3	3	1	1	2	1	1	1	1	2	2	3.2	15
13	1	2	3	3	4	4	4	4	4	3	2	3	3	4	8	12	29	42	17	16	6	8	27	61	11.3	53
14 D	44	4	8	5	6	5	4	3	3	3	4	14	29	17	(14)	15	216	106	71	49	159	95	(27)	91	41.3	192
15 D	22	22	(27)	26	42	50	35	25	11	13	4	15	5	13	19	10	16	24	(45)	47	(103)	37	30	52	28.9	135
16 D	(218)	223	(70)	16	26	14	10	6	11	6	4	11	5	7	8	7	39	39	19	12	74	26	9	13	36.4	170
17 D	20	66	19	3	8	4	9	7	9	4	6	16	9	9	8	33	19	22	13	42	17	4	48	16.6	77	
18	14	4	11	35	9	18	7	7	6	6	8	5	7	18	17	10	5	4	4	4	5	7	2	5	9.1	42
19	1	4	4	8	5	3	2	2	6	5	3	2	2	14	5	7	16	6	4	8	22	7	7	4	6.1	28
20	7	18	15	6	2	4	3	6	4	6	3	1	2	2	1	3	4	3	2	1	1	2	2	2	4.2	20
21 Q	3	4	10	2	3	1	2	3	3	1	2	3	2	4	3	3	2	1	2	2	1	2	2	2	2.6	12
22	2	2	4	6	4	2	2	2	2	4	3	2	2	1	2	2	3	7	4	7	7	3	1	1	3.1	14
23 Q	2	1	1	4	1	1	2	4	3	2	4	2	1	2	1	2	1	2	3	4	3	3	4	9	2.6	12
24	20	13	4	2	1	1	1	2	2	4	5	3	(4)	3	2	2	4	3	3	4	3	2	2	2	3.9	18
25	2	3	4	2	3	2	4	4	2	6	3	8	4	6	4	5	4	7	6	27	29	16	8	20	7.5	35
26	14	26	22	12	7	8	3	3	5	3	2	6	3	4	4	5	3	8	8	11	15	8	7	5	8.0	37
27	6	56	44	46	16	6	3	4	4	3	8	6	11	7	6	9	8	4	4	11	15	6	2	11	12.3	57
28	2	4	2	1	1	6	6	3	4	4	3	4	7	7	13	14	4	4	21	14	27	10	21	8	7.9	37
29	3	2	1	2	2	1	4	5	3	4	2	2	4	6	4	3	2	2	2	1	8	10	3	4	3.3	15
30	1	3	3	4	2	3	3	3	6	(4)	2	7	6	5	5	2	4	3	21	17	17	12	16	23	7.2	34
31	15	10	6	7	4	6	9	8	13	6	3	6	(4)	4	5	6	(7)	9	16	30	11	10	(13)	46	10.6	49
Mean r _v	17.4	18.3	10.7	9.0	6.5	6.2	5.5	4.9	4.8	4.4	3.5	5.1	5.0	6.0	5.5	6.4	14.4	11.1	10.7	13.1	19.0	11.6	9.5	16.1	9.4	..
V _r 10,000 ²	81	85	50	42	30	29	26	23	22	21	16	24	23	28	26	30	67	52	50	61	89	54	44	75	..	44

34. LERWICK (r_v)

JANUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _r 10,000 ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	15	11	8	16	4	10	6	5	7	(4)	5	5	6	7	8	8	21	11	9	39	24	9	14	3	10.6	49	
2	6	72	33	33	4	5	4	8	7	8	5	5	8	6	5	6	4	5	19	14	21	18	6	3	12.7	59	
3	12	21	11	7	5	6	3	4	4	3	5	5	5	5	4	2	5	5	5	4	2	3	5	6	5.6	26	
4 Q	6	5	2	2	2	1	1	1	3	3	2	2	3	5	5	3	5	5	4	2	4	4	3	4	3.1	14	
5 Q	4	3	3	2	3	2	2	2	1	2	5	5	3	2	2	4	5	3	2	3	2	1	1	2	2.7	13	
6	8	5	14	4	9	30	17	14	6	12	7	8	6	27	38	19	5	7	5	11	5	5	8	21	12.1	56	
7	11	5	7	16	11	10	2	2	4	3	2	2	3	4	4	3	16	27	15	9	11	4	3	8	7.6	35	
8	3	7	3	5	5	4	2	6	3	3	3	5	3	5	5	3	2	2	4	3	5	18	10	4.6	21		
9	9	3	2	3	2	2	3	2	2	2	2	2	3	5	3	3	5	4	2	1	6	5	11	2	3.5	16	
10 Q	2	1	3	1	2	1	1	1	1	2	1	2	5	2	2	5	6	2	3	6	2	3	3	4	2.5	12	
11 Q	1	3	2	1	1	2	1	2	2	3	3	3	3	2	3	2	2	2	3	2	2	4	4	3	2.3	11	
12	5	2	2	2	1	2	2	2	1	2	2	2	3	1	3	2	4	2	3	3	3	5	4	4	2.5	12	
13	5	5	3	1	3	2	3	4	5	6	3	2	2	3	4	3	1	3	5	7	7	5	6	3	3.8	18	
14	1	2	10	3	1	1	2	3	3	2	2	3	3	2	2	1	2	3	5	6	18	12	20	23	5.4	25	
15	9	7	5	5	9	26	(49)	18	33	(22)	11	9	5	6	5	4	3	3	7	6	13	71	41	14	15.9	74	
16	2	5	24	14	10	5	4	8	8	9	2	5	4	6	9	3	7	5	3	5	6	4	3	2	6.4	30	
17	2	3	3	2	2	2	3	2	8	10	11	5	5	3	3	2	3	5	5	2	5	2	3	7	3.9	18	
18	7	3	2	2	2	2	5	2	2	3	5	2	5	1	2	2	2	2	5	5	6	13	5	3	3.7	17	
19 D	3	1	2	3	12	8	7	5	2	2	2	2	5	3	6	24	148	78	45	11	8	21	9	16	7	17.8	83
20	26	15	14	12	72	36	49	17	17	6	5	3	2	6	2	2	3	2	2	1	1	2	9	19	13.5	63	
21 Q	9	3	2	2	3	2	1	2	1	1	(2)	2	2	3	4	2	1	2	2	2	7	6	4	6	3.0	14	
22 D	2	2	5	3	8	8	11	9	7	7	3	3	4	5	8	32	35	70	110	247	28	63	17	16	29.6	138	
23	52	60	16	5	13	8	11	6	9	2	2	9	6	5	5	7	6	5	25	25	8	25	33	16.5	77		
24	78	28	72	50	8	4	4	5	6	2	2	8	6	5	8	5	7	8	8	9	7	9	5	9	14.6	68	
25	7	44	14	21	3	4	8	6	5	4	5	5	5	9	18	8	(18)	10	14	7	22	5	20	9	11.3	53	
26	7	4	(72)	26	16	14	7	9	8	9	9	6	5	8	20	15	14	17	21	20	21	10	6	16	15.0	70	
27 D	33	36	23	4	8	16	24	9	5	4	8	12	7	5	10	10	42	11	28	17	26	34	40	23.5	110		
28 D	17	9	39	32	18	6	5	7	7	10	8	7	10	10	16	29	13	26	(20)	14	(39)	23	27	80	19.3	90	
29	22	16	24	8	6	3	8	5	3	3	3	4	10	7	8	27	14	19	26	18	23	14	10	9	12.1	56	
30	5	25	32	33	47	14	5	8	(6)	13	5	4	7	7	7	15	10	2	1	2	8	25	9	9	12.5	58	
31	9	22	13	11	4	2	2	3	6	3	3	5	5	6	5	6	9	14	2	5	2	26	4	5	7.2	34	
Mean r _v	12.0	13.8	15.0	10.6	9.2	7.9	8.0	5.8	5.9	5.5	4.5	4.7	4.7	5.5	7.8	12.4	11.2	10.5	11.9	16.2	11.3	17.4	12.1	12.1	9.8	..	
V _r 10,000 ²	56	64	70	49	43	37	37	27	27	26	21	22	22	26	36	58	52	49	55	75	53	81	56	56	..	46	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

35. LERWICK (r_v)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _r 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	1	2	2	2	1	3	1	2	3	(1)	1	5	5	1	5	3	2	1	1	2	1	2	24	8	3.3	15
2	10	10	5	6	17	9	5	7	7	3	6	8	8	2	3	18	8	8	9	9	10	15	8	4	8.1	38
3	2	6	6	2	1	2	2	2	3	2	3	2	5	4	2	3	2	3	2	3	5	2	2	24	3.7	17
4	12	6	1	1	2	2	1	1	3	5	4	2	2	5	3	5	2	3	11	10	2	7	2	14	4.4	21
5	2	25	24	8	12	6	9	2	3	2	4	1	1	1	2	2	1	1	1	1	1	1	1	2	4.7	22
6 Q	4	6	17	8	5	2	1	3	2	2	2	1	1	2	1	2	2	1	1	1	5	3	2	2	3.2	15
7	1	2	1	2	5	9	5	5	5	6	3	5	3	5	2	2	5	4	3	3	2	3	2	2	3.5	16
8	1	1	1	2	3	5	2	3	2	2	5	4	5	6	5	2	3	3	3	2	8	6	11	4.0	19	
9	3	3	13	16	8	8	8	9	5	3	5	6	5	2	4	6	6	5	5	6	9	9	5	8	6.5	30
10	10	7	3	9	3	2	3	2	2	3	4	5	3	1	2	4	4	3	5	2	2	6	9	3	4.0	19
11 Q	5	2	1	1	1	2	4	4	2	2	2	1	1	3	3	1	2	2	2	4	5	5	6	3	2.7	13
12	2	2	1	1	2	1	2	3	6	3	5	6	2	4	5	3	2	2	3	4	3	3	2	2	2.9	14
13 Q	2	1	2	2	1	1	2	3	1	5	1	1	4	3	1	1	2	4	2	1	3	5	5	2	2.3	11
14	5	6	2	5	5	3	3	4	10	4	(4)	5	4	7	5	5	3	5	21	29	14	8	7	5	7.0	33
15	6	8	8	6	3	16	6	3	5	5	5	3	3	5	7	(24)	12	11	17	9	5	23	17	8	9.0	42
16 Q	5	4	2	3	2	2	1	2	1	2	3	3	2	2	2	2	4	2	1	1	2	3	2	2	2.3	11
17 Q	2	1	1	1	1	1	2	2	2	2	3	2	3	2	1	1	1	1	1	2	1	1	2	2	1.6	7
18	5	3	2	2	1	1	1	2	3	2	6	4	3	2	4	3	4	3	9	5	31	15	8	9	5.3	25
19 D	11	8	24	9	3	2	7	8	5	(3)	6	16	14	12	(81)	44	9	17	43	33	35	19	55	181	26.9	125
20	32	54	81	55	20	5	5	6	5	14	16	8	14	11	9	17	13	15	36	24	17	8	(25)	56	22.7	106
21 D	17	10	107	53	25	75	31	16	16	5	9	7	14	20	80	122	212	41	14	39	21	35	93	20	45.1	210
22 D	210	77	34	24	42	29	(23)	(33)	14	11	11	5	7	12	24	26	14	32	27	31	19	25	73	80	36.8	171
23 D	96	40	73	18	25	17	11	9	8	(7)	7	3	7	20	32	82	65	45	20	117	25	32	31	37	34.5	161
24 D	28	(9)	16	8	19	5	14	17	15	17	11	29	16	10	26	58	(41)	16	36	46	(23)	89	44	16	25.4	118
25	16	(33)	13	16	15	18	9	12	8	7	14	10	10	5	15	9	14	13	21	15	19	65	48	57	19.3	90
26	33	62	(33)	37	33	16	12	9	7	6	11	6	5	9	19	5	7	8	7	6	26	87	45	12	20.9	97
27	14	5	18	17	20	9	8	3	5	5	5	5	5	4	5	2	6	5	8	7	5	34	9	11	9.0	42
28	19	13	7	4	5	1	2	2	2	3	2	3	5	1	4	5	1	5	2	2	2	4	5	16	4.8	22
Mean r _v	19.8	14.5	17.8	11.4	10.0	9.0	6.4	6.2	5.4	4.7	5.6	5.6	5.6	5.7	12.6	16.4	15.7	9.3	11.1	14.8	10.7	18.4	19.3	21.3	11.6	..
V _r 10,000 ²	92	68	83	53	47	42	30	29	25	22	26	26	26	27	59	76	73	43	52	69	50	86	90	92	..	54

36. LERWICK (r_v)

MARCH, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _r 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	5	6	17	7	4	3	2	3	3	4	5	4	2	2	4	10	6	6	2	10	11	5	4	26	6.3	29
2	18	8	13	7	3	4	2	2	2	3	2	5	5	2	6	7	3	3	5	6	9	14	13	12	6.4	30
3	3	6	5	3	10	2	3	5	4	5	3	3	5	5	5	24	9	8	9	17	18	5	5	9	7.1	33
4	8	18	5	7	3	6	3	2	2	5	5	4	2	2	2	2	3	6	4	11	5	6	5	3	5.0	23
5 Q	1	3	3	3	2	1	1	2	1	(4)	5	2	2	3	2	5	1	1	3	5	4	6	4	3	2.8	13
6 Q	2	8	6	5	2	1	1	2	3	3	2	4	2	8	9	7	5	5	4	2	3	2	2	2	3.7	17
7 Q	1	2	3	1	3	2	1	1	1	3	3	3	1	6	7	5	3	2	5	2	1	2	16	12	3.6	17
8	10	10	9	3	1	1	2	2	1	3	5	2	7	5	6	3	3	3	2	7	8	11	10	10	4.9	23
9 Q	12	5	6	7	4	2	3	2	2	2	2	3	1	2	2	1	3	2	2	3	2	3	2	3	3.2	15
10	3	13	3	2	18	2	3	2	2	3	5	5	2	3	5	5	3	5	5	3	17	11	13	8	5.9	27
11	70	54	46	44	(14)	5	5	3	2	5	2	5	5	11	7	9	10	5	2	3	5	2	6	2	13.4	62
12	2	2	3	3	3	5	4	5	3	4	8	4	5	5	4	6	8	6	3	9	5	7	5	21	5.4	25
13	10	3	3	11	14	6	5	3	5	5	5	7	6	7	9	20	14	12	9	8	9	8	3	6	7.8	36
14	2	5	3	5	(17)	(9)	8	17	4	3	3	5	6	6	7	9	3	7	7	5	5	5	3	2	6.1	28
15	3	3	2	1	3	6	7	2	5	3	3	8	2	3	5	3	2	2	2	2	3	5	6	2	3.5	16
16 Q	14	8	3	2	1	2	2	1	2	5	3	6	2	2	6	9	2	1	5	3	2	4	5	3	3.9	18
17	3	3	2	2	1	2	1	1	2	3	6	4	6	7	5	2	7	3	3	2	14	11	8	5	4.3	20
18 D	3	4	57	54	32	17	63	28	14	8	(2)	5	6	6	17	32	27	8	28	23	6	7	137	111	29.0	135
19 D	63	51	54	28	27	24	8	6	3	5	5	3	6	7	3	8	41	10	86	(43)	188	124	43	20	35.7	166
20 D	34	153	77	45	39	26	9	25	8	13	12	11	13	9	10	8	38	27	23	134	10	10	132	88	32.7	185
21	27	38	28	11	11	53	30	24	9	33	9	31	7	4	24	7	29	23	19	7	5	20	34	107	24.6	115
22	53	27	37	72	27	7	24	14	14	(15)	8	32	15	18	16	12	17	7	25	18	20	17	(9)	24.2	113	
23 D	34	34	33	17	28	62	34	19	16	11	9	10	22	12	10	64	35	25	34	24	120	36	17	30.3	141	
24 D	21	25	53	36	9	14	22	32	17	17	12	7	11	8	25	13	43	62	28	36	(56)	41	64	34	28.6	133
25	26	20	20	27	7	44	9	(9)	21	8	7	3	8	8	7	8	10	5	5	9	4	20	(3)	(7)	12.3	57
26	6	5	4	7	2	3	3	2	10	(9)	5	2	1	1	6	2	8	11	10	5	3	2	6	2	4.8	22
27	6	3	2	1	6	3	7	(9)	8	7	9	6	32	10	18	15	21	51	25	9	19	22	14	7	12.9	60
28	17	16	15	36	35	12	5	4	3	7	4	7	4	10	17	9	14	8	8	25	5	55	15	14.1	66	
29	24	16	(9)	(9)	5	5	1	6	8	5	5	14	(5)	(14)	25	12	18	18	4	14	6	8	80	51	15.1	70
30	15	(5)	(9)	(11)	(3)	(5)	3	4	4	5	6	(5)	(5)	(5)	13	26	6	6	4	2	2	7	10	43	8.7	41
31	12	26	12	25	10	6	5	2	2	2	3	11	(4)	3	14	12	6	8	10	9	4	4	14	42	10.3	48
Mean r _v	16.4	18.7	17.5	15.9	11.1	11.0	8.9	7.7	5.8	6.7	5.3	7.1	6.5	6.5	10.0	10.8	13.0	11.2	12.3	14.0	20.8	13.4	24.4	22.0	12.4	..
V _r 10,000 ²	76	87	82	74	52	51	41	36	27	31	25	33	30	30	47	50	61	52	57	65	97	62	114	103	..	58

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

37. LERWICK (r.v)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r.v	Vr.v 10,000 γ^2
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	19	9	9	58	5	20	23	8	6	3	(5)	7	3	3	8	13	6	8	7	12	20	4	9	21	11.9	55
2	14	10	2	3	8	5	2	2	5	6	5	4	5	5	4	3	3	5	5	16	14	13	14	43	8.2	38
3	12	15	20	(7)	(6)	24	19	5	9	5	5	27	35	16	5	12	8	8	7	6	10	12	20	10	12.6	59
4	32	70	29	63	16	9	9	6	5	4	2	5	4	5	2	6	7	6	8	7	11	5	7	3	13.4	62
5	10	25	11	(6)	8	4	3	4	2	4	7	8	7	6	5	13	6	6	5	8	14	10	14	24	8.8	41
6	40	21	45	25	3	5	8	7	3	5	3	6	4	3	3	5	5	3	2	7	12	24	12	8	10.8	50
7	7	5	10	12	8	11	8	4	8	3	9	5	12	9	(18)	44	37	29	20	19	62	8	7	8	15.1	70
8	6	5	11	7	5	4	3	5	5	4	5	2	5	8	7	11	7	30	(27)	11	6	6	16	19	9.0	42
9	5	24	6	7	7	4	3	7	10	11	8	9	5	18	11	5	6	12	3	5	7	2	5	10	7.9	37
10	8	8	1	2	5	8	7	7	(7)	(5)	8	6	9	8	13	10	6	8	6	6	7	3	2	2	6.3	29
11 Q	2	5	2	3	3	2	3	(5)	4	4	5	(5)	5	10	4	3	5	6	3	4	5	5	4	(4)	4.2	20
12 Q	(2)	3	(2)	5	(4)	(3)	(4)	(2)	(3)	(4)	(3)	(5)	(3)	(2)	4	4	4	2	2	3	2	2	2	2	2.9	14
13 Q	2	6	4	5	2	3	2	4	3	5	4	3	4	2	7	3	2	3	3	5	2	2	3	3	3.4	16
14	1	2	2	3	3	2	3	4	5	5	5	3	7	11	6	12	11	10	8	18	11	21	7	16	7.3	34
15 D	7	3	6	7	6	19	15	10	5	7	5	5	5	6	7	8	7	26	35	63	105	116	51	52	24.0	112
16 D	(6)	27	20	33	10	19	20	11	3	8	12	3	5	8	22	18	9	8	8	29	9	12	29	89	17.4	81
17 D	42	69	23	39	22	24	20	18	14	5	17	8	62	54	33	34	17	30	21	14	19	33	36	6	27.5	128
18	54	53	69	48	15	(14)	23	(5)	19	6	5	10	7	11	14	11	19	11	8	5	34	64	65	41	25.6	119
19 D	33	34	34	61	44	14	5	5	5	5	8	15	63	35	(16)	9	17	8	35	18	16	34	138	87	20.8	144
20	65	16	7	4	8	37	10	27	17	5	10	8	8	14	24	20	11	37	6	36	90	45	6	(13)	21.8	102
21	35	17	34	7	16	12	9	5	5	8	8	7	9	5	10	6	6	24	26	10	(14)	42	149	87	23.0	107
22	11	46	31	(5)	(5)	14	9	17	15	6	5	(14)	9	16	18	17	14	27	9	6	96	34	41	24	20.4	95
23	15	16	12	17	12	10	27	11	15	5	3	3	7	38	10	7	15	14	6	18	55	13	42	35	16.9	79
24	34	37	7	19	5	11	3	5	4	4	9	3	3	5	11	25	10	4	14	8	14	19	64	14	13.8	64
25	18	(29)	(10)	7	5	5	2	5	3	3	4	7	10	3	12	5	24	14	4	7	8	9	10	18	9.1	42
26	49	24	23	16	5	3	3	6	7	4	(2)	(3)	(9)	19	15	5	18	20	11	25	21	6	5	3	12.6	59
27	2	2	4	7	5	5	2	1	3	3	5	(6)	(5)	(6)	9	9	5	4	8	12	6	27	9	34	7.5	35
28 Q	19	8	14	33	10	4	2	5	5	2	(5)	(4)	(4)	(4)	(3)	2	3	3	10	3	5	10	18	33	8.7	41
29 Q	16	19	(7)	5	3	2	2	2	3	5	5	(5)	(3)	(3)	4	3	2	2	9	3	6	7	(12)	(13)	5.9	27
30 D	8	(6)	4	3	5	3	2	5	(3)	3	5	(5)	(4)	(4)	(5)	29	34	17	12	111	100	46	59	19.9	93	
Mean r.v	19.1	20.5	15.3	17.2	8.5	10.0	8.4	7.1	6.7	4.9	6.1	6.6	10.7	11.2	10.4	10.7	10.9	13.4	11.1	13.2	26.4	22.9	28.1	26.0	13.6	..
Vr.v 10,000 γ^2	89	95	71	80	40	47	39	33	31	23	28	31	50	52	49	50	51	62	52	61	123	107	131	121	..	63

38. LERWICK (r.v)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r v	Vr v 10,000 γ^2	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	(50)	(14)	(14)	(8)	(6)	(6)	(14)	(8)	(11)	(14)	9	9	29	48	109	420	389	239	112	114	254	457	206	114	110.6	513	
2	361	162	63	38	12	8	9	8	7	6	8	10	5	(4)	(5)	(5)	5	5	3	6	5	9	46	5	33.1	154	
3	36	21	61	33	(3)	14	9	6	5	5	5	18	7	(9)	(10)	(11)	14	9	24	13	14	5	23	25	15.8	74	
4	21	6	8	46	16	18	14	(7)	(6)	5	2	4	3	5	11	23	33	15	72	93	7	10	6	4	18.2	85	
5	19	6	9	5	6	8	11	14	6	5	3	7	6	10	8	8	8	11	8	20	27	13	46	29	12.2	57	
6	16	101	62	93	31	34	14	8	7	(6)	5	6	5	31	19	14	8	5	9	20	17	12	22	111	27.3	127	
7	35	91	46	16	6	6	6	8	8	(3)	(7)	7	9	9	6	5	7	3	2	3	5	3	4	4	12.5	58	
8	4	7	7	5	5	5	6	4	5	4	7	(5)	(5)	8	8	4	6	8	9	6	7	5	3	2	5.6	26	
9 Q	1	1	2	2	3	3	3	6	6	2	(3)	(3)	(3)	(3)	7	5	5	4	4	3	2	2	1	2	3.2	15	
10 Q	2	4	3	3	5	5	3	3	8	(5)	(3)	(4)	(5)	(5)	1	5	4	2	1	1	3	2	3	2	3.4	16	
11	2	14	9	8	9	7	3	3	3	2	2	2	3	11	8	3	5	3	9	9	7	5	2	2	5.5	26	
12 Q	1	2	2	4	3	2	5	5	5	6	(5)	(3)	(4)	7	2	5	3	2	2	3	2	4	5	5	3.6	17	
13	5	2	3	7	13	27	8	2	3	(4)	(3)	(3)	(5)	4	5	9	9	4	6	12	10	5	11	31	8.0	37	
14	36	37	11	6	5	3	5	3	7	(9)	(5)	(9)	(5)	(5)	(9)	18	44	14	17	60	50	120	66	23	23.6	110	
15	11	3	5	45	49	34	34	15	7	4	8	(7)	(9)	7	3	6	7	13	10	11	8	57	(75)	21	18.7	87	
16	25	19	(15)	(12)	5	4	5	3	5	5	6	(3)	5	6	5	5	5	13	10	6	6	(33)	(18)	22	10.0	47	
17	18	26	16	16	6	5	6	5	6	6	4	2	5	5	5	16	10	15	23	17	26	48	43	66	16.3	76	
18 D	27	60	35	27	61	(62)	22	34	(16)	(30)	14	19	10	8	11	5	11	12	22	17	4	15	29	8	23.3	109	
19	14	5	2	3	8	7	5	5	7	5	5	5	12	6	8	3	8	30	19	18	7	3	2	2	8.0	37	
20	6	17	(9)	11	(6)	(5)	(5)	(5)	(5)	(5)	(4)	(4)	(5)	(9)	2	6	6	4	6	7	2	2	(18)	(5)	6.4	30	
21	(3)	3	5	5	(5)	(3)	(5)	9	5	4	3	6	9	(3)	(4)	(5)	2	3	3	5	5	5	2	(5)	4.5	21	
22	9	17	3	9	(5)	(5)	(5)	(3)	5	6	6	5	7	11	5	6	9	4	12	7	5	11	16	11	7.6	35	
23	9	9	4	3	(5)	(5)	(4)	(9)	5	6	2	3	8	11	(6)	(6)	7	8	(3)	(4)	(5)	(27)	8	6	6.8	32	
24 Q	5	3	(3)	(2)	(3)	(3)	5	7	3	12	4	6	3	2	7	(3)	(3)	(3)	3	5	3	2	2	6	4	4.1	19
25	8	29	19	11	(3)	(4)	7	3	4	5	4	5	5	12	8	(7)	(3)	(3)	(5)	(3)	(5)	(3)	(3)	(3)	6.7	31	
26 Q	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(4)	6	3	3	5	4	5	(5)	(5)	(4)	(4)	(2)	(3)	(2)	(2)	3.5	16	
27	(3)	(2)	(3)	(3)	(2)	(3)	(5)	(5)	9	4	2	4	6	3	3	9	14	(18)	23	16	19	14	25	12	8.6	40	
28	33	96	56	39	20	11	2	3	5	3	2	1	2	6	5	(3)	(2)	(3)	(4)	(4)	(3)	(5)	(3)	(3)	13.1	61	
29 D	(2)	(2)	2	1	2	8	(6)	(3)	(5)	8	9	9	14	25	34	16	8	16	17	54	71	3	37	14.7	69		
30 D	19	103	93	63	41	37	14	9	9	7	(5)	(5)	6	8	16	10	53	28	29	16	(21)	7	11	31	26.7	124	
31 D	14	9	10	30	40	18	44	(5)	(5)	(5)	(5)	(5)	(8)	29	53	35	27	17	13	10	11	38	17	24	19.7	92	
Mean r v	25.7	28.2	18.8	18.0	12.5	11.5	9.2	6.9	6.1	6.2	5.0	5.9	6.4	10.0	12.1	22.7	23.3	15.8	15.9	17.1	19.6	32.3	23.3	20.1	15.5	..	
Vr v 10,000 γ^2	120	131	88	84	58	54	43	32	28	29	22	27	30	47	56	106	109	74	74	80	91	151	109	94	..	72	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

39. LERWICK (ry)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _{r_v} 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	22	(5)	70	106	85	14	38	20	(9)	(9)	8	8	17	11	14	27	8	14	15	29	9	7	5	3	23.0	107
2	(5)	(6)	(7)	(7)	9	8	5	5	7	8	4	15	8	5	8	9	7	4	6	3	9	(9)	(6)	(6)	6.9	32
3	14	6	4	9	(7)	4	(6)	(6)	(4)	(3)	(3)	(3)	(5)	(4)	(6)	(9)	(3)	6	6	5	5	(5)	(4)	(4)	5.5	26
4	(3)	(11)	(8)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(4)	3	5	(2)	2	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	3.3	15
5 Q	18	8	9	5	(2)	(2)	2	6	2	3	3	5	5	12	5	5	5	2	1	5	2	3	1	3	4.6	21
6 Q	3	3	2	5	7	5	5	5	3	5	2	2	3	5	5	5	2	5	2	2	4	5	2	2	3.7	17
7	2	3	1	5	5	4	6	5	2	2	2	2	8	9	3	5	5	3	5	5	4	2	5	6	4.2	20
8	9	7	8	3	3	5	4	9	8	9	6	8	8	8	8	5	8	7	12	28	24	26	46	22	11.5	54
9	19	44	53	15	24	17	16	14	8	8	4	6	9	9	14	12	16	8	6	(9)	(4)	6	4	5	13.7	64
10	17	10	7	3	5	(3)	(2)	5	9	5	(7)	5	5	7	4	14	15	6	(5)	(5)	3	5	6	2	6.5	30
11	4	2	3	6	3	(2)	(2)	(2)	(3)	(6)	5	7	6	5	9	(3)	(3)	4	(3)	(3)	5	4	2	3	4.0	19
12	3	6	9	5	8	7	2	2	3	6	3	4	2	6	4	8	(5)	(3)	(3)	(3)	(4)	(9)	20	16	5.9	27
13 D	46	27	(102)	66	116	78	24	11	7	(5)	8	11	10	17	36	51	33	26	16	(16)	18	91	179	81	44.8	209
14 Q	114	50	47	36	18	12	5	(14)	(5)	(12)	6	18	9	12	7	3	(5)	(12)	17	(5)	(5)	(9)	21	26	19.5	91
15	7	118	(64)	26	46	17	9	3	5	5	6	3	5	2	6	6	5	6	(17)	(5)	(4)	(18)	15	8	16.3	76
16 Q	7	3	2	2	2	3	3	1	5	4	9	7	2	1	2	5	6	7	8	5	5	2	3	5	4.1	19
17	2	3	3	2	1	3	9	5	5	5	4	5	5	11	8	4	5	5	5	5	3	6	5	2	4.6	21
18 Q	2	1	5	4	3	3	5	5	5	7	3	4	3	3	2	3	3	5	3	4	5	5	8	20	4.6	21
19	8	15	3	5	5	15	6	7	8	4	4	10	12	11	15	(9)	(10)	(4)	6	9	13	14	16	12	9.2	43
20 D	37	72	21	16	27	15	9	19	27	15	10	8	14	14	20	13	21	(18)	10	7	8	12	3	9	17.7	82
21	8	9	4	3	2	9	5	8	4	6	6	8	7	8	8	8	5	5	8	5	3	5	5	21	6.7	31
22	14	14	15	6	2	3	5	5	6	4	3	5	2	2	5	6	3	6	9	2	3	2	1	2	5.2	24
23	1	2	2	1	3	2	1	2	5	2	6	6	5	7	3	2	4	3	2	2	5	2	6	6	3.3	15
24 Q	6	6	7	5	5	2	3	3	3	5	6	10	5	12	5	4	2	3	2	3	5	5	2	2	4.6	21
25	2	1	2	4	5	3	2	4	1	5	11	3	6	5	2	9	18	7	17	29	28	23	9	26	9.3	43
26	10	26	34	17	9	6	6	2	3	5	8	6	5	2	5	6	12	7	4	5	10	3	5	6	8.4	39
27	2	3	1	2	3	2	3	9	2	6	15	7	8	8	27	17	9	4	4	5	5	3	5	9	6.6	31
28 D	87	46	25	17	4	7	8	3	5	3	2	6	7	17	16	49	23	25	(27)	10	11	25	18	66	21.1	98
29	22	16	21	17	19	5	8	8	11	11	8	7	6	11	15	10	12	3	6	7	5	5	6	17	10.7	50
30	7	8	6	11	8	7	7	8	7	7	3	5	6	7	5	8	12	9	5	5	7	5	6	26	7.9	37
Mean r _v	16.7	17.7	18.2	13.7	14.6	8.9	7.0	6.5	5.9	5.9	5.7	6.5	6.7	7.8	8.7	10.6	8.8	7.4	7.5	7.6	7.2	10.6	13.9	13.9	9.9	..
V _{r_v} 10,000 ²	78	82	85	64	68	41	33	30	27	27	27	30	31	36	41	49	41	34	35	35	34	49	65	65	..	46

40. LERWICK (ry)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean ry	Vry 10,000 ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	10	4	6	6	3	5	6	2	2	2	2	9	3	6	7	7	6	7	7	10	9	9	25	56	7	8.6	40
2	24	29	12	7	2	4	4	3	4	4	7	5	3	2	6	2	7	6	6	2	2	6	5	3	6	6.5	30
3	27	36	23	10	3	2	4	3	1	6	5	6	6	8	6	9	9	5	8	2	2	6	6	5	5	8.3	39
4	2	3	6	11	7	5	2	4	3	2	1	2	4	5	8	4	2	5	3	8	6	6	4	5	4	4.5	21
5	4	10	17	7	9	2	5	3	3	2	3	7	4	2	12	9	6	9	4	2	3	1	2	2	2	5.3	25
6	7	6	8	6	4	7	3	6	6	6	7	8	9	8	7	5	9	8	6	6	3	7	3	2	6	6.1	28
7	1	1	2	2	3	3	6	4	6	2	6	8	7	2	6	4	9	10	4	6	6	6	5	9	4	4.9	23
8	6	14	5	6	3	2	6	6	5	4	6	12	2	9	7	4	8	6	6	15	6	10	21	7	7	7.4	34
9 D	64	17	35	17	9	3	6	8	12	13	11	26	19	11	9	6	8	7	19	8	14	7	9	7	14	14.4	67
10	8	2	6	6	20	8	9	5	6	8	4	7	6	9	6	5	6	8	11	18	(10)	62	10	15	15	10.6	49
11	9	64	44	18	12	7	2	4	9	8	9	8	6	15	19	28	17	9	2	3	6	2	5	16	13	13.4	62
12	8	9	4	21	9	10	6	2	6	2	6	8	6	5	3	6	8	12	7	4	3	2	3	14	6	6.8	32
13 Q	6	4	5	6	2	6	2	1	3	5	6	8	2	6	2	6	17	6	7	3	1	2	6	8	5	5.0	23
14 Q	5	9	7	6	5	4	3	2	2	4	3	2	7	2	6	7	3	2	2	3	1	2	3	17	4	4.5	21
15 Q	6	3	4	2	2	2	2	8	6	3	6	6	6	2	3	6	6	3	3	3	2	1	2	3	3	3.7	17
16	2	2	2	1	1	1	6	2	3	4	10	6	5	3	10	5	6	3	6	2	7	7	6	6	4	4.4	21
17 D	16	11	7	2	4	5	3	6	5	2	6	7	13	15	20	9	8	3	4	7	16	17	12	3	8	8.4	39
18	39	55	37	9	26	11	8	6	5	5	9	6	5	8	10	8	9	8	6	7	3	6	7	2	2	12.3	57
19	2	5	2	9	9	3	2	2	2	6	2	6	6	7	7	12	6	6	3	2	2	7	6	9	5	5.1	24
20	13	11	15	6	15	8	9	5	6	8	5	3	5	12	11	8	3	5	6	8	7	6	5	6	7	7.7	36
21 Q	4	5	6	6	6	6	6	3	6	5	2	5	6	4	4	7	3	6	6	7	6	3	5	3	5	5.0	23
22	3	2	32	14	7	3	2	6	6	2	1	6	6	8	7	2	2	2	7	6	3	6	2	2	2	5.7	27
23 D	2	19	7	10	3	2	2	1	3	17	6	7	17	13	(55)	32	12	7	(16)	31	33	24	69	24	17	17.2	80
24 D	40	29	62	103	96	47	17	16	3	20	9	6	16	9	14	35	70	36	17	8	6	6	10	11	11	28.9	135
25	6	6	6	6	6	2	1	3	2	7	10	11	20	21	7	7	10	2	4	8	3	6	6	7	7	7.1	33
26	3	5	2	6	2	2	2	6	2	2	3	17	6	6	8	14	8	7	15	7	4	4	9	79	9	9.1	42
27 D	22	23	15	6	17	14	15	6	5	4	6	6	9	7	12	10	4	5	4	16	15	7	199	111	22	22.8	106
28	52	12	6	6	4	6	2	7	3	6	8	6	7	4	6	6	6	3	2	2	2	1	8	7	7	7.2	34
29	5	6	6	8	6	1	2	2	1	3	3	6	3	6	15	17	6	6	3	2	2	8	5	8	5	5.4	25
30 Q	6	5	6	3	2	2	1	1	2	4	2	9	6	8	6	5	1	1	2	2	2	7	2	1	1	3.6	17
31	1	1	2	1	2	2	2	6	3	4	6	3	6	6	10	6	3	2	10	5	6	8	6	3	4	4.3	20
Mean ry	13.0	13.5	12.9	10.5	9.6	6.0	4.7	4.5	4.8	5.1	5.4	8.0	6.9	7.5	10.6	10.5	7.9	6.0	6.5	6.4	6.5	8.2	14.7	15.0	8.5	..	
Vry 10,000 ²	61	63	60	49	45	28	22	21	22	24	25	37	32	35	49	49	37	28	30	30	30	38	69	70	..	40	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

41. LERWICK (rv)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	Vr _v 10,000r _v ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 Q	3	3	4	4	5	4	3	3	3	6	6	2	6	4	6	6	4	5	3	2	6	2	3	6	4	4.1	19
2	3	4	3	7	6	2	2	2	3	4	5	6	4	6	6	7	2	5	6	3	6	14	9	4	5.0	23	
3	3	2	9	7	5	2	1	2	6	4	8	2	5	7	6	2	-6	7	2	3	2	3	5	3	4.3	20	
4	2	2	2	1	2	3	1	8	3	5	1	6	6	8	10	2	3	3	3	6	2	3	3	19	4.3	20	
5 D	17	6	2	2	3	8	9	6	14	10	9	8	20	45	9	6	39	55	268	115	30	19	26	23	31.2	145	
6 D	17	24	110	63	36	24	18	8	9	10	7	9	9	6	7	15	19	21	27	6	11	5	3	2	19.4	90	
7	6	9	18	18	10	8	6	4	5	4	6	3	5	4	6	6	6	6	6	5	4	4	14	6	7.0	33	
8	3	6	10	8	9	2	3	6	8	2	6	3	2	8	2	6	11	5	9	6	4	4	5	26	6.4	30	
9 Q	6	11	7	4	8	3	1	4	6	3	2	3	6	6	3	6	5	11	4	10	3	2	8	20	5.9	27	
10 Q	15	5	6	4	6	1	3	3	2	6	8	7	5	3	2	5	6	5	2	1	1	5	4	3	4.5	21	
11 Q	2	6	4	7	6	2	6	2	1	3	7	6	6	4	2	3	6	2	4	1	3	5	12	6	4.4	21	
12	2	3	2	2	2	2	1	2	6	14	4	(3)	(4)	2	4	3	3	3	5	6	3	4	3	11	3.2	18	
13 D	10	8	3	5	3	3	6	2	6	11	7	8	8	14	10	27	23	6	19	39	35	27	193	109	24.3	113	
14	64	18	10	18	20	8	6	7	6	7	2	3	5	22	27	15	-8	6	12	9	11	18	10	7	13.2	62	
15	3	6	18	9	6	7	7	4	4	3	3	6	4	9	7	9	7	8	10	11	8	4	2	3	6.6	31	
16	16	11	11	3	5	2	2	6	8	3	2	5	3	6	2	4	6	6	6	6	6	3	17	4	6.0	28	
17	6	5	17	17	9	5	9	10	11	7	4	6	10	19	9	12	8	15	17	3	21	9	10	11	10.4	48	
18 D	10	19	5	3	4	7	36	6	6	5	6	6	4	6	6	34	24	64	70	86	40	20	15	110	24.7	115	
19	38	40	27	25	12	26	7	26	16	12	8	14	12	6	7	6	4	6	4	7	8	8	9	14.0	65		
20	18	6	7	5	8	4	5	5	6	6	6	2	7	7	13	6	6	8	44	30	30	43	30	26	13.7	64	
21 D	9	9	20	8	19	6	12	8	6	7	7	14	21	18	6	38	66	18	17	18	29	6	10	10	15.9	74	
22	8	12	7	6	3	2	6	7	10	4	3	6	6	5	2	3	3	4	2	5	2	1	2	4	4.6	21	
23	1	2	2	2	3	8	3	3	7	17	9	5	8	15	36	15	13	9	17	33	8	14	7	6	10.1	47	
24	4	6	12	10	14	6	3	6	9	30	6	11	9	12	21	6	46	17	16	37	(21)	(18)	42	11	15.5	72	
25	26	25	28	10	10	9	25	14	9	4	5	4	2	6	6	3	3	6	6	5	8	6	7	7	9.6	45	
26	39	19	18	20	12	16	8	3	3	5	2	8	6	11	6	6	9	6	3	3	6	7	8	6	9.6	45	
27	4	14	7	7	7	9	3	3	2	7	11	(3)	2	2	8	3	4	3	5	7	4	6	16	5	5.9	27	
28	6	3	6	3	3	2	4	2	6	4	6	2	1	2	3	6	4	5	6	6	5	6	6	6	4.3	20	
29	21	11	7	3	2	2	6	6	8	2	1	6	5	3	3	2	2	2	3	3	2	2	3	3	4.5	21	
30	8	8	7	8	6	2	3	6	2	6	6	6	2	2	6	6	6	1	3	2	1	2	2	8	4.5	21	
31 Q	2	2	4	2	1	2	1	1	6	5	2	2	7	5	5	4	7	6	6	3	7	13	6	4	4.3	20	
Mean r _v	12.0	9.8	12.7	9.4	7.9	6.0	6.6	5.6	6.4	6.9	5.3	5.6	6.5	8.8	7.9	8.8	11.6	10.5	19.5	15.4	10.5	9.1	15.6	15.4	9.7	..	
Vr _v 10,000r _v ²	56	46	59	44	37	28	31	26	30	32	25	26	30	41	37	41	54	49	21	72	49	42	73	72	..	45	

HOURLY RANGES OF VERTICAL FORCE
Monthly, seasonal and annual means

42. LERWICK (rv)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1932	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
August	15.0	19.1	16.5	17.0	11.5	7.8	7.6	7.2	7.5	9.6	7.5	8.6	7.3	10.4	10.5	16.8	13.6	17.9	15.4	13.7	11.3	15.6	20.4	21.6	12.9
September	17.3	19.0	17.8	17.5	12.0	8.6	7.1	7.2	5.7	5.4	4.8	5.3	6.8	14.6	12.3	20.2	19.5	16.1	12.1	17.5	18.5	21.2	24.8	18.2	13.7
October	18.8	15.3	12.9	9.4	8.8	5.6	6.1	4.8	5.7	6.0	5.7	4.8	6.0	9.0	11.4	13.8	14.8	13.5	14.9	14.1	17.7	15.7	16.4	14.5	11.1
November	9.2	5.6	7.2	7.7	7.4	6.1	7.0	6.0	5.9	4.8	4.9	4.5	5.6	5.9	8.6	8.3	7.7	8.0	8.4	7.3	8.7	9.1	9.9	9.9	7.2
December	17.4	18.3	10.7	9.0	6.5	6.2	5.5	4.9	4.8	4.4	3.5	5.1	5.0	6.0	5.5	6.4	14.4	11.1	10.7	13.1	19.0	11.6	9.5	16.1	9.4
1933																									
January	12.0	13.8	15.0	10.6	9.2	7.9	8.0	5.8	5.9	5.5	4.5	4.7	4.7	5.5	7.8	12.4	11.2	10.5	11.9	16.2	11.3	17.4	12.1	12.1	9.8
February	19.8	14.5	17.8	11.4	10.0	9.0	6.4	6.2	5.4	4.7	5.6	5.6	5.6	5.7	12.6	16.4	15.7	9.3	11.1	14.8	10.7	18.4	19.3	21.3	11.6
March	16.4	18.7	17.5	15.9	11.1	11.0	8.9	7.7	5.8	6.7	5.3	7.1	6.5	6.5	10.0	10.8	13.0	11.2	12.3	14.0	20.8	13.4	24.4	22.0	12.4
April	19.1	20.5	15.3	17.2	8.5	10.0	8.4	7.1	6.7	4.9	6.1	6.6	10.7	11.2	10.4	10.7	10.9	13.4	11.1	13.2	26.4	22.9	28.1	26.0	13.6
May	25.7	28.2	18.8	18.0	12.5	11.5	9.2	6.9	6.1	6.2	5.0	5.9	6.4	10.0	12.1	22.7	23.3	15.8	15.9	17.1	19.6	32.3	23.3	20.1	15.5
June	16.7	17.7	18.2	13.7	14.6	8.9	7.0	6.5	5.9	5.9	5.7	6.5	6.7	7.8	8.7	10.6	8.8	7.4	7.5	7.6	7.2	10.6	13.9	13.9	9.9
July	13.0	13.5	12.9	10.5	9.6	6.0	4.7	4.5	4.8	5.1	5.4	8.0	6.9	7.5	10.6	10.5	7.9	6.0	6.5	6.4	6.5	8.2	14.7	15.0	8.5
August	12.0	9.8	12.7	9.4	7.9	6.0	6.6	5.6	6.4	6.9	5.3	5.6	6.5	8.8	7.9	8.8	11.6	10.5	19.5	15.4	10.5	9.1	15.6	15.4	9.7
Winter	14.6	13.1	12.7	9.7	8.3	7.3	6.7	5.7	5.5	4.9	4.6	5.0	5.2	5.8	8.6	10.9	12.3	9.7	10.5	12.9	12.4	14.1	12.7	14.9	9.5
Equinox	17.9	18.4	15.9	15.0	10.1	8.8	7.6	6.7	6.0	5.7	5.5	5.9	7.5	10.3	11.0	13.9	14.5	13.5	12.6	14.7	20.9	18.3	23.4	20.2	12.7
Summer*	17.2	18.5	16.1	13.9	11.6	8.4	7.0	6.1	5.9	6.4	5.6	6.9	6.7	8.7	10.1	14.1	13.1	10.9	11.9	11.4	11.1	15.9	17.5	16.9	11.3
Year*	16.6	16.6	14.9	12.8	10.0	8.1	7.1	6.2	5.8	5.7	5.2	5.9	6.5	8.3	9.9	13.0	13.3	11.4	11.7	13.0	14.8	16.1	17.9	17.3	11.2

Q and D denote the international "quiet" and "disturbed" days.

* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

DIURNAL VARIATION OF HOURLY RANGES OF THE TERRESTRIAL MAGNETIC ELEMENTS ON INTERNATIONAL QUIET DAYS

Monthly, seasonal and annual means for periods ending at the exact hours of Greenwich Mean Time

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
43. LERWICK																									
HORIZONTAL FORCE																									
1932-3																									
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	6.2	5.6	4.0	3.2	3.8	6.0	5.2	7.0	8.2	6.8	5.0	8.6	12.0	11.6	9.4	8.0	6.4	6.2	7.6	4.2	5.6	5.6	3.8	2.8	6.4
September	6.0	5.6	5.8	4.0	2.2	5.4	6.0	8.4	7.4	4.6	5.2	7.2	8.4	13.0	12.8	13.6	8.6	8.0	6.0	5.0	5.2	7.4	6.2	6.0	7.0
October	5.8	4.4	2.6	3.4	6.2	5.6	2.6	7.6	8.6	9.6	6.8	8.2	8.4	8.4	11.2	9.0	5.2	7.4	4.6	6.2	8.4	9.6	8.6	4.4	6.8
November	3.6	5.2	4.8	4.4	5.4	4.8	5.0	7.4	6.6	6.0	6.4	5.6	6.4	5.4	3.8	4.0	4.0	5.2	4.6	3.6	6.4	6.4	4.0	3.2	5.0
December	7.4	6.2	6.0	4.2	5.0	4.6	6.4	6.2	6.0	6.4	5.2	4.4	4.2	4.4	3.8	3.4	2.4	3.0	3.2	3.6	2.8	4.4	6.0	6.2	4.8
1933																									
January	5.2	3.6	2.8	2.8	4.0	2.8	3.2	3.4	5.0	5.2	6.2	4.8	4.8	5.2	6.2	4.0	4.2	4.4	3.4	3.6	4.2	5.4	3.2	3.6	4.2
February	4.6	4.8	6.0	3.2	3.0	2.6	2.2	4.2	4.4	5.0	3.8	4.2	6.4	4.8	4.0	4.0	4.4	3.8	3.4	3.0	3.6	5.0	5.0	2.6	4.1
March	8.0	5.0	4.2	4.8	3.2	4.0	3.6	4.6	5.6	6.2	6.0	5.0	7.2	8.2	9.4	8.2	4.4	3.0	5.6	3.6	3.8	7.0	8.8	4.8	5.6
April	9.8	8.0	9.4	3.6	2.4	4.0	3.4	8.6	10.8	7.8	8.0	8.0	11.0	12.2	9.4	8.8	8.0	9.0	7.8	6.6	4.6	5.2	6.8	9.8	7.6
May	3.8	3.6	2.6	3.6	4.0	4.6	8.2	9.0	7.0	5.6	6.4	9.6	9.8	10.0	8.2	9.6	8.0	7.2	5.2	5.2	3.8	5.4	4.0	5.6	6.3
June	5.4	5.2	5.0	5.4	5.2	6.4	7.6	6.0	7.4	5.8	5.4	9.0	10.4	11.4	9.0	5.6	7.4	6.2	5.6	7.4	4.4	6.2	6.4	3.8	6.6
July	7.6	5.2	5.6	5.0	5.6	6.4	6.6	6.0	5.0	5.8	8.0	9.6	10.0	11.0	12.4	13.4	7.2	8.6	5.6	6.2	7.6	4.4	4.8	4.8	7.2
August	6.4	3.8	4.4	4.6	4.4	5.0	5.4	7.4	10.2	6.0	6.2	7.4	14.6	11.0	11.0	10.0	10.4	7.4	7.2	6.2	7.0	7.4	7.0	6.2	7.4
Winter	5.2	4.9	5.1	3.7	4.3	3.7	4.2	5.3	5.5	5.7	5.4	4.7	5.5	4.9	4.5	3.9	3.7	4.1	3.7	3.5	3.9	5.3	4.5	3.9	4.5
Equinox	7.4	5.7	5.5	3.9	3.5	4.7	3.9	7.3	8.1	7.1	6.5	7.1	8.7	10.5	10.7	9.9	6.5	6.9	6.0	5.3	5.5	7.3	7.6	6.3	6.7
Summer*	5.8	4.7	4.3	4.5	4.7	5.7	6.9	7.1	7.1	5.9	6.3	9.1	10.9	10.9	9.9	9.4	7.7	7.2	5.9	6.0	5.6	5.6	5.1	4.7	6.7
Year*	6.1	5.1	4.9	4.0	4.2	4.7	5.0	6.5	6.9	6.2	6.1	7.0	8.4	8.8	8.4	7.7	6.0	6.1	5.2	4.9	5.0	6.1	5.8	4.9	6.0

44. LERWICK																									
DECLINATION																									
1932-3																									
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	2.1	1.4	1.8	1.3	1.7	1.5	1.3	1.0	1.8	1.7	3.0	2.8	2.0	1.4	1.7	1.5	1.3	1.1	1.6	0.9	1.0	1.7	1.4	1.1	1.6
September	1.8	1.6	1.5	0.9	1.1	1.3	0.8	1.2	1.7	2.9	2.2	1.5	1.3	1.6	1.9	1.4	1.0	1.1	0.6	0.9	1.0	3.8	2.5	3.2	1.6
October	2.7	2.0	1.5	1.1	1.5	1.5	0.9	1.6	1.0	1.3	2.2	2.5	2.1	1.5	1.5	0.8	1.1	0.9	2.8	2.3	1.9	1.9	2.5	1.9	1.7
November	1.9	1.4	1.3	1.2	1.3	1.0	0.8	1.1	1.0	1.4	1.8	1.0	0.7	0.7	0.8	0.5	1.1	0.9	1.0	1.3	2.9	1.8	0.9	0.9	1.2
December	3.1	1.7	1.8	1.2	1.6	1.0	0.9	1.2	0.8	0.8	1.5	0.8	1.0	1.0	0.9	0.8	0.5	0.2	0.6	0.6	0.9	2.0	1.4	1.7	1.2
1933																									
January	2.0	1.4	0.7	0.5	0.4	0.5	0.5	0.4	0.5	0.9	1.2	1.4	0.9	1.1	1.1	0.6	0.8	0.4	0.5	0.6	1.1	1.0	0.8	1.0	0.9
February	0.7	1.4	1.3	0.5	0.5	0.5	0.3	0.5	0.5	0.8	1.1	0.9	0.7	0.8	0.7	0.9	0.4	0.8	0.3	0.4	1.2	1.0	0.7	0.9	0.8
March	1.9	1.8	0.8	1.2	0.9	0.8	0.6	0.9	1.0	1.5	1.9	2.0	1.3	1.0	1.7	1.0	1.0	0.7	0.8	1.0	1.1	1.1	1.9	1.9	1.3
April	2.0	1.4	2.3	1.7	1.6	1.8	1.2	1.1	1.4	1.6	2.3	2.8	2.1	1.5	2.0	1.3	1.0	0.7	1.2	0.7	1.3	1.3	2.0	1.6	1.6
May	0.7	0.9	1.2	1.7	1.8	1.1	1.0	1.3	2.5	1.8	2.5	2.5	1.4	1.4	1.4	1.6	1.2	0.4	0.4	0.3	0.6	0.8	1.4	0.8	1.3
June	1.7	1.4	1.5	1.5	1.6	1.9	1.7	1.6	2.1	2.3	3.2	2.8	1.0	1.0	0.6	1.3	1.1	0.6	0.8	0.6	0.4	1.0	2.0	1.1	1.5
July	2.4	2.1	1.9	2.1	1.6	1.2	1.4	1.4	1.5	2.2	3.0	1.7	1.4	1.1	1.1	1.1	1.0	1.0	0.6	1.4	0.7	1.3	1.8	2.1	1.5
August	1.6	1.2	1.5	1.9	1.3	1.4	1.0	0.9	1.8	2.7	3.0	2.5	1.7	1.2	2.2	1.7	1.4	1.2	0.8	0.8	1.4	0.8	2.4	2.1	1.6
Winter	1.9	1.5	1.3	0.8	0.9	0.7	0.6	0.8	0.7	1.0	1.4	1.0	0.9	0.9	0.9	0.7	0.7	0.6	0.6	0.7	1.6	1.5	0.9	1.1	1.0
Equinox	2.1	1.7	1.5	1.3	1.3	1.3	0.9	1.2	1.3	1.8	2.1	2.2	1.7	1.4	1.8	1.5	0.9	0.9	0.9	1.3	1.5	2.1	2.1	2.2	1.5
Summer*	1.7	1.5	1.5	1.7	1.6	1.4	1.3	1.3	2.0	2.1	2.9	2.4	1.4	1.2	1.3	1.4	1.2	0.8	0.7	0.8	0.7	1.1	1.8	1.4	1.5
Year*	1.9	1.6	1.4	1.3	1.3	1.2	0.9	1.1	1.3	1.6	2.2	1.9	1.3	1.2	1.3	1.2	0.9	0.8	0.7	1.0	1.3	1.6	1.6	1.6	1.3

45. LERWICK										VERTICAL FORCE										1932-3									
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				
August	4.4	4.2	4.0	4.0	2.4	3.4	3.6	5.0	3.8	2.8	4.8	5.8	3.8	5.0	5.8	5.2	4.4	3.0	5.2	2.8	3.6	2.8	3.2	2.6	4.0				
September	5.4	4.4	4.2	2.8	2.2	2.6	2.0	3.6	4.8	2.8	3.2	2.4	3.4	3.8	3.8	3.4	4.2	5.0	3.4	3.0	3.0	5.2	6.4	9.2	3.9				
October	9.4	7.8	4.4	3.4	3.6	4.4	3.8	3.4	2.8	3.6	2.8	4.0	4.0	3.8	4.0	3.4	3.0	4.0	2.6	3.0	3.0	6.0	7.2	4.4	4.2				
November	4.4	3.0	5.2	3.0	2.0	3.0	2.2	3.6	3.6	3.2	2.4	2.4	2.8	2.0	3.4	3.0	2.8	3.0	2.4	2.8	3.4	3.0	3.6	2.0	3.0				
December	7.2	2.8	4.0	3.6	3.4	2.2	3.4	3.4	2.8	3.4	2.4	2.2	1.4	2.2	1.8	2.0	1.2	1.4	1.8	2.2	2.0	2.6	3.0	4.2	2.8				
1933																													
January	4.4	3.0	2.4	1.6	2.2	1.8	1.2	1.6	1.6	2.2	2.8	2.8	3.0	2.4	3.2	3.6	3.4	2.8	2.4	3.0	3.0	3.6	3.2	3.6	2.7				
February	3.6	2.8	4.6	3.0	2.0	1.6	2.0	2.8	1.6	2.6	2.2	1.6	2.2	2.4	1.6	1.4	2.2	2.0	1.4	1.8	3.2	3.4	3.4	2.2	2.4				
March	6.0	5.2	4.2	3.6	2.4	1.6	1.6	1.6	1.8	3.4	3.0	3.6	1.6	4.2	5.2	5.4	2.8	2.2	3.8	3.0	2.4	3.4	5.8	4.6	3.4				
April	8.2	8.2	5.8	10.2	4.4	2.8	2.6	3.6	3.6	4.0	4.4	4.0	3.8	4.2	4.4	3.0	3.2	3.2	5.4	3.6	4.0	5.2	7.8	11.0	5.0				
May	2.4	2.6	2.6	2.8	3.4	3.2	3.8	4.8	5.0	5.8	4.2	3.8	3.6	4.4	4.2	4.6	4.0	3.2	2.8	3.2	2.4	2.6	2.6	3.4	3.6				
June	7.2	4.2	5.0	4.2	3.8	3.0	3.6	4.0	3.6	4.8	4.6	5.6	3.6	6.6	3.2	4.4	3.6	4.4	3.2	3.8	4.2	4.0	3.2	6.4	4.3				
July	5.4	5.2	5.6	4.6	3.4	4.0	3.8	3.0	4.2	4.0	3.6	7.0	4.4	4.4	4.2	6.2	6.0	3.6	4.0	3.4	2.2	3.2	3.8	6.4	4.4				
August	5.6	5.4	5.0	4.2	5.2	2.4	2.8	2.6	3.6	4.6	5.0	4.0	6.0	4.4	3.6	4.8	5.6	5.8	3.8	3.4	4.0	5.4	6.6	7.8	4.7				
Winter	4.9	2.9	4.1	2.8	2.4	2.1	2.2	2.9	2.4	2.9	2.5	2.3	2.3	2.3	2.5	2.5	2.4	2.3	2.0	2.5	2.9	3.1	3.3	3.0	2.7				
Equinox	7.3	6.4	4.7	5.0	3.1	2.9	2.5	3.1	3.3	3.5	3.3	3.5	3.2	4.0	4.3	3.8	3.3	3.6	3.8	3.1	3.1	4.9	6.8	7.3	4.2				
Summer*	5.0	4.2	4.4	3.9	3.6	3.3	3.3	3.9	4.1	4.6	4.3	5.3	4.1	5.0	4.1	5.1	4.7	3.9	3.6	3.4	3.1	3.5	3.6	5.3	4.1				
Year*	5.7	4.5	4.4	3.9	3.1	2.8	2.7	3.3	3.3	3.6	3.4	3.7	3.2	3.8	3.6	3.8	3.5	3.3	3.1	3.0	3.1	3.9	4.6	5.2	3.7				

DIURNAL VARIATION OF HOURLY RANGES OF THE TERRESTRIAL MAGNETIC ELEMENTS ON INTERNATIONAL DISTURBED DAYS

Monthly, seasonal and annual means for periods ending at the exact hours of Greenwich Mean Time

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
46. LERWICK																									
												HORIZONTAL FORCE												1932-3	
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	23.0	162.6	120.2	37.2	18.6	39.4	36.0	37.4	33.6	27.0	38.8	41.8	44.0	50.4	46.8	57.0	52.4	63.4	35.4	45.4	16.8	35.4	52.2	43.8	48.3
September	16.4	37.2	45.0	29.8	31.4	30.2	24.0	14.6	26.0	19.6	19.2	23.6	42.4	55.0	57.0	70.6	58.0	57.6	47.6	51.2	58.2	50.4	45.0	46.4	39.9
October	46.6	37.4	33.4	23.0	36.8	22.4	15.2	18.4	24.8	23.6	25.0	18.8	27.6	22.4	33.2	33.2	49.0	80.6	32.4	24.8	65.8	67.4	40.8	42.4	35.2
November	10.8	6.6	16.0	24.2	20.6	20.8	25.4	24.4	21.0	14.2	17.4	15.8	26.2	31.8	22.0	17.2	20.4	18.2	16.0	17.4	26.6	29.0	27.2	23.4	20.5
December	78.8	87.4	22.2	11.2	12.2	11.6	10.4	10.8	9.6	10.6	10.6	15.2	20.2	20.8	22.2	16.6	35.4	58.8	51.0	44.8	68.0	62.6	39.6	52.4	32.6
1933	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
January	25.4	20.2	14.6	7.8	15.4	18.6	13.2	13.6	13.8	10.2	11.4	12.8	12.4	15.6	22.6	51.0	33.8	28.4	49.4	83.8	45.8	60.4	30.6	28.6	26.6
February	55.6	23.4	47.2	50.0	29.4	22.8	21.4	15.4	20.0	15.8	11.6	23.6	26.0	37.0	47.2	48.8	100.2	34.6	30.6	43.2	24.6	40.8	72.4	84.8	38.6
March	38.0	89.0	92.2	46.4	42.4	47.4	31.6	13.2	17.4	21.6	23.0	20.0	25.0	28.0	27.4	51.8	52.6	51.2	43.8	80.8	85.4	96.6	72.4	123.4	50.9
April	26.2	19.2	31.6	26.4	16.2	18.8	16.2	10.6	10.4	14.4	17.6	16.0	26.6	38.2	39.6	33.6	36.8	27.2	32.2	40.4	72.2	90.0	54.6	77.8	33.0
May	26.4	33.2	37.2	34.2	26.0	29.0	20.8	14.8	18.0	14.4	20.8	26.8	47.6	43.0	101.2	125.8	130.0	91.2	58.6	71.6	111.8	142.2	63.4	68.0	56.5
June	56.0	38.2	58.4	38.6	36.4	23.4	21.0	21.4	15.6	17.4	14.2	20.0	29.0	39.6	44.2	45.4	33.8	26.8	26.0	18.6	29.0	30.4	32.0	33.2	31.2
July	22.6	16.6	31.2	29.2	17.4	8.2	15.6	25.2	20.6	25.4	20.4	29.6	42.0	47.0	35.4	48.4	33.0	16.2	15.4	18.6	15.8	17.6	49.4	24.2	26.0
August	12.2	15.2	30.8	20.6	10.8	16.6	19.4	15.4	12.0	16.4	15.6	23.0	37.6	27.8	51.0	55.6	69.4	74.4	127.4	61.2	44.4	19.0	31.0	39.4	35.3
Winter	42.7	34.4	25.0	23.3	19.4	18.5	17.6	16.1	16.1	12.7	12.7	16.9	21.2	26.3	28.5	33.4	47.5	35.0	36.7	47.3	41.3	48.2	42.5	47.3	29.6
Equinox	31.8	45.7	50.5	31.4	31.7	29.7	21.7	14.2	19.7	19.8	21.2	19.6	30.4	35.9	39.3	47.3	49.1	54.1	39.0	49.3	70.4	76.1	53.2	72.5	39.7
Summer*	30.7	44.2	50.6	32.7	23.6	22.1	21.3	21.9	19.3	19.7	20.7	27.2	39.9	42.2	57.4	69.0	64.4	50.8	45.3	40.5	46.8	54.3	46.6	41.7	38.9
Year*	35.0	41.4	42.0	29.1	24.9	23.4	20.2	17.4	18.3	17.8	18.2	21.2	30.5	34.8	41.7	49.9	53.7	46.6	40.4	45.7	52.8	59.5	47.4	53.9	36.1

47. LERWICK												DECLINATION												1932-3	
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	5.6	12.5	10.6	4.2	3.8	4.1	6.5	5.8	4.6	4.8	6.4	4.2	5.6	5.4	4.3	8.5	12.3	14.4	15.3	13.1	8.6	13.6	15.8	11.0	8.4
September	6.0	7.2	6.7	6.1	8.4	5.6	5.1	4.3	4.7	4.8	3.1	3.4	3.2	5.4	3.7	15.7	12.5	10.5	9.9	16.6	16.5	13.3	12.5	10.2	8.1
October	6.1	12.1	8.8	6.0	6.5	4.3	3.3	3.9	4.9	4.5	3.3	3.7	3.7	3.4	7.0	10.4	15.7	17.2	7.2	12.6	4.8	10.3	13.4	6.5	6.5
November	3.3	2.8	2.9	5.1	6.4	5.8	6.9	5.7	6.8	3.8	4.1	4.7	5.0	9.2	6.2	4.9	10.3	11.3	5.6	8.3	6.7	8.0	5.3	6.0	6.0
December	16.7	22.2	5.3	6.0	3.4	3.6	3.6	2.4	2.8	2.2	2.5	3.4	3.3	3.3	3.4	4.8	9.2	14.1	11.4	12.6	16.9	12.5	8.6	10.5	7.7
1933	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
January	5.5	4.6	4.8	3.8	3.0	3.7	2.7	2.6	2.4	2.3	2.6	3.2	2.2	3.1	3.7	11.1	14.2	10.6	9.9	20.5	15.7	15.4	9.9	9.3	6.9
February	12.6	9.0	7.8	9.2	6.9	4.0	3.2	4.5	6.7	3.6	4.1	3.3	3.8	6.7	9.6	14.2	17.6	10.5	22.0	18.9	8.4	14.9	18.1	18.8	9.9
March	8.0	13.4	10.5	11.9	8.8	8.5	6.3	2.2	3.2	4.1	4.3	2.9	3.3	3.0	3.4	8.0	14.1	11.6	20.9	23.2	13.2	17.7	15.6	11.0	9.5
April	6.2	5.8	8.4	3.9	3.7	2.6	3.7	2.3	2.2	3.6	2.9	2.5	6.1	4.0	4.4	3.7	3.7	3.8	7.3	10.5	16.5	11.8	11.7	10.8	5.9
May	7.1	7.7	9.0	8.9	3.3	5.4	3.4	4.3	4.1	2.8	4.5	3.2	4.1	3.1	6.0	12.3	24.2	16.3	7.6	10.4	13.5	16.5	9.3	9.4	8.3
June	10.4	6.3	9.2	11.0	5.5	6.8	5.5	4.5	2.4	3.8	3.1	3.1	2.4	3.2	2.7	5.6	4.9	2.6	5.6	4.2	4.8	6.4	10.3	8.1	5.5
July	4.7	5.5	4.7	2.7	2.1	2.1	3.9	2.0	3.4	5.1	4.2	4.1	4.0	3.6	3.1	5.7	3.5	1.9	2.3	4.5	2.9	3.3	10.6	4.5	3.9
August	3.4	2.6	3.5	4.0	2.4	2.9	3.7	4.0	3.7	3.7	4.3	4.1	4.2	4.8	3.5	5.4	9.0	8.3	25.2	20.4	12.8	4.1	7.0	7.6	6.4
Winter	9.5	9.7	5.2	6.0	4.9	4.3	4.1	3.8	4.7	3.0	3.3	3.7	3.6	4.5	6.5	9.1	11.5	11.4	13.7	14.4	12.3	12.4	11.2	11.0	7.7
Equinox	6.5	9.6	8.6	7.0	6.9	5.3	4.6	3.2	3.7	4.2	3.4	3.1	4.1	3.9	4.6	9.5	11.5	10.8	11.3	15.7	12.7	13.2	13.3	9.6	7.8
Summer*	6.7	6.7	7.5	6.7	3.5	4.4	5.0	3.9	3.5	3.9	4.3	3.6	3.9	3.8	3.9	7.6	10.8	8.1	8.9	9.0	8.0	8.7	10.4	7.8	6.3
Year*	7.6	8.7	7.1	6.6	5.1	4.7	4.5	3.6	4.0	3.7	3.7	3.5	3.8	4.1	5.0	8.7	11.3	10.1	11.3	13.0	11.0	11.5	11.6	9.5	7.2

48. LERWICK												VERTICAL FORCE												1932-3	
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	36.8	62.0	51.2	48.6	21.2	10.8	14.6	13.8	17.2	19.0	12.2	14.8	16.4	23.0	22.2	43.6	39.4	52.2	43.6	48.8	20.4	51.6	76.4	66.0	34.4
September	23.6	28.2	20.4	55.4	34.2	17.6	12.0	12.8	10.8	9.0	7.2	8.4	13.4	59.2	36.0	67.8	51.6	54.0	38.0	69.0	72.4	50.8	52.4	42.2	35.3
October	37.8	28.2	35.8	26.4	33.4	15.2	13.0	10.4	17.0	14.0	16.8	7.2	9.2	12.4	25.8	39.4	45.4	47.2	57.4	33.4	39.6	36.6	48.6	27.6	28.2
November	22.0	6.8	9.4	18.6	21.2	13.4	21.4	16.4	13.4	9.4	12.0	6.8	14.0	15.0	27.8	21.0	14.4	15.4	23.2	13.2	17.6	21.4	21.2	25.6	16.7
December	61.6	63.6	25.2	11.6	17.8	17.0	13.8	10.8	8.4	6.2	4.2	12.2	11.0	10.6	10.8	14.0	58.8	39.6	31.2	31.0	71.6	37.2	21.6	47.2	26.5
1933	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
January	14.0	11.8	15.4	11.6	10.0	9.6	10.6	7.4	6.0	5.4	6.0	6.4	6.0	6.6	13.2	45.4	37.8	32.6	35.6	65.0	27.6	51.2	21.6	29.2	20.3
February	72.4	28.8	50.8	22.4	22.8	25.6	17.2	16.6	11.6	8.6	6.8	12.0	11.6	14.8	48.6	66.4	68.2	30.2	28.0	53.2	24.6	40.0	59.2	66.8	33.7
March	31.0	53.4	54.8	36.0	27.0	28.6	27.2	22.0	11.6	10.8	8.0	7.2	11.6	8.4	13.0	25.0	36.8	26.4	39.8	52.0	76.0	40.4	82.4	54.0	32.6
April	19.2	27.8	17.4	28.6	17.4	15.8	12.4	9.8	6.0	5.6	9.4	7.2	27.8	21.4	16.4	14.8	15.8	21.2	23.2	27.2	52.0	59.0	60.0	58.6	23.9
May	22.4	37.6	30.8	25.8	30.0	25.0	20.4	12.4	8.8	12.2	8.2	9.4	12.4	21.4	42.8	100.8	99.2	60.8	38.4	68.8	117.6	53.2	42.8	39.0	25.2
June	61.2	40.0	53.0	48.2	50.0	25.2	16.8	13.4	10.6	8.8	6.8	10.2	11.4	14.2	18.6	28.6	18.0	19.0	17.0	13.4	10.2	28.8	45.2	37.0	25.2
July	28.8	21.8	25.2	27.6	25.8	14.2	8.6	7.4	9.0	9.0	7.0	12.4	13.4	12.0	26.2	25.4	13.6	7.8	10.2	13.6	14.8	13.0	60.0	31.2	18.3
August	12.6	13.2	28.0	16.2	13.0	9.6	16.2	6.0	8.2	8.6	7.2	9.0	12.4	17.8	7.6	24.0	34.2	32.8	80.2	52.8	29.0	15.4	49.4	50.8	23.1
Winter	42.5	27.7	25.2	16.1	17.9	16.4	15.7	12.8	9.9	<u>7.4</u>	7.7	9.3	10.7	11.7	25.1	36.7	<u>44.8</u>	29.5	29.5	40.6	35.3	37.5	30.9	42.2	24.3
Equinox	27.9	34.4	32.1	36.6	28.0	19.3	16.1	13.7	11.3	9.9	10.3	<u>7.5</u>	15.5	25.3	22.8	36.7	37.4	37.2	39.6	45.4	60.0	46.7	<u>60.9</u>	45.6	30.0
Summer*	34.3	34.3	37.1	33.5	30.7	18.7	15.3	10.8	10.3	10.9	<u>7.9</u>	11.0	12.9	17.0	25.6	47.1	41.9	32.5	31.9	28.1	30.1	48.2	<u>55.3</u>	42.3	27.8
Year*	34.9	32.1	31.5	28.7	25.6	18.1	15.7	12.4	10.5	9.4	<u>8.7</u>	9.3	13.0	18.0	24.5	40.2	41.4	33.1	33.7	38.1	41.8	44.1	<u>49.0</u>	43.4	27.4

MEAN VALUE OF ($H_{rH} + V_{rV}$) 10^{-4} FOR EACH DAY

49. LERWICK

Day	1932						1933						
	August	Sept- ember	October	Novem- ber	Decem- ber	Janu- ary	Febru- ary	March	April	May	June	July	August
	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
1	113	60	48	92	42	76	23	42	78	771	153	56	29
2	158	65	50	54	36	82	54	42	53	230	51	46	34
3	140	41	62	35	30	36	26	49	81	102	43	54	28
4	112	48	45	63	34	21	32	34	86	108	26	35	30
5	72	53	53	55	25	19	32	19	57	84	31	39	228
6	67	165	31	26	34	79	23	25	72	162	23	43	135
7	42	53	38	31	14	48	28	25	102	80	31	35	50
8	38	156	40	34	64	22	29	34	62	40	80	55	46
9	38	108	70	24	80	24	40	23	61	24	94	101	39
10	25	28	73	22	57	18	26	39	47	25	46	72	31
11	36	23	48	25	23	16	18	83	30	39	30	89	32
12	98	26	43	40	22	19	20	40	22	25	41	51	30
13	88	35	35	42	68	26	16	56	24	55	281	33	152
14	38	34	23	81	266	35	47	45	53	151	131	31	85
15	38	39	228	52	198	101	60	26	168	115	107	25	52
16	27	25	96	209	227	42	18	28	118	64	31	35	43
17	29	24	101	103	100	28	12	32	178	106	35	61	71
18	32	78	52	60	59	25	35	202	179	154	31	78	166
19	28	141	37	51	44	106	172	261	202	63	66	37	99
20	24	95	240	45	29	84	156	258	139	42	115	49	89
21	75	56	195	25	19	21	284	168	153	34	44	36	112
22	86	84	106	20	21	197	227	178	134	51	35	38	30
23	50	209	154	22	19	105	222	201	114	45	24	120	78
24	27	271	77	15	25	99	161	207	86	41	31	193	108
25	36	310	50	46	53	74	128	86	61	49	65	48	66
26	31	114	25	24	55	98	144	39	80	24	53	59	67
27	199	129	65	24	70	160	63	88	49	58	50	140	40
28	411	40	31	42	58	125	33	92	59	77	133	47	31
29	244	74	31	64	23	79	..	96	37	94	75	40	30
30	182	75	65	30	50	78	..	57	132	171	54	28	31
31	75	..	37	..	74	50	..	68	..	128	..	32	30
Mean	86	89	73	49	62	64	76	85	91	103	67	59	67

DIURNAL VARIATION OF ($Hr_B + Vr_V$) 10^{-4}

Mean values for periods of 60 minutes ending at the hours of Greenwich Mean Time

50. LEWIS

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
ALL DAYS																									
1932	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2
August	95	157	116	102	68	56	55	56	58	67	54	65	63	81	84	114	95	114	98	85	69	92	118	123	86
September	106	120	111	102	74	58	49	50	45	42	38	45	58	97	90	132	124	105	78	104	113	128	147	111	89
October	113	91	76	57	57	40	40	37	44	46	45	37	53	66	78	89	95	94	87	85	117	106	101	92	73
November	55	35	45	48	48	41	48	43	45	35	36	35	43	45	56	54	54	54	53	47	58	60	62	62	49
December	109	118	66	54	41	39	37	34	35	34	28	37	37	45	42	44	86	75	73	87	123	83	65	100	62
1933																									
January	80	87	86	61	58	56	52	41	42	41	33	35	35	42	55	80	71	65	78	108	76	109	79	76	64
February	122	98	113	77	63	55	43	41	40	36	41	42	45	49	82	101	109	61	73	90	69	111	126	135	76
March	107	125	125	100	76	71	58	50	44	52	43	53	53	56	76	83	93	80	79	95	131	97	146	154	85
April	118	123	98	97	57	71	59	50	50	39	49	52	80	86	82	84	80	89	79	90	165	148	165	165	91
May	165	180	111	102	75	73	60	48	44	42	40	49	57	77	101	161	158	112	106	117	134	201	142	129	103
June	104	107	112	85	87	57	48	46	42	42	41	49	55	67	73	83	55	55	54	53	51	68	85	84	67
July	77	79	80	65	58	38	34	36	38	40	41	59	57	64	77	81	61	50	47	46	47	51	90	87	59
August	73	62	78	59	48	41	48	45	49	48	40	45	59	66	68	71	87	83	136	103	69	58	94	92	67
Winter	91	85	77	60	53	48	45	40	41	37	35	37	40	45	59	70	80	64	69	83	81	91	83	92	63
Equinox	111	115	103	89	66	60	52	47	46	45	44	47	61	76	81	97	98	92	81	93	131	120	140	131	84
Summer*	107	116	100	83	69	54	48	45	45	45	42	53	57	71	82	104	91	79	81	77	75	99	106	102	76
Year*	103	105	93	77	63	54	48	44	44	42	40	46	53	64	74	91	90	78	77	85	96	103	109	109	74
QUIET DAYS																									
1932	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2
August	30	28	25	24	17	25	25	33	30	23	29	39	35	40	41	36	30	23	35	19	26	21	21	16	28
September	34	29	28	19	13	20	18	29	33	20	23	21	28	37	37	27	32	35	25	21	22	35	39	52	28
October	52	42	25	21	26	29	22	27	25	31	23	31	31	30	35	29	22	30	19	23	26	42	46	27	30
November	26	22	31	20	17	21	17	28	27	24	20	19	22	17	22	20	19	22	18	18	24	23	23	14	21
December	45	22	28	23	23	17	25	25	22	25	19	16	13	16	14	14	9	11	13	15	13	18	23	29	20
1933																									
January	29	19	15	11	16	12	11	12	14	18	22	20	21	19	24	23	22	19	16	19	20	25	20	22	19
February	24	20	30	19	13	11	12	19	13	19	16	13	19	18	13	12	16	15	11	12	20	23	23	14	17
March	40	31	26	24	16	13	12	14	16	25	23	24	17	32	38	37	19	14	26	19	17	26	40	28	24
April	52	50	41	53	24	19	17	29	33	30	33	31	34	38	35	27	27	28	36	27	26	31	46	65	35
May	17	17	16	18	22	22	30	35	33	35	29	32	31	36	32	36	31	25	21	23	17	20	18	24	26
June	42	28	30	28	26	23	28	28	28	30	29	39	32	48	28	29	28	30	23	29	26	28	24	36	30
July	36	32	34	28	24	28	23	23	27	27	29	47	36	37	38	48	38	29	27	25	21	21	25	37	31
August	35	31	29	27	30	18	21	23	32	30	32	30	49	37	33	37	41	38	28	25	29	36	41	45	32
Winter	31	20	26	18	17	15	16	19	19	21	19	17	19	17	18	17	14	17	15	16	19	22	22	20	19
Equinox	42	39	30	29	20	20	17	25	27	27	25	27	27	34	36	30	25	27	27	23	23	33	43	41	29
Summer*	32	27	27	25	24	23	26	29	30	30	29	38	35	40	34	37	33	29	25	25	23	25	25	32	29
Year*	35	29	28	24	20	20	20	24	25	26	25	27	27	31	29	28	24	24	22	21	22	27	30	32	26
DISTURBED DAYS																									
1932	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2	r^2
August	204	525	413	280	126	108	120	118	129	128	113	130	140	180	171	286	260	335	254	293	119	291	432	372	230
September	134	185	160	301	205	126	91	81	88	70	62	73	123	356	251	418	324	336	396	421	310	509	264	222	
October	244	185	215	156	209	103	83	74	115	99	114	61	83	90	168	232	283	339	314	192	280	269	285	190	182
November	119	42	67	122	129	92	137	111	92	65	81	55	103	116	162	123	97	98	131	87	121	142	138	153	107
December	401	423	149	70	101	96	79	66	53	44	35	79	80	79	82	89	325	270	219	209	433	264	158	296	170
1933																									
January	102	84	93	65	69	72	68	54	48	40	45	49	46	54	95	285	225	193	238	425	195	327	145	177	134
February	418	168	305	177	149	152	111	99	83	63	58	90	92	123	294	380	463	191	174	311	151	245	381	434	213
March	199	378	389	235	187	202	175	122	79	81	70	63	90	80	101	192	247	197	249	359	478	328	489	431	226
April	127	158	127	171	104	101	81	61	43	47	70	57	169	155	133	118	127	138	155	186	347	406	359	386	159
May	142	223	198	170	178	159	125	93	67	78	68	83	127	162	346	652	651	415	264	266	483	754	340	298	264
June	366	241	331	281	286	151	108	93	72	66	53	77	95	123	151	199	133	128	117	89	90	178	257	220	163
July	167	126	162	171	145	78	63	71	72	79	63	101	123	124	173	188	111	59	70	90	101	87	352	180	123
August	77	84	175	105	77	69	103	50	55	64	57	75	113	123	109	193	260	261	559	335	199	100	275	294	159
Winter	260	179	153	109	112	103	99	80	69	53	55	68	80	93	158	219	275	188	191	258	225	245	205	265	156
Equinox	175	227	223	216	176	133	107	85	81	74	79	63	116	175	163	240	245	253	241	281	381	328	361	318	197
Summer*	204	223	246	204	177	119	102	82	76	80	67	91	118	140	203	320	289	225	214	190	208	304	326	258	186
Year*	213	210	207	176	155	118	103	82	75	69	67	74	105	136	175	260	270	222	215	243	271	292	280	280	180

* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

51. ESKDALEMUIR (r_H)

AUGUST, 1932

AUGUST, 1932																											
Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr. r _H 10,000γ ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	12	10	8	3	4	5	6	14	6	17	16	13	21	23	(44)	52	36	54	31	19	13	28	46	26	21.1	35	
2 D	4	17	31	(18)	(21)	28	22	18	17	22	17	42	53	46	37	103	69	12	32	36	22	65	46	28	33.6	56	
3 D	15	15	7	6	12	15	57	29	(38)	43	(21)	31	37	52	14	27	55	53	21	19	40	68	16	41	30.5	51	
4	73	19	12	25	(24)	9	23	12	44	29	13	33	40	25	17	31	48	33	11	12	8	3	5	3	23.0	38	
5	3	3	3	11	11	8	(12)	9	28	88	30	46	11	(14)	28	14	(18)	15	27	18	28	17	15	21	20.3	34	
6	18	14	6	12	11	3	7	10	(9)	12	11	14	(17)	12	36	19	(12)	17	(16)	9	15	5	25	11	13.4	22	
7	4	4	4	6	3	8	6	7	6	5	7	11	19	14	8	15	12	9	8	11	6	8	5	5	8.0	13	
8	4	4	17	7	7	6	3	8	17	5	4	5	12	20	18	7	14	15	17	15	5	7	3	5	9.4	16	
9	4	4	7	5	14	13	19	23	11	8	(10)	9	7	10	10	5	6	14	5	6	7	7	6	4	8.9	15	
10 Q	4	5	9	3	4	5	6	11	5	6	6	9	8	9	6	13	4	8	14	5	3	3	4	3	6.3	10	
11	3	5	7	7	5	8	4	7	6	10	10	11	(11)	7	11	10	9	16	13	18	(8)	3	3	4	8.2	14	
12	24	9	27	74	54	3	8	12	11	13	13	18	42	29	52	76	15	13	10	11	10	6	9	15	23.1	38	
13	22	11	24	18	12	10	12	55	29	7	7	15	18	22	24	23	18	40	32	10	8	10	22	21	19.6	33	
14	8	3	6	4	3	9	29	9	7	20	21	11	13	14	18	17	7	15	10	9	8	12	17	7	11.5	19	
15	8	7	4	5	4	6	3	4	9	7	8	12	11	10	12	18	19	17	10	9	13	23	7	14	10.0	17	
16 Q	16	12	8	5	7	5	4	4	10	7	4	16	13	11	8	2	7	10	8	7	8	7	4	6	7.9	13	
17 Q	11	4	5	5	6	5	6	8	12	9	9	13	13	17	13	18	20	9	20	4	5	13	8	6	10.0	17	
18 Q	5	5	5	4	5	11	5	9	11	9	11	9	13	10	8	12	4	8	8	9	17	11	10	6	8.5	14	
19 Q	7	5	4	4	3	7	6	7	10	4	12	9	18	13	23	10	9	11	14	3	4	5	5	4	8.2	14	
20	2	1	4	4	4	3	4	6	15	12	6	8	12	15	18	11	5	11	10	11	4	6	8	8	7.8	13	
21	29	20	(16)	16	8	25	20	7	13	17	9	16	18	17	44	32	(39)	29	(32)	9	6	12	18	30	20.1	33	
22	15	9	10	4	6	4	9	14	11	15	16	37	27	20	23	33	24	63	101	44	20	10	7	9	22.1	37	
23	4	7	7	6	6	19	6	8	6	29	10	40	9	5	40	40	20	11	5	4	6	5	7	14	13.1	22	
24	17	5	10	6	4	4	9	5	6	9	8	9	7	10	6	18	6	6	15	8	8	12	9	9	8.6	14	
25	14	3	9	8	5	4	10	10	9	7	4	6	14	15	20	6	14	10	9	9	8	34	14	16	10.7	18	
26	9	11	6	3	5	6	6	4	9	4	5	7	11	10	15	7	4	8	8	6	6	19	15	15	7.9	13	
27 D	8	11	10	10	12	15	22	43	23	12	9	29	22	74	95	31	46	(96)	110	31	18	22	45	44	34.9	58	
28 D	21	115	118	37	17	82	61	29	(78)	56	44	36	39	60	73	83	74	104	49	18	9	14	24	41	53.9	82	
29 D	54	20	12	22	35	31	28	43	33	14	19	58	62	60	52	51	106	76	45	145	(32)	95	95	13	50.3	83	
30	10	21	15	15	12	23	10	28	26	31	19	40	59	27	38	30	91	35	82	59	(81)	26	14	12	33.5	56	
31	11	14	10	15	13	9	19	20	18	22	16	16	17	(31)	(29)	21	27	10	14	12	10	18	3	16.1	27		
Mean r _H	14.2	12.7	13.6	11.9	10.2	12.5	14.3	15.6	17.2	17.7	12.7	20.1	21.5	22.8	27.3	26.7	27.1	26.8	25.4	18.8	14.3	17.8	17.3	14.5	18.1	..	
Hr. r _H 10,000γ ²	24	21	23	20	18	21	24	26	29	29	21	33	36	38	45	44	45	44	42	31	24	30	29	24	..	30	

52. ESKDALEMUIR (r_H)

SEPTEMBER, 1932

SEPTEMBER, 1932																										
Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean T _H	H _r 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	6	6	12	8	6	14	8	12	9	14	6	11	14	27	12	36	27	52	9	4	5	6	5	19	13.7	23
2	23	21	11	22	14	10	16	9	8	6	10	12	14	19	29	19	32	11	12	8	4	14	13	12	14.5	24
3 Q	6	4	4	6	3	5	4	6	5	4	4	5	12	11	(18)	23	13	15	9	8	6	10	20	6	8.6	14
4	6	8	4	7	9	3	8	8	7	6	5	8	13	5	17	11	8	15	16	23	16	11	30	23	11.1	18
5	8	4	4	5	4	5	8	8	10	12	9	12	13	17	22	45	25	9	5	7	4	8	9	8	10.9	18
6 D	16	10	10	9	11	23	28	37	(32)	16	23	45	35	41	64	53	63	46	20	14	32	13	10	6	27.4	45
7	5	4	4	2	6	9	10	8	10	33	12	19	13	5	8	14	6	14	22	8	12	50	62	17	14.7	24
8 D	11	18	31	50	23	23	(11)	15	16	8	10	12	13	18	(15)	26	17	29	32	26	25	20	11	36	20.7	34
9	58	14	(53)	40	28	29	6	18	9	12	13	22	18	14	16	18	27	6	(14)	8	36	23	12	5	20.8	35
10 Q	13	9	8	9	4	8	7	13	8	7	8	10	10	17	11	8	12	15	9	3	10	14	9	12	9.7	16
11 Q	6	11	13	4	5	7	3	8	4	3	6	7	10	12	11	10	8	8	4	4	11	7	6	9	7.4	12
12	4	7	6	5	8	6	4	5	3	3	3	7	9	14	11	4	9	8	4	4	11	7	6	9	7.4	12
13	4	4	5	10	11	5	10	8	9	7	9	15	8	6	18	22	24	14	(10)	6	7	12	7	7	9.9	16
14	7	4	2	11	6	10	11	14	16	10	5	14	11	6	5	10	9	45	26	12	9	14	(8)	7	11.3	19
15	6	6	4	4	3	4	7	14	9	13	13	15	21	11	(13)	12	14	6	9	4	6	9	32	10	10.2	17
16 Q	6	5	5	3	1	7	(9)	8	(11)	7	11	11	10	22	11	16	6	8	11	5	7	4	4	2	7.9	13
17 Q	3	3	3	4	5	5	6	9	6	6	6	10	6	11	7	11	10	4	9	10	4	4	5	21	7.0	12
18	26	8	5	5	7	3	17	10	7	(9)	17	23	15	6	10	27	38	26	13	11	9	7	37	74	17.1	28
19	17	38	20	9	17	12	12	6	20	20	31	33	18	19	29	58	53	17	21	17	17	49	53	9	24.8	41
20	4	8	28	18	12	21	11	23	29	15	9	7	15	15	22	21	29	10	9	14	9	18	37	22	16.9	28
21	(14)	21	14	17	11	16	11	20	5	13	9	11	7	11	10	4	4	6	9	16	15	8	41	18	13.0	22
22	8	8	9	11	36	35	8	4	8	38	14	12	28	11	12	14	22	33	12	14	26	24	21	17	17.7	29
23 D	8	14	12	5	12	16	13	15	46	33	16	23	29	31	53	62	69	51	33	52	73	50	(23)	26	31.9	53
24 D	19	27	21	18	20	72	46	15	10	23	23	20	63	26	(61)	57	33	18	61	110	(107)	22	32	44	39.5	66
25 D	14	40	47	55	(29)	22	27	24	35	37	28	41	46	42	63	87	45	33	21	65	46	102	65	38	43.8	73
26	26	34	22	13	26	29	32	27	12	21	40	40	11	6	18	11	19	10	12	28	40	41	24	13	23.1	39
27	55	44	26	14	13	8	24	12	19	19	23	17	23	29	38	29	34	23	12	22	11	5	29	24	23.0	38
28	13	6	7	9	3	8	15	3	10	9	5	6	15	14	19	14	15	18	9	9	6	7	7	7	9.8	16
29	14	63	17	6	3	4	4	6	6	21	11	11	17	3	13	7	10	6	9	53	51	20	11	20	16.1	27
30	20	12	14	11	11	8	15	18	10	12	6	(11)	10	13	12	13	23	16	3	4	4	70	52	9	15.7	26
Mean T _H	14.2	15.4	14.0	13.0	11.6	14.2	13.0	12.8	13.0	14.6	12.8	16.3	17.6	16.1	21.6	24.7	23.3	19.1	15.1	19.1	20.5	21.9	23.3	17.7	16.9	..
H _r 10,000γ ²	24	26	23	22	19	24	22	21	22	24	21	27	29	27	36	41	39	32	25	32	34	36	39	29	..	28

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

53. ESKDALEMUIR (r_H)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000 y ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	12	18	4	8	6	8	5	7	10	4	9	10	8	13	8	17	(9)	12	13	5	10	33	(35)	7	7	11.3
2	12	7	11	11	5	5	10	7	11	12	32	14	14	25	27	14	17	10	23	7	7	7	9	23	13.4	22
3	17	35	34	13	5	6	15	13	7	10	12	13	15	26	14	18	11	8	6	4	8	14	12	35	14.6	24
4	18	11	10	6	2	6	11	8	10	10	6	5	22	12	(25)	33	27	17	14	6	12	9	21	7	12.8	21
5	9	13	17	11	10	11	7	8	11	10	(9)	11	20	15	13	11	12	18	18	8	3	21	27	29	13.4	22
6 Q	5	12	6	7	4	1	2	3	6	11	8	10	13	13	17	12	8	7	9	19	17	18	*12	9	9.6	16
7	45	26	6	4	3	3	5	5	7	8	6	10	13	9	13	8	7	5	4	4	4	5	6	9	9.0	15
8	7	4	4	3	6	4	4	8	8	11	5	6	7	9	17	6	5	8	23	27	17	9	22	21	10.0	17
9	29	23	9	10	4	4	5	9	8	8	15	20	22	22	15	40	23	8	17	29	13	14	14	27	16.2	27
10	36	14	9	8	13	10	15	10	8	18	11	19	21	32	19	21	60	21	9	9	35	12	6	9	17.7	29
11	5	6	4	8	7	5	5	9	14	21	14	10	14	10	10	13	11	6	22	13	23	29	40	18	13.2	22
12	(29)	11	6	9	5	5	8	10	7	8	7	4	8	4	8	11	12	11	10	9	32	10	11	12	10.3	17
13 Q	5	5	3	2	3	1	3	13	13	17	21	18	19	10	16	18	9	12	(9)	9	(8)	17	15	6	10.5	17
14 Q	5	3	3	3	3	1	1	5	10	13	3	8	6	10	11	6	4	17	5	6	6	7	20	8	6.8	11
15 D	6	20	18	23	29	17	(16)	23	42	32	(39)	23	38	27	46	69	48	41	43	39	27	11	57	39	32.1	53
16 D	28	17	23	27	60	58	44	39	29	11	30	31	9	13	9	30	32	27	4	5	4	5	8	16	23.3	39
17	29	17	9	5	8	7	14	12	29	9	14	11	24	41	24	17	33	45	12	24	38	32	9	31	20.6	34
18	41	19	6	6	6	6	3	4	6	9	11	9	17	7	10	(7)	8	13	7	5	10	6	9	12	9.9	16
19	8	5	5	9	7	24	20	13	8	15	11	10	14	31	32	6	9	9	8	5	9	12	9	9	12.0	20
20 D	6	6	5	4	4	8	6	11	12	9	22	10	33	18	37	33	38	43	53	37	(92)	138	88	37	31.3	52
21 D	41	58	28	39	49	27	23	23	29	45	21	21	21	25	13	10	17	13	4	18	14	6	3	6	23.1	38
22	7	3	4	6	6	3	5	8	11	11	8	9	17	23	10	14	21	34	24	80	67	35	17	14	18.2	30
23 D	17	16	16	21	11	7	6	14	29	31	20	21	18	26	50	33	40	36	21	74	29	23	50	14	26.0	43
24	9	6	4	13	18	17	4	10	25	17	6	14	66	75	12	12	(13)	11	27	49	72	14	9	7	21.3	35
25	3	6	6	5	6	11	11	17	13	14	8	8	10	13	13	38	7	3	4	13	12	6	8	5	10.0	17
26 Q	5	5	2	3	5	9	4	8	8	11	(9)	8	7	15	14	3	5	6	3	5	7	4	6	5	6.5	11
27	4	3	10	10	15	4	6	12	5	14	19	28	41	22	55	33	14	8	5	12	13	11	9	9	15.1	25
28 Q	9	8	4	6	21	10	4	10	8	10	6	10	5	3	5	1	2	3	3	4	2	3	2	1	5.8	10
29	4	1	6	5	7	5	3	3	10	8	5	5	9	6	5	7	6	2	5	5	6	32	30	12	7.8	13
30	12	13	7	13	4	22	21	18	13	16	44	19	23	12	22	12	26	6	4	6	28	32	15	8	16.5	27
31	11	14	6	4	6	6	19	13	7	11	7	8	15	9	7	7	5	2	5	3	3	11	9	18	8.6	14
Mean r _H	15.3	13.1	9.2	9.7	10.9	10.0	9.8	11.4	13.4	14.0	14.1	13.0	18.4	18.4	18.5	18.2	17.5	15.0	13.4	17.4	20.3	18.9	18.9	14.8	14.4	..
Hr _H 10,000 y ²	25	22	15	16	18	17	16	19	22	23	23	22	31	31	31	30	29	25	22	29	34	31	31	25	..	24

54. ESKDALEMUIR (r_H)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000r ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
1 D	6	10	14	11	34	31	66	43	18	14	(18)	17	35	32	18	13	18	15	7	13	11	8	9	25	20.3	34	
2	21	11	11	8	14	17	8	15	22	9	(14)	25	27	12	9	4	7	6	27	8	6	4	4	5	12.3	20	
3	5	4	4	8	6	8	14	10	32	22	15	6	4	11	11	18	3	6	9	13	7	12	9	8	10.3	17	
4	15	7	9	3	19	19	7	8	12	9	11	10	6	11	11	8	20	19	18	26	14	27	31	28	14.5	24	
5	10	4	24	17	4	9	10	18	19	10	9	7	12	13	4	6	30	16	6	11	12	9	12	21	12.2	20	
6 Q	9	8	4	4	9	6	11	11	6	9	7	12	12	5	5	4	3	6	6	4	7	11	5	4	7.0	12	
7	23	7	4	4	3	4	1	4	(11)	8	5	5	7	10	13	9	17	19	8	7	8	7	5	2	8.0	13	
8	4	2	3	3	4	4	8	5	10	11	6	7	6	9	6	6	11	15	13	8	25	28	12	7	8.9	15	
9 Q	8	8	5	3	4	4	6	7	12	10	3	4	7	6	4	7	4	5	7	5	6	6	4	5	5.8	10	
10 Q	3	6	6	5	5	9	(8)	6	11	10	9	8	(8)	7	6	(5)	4	5	3	4	8	6	9	4	6.5	11	
11	11	9	5	5	4	3	6	5	10	10	7	9	8	15	5	5	9	7	9	13	2	2	1	6	6.9	11	
12	5	9	7	4	4	6	8	12	11	12	12	20	15	17	13	13	12	22	9	17	12	7	7	6	10.8	18	
13	10	4	14	18	9	10	10	6	11	11	11	11	15	14	11	22	19	13	17	5	9	12	10	5	11.5	19	
14 D	4	9	10	6	10	9	14	28	19	22	13	21	(37)	40	22	17	18	27	6	5	4	32	30	27	17.9	30	
15 D	7	4	4	5	2	35	16	8	(14)	12	8	4	8	21	8	11	6	15	27	10	7	13	8	27	11.7	19	
16 D	(23)	8	34	59	53	13	30	40	37	24	41	27	17	38	51	31	49	45	64	29	57	46	63	36	38.1	63	
17 D	8	13	8	4	12	27	22	10	26	23	(23)	14	46	40	50	15	24	6	18	57	58	41	6	6	23.2	39	
18	15	8	11	12	7	9	8	9	23	5	8	9	8	14	14	31	(9)	14	13	11	68	44	7	8	15.2	25	
19	6	12	13	6	8	7	8	9	(13)	12	5	13	6	8	14	5	16	9	(13)	12	10	12	18	28	11.0	18	
20	23	3	3	5	6	4	11	11	7	6	5	13	10	9	12	31	9	6	18	5	2	6	33	31	11.2	19	
21	8	4	3	3	6	6	4	8	(9)	5	6	8	6	3	4	9	12	6	3	4	6	15	7	4	6.2	10	
22 Q	2	3	3	3	5	3	8	4	12	6	5	5	6	4	6	4	8	8	7	4	3	6	2	1	1	4.8	8
23	1	3	6	7	7	4	3	5	4	7	6	6	(24)	18	5	3	9	4	5	4	2	6	3	5	6.0	10	
24 Q	2	3	6	4	2	2	3	6	5	5	5	5	5	6	4	4	1	5	5	3	3	3	1	1	3.6	6	
25	1	3	2	5	7	12	10	9	9	9	12	14	9	9	12	53	33	18	25	10	11	11	19	30	13.9	23	
26	8	4	7	2	9	5	4	12	10	8	8	13	9	7	6	11	9	5	4	4	4	2	3	3	6.5	11	
27	3	2	4	5	18	11	3	3	8	(5)	6	7	9	9	4	4	5	4	5	7	6	7	4	5	6.0	10	
28	7	6	3	5	6	3	11	8	5	10	20	18	17	15	13	7	38	35	10	5	5	6	5	7	11.0	18	
29	9	13	21	7	9	17	14	14	15	15	19	17	12	6	48	21	13	27	16	9	8	7	9	19	14.8	25	
30	10	18	14	5	8	4	4	5	7	12	7	11	(5)	6	7	(7)	6	6	8	6	4	5	3	3	7.1	12	
Mean r _H	8.9	6.8	8.7	7.9	9.7	10.0	11.1	11.6	13.4	11.0	10.8	11.5	13.1	13.9	13.0	12.9	14.1	13.1	12.8	10.6	12.9	13.2	11.3	12.3	11.4	..	
Hr _H 10,000r ²	15	11	14	13	16	17	18	19	22	18	18	19	22	23	22	21	23	22	21	18	21	22	19	20	..	19	

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

55. ESKDALEMUIR (r_H)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	5	5	4	5	6	6	5	6	16	8	12	15	8	6	4	6	19	13	26	10	11	13	8	16	9.7	16
2	5	8	8	5	2	4	5	4	6	9	3	5	9	8	5	3	4	8	9	33	35	14	5	2	8.3	14
3	6	4	5	6	6	4	6	4	6	8	7	8	4	5	3	4	3	2	8	13	14	9	8	8	6.3	10
4	10	11	12	9	11	5	5	6	9	8	10	8	5	9	6	15	18	4	6	5	7	7	5	11	8.4	14
5 Q	15	6	4	7	6	10	8	5	7	9	9	5	5	4	1	2	3	3	5	4	4	11	14	13	6.7	11
6	11	8	4*	4	5	10	5	5	5	6	3	9	7	5	2	6	5	4	6	11	(9)	6	29	28	8.0	13
7 Q	5	6	10	4	3	3	6	7	5	5	3	4	5	4	3	4	1	3	2	2	4	3	4	5	4.2	7
8 D	13	6	5	9	15	23	21	13	12	13	14	22	18	16	15	18	20	16	17	26	43	32	13	17.0	28	
9	50	33	11	15	19	6	17	24	17	36	23	14	17	19	17	20	19	10	7	31	16	21	7	6	19.0	32
10	24	36	18	6	7	5	10	10	6	11	5	17	11	26	15	16	8	(14)	(9)	(14)	6	8	9	15	12.7	21
11	8	2	3	3	2	3	7	4	8	8	6	9	14	8	4	2	3	5	4	5	12	21	10	6	6.5	11
12 Q	10	3	3	6	4	3	12	12	11	10	9	6	7	1	1	4	2	2	3	1	1	3	3	3	4.9	8
13	1	5	5	5	9	4	8	7	5	11	8	5	9	13	10	18	38	29	18	6	9	22	29	36	12.9	21
14 D	17	5	18	19	9	5	10	6	8	11	9	38	46	40	32	32	93	92	(28)	33	50	89	41	26	31.5	52
15 D	86	64	32	17	19	12	6	5	15	10	(14)	9	7	21	31	9	17	19	38	31	90	28	29	68	28.2	47
16 D	110	170	11	6	8	11	9	12	8	14	11	10	11	12	17	8	40	31	31	21	47	49	18	14	28.3	47
17 D	36	31	10	5	7	6	8	12	17	17	(11)	24	37	27	17	35	35	13	22	61	12	4	8	53	21.2	35
18	10	8	20	21	15	20	17	5	11	15	12	9	10	23	24	11	6	8	9	4	5	8	6	8	11.9	20
19	1	5	4	8	6	3	2	5	15	9	(11)	7	6	28	16	10	38	8	12	25	(38)	12	9	6	11.8	20
20	8	10	14	2	6	9	6	10	11	13	10	6	5	6	4	7	7	6	4	4	3	4	4	2	6.7	11
21 Q	3	18	15	2	6	3	3	5	8	5	3	4	4	6	7	6	3	2	3	4	2	4	3	3	5.1	8
22	1	2	3	9	5	2	3	3	5	6	4	6	5	4	5	6	7	15	7	8	6	4	1	2	5.0	8
23 Q	1	2	1	5	3	3	6	6	4	4	8	4	5	6	3	3	4	3	5	5	5	4	14	4.5	7	
24	12	9	3	4	3	2	3	2	2	4	(14)	5	10	7	4	3	4	4	5	8	6	5	3	3	5.3	9
25	5	2	5	4	7	6	8	4	7	18	10	17	13	15	17	16	7	17	7	33	45	25	8	20	13.2	22
26	17	38	17	11	14	9	12	9	(15)	5	6	10	5	9	9	12	5	19	26	22	29	16	9	8	13.8	23
27	4	12	34	9	10	6	6	5	9	10	17	12	13	11	8	18	(17)	13	8	29	9	10	8	19	12.4	21
28	7	8	5	4	1	11	8	8	9	7	11	7	16	15	31	22	8	12	23	16	49	46	29	16	15.0	25
29	4	4	5	4	6	3	6	6	6	6	4	5	5	(12)	(9)	4	3	4	4	5	12	13	6	5	5.9	10
30	4	6	5	6	4	8	7	5	11	10	9	13	11	13	(7)	(7)	7	7	22	20	20	10	15	35	10.9	18
31	32	17	8	13	10	6	13	21	20	12	6	15	10	14	10	13	10	17	21	52	29	25	41	25	18.3	30
Mean r _H	16.8	17.5	9.4	7.5	7.4	6.5	8.1	7.9	9.5	10.2	9.1	10.3	11.0	12.7	11.0	10.9	14.6	13.1	12.7	17.2	19.7	17.3	13.1	15.8	12.1	..
Hr _H 10,000γ ²	28	29	16	12	12	11	13	13	16	17	15	17	18	21	18	18	24	22	21	29	33	29	22	26	..	20

56. ESKDALEMUIR (r_H)

JANUARY, 1933

JANUARY, 1955																											
Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000γ ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	21	9	10	15	14	10	8	9	13	12	8	15	17	11	13	19	18	24	34	75	92	13	35	10	21.0	35	
2	8	15	29	6	12	9	11	6	23	14	11	10	23	6	7	11	6	7	31	33	25	36	17	7	15.1	25	
3	8	11	5	1	11	8	5	7	8	6	7	6	6	15	7	6	6	5	8	6	7	5	9	11	7.3	12	
4 Q	10	6	3	1	5	3	3	3	9	5	(8)	(3)	7	5	9	5	4	6	3	4	2	6	5	4	5.0	8	
5 Q	7	3	3	2	6	2	6	4	3	5	9	5	5	3	5	5	5	3	2	3	5	2	1	3	4.0	7	
6	7	10	12	6	16	49	27	11	14	32	19	12	12	31	54	17	5	8	6	18	13	8	(16)	21	17.7	29	
7	22	16	7	22	5	7	5	5	8	3	3	4	2	5	6	6	23	18	(23)	12	11	3	5	5	9.4	16	
8	5	4	3	10	11	7	5	9	5	10	18	13	9	9	7	5	3	6	4	2	4	6	25	14	8.1	13	
9	4	4	5	4	3	3	4	5	7	2	(3)	4	9	5	6	11	13	5	6	5	4	9	15	6	5.9	10	
10 Q	3	2	4	2	4	3	2	3	6	5	3	4	2	8	6	5	5	5	4	7	2	5	3	5	4.1	7	
11 Q	4	4	2	4	3	5	4	4	6	6	7	6	6	4	3	3	5	2	3	3	3	4	6	5	4.3	7	
12	5	6	3	1	2	2	3	2	4	6	6	6	7	6	8	5	7	2	8	3	11	3	14	7	5.3	9	
13	10	8	5	2	3	3	3	6	7	10	7	6	6	4	(6)	3	4	5	9	10	6	9	10	4	6.1	10	
14	2	4	10	6	3	3	3	1	4	6	3	1	4	4	3	1	4	6	6	19	23	18	13	27	7.3	12	
15	26	15	7	9	9	48	37	26	52	22	12	27	6	15	21	6	5	4	(9)	13	11	46	29	11	19.4	32	
16	6	12	15	7	13	(11)	(17)	11	16	10	6	6	8	16	13	5	16	6	6	7	4	4	3	4	9.3	15	
17	4	4	5	7	5	4	8	8	28	23	9	6	(9)	9	5	3	6	7	7	4	6	4	2	18	8.0	13	
18	9	3	2	3	3	6	4	4	5	16	5	4	8	4	3	4	3	2	7	8	9	7	14	10	6.0	10	
19 D	2	1	3	4	13	16	12	10	6	7	7	16	10	11	26	46	26	24	14	10	5	6	15	21	13.0	22	
20	13	18	11	9	24	32	24	23	14	9	8	4	7	16	6	3	6	10	4	3	1	2	15	23	11.9	20	
21 Q	4	2	3	3	5	1	3	4	5	1	5	7	5	5*	9	3	3	3	4	4	13	10	4	8	4.7	8	
22 D	5	3	6	4	9	12	26	14	(20)	9	11	(7)	10	18	40	50	(26)	26	28	88	28	127	32	17	25.7	43	
23	40	36	13	6	6	11	9	18	9	8	6	11	14	18	17	15	6	9	25	46	11	36	40	35	18.5	31	
24	46	89	17	8	13	14	8	9	17	6	5	27	23	13	11	9	13	13	10	14	14	8	7	7	17.0	28	
25	10	28	13	7	10	9	13	18	12	14	7	10	13	20	18	27	16	28	20	6	31	12	34	19	16.4	27	
26	13	10	61	11	16	10	23	20	18	18	16	10	13	13	47	13	13	23	31	41	31	23	13	14	20.9	35	
27 D	23	17	18	10	11	39	18	24	22	11	14	27	12	22	29	42	60	50	40	32	62	111	41	28	31.8	53	
28 D	23	21	38	23	23	19	12	15	23	18	22	20	26	24	19	46	22	36	41	13	(43)	19	59	34	26.6	44	
29	20	30	22	8	19	12	9	12	8	16	6	4	19	23	16	24	23	27	56	29	22	22	14	14	19.0	32	
30	8	13	23	56	(18)	14	9	10	11	14	10	8	16	16	7	28	32	6	4	4	17	37	23	15	16.6	28	
31	12	13	8	4	9	4	5	10	9	9	5	11	7	11	20	6	21	26	6	(4)	5	27	13	6	10.5	17	
Mean r _H	12.3	13.5	11.8	8.4	9.8	12.1	10.5	10.0	12.6	10.7	8.6	9.7	10.4	11.9	14.4	13.9	13.1	13.0	14.8	17.0	16.8	20.5	17.2	13.3	12.8	..	
Hr _H 10,000γ ²	20	22	20	14	16	20	17	17	21	18	14	16	17	20	24	23	22	22	25	28	28	34	29	22	..	21	

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

57. ESKDALEMUIR (r_H)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r_H	$\frac{Hr_H}{10,000\gamma^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	9	5	2	4	3	2	3	2	7	7	11	10	8	9	4	6	4	3	4	2	4	6	17	8	5.8	10
2	8	13	5	6	17	6	6	14	21	9	7	9	18	24	6	21	14	14	16	17	12	23	5	4	12.3	20
3	3	5	4	3	3	3	3	5	5	4	10	4	11	7	4	13	5	4	5	11	13	4	12	35	7.3	12
4	23	8	3	2	3	2	2	4	6	3	10	4	5	6	11	10	4	9	26	24	9	15	5	10	8.5	14
5	3	20	21	9	3	4	9	7	6	5	3	7	9	5	4	5	6	4	3	3	6	3	3	4	6.3	10
6 Q	10	11	10	8	7	2	3	8	3	5	4	4	5	10	4	5	5	3	3	1	10	7	5	3	5.7	9
7	7	4	4	5	10	5	12	10	12	19	18	17	7	23	13	9	20	7	11	6	4	7	10	7	10.3	17
8	2	2	2	3	5	4	4	9	8	5	9	16	14	13	11	5	5	3	2	6	9	13	14	15	7.5	12
9	5	7	8	10	8	7	3	7	6	3	5	8	5	8	4	11	11	4	3	7	13	8	6	5	6.7	11
10	17	9	8	13	3	3	4	5	8	3	6	7	7	6	3	6	5	4	3	3	1	11	6	5	6.1	10
11 Q	7	1	3	1	2	3	1	5	3	5	3	2	4	6	6	3	4	5	9	4	4	5	7	4	4.1	7
12	4	7	3	2	5	3	5	4	13	9	8	12	12	6	12	3	3	4	4	2	2	2	1	2	5.3	9
13 Q	4	3	4	3	1	3	2	3	7	4	5	6	10	3	3	4	3	3	2	3	4	14	12	5	4.6	8
14	4	10	3	9	4	4	5	11	17	8	6	9	9	11	10	12	9	10	52	20	27	14	8	8	11.7	19
15	6	6	13	7	9	18	4	8	17	5	11	15	13	20	7	36	32	27	12	4	10	23	28	11	14.3	24
16 Q	6	9	4	5	4	4	4	5	7	7	9	8	5	3	4	4	4	4	3	1	4	5	5	1	4.9	8
17 Q	3	2	3	1	1	2	1	2	6	8	3	4	8	4	5	3	2	4	2	4	1	2	2	2	3.1	5
18	3	4	3	2	1	3	1	2	6	6	4	4	7	7	27	19	7	4	13	10	23	15	8	18	8.2	14
19 D	17	15	18	5	4	10	11	18	13	13	40	33	41	72	69	47	17	22	56	68	42	26	13	77	31.1	52
20	115	46	40	14	6	9	10	11	17	33	25	17	37	33	14	37	12	29	32	36	15	20	33	47	28.7	48
21 D	19	14	22	74	63	36	13	13	39	9	9	14	18	22	53	64	(72)	39	38	50	(32)	68	151	46	40.7	68
22 D	97	30	27	29	47	40	24	19	37	27	23	20	23	49	48	46	15	56	50	42	33	29	58	49	38.3	64
23 D	77	14	26	32	20	13	31	23	14	19	16	13	21	36	24	38	73	75	26	93	50	42	21	70	36.1	60
24 D	33	16	14	19	6	9	20	23	16	(16)	(20)	58	32	23	23	52	52	33	29	47	28	79	128	29	33.5	56
25	24	12	17	28	20	15	17	23	27	28	33	27	17	18	21	37	15	16	43	13	30	35	69	25	25.4	42
26	28	69	69	53	24	35	35	11	13	23	35	21	23	31	24	14	18	17	14	13	56	55	45	27	31.4	52
27	8	12	10	17	16	9	15	12	5	17	22	20	13	8	8	6	13	17	14	13	14	38	48	21	15.7	26
28	20	9	8	15	5	4	4	6	13	3	7	4	10	6	(6)	6	4	10	5	6	5	9	18	14	8.2	14
Mean r_H	20.1	13.0	12.6	13.5	10.7	9.2	9.0	9.6	12.6	10.8	12.9	13.4	14.1	16.8	15.2	18.6	15.5	15.4	17.1	18.2	16.5	20.6	26.4	19.7	15.1	..
$\frac{Hr_H}{10,000\gamma^2}$	33	22	21	22	18	15	15	16	21	18	21	22	23	28	25	31	26	26	28	30	27	34	44	33	..	25

58. ESKDALEMUIR (r_H)

MARCH, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	$\frac{Hr_H}{10,000\gamma^2}$
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	5	13	9	8	6	4	4	7	10	17	12	10	9	5	9	10	8	12	5	11	12	5	5	32	9.5	16
2	31	9	10	5	5	5	4	7	10	8	4	7	10	13	10	4	4	11	9	8	(14)	19	14	21	10.1	17
3	6	9	4	4	10	5	3	10	11	9	7	13	5	11	24	30	12	17	12	26	24	15	13	10	12.5	21
4	6	16	7	12	8	4	8	4	10	17	6	12	4	5	8	4	8	5	8	16	5	8	9	4	8.1	13
5 Q	3	3	2	3	4	4	3	6	5	7	8	3	4	10	5	6	4	4	5	8	4	7	5	4	4.2	8
6 Q	7	14	7	5	3	4	5	4	7	5	9	9	7	11	25	17	5	5	4	3	7	8	5	3	7.5	12
7 Q	3	4	5	1	3	3	2	2	3	10	5	9	14	12	16	15	9	5	14	4	4	7	26	15	8.0	13
8	10	9	11	3	3	2	3	5	6	8	4	9	20	24	10	5	9	7	8	5	11	14	5	12	8.5	14
9 Q	17	8	6	6	6	3	5	8	8	3	7	5	5	7	7	4	4	3	5	7	6	14	7	4	6.5	11
10	11	15	4	10	18	5	(4)	3	7	5	7	9	10	5	5	6	6	10	9	8	26	16	10	15	9.3	15
11	6	53	27	9	8	18	6	10	8	19	10	16	14	19	(17)	10	8	4	7	4	9	5	12	5	12.7	21
12	4	3	6	4	6	8	13	17	7	18	15	15	11	9	22	11	(15)	10	10	10	13	9	10	3	11.2	19
13	9	9	8	18	18	8	12	12	6	18	5	33	18	23	26	19	(23)	20	10	14	6	13	9	8	14.4	24
14	10	8	9	9	18	20	15	26	10	15	3	11	27	17	10	27	17	12	10	5	6	3	4	4	12.3	20
15	9	4	9	4	9	10	14	7	3	10	8	21	11	19	8	4	8	5	3	3	2	5	(5)	10	8.0	13
16 Q	28	5	5	4	5	5	5	5	6	9	8	(5)	8	8	9	9	6	3	13	5	3	5	7	3	7.1	12
17	5	2	3	2	4	1	4	4	6	13	10	14	14	16	10	16	9	11	9	5	18	16	11	10	8.9	15
18 D	6	14	32	18	41	26	31	10	14	20	13	26	18	24	28	50	36	24	43	8	5	15	139	155	33.2	55
19 D	44	73	33	21	12	12	15	14	13	20	15	21	41	28	19	73	36	37	131	119	75	120	36	20	42.8	71
20 D	21	47	36	41	29	24	19	22	32	27	29	34	28	38	15	33	57	27	25	137	24	13	55	22	34.8	58
21	24	13	17	29	34	16	12	18	24	73	32	28	23	26	50	22	46	45	11	8	13	41	60	47	29.7	49
22	49	40	58	63	5	16	21	17	18	30	18	54	(46)	20	37	23	46	23	38	25	(75)	33	14	5	32.3	54
23 D	17	22	19	16	58	(55)	14	10	21	18	36	15	33	18	22	73	130	104	65	43	114	46	19	33	41.7	69
24 D	40	28	49	54	36	90	53	17	31	32	26	23	23	26	14	36	51	114	36	44	53	59	(68)	57	44.2	72
25	22	18	14	16	38	21	(16)	9	22	10	25	8	10	31	10	42	15	5	9	9	23	(20)	18	17.3	29	
26	10	7	6	5	4	4	15	21	38	27	9	5	9	5	5	21	(18)	30	16	7	4	5	11	9	12.1	20
27	7	5	4	4	8	8	14	18	20	18	28	19	31	36	33	40	31	65	28	20	9	13	5	16	20.0	33
28	18	8	10	18	12	19	5	10	9	19	18	18	11	22	23	36	29	39	13	17	26	8	58	52	20.7	34
29	18	13	9	7	11	4	4	10	27	11	11	22	29	19	31	20	27	13	17	28	8	8	46	50	18.5	31
30	7	3	13	10	16	14	6	10	(9)	8	7	14	19	9	21	11	10	8	5	5	5	9	12	31	10.9	18
31	20	13	21	13	10	8	5	6	12	13	24	23	6	13	16	20	19	8	31	10	9	6	8	36	14.6	24
Mean r _H	15.3	15.7	14.6	13.6	14.5	13.7	11.0	10.6	13.3	16.7	13.6	16.5	17.0	17.1	17.6	22.5	22.8	22.1	19.5	20.4	19.3	18.3	22.8	25.4	17.2	..
$\frac{Hr_H}{10,000\gamma^2}$	25	26	24	23	24	23	18	18	22	28	23	27	28	28	29	37	38	37	32	34	32	30	38	32	..	28

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

59. ESKDALEMUIR (r_H)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	9	10	17	9	13	14	22	6	10	5	20	27	15	9	16	32	5	9	15	19	27	11	10	32	15.1	25
2	18	5	4	6	9	2	4	4	9	5	8	6	13	9	5	7	8	13	12	18	18	16	16	33	10.3	17
3	11	11	10	5	10	27	9	17	(27)	13	19	32	48	16	19	8	9	13	7	8	19	14	27	11	16.3	27
4	13	27	44	42	15	17	16	7	19	8	7	12	8	19	12	13	6	11	10	21	19	9	7	16	15.7	26
5	10	24	20	10	5	10	5	5	9	12	10	5	23	21	9	9	12	9	16	16	15	15	10	7	12.0	20
6	19	25	13	4	7	14	9	5	11	10	(14)	20	14	15	20	21	(14)	13	8	10	23	17	16	12	13.9	23
7	6	6	8	24	6	19	8	22	9	11	41	13	47	45	22	46	59	37	36	36	23	17	6	9	23.2	39
8	6	9	8	8	11	8	18	10	13	10	17	8	15	14	17	28	18	41	36	15	13	6	15	18	15.1	25
9	18	7	13	10	11	9	13	33	16	(27)	35	21	13	37	31	36	13	9	9	11	12	10	8	11	17.2	29
10	7	5	4	5	8	16	14	18	10	6	22	19	26	20	37	64	7	13	18	9	10	4	2	5	14.5	24
11 Q	4	5	4	4	3	4	4	9	13	8	10	15	14	12	9	14	13	14	6	8	5	5	9	8	8.3	14
12 Q	4	5	5	7	3	5	4	9	6	9	5	8	11	11	9	9	10	6	4	5	3	1	2	3	6.0	10
13 Q	5	5	3	3	3	5	3	5	15	17	(13)	16	16	10	10	7	6	10	8	9	2	4	(8)	5	7.8	13
14	3	4	4	3	4	5	4	5	(10)	10	13	11	16	27	22	31	21	26	21	14	10	6	24	21	13.1	22
15 D	9	4	11	12	7	31	12	6	8	17	13	13	13	15	35	36	10	32	14	26	32	60	41	22	20.0	33
16 D	18	38	14	13	19	25	19	19	8	24	30	14	15	32	31	32	19	20	45	89	30	13	24	72	27.6	44
17 D	46	22	55	42	23	32	10	19	15	21	31	31	23	28	70	55	34	29	18	14	32	42	38	29	31.8	53
18	27	50	22	23	52	58	15	15	10	14	13	32	31	32	31	30	51	27	27	38	18	44	40	40	30.8	51
19 D	15	34	19	10	10	5	22	10	19	13	27	25	27	51	27	48	27	16	83	79	23	24	47	18	28.3	47
20	6	13	9	5	16	32	47	27	(37)	13	26	25	23	28	(41)	44	32	29	25	58	70	12	10	21	27.1	45
21	27	28	18	14	17	13	22	11	10	32	22	27	32	14	23	13	37	38	58	46	21	17	110	92	30.9	51
22	10	35	9	13	13	28	39	23	44	16	14	16	31	14	31	32	46	78	17	14	50	37	15	19	26.8	44
23	15	15	14	10	9	41	34	29	17	17	9	20	32	37	32	19	(23)	18	10	28	47	21	12	16	21.9	36
24	10	14	18	9	10	19	11	11	18	8	13	9	10	22	16	20	10	13	21	17	8	17	51	27	15.9	26
25	10	4	8	4	7	7	10	7	20	6	10	18	19	44	10	17	32	31	11	10	7	8	10	22	13.8	23
26	29	21	7	5	4	5	12	10	8	7	6	25	19	14	35	16	19	22	24	41	27	10	4	3	15.5	26
27	3	4	5	5	3	2	4	8	8	5	9	14	13	5	8	7	10	9	13	10	17	17	20	16	9.0	15
28 Q	23	12	9	12	4	5	9	5	11	6	8	10	19	12	19	(7)	16	12	17	10	6	15	9	20	11.5	19
29 Q	13	7	2	3	5	4	4	9	8	7	4	5	6	19	10	10	8	6	12	5	10	5	8	10	7.7	13
30 D	11	6	3	4	9	4	4	3	14	11	9	13	6	14	28	10	118	43	35	42	(73)	34	(41)	41	24.0	40
Mean r _H	13.2	15.2	12.7	11.0	10.5	15.5	13.6	12.2	14.4	12.3	16.1	17.0	19.9	21.5	22.8	24.0	23.1	21.6	21.2	24.2	22.3	17.0	21.3	22.0	17.7	..
Hr _H 10,000γ ²	22	25	21	18	17	26	23	20	24	20	27	28	33	36	38	40	38	36	35	40	37	28	35	37	..	29

60. ESKDALEMUIR (r_H)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr _H 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	29	12	6	5	4	12	28	10	13	16	24	27	127	79	151	(303)	(290)	159	135	110	176	204	37	104	85.9	143
2	241	58	11	6	7	5	20	13	10	15	11	5	13	13	10	13	13	22	7	12	10	14	20	11	23.3	39
3	17	24	19	11	12	11	24	19	13	11	5	32	17	35	23	27	16	27	47	25	9	5	15	21	19.4	32
4	18	9	13	22	18	13	18	20	18	11	10	9	9	11	29	54	69	47	87	92	(10)	9	5	5	25.3	42
5	16	12	6	9	10	28	36	11	18	8	10	17	16	19	47	16	30	36	23	39	23	17	28	27	20.9	35
6	21	24	42	22	33	18	19	14	17	19	14	37	14	48	31	17	12	14	27	29	17	9	12	36	22.7	38
7	49	17	6	8	9	16	8	14	14	16	19	18	15	15	27	15	(5)	4	5	5	9	7	8	13.1	22	
8	8	9	9	6	8	7	10	9	10	10	13	14	19	16	17	22	14	25	28	12	4	9	5	4	12.0	20
9 Q	3	3	3	4	3	5	8	8	(5)	6	12	14	10	13	7	16	9	6	3	6	4	5	4	5	6.7	11
10 Q	5	5	4	6	5	4	13	18	9	12	10	13	7	4	9	6	4	8	4	4	7	4	2	5	7.0	12
11	5	17	18	4	9	2	8	12	9	13	5	13	14	11	10	27	3	13	23	7	4	2	1	4	9.7	16
12 Q	2	1	4	4	4	7	8	10	7	3	1	4	8	12	5	16	4	5	5	4	10	9	9	9	6.1	10
13	8	5	5	10	17	7	5	14	10	11	9	11	(18)	23	6	9	9	12	10	12	28	33	10	42	13.9	23
14	53	15	5	4	4	5	7	9	(14)	6	16	33	15	23	15	27	40	34	23	36	34	27	31	25	20.9	35
15	12	3	10	34	28	23	12	11	8	10	27	15	5	14	16	17	26	18	22	9	15	62	39	39	19.8	33
16	9	22	4	5	5	9	9	9	7	10	(5)	4	10	11	8	11	14	19	34	27	14	18	21	10	12.3	20
17	8	10	8	5	4	6	9	7	10	5	14	9	10	14	33	34	35	22	19	41	22	21	35	49	17.9	30
18 D	36	33	64	48	56	42	32	25	23	(34)	25	32	33	31	23	15	26	31	24	24	9	6	21	10	29.2	48
19	15	6	6	5	10	7	6	11	16	8	15	10	26	19	31	21	13	17	68	72	37	17	4	3	18.5	31
20	5	6	4	18	5	9	9	8	5	5	11	17	9	12	7	14	13	9	9	5	5	16	16	9.3	15	
21	10	8	5	5	6	10	15	15	9	6	7	3	9	5	10	4	6	12	14	7	13	5	8	8	8.3	14
22	9	21	6	5	5	15	9	13	5	4	7	13	8	21	21	17	9	10	7	12	8	5	21	21	11.3	19
23	10	8	7	4	4	12	9	4	5	3	5	9	11	12	8	9	13	23	7	11	10	24	15	5	9.5	16
24 Q	4	5	4	4	5	5	6	8	10	7	9	8	9	20	16	13	6	9	10	11	9	8	9	16	8.8	15
25	17	19	14	4	5	5	5	10	9	3	10	13	17	14	36	20	15	18	31	8	14	18	6	9	13.3	22
26 Q	9	5	9	2	1	3	5	6	8	4	8	6	16	11	6	4	4	11	5	2	3	4	3	3	5.7	2
27	6	2	3	4	2	5	8	6	4	5	18	10	8	12	21	21	47	21	(52)	16	15	16	35	12	14.5	24
28	21	13	20	6	6	5	8	5	7	5	7	9	21	18	10	7	11	9	10	5	10	5	5	9.9	16	
29 D	5	4	5	5	2	7	12	9	10	11	17	23	36	44	31	19	14	23	13	20	50	31	9	25	17.7	29
30 D	26	48	49	43	17	5	27	28	13	14	18	14	18	19	31	32	59	52	58	32	7	9	15	31	27.7	46
31 D	16	10	14	20	16	17	13	14	22	10	19	33	41	(23)	73	43	31	41	19	20	12	23	22	21	23.9	40
Mean r _H	22.4	13.9	12.4	10.9	10.3	10.8	13.0	12.0	10.8	9.8	12.0	15.1	18.8	19.9	25.4	27.5	28.3	24.5	26.6	23.4	18.9	20.6	15.2	19.0	17.6	..
Hr _H 10,000γ ²	37	23	21	18	17	18	22	20	18	16	20	25	31	33	42	46	47	41	44	39	31	34	25	32	..	29

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

61. ESKDALEWUIR (F_H)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	$\frac{Hr_H}{10,000\gamma^2}$	
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
1 D	7	18	22	31	14	15	31	32	24	20	27	22	50	52	29	43	43	21	23	41	51	8	10	10	7	26.8	
2	12	12	14	9	9	13	9	10	13	18	18	22	14	20	31	23	(14)	19	18	17	14	9	11	7	14.8	25	
3	12	19	7	9	5	9	15	17	16	12	7	9	15	18	11	30	16	18	7	19	11	11	13	6	13.8	22	
4	5	5	9	4	4	5	7	5	5	6	7	14	6	9	12	13	9	9	13	9	9	5	9	9	7.8	13	
5 Q	13	5	5	4	4	5	7	8	6	5	5	13	9	23	12	7	8	6	10	10	4	7	5	4	7.7	13	
6 Q	5	4	3	4	3	7	12	10	4	5	4	7	7	7	5	3	4	3	4	4	4	6	4	5	5.2	9	
7	4	5	4	5	7	13	5	5	4	5	5	5	15	9	9	14	11	9	5	9	7	6	10	12	7.6	13	
8	10	9	8	7	7	7	6	15	15	13	28	14	18	27	14	21	17	25	29	20	16	28	21	27	16.7	28	
9	21	13	9	21	19	10	16	17	10	9	(14)	13	20	31	31	30	30	22	9	10	10	4	9	9	16.1	27	
10	10	8	6	4	3	4	5	5	4	6	(12)	10	18	28	32	27	19	17	14	22	21	10	3	3	12.1	20	
11	4	4	5	10	7	6	5	13	8	8	5	6	15	12	6	12	12	10	10	4	7	12	4	5	7.9	13	
12	5	6	4	9	13	7	5	6	8	5	6	3	8	17	9	9	12	18	8	13	17	13	23	24	10.3	17	
13 D	26	41	44	37	(18)	22	42	21	13	13	(26)	41	28	65	(104)	85	42	57	43	26	21	68	119	74	44.8	74	
14 D	104	41	15	9	15	11	11	43	31	21	12	24	26	19	16	24	20	31	24	13	12	10	27	31	24.6	41	
15	13	32	57	14	13	4	9	6	10	12	9	12	13	13	19	19	23	20	16	8	9	21	34	10	16.5	27	
16 Q	4	6	6	5	5	10	9	4	12	6	11	5	8	6	12	10	23	11	13	10	7	12	6	6	8.6	14	
17	7	7	4	3	1	14	8	5	8	(7)	4	11	9	23	14	19	12	14	10	5	7	5	11	5	8.9	15	
18 Q	4	2	5	7	4	7	10	5	6	9	5	6	7	10	10	9	6	6	6	14	2	8	12	8	7.0	12	
19	21	4	4	2	8	8	5	6	21	11	10	48	42	12	28	20	22	14	13	12	20	32	12	15	16.3	27	
20 D	25	48	33	15	(25)	36	36	10	36	20	12	21	15	39	29	29	37	23	13	17	35	35	8	28	26.0	43	
21	14	13	7	10	6	14	18	9	7	10	7	17	16	35	31	16	12	5	16	13	8	15	12	31	14.3	24	
22	22	5	11	6	7	7	5	14	7	6	6	11	15	12	11	11	7	16	22	10	5	4	3	4	9.5	16	
23	4	3	1	3	2	6	10	9	7	5	(10)	12	14	7	10	6	17	15	(10)	5	18	8	14	14	8.7	14	
24 Q	11	9	5	5	5	10	11	14	5	6	5	17	13	7	13	7	3	7	9	8	(7)	5	5	5	8.0	13	
25	3	5	3	4	12	5	9	4	9	10	35	11	28	15	23	25	45	36	27	44	16	19	26	7	17.5	29	
26	18	14	10	12	18	12	10	5	14	15	20	14	6	22	11	20	16	22	10	5	3	7	6	5	12.3	20	
27	3	3	3	6	7	4	7	9	28	19	26	18	14	31	61	59	29	12	9	6	5	8	6	10	16.0	27	
28 D	39	39	22	9	14	21	16	9	11	7	8	11	28	38	82	42	47	23	55	19	46	25	9	27	27.0	45	
29	21	19	18	14	22	16	18	23	12	28	10	7	23	24	36	54	21	23	13	18	13	9	13	11	19.4	32	
30	14	4	10	18	19	12	12	13	12	10	7	21	13	30	17	28	19	15	18	5	5	7	7	23	14.2	24	
Mean r _H	15.4	13.4	11.8	9.9	9.9	10.7	12.3	11.7	12.2	10.9	12.0	14.8	17.1	22.0	24.3	23.8	19.9	17.6	15.9	13.9	13.7	13.9	15.1	14.5	14.9
$\frac{Hr_H}{10,000\gamma^2}$	25	22	20	16	16	18	20	19	20	18	20	25	28	37	40	40	33	29	26	23	23	23	25	24	..	25	

62. ESKDALEWUIR (F_H)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	H _{rH} 10,000γ ²
Day	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1	14	6	4	5	4	5	3	9	13	9	9	19	16	16	9	10	16	20	15	24	23	14	10	14	12.0	20
2	20	16	10	6	6	13	13	10	15	11	9	10	7	5	13	20	10	16	18	5	3	9	17	5	11.1	18
3	13	42	12	6	6	5	14	5	8	9	(14)	18	19	25	10	21	(29)	19	26	5	4	10	7	6	13.9	23
4	2	7	5	6	12	4	6	9	3	4	5	14	14	21	13	17	10	10	13	22	13	6	8	6	9.6	16
5	8	13	9	3	16	5	15	6	4	6	17	10	13	7	12	30	18	9	5	5	7	4	4	5	9.6	16
6	8	12	13	5	11	9	5	10	18	10	17	17	17	5	12	21	17	18	19	10	9	9	7	5	11.8	20
7	4	4	3	3	6	4	5	7	16	7	11	14	12	7	6	18	10	24	5	10	10	8	9	10	8.9	15
8	10	8	13	4	4	10	10	8	13	13	5	15	18	13	19	23	18	21	26	12	43	11	19	54	16.3	27
9 D	46	24	13	6	10	7	11	27	36	29	50	39	65	56	9	18	17	32	44	35	18	8	8	9	25.7	43
10	5	7	4	7	10	10	10	12	14	16	11	24	10	24	17	13	24	32	24	37	47	14	14	13	16.6	28
11	12	21	16	6	14	6	9	17	12	18	14	26	35	48	36	36	26	20	16	9	14	7	6	17	18.4	31
12	21	8	18	18	9	11	13	7	13	7	14	11	19	12	18	15	17	10	20	8	(10)	8	5	15	12.8	21
13 Q	12	8	5	4	4	4	7	5	8	10	(8)	15	6	10	19	13	17	16	8	10	9	4	7	8	9.0	15
14 Q	8	6	4	3	9	4	5	8	8	5	7	12	15	18	10	8	10	10	5	14	9	7	8	8	8.4	14
15 Q	7	4	5	5	2	6	4	4	3	7	5	8	8	9	14	13	6	10	10	8	8	5	5	5	6.7	11
16	3	3	4	2	3	4	4	6	11	16	10	22	10	15	27	16	12	22	7	13	22	8	10	4	10.6	18
17 D	19	25	8	9	4	12	4	8	10	(14)	17	26	28	47	26	41	20	12	10	13	35	21	19	18	18.6	31
18	27	58	14	19	21	9	19	15	18	11	17	18	9	16	32	19	28	19	31	15	16	5	4	4	18.5	31
19	5	7	6	13	8	4	8	6	5	13	6	14	10	30	9	10	10	12	11	11	10	13	17	10	10.3	17
20	13	18	3	10	11	7	10	5	22	18	12	4	10	10	22	18	7	12	7	10	10	9	4	6	10.7	18
21 Q	10	7	13	5	9	9	10	10	8	5	8	9	5	16	14	9	15	13	9	8	10	4	3	4	8.9	15
22	3	7	24	8	5	5	5	13	(5)	5	16	8	14	11	14	18	9	9	14	10	7	5	4	9.3	15	
23 D	7	12	8	5	3	7	7	10	(8)	26	20	15	44	58	80	47	36	23	11	40	21	45	36	34	25.1	42
24 D	22	22	38	33	27	10	35	81	47	27	17	44	46	41	24	129	(52)	15	7	6	9	9	23	12	32.3	24
25	9	10	7	5	3	8	9	10	8	7	24	22	26	23	19	27	18	13	13	10	7	5	19	15	13.2	22
26	6	5	4	9	(5)	8	9	5	8	13	9	9	16	15	17	22	31	30	17	17	4	7	16	43	13.5	22
27 D	44	5	7	12	10	9	13	11	19	20	14	23	26	31	22	26	21	21	10	23	16	23	78	43	22.0	37
28	14	5	4	5	8	12	6	17	6	12	9	12	13	15	24	9	9	15	8	9	8	8	10	10.3	17	
29	9	4	7	9	9	5	6	13	5	9	(12)	17	18	12	31	17	20	16	9	5	3	6	9	5	10.7	18
30 Q	9	9	4	6	5	5	8	10	6	5	18	13	14	17	13	9	5	5	5	6	9	13	14	3	8.8	15
31	9	12	9	4	6	5	5	7	9	10	6	6	13	12	29	18	12	14	13	9	3	3	10	7	9.6	16
Mean r _H	12.9	12.7	9.5	7.8	8.4	7.2	9.3	11.7	12.5	12.0	12.9	16.8	18.4	20.9	19.9	22.8	18.0	16.5	14.1	13.6	13.6	10.0	13.2	13.0	13.7	..
H _{rH} 10,000γ ²	21	21	16	13	14	12	15	19	21	20	21	28	31	35	33	38	30	27	23	23	23	17	22	22	..	23

HOURLY RANGES OF HORIZONTAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

63. ESKDALEQUIR (r_H)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _H	Hr H 10,000y ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 Q	5	7	4	6	6	5	5	7	11	4	4	4	11	14	18	13	5	10	5	5	6	7	5	4	7.1	12
2	9	5	5	6	5	6	5	7	7	8	9	14	22	9	7	10	7	10	5	5	10	17	9	8	8.5	14
3	8	6	9	6	4	9	4	5	4	4	(7)	5	10	9	5	8	6	10	5	9	5	6	5	4	6.4	11
4	5	4	2	3	1	3	4	6	4	8	5	10	9	10	4	9	4	9	17	15	8	5	5	12	6.7	11
5 D	17	14	5	3	7	11	14	22	17	10	18	26	42	57	61	59	51	136	218	69	33	44	14	22	40.3	67
6 D	16	18	41	32	11	44	18	22	19	19	14	36	46	24	26	26	46	38	56	27	16	5	5	6	25.5	42
7	13	14	18	6	8	14	7	14	13	9	8	14	26	13	14	10	3	19	11	5	4	10	12	19	11.8	20
8	6	10	8	8	5	3	9	8	17	10	11	19	24	14	7	11	14	14	9	10	5	4	15	27	11.2	19
9 Q	9	4	4	3	4	10	8	9	8	6	6	9	19	9	9	6	17	13	3	8	5	9	10	8	8.2	14
10 Q	5	7	5	4	4	4	9	10	11	4	10	13	6	5	10	15	4	7	10	10	7	4	4	7	7.2	12
11 Q	5	7	4	3	3	8	5	7	11	10	4	9	13	9	10	13	7	6	8	9	5	2	9	10	7.4	12
12	5	5	4	3	3	5	5	8	4	10	9	5	7	10	12	15	17	13	20	14	12	8	6	17	9.0	15
13 D	13	9	9	4	3	3	3	14	9	13	19	22	50	26	19	46	58	34	35	58	60	28	29	30	24.7	41
14	14	6	16	16	9	14	22	18	12	(8)	10	23	17	35	23	31	13	19	9	13	12	30	21	5	16.5	27
15	7	4	8	8	16	6	8	10	21	9	5	12	17	17	28	36	21	17	43	28	13	8	5	5	14.7	24
16	14	9	14	10	9	8	12	23	18	13	8	5	11	13	13	13	13	9	18	12	8	9	29	12	12.6	21
17	8	5	18	4	5	14	19	35	28	14	12	10	15	25	18	26	13	26	31	26	19	13	10	14	17.0	28
18 D	14	21	7	3	7	25	28	10	10	12	9	3	10	19	36	62	141	103	62	92	79	22	13	20	33.7	56
19	24	30	39	6	8	10	40	52	12	(23)	10	25	38	18	32	17	19	21	10	13	22	15	7	9	20.8	35
20	17	5	8	9	13	9	13	10	9	13	9	10	12	32	21	13	32	36	49	36	30	40	53	17	20.7	34
21 D	10	14	21	9	15	8	30	21	23	27	13	28	49	27	22	49	81	45	21	40	30	12	11	13	25.8	43
22	13	5	5	5	4	5	10	9	12	9	9	5	9	8	8	10	5	7	7	13	5	4	5	5	7.4	12
23	4	3	5	4	5	5	5	27	35	30	16	14	22	36	58	32	21	15	55	49	10	16	19	7	20.5	34
24	14	8	18	14	10	8	5	36	41	49	15	27	18	14	22	41	64	55	28	67	33	10	21	26	26.8	44
25	22	12	17	16	12	16	23	15	17	13	10	10	9	10	11	12	7	14	16	14	10	9	10	14	13.3	22
26	31	41	14	18	29	19	19	16	8	(5)	13	19	23	26	9	18	32	23	12	12	13	10	9	5	17.7	29
27	7	10	7	16	10	11	8	9	12	14	14	9	13	8	7	8	5	9	5	10	5	22	6	9	9.6	16
28	4	5	5	5	4	4	5	5	8	7	8	8	13	17	13	6	7	12	17	7	10	9	13	8	8.5	14
29	19	9	5	5	4	8	14	5	5	4	6	9	10	7	7	7	8	5	6	4	3	1	1	3	6.5	11
30	5	8	9	8	5	4	7	4	7	9	6	10	9	8	9	17	17	9	10	4	5	8	5	13	8.2	14
31 Q	5	3	3	2	1	1	1	8	10	3	10	9	12	(11)	5	7	10	10	11	5	10	19	10	6	7.2	12
Mean r _H	11.2	9.9	10.8	7.9	7.4	9.7	11.8	14.6	13.6	12.2	9.9	13.6	19.1	17.4	17.5	21.0	24.1	24.2	26.0	22.5	15.8	12.6	12.5	11.8	14.9	..
Hr H 10,000y ²	19	16	18	13	12	16	20	24	23	20	16	23	32	29	29	35	40	40	43	37	26	21	21	20	..	25

HOURLY RANGES OF HORIZONTAL FORCE
Monthly, seasonal and annual Means

64. ESKDALEQUIR (r_H)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1932	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
August	14.2	12.7	13.6	11.9	10.9	12.5	14.3	15.6	17.2	17.7	12.7	20.1	21.5	22.8	27.3	26.7	27.1	26.8	25.4	18.8	14.3	17.8	17.3	14.5	18.1
September	14.2	15.4	14.0	13.0	11.6	14.2	13.0	12.8	13.0	14.6	12.8	16.3	17.6	16.1	21.6	24.7	23.3	19.1	15.1	19.1	20.5	21.9	23.3	17.7	16.9
October	15.3	13.1	9.2	9.7	10.9	10.0	9.8	11.4	13.4	14.0	14.1	13.0	18.4	18.6	18.5	18.2	17.5	15.0	13.4	17.4	20.3	18.9	18.9	14.8	14.4
November	8.9	6.8	8.7	7.9	9.7	10.0	11.1	11.6	13.4	11.0	10.8	11.5	13.1	13.9	13.0	12.9	14.1	13.1	12.8	10.6	12.9	13.2	11.3	12.3	11.4
December	16.8	17.5	9.4	7.5	7.4	6.5	8.1	7.9	9.5	10.2	9.1	10.3	11.0	12.7	11.0	10.9	14.6	13.1	12.7	17.2	19.7	17.3	13.1	15.8	12.1
1933	12.3	13.5	11.8	8.4	9.8	12.1	10.5	10.0	12.6	10.7	8.6	9.7	10.4	11.9	14.4	13.9	13.1	13.0	14.8	17.0	16.8	20.5	17.2	13.3	12.8
January	20.1	13.0	12.6	13.5	10.7	9.2	9.0	9.6	12.6	10.8	12.9	13.4	14.1	16.8	15.2	18.6	15.5	15.4	17.1	18.2	16.5	20.6	26.4	19.7	15.1
February	15.3	15.7	14.6	13.6	14.5	13.7	11.0	10.6	13.3	16.7	13.6	16.5	17.0	17.1	17.6	22.5	22.8	22.1	19.5	20.4	19.3	18.3	22.8	23.4	17.2
March	13.2	15.2	12.7	11.0	10.5	15.5	13.6	12.2	14.4	12.3	16.1	17.0	19.9	21.5	22.8	24.0	23.1	21.6	21.2	24.2	22.3	17.0	21.3	22.0	17.7
April	22.4	13.9	12.4	10.9	10.3	10.8	13.0	12.0	10.8	9.8	12.0	15.1	18.8	19.9	25.4	27.5	28.3	24.5	26.6	23.4	18.9	20.6	15.2	19.0	17.6
May	15.4	13.4	11.8	9.9	9.9	10.7	12.3	11.7	12.2	10.9	12.0	14.8	17.1	22.0	24.3	23.8	19.9	17.6	15.9	13.9	13.7	13.9	15.1	14.5	14.9
June	12.9	12.7	9.5	7.8	8.4	7.2	9.3	11.7	12.5	12.0	12.9	16.8	18.4	20.9	19.9	22.8	18.0	16.5	14.1	13.6	13.6	10.0	13.2	13.0	13.7
July	11.2	9.9	10.8	7.9	7.4	9.7	11.8	14.6	13.6	12.2	9.9	13.6	19.1	17.4	17.5	21.0	24.1	24.2	26.0	22.5	15.8	12.6	12.5	11.8	14.9
August	14.5	12.7	10.6	9.3	9.4	9.5	9.7	9.8	12.0	10.7	10.3	11.2	12.2	13.8	13.4	14.1	14.3	13.5	14.3	15.7	16.0	17.9	17.0	15.3	12.8
Equinox	14.5	14.9	12.6	11.8	11.9	13.3	11.9	11.7	13.5	14.4	14.1	15.7	18.2	18.3	20.1	22.3	21.7	19.5	17.3	20.3	20.6	19.0	21.6	19.5	16.5
Summer*	15.9	12.8	11.5	9.6	9.4	9.9	11.9	12.6	12.7	11.9	12.1	15.9	18.7	20.7	23.0	24.5	22.9	21.0	20.6	17.9	15.8	14.9	14.6	14.9	15.7
Year*	15.0	13.5	11.6	10.2	10.2	10.9	11.2	11.4	12.7	12.3	12.2	14.3	16.4	17.6	18.8	20.3	19.6	18.0	17.4	18.0	17.5	17.3	17.7	16.6	15.0

Q and D denote the international "quiet" and "disturbed" days.

*In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

65. ESKDALEUIR (r_D)

AUGUST, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	1.1	2.8	4.0	2.1	2.2	2.8	2.0	1.0	2.7	2.3	1.9	2.2	1.8	2.2	1.2	5.1	2.3	6.8	7.6	2.1	1.0	9.6	6.7	6.6	3.3
2 D	6.1	15.1	20.8	2.4	2.3	4.0	2.0	2.8	3.9	1.9	3.2	3.0	3.8	3.2	1.1	10.7	5.1	3.5	12.7	8.3	3.8	15.9	5.8	4.2	6.1
3 D	3.1	3.0	2.9	1.9	2.2	3.0	4.5	3.2	3.0	2.6	3.9	4.6	4.7	2.5	3.1	2.1	6.8	5.2	3.9	0.8	14.0	16.0	7.9	13.2	4.9
4	4.1	5.7	2.9	2.3	3.1	3.6	2.3	2.8	1.6	3.9	2.1	3.6	2.4	2.0	1.7	2.3	3.1	1.2	0.9	0.7	1.1	0.3	0.2	0.3	2.3
5	0.6	0.4	0.4	2.2	6.4	4.3	3.1	4.7	5.2	5.7	2.2	3.0	2.9	(1.2)	1.6	2.0	2.2	1.3	2.9	1.1	5.1	2.8	4.6	2.0	2.8
6	4.5	2.7	2.0	3.0	3.1	1.1	1.6	1.2	1.2	1.7	3.0	2.8	3.1	0.9	2.0	1.8	1.3	1.7	0.6	0.6	0.7	0.8	3.9	2.2	2.0
7	0.9	0.7	0.8	0.8	1.0	1.0	2.1	1.7	0.9	2.6	4.3	3.3	1.9	1.5	1.0	1.7	1.1	2.5	1.1	1.2	2.1	1.1	1.8	1.7	1.6
8	0.9	1.4	3.2	2.0	2.7	1.4	0.6	1.3	1.1	2.2	2.9	2.6	3.0	1.8	2.1	1.8	1.8	1.6	2.0	1.8	0.8	0.7	0.7	1.0	1.7
9	0.8	0.3	0.9	0.9	2.7	4.6	1.4	2.9	5.5	2.1	1.9	2.5	0.9	0.9	0.9	1.1	1.2	1.0	0.2	0.3	0.2	2.1	2.1	0.4	1.6
10 Q	0.6	1.1	1.7	0.8	1.0	2.5	1.0	1.1	1.8	0.9	2.0	2.1	2.3	1.6	1.2	1.6	1.1	1.0	1.1	0.8	0.2	0.5	0.3	0.3	1.2
11	1.0	1.0	1.9	1.2	1.1	2.2	1.8	1.3	1.4	2.5	1.6	1.9	2.7	0.8	1.5	1.5	1.4	0.7	1.8	1.5	1.0	1.2	1.7	9.0	1.8
12	2.0	2.7	5.0	11.1	8.7	3.7	2.8	1.1	3.0	2.5	2.6	3.3	(6.2)	1.1	1.2	4.9	2.8	1.9	1.0	0.4	1.1	1.0	0.9	4.8	3.2
13	5.1	2.9	8.6	7.3	1.0	1.3	4.0	7.2	2.9	2.0	2.8	3.0	1.6	1.2	2.6	2.7	1.8	4.0	4.0	1.7	0.7	1.8	9.0	2.9	3.4
14	1.9	0.9	1.3	1.2	2.1	1.0	2.7	3.0	2.1	4.6	3.2	2.9	2.0	1.5	2.9	1.6	1.5	1.0	0.8	0.9	0.7	1.1	1.2	1.0	1.8
15	0.8	1.1	1.1	1.3	1.5	1.4	1.3	0.8	1.6	1.4	2.3	4.2	2.0	1.1	2.2	2.1	2.8	1.1	0.6	1.1	3.1	2.5	0.6	1.2	1.6
16 Q	2.9	1.3	2.2	0.8	1.1	0.9	1.1	0.9	0.8	2.6	3.0	4.2	1.2	1.5	1.0	1.2	1.1	0.9	0.6	0.9	0.6	1.3	0.5	0.7	1.4
17 Q	1.1	0.6	0.7	1.1	1.4	1.6	0.9	1.7	1.0	3.2	(2.2)	3.1	2.3	0.7	1.9	1.6	0.7	0.4	1.8	1.1	0.9	1.3	1.7	0.6	1.4
18 Q	1.2	0.9	0.8	0.9	2.0	1.2	1.9	0.7	1.6	1.9	3.0	2.5	2.5	1.7	2.0	1.6	0.9	1.2	1.8	0.3	0.7	0.6	2.1	2.0	1.5
19 Q	1.0	0.6	0.9	0.7	0.9	0.6	0.9	0.3	1.0	1.7	3.2	3.0	2.7	1.9	1.2	1.9	1.1	1.1	0.9	0.8	0.9	1.8	0.7	0.6	1.3
20	0.2	0.2	0.3	0.7	1.6	0.9	1.0	1.9	1.1	1.8	4.2	2.5	1.7	1.0	0.7	1.1	1.0	1.5	1.8	1.4	1.3	0.9	1.5	1.2	1.3
21	2.9	1.6	3.1	3.2	2.7	2.3	4.9	2.9	1.3	1.6	4.0	3.6	2.2	1.3	2.3	3.2	2.9	2.5	1.9	1.6	1.0	1.1	6.0	3.1	2.6
22	5.3	2.2	1.2	1.3	0.9	1.0	3.0	3.7	2.1	3.0	(5.0)	4.9	1.5	3.8	3.9	2.0	2.3	5.0	12.9	4.1	2.5	1.0	0.9	1.1	3.1
23	1.0	1.0	1.1	0.9	0.9	2.8	2.9	2.1	1.9	2.6	3.2	2.0	1.8	0.7	3.0	3.9	0.8	0.8	0.6	0.7	0.9	0.7	1.1	2.8	1.7
24	2.8	0.9	2.7	0.8	0.9	1.1	1.8	1.0	0.5	2.3	2.2	2.0	2.6	0.6	2.0	0.9	1.2	1.0	1.7	1.1	0.8	1.2	4.0	3.2	1.6
25	1.4	1.0	1.3	1.1	2.1	1.7	1.6	1.9	2.0	1.0	3.1	4.0	2.0	1.7	1.8	2.3	1.0	0.5	0.8	0.9	0.9	4.7	0.9	1.8	1.7
26	2.8	2.0	1.1	1.0	0.9	1.0	0.9	1.6	0.8	2.1	1.9	2.3	2.9	1.8	1.9	1.3	1.2	0.7	0.9	0.8	1.1	0.7	4.3	2.8	1.6
27 D	1.2	2.6	1.9	1.9	1.1	2.2	3.6	3.2	4.7	5.5	4.3	4.1	(3.9)	5.4	4.4	3.2	3.6	19.0	14.6	4.7	5.0	4.6	23.8	14.3	5.9
28 D	4.7	22.6	11.3	3.5	5.6	6.0	10.4	11.9	3.9	4.9	7.3	2.2	5.0	4.0	3.8	9.9	9.0	19.2	12.3	3.8	1.8	1.4	3.9	11.0	7.5
29 D	4.6	7.0	3.1	4.3	5.1	5.2	4.1	4.1	5.8	5.9	7.6	2.7	5.0	7.3	3.8	7.9	13.0	5.2	13.2	28.0	4.1	13.3	13.1	2.6	7.3
30	4.5	9.0	6.9	8.4	1.9	1.8	2.2	5.0	4.7	3.9	5.1	2.7	2.9	3.3	4.3	16.1	10.4	3.5	10.0	9.9	11.4	6.9	2.1	5.0	5.9
31	4.7	2.8	2.1	2.9	1.6	1.9	1.8	2.7	5.8	3.0	4.0	2.7	2.0	(3.0)	1.4	2.0	1.3	2.1	1.9	2.2	2.2	1.6	1.0	1.1	2.4
Mean	2.4	3.2	3.2	2.4	2.3	2.3	2.5	2.6	2.5	2.8	3.3	3.0	2.7	2.0	2.1	3.3	2.8	3.2	3.8	2.8	2.3	3.2	3.7	3.4	2.8

66. ESKDALEUIR (r_D)

SEPTEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	1.4	1.1	4.9	5.2	0.9	1.1	2.0	1.2	1.8	3.0	3.5	1.7	3.0	2.3	2.1	2.2	1.6	5.8	6.1	1.0	0.6	0.9	0.7	6.9	2.5
2	4.8	5.9	2.2	5.6	3.4	1.1	1.1	1.5	1.0	2.1	2.3	3.0	(2.7)	3.1	1.5	2.9	1.8	0.9	1.2	0.6	1.0	6.7	1.8	1.5	2.5
3 Q	1.9	0.8	0.8	0.9	1.1	1.6	0.9	1.2	1.1	2.8	2.7	2.0	2.1	1.4	2.0	2.1	1.6	2.0	0.6	1.0	1.0	4.0	4.2	1.3	1.7
4	1.3	0.7	1.1	1.2	0.8	0.6	1.2	0.7	1.2	2.7	2.8	2.1	2.1	1.5	3.0	2.9	1.3	0.6	1.5	1.1	2.1	6.4	3.0	1.5	1.8
5	0.8	0.7	0.7	0.7	0.6	0.6	1.6	0.8	1.2	2.1	3.0	2.4	1.1	1.2	1.2	8.9	5.3	0.8	0.6	1.0	1.2	0.7	4.1	1.6	1.8
6 D	1.5	1.4	1.1	3.0	4.9	4.0	5.3	4.0	3.7	0.9	2.8	2.7	3.5	3.2	5.1	14.6	(12.8)	5.9	3.3	8.0	6.6	7.8	6.2	1.2	4.7
7	0.6	0.8	0.3	0.2	0.8	1.0	2.2	1.1	1.7	(1.0)	3.0	1.9	1.8	0.7	1.8	1.6	1.1	0.8	2.4	1.6	1.8	12.3	9.6	1.0	2.1
8 D	2.6	2.1	10.3	3.2	16.6	5.8	1.9	2.7	1.1	3.0	2.5	3.0	1.3	1.1	2.0	1.7	1.2	5.0	4.2	2.7	10.3	3.0	0.3	2.7	3.8
9	5.1	5.9	4.2	2.7	5.4	1.9	0.9	2.1	2.0	2.9	2.7	3.9	0.9	1.1	1.8	2.0	5.0	2.8	0.3	4.7	4.0	2.2	3.1	1.0	2.9
10 Q	1.3	1.7	2.0	1.1	0.9	1.0	1.0	1.7	1.1	2.8	3.5	1.9	0.3	1.1	(2.1)	1.1	1.2	0.5	0.6	1.0	1.8	5.4	1.1	3.1	1.6
11 Q	2.9	3.0	2.0	0.9	1.9	1.0	1.3	0.6	1.0	2.4	1.9	1.3	1.3	2.4	1.7	1.0	0.3	0.7	0.4	0.6	1.3	2.2	0.9	0.9	1.4
12	0.4	1.0	1.5	1.4	1.0	0.6	0.7	1.1	0.9	2.1	1.7	1.4	0.3	1.8	0.9	0.7	0.9	1.0	0.8	1.1	0.1	4.0	6.1	2.0	1.4
13	0.6	1.2	0.7	2.0	2.6	1.9	2.0	1.1	1.5	3.1	3.8	2.9	1.0	3.1	1.2	3.1	1.2	0.3	0.8	1.4	1.0	2.1	0.7	0.9	1.7
14	0.9	0.8	0.3	1.9	1.7	1.4	1.8	2.3	1.2	3.0	3.1	2.9	1.1	1.9	2.1	1.5	1.6	1.2	1.0	0.9	3.6	1.8	0.9	0.8	1.7
15	(1.0)	1.0	0.9	1.0	0.9	1.7	0.8	1.6	1.8	4.0	(4.5)	2.6	1.2	1.8	(2.5)	(2.0)	1.2	0.3	0.2	0.4	0.3	2.1	2.8	3.8	1.7
16 Q	0.7	0.7	0.7	0.7	0.6	0.9	1.0	0.9	1.7	4.2	3.9	2.5	1.0	1.3	2.5	2.9	0.9	0.9	0.6	0.8	0.3	0.8	0.3	0.2	1.3
17 Q	0.1	0.3	0.2	0.4	0.7	0.3	0.9	1.1	1.1	3.6	1.7	1.2	0.3	1.5	2.0	1.1	0.8	1.0	0.6	1.2	1.0	1.0	1.7	3.9	1.2
18	5.1	3.8	1.0	1.0	1.2	0.9	1.9	1.3	2.2	2.7	2.1	2.2	3.1	1.9	2.7	1.1	2.8	2.9	1.0	1.8	1.2	3.7	12.0	8.1	2.8
19	5.0	10.8	1.6	1.6	1.8	1.0	(3.1)	2.5	1.3	(2.5)	2.6	5.1	1.0	0.9	3.1	4.8	5.6	2.3	1.4	1.5	1.3	7.1	4.8	3.7	3.2
20	1.8	11.1	9.0	4.3	2.3	3.5	3.5	3.9	3.1	2.9	1.8	2.6	1.0	1.7	2.6	2.1	1.0	0.9	0.9	1.2	3.0	4.8	3.1	2.2	3.1
21	7.8	4.9	0.8	2.2	3.1	3.0	3.1	0.9	1.0	1.0	1.9	1.9	1.6	1.6	0.7	1.1	1.7	2.8	1.0	4.1	1.0	1.1	2.1	1.0	2.1
22	1.8	1.2	1.5	1.9	6.0	5.1	1.5	1.2	2.1	2.3	8.2	2.9	1.9	3.0	1.9	1.0	14.2	11.0	1.8	1.0	(6.7)	10.1	3.8	1.2	3.9
23 D	2.2	1.9	5.1	5.1	2.0	2.0	1.5	2.8	2.0	(5.2)	3.3	3.8	2.1	1.9	1.3	3.9	11.8	15.9	5.8	18.5	18.2	8.6	7.9	5.1	5.7
24 D	5.3	7.7	2.2	2.9	4.1	4.0	3.1	4.5	3.0	2.1	4.0	3.3	4.1	2.9	2.5	20.1	12.0	4.1	13.7	12.6	5.9	6.3	9.0	10.4	6.3
25 D	4.0	14.2	7.8	8.1	5.9	5.2	6.9	4.3	5.5	5.9	(4.0)	5.1	5.0	6.9	(4.5)	15.1	3.1	11.8	7.2	11.1	9.7	17.0	13.8	9.0	8.0
26	6.0	6.7	7.5	2.7	2.0	4.1	4.8	6.8	4.2	3.7	3.9	2.6	0.7	0.6	1.2	1.9	0.9	1.0	1.0	10.5	8.8	4.5	3.3	3.9	3.9
27	13.84	10.8	5.0	2.6	1.3	1.6	2.9	1.1	2.3	3.9	5.1	1.8	2.2	1.1	2.3	8.0	4.2	4.0	4.7	5.8	6.8	1.1	0.8	1.9	4.0
28	2.0	2.0	1.1	4.0	2.9	0.7	1.0	1.1	0.9	3.2	1.1	2.9	1.1	1.9	1.8	1.2	1.3	1.8	1.3	1.0	0.9	1.6	0.7	1.0	1.6
29	3.2	6.5	3.2	1.2	0.8	0.5	1.0	0.9	0.7	2.9	4.6	2.3	2.4	1.0	1.1	0.4	1.1	1.1	2.7	4.1	(4.8)	1.0	2.2	3.8	2.2
30	6.0	2.9	4.1	3.5	2.8	1.1	1.0	2.1	1.1	1.6	2.0	1.9	(1.0)	1.6	0.9	1.0	1.8	1.5	0.3	0.2	1.1	5.9	7.0	1.1	2.2
Mean	3.1	3.8	2.8	2.4	2.7	2.0	2.1	2.0	1.8	2.9	3.1	2.6	1.7	1.9	2.1	3.8	3.4	3.1	2.3	3.4	3.6	4.5	3.9	2.9	2.8

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

67. ESKDALEMUIR (r_D)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	2.9	7.6	1.1	1.3	0.6	1.0	1.0	1.0	1.1	0.9	2.9	2.3	2.1	1.5	1.4	1.0	1.1	1.4	0.9	0.9	0.8	0.7	2.1	0.3	1.6
2	1.0	0.7	0.6	1.2	1.0	1.0	1.0	2.0	0.8	3.1	3.7	2.0	1.2	5.2	3.7	2.0	2.1	1.0	3.9	1.2	2.8	0.9	1.5	1.9	1.9
3	6.7	4.0	5.6	2.0	1.4	1.9	1.3	0.9	0.9	3.5	1.5	2.7	(3.0)	2.1	0.9	1.2	1.9	1.2	0.6	0.3	0.7	0.9	0.5	5.0	2.1
4	3.1	3.9	2.1	0.8	1.7	0.7	1.0	1.9	0.8	1.3	3.0	0.9	1.5	0.9	(2.0)	2.2	1.1	1.6	0.9	1.3	1.8	3.2	1.6	2.0	1.7
5	1.9	4.1	(2.6)	2.0	2.1	1.1	0.6	0.8	0.8	0.8	2.3	3.0	2.8	1.5	1.9	2.0	0.9	1.1	5.2	1.0	0.2	2.6	4.0	3.9	2.1
6	2.8	2.0	1.2	1.6	0.2	0.3	0.3	0.9	1.0	1.1	3.0	2.2	1.2	1.3	1.1	2.1	0.3	0.8	1.1	4.9	3.0	2.8	2.9	2.1	1.7
7	6.8	2.5	1.8	0.9	0.2	0.2	0.8	1.1	0.6	0.7	2.9	2.8	1.9	1.1	0.7	1.0	0.2	0.8	1.0	0.2	0.3	0.4	0.9	1.8	1.3
8	0.9	1.1	1.1	1.0	1.7	1.9	0.9	1.1	1.6	1.7	(2.0)	2.6	1.4	1.0	1.1	1.9	0.6	1.0	2.5	5.3	2.5	2.2	1.2	0.9	1.6
9	2.7	3.0	1.1	2.0	1.3	0.7	0.3	0.8	0.7	1.6	3.0	3.6	2.5	1.2	2.9	6.2	1.9	1.6	1.8	2.1	1.8	4.2	7.3	7.8	2.6
10	2.2	2.1	1.9	3.0	(4.0)	2.5	2.2	1.9	1.1	1.2	3.0	5.1	2.9	1.8	(3.2)	7.6	6.1	3.2	1.3	5.5	4.5	2.0	1.0	2.0	3.0
11	2.5	2.2	2.3	1.1	2.0	1.4	0.8	2.0	2.1	1.8	2.9	2.1	2.1	0.6	1.2	1.8	1.2	1.1	2.3	3.7	7.4	2.9	5.9	6.0	2.5
12	6.3	3.2	3.0	2.7	2.0	0.7	1.1	1.1	1.0	0.9	(2.1)	3.0	1.6	0.8	1.0	1.3	1.2	0.8	0.9	1.0	4.1	2.1	0.5	3.7	1.9
13	1.3	1.3	1.2	0.4	0.5	0.2	0.7	2.9	1.7	1.1	(2.0)	3.7	3.2	0.9	1.8	2.7	1.2	1.0	0.8	1.0	0.9	2.0	2.0	1.7	1.5
14	0.9	0.5	0.4	0.3	0.8	0.2	0.2	1.1	0.7	0.8	2.1	3.0	1.9	1.0	1.1	1.5	1.1	1.0	0.7	0.6	0.3	1.4	3.7	1.9	1.1
15	1.1	1.9	2.9	5.9	4.2	2.2	1.8	2.0	6.2	6.2	3.3	2.0	(7.5)	4.8	12.7	14.2	13.9	18.0	8.2	10.3	4.3	8.9	11.0	6.6	6.6
16	3.7	10.1	2.3	6.0	(7.7)	5.6	5.9	5.7	(5.6)	3.4	1.8	4.6	1.2	1.5	3.4	3.6	8.0	8.3	1.0	0.3	0.5	0.5	1.0	3.6	4.0
17	4.8	5.1	2.0	2.2	1.5	1.1	1.1	1.2	1.9	(2.0)	1.8	3.2	3.9	5.1	2.5	2.2	6.5	13.4	4.8	5.8	12.1	7.2	1.9	6.2	4.1
18	11.1	9.4	4.0	1.8	1.1	0.9	0.7	1.0	0.5	1.5	1.7	2.5	1.4	0.9	0.9	1.6	1.2	4.6	2.9	0.6	1.7	1.0	2.1	2.1	2.4
19	1.8	0.9	0.9	1.8	1.0	3.9	3.1	2.3	1.5	1.3	3.2	3.4	1.5	1.0	1.6	1.0	1.7	1.4	1.0	1.9	1.2	0.9	1.1	1.9	1.7
20	0.8	0.9	0.7	0.9	0.9	1.0	0.8	1.1	0.7	0.9	2.0	3.8	4.1	2.9	4.9	4.0	7.1	9.0	7.8	8.2	9.9	21.1	15.4	11.0	5.0
21	5.8	11.8	13.0	7.3	12.9	4.5	2.8	5.7	2.7	3.9	1.3	3.2	2.6	2.1	1.7	2.6	1.3	1.5	1.0	3.1	2.0	1.1	0.4	0.5	3.9
22	0.3	0.2	0.8	0.4	0.9	0.7	1.1	1.7	1.2	1.0	(4.0)	3.1	3.0	2.0	0.7	2.2	2.8	4.4	4.1	13.5	9.7	5.5	4.0	1.9	2.9
23	6.5	10.4	3.7	4.1	1.1	1.7	1.0	1.2	1.5	5.6	1.9	1.8	1.1	1.1	5.0	4.8	21.0	17.1	1.7	14.6	4.3	2.8	7.8	7.1	5.4
24	0.8	2.3	0.9	4.7	3.8	1.2	1.0	2.2	1.6	3.7	2.7	3.2	(5.2)	2.5	2.0	(0.8)	1.2	3.9	6.1	5.2	5.3	3.6	5.2	2.5	3.0
25	1.7	1.2	1.4	1.2	2.3	2.2	1.0	1.1	2.2	2.0	3.5	2.0	2.9	1.2	2.2	7.1	1.4	0.8	0.3	1.9	1.5	1.0	1.9	1.3	1.9
26	3.0	1.8	1.4	0.7	1.0	1.6	0.8	1.8	0.8	1.1	(2.6)	2.7	1.2	1.8	0.9	2.1	0.8	0.9	0.6	3.8	(3.5)	0.7	0.7	1.7	1.6
27	0.9	0.6	1.6	0.8	2.5	1.0	1.1	2.0	1.0	2.1	3.1	3.8	2.8	4.8	1.4	4.6	2.8	1.1	1.2	1.5	5.0	3.0	2.2	2.1	2.2
28	1.8	0.9	1.0	0.8	3.5	3.4	1.0	1.6	1.5	1.6	2.2	1.7	1.6	0.8	1.3	1.5	0.4	0.5	0.3	0.1	0.1	0.1	0.1	0.1	1.2
29	0.6	0.2	1.3	1.1	0.4	0.9	0.5	1.0	0.8	1.2	3.0	2.1	1.1	0.6	1.6	1.2	0.3	0.3	0.6	1.0	0.7	2.9	8.8	3.6	1.5
30	5.2	2.2	4.3	1.8	1.2	2.2	3.9	1.9	4.8	2.1	3.7	4.0	2.0	0.9	1.8	4.0	3.9	0.5	0.3	3.2	3.6	5.6	2.0	1.7	2.8
31	4.9	3.5	1.2	1.5	1.1	1.1	1.0	1.2	0.9	0.9	2.7	2.3	1.1	1.5	0.9	2.1	1.4	0.5	0.8	0.2	0.2	0.9	0.7	1.5	1.4
Mean	3.1	3.3	2.2	2.0	2.1	1.6	1.3	1.7	1.6	2.0	2.6	2.9	2.5	1.8	2.2	3.0	3.1	3.3	2.1	3.4	3.1	3.1	3.3	3.1	2.5

68. ESKDALEMUIR (r_D)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1 D	2.0	2.8	1.4	8.0	7.8	4.1	4.6	7.6	7.4	2.5	4.6	5.1	6.1	4.0	1.8	2.7	1.7	1.6	1.8	1.0	3.3	2.8	1.3	2.1	3.7
2	5.6	5.2	5.6	4.2	2.4	2.5	(2.0)	1.8	3.9	1.2	(3.0)	3.5	1.2	1.9	1.1	1.7	0.9	0.5	4.2	1.4	0.9	0.7	0.4	0.8	2.4
3	0.9	0.9	0.9	1.0	1.2	1.9	1.8	2.0	1.8	2.7	2.3	2.7	1.1	2.1	1.2	0.8	0.6	0.8	0.4	1.5	1.1	0.6	1.3	0.8	1.3
4	1.7	2.3	1.8	2.2	3.6	4.0	2.1	1.5	1.1	2.0	1.1	1.2	1.1	0.4	0.9	1.1	1.2	4.9	4.1	5.1	(2.0)	6.1	4.9	5.9	2.6
5	1.9	2.2	4.3	3.8	1.0	1.5	1.4	2.0	1.0	1.8	3.0	2.1	(2.0)	1.3	1.4	1.1	5.7	3.8	1.8	2.1	2.9	1.6	5.1	2.6	2.4
6 Q	(4.0)	1.6	1.0	1.1	1.9	1.0	0.9	1.2	0.6	1.9	2.1	1.1	0.7	0.9	0.9	0.7	0.2	0.8	0.8	1.7	2.3	3.0	0.8	0.4	1.3
7	1.3	1.1	2.3	1.6	1.2	0.9	0.6	0.8	0.6	1.5	2.2	1.3	1.3	0.5	1.7	2.0	7.8	7.4	3.8	1.8	0.7	1.1	0.6	0.7	1.9
8	0.8	0.9	0.9	1.2	0.9	0.6	0.8	0.7	1.0	1.7	2.5	2.1	1.2	1.1	1.0	1.1	0.9	2.1	0.6	2.5	4.6	2.6	2.1	1.3	1.5
9 Q	1.1	1.5	1.0	0.6	0.6	0.5	0.9	1.1	1.0	1.9	2.8	1.7	(0.9)	0.7	0.9	0.3	0.2	0.4	1.2	0.6	3.2	1.8	0.5	0.9	1.1
10 Q	0.3	2.0	2.0	0.7	1.2	0.6	0.7	0.5	0.7	1.0	2.0	2.8	1.2	1.0	2.0	(0.5)	0.8	0.7	0.7	1.9	2.3	0.9	0.9	1.5	1.2
11	2.2	2.1	0.4	0.5	0.7	0.7	1.1	1.1	1.1	1.0	2.2	2.0	0.3	1.2	1.4	0.8	0.6	0.5	1.1	3.1	0.6	0.7	0.2	0.3	1.1
12	1.9	1.2	1.0	1.5	1.2	1.1	2.0	1.0	1.2	1.9	3.6	2.1	2.2	1.8	0.9	2.2	3.1	3.3	1.7	6.5	4.7	1.0	0.9	2.1	2.1
13	1.1	1.2	4.2	1.9	5.0	1.5	1.4	1.0	0.9	2.3	2.1	3.7	1.3	1.5	1.9	4.4	3.0	3.8	5.0	4.1	5.9	4.0	3.9	2.2	2.8
14 D	0.8	0.9	1.6	0.7	1.7	1.5	6.0	5.2	5.8	4.1	(2.5)	5.9	4.5	2.1	(3.6)	1.5	3.7	5.2	1.3	0.7	0.7	6.4	5.9	9.4	3.4
15 D	4.0	0.7	0.3	0.9	1.1	4.9	2.6	0.8	0.7	1.1	0.8	1.8	1.0	1.3	1.0	1.2	0.7	9.1	7.6	2.9	1.1	2.4	3.6	2.2	2.2
16 D	2.8	4.8	8.0	10.6	8.1	7.3	11.2	2.0	7.0	4.5	6.0	3.3	2.9	4.9	16.3	11.8	5.0	15.7	21.2	4.9	12.7	7.7	12.8	8.3	8.3
17 D	1.3	2.0	1.8	2.0	1.1	4.2	1.9	3.0	4.7	3.3	1.9	3.8	5.2	5.3	9.8	1.9	4.9	2.5	5.4	7.2	7.8	3.8	2.0	2.7	3.7
18	2.9	0.6	1.2	1.1	2.1	2.0	2.8	1.8	1.3	1.1	4.5	1.0	1.2	2.0	1.6	8.6	5.9	2.0	2.2	3.3	9.1	8.0	2.0	1.9	2.9
19	2.4	2.7	4.6	1.1	0.9	0.8	1.7	2.1	1.6	1.4	1.8	2.0	1.9	1.7	1.1	2.5	1.3	1.0	3.6	2.1	1.0	1.5	3.0	3.0	1.9
20	2.4	1.2	1.1	1.3	1.8	1.0	3.6	4.3	0.9	0.8	1.3	1.8	1.5	1.1	1.2	4.1	1.5	2.0	1.3	0.7	0.7	0.9	3.5	2.2	1.8
21	2.5	1.8	0.2	1.2	0.7	1.0	0.7	0.9	2.4	1.6	1.5	1.8	0.8	0.7	0.9	1.2	1.0	1.1	0.2	0.2	3.9	3.8	(3.0)	0.9	1.4
22 Q	0.3	1.3	1.0	0.9	0.6	0.8	0.6	0.6	1.0	0.8	1.5	1.0	0.9	0.5	0.3	0.9	3.0	1.1	0.4	0.8	0.8	0.6	0.1	0.2	0.8
23	0.2	0.6	0.9	2.0	0.5	0.6	0.3	0.2	0.3	1.0	(2.2)	1.1	1.1	0.8	1.1	0.9	0.5	0.3	0.2	0.3	0.3	0.5	0.2	0.4	0.7
24 Q	0.4	0.5	0.6	0.6	0.4	0.7	0.3	0.9	0.6	0.9	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.3	0.7	0.4	0.5	0.4	0.3	0.2	0.1
25	0.2	0.6	0.3	0.1	1.1	1.9	1.2	0.4	0.9	1.2	1.7	1.8	1.4	0.8	1.7	3.0	2.0	3.1	1.2	1.1	1.0	0.7	4.7	4.1	1.5
26	4.1	1.1	1.1	0.8	1.2	0.9	0.8	1.2	1.8	0.9	3.2	0.4	1.3	1.7	0.9	1.0	0.9	0.8	0.2	0.8	0.4	0.1	0.2	0.2	1.1
27	0.3	0.4	0.2	0.5	3.2	3.9	0.8	0.3	1.0	0.7	1.4	1.6	0.9	0.7	0.9	0.7	0.9	0.9	1.0	2.0	1.7	1.6	1.0	1.8	1.2
28	1.3	1.0	0.3	0.6	1.2	0.8	(1.5)	1.1	0.8	0.7	2.6	4.1	2.7	2.3	1.5	1.0	3.2	2.3	1.2	0.9	0.5	0.5	0.8	0.6	1.4
29	0.8	4.7	4.2	3.0	1.9	3.0	2.1	6.0	1.9	2.2	2.0	2.6	2.7	1.3	2.2	6.1	(5.3)	1.9	2.2	1.0	1.8	2.8	1.7	2.6	2.7
30	1.9	1.5	5.9	1.9	1.2	1.9	1.8	1.0	1.1	3.4	1.5	1.0	1.0	1.1	1.6	(1.5)	0.7	1.0	1.0	1.3	0.7	0.3	0.7	0.3	1.4
Mean	1.8	1.7	2.0	1.9	1.9	1.9	2.0	1.8	1.9	1.8	2.4	2.3	1.8	1.6	2.1	2.3	2.3	2.7	2.6	2.1	2.6	2.3	2.3	2.1	2.1

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

69. ESKDALEMUIR (rD)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	0.8	0.9	1.6	1.2	1.2	1.0	0.5	0.7	0.8	1.7	(1.5)	2.2	1.0	0.7	1.3	0.6	3.1	1.8	7.0	3.0	1.3	1.8	0.9	1.7	1.6
2	1.7	2.0	3.0	1.8	0.9	0.8	0.7	0.2	1.0	0.7	2.0	0.8	0.8	1.2	0.6	0.6	1.0	1.0	0.4	7.2	2.8	3.1	0.6	0.7	1.5
3	0.9	0.8	1.0	3.3	0.6	1.1	0.8	0.8	0.8	1.9	1.4	1.5	0.8	0.3	0.2	0.9	0.4	0.2	0.5	0.6	6.0	3.7	1.8	1.6	1.3
4	2.4	2.5	3.6	3.5	1.1	0.6	0.3	0.9	1.3	1.4	1.0	2.9	2.0	1.0	1.2	1.2	1.0	1.3	1.2	1.2	1.7	1.0	0.9	1.1	1.5
5 Q	3.6	1.9	(0.8)	1.6	2.7	1.9	1.2	1.6	0.7	1.1	1.7	0.9	0.8	0.6	0.9	0.4	0.2	0.2	1.0	0.9	0.8	4.9	(2.5)	1.5	1.4
6	2.8	2.7	1.2	0.6	1.0	0.8	0.4	0.6	0.6	0.8	2.0	0.9	1.1	1.0	1.1	0.3	0.7	0.3	0.4	1.0	1.0	0.9	10.4	7.1	1.7
7 Q	3.9	1.8	2.1	0.5	0.8	0.6	0.8	1.1	0.5	0.9	1.7	1.1	0.3	1.0	0.5	0.6	0.2	0.3	0.3	0.3	0.4	0.3	0.3	1.0	0.9
8	3.1	2.5	0.5	5.8	2.6	2.4	4.2	4.2	1.9	1.2	1.9	3.1	3.1	2.3	2.8	1.0	1.3	1.0	1.1	1.1	2.1	4.3	(4.0)	5.4	2.6
9 D	10.8	6.1	(4.2)	3.0	1.3	2.2	3.1	3.3	1.9	3.0	3.5	2.0	2.1	3.4	4.6	3.0	5.0	2.5	2.5	4.7	3.6	3.7	1.3	1.1	3.4
10	2.2	4.6	2.3	1.1	0.5	1.0	1.2	1.1	(1.8)	2.1	1.8	3.9	2.0	2.0	3.8	3.0	1.4	(2.0)	(1.0)	(2.3)	2.7	2.1	2.6	3.0	2.1
11	(1.2)	(0.6)	(0.3)	(0.5)	(0.8)	(0.5)	(1.0)	(0.7)	1.6	0.7	1.2	1.3	1.0	1.1	0.9	0.8	1.0	1.1	0.3	0.8	3.0	7.7	5.1	1.2	1.4
12 Q	1.7	0.6	0.9	2.0	3.1	0.8	0.8	1.1	1.0	0.8	1.3	1.0	0.9	0.1	0.6	0.6	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.3	0.8
13	0.2	0.6	0.7	0.8	2.4	1.0	0.7	0.8	0.6	0.6	1.4	3.0	1.2	3.1	1.0	1.0	5.1	6.1	4.7	1.7	3.9	5.8	6.6	8.2	2.5
14 D	3.2	1.9	2.9	2.2	2.2	1.1	1.0	1.1	1.4	1.1	3.6	2.8	4.1	3.9	(2.2)	3.9	16.0	26.2	13.9	10.1	18.3	14.8	5.5	10.7	6.4
15 D	11.4	7.8	6.1	7.9	3.2	1.3	2.5	1.9	2.4	3.0	2.9	0.7	1.8	0.9	2.8	1.3	2.2	3.0	10.8	5.9	18.0	6.6	8.0	11.2	5.1
16 D	10.9	20.9	5.7	2.8	2.9	3.1	2.3	1.6	2.0	1.4	2.0	2.1	3.1	1.3	1.9	2.0	5.2	7.4	7.1	6.6	14.0	8.1	(5.2)	1.2	5.0
17 D	16.5	13.4	1.8	0.9	1.3	2.7	1.9	1.0	1.8	3.0	1.4	3.9	2.0	3.9	2.9	6.6	2.8	2.8	7.0	17.1	4.8	1.0	1.4	3.7	4.4
18	1.0	2.0	8.7	6.0	4.5	1.3	1.6	2.8	1.6	1.6	1.0	1.2	1.1	2.0	2.4	2.4	1.0	0.4	2.1	1.6	0.9	1.0	0.9	0.9	2.1
19	0.5	0.7	3.3	2.7	0.8	0.9	0.6	0.7	0.8	1.0	1.6	1.0	1.1	1.1	0.9	2.1	8.0	0.8	0.9	4.2	10.1	3.8	1.0	1.2	2.1
20	0.9	5.2	3.1	0.8	1.3	1.2	0.9	1.6	1.3	1.2	1.8	1.1	1.0	0.7	0.7	0.8	1.0	0.6	0.3	0.2	0.2	0.3	0.2	0.4	1.1
21 Q	1.1	1.8	1.6	1.0	0.6	0.9	0.3	0.2	0.3	1.0	0.5	0.7	1.1	1.0	0.3	1.1	0.7	0.4	0.5	0.2	0.2	0.5	0.2	0.1	0.7
22	0.3	0.4	0.6	1.5	1.0	0.3	0.3	0.2	1.0	0.6	1.3	0.8	0.9	0.8	0.7	0.8	1.2	1.9	1.2	5.8	4.0	0.8	0.5	0.2	1.1
23 Q	0.2	0.3	0.3	0.9	0.8	0.6	0.8	0.6	0.9	0.7	1.9	1.0	0.7	1.3	1.0	0.2	0.3	0.7	0.9	0.3	1.3	1.1	0.8	2.0	0.8
24	2.9	0.7	1.3	0.7	0.3	0.2	0.4	0.5	0.2	0.6	1.4	0.6	1.8	0.9	1.0	1.0	0.6	0.8	2.7	1.3	1.3	0.3	0.3	0.3	0.9
25	0.9	0.9	1.2	0.7	0.8	0.9	1.2	0.7	0.9	1.2	2.0	2.9	2.2	1.7	(1.6)	2.2	0.9	2.1	0.8	7.8	(5.5)	5.7	1.0	2.4	2.0
26	5.1	9.2	2.3	2.2	2.7	1.8	1.7	1.3	1.2	0.7	2.1	3.0	0.9	1.8	1.3	1.9	1.6	2.1	5.8	4.9	6.0	3.7	1.2	2.1	2.8
27	3.1	6.9	8.9	9.8	1.9	2.0	0.9	1.1	1.1	2.0	(2.2)	3.3	1.0	1.5	1.9	1.2	0.9	1.2	4.0	6.0	2.2	2.3	0.9	1.0	2.8
28	2.9	1.7	1.2	0.6	1.1	1.0	1.4	0.6	1.1	1.0	2.2	3.0	2.7	2.6	4.9	1.1	1.6	4.2	(7.7)	2.7	8.9	7.0	6.0	3.7	2.9
29	3.9	0.7	0.9	1.3	0.3	1.0	1.1	0.6	0.4	0.9	1.6	1.1	1.2	1.0	0.7	2.0	1.6	1.0	0.5	0.6	2.7	2.2	0.7	0.5	1.2
30	0.2	1.0	0.9	2.0	1.2	0.8	1.0	0.7	2.1	(1.5)	1.4	1.1	4.0	2.8	(1.0)	(3.0)	0.9	1.1	2.6	6.1	4.0	5.8	5.2	6.0	2.3
31	8.0	3.1	3.0	2.9	1.9	2.1	1.6	2.9	3.9	1.2	1.6	1.9	1.0	3.6	1.5	2.0	1.3	2.0	3.9	4.8	6.0	2.1	4.0	5.8	3.0
Mean	3.5	3.4	2.5	2.3	1.5	1.2	1.2	1.3	1.3	1.8	1.8	1.8	1.6	1.6	1.6	1.6	2.2	2.5	3.0	3.6	4.4	3.4	2.6	2.8	2.2

70. ESKDALEMUIR (rD)

JANUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
Day																										
1 D	3.0	4.6	1.9	2.9	1.6	4.2	1.2	1.3	1.2	1.3	2.1	2.8	2.6	2.6	1.1	2.1	5.5	5.0	5.8	18.7	14.6	2.2	5.3	2.1	4.0	
2	2.0	3.3	3.9	4.5	2.0	2.9	1.2	0.9	2.2	2.9	3.0	2.9	2.8	0.9	1.1	1.0	0.6	0.9	3.0	2.9	4.3	5.8	2.9	0.4	2.4	
3	2.7	4.9	3.8	1.7	2.3	1.5	0.8	1.0	1.3	0.9	1.2	1.4	3.0	2.1	1.0	0.9	1.0	1.1	0.7	0.6	0.8	0.4	2.5	2.0	1.7	
4 Q	3.4	3.1	1.0	0.8	0.3	0.9	0.3	0.5	0.9	1.0	(1.1)	1.4	1.3	1.0	1.9	0.4	0.5	1.0	0.7	0.2	0.3	0.3	0.7	1.0	1.0	
5 Q	0.8	0.7	0.3	0.6	0.9	0.8	1.0	0.5	0.6	0.2	1.4	1.6	0.3	0.9	0.9	0.8	0.6	0.4	0.2	0.1	0.2	0.2	0.1	0.3	0.6	
6	1.4	1.8	1.9	2.1	2.9	2.5	4.2	1.8	2.3	1.5	7.1	2.2	2.1	3.5	12.1	2.6	1.5	0.8	3.7	3.0	3.6	1.1	2.7	3.6	3.0	
7	4.1	3.5	1.2	5.0	3.5	2.0	0.7	1.2	1.2	1.2	2.1	1.0	1.3	2.5	0.7	1.2	3.0	6.9	3.0	2.7	0.9	1.0	0.3	1.2	2.1	
8	2.6	1.4	0.7	1.9	1.8	1.9	1.2	0.9	0.8	1.3	3.4	1.0	1.5	1.1	1.0	1.0	0.8	0.8	0.6	0.3	0.5	0.6	1.6	2.1	1.3	
9	0.8	0.8	2.0	1.1	0.9	0.2	0.7	1.0	0.5	0.8	1.3	1.0	0.9	0.9	0.7	1.5	1.2	1.0	0.5	1.2	1.0	1.6	1.2	1.0	1.0	
10 Q	1.0	0.2	0.6	0.5	0.7	0.6	0.4	0.5	0.6	0.6	1.0	1.0	1.7	0.7	0.7	0.6	0.9	0.3	0.6	1.0	0.7	1.1	0.6	0.9	0.7	
11 Q	1.0	1.2	1.0	0.8	0.7	0.5	0.9	0.9	1.1	(1.1)	0.8	1.5	2.0	0.9	1.3	0.3	1.0	0.4	0.4	0.5	0.6	0.8	0.9	0.4	0.9	
12	1.0	1.1	1.0	0.5	0.3	0.3	0.3	0.7	0.4	0.3	0.3	1.9	1.8	0.4	1.2	0.2	0.2	0.2	0.5	0.6	0.9	0.8	1.2	0.9	0.7	
13	2.3	1.8	1.1	0.5	1.1	0.9	0.3	0.5	0.8	1.3	1.2	1.4	1.0	0.9	0.9	0.4	0.5	1.0	1.2	0.7	1.8	1.0	1.3	1.0	1.0	
14	0.2	2.0	2.2	0.7	0.3	0.4	0.3	0.6	0.3	0.7	6.8	1.1	1.0	0.9	0.3	0.1	0.3	0.4	0.6	2.6	6.3	5.2	4.0	6.0	1.6	
15	3.3	4.8	1.0	1.6	2.5	14.0	12.8	4.6	5.7	10.1	3.8	4.7	1.0	2.3	3.2	1.9	0.6	0.7	1.6	1.9	1.5	6.9	8.2	1.2	4.2	
16	1.0	3.8	4.9	1.1	0.9	(1.0)	(1.0)	1.7	1.8	1.1	1.7	2.7	1.3	0.9	1.5	2.1	1.0	0.7	1.0	0.8	0.8	0.3	0.1	0.5	1.4	
17	0.7	1.3	0.9	1.5	0.7	0.6	1.1	1.0	0.9	3.1	1.3	0.8	0.8	1.5	1.0	0.8	0.6	0.9	0.8	0.7	0.8	0.6	0.3	1.9	1.0	
18	1.1	1.0	0.6	1.6	1.5	0.5	0.8	0.7	0.8	0.6	1.3	1.3	1.5	0.9	1.0	0.2	0.6	0.5	1.2	4.4	4.0	1.1	1.1	1.9	1.3	
19 D	0.4	0.5	1.0	1.7	2.9	2.1	1.9	1.1	1.0	2.8	1.0	1.7	3.0	1.7	2.6	16.1	13.0	3.8	3.1	4.7	4.3	1.3	5.2	4.8	3.4	
20	2.2	5.4	2.0	4.4	(14.0)	8.0	4.7	5.4	1.6	2.0	0.8	1.2	1.5	1.3	2.6	0.9	1.0	0.8	0.4	0.3	0.3	0.2	3.2	2.9	2.8	
21 Q	2.2	0.4	0.2	0.3	0.2	0.3	0.4	0.6	0.4	1.0	1.1	1.6	1.5	1.1	1.0	1.0	0.2	0.4	0.3	0.2	2.5	1.3	1.1	0.9	0.8	
22 D	1.0	0.8	1.0	1.2	1.3	2.0	2.7	3.2	1.5	1.5	1.8	1.6	3.0	0.9	5.2	5.1	4.1	11.2	10.8	9.6	6.9	14.7	(10.8)	4.6	4.4	
23	4.3	5.0	3.9	2.2	2.2	2.1	2.4	2.3	1.5	2.8	1.8	1.7	3.9	2.7	1.5	1.9	1.1	2.4	5.3	11.9	1.3	6.8	7.9	6.8	3.6	
24	15.0	10.2	6.2	2.3	2.3	1.7	2.3	1.6	2.0	2.0	2.1	2.7	2.0	2.1	3.4	1.1	3.1	2.3	1.4	2.7	3.2	2.2	2.8	2.4	3.3	
25	2.9	7.7	5.7	3.0	1.2	1.0	0.8	1.1	3.2	2.9	3.0	2.6	1.9	1.3	2.3	2.5	1.2	3.4	2.9	2.2	1.5	5.0	1.1	8.8	5.3	3.0
26	4.2	0.7	11.1	5.1	2.5	3.0	3.0	1.4	(2.1)	3.0	(4.0)	1.9	5.0	3.1	3.0	3.3	2.3	3.2	6.0	9.8	4.8	7.0	4.4	3.0	4.0	
27 D	16.0	6.2	4.9	3.5	2.9	4.0	1.3	2.8	2.7	3.0	1.8	4.8	3.5	1.0	1.1	3.8	10.0	6.7	6.8	12.0	(8.7)	21.9	6.4	11.1	6.1	
28 D	2.2	4.9	11.3	4.1	3.8	4.1	1.6	1.9	2.5	2.6	3.7	3.2	2.1	7.1	4.0	7.6	10.5	8.0	7.6	8.7	(10.0)	6.2	6.0	7.0	5.5	
29	4.7	7.0	4.7	1.6	2.0	2.2	2.5	1.2	1.3	2.1	1.1	2.0	3.2	2.2	2.3	4.2	4.6	4.3	9.4	4.0	(5.0)	2.3	1.9	3.1	3.3	
30	4.0	3.9	7.7	8.1	1.1	1.6	0.9	1.3	0.9	1.0	3.9	3.9	3.6	1.2	1.7	2.1	1.0	0.7	0.2	0.9	5.7	3.2	1.6	2.9	2.6	
31	5.6	4.4	3.5	2.8	1.5	(1.0)	(0.7)	(1.0)	(0.8)	1.1	1.1	3.4	(3.0)	2.4	1.7	0.7	2.9	2.2	1.8	(1.0)	1.5	4.1	1.1	1.8	2.1	
Mean	3.1	3.2	3.0	2.2	2.0	2.2	1.7	1.5	1.4	1.9	2.1	2.1	2.1	1.7	2.1	2.2	2.5	2.3	2.6	1.6	3.3	3.4	3.1	2.7	2.4	

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

71. ESKDALEMUIR (r_D)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	1.2	1.8	0.7	0.8	0.8	0.2	0.3	0.7	0.9	0.8	1.0	2.1	1.0	0.7	1.9	1.1	0.4	0.7	0.7	0.3	0.2	1.0	3.8	2.8	1.1
2	3.1	1.7	2.8	0.9	2.6	1.7	2.1	2.9	2.8	4.1	1.9	1.7	2.0	1.8	1.1	1.2	3.0	2.6	1.9	2.9	1.5	2.9	1.5	1.1	2.2
3	1.0	1.1	1.8	0.7	0.7	0.8	0.6	0.8	0.4	0.5	1.0	2.2	1.1	1.3	2.0	0.9	0.7	1.0	0.4	0.3	0.5	1.0	3.1	9.8	1.4
4	(3.0)	0.8	0.3	0.2	0.5	0.5	0.3	0.3	0.7	2.0	0.8	0.9	(1.1)	0.8	2.3	0.7	1.3	3.3	6.2	5.1	1.9	1.8	2.0	1.0	1.6
5	0.9	4.0	5.2	4.8	2.0	1.0	1.3	0.3	1.2	1.4	0.8	0.7	1.0	0.7	0.6	0.5	0.3	0.3	0.3	0.6	0.7	0.3	0.1	0.2	1.2
6 Q	1.0	3.6	(4.5)	1.8	1.1	0.8	0.6	0.5	0.5	1.0	1.7	1.1	1.4	1.0	1.3	1.0	0.3	0.3	0.1	0.2	1.6	1.1	0.4	0.6	1.1
7	0.4	0.3	0.3	0.9	2.7	3.0	0.9	1.0	2.0	1.6	2.2	3.9	2.1	3.0	1.7	0.9	1.0	1.7	0.8	0.9	0.6	0.3	0.8	0.5	1.4
8	0.3	0.2	0.2	0.7	1.0	1.1	1.0	0.6	0.8	1.9	(1.8)	2.2	1.0	1.9	1.5	1.0	0.8	0.8	0.4	0.7	4.9	3.5	1.9	2.2	1.3
9	2.5	1.2	6.6	4.9	2.9	3.5	1.2	1.1	0.8	0.9	1.2	3.1	1.3	1.2	0.9	0.8	2.2	0.7	0.7	1.5	3.0	1.1	1.7	1.5	1.9
10	1.8	2.0	1.2	1.3	0.6	1.1	0.7	0.6	0.4	1.0	1.2	0.9	1.2	1.1	2.0	0.8	0.3	0.3	0.8	0.4	0.7	5.2	2.3	0.9	1.2
11 Q	1.1	0.4	0.4	0.3	0.4	0.6	0.1	0.5	0.7	0.6	0.9	0.4	0.3	0.8	1.0	0.8	0.3	0.4	0.8	1.2	1.8	0.9	1.0	0.8	0.7
12	0.7	0.8	0.6	0.3	0.6	1.1	0.4	0.6	2.6	2.0	1.9	1.9	(1.3)	1.0	1.8	0.6	0.3	0.7	0.7	0.8	0.3	0.6	0.7	0.8	1.0
13 Q	0.9	0.5	0.3	0.7	0.3	0.4	0.6	0.2	0.3	0.6	0.9	0.9	1.0	1.3	0.7	0.9	(0.8)	1.2	0.6	0.7	1.0	1.1	1.0	1.6	0.8
14	1.2	1.9	1.0	2.2	1.7	0.7	1.0	1.1	1.1	1.3	2.5	1.6	1.0	1.5	1.9	1.1	0.9	0.9	1.8	10.0	9.4	4.5	2.5	1.3	2.3
15	2.0	3.0	3.1	0.9	(2.4)	5.0	2.1	1.5	1.6	1.8	2.3	2.4	1.5	2.2	1.0	(8.3)	(6.0)	4.1	1.5	0.9	2.8	4.3	3.7	2.7	2.8
16 Q	0.8	1.1	0.7	0.8	0.9	0.8	0.9	0.7	1.0	1.4	1.2	1.1	1.6	1.4	0.8	1.1	1.0	0.7	0.5	0.2	0.9	0.8	0.6	0.2	0.9
17 Q	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	1.0	0.2	2.0	1.9	0.9	0.4	0.9	1.1	0.6	0.2	0.1	0.7	0.1	0.2	0.2	0.3	0.5
18	0.7	1.0	0.5	0.3	0.2	0.4	0.2	0.3	0.8	0.3	2.0	1.3	1.5	0.8	2.9	0.9	1.1	0.8	1.0	1.1	6.0	4.0	(1.5)	3.4	1.4
19 D	2.7	2.6	(6.1)	6.4	0.9	1.1	1.2	1.9	1.3	2.2	4.6	8.1	4.7	12.0	8.0	6.5	3.2	3.5	23.9	13.7	7.9	4.1	6.0	29.3	6.7
20	13.4	16.9	11.8	3.2	2.5	0.9	1.3	2.7	3.6	3.9	(2.9)	5.1	3.1	1.6	1.9	5.2	(2.0)	2.3	(6.0)	6.3	2.1	1.6	5.9	5.0	4.6
21 D	2.9	3.9	8.0	7.0	8.3	3.7	2.2	1.2	5.0	3.0	6.0	1.2	3.6	2.4	15.9	7.1	28.0	1.2	17.3	10.0	2.8	16.0	15.1	14.2	7.7
22 D	14.2	15.1	6.0	6.5	6.7	4.7	4.2	2.0	4.3	2.9	3.4	3.5	(4.1)	5.0	6.9	6.0	2.7	11.0	16.2	14.8	4.1	2.6	9.2	9.0	6.9
23 D	14.0	2.6	7.0	6.1	3.0	3.9	3.1	6.0	5.8	4.9	(3.3)	2.2	4.6	4.1	3.3	11.7	19.8	14.0	8.1	22.0	5.1	6.4	10.8	9.0	7.5
24 D	5.2	4.9	2.8	4.0	3.2	2.0	(1.5)	8.0	7.1	(3.0)	3.7	(2.5)	(3.0)	3.8	2.9	13.1	5.9	9.7	(10.0)	8.2	5.3	20.7	(16.0)	5.9	6.3
25	6.5	3.7	3.2	2.8	3.2	1.6	2.7	1.8	4.7	2.8	3.9	2.6	3.1	1.3	2.3	3.7	2.1	2.2	12.6	8.0	3.1	5.8	7.0	10.9	4.2
26	3.6	7.8	4.9	4.8	2.0	4.2	3.9	3.0	2.1	2.4	3.1	4.2	2.0	3.3	4.3	1.1	2.9	1.9	2.8	1.1	19.7	8.5	6.8	4.4	4.4
27	1.4	2.1	5.1	4.8	2.2	1.3	1.1	0.9	1.6	1.9	2.8	3.9	(3.0)	1.0	1.9	1.4	1.0	1.0	2.6	1.5	2.7	2.0	5.9	3.8	2.4
28	1.2	2.4	1.6	0.9	0.7	0.7	0.7	1.1	0.9	1.2	2.1	2.6	0.9	0.2	(0.7)	(1.0)	1.0	1.0	0.8	0.3	0.9	0.6	10.7	7.3	1.7
Mean	3.1	3.1	3.1	2.5	1.9	1.7	1.3	1.5	2.0	1.8	2.3	2.4	1.9	2.1	2.6	2.9	3.2	2.4	4.3	4.1	3.3	3.7	4.4	4.7	2.8

72. ESKDALEMUIR (r_D)

MARCH, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	0.9	3.7	4.2	2.8	1.6	0.9	0.8	1.1	1.6	2.3	2.6	2.6	3.3	1.0	1.4	2.0	0.9	1.3	0.9	6.5	5.8	0.8	0.7	2.3	2.2
2	3.2	1.8	4.7	1.2	0.6	0.5	0.6	0.9	1.1	1.1	2.0	3.1	(3.6)	1.5	1.2	1.9	1.4	0.8	1.7	2.9	2.0	4.7	1.7	1.9	1.9
3	2.3	1.3	0.7	1.2	1.8	1.1	0.5	1.1	2.2	1.8	2.6	1.3	4.3	1.2	1.7	1.1	1.9	3.2	0.9	4.8	4.0	1.9	1.1	1.2	1.9
4	1.1	5.3	5.2	2.5	1.0	0.9	1.1	0.5	1.8	1.2	1.7	2.7	0.9	0.9	0.6	1.0	0.7	0.5	1.2	2.0	1.0	0.6	1.5	1.5	1.6
5 Q	0.4	0.3	0.5	1.0	0.7	0.3	0.2	0.8	1.3	1.2	1.3	2.6	1.6	1.0	1.0	1.6	1.8	0.7	0.4	1.3	1.4	1.0	0.9	0.6	1.0
6 Q	1.1	2.3	0.7	1.6	0.6	0.8	0.9	1.1	0.9	1.8	2.2	2.8	1.2	1.3	4.0	2.4	1.0	1.0	0.8	0.3	1.2	0.8	0.7	0.2	1.3
7 Q	0.4	0.3	0.6	0.3	0.5	0.4	0.3	0.8	0.9	1.2	2.6	2.5	2.0	1.7	1.2	1.9	1.0	0.9	0.9	0.3	0.6	0.8	3.6	3.7	1.2
8	3.2	3.5	3.0	0.6	0.5	0.3	0.7	1.9	1.1	1.8	2.6	3.6	2.8	2.0	1.0	1.9	1.1	0.8	0.8	0.4	0.9	1.5	3.0	3.9	1.8
9 Q	2.9	1.7	1.0	1.9	1.1	0.6	0.9	1.5	0.8	1.2	3.3	2.0	1.1	1.0	1.0	1.7	0.9	0.2	0.3	0.7	0.9	0.8	1.0	1.1	1.2
10	1.1	2.6	1.1	2.0	2.7	2.0	0.8	0.7	0.9	0.9	2.9	3.6	3.1	0.8	1.9	2.2	1.4	1.1	1.3	0.9	3.4	2.9	(2.0)	1.1	1.8
11	(7.0)	7.8	5.3	4.1	0.9	0.7	0.8	0.9	0.9	1.0	3.6	4.0	3.0	2.1	1.5	1.5	1.8	0.7	1.6	0.9	1.6	1.1	1.2	0.8	2.3
12	0.6	0.7	1.2	1.1	1.0	1.0	2.1	2.0	1.4	1.6	4.1	3.0	2.0	1.8	1.2	2.0	2.0	0.9	1.2	1.3	1.5	0.8	0.9	2.0	1.5
13	1.7	0.9	1.6	2.4	3.7	1.8	1.1	1.4	2.0	1.9	2.4	3.7	3.1	1.9	3.3	3.0	1.2	3.1	1.5	2.3	0.9	1.3	1.3	0.8	2.0
14	0.9	0.9	1.1	3.0	4.0	6.2	4.1	1.6	2.0	1.9	2.2	4.0	1.2	0.7	1.1	1.7	2.9	0.5	1.8	0.8	0.8	0.6	0.2	0.3	1.9
15	0.8	0.7	0.9	0.6	1.0	1.2	1.6	1.7	1.2	0.7	3.7	3.3	3.2	3.0	0.7	1.5	1.4	1.1	0.2	0.3	0.3	2.5	(2.5)	0.9	1.5
16 Q	3.1	2.6	0.9	1.0	1.4	1.4	0.9	1.3	1.1	0.9	2.2	(2.5)	2.0	0.7	0.7	1.8	1.8	0.6	1.6	1.0	0.6	1.0	1.5	0.3	1.4
17	1.2	1.8	0.5	0.8	0.4	0.6	0.3	1.1	1.0	1.1	3.3	3.4	1.9	2.8	2.0	3.1	0.9	0.9	1.2	0.7	5.9	3.0	1.5	1.2	1.7
18 D	1.0	5.1	7.8	13.8	12.0	13.6	(6.0)	1.3	2.1	3.2	4.0	3.5	3.7	1.2	2.7	1.9	(9.0)	2.0	5.9	3.2	0.6	1.7	19.1	13.2	5.6
19 D	12.1	12.7	3.9	6.0	3.6	1.7	1.3	0.9	2.6	2.3	3.2	3.5	3.6	2.6	2.0	6.0	2.9	6.2	35.3	24.0	8.8	31.6	5.5	5.6	7.8
20 D	7.2	23.4	18.0	8.7	6.1	3.3	3.1	2.2	2.8	4.9	4.4	3.6	3.1	3.8	1.3	2.8	14.2	5.2	7.0	25.9	5.7	3.9	10.1	6.0	7.4
21	10.5	7.4	(5.0)	3.6	6.0	2.6	3.8	5.1	3.7	2.0	5.1	2.0	2.0	3.9	(7.0)	(2.0)	(5.0)	4.1	1.1	0.9	1.2	7.2	4.3	15.6	4.6
22	21.3	9.0	13.8	4.0	5.4	4.2	2.2	2.9	4.8	2.8	6.0	3.0	5.0	4.9	4.1	3.2	7.6	8.0	(5.5)	2.5	7.9	3.5	1.4	2.2	5.6
23 D	(5.5)	5.4	2.6	5.8	10.0	8.9	5.7	2.0	2.9	2.8	4.7	2.2	3.5	4.6	2.3	13.9	16.3	10.1	9.8	12.7	16.1	9.8	7.9	4.8	7.1
24 D	6.5	6.0	4.2	5.9	5.9	5.1	(9.2)	4.5	5.0	4.0	3.6	4.0	2.1	3.9	5.8	5.3	5.6	18.8	6.8	7.0	12.4	14.4	9.0	3.6	6.6
25	2.8	6.1	2.3	7.0	6.8	1.3	6.0	4.0	4.2	2.0	1.9	1.0	3.0	3.0	1.9	5.6	1.8	1.4	3.2	2.2	2.8	2.2	4.6	1.7	3.6
26	1.9	2.0	1.7	1.0	0.9	0.6	2.6	2.1	2.7	2.8	1.9	3.0	1.2	0.4	0.5	1.2	1.3	2.9	1.0	0.7	0.8	0.8	0.9	0.8	1.5
27	1.1	1.1	0.7	0.6	0.8	0.9	2.2	4.3	2.6	2.0	4.4	4.6	(4.5)	7.1	3.2	5.0	3.1	12.8	6.6	5.0	3.4	1.8	1.1	1.4	3.3
28	1.9	1.2	1.8	8.2	4.7	1.7	1.0	2.4	1.2	2.5	2.5	3.6	3.9	4.1	2.9	3.2	2.6	7.5	3.1	6.4	2.5	5.1	4.8	5.0	3.5
29	4.9	2.2	2.0	2.2	2.8	1.0	0.7	2.1	2.9	3.0	2.4	4.2	2.1	2.3	3.9	1.7	6.2	1.8	3.2	3.9	1.0	2.5	10.8	3.0	3.0
30	0.8	1.2	5.8	2.7	2.3	0.9	1.1	2.0	1.9	1.2	3.3	3.0	3.7	0.8	2.9	1.0	2.7	2.0	0.6	0.4	0.9	1.8	3.2	5.6	2.2
31	1.8	4.3	5.0	0.9	3.0	1.1	0.9	1.8	1.2	2.7	2.6	4.0	0.7	1.2	2.1	2.2	2.0	2.6	(7.3)	5.5	0.9	0.5	2.1	4.7	2.5
Mean	3.6	3.9	3.7	3.2	3.0	2.2	2.1	1.9	2.0	2.0	3.1	3.1	2.7	2.2	2.2	2.8	3.4	3.3	3.7	4.1	3.2	3.6	3.6	3.1	3.0

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

73. ESKDALEUIR (r_D)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	2.3	2.5	(6.2)	2.7	3.9	1.5	1.7	1.2	1.3	2.9	2.1	3.0	2.0	0.7	1.9	4.0	1.8	3.1	1.9	5.0	2.1	1.3	2.1	7.3	2.7
2	3.2	1.0	1.6	2.0	2.5	0.6	0.8	1.1	1.5	2.6	1.9	3.5	2.8	1.1	2.0	2.6	1.6	0.9	1.0	7.9	(4.0)	3.0	2.3	2.8	2.3
3	5.1	2.2	2.6	1.1	1.6	2.5	0.9	2.3	1.7	4.6	3.3	4.7	2.8	2.2	1.7	1.9	1.4	1.9	3.2	2.4	2.5	2.6	4.4	2.3	2.6
4	2.2	6.3	13.0	6.6	3.5	1.9	1.1	1.3	1.3	2.9	2.0	4.0	3.2	2.3	1.5	1.3	1.0	0.7	2.4	2.0	1.0	0.8	0.3	0.8	2.6
5	2.1	5.0	2.8	1.6	1.2	1.9	1.1	1.3	0.7	1.8	2.3	2.0	4.0	2.2	1.8	1.1	3.2	1.2	0.9	1.3	1.9	1.7	2.0	1.6	1.9
6	2.9	4.5	2.2	0.9	1.1	1.1	2.2	2.1	(3.7)	2.1	3.5	2.2	3.7	2.1	1.4	1.5	2.1	2.3	0.5	1.8	7.0	6.6	3.5	3.2	2.7
7	1.2	2.2	2.5	4.0	4.1	4.1	1.0	3.1	1.5	3.0	3.5	3.7	4.2	3.3	2.0	8.6	5.0	1.3	2.2	4.7	12.9	11.9	1.6	1.6	3.9
8	1.4	4.1	(4.3)	1.4	0.9	0.9	1.9	1.8	2.4	2.1	3.6	3.0	2.9	1.9	2.5	2.7	2.2	14.1	(7.0)	3.6	1.3	2.7	1.0	2.9	3.0
9	3.3	4.3	1.4	0.7	1.2	1.2	3.4	3.3	4.3	3.0	(4.5)	2.8	(1.3)	2.2	3.0	3.8	0.7	1.7	1.0	1.0	0.9	0.8	1.1	2.4	2.2
10	4.2	0.8	0.9	1.2	1.3	1.2	3.0	2.1	1.1	1.6	3.9	3.3	2.0	2.3	(6.0)	1.0	0.8	2.2	3.9	1.4	2.2	0.6	0.5	0.7	2.0
11 Q	0.3	1.0	1.3	0.9	0.3	1.2	1.7	2.4	(2.0)	2.1	2.9	3.5	2.8	1.3	1.5	1.9	1.6	1.9	0.7	0.8	1.9	1.3	2.0	1.8	1.6
12 Q	0.8	1.1	1.2	1.7	1.7	1.0	1.1	0.8	0.9	1.7	2.0	2.7	2.6	0.7	2.0	1.3	1.4	0.6	0.4	0.7	0.4	0.2	0.5	0.3	1.2
13 Q	1.1	0.7	0.6	0.6	0.7	1.0	1.7	2.1	0.6	1.5	(2.0)	3.0	2.2	1.8	2.0	0.8	0.5	1.0	0.7	1.2	0.8	0.6	0.5	0.3	1.2
14	0.2	0.3	0.7	0.7	0.8	1.3	1.9	2.2	0.9	1.9	3.2	5.1	4.0	2.7	2.0	1.2	1.0	1.8	2.4	3.0	2.2	2.1	4.9	1.2	2.0
15 D	1.9	0.9	2.1	2.0	1.9	3.5	3.0	1.0	1.0	3.6	3.0	3.9	2.2	1.6	4.0	1.3	1.9	2.0	5.0	5.0	(21.5)	14.3	7.9	6.6	4.2
16 D	2.3	6.7	8.2	6.1	5.6	4.1	3.0	2.0	2.8	3.7	5.6	2.9	3.3	2.9	6.0	1.2	1.1	2.8	5.5	18.1	13.0	0.9	6.6	9.2	5.1
17 D	8.0	4.1	10.6	6.7	4.5	1.8	3.6	4.7	1.6	1.4	5.0	2.5	10.2	7.5	5.4	4.3	5.8	2.0	2.4	3.9	6.0	4.0	10.3	7.9	5.2
18	15.1	11.5	2.6	5.4	4.1	3.9	4.3	6.9	2.7	1.4	2.7	3.8	4.6	3.7	4.0	3.6	4.1	3.0	8.0	4.8	3.9	11.2	8.3	8.9	5.5
19 D	6.7	4.9	9.8	3.1	2.3	1.2	5.7	1.9	2.0	2.9	4.0	3.9	6.5	4.1	1.6	6.7	(2.5)	3.0	9.2	4.7	5.0	8.1	7.6	8.0	4.9
20	3.0	2.1	1.3	2.5	3.2	7.7	7.1	5.1	(3.9)	1.9	5.7	1.9	3.5	1.9	4.5	3.7	(3.3)	2.1	3.5	11.4	5.8	3.9	1.8	2.9	3.9
21	2.8	3.8	2.5	4.2	2.7	1.7	2.0	2.0	1.8	4.0	3.5	4.1	3.0	1.4	2.2	2.3	1.6	1.9	14.2	5.1	5.1	2.6	10.9	11.8	4.1
22	4.7	4.4	3.0	2.7	3.2	2.6	2.7	6.1	1.7	4.7	2.1	3.0	(3.8)	2.0	7.3	3.9	4.1	7.0	1.7	1.3	9.5	7.6	2.2	4.0	4.0
23	2.8	3.0	1.7	3.1	2.0	4.6	4.7	4.2	1.0	1.9	3.7	4.4	4.8	3.7	4.0	2.8	2.8	3.0	1.9	15.0	14.0	3.7	4.6	10.4	4.5
24	4.6	1.6	1.9	1.8	1.5	1.2	1.6	1.1	1.1	2.8	3.0	3.1	1.8	1.3	2.4	4.6	1.4	1.7	1.5	3.0	1.2	1.8	5.8	5.3	2.4
25	3.7	1.6	1.6	0.9	0.8	1.5	1.1	2.0	1.1	2.8	2.7	3.2	2.1	1.9	1.3	1.6	6.2	3.0	2.1	1.7	1.1	1.2	1.7	2.6	2.1
26	6.8	4.9	1.7	1.9	0.4	1.0	2.1	2.0	2.0	(1.7)	2.9	5.2	2.1	3.6	2.8	1.2	1.2	3.0	2.3	12.6	6.7	2.6	2.8	0.6	3.1
27	0.7	0.7	2.0	1.5	2.0	1.4	0.5	0.5	1.1	1.8	2.3	3.6	2.3	1.0	1.9	1.4	1.0	1.3	4.6	3.2	1.8	12.8	5.7	1.7	2.4
28 Q	2.0	6.8	4.7	3.6	2.1	1.5	0.7	1.1	1.2	2.1	1.9	2.0	4.0	1.6	2.0	(1.7)	1.0	0.8	2.0	1.1	1.9	2.2	1.7	4.9	2.3
29 Q	2.3	0.6	0.4	0.9	0.7	0.9	0.8	1.0	0.7	2.2	3.3	3.4	5.0	1.7	1.5	1.0	1.0	0.7	2.4	1.0	1.2	0.8	1.0	2.3	1.5
30 D	1.0	1.7	1.3	0.8	0.5	1.5	0.7	1.2	(1.0)	2.5	1.9	2.9	0.7	0.8	1.6	0.5	6.7	4.1	2.6	2.4	16.0	10.1	10.5	5.4	3.3
Mean	3.3	3.2	3.2	2.4	2.1	2.1	2.2	2.3	1.7	2.5	3.1	3.3	3.3	2.3	2.8	2.5	2.3	2.5	3.2	4.4	5.2	4.1	3.9	4.1	3.0

74. ESKDALEUIR (r_D)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1 D	6.1	1.7	0.9	1.8	0.8	4.0	4.9	3.1	4.0	3.5	4.2	5.1	8.9	5.7	9.0	32.6	53.0	44.1	(15.0)	19.1	19.8	28.0	12.6	21.7	12.9
2	18.8	16.8	3.6	3.1	1.2	1.1	2.3	1.6	1.5	2.5	(1.0)	1.5	1.9	0.8	0.9	0.7	0.9	1.6	0.8	0.4	0.9	8.4	(3.5)	4.2	3.3
3	3.4	4.0	4.0	1.9	1.9	1.3	3.2	2.8	1.6	3.5	(2.2)	1.0	1.1	2.6	2.1	1.7	1.0	1.4	10.0	4.5	1.2	1.0	5.3	3.7	2.8
4	2.0	2.8	3.1	4.1	3.6	3.5	3.0	6.2	4.7	2.5	2.7	1.0	2.0	1.3	1.9	2.0	2.0	2.8	18.7	20.0	3.2	1.1	0.3	0.6	4.0
5	2.0	1.2	1.0	1.8	1.3	5.4	3.0	3.9	2.5	3.1	3.2	1.6	4.1	1.0	1.3	1.3	1.9	2.0	1.2	6.3	8.0	4.9	2.4	7.9	3.0
6	1.7	11.0	(10.6)	4.0	3.2	4.3	3.4	1.1	2.9	(6.0)	2.7	2.0	3.2	6.0	2.7	1.8	2.7	1.9	1.1	5.9	4.5	2.0	2.3	15.4	4.3
7	7.8	3.4	1.6	1.9	2.7	2.0	2.0	3.9	3.2	3.1	1.7	3.1	1.8	1.5	3.2	1.9	1.0	0.6	0.5	0.5	0.8	0.8	1.0	0.9	2.1
8	1.2	2.0	1.9	2.9	1.8	2.0	2.0	1.9	(2.3)	1.9	3.0	2.7	1.6	1.5	2.4	1.1	1.2	1.7	1.6	1.0	0.2	0.4	1.0	0.3	1.7
9 Q	0.2	0.3	0.7	0.8	1.2	1.6	1.9	1.0	1.2	1.6	3.0	2.8	1.3	0.7	1.2	1.8	1.6	0.8	0.2	0.5	0.3	0.5	0.6	1.0	1.1
10 Q	0.9	1.2	0.7	2.1	2.5	1.7	1.8	1.9	3.5	1.7	2.2	2.7	1.7	1.1	1.1	1.1	1.3	0.9	0.5	0.3	0.6	0.4	0.5	0.7	1.4
11	1.2	3.8	3.6	1.8	2.9	0.9	1.0	1.7	1.3	3.7	3.7	2.3	1.3	1.2	1.0	2.1	2.0	1.6	2.1	0.7	0.2	0.2	0.2	0.7	1.7
12 Q	0.3	0.3	0.5	1.8	1.8	1.7	0.9	0.7	0.9	2.7	3.1	3.4	1.5	1.0	1.3	2.6	1.0	0.6	0.7	0.3	0.4	1.6	2.8	1.3	1.4
13	1.4	1.6	1.1	2.3	3.0	1.9	4.2	1.3	2.0	3.9	4.1	2.0	0.8	0.5	0.6	1.5	1.8	2.0	1.3	0.6	7.5	4.9	1.0	1.7	2.2
14	8.2	6.1	1.8	1.0	2.0	0.8	1.2	2.1	3.0	1.9	4.3	4.4	2.8	1.0	0.9	1.0	3.0	1.7	7.0	7.6	14.5	5.4	2.2	5.7	3.7
15	2.0	0.8	1.5	4.0	3.0	2.9	3.2	1.9	5.0	1.6	(2.0)	1.7	1.3	1.1	0.7	1.0	1.4	1.8	3.9	2.6	0.8	5.2	7.0	5.8	2.6
16	3.8	3.7	1.4	1.0	0.9	1.7	0.4	1.1	1.0	2.2	(2.0)	1.9	1.1	1.0	0.9	1.1	0.9	2.4	6.8	3.0	1.0	3.1	1.6	2.5	1.9
17	(5.0)	3.1	2.6	0.8	1.1	0.5	2.2	2.1	1.7	2.0	3.6	1.7	0.9	1.2	2.0	2.6	1.8	1.3	3.9	3.2	3.0	3.0	5.6	7.3	2.6
18 D	5.4	8.0	8.6	9.1	5.3	7.5	4.5	6.6	6.0	4.7	(4.0)	2.4	2.6	1.2	2.0	2.2	2.9	1.2	7.1	6.8	1.7	2.1	(3.4)	3.1	4.5
19	2.1	1.6	0.9	4.0	0.9	2.8	2.0	2.9	2.8	3.1	2.9	2.8	3.6	2.0	2.0	0.9	0.5	1.0	7.0	3.9	5.8	7.2	0.7	1.3	2.7
20	0.8	2.0	2.3	3.0	2.2	2.2	1.0	1.1	1.2	1.9	2.3	3.2	1.9	1.0	0.8	0.4	1.7	1.0	0.8	0.9	0.7	3.7	1.6	1.9	1.7
21	1.5	2.0	2.0	3.0	1.0	1.4	0.9	0.7	2.6	2.7	1.9	2.1	1.8	1.9	1.3	2.1	0.2	2.7	1.0	1.6	0.9	0.3	1.3	0.8	1.5
22	3.7	5.0	2.2	1.1	2.2	1.0	1.9	1.0	2.3	2.1	3.0	3.0	0.9	1.6	2.0	0.7	1.5	2.8	0.6	1.0	0.8	0.9	4.5	4.3	2.1
23	2.0	1.1	1.2	1.3	1.1	1.4	1.0	1.0	2.3	5.2	3.0	1.0	0.7	1.3	1.8	1.6	2.7	0.8	0.4	1.0	0.6	2.0	1.7	0.8	1.5
24 Q	0.3	0.9	1.8	1.2	1.3	1.9	0.9	1.0	2.4	3.5	3.6	3.4	1.2	0.4	2.0	1.1	1.1	0.9	0.7	0.6	0.6	0.7	1.3	1.0	1.4
25 Q	2.0	4.2	3.4	1.0	0.8	1.8	1.1	0.5	1.2	2.3	3.4	3.6	1.3	0.3	1.3	1.3	1.8	1.0	1.6	0.8	0.5	1.2	0.8	0.9	1.6
26 Q	1.0	1.3	1.3	0.7	2.2	1.0	0.7	0.9	2.0	2.9	2.4	2.0	1.0	0.6	1.1	2.0	1.2	0.3	0.1	0.7	0.2	0.2	0.2	0.3	1.1
27	0.7	1.0	0.7	1.4	0.9	1.5	0.6	0.7	1.5	2.7	2.1	3.0	2.7	0.7	0.8	1.0	2.6	3.9	(5.0)	2.8	0.8	3.5	9.8	4.6	2.3
28	3.7	11.6	3.6	5.1	1.4	1.0	1.0	1.6	2.0	2.5	3.0	2.1	0.9	1.1	1.1	0.2	0.6	1.0	0.8	0.5	0.7	1.0	0.5	0.6	2.0
29 D	0.5	0.5	0.8	1.0	1.6	1.9	4.2	1.6	1.1	3.2	(3.3)	2.3	3.7	2.2	1.3	1.2	3.1	3.2	(1.3)	2.4	15.7	7.8	1.0	3.8	2.9
30 D	7.4	8.9	14.5	5.6	3.4	3.9	3.0	5.2	(5.3)	1.9	3.4	3.6	3.3	1.0	2.0	2.1	3.0	6.0	3.5	1.3	0.9	0.8	1.0	6.7	4.1
31 D	4.2	2.0	2.7	7.9	2.4	7.1	3.6	3.0	2.5	2.9	(3.0)	3.5	2.6	(3.0)	4.6	1.9	1.3	1.3	2.0	3.9	1.7	3.0	5.0	7.7	3.5
Mean	3.3	3.7	2.8	2.7	2.0	2.4	2.2	2.1	2.5	2.9	2.9	2.5	2.1	1.5	1.8	2.5	3.3	3.0	3.5	3.4	3.2	3.4	2.7	3.8	2.8

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

75. ESKDALEMUR (r_D)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1 D	3.0	1.8	11.9	19.1	8.7	6.1	2.6	2.9	1.8	3.5	3.3	3.0	3.2	1.9	1.5	3.9	4.8	1.9	0.9	5.9	4.0	1.3	2.0	1.9	4.2
2	1.6	1.5	4.3	2.1	1.4	2.0	1.9	2.0	2.2	3.3	2.9	1.9	2.2	1.9	2.2	1.8	1.9	1.8	1.0	1.0	1.7	1.7	2.0	0.9	2.0
3	3.5	3.1	2.9	1.3	1.7	1.7	1.0	3.4	2.0	1.8	2.3	1.9	2.2	1.4	2.8	1.8	1.1	1.2	0.6	2.1	1.1	1.1	0.9	0.8	1.8
4	0.9	4.1	3.9	1.1	0.7	1.4	1.0	1.0	2.0	2.6	3.1	2.2	0.9	0.9	1.1	2.3	1.0	1.1	1.5	1.2	0.7	0.9	1.0	1.0	1.6
5 Q	4.0	2.6	1.7	2.0	2.1	1.7	1.1	2.3	2.0	2.2	2.1	3.4	0.7	0.8	1.4	1.3	0.9	0.5	0.6	1.0	0.3	0.6	0.8	0.8	1.5
6	0.8	0.7	0.9	1.5	2.1	2.8	1.6	1.2	0.9	2.0	2.3	2.2	1.0	0.4	0.2	0.7	1.0	0.9	0.7	0.3	0.2	0.9	0.7	1.2	1.1
7	1.0	0.9	0.8	2.5	1.3	2.1	2.3	1.3	1.2	2.7	1.7	1.6	1.1	1.7	1.5	1.9	1.1	1.1	0.8	0.8	0.7	0.7	1.2	2.6	1.4
8	2.1	1.1	1.3	1.6	3.2	5.0	2.0	2.2	4.0	3.1	(5.0)	2.7	1.7	1.5	1.8	1.9	1.7	0.9	1.7	3.3	1.9	2.8	3.9	8.0	2.7
9	4.0	4.9	2.1	2.9	2.8	4.7	7.0	5.9	4.9	1.9	3.7	2.8	2.0	1.2	2.2	0.9	2.1	1.1	1.3	0.9	0.8	0.3	0.6	1.1	2.6
10	3.0	1.1	1.2	1.0	1.6	0.8	1.1	1.5	0.7	1.2	3.0	2.4	3.6	2.7	1.1	1.5	2.9	1.0	0.8	3.9	1.0	0.9	1.0	0.8	1.7
11	0.3	0.7	1.9	1.9	4.2	0.9	1.0	1.4	2.5	1.0	2.7	2.0	1.0	1.2	1.1	0.5	1.3	0.8	0.8	1.1	2.2	0.9	0.8	0.4	1.4
12	2.9	2.9	0.3	1.6	1.9	2.4	0.8	1.1	1.4	0.7	2.3	2.3	1.7	0.8	1.3	0.6	0.7	1.2	0.3	0.6	2.3	1.0	5.2	4.0	1.7
13 D	7.7	5.3	(11.6)	19.3	(5.0)	6.9	9.0	8.8	2.7	2.3	(4.8)	4.0	4.2	4.5	4.1	5.9	3.9	3.8	11.1	3.5	3.0	11.7	19.6	17.0	7.5
14 D	18.5	4.3	5.0	1.4	2.3	2.8	4.0	3.3	2.5	2.0	2.4	1.9	2.3	2.3	1.9	0.9	1.4	1.3	(4.0)	1.8	0.9	1.6	6.0	3.9	3.3
15	2.9	10.9	11.0	1.0	1.9	1.7	1.2	1.1	1.0	1.8	2.6	1.1	1.2	1.9	1.0	1.1	1.6	2.1	1.0	0.7	0.7	3.9	3.1	1.1	2.4
16 Q	0.9	1.2	1.0	0.7	1.4	2.1	1.7	0.8	2.1	2.8	3.6	2.4	1.7	0.3	0.8	2.0	1.4	0.7	1.3	0.7	0.8	1.0	1.8	0.9	1.4
17	0.8	0.9	1.0	1.0	2.1	1.7	1.9	0.8	2.0	(2.0)	1.3	3.0	1.1	1.5	1.0	2.0	0.8	1.6	0.8	0.3	0.8	0.6	1.4	0.7	1.3
18 Q	0.7	0.6	1.6	0.9	1.1	3.0	1.9	1.0	2.0	1.9	2.9	2.8	0.9	0.3	0.5	1.8	1.1	0.4	0.7	0.5	0.6	0.9	2.9	2.9	1.4
19	1.9	2.0	0.9	0.6	1.8	1.3	0.7	2.0	2.9	(2.0)	4.0	3.7	2.5	0.8	1.2	1.0	1.9	1.9	1.9	2.0	(6.0)	2.9	2.1	3.7	2.2
20 D	3.6	7.7	1.5	3.0	2.9	9.5	3.9	1.4	3.1	6.9	3.2	3.8	2.5	2.4	2.0	3.4	3.0	1.9	0.8	1.8	1.7	1.3	1.8	2.3	3.1
21	(4.0)	1.9	1.7	2.0	1.0	1.8	3.2	2.2	1.7	1.8	2.1	2.7	2.1	1.6	1.2	1.1	0.9	0.8	2.2	1.0	0.9	1.9	1.7	4.7	1.9
22	5.0	2.0	1.9	1.8	1.5	2.7	1.1	2.1	0.9	2.4	2.1	2.0	2.1	0.9	0.8	1.6	0.7	1.5	1.7	0.8	0.8	0.7	0.6	0.7	1.6
23	0.6	0.2	0.7	1.1	1.3	0.7	0.7	1.2	1.0	3.3	2.5	1.2	1.9	1.0	0.7	1.3	1.2	0.4	0.2	0.8	1.2	0.8	3.2	2.4	1.2
24 Q	0.9	1.2	1.1	1.4	1.3	0.5	1.1	1.4	1.0	1.8	4.8	2.4	0.5	0.5	0.8	1.1	1.3	0.6	0.6	0.8	0.7	1.0	1.0	0.6	1.2
25	(1.0)	0.8	0.7	2.1	2.5	1.2	0.8	0.9	1.3	3.0	5.1	3.3	(5.0)	1.9	0.9	1.3	4.0	1.9	1.9	5.4	1.8	2.3	8.0	3.1	2.5
26	3.0	5.1	2.0	2.6	3.4	2.7	1.1	1.1	1.6	(3.0)	2.2	2.0	2.7	2.1	0.9	1.0	1.9	2.6	1.8	0.6	0.4	0.7	0.8	1.3	1.9
27	0.4	0.7	1.0	1.6	(1.5)	1.9	1.6	1.2	0.9	4.4	2.0	2.9	3.5	3.2	2.9	4.6	2.8	2.8	1.2	1.9	0.3	0.4	0.8	1.8	1.9
28 D	12.2	3.0	2.1	2.0	2.9	3.2	3.1	1.1	1.6	2.9	1.4	1.9	3.9	3.3	3.4	5.8	2.9	1.7	2.8	1.9	7.8	5.0	2.4	7.6	3.6
29	4.2	5.7	3.1	8.0	3.8	2.7	2.8	2.6	(3.5)	3.6	1.2	2.2	2.0	2.3	2.1	3.1	1.1	1.7	3.0	1.1	1.0	1.2	1.1	3.2	2.8
30	2.2	1.8	2.3	2.4	3.3	5.7	1.1	2.0	2.3	2.1	2.7	3.1	2.7	1.3	1.0	1.8	1.2	2.3	1.3	0.4	0.2	0.9	1.6	1.8	2.0
Mean	3.2	2.7	2.8	3.1	2.4	2.8	2.1	2.0	2.0	2.5	2.8	2.5	2.1	1.6	1.5	2.0	1.8	1.4	1.6	1.6	1.6	1.8	2.7	2.8	2.2

76. ESKDALEMUR (r_D)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1	(1.2)	0.9	1.0	1.7	0.9	1.0	1.0	2.1	1.1	1.4	1.3	3.5	2.0	0.6	0.7	1.9	0.9	0.8	2.0	1.4	3.5	2.3	2.8	8.5	1.9
2	6.5	2.2	1.1	1.3	2.9	2.1	3.6	2.1	3.0	2.6	1.6	3.2	2.4	1.1	0.9	2.1	2.6	0.9	0.6	0.9	0.3	0.7	1.6	1.1	2.0
3	2.8	6.8	1.1	1.2	2.7	0.6	3.3	0.8	1.0	2.5	2.6	1.8	2.0	1.7	1.5	1.2	0.9	0.9	2.3	0.6	0.7	0.9	0.9	1.0	1.7
4	0.5	1.8	3.4	2.9	3.7	1.0	0.9	1.6	1.0	2.0	2.5	2.3	2.1	1.1	1.2	0.9	0.6	0.9	1.4	5.1	3.6	1.1	0.8	1.1	1.8
5	1.5	4.7	4.2	4.0	1.2	2.1	0.8	1.8	0.9	1.9	1.9	2.0	1.5	0.6	1.3	1.0	1.8	1.1	0.4	0.2	0.7	0.3	0.6	0.5	1.5
6	1.9	2.1	2.0	2.7	1.7	0.7	0.9	1.0	1.3	4.5	3.4	1.8	1.3	0.7	1.2	0.9	2.1	0.9	2.0	0.8	0.9	1.0	0.5	0.5	1.5
7	0.8	0.7	0.9	1.2	2.3	2.1	1.0	0.9	1.1	4.6	4.9	2.3	0.4	1.0	1.0	1.0	1.5	1.7	0.8	1.1	0.8	1.1	0.6	1.3	1.5
8	2.2	0.7	0.8	1.0	1.5	1.0	1.6	1.7	(1.0)	3.0	3.1	4.0	3.4	1.8	1.0	2.4	2.8	3.0	1.1	0.9	2.2	1.0	2.7	6.5	2.1
9 D	5.9	7.0	3.4	1.0	2.7	2.0	4.1	3.7	4.2	(5.0)	2.9	5.3	(4.0)	3.5	2.8	2.4	2.3	1.1	1.0	6.2	2.0	1.0	1.8	1.3	3.2
10	0.9	2.9	1.4	2.0	3.7	2.8	1.8	1.0	2.3	3.1	4.0	2.6	0.9	2.0	1.0	1.6	1.3	1.9	2.3	8.4	5.4	5.9	3.8	2.1	2.7
11	3.9	1.3	4.2	3.7	1.9	1.4	2.3	2.9	5.1	1.6	4.8	2.8	2.2	4.1	3.3	5.1	1.7	3.0	1.7	1.4	0.8	1.0	0.4	3.0	2.7
12	2.2	2.2	5.5	2.9	5.1	2.0	1.0	1.5	2.5	2.2	2.8	2.6	2.1	1.2	2.2	1.3	0.8	1.3	1.7	0.8	1.0	1.2	0.9	1.0	2.0
13 Q	2.0	3.0	1.3	1.4	1.0	1.2	1.1	1.0	0.8	1.3	1.4	1.6	2.2	1.9	0.9	1.5	1.0	1.0	0.8	0.5	0.4	0.8	1.3	2.5	1.3
14 Q	2.9	1.6	1.8	0.7	1.3	1.8	1.5	1.9	1.2	2.0	3.1	1.7	2.1	0.9	0.8	0.6	0.3	0.3	1.0	2.4	0.9	0.9	2.2	3.6	1.6
15 Q	1.5	0.8	1.2	0.8	1.1	1.1	0.9	1.0	0.7	2.3	3.2	1.8	1.2	0.5	1.0	0.9	0.9	1.0	0.3	0.9	0.7	0.8	1.8	0.8	1.1
16	0.6	0.7	0.4	0.3	0.9	1.2	1.9	0.8	2.3	2.2	1.9	2.7	1.9	0.7	1.2	1.0	0.5	1.9	1.2	1.6	1.1	1.4	0.8	0.9	1.3
17 D	2.1	4.1	3.5	0.9	1.6	1.9	1.0	1.1	1.0	1.2	(4.5)	3.1	3.4	2.8	3.1	2.0	2.0	1.9	1.3	0.9	4.2	3.3	5.3	2.4	2.4
18	5.6	9.0	2.1	5.7	(4.0)	2.0	3.1	2.8	3.8	2.0	3.0	2.9	1.2	1.6	1.8	0.8	0.9	1.0	3.1	2.3	2.9	1.0	0.9	0.8	2.7
19	0.8	1.7	1.0	3.0	1.9	2.0	1.4	1.1	2.0	1.7	3.2	3.0	1.8	0.9	3.0	0.9	1.1	1.0	0.7	0.6	1.0	2.2	2.3	3.0	1.7
20	6.6	4.6	1.0	2.0	2.1	2.5	1.1	1.1	2.9	3.8	1.7	3.9	3.4	0.9	2.1	3.6	2.6	1.8	0.4	0.4	0.9	2.0	2.0	0.9	2.3
21 Q	1.9	1.1	1.2	3.9	3.2	2.8	1.4	0.9	1.8	1.9	3.5	2.3	0.6	1.0	0.7	1.0	1.2	1.9	0.6	0.4	0.9	0.6	0.7	0.7	1.5
22	1.0	0.9	6.9	1.7	0.8	0.8	1.3	0.7	0.9	2.0	3.7	2.2	2.1	1.3	0.9	3.0	1.8	1.1	0.8	1.7	0.5	0.8	0.2	0.6	1.6
23 D	1.4	3.1	2.2	1.0	0.6	2.4	0.9	0.9	1.0	1.8	(3.5)	4.2	4.6	4.9	2.9	2.8	1.1	2.3	1.3	6.2	2.3	3.0	17.2	6.1	3.2
24 D	3.4	4.5	6.6	6.8	3.8	3.2	6.7	3.7	4.6	4.0	3.1	4.2	2.9	1.8	2.7	14.7	7.0	1.1	0.7	0.7	1.0	2.2	2.0	1.7	1.9
25	1.6	0.8	1.3	0.9	1.4	1.1	0.9	2.0	1.5	1.3	3.1	4.5	2.2	2.0	1.9	2.2	2.0	0.7	0.8	0.9	0.8	1.8	3.3	2.2	1.7
26	2.1	0.7	1.0	1.1	0.9	1.8	2.0	1.2	1.1	2.1	3.2	1.3	(2.8)	2.3	1.1	0.9	2.8	2.9	0.9	2.4	0.8	0.8	2.3	6.6	1.9
27 D	4.2	2.3	1.4	2.1	3.6	2.3	2.2	1.3	2.1	5.0	3.3	4.2	1.2	2.0	2.2	1.9	0.7	1.4	1.4	4.4	3.3	2.4	15.5	4.2	3.1
28	1.1	0.7	0.8	0.7	1.2	3.2	0.9	1.1	(1.0)	2.3	2.6	2.0	3.3	1.2	0.7	(2.5)	2.1	1.0	3.1	1.8	0.8	0.3	0.7	1.8	1.5
29	1.2	0.8	2.1	3.9	1.7	1.1	1.0	1.1	2.2	(2.4)	(1.6)	3.0	(3.8)	1.2	1.4	1.6	1.3	1.1	1.0	1.0	0.4	0.9	1.2	1.0	1.6
30 Q	1.1	1.2	1.3	0.9	1.3	1.0	1.4	1.0	1.0	2.0	3.7	2.1	1.5	1.3	0.9	0.9	0.9	0.7	0.1	0.9	0.8	1.4	1.4	0.7	1.2
31	1.1	1.2	1.5	0.8	1.2	2.0	1.3	1.2	2.0	2.4	0.8	1.1	1.4	0.9	1.3	1.0	0.4	0.3	4.8	3.1	0.8	0.2	0.6	0.9	1.3
Mean	2.3	2.5	2.2	2.1	2.1	1.7	1.8	1.5	1.9	2.5	2.9	2.8	2.2	1.6	1.6	2.1	1.6	1.4	1.3	2.0	1.5	1.4	2.6	2.2	2.0

HOURLY RANGES OF DECLINATION
for periods of 60 minutes ending at the hours of Greenwich Mean Time

77. ESKDALEMUIR (rD)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Day																									
1 Q	0.8	1.0	2.0	2.3	1.1	2.6	1.1	0.9	2.0	(2.5)	2.8	2.2	2.2	0.7	2.1	2.0	1.0	1.4	1.1	0.6	0.5	0.4	1.1	1.3	1.5
2	0.9	0.9	0.7	1.8	2.0	1.7	1.1	0.8	1.3	1.8	3.0	2.9	2.1	1.7	1.3	1.8	1.8	0.8	1.0	0.7	1.1	5.9	3.0	0.9	1.7
3	1.2	0.9	3.4	1.1	3.8	1.2	1.0	0.5	2.1	(2.2)	(2.5)	1.7	0.9	0.7	1.0	1.3	1.6	1.2	0.8	1.0	0.5	1.1	1.0	0.6	1.4
4	0.8	1.1	0.6	0.4	1.0	1.0	0.9	0.9	1.1	1.8	1.8	1.1	1.9	0.5	0.8	1.1	0.9	0.8	1.1	0.9	0.6	0.8	1.7	3.7	1.1
5 D	1.2	1.2	0.9	0.8	2.2	1.2	3.7	3.3	(5.2)	1.9	6.8	3.9	8.4	6.2	6.3	7.7	4.6	10.5	41.1	17.8	4.5	3.2	1.8	3.1	6.1
6 D	3.7	3.1	(2.5)	14.1	3.0	4.7	3.0	3.8	2.9	3.6	3.9	2.8	3.0	3.2	1.5	3.0	4.1	5.8	4.8	2.9	1.8	0.6	0.7	1.1	3.9
7	1.2	2.0	3.1	2.2	2.2	1.0	0.6	0.9	1.8	1.9	1.2	2.7	1.1	0.7	1.2	0.9	0.6	2.9	0.3	0.2	0.3	1.7	4.0	4.1	1.6
8	1.3	3.8	2.5	4.3	1.8	1.0	0.6	3.1	1.7	2.1	4.1	3.7	1.7	0.9	2.3	1.9	2.1	1.2	0.7	0.9	0.5	0.6	4.4	1.8	2.0
9 Q	1.6	0.7	0.4	1.0	1.5	1.2	0.5	0.6	1.2	3.0	4.1	3.1	1.2	1.0	2.7	2.6	1.1	1.8	1.0	0.7	0.7	0.8	2.4	3.2	1.6
10 Q	0.2	0.9	3.7	4.1	1.0	1.1	0.6	0.8	1.5	2.3	2.8	3.2	3.5	1.2	2.1	1.7	2.1	2.2	0.5	0.8	0.2	0.6	0.4	0.8	1.6
11 Q	0.7	2.4	1.1	0.6	1.0	2.1	1.6	2.3	1.2	(2.5)	3.1	3.1	1.8	0.9	1.0	1.2	1.1	0.9	0.7	0.8	0.7	0.7	1.9	1.0	1.4
12	0.6	0.8	0.9	0.9	1.0	0.9	0.3	0.9	2.4	2.0	2.1	2.7	1.3	1.0	1.4	1.8	1.6	1.0	1.8	0.9	0.7	1.0	1.3	2.2	1.3
13 D	3.3	0.8	0.8	0.6	1.1	1.9	1.0	1.9	4.2	5.4	3.0	6.0	1.9	1.5	1.2	6.1	4.1	0.9	5.0	29.4	12.3	4.3	16.7	9.8	5.1
14	2.6	4.9	7.2	6.1	1.1	2.0	3.4	3.8	2.0	3.6	3.2	2.5	1.1	1.6	3.7	1.1	1.5	2.9	0.6	0.8	2.0	9.4	5.7	1.8	3.1
15	1.4	2.6	3.1	2.2	1.1	2.3	2.9	1.7	(3.0)	1.9	4.0	2.5	1.8	4.0	2.2	2.1	2.2	1.0	9.1	7.0	1.5	1.1	2.0	0.7	2.6
16	4.1	3.0	4.1	1.1	2.3	1.9	1.8	1.8	2.2	2.0	2.1	1.3	2.0	1.1	1.6	1.5	1.3	0.6	1.2	1.0	1.0	0.8	2.9	1.0	1.8
17	2.0	0.9	5.5	5.3	2.2	3.0	5.0	3.9	4.9	2.4	2.0	2.6	1.9	1.9	2.1	2.5	0.9	1.2	4.0	3.1	4.5	0.9	0.9	1.7	2.7
18 D	3.0	3.1	0.8	0.6	1.2	4.2	5.6	5.4	2.7	3.2	1.9	2.1	0.7	1.6	2.3	2.8	2.9	9.2	9.9	18.8	15.5	5.9	2.7	12.1	4.9
19	12.2	4.8	10.8	4.3	3.3	4.9	4.1	2.0	2.9	3.0	3.2	2.9	1.7	1.8	2.1	1.8	1.2	1.7	1.1	1.7	5.0	1.8	1.1	2.6	3.4
20	2.7	2.8	2.1	1.1	2.6	2.1	1.1	1.8	1.0	3.0	3.0	2.1	1.2	3.1	1.6	2.1	1.0	2.9	6.7	3.6	4.1	13.3	11.0	4.1	3.3
21 D	1.6	3.5	2.2	3.4	2.2	1.0	1.9	2.0	2.0	(3.0)	(3.2)	3.0	3.1	3.1	2.8	3.6	16.9	3.6	0.9	14.9	8.7	2.6	0.9	2.7	3.9
22	1.8	0.9	2.7	1.0	1.3	1.8	1.1	2.1	2.9	2.4	1.3	1.2	1.6	1.0	1.0	1.5	0.7	0.4	0.7	1.1	1.2	0.8	0.6	0.9	1.3
23	0.4	0.3	0.6	1.1	0.9	2.1	2.0	2.2	2.7	4.1	2.0	1.6	2.7	3.0	3.5	3.8	2.0	2.6	15.0	13.9	1.2	4.7	5.6	1.9	3.3
24	1.7	2.1	2.9	4.4	1.1	1.3	1.0	2.0	7.6	1.1	4.2	2.0	1.2	1.1	2.1	2.2	6.0	2.4	6.7	7.7	11.3	2.1	3.1	6.1	3.5
25	6.7	8.8	3.9	3.2	4.6	3.0	2.0	1.7	4.0	2.1	(2.3)	2.1	0.8	2.2	1.3	2.1	0.7	0.9	1.9	1.9	1.0	0.7	0.9	1.2	2.5
26	3.8	3.3	7.0	3.8	6.2	5.1	1.2	1.9	(3.0)	3.1	3.0	4.0	1.7	2.3	1.8	1.2	2.9	1.3	1.1	2.3	2.7	1.7	1.5	1.4	2.8
27	2.7	4.1	0.8	2.2	1.4	1.8	2.0	0.9	1.2	2.1	2.0	2.4	1.8	1.0	2.1	1.2	0.7	0.5	0.8	1.4	1.0	1.0	1.9	2.0	1.6
28	0.8	1.6	2.1	1.1	0.8	0.5	0.3	0.7	1.0	2.5	(3.3)	3.2	1.1	0.9	1.5	2.2	1.0	0.7	0.6	0.7	0.8	3.0	1.8	1.3	1.4
29	1.8	1.0	0.6	0.9	1.2	0.9	1.9	1.1	1.6	2.9	3.0	1.8	1.6	1.2	1.8	2.0	1.0	0.5	0.8	0.7	0.4	0.6	0.3	0.7	1.3
30	1.7	3.2	1.1	1.4	1.6	1.9	1.2	1.3	1.0	2.6	2.6	2.3	1.4	1.8	1.3	1.0	1.0	0.7	0.3	0.8	0.6	0.5	0.7	2.3	1.4
31 Q	1.5	0.7	0.7	0.5	0.2	0.1	0.9	0.7	1.0	2.5	(2.5)	1.3	1.0	2.0	1.2	1.1	0.4	1.0	0.7	0.7	2.2	3.0	2.9	1.6	1.3
Mean	2.3	2.3	2.9	2.5	1.9	2.0	1.8	1.8	2.4	2.6	2.9	2.6	1.9	1.8	2.0	2.2	2.3	2.1	3.9	4.5	2.9	2.4	2.8	2.6	2.5

HOURLY RANGES OF DECLINATION
Monthly, seasonal and annual Means

78. ESKDALEMUIR (rD)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1932																									
August	2.4	3.2	3.2	2.4	2.3	2.3	2.5	2.6	2.5	2.8	3.3	3.0	2.7	2.0	2.1	3.3	2.8	3.2	3.8	2.8	2.3	3.2	3.7	3.4	2.8
September	3.1	3.8	2.8	2.4	2.7	2.0	2.1	2.0	1.8	2.9	3.1	2.6	1.7	1.9	2.1	3.8	3.4	3.1	2.3	3.4	3.6	4.5	3.9	2.9	2.8
October	3.1	3.3	2.2	2.0	2.1	1.6	1.3	1.7	1.6	2.0	2.6	2.9	2.5	1.8	2.2	3.0	3.1	3.3	2.1	3.4	3.1	3.1	3.3	3.1	2.5
November	1.8	1.7	2.0	1.9	1.9	1.9	2.0	1.8	1.9	1.8	2.4	2.3	1.8	1.6	2.1	2.3	2.3	2.7	2.6	2.1	2.6	2.3	2.3	2.1	2.1
December	3.5	3.4	2.5	2.3	1.5	1.2	1.2	1.2	1.3	1.3	1.8	1.8	1.3	1.6	1.6	1.6	1.6	2.2	2.5	3.0	3.6	4.4	3.4	2.6	2.2
1933																									
January	3.1	3.2	3.0	2.2	2.0	2.2	1.7	1.5	1.4	1.9	2.1	2.1	2.1	1.7	2.1	2.2	2.5	2.3	2.6	3.6	3.3	3.4	3.1	2.7	2.4
February	3.1	3.1	3.1	2.5	1.9	1.7	1.3	1.5	2.0	1.8	2.3	2.4	1.9	2.1	2.6	2.9	3.2	2.4	4.3	4.1	3.3	3.7	4.4	4.7	2.8
March	3.6	3.9	3.7	3.2	3.0	2.2	2.1	1.9	2.0	2.0	3.1	3.1	2.7	2.2	2.2	2.8	3.4	3.3	3.7	4.1	3.2	3.6	3.6	3.1	3.0
April	3.3	3.2	3.2	2.4	2.1	2.1	2.2	2.3	1.7	2.5	3.1	3.3	3.3	2.3	2.8	2.5	2.3	2.5	3.2	4.4	5.2	4.1	3.9	4.1	3.0
May	3.3	3.7	2.8	2.7	2.0	2.4	2.2	2.1	2.5	2.9	2.9	2.5	2.1	1.5	1.8	2.5	3.3	3.0	3.5	3.4	3.2	3.4	2.7	3.8	2.8
June	3.2	2.7	2.8	3.1	2.4	2.8	2.1	2.0	2.0	2.5	2.8	2.5	2.1	1.6	1.5	2.0	1.8	1.4	1.6	1.6	1.6	1.8	2.7	2.8	2.2
July	2.3	2.5	2.2	2.1	2.1	1.7	1.8	1.5	1.9	2.5	2.9	2.8	2.2	1.6	1.6	2.1	1.6	1.4	1.3	2.0	1.5	1.4	2.6	2.2	2.0
August	2.3	2.3	2.9	2.5	1.9	2.0	1.8	1.8	2.4	2.6	2.9	2.6	1.9	1.8	2.0	2.2	2.3	2.1	3.9	4.5	2.9	2.4	2.8	2.6	2.5
Winter	2.9	2.9	2.6	2.2	1.8	1.8	1.6	1.5	1.6	1.7	2.1	2.1	1.8	1.7	2.1	2.2	2.5	2.5	3.1	3.3	3.4	3.2	3.1	3.0	2.4
Equinox	3.3	3.5	3.0	2.5	2.5	1.9	1.9	2.0	1.8	2.3	3.0	3.0	2.5	2.1	2.3	3.0	3.1	3.1	2.8	3.8	3.7	3.8	3.7	3.3	2.8
Summer*	2.8	2.9	2.7	2.6	2.1	2.3	2.0	2.0	2.2	2.7	2.9	2.7	2.2	1.7	1.7	2.3	2.3	2.1	2.6	2.7	2.2	2.4	2.8	3.0	2.4
Year*	3.0	3.1	2.8	2.4	2.2	2.0	1.8	1.8	1.9	2.2	2.7	2.6	2.2	1.8	2.0	2.5	2.6	2.6	2.8	3.3	3.1	3.1	3.2	3.1	2.5

Q and D denote the international "quiet" and "disturbed" days.

* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

79. ESKDALEMUIR (ry)

AUGUST, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _y	V _{ry} 10,000r ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	1	4	7	6	4	2	1	1	4	3	8	1	3	8	4	17	9	21	5	12	13	16	12	9	9	7.1	32
2 D	8	17	15	17	5	3	3	3	4	3	2	5	5	3	3	31	5	2	9	9	17	5	21	5	6	8.2	37
3 D	8	4	9	4	3	4	5	5	4	6	3	3	7	8	6	6	11	5	6	7	8	16	8	28	7.3	33	
4	16	15	14	2	14	9	9	3	4	2	4	4	8	4	6	4	4	4	4	2	3	2	1	1	1	5.8	26
5	1	1	1	3	3	9	2	4	3	10	6	9	5	12	6	4	3	3	2	3	8	2	9	5	4.7	21	
6	8	6	7	4	4	1	1	1	3	2	4	5	3	9	4	7	4	4	5	3	2	2	7	1	4.0	18	
7	3	1	2	3	1	1	2	1	4	3	5	4	2	3	5	3	5	4	3	3	3	1	4	2	2.8	13	
8	1	2	4	4	1	2	3	1	3	4	3	4	1	6	4	3	9	4	6	6	5	1	3	1	3.4	15	
9	1	1	1	1	3	4	3	4	5	5	5	3	4	5	8	1	1	1	1	1	1	1	3	3	2.7	12	
10 Q	1	1	2	3	3	1	1	1	4	5	4	2	1	7	2	4	1	1	3	2	1	1	1	1	1	2.3	10
11	1	1	1	1	3	1	1	1	6	7	4	3	1	9	4	6	2	3	3	1	1	2	3	10	3.1	14	
12	8	7	4	17	10	8	9	2	7	7	4	4	3	5	13	13	1	1	3	1	2	2	2	2	2	6.0	27
13	8	1	5	9	9	3	3	3	3	3	4	2	4	7	6	3	8	8	5	8	4	3	13	3	5.2	23	
14	1	1	1	1	1	1	1	2	4	4	4	4	1	8	9	1	2	3	1	4	1	2	4	2	2.6	12	
15	2	1	1	1	1	2	2	2	1	6	7	4	8	12	6	4	3	3	2	3	1	2	1	3	3.3	15	
16 Q	1	2	1	1	1	1	1	1	1	5	10	3	4	9	3	2	3	1	1	1	1	1	1	1	1	2.4	11
17 Q	2	1	1	1	2	1	1	4	4	2	2	6	3	6	5	3	6	3	3	1	1	1	1	1	1	2.5	11
18 Q	2	3	1	1	1	2	1	2	3	4	8	3	4	5	6	5	1	1	3	1	3	2	4	2	2	2.8	13
19 Q	1	1	1	1	2	1	5	3	3	6	3	1	1	5	6	3	1	1	1	1	1	1	1	1	1	2.1	9
20	1	1	1	1	3	1	1	2	1	3	3	1	2	1	4	4	3	2	1	2	4	1	1	1	1	1.9	2
21	7	5	5	3	3	3	7	4	3	1	6	3	6	5	5	7	3	6	6	6	3	1	5	13	4.8	22	
22	2	6	5	3	1	2	1	2	3	6	7	3	3	12	15	6	13	5	10	9	4	2	3	1	5.2	23	
23	1	1	1	1	1	2	4	2	7	2	2	5	3	7	14	8	8	3	4	1	2	2	2	3	3	3.6	16
24	3	1	1	2	2	1	1	2	1	3	5	1	3	3	9	4	2	3	1	3	1	1	2	4	2.5	11	
25	1	1	2	1	2	3	3	3	6	2	4	4	2	7	3	3	2	2	2	1	2	3	2	3	3	2.8	13
26	3	1	2	1	1	2	2	3	1	3	7	2	3	9	5	1	1	1	1	1	1	4	1	1	2.4	11	
27 D	1	1	1	1	1	3	4	1	3	5	5	5	2	3	17	18	3	22	17	15	11	15	51	12	9.0	40	
28 D	11	137	40	79	30	4	9	14	20	8	8	3	2	13	16	29	14	32	38	21	4	3	14	43	24.7	111	
29 D	29	6	6	6	3	7	6	6	4	5	9	3	11	20	5	16	11	5	3	41	5	34	15	6	10.9	49	
30	5	17	17	26	16	6	6	3	3	4	5	5	4	9	3	33	8	14	9	10	20	3	20	10.3	46		
31	3	11	8	1	2	2	7	3	4	5	3	1	5	12	6	3	4	1	5	5	2	11	4	3	4.6	21	
Mean r _y	4.5	8.2	5.4	6.6	4.7	3.0	3.4	2.9	4.0	4.3	5.1	3.5	3.6	7.3	7.0	8.1	4.9	5.5	5.3	6.2	4.0	5.0	6.1	6.2	5.2	..	
V _{ry} 10,000r ²	20	21	24	30	21	13	15	12	18	19	23	16	16	33	31	36	22	25	24	28	18	22	27	28	..	23	

1 2 1 1 2 1 2 2 3 4 5 3 3 3 1 2 1 1

80. ESKDALEMUIR (ry)

SEPTEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean ry	Vry 10,000r ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	1	1	5	5	3	2	2	1	1	3	3	1	4	12	5	3	5	3	9	3	1	2	1	6	6	3.4	15
2	16	11	4	1	4	3	1	3	1	3	2	1	8	9	7	3	3	4	3	1	1	4	4	3	4	4.2	19
3 Q	1	2	1	1	1	1	1	4	4	4	1	3	3	4	6	5	1	4	4	1	1	4	8	2	2	2.8	13
4	1	1	1	1	1	2	4	1	4	6	3	5	1	4	2	1	1	1	1	3	3	5	14	9	3.1	14	
5	5	2	1	1	1	1	2	1	2	5	2	3	3	3	10	21	16	4	6	3	1	1	1	3	4.1	18	
6 D	2	2	1	3	3	4	3	4	2	1	2	3	6	46	25	25	18	31	4	9	27	5	4	4	9.7	44	
7	3	3	1	1	1	1	2	1	3	3	2	3	3	3	3	2	2	2	5	4	2	5	12	5	3.0	13	
8 D	1	3	17	59	35	13	10	6	6	3	3	1	3	3	3	1	7	18	8	11	4	5	3	9	9.7	44	
9	13	6	27	9	17	6	8	4	3	4	2	4	1	4	5	3	9	4	3	4	4	4	2	3	6.2	28	
10 Q	1	1	1	1	2	2	1	3	3	2	5	3	1	3	5	4	2	3	1	1	2	1	4	1	2.2	10	
11 Q	3	1	2	2	1	1	1	1	4	3	3	3	3	5	1	2	1	1	3	2	3	3	1	1	2.1	9	
12	1	2	1	1	2	1	1	1	3	3	3	3	2	4	3	1	1	2	2	1	2	4	3	2	2.0	2	
13	1	1	1	1	4	3	1	2	4	3	4	4	6	4	3	3	1	1	3	2	1	3	1	1	2.4	11	
14	1	1	1	2	1	2	4	2	3	4	4	2	3	6	2	3	1	3	2	3	1	1	1	1	2.3	10	
15	1	1	1	1	1	2	2	1	2	3	4	8	3	9	9	4	1	3	3	1	1	2	4	4	3.0	13	
16 Q	1	2	1	1	1	2	1	3	2	6	5	3	3	4	8	3	1	4	1	1	1	3	2	1	2.5	11	
17 Q	1	1	1	1	1	1	1	4	4	3	1	3	4	5	4	1	3	1	2	1	1	3	1	9	2.4	11	
18	4	3	1	1	1	1	2	4	4	(3)	1	4	3	5	3	11	8	8	3	3	1	2	24	9	4.5	20	
19	5	25	9	13	6	2	1	3	1	4	2	4	2	1	12	20	9	9	4	4	1	37	16	3	8.0	36	
20	2	15	21	7	1	8	4	12	5	1	2	1	3	4	12	5	3	1	4	2	1	1	8	5	5.3	24	
21	15	9	1	2	3	1	5	6	2	1	3	4	1	4	8	4	1	2	2	4	1	3	11	5	4.1	18	
22	4	2	1	4	16	9	6	4	3	3	4	4	4	3	5	9	12	8	4	2	10	9	4	5.6	25		
23 D	5	3	6	3	5	3	3	2	5	4	4	3	2	9	2	20	28	53	49	22	52	6	10	9	12.8	57	
24 D	7	4	7	15	7	3	3	9	3	2	2	1	8	4	18	54	41	10	12	29	14	6	48	12	13.3	60	
25 D	17	41	4	34	5	5	6	7	6	3	4	9	32	19	13	16	16	15	24	6	50	21	6	6	15.4	69	
26	13	9	17	10	2	13	11	6	3	5	6	2	1	3	5	2	2	2	9	10	9	5	6	3	6.3	28	
27	43	17	23	11	3	4	3	3	3	4	3	1	9	8	6	14	12	4	2	4	5	1	5	3	8.0	36	
28	2	2	3	4	2	2	2	1	1	4	3	3	4	7	4	1	4	3	1	1	1	2	1	1	2.5	11	
29	3	20	8	4	1	1	1	1	2	3	3	3	4	1	5	1	4	1	2	7	5	4	3	7	3.9	18	
30	12	5	5	4	3	3	4	3	1	7	3	6	7	5	9	3	7	3	2	1	1	17	4	4	5.0	22	
Mean ry	6.2	6.5	5.8	6.8	4.5	3.4	3.2	3.5	3.0	3.5	2.9	3.1	3.8	7.1	7.0	8.1	7.3	7.0	5.4	5.5	5.2	6.8	7.7	4.7	5.3	..	
Vr y 10,000r ²	28	29	26	31	20	15	14	16	13	16	13	14	17	32	31	36	33	31	24	25	23	31	35	21	..	24	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

81. ESKDALEMUIR (FV)

OCTOBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean Fv	Vr 10,000γ ²		
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
1	2	10	8	2	1	1	2	1	3	1	1	3	4	6	6	3	2	2	1	1	2	4	3	2	3	3.0	13	
2	1	1	2	1	1	1	1	2	4	1	4	3	5	11	4	2	2	1	6	1	3	2	1	8	2	2.8	13	
3	11	10	9	4	4	1	2	1	1	3	3	1	1	5	3	5	1	1	2	1	1	1	1	6	3	3.3	15	
4	5	4	1	2	2	1	1	1	1	2	2	1	4	1	2	8	3	2	1	1	1	1	2	2	2	2.1	9	
5	1	9	6	1	1	1	3	2	1	2	1	7	2	3	9	5	1	3	2	3	1	4	4	11	3	3.5	16	
6 Q	2	5	4	1	1	1	1	1	1	1	5	7	3	5	5	1	1	1	1	1	1	2	3	1	2	2.3	10	
7	16	11	4	1	1	1	2	2	1	1	6	3	1	1	1	5	1	1	1	1	1	1	2	3	2	2.8	13	
8	1	1	1	1	1	1	2	1	1	1	3	3	4	2	4	3	2	3	9	4	4	3	5	1	2	2.5	11	
9	8	3	1	1	1	1	1	1	1	3	3	3	1	1	10	16	11	3	2	4	2	4	2	20	4	4.3	19	
10	6	4	2	5	3	3	4	5	3	1	4	7	3	5	12	15	4	12	1	1	9	1	1	2	4	4.7	21	
11	3	2	1	2	1	1	1	4	3	2	4	3	1	3	4	2	2	2	4	4	3	6	6	4	2	2.8	13	
12	10	4	4	1	2	1	2	4	2	1	2	1	1	1	3	1	2	1	1	3	5	2	1	5	2	2.5	11	
13 Q	1	1	1	1	1	1	1	3	3	2	3	3	2	3	7	2	1	1	1	1	1	3	4	1	1	2.0	9	
14 Q	1	1	1	1	1	1	1	1	1	1	2	3	1	2	3	3	1	6	1	1	2	1	4	1	1	1.7	8	
15 D	1	2	6	4	11	2	4	4	7	3	11	3	7	12	32	23	9	51	41	12	8	6	30	20	12	12.9	58	
16 D	7	6	9	11	5	4	4	7	8	3	6	4	1	6	9	8	7	11	4	1	1	1	1	5	5	5.4	24	
17	17	6	7	5	3	1	1	2	6	3	3	4	3	18	5	5	9	9	4	8	18	3	4	12	6	6.5	29	
18	16	4	13	7	2	2	1	2	2	1	1	1	4	4	(3)	(4)	2	2	3	1	1	1	4	4	3	3.5	16	
19	1	3	1	2	2	4	3	4	3	2	2	2	5	3	5	1	1	1	1	2	3	1	1	1	1	2.3	10	
20 D	2	1	2	1	1	1	1	2	1	1	1	3	6	2	6	17	32	26	32	14	45	32	47	7	11	11.8	53	
21 D	43	25	12	20	19	17	17	10	10	14	2	2	7	2	3	2	3	5	1	6	6	1	1	1	1	9	9.5	43
22	1	1	1	1	1	1	2	1	1	(2)	4	1	4	7	5	9	5	6	10	17	34	12	12	2	2	5.8	26	
23 D	11	8	10	4	5	5	3	2	3	4	8	3	1	3	18	9	17	28	3	14	1	3	17	6	7	7.7	35	
24	4	1	1	4	2	2	2	2	6	4	1	4	11	3	4	(5)	(3)	(2)	(3)	(8)	(14)	6	3	4	4	4.1	18	
25	5	1	3	4	4	2	1	6	3	6	2	4	4	6	10	8	13	5	1	4	3	2	3	3	4	4.3	19	
26 Q	3	2	1	1	1	3	3	4	1	1	1	1	1	1	2	3	3	1	1	2	2	1	1	1	1	1.7	8	
27	1	1	2	3	2	1	1	3	1	2	2	6	1	10	13	7	4	3	1	5	4	3	5	5	5	3.6	16	
28 Q	10	4	3	2	3	2	3	3	1	2	1	3	1	2	3	1	1	1	1	1	1	1	1	1	2	2.2	10	
29	1	1	1	1	2	1	1	2	1	2	1	2	1	2	4	1	3	2	1	1	1	9	5	3	2	2.0	9	
30	2	2	2	3	1	1	9	2	7	2	6	3	4	7	14	5	6	4	3	2	7	7	3	1	4	4.3	19	
31	4	5	3	3	1	1	2	1	2	1	3	3	3	6	2	1	1	1	2	1	1	2	1	3	2	2.2	10	
Mean Fv	6.4	4.5	3.9	3.2	2.8	2.1	2.6	2.8	2.9	2.4	3.2	3.1	3.1	4.6	6.8	5.8	4.9	6.4	4.7	4.1	6.0	4.1	5.7	4.7	4.2	..	..
Vr 10,000γ ²	29	20	18	14	13	2	12	13	13	11	14	14	14	21	21	26	22	29	21	18	27	18	26	21	..	19	..	

3 3 2 1 1 2

2 1 2 1 1 1

82. ESKDALEMUIR (FV)

NOVEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean Fv	Vr 10,000γ ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	3	4	2	8	22	6	11	9	9	4	4	5	5	8	6	1	2	1	1	1	3	3	1	8	5.3	24	
2	11	3	5	6	3	3	5	3	5	3	1	2	5	4	2	1	1	5	4	2	1	1	1	1	1	3.3	15
3	1	1	1	2	1	2	2	2	4	3	5	2	2	6	3	3	3	1	1	1	3	3	2	2	2	2.3	10
4	3	1	1	1	7	5	3	2	4	2	2	2	1	3	3	2	4	7	2	8	2	6	13	5	3.6	16	
5	4	4	11	5	5	3	3	3	2	1	3	4	2	3	3	3	4	3	1	1	2	1	8	4	3.5	16	
6 Q	1	1	1	2	1	1	2	2	1	1	1	2	1	2	1	3	1	1	1	1	1	2	2	1	1	1.4	6
7	6	1	3	1	1	1	1	1	3	1	2	1	1	2	2	1	10	3	5	1	1	2	2	1	1	2.2	10
8	1	1	1	1	1	1	2	2	2	3	2	1	3	1	1	1	1	2	2	2	4	5	3	2	2	1.9	9
9 Q	3	1	3	1	1	1	2	4	3	1	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1.5	7
10 Q	1	1	1	1	1	1	1	3	4	1	2	3	1	2	(3)	(1)	1	2	1	1	1	1	2	1	1	1.5	7
11	3	3	2	1	1	1	2	2	2	3	2	1	1	3	2	1	1	1	2	(4)	3	1	1	1	1	1.8	8
12	2	3	1	1	1	1	1	3	2	1	3	2	4	5	4	1	2	4	2	3	4	2	1	2	2	2.3	10
13	1	1	8	3	3	2	2	1	2	3	2	3	3	5	3	1	2	2	2	3	4	3	4	2	2	2.6	12
14 D	1	1	1	1	1	2	6	5	5	3	2	3	14	6	2	7	2	6	7	3	2	7	18	8	4	4.7	21
15 D	5	4	2	1	1	7	4	1	2	1	1	1	4	3	1	2	1	4	3	4	3	2	2	6	2	2.7	12
16 D	4	2	11	25	8	4	9	8	12	6	8	5	7	9	31	9	10	12	27	5	14	12	9	16	11	11.0	49
17 D	22	6	2	1	1	3	3	2	6	2	4	2	8	10	3	7	6	3	4	15	9	3	2	2	2	5.5	25
18	3	3	2	1	2	2	2	2	3	2	2	1	2	3	7	7	6	2	3	3	15	4	3	2	3	3.4	15
19	1	2	5	3	1	1	1	1	1	1	1	1	3	6	2	5	4	1	2	3	1	2	5	10	2	2.6	12
20	3	3	3	1	1	1	3	3	1	1	1	2	1	1	6	5	3	2	3	2	1	1	8	2	2	2.4	11
21	1	1	2	1	1	1	1	1	3	1	1	4	3	3	1	2	2	2	1	1	1	4	3	1	1	1.7	8
22 Q	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	1	1	1	1	1	1	1	1	1.3	6
23	1	1	1	2	1	1	1	1	1	1	1	1	1	3	4	3	2	1	1	1	1	1	1	1	1	1.4	6
24 Q	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1.2	5
25	1	1	1	1	1	3	2	2	1	2	1	2	1	1	2	6	3	1	3	1	2	3	4	7	2	2.2	10
26	1	1	1	1	1	1	1	1	1	1	1	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1.2	5
27	1	1	1	1	5	2	2	1	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1.6	7
28	3	1	1	1	1	1	4	1	1	1	3	1	4	3	3	3	8	6	5	3	1	1	1	1	1	2.4	11
29	1	6	3	2	1	2	1	3	3	3	3	2	2	2	11	6	5	4	2	3	3	3	1	8	3	3.3	15
30	3	2	4	4	1	1	1	1	2	3	3	1	1	3	(1)	(3)	1	1	1	2	1	1	1	1	1	1.8	8
Mean Fv	3.1	2.1	2.7	2.7	2.6	2.1	2.6	2.5	2.9	1.2	2.3	2.1	3.0	3.6	4.0	3.1	2.9	2.6	3.1	2.7	3.0	2.6	3.4	3.4	2.8	..	
Vr 10,000γ ²	14	9	12	12	12	9	12	11	13	2	10	9	13	16	18	14	13	12	14	12	13	12	15	15	..	12	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

83. ESKDALEMUIR (r_v)

DECEMBER, 1932

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	Vr _v 10,000γ ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	1	1	1	2	1	1	1	1	3	3	2	2	4	2	2	3	5	3	8	7	1	3	1	2	2	2.5	11
2	1	2	3	2	1	1	1	1	2	1	1	1	3	3	3	1	1	1	2	14	8	7	1	1	2	2.6	12
3	1	1	2	6	3	2	1	1	1	2	1	2	2	1	2	1	1	1	1	2	4	3	2	3	1	1.9	9
4	5	3	3	6	3	3	1	1	1	2	1	1	2	1	3	1	1	1	1	1	1	1	1	1	1	1.9	9
5 Q	5	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	3	1	1.4	6
6	3	4	3	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	4	3	1	1.6	7
7 Q	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	5
8 D	2	2	1	3	1	5	3	3	3	2	2	3	4	1	3	1	2	3	1	2	1	10	8	10	3	3.2	14
9	22	7	9	2	2	4	7	7	6	2	3	2	3	7	5	6	5	3	2	5	2	2	3	3	3	5.0	22
10	13	6	4	5	1	1	1	2	1	1	1	3	4	6	1	1	3	(3)	(1)	(1)	1	1	(2)	4	4	2.8	13
11	1	1	1	1	1	1	1	1	2	2	1	1	3	1	2	1	1	1	1	1	2	1	4	1	1	1.4	6
12 Q	1	1	1	2	1	1	1	3	2	1	2	1	1	4	3	1	1	1	1	1	1	1	1	1	1	1.4	6
13	1	1	1	1	1	1	1	1	2	1	1	1	2	4	4	4	12	11	7	4	1	4	11	19	4.0	18	
14 D	9	1	2	1	1	1	1	1	1	2	2	5	10	7	3	2	67	48	15	16	44	35	6	30	12.2	58	
15 D	18	7	12	(4)	11	19	15	11	7	5	(2)	7	1	7	6	3	4	6	22	28	14	19	16	11	11	10.6	48
16 D	73	29	19	(3)	5	2	3	2	5	4	3	2	3	2	7	1	15	14	5	7	14	11	7	6	10.1	45	
17 D	13	12	4	1	2	2	2	3	4	3	2	5	8	5	7	13	4	8	5	19	10	1	3	14	6.3	28	
18	3	1	4	8	4	5	2	2	1	2	4	1	4	10	4	3	4	1	1	2	2	2	1	1	1	3.0	13
19	1	1	2	2	1	1	1	1	1	2	2	1	3	10	3	3	7	3	2	4	3	5	2	2	2	2.7	12
20	1	7	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4	6
21 Q	1	5	2	1	1	1	1	1	1	3	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1.4	6
22	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1	3	3	3	1	1	1	1.4	6
23 Q	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	5	1	1.3	6
24	7	3	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1.4	6
25	2	1	2	1	1	1	1	1	1	1	2	4	2	5	2	1	1	3	4	3	8	7	3	6	2	2.6	12
26	3	10	3	3	2	2	1	2	3	1	2	2	2	3	1	1	1	2	4	3	7	1	3	3	2	2.7	12
27	1	20	14	10	5	3	1	2	2	1	(4)	2	3	4	1	3	3	1	1	4	4	1	1	3	3	3.9	16
28	2	1	1	1	1	3	3	1	1	2	2	2	3	5	5	5	3	2	8	4	5	4	5	4	4	3.0	13
29	2	1	1	1	1	1	2	1	2	2	2	1	2	(2)	(1)	(1)	1	1	1	1	3	3	1	(1)	1	1.5	7
30	(1)	(1)	1	2	1	2	1	1	2	1	(3)	4	2	3	4	1	1	1	8	7	4	3	7	5	5	2.7	12
31	4	2	1	4	3	2	3	3	3	(2)	(3)	(2)	2	3	3	3	3	3	8	9	4	4	6	13	3.9	18	
Mean r _v	6.5	4.4	3.5	2.6	2.0	2.3	2.0	1.9	2.1	1.8	1.8	2.0	2.6	3.5	2.8	2.2	5.0	4.2	3.8	5.0	5.0	4.5	3.4	5.2	3.3	..	..
Vr _v 10,000γ ²	29	20	16	12	9	10	9	9	9	8	8	9	12	16	13	10	22	19	17	22	22	20	15	23	..	15	

2 2 1 2 1 1

1 1 1 1 1 1

84. ESKDALEMUIR (r_v)

JANUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	r _v 10,000 ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 D	3	2	1	5	2	4	1	1	2	1	1	1	1	3	4	5	9	3	6	10	6	2	7	1	1	15	
2	3	21	7	8	3	1	1	1	4	4	2	1	3	3	1	1	1	9	4	7	4	2	1	1	1	18	
3	3	7	4	1	2	1	1	1	2	1	1	3	1	5	2	1	1	1	1	1	1	1	2	1	1	9	
4 Q	1	1	1	1	1	1	1	1	1	1	1	2	3	3	1	1	1	1	1	1	1	1	1	1	1	5	
5 Q	1	1	1	1	1	1	1	1	1	1	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	5	
6	1	1	5	1	3	10	4	5	4	5	3	3	3	11	11	6	2	3	1	4	2	1	2	8	4.1	18	
7	1	3	1	5	4	4	1	1	1	1	1	2	1	2	2	1	7	7	5	2	4	1	1	1	2.4	11	
8	3	1	1	1	1	1	1	3	1	1	1	2	1	4	2	1	1	1	1	1	1	4	1	1	1.5	7	
9	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	2	1	1	1	1	2	1	3	1	1.3	6	
10 Q	1	1	1	1	1	1	1	1	1	1	1	1	2	5	1	1	1	1	1	1	1	1	1	1	1	5	
11 Q	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1.1	5	
12	1	2	1	1	1	1	1	1	1	2	2	1	1	3	2	1	2	1	1	1	1	1	1	1	1	1.3	6
13	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	3	1	1	1	1	1	5	
14	1	2	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	7	7	6	8	2.2	10	
15	3	6	3	1	4	18	8	3	13	5	3	7	5	3	3	2	2	1	3	2	3	18	6	5	5.3	24	
16	2	1	7	4	2	(1)	(1)	(1)	3	1	1	1	1	3	4	1	4	1	1	1	2	1	1	1	1.9	9	
17	1	1	1	1	1	1	1	1	4	3	2	2	2	4	1	1	1	1	1	1	1	1	1	2	1	1.5	7
18	2	1	1	1	1	1	1	1	2	1	1	1	1	3	1	1	1	1	1	1	1	1	3	1	1.3	6	
19 D	1	1	1	1	3	2	3	2	1	3	2	1	4	8	6	43	25	12	4	2	8	4	2	4	6.0	27	
20	7	7	4	3	31	8	11	11	5	3	1	2	1	5	1	1	1	1	1	1	1	1	3	6	4.8	22	
21 Q	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	3	1	1	2	1.3	6	
22 D	2	1	1	1	3	1	3	4	3	3	1	1	1	1	4	6	14	30	29	37	6	18	3	7	7.5	34	
23	18	11	5	1	1	6	3	5	1	2	1	5	1	4	1	3	1	2	9	4	1	5	10	12	4.7	21	
24	31	11	23	17	4	1	1	1	2	2	1	4	2	2	1	1	2	4	1	4	2	2	1	2	5.1	23	
25	1	18	4	5	1	1	2	3	3	1	1	1	2	7	8	2	6	4	3	1	5	3	3	2	3.7	17	
26	2	1	22	4	3	4	3	5	3	(4)	(2)	1	1	8	7	6	5	5	4	4	7	3	3	3	4.6	21	
27 D	11	12	4	2	3	7	8	4	2	1	3	2	1	7	3	1	17	4	11	10	11	38	10	12	7.7	35	
28 D	4	4	18	9	6	2	1	1	2	2	2	1	6	7	5	11	8	7	5	4	11	8	7	23	6.4	29	
29	6	3	7	1	1	1	2	1	1	2	3	1	6	4	6	12	4	8	6	7	7	4	3	3	4.1	18	
30	1	7	7	11	13	4	2	2	1	3	1	1	3	6	4	6	4	2	1	1	6	7	3	4	4.1	18	
31	5	5	4	2	1	1	1	1	1	1	1	1	1	4	4	1	3	5	1	(2)	1	8	2	1	2.4	11	
Mean r _v	3.9	4.4	4.6	3.1	3.3	2.9	2.2	2.2	2.3	1.9	1.5	1.7	2.2	4.0	2.9	4.0	4.2	3.6	3.6	3.7	3.6	4.7	3.0	3.8	3.2	..	
r _v 10,000 ²	18	20	21	14	15	13	10	10	10	9	7	8	10	18	13	18	19	16	16	17	16	21	13	17	..	14	

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

85. ESKDALEMUIR (rv)

FEBRUARY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean rv	Vrv 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	1	1	1	1	1	1	1	1	2	1	1	3	2	6	5	1	1	1	1	1	1	3	3	3	1	1.7
2	4	3	3	1	6	1	1	1	3	2	3	3	3	4	3	8	4	3	1	3	3	7	1	2	3	3.0
3	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	3	10	1	1.5
4	3	2	1	1	1	1	1	1	1	1	3	1	3	4	3	3	4	1	2	1	1	1	1	4	1	1.9
5	1	8	8	3	4	2	3	1	1	1	1	2	4	2	4	1	1	1	1	1	1	1	1	1	1	2.3
6 Q	1	2	4	3	1	1	1	1	1	1	1	1	2	3	4	1	1	1	1	1	1	1	1	1	1	1.5
7	1	1	1	1	3	1	3	1	2	3	2	2	3	4	1	1	3	1	1	1	1	1	1	1	1	1.7
8	1	1	1	1	1	1	1	1	1	2	(2)	1	2	3	1	2	1	1	1	1	4	2	2	3	1	1.5
9	1	1	8	3	1	2	3	4	5	1	3	1	1	2	2	1	1	1	1	2	5	2	2	3	1	2.3
10	3	3	1	4	1	1	1	1	2	1	3	2	1	3	1	1	2	1	1	1	1	3	3	1	1	1.7
11 Q	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.1
12	1	1	1	1	1	1	1	1	2	2	3	3	1	3	5	2	1	1	1	1	1	1	1	1	1	1.5
13 Q	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.1
14	1	1	1	2	1	1	1	1	3	2	1	6	5	2	2	2	3	2	8	5	7	6	1	1	1	2.7
15	1	3	3	2	1	5	2	1	2	1	2	2	4	6	6	17	4	2	6	5	2	7	2	2	2	3.7
16 Q	2	1	1	1	1	1	1	1	1	3	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1.2
17 Q	1	1	1	1	1	1	1	1	2	2	3	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1.3
18	1	1	1	1	1	1	1	1	1	2	5	1	1	1	3	3	2	3	4	2	4	3	3	3	3	2.1
19 D	3	3	5	1	1	1	2	1	2	1	5	4	6	4	24	6	4	3	19	16	5	8	17	60	6	8.4
20	8	18	24	22	9	4	2	2	4	5	5	3	6	2	7	6	4	3	13	8	6	4	5	18	7.8	35
21 D	3	3	30	21	6	27	16	6	7	2	2	4	5	12	31	36	78	19	7	15	6	11	37	6	16.3	73
22 D	42	24	11	7	12	6	10	14	7	4	2	2	3	7	12	10	8	17	8	14	5	6	25	23	11.6	52
23 D	27	12	21	5	9	5	3	4	5	3	1	1	2	10	19	31	18	31	12	30	10	8	7	15	12.0	54
24 D	4	1	5	3	6	1	3	7	3	7	(2)	6	5	5	11	30	14	7	7	23	7	25	15	6	8.5	38
25	5	7	4	5	6	7	4	7	3	3	4	7	5	5	7	11	7	7	9	8	6	18	24	7.7	35	
26	7	23	8	13	11	5	4	5	3	2	5	2	2	6	10	1	2	4	3	2	7	36	12	3	7.3	33
27	6	2	7	6	7	3	3	1	1	1	4	3	2	3	4	3	1	1	3	3	1	11	2	4	3.4	15
28	5	5	3	1	1	1	1	1	2	1	3	3	3	(4)	(5)	1	1	1	1	1	1	.7	6	2.5	11	
Mean rv	4.8	4.7	5.6	4.0	3.4	3.0	2.6	2.5	2.5	2.0	2.6	2.4	2.8	3.8	6.3	6.5	6.1	4.2	4.2	5.4	3.3	6.0	6.2	7.3	4.3	..
Vrv 10,000γ ²	22	21	25	18	15	13	12	11	11	2	12	11	13	17	28	29	27	19	19	24	15	27	28	32	..	19

1 1 2 1 1 1

1 1 1 1 1 1

86. ESKDALEMUIR (rv)

MARCH, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean rv	Vrv 10,000γ ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	2	2	3	1	1	1	1	1	2	1	5	6	1	4	4	6	3	3	1	5	4	2	1	3	3	2.6
2	3	2	3	3	1	1	1	1	2	2	2	4	3	3	4	8	2	1	3	1	3	4	4	4	4	2.7
3	1	1	1	1	3	1	1	1	1	3	3	3	1	1	4	12	7	5	3	6	6	2	2	3	3	3.0
4	2	7	3	2	1	3	1	3	1	3	7	3	4	2	1	4	3	1	1	3	2	2	2	2	2	2.6
5 Q	1	1	1	1	1	1	1	1	1	1	3	2	1	1	5	6	1	2	1	1	1	1	1	1	1	1.5
6 Q	1	3	1	1	1	1	1	1	1	3	2	3	3	4	7	3	1	4	1	1	1	1	1	1	1	2.0
7	1	1	1	1	1	1	1	1	2	2	5	1	3	4	5	3	1	3	1	1	1	1	3	4	2.0	
8	3	2	3	1	1	1	1	3	1	2	3	1	4	3	3	2	1	4	1	1	3	3	3	7	2.4	
9 Q	3	2	2	2	1	1	1	4	3	1	4	1	3	3	3	1	1	3	1	1	1	3	1	3	1	2.0
10	1	4	1	1	7	2	2	2	1	1	3	8	2	4	6	3	1	2	1	1	8	4	4	3	3	3.0
11	19	25	12	15	9	2	2	3	1	(3)	7	2	3	6	1	8	1	1	1	1	2	1	1	1	1	5.3
12	1	1	1	1	1	2	2	1	1	1	5	3	2	4	4	6	3	3	1	3	2	1	1	5	2.3	
13	2	1	1	4	6	2	1	2	1	1	3	3	3	4	11	15	4	3	3	3	3	3	1	1	3.4	
14	1	1	1	3	6	8	3	8	3	1	1	1	1	1	4	7	4	3	2	1	1	1	1	1	1	2.7
15	1	1	1	1	1	2	2	2	1	2	3	3	1	3	4	3	1	1	1	1	1	1	1	1	1	1.6
16 Q	3	2	1	1	1	1	1	1	1	2	5	(4)	2	5	4	7	1	1	1	1	1	1	1	2	2.1	
17	1	1	1	1	1	1	1	1	3	1	6	4	5	3	4	4	4	2	1	1	2	3	1	2	2.3	
18 D	1	3	23	13	19	9	19	13	9	4	1	3	4	1	14	12	5	4	6	9	3	3	43	29	10.4	
19 D	21	7	19	10	7	9	4	2	4	4	3	4	4	4	7	15	7	10	25	28	44	27	3	4	11.3	
20 D	7	73	27	14	15	9	4	10	3	2	5	3	5	4	3	13	17	12	13	37	1	1	42	25	14.4	
21	12	12	10	7	4	19	13	12	3	10	2	9	3	3	(15)	(7)	12	6	10	3	1	7	10	46	9.8	
22	21	4	22	34	16	3	9	6	3	7	4	11	6	10	5	6	3	1	8	3	25	7	7	1	9.3	
23 D	12	14	11	4	8	24	13	9	7	3	6	3	11	3	8	32	15	12	12	12	25	8	8	6	11.1	
24 D	8	7	15	11	4	4	6	14	6	7	4	3	3	4	19	15	15	15	7	12	14	13	24	13	10.1	
25	9	3	3	6	5	16	4	3	9	5	3	3	3	8	1	8	4	1	1	3	3	7	2	2	4.7	
26	2	1	1	2	1	1	2	1	2	9	2	2	1	3	4	6	3	4	4	1	1	1	1	1	1	2.3
27	1	1	1	1	3	1	2	3	3	2	8	3	15	6	6	5	12	14	6	2	7	10	5	4	5.0	
28	6	5	5	15	11	4	3	1	2	6	2	4	2	7	11	3	7	6	6	2	9	4	19	7	6.1	
29	6	7	6	1	2	1	1	2	2	2	4	10	4	10	18	7	6	4	1	6	3	1	26	11	5.9	
30	5	3	6	4	1	3	2	1	1	8	4	3	4	7	16	3	3	2	4	1	1	2	6	15	4.4	
31	4	8	3	8	2	3	1	1	3	1	1	10	1	2	11	5	4	2	3	6	1	1	1	17	4.2	
Mean Ry	5.2	6.6	6.1	5.5	4.5	4.4	3.4	3.7	2.6	3.2	3.7	4.0	3.5	4.1	6.8	7.6	4.9	4.4	4.2	5.1	5.8	4.0	7.4	7.2	4.9	..
Vrv 10,000γ ²	23	30	27	25	20	20	15	17	12	14	17	18	16	18	31	34	22	20	19	23	26	18	33	32	..	22

Q and D denote the international "quiet" and "disturbed" days.

2 2 1 1 1 1

4 1 3 1 1 1

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

87. ESKDALESVIR (FV)

APRIL, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean rv	Vrv 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1	4	4	5	15	3	5	8	3	3	1	3	1	3	3	7	7	5	3	3	4	8	1	3	7	4.5	20
2	2	4	1	1	3	1	2	1	1	4	3	3	3	5	4	4	4	2	1	8	4	4	5	15	3.5	16
3	6	4	8	2	3	8	7	2	2	2	2	6	7	4	5	4	6	4	3	2	5	3	7	4	4.4	20
4	12	26	11	22	6	4	4	2	1	2	4	3	1	3	4	7	5	4	1	3	4	2	3	1	5.6	25
5	3	9	3	3	3	2	4	1	2	3	9	8	3	9	7	3	10	4	2	2	2	4	4	7	4.5	20
6	12	11	14	13	2	1	3	2	2	1	2	1	3	5	4	3	3	1	1	3	9	8	7	3	4.7	21
7	1	3	3	4	3	3	4	2	3	3	6	4	4	3	14	15	10	9	8	8	11	12	3	2	5.7	26
8	1	4	2	2	1	2	1	2	2	4	3	1	4	4	4	4	2	15	11	6	2	1	7	7	3.8	17
9	2	5	1	2	3	1	2	3	6	6	6	4	4	8	5	3	3	3	3	1	3	1	1	3	3.3	15
10	2	3	1	1	1	1	2	1	2	1	2	4	3	7	7	3	1	1	2	4	3	1	1	1	2.3	10
11 Q	1	1	1	1	1	1	1	3	4	5	3	4	2	8	4	2	4	2	1	1	1	1	1	1	2.3	10
12 Q	1	1	1	2	2	1	1	1	5	1	1	1	1	4	5	3	1	1	1	1	1	1	1	1	1.6	7
13 Q	1	1	1	1	1	1	1	1	3	1	(2)	3	4	3	5	2	2	3	3	1	1	1	1	1	1.8	8
14	1	1	1	1	1	1	1	2	3	4	6	6	6	9	4	7	7	4	2	5	4	7	2	5	3.7	17
15 D	3	3	1	2	4	9	7	1	1	9	3	3	3	5	6	6	1	15	14	19	31	38	19	10	8.9	40
16 D	3	11	6	4	7	6	8	3	3	2	4	2	1	10	10	3	4	4	8	8	12	4	6	32	6.7	30
17 D	22	22	1	9	5	7	6	8	4	3	3	4	17	17	4	10	16	12	14	5	5	13	17	1	9.4	42
18	26	25	22	16	4	3	9	3	5	2	3	4	6	10	4	9	6	3	4	5	9	15	25	9	9.5	43
19 D	8	6	11	26	18	7	3	2	2	1	5	2	19	5	4	8	4	3	7	4	4	12	47	23	9.6	43
20	20	7	3	3	5	18	5	6	7	1	3	2	4	11	17	13	7	11	4	11	26	9	1	5	8.3	37
21	13	5	8	3	7	5	4	2	2	2	3	7	4	3	6	1	6	8	9	2	8	10	51	19	7.8	35
22	3	14	11	1	2	5	4	3	3	1	3	3	4	11	10	5	5	6	5	1	30	7	14	4	6.5	29
23	3	4	3	7	3	3	12	3	4	2	3	4	8	17	4	2	3	6	3	10	22	4	12	12	6.4	29
24	10	12	2	5	1	6	1	1	1	(3)	(7)	4	1	6	8	13	3	4	4	4	4	5	22	3	5.4	25
25	3	10	4	3	1	1	1	3	1	1	3	4	4	7	5	4	12	3	1	1	4	4	4	8	3.8	17
26	19	7	8	6	2	2	1	4	3	4	4	4	4	11	2	7	8	7	3	7	13	3	2	1	5.5	25
27	1	1	1	3	1	1	1	1	2	3	6	8	1	6	9	5	4	2	3	5	2	3	7	11	3.6	16
28 Q	3	4	5	12	4	1	1	5	6	3	4	4	2	6	(11)	(6)	2	2	3	1	1	4	7	10	4.5	20
29 Q	1	6	4	2	2	1	1	1	3	3	4	3	2	4	4	4	2	2	4	1	2	2	4	5	2.8	13
30 D	2	1	3	1	1	1	1	4	1	1	4	6	1	5	2	1	5	11	5	6	42	23	27	15	7.1	32
Mean FV	6.3	7.2	4.9	5.8	3.3	3.6	3.5	2.5	2.9	2.6	3.8	3.8	4.3	7.0	6.2	5.5	5.1	5.2	4.4	4.6	9.1	6.8	10.4	7.5	5.2	..
Vrv 10,000 ²	28	32	22	26	15	16	16	11	13	12	17	17	19	31	28	25	23	23	20	21	41	31	47	34	..	24
	1	3	2	4	2	1									3	2	2	2	1	1						

88. ESKDALESVIR (FV)

MAY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean FV	Vr V 10,000 ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	12	3	1	2	1	3	8	3	4	4	4	3	11	13	69	(221)	(248)	(206)	(65)	172	166	(243)	102	76	68.3	307
2	110	123	26	18	7	3	4	4	3	3	3	4	1	4	4	3	3	2	2	2	2	2	15	4	14.7	66
3	15	10	19	14	3	4	4	3	4	4	2	6	4	3	3	1	8	6	13	12	6	2	4	8	6.6	30
4	3	1	3	15	5	9	6	5	1	5	1	1	3	3	10	8	13	4	30	34	10	6	3	3	7.6	34
5	7	1	3	2	4	3	7	6	3	3	4	2	6	5	6	4	4	3	2	8	8	6	15	13	5.2	23
6	4	34	29	33	11	18	8	4	3	2	2	4	3	17	6	2	3	1	1	6	5	6	5	43	10.4	47
7	17	25	18	9	3	4	3	4	5	4	3	3	9	7	3	1	1	1	1	3	1	1	1	1	5.3	24
8	1	3	2	2	2	1	1	4	4	3	1	2	1	5	5	4	1	2	3	3	4	1	1	1	2.4	11
9 Q	1	1	1	1	1	1	1	3	4	3	4	3	3	4	4	4	3	1	3	2	1	1	1	1	2.2	10
10 Q	1	1	1	1	1	1	1	4	7	3	4	2	3	2	2	6	4	2	1	1	1	1	1	1	2.2	10
11	1	7	3	2	2	2	1	1	4	2	1	3	1	4	4	7	4	3	3	6	3	1	1	1	2.8	13
12 Q	1	1	1	2	1	1	3	1	3	4	6	4	3	8	4	4	1	3	1	1	1	3	3	3	2.6	12
13	1	1	1	3	6	11	4	1	1	1	3	3	6	7	6	6	4	4	3	7	1	4	4	11	4.1	18
14	10	7	4	4	2	1	1	2	3	6	6	5	4	3	7	14	15	8	11	15	11	38	11	3	8.0	36
15	1	1	1	19	19	8	11	6	1	4	3	2	3	8	4	4	6	5	3	4	1	15	25	6	6.7	30
16	7	4	8	4	3	1	1	2	4	1	6	3	4	7	3	4	4	8	3	3	3	9	4	5	4.2	19
17	1	8	5	7	4	1	4	1	3	3	2	1	3	3	7	8	1	11	11	7	11	13	13	26	6.4	29
18 D	6	11	10	12	24	21	3	13	8	(7)	(4)	8	4	4	6	1	4	2	12	9	4	5	9	4	8.0	36
19	4	3	1	3	4	3	3	2	7	1	2	1	4	8	3	2	1	3	7	5	4	6	1	1	3.3	15
20	2	4	1	4	1	1	1	2	4	4	1	1	7	7	1	4	4	1	2	3	1	3	7	1	2.8	13
21	1	1	1	1	1	1	2	4	7	6	4	2	9	4	7	4	4	1	2	2	4	1	2	2	3.0	13
22	6	4	1	5	1	2	3	3	4	6	7	3	11	10	6	6	7	1	4	4	3	2	6	4	4.5	20
23	3	3	3	1	1	1	3	7	6	7	1	3	3	8	7	8	4	1	2	1	1	8	2	1	3.5	16
24 Q	1	1	1	3	1	3	4	4	6	(6)	4	2	8	3	6	4	3	3	3	2	2	1	1	2	3.1	14
25	3	11	7	4	1	2	4	1	1	3	10	6	5	11	8	4	2	1	3	1	1	1	1	1	3.8	17
26 Q	1	1	2	2	1	1	1	3	1	6	6	4	4	6	3	1	4	1	1	2	1	1	1	1	2.3	10
27	1	1	1	1	1	1	3	3	8	6	6	2	6	8	4	4	8	11	9	10	8	4	4	6	4.8	22
28	12	32	17	10	8	3	3	3	2	6	1	1	6	6	3	4	4	1	1	1	1	1	1	1	5.3	24
29 D	1	1	1	1	1	1	4	1	1	4	6	4	4	7	13	15	8	5	4	5	15	28	3	10	6.0	27
30 D	10	33	15	4	14	15	7	3	7	4	3	4	6	11	8	4	20	11	12	7	7	4	3	8	9.2	41
31 D	3	3	6	14	12	7	14	3	4	4	4	3	10	(18)	10	4	3	6	4	5	4	11	11	7	7.1	32
Mean FV	8.0	11.0	6.2	6.5	4.7	4.3	4.0	3.4	4.0	4.0	3.7	<u>3.1</u>	5.0	6.9	7.5	11.8	12.9	10.3	7.2	11.0	9.5	<u>13.8</u>	8.4	8.2	7.3	..
VrV 10,000 ²	36	49	28	29	21	19	18	15	18	18	16	<u>14</u>	22	31	34	53	58	46	32	49	43	<u>62</u>	38	37	..	33

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

89. ESKDALEMUIR (rv)

JUNE, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean rv	Vrv 10,000r ²
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
1 D	4	3	30	38	26	4	17	7	4	4	3	2	7	4	6	13	7	1	4	9	9	2	1	1	1	8.6
2	3	4	5	4	3	3	1	1	1	1	3	6	3	3	2	5	6	2	2	3	2	4	4	1	1	3.0
3	4	2	3	6	2	1	3	1	1	4	2	2	3	3	6	3	3	3	1	3	1	3	1	1	1	2.6
4	1	5	4	2	1	1	2	1	3	2	1	1	1	3	1	4	2	2	1	3	1	1	3	1	1	2.0
5 Q	7	3	4	4	3	2	1	3	3	2	3	5	5	7	1	2	2	1	2	3	1	1	1	1	1	2.8
6 Q	2	1	1	1	1	2	1	1	1	2	(4)	5	3	5	4	4	3	1	1	3	1	1	1	1	1	2.1
7	1	1	1	1	3	1	7	4	1	3	2	3	8	5	6	4	1	1	2	4	1	1	1	1	1	2.7
8	2	2	2	1	1	4	1	1	4	11	4	3	7	8	4	4	2	1	9	10	4	10	14	11	1	5.0
9	11	15	15	4	6	7	4	4	2	1	7	3	7	11	4	7	7	1	1	5	2	4	2	1	1	5.5
10	6	3	3	3	2	1	3	3	3	4	4	1	1	3	2	8	6	1	3	2	3	3	1	1	1	2.9
11	1	1	1	2	1	1	3	2	4	3	1	3	3	2	4	4	4	1	1	1	1	3	1	1	1	2.0
12	2	2	3	3	3	1	2	2	4	4	1	1	1	1	1	5	1	1	2	3	3	3	6	7	1	2.8
13 D	15	10	48	33	53	31	15	3	3	3	7	4	3	7	16	26	3	6	4	10	7	25	65	14	17.1	
14 D	44	14	19	15	11	3	3	3	3	4	6	8	3	8	3	11	4	3	4	3	3	5	7	11	8.3	
15	2	42	10	10	17	8	3	3	3	3	6	6	2	2	8	3	3	6	4	1	2	7	7	2	6.7	
16 Q	2	1	1	1	1	2	1	1	3	7	5	1	1	2	4	5	7	4	1	3	1	1	1	1	1	2.4
17	1	1	1	1	1	1	3	4	(1)	(4)	6	4	7	7	1	7	4	1	1	2	1	1	1	2	1	2.6
18 Q	1	1	1	1	1	1	3	1	1	4	4	2	7	5	1	1	3	3	1	1	2	3	2	7	2	2.4
19	3	4	3	2	2	6	2	2	9	(9)	(6)	5	10	8	7	6	4	1	3	2	3	4	5	7	4.7	
20 D	15	23	1	3	7	7	4	7	7	4	3	2	5	12	10	11	4	4	4	1	4	6	1	5	6.3	
21	2	3	3	1	2	1	2	2	1	2	2	2	2	4	2	2	3	3	2	1	1	2	1	10	2.3	
22	6	4	6	3	1	1	2	2	5	5	8	2	3	10	3	4	3	1	2	1	2	1	1	1	1	3.2
23	1	1	1	3	1	1	1	2	3	2	2	5	1	7	3	3	3	1	3	2	2	1	3	1	1	2.2
24 Q	3	1	2	1	1	1	3	1	1	1	5	4	4	7	4	4	6	3	2	3	3	1	1	1	1	2.6
25	1	1	1	1	2	1	4	3	1	2	11	3	5	3	6	8	10	1	11	10	14	9	3	11	5.1	
26	6	7	8	7	6	2	3	1	3	3	2	4	3	1	6	10	7	2	3	3	4	3	1	1	4.0	
27	1	1	1	1	1	1	4	4	3	4	7	3	6	7	5	7	3	2	1	1	4	1	1	2	3.0	
28 D	24	7	8	7	3	3	2	3	1	5	1	2	3	9	9	15	13	8	7	6	3	11	6	19	7.3	
29	3	3	7	7	9	3	2	1	6	4	4	1	2	1	(7)	(7)	4	3	3	4	1	3	3	5	3.9	
30	1	2	1	3	3	3	1	4	1	4	2	2	4	1	1	4	6	4	3	3	4	1	1	1	2.7	
Mean rv	5.8	5.6	6.5	5.6	5.8	3.5	3.4	2.6	2.9	3.7	4.1	3.2	4.2	5.2	4.6	6.6	4.5	2.4	2.9	3.5	3.0	4.0	5.0	4.5	4.3	..
Vrv 10,000r ²	26	25	29	25	26	16	15	12	13	17	18	14	19	23	21	20	20	11	13	16	13	18	22	20	..	19

3 1 2 2 1 2

3 4 2 1 3 2

90. ESKDALEMUIR (rv)

JULY, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean rv	Vrv 10,000r ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1	1	1	3	4	1	1	3	1	1	5	3	8	3	1	5	7	4	3	3	3	3	6	10	20	4.1	18	
2	7	10	7	4	1	2	1	1	3	7	1	4	1	5	4	4	3	1	3	1	1	3	1	1	1	3.2	14
3	8	14	7	4	1	2	1	1	5	4	1	4	1	1	1	7	3	3	4	1	1	1	2	1	1	3.3	15
4	1	1	3	3	3	1	1	1	4	1	2	4	3	3	3	4	7	3	3	6	3	4	3	1	1	2.8	13
5	1	7	4	3	3	4	2	1	2	3	3	5	1	4	5	4	4	3	1	1	1	1	1	1	1	2.7	12
6	3	1	3	2	1	6	2	6	4	1	3	5	7	8	3	4	4	1	3	1	1	2	1	1	1	3.0	13
7	1	1	1	1	1	1	4	1	3	1	10	4	1	3	2	7	6	6	1	1	3	1	1	4	2.7	12	
8	3	4	1	3	1	1	2	3	1	1	4	7	4	4	7	4	7	4	4	3	7	3	2	10	3.7	17	
9 D	19	7	11	7	3	1	4	3	7	4	3	4	9	6	3	4	4	1	5	4	7	4	3	3	5.3	24	
10	2	1	1	7	7	2	3	3	2	9	3	1	6	4	5	6	4	3	4	8	7	23	1	4	4.6	21	
11	3	19	15	8	3	1	3	3	3	4	7	1	4	2	10	7	2	4	1	2	2	1	1	3	4.5	20	
12	1	1	4	6	3	3	4	3	3	4	5	3	3	2	2	10	6	4	4	3	4	3	2	4	3.8	17	
13 Q	3	2	2	3	2	2	3	2	4	3	4	1	3	1	1	5	9	1	4	4	1	1	1	4	2.7	12	
14 Q	4	3	4	2	1	1	1	1	1	3	6	11	3	4	5	7	3	4	1	1	3	2	1	1	4	3.2	14
15 Q	1	1	2	2	1	1	3	3	4	3	8	3	10	3	4	9	1	6	1	1	1	1	1	1	1	3.0	13
16	1	1	1	1	1	1	1	1	4	5	3	4	3	4	3	1	6	6	3	1	1	4	3	1	2.5	11	
17 D	6	3	3	2	1	1	6	1	3	(4)	(4)	3	3	5	12	3	4	4	2	2	7	7	3	3	3	3.8	17
18	11	22	11	3	8	4	7	2	4	5	11	4	6	3	6	4	4	3	4	3	5	3	1	1	5.7	26	
19	1	1	1	3	4	1	1	1	1	1	4	7	4	6	8	7	4	1	4	1	1	3	3	3	3.0	13	
20	8	4	4	1	4	1	3	3	1	6	5	10	4	12	9	9	7	1	3	4	4	2	1	2	4.5	20	
21 Q	2	1	2	3	4	3	1	1	3	4	2	2	2	2	7	6	3	1	4	3	2	1	1	1	2.5	11	
22	1	1	12	5	4	1	1	4	4	4	1	4	4	2	7	4	3	5	1	4	3	1	1	1	3.1	14	
23 D	2	6	3	4	2	3	4	2	7	7	4	3	6	7	6	13	11	8	6	8	16	7	18	13	6.9	31	
24 D	7	7	22	39	31	22	5	5	5	5	7	6	6	10	12	24	15	10	6	5	1	2	4	4	10.8	48	
25	1	1	2	2	1	2	2	2	7	2	2	3	4	4	5	2	7	3	3	4	2	2	2	3	2.8	13	
26	1	2	2	2	1	2	2	3	3	2	9	12	7	2	4	8	11	4	7	2	2	1	3	24	4.8	22	
27 D	3	10	6	3	4	3	8	3	4	4	2	4	3	3	3	8	4	6	5	4	4	4	59	26	7.6	34	
28	18	6	3	2	1	3	4	3	4	6	5	6	3	3	4	11	2	3	3	4	3	1	3	1	4.3	19	
29	1	1	1	3	3	3	1	1	1	4	2	4	6	4	4	7	4	1	1	1	3	3	1	3	2.6	12	
30 Q	1	1	3	2	2	2	1	1	4	6	7	1	3	10	4	3	4	1	3	1	1	2	1	1	2.7	12	
31	1	2	1	2	1	3	3	3	3	6	7	4	1	8	7	1	1	1	9	4	4	1	3	1	3.2	14	
Mean rv	4.0	4.6	4.7	4.2	3.5	2.7	2.8	2.2	3.4	4.0	4.5	4.6	3.9	4.5	5.0	6.4	5.1	3.3	3.5	3.0	3.2	3.3	4.5	4.8	4.0	..	
Vrv 10,000r ²	18	21	21	19	16	12	13	10	15	18	20	21	18	20	22	22	23	15	16	13	14	15	20	22	..	18	

Q and D denote the international "quiet" and "disturbed

HOURLY RANGES OF VERTICAL FORCE
for periods of 60 minutes ending at the hours of Greenwich Mean Time

91. ESKDALEMUIR (°v)

AUGUST, 1933

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean r _v	V _r 10,000 ²	
Day	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
1 Q	1	1	1	1	2	1	2	1	2	4	4	4	5	4	7	4	4	7	2	1	1	1	1	1	1	2.4	11
2	1	1	1	2	4	2	2	1	3	4	3	1	3	5	8	3	4	1	3	3	1	2	1	1	1	2.5	11
3	1	1	3	3	2	2	1	2	3	3	6	2	4	4	5	2	1	1	1	1	1	1	1	1	1	2.2	10
4	1	1	1	1	1	1	2	4	1	3	7	6	4	4	8	3	3	3	2	1	1	1	1	1	6	2.7	12
5 D	4	1	1	1	1	4	4	1	1	1	6	8	9	18	37	13	5	11	82	34	22	14	12	9	12.5	56	
6 D	3	7	44	16	19	4	6	3	3	3	3	4	7	8	2	3	8	9	6	6	7	2	1	1	7.3	33	
7	3	4	8	7	7	4	1	1	3	1	(4)	(4)	2	5	4	3	3	2	4	3	1	2	3	3	3.4	15	
8	1	5	3	4	5	2	2	1	10	11	3	4	4	7	7	5	3	4	3	1	1	1	3	10	4.2	19	
9 Q	2	3	3	2	5	1	1	1	3	3	3	3	3	5	4	3	5	5	3	6	2	1	4	6	3.2	14	
10 Q	4	2	1	3	4	1	1	1	4	7	4	4	1	12	2	2	4	3	1	1	1	1	1	1	2.7	12	
11 Q	1	2	1	3	4	3	1	1	3	4	6	4	3	3	7	1	4	2	1	2	1	1	3	1	2.6	12	
12	1	1	1	1	2	1	1	2	9	9	4	1	3	4	5	4	1	1	1	1	1	3	1	4	2.6	12	
13 D	3	3	1	3	2	1	3	3	4	10	4	7	4	3	5	12	6	5	8	19	18	11	53	19	8.6	39	
14	18	4	4	7	10	4	3	7	4	3	1	3	4	15	15	4	7	7	7	4	3	3	6	1	6.0	27	
15	1	2	6	4	2	2	4	4	7	1	1	5	3	7	10	3	4	2	3	10	4	2	2	2	3.8	17	
16	5	3	4	1	2	2	3	1	10	4	3	1	1	6	6	2	4	2	2	2	1	1	6	1	3.0	13	
17	1	1	9	3	4	2	4	3	2	4	3	8	3	15	4	(4)	5	7	6	3	12	4	5	4	4.8	22	
18 D	5	4	1	1	1	1	16	2	1	2	1	3	1	4	8	12	6	23	18	24	18	3	33	8.0	36		
19	6	7	7	11	6	10	2	9	4	3	3	4	9	3	4	4	1	3	1	3	4	3	3	4	4.7	21	
20	4	1	2	1	2	3	3	3	2	4	5	1	8	3	11	2	3	4	16	10	11	8	18	3	5.3	24	
21 D	2	3	7	3	9	1	5	4	4	4	3	7	9	4	7	15	21	15	8	4	15	3	3	4	6.7	30	
22	4	4	3	3	2	3	2	5	8	6	3	2	4	7	3	1	1	3	1	1	1	1	1	1	2.9	13	
23	1	1	1	1	1	3	1	2	4	7	4	3	6	16	9	1	9	6	7	15	2	2	4	1	4.5	20	
24	2	3	4	3	6	3	1	4	7	11	1	3	1	11	15	3	16	3	7	7	15	7	15	9	6.5	29	
25	6	6	9	3	4	3	8	3	3	3	2	2	4	6	3	1	1	1	2	3	1	2	3	2	3.7	17	
26	16	6	9	7	3	6	2	2	1	3	2	3	3	4	2	3	3	3	1	1	3	1	2	2	3.7	17	
27	2	4	2	2	1	3	1	1	11	6	4	1	2	4	8	3	3	1	1	2	1	1	4	3	3.0	13	
28	1	1	1	1	1	1	2	1	3	7	3	2	4	4	3	5	1	1	2	1	1	4	3	2	2.3	10	
29	8	3	3	1	1	1	3	7	2	3	2	5	1	1	4	3	1	3	1	1	1	1	1	1	2.4	11	
30	2	4	1	3	3	1	1	2	1	6	3	1	1	5	3	4	3	3	2	1	1	1	1	2	2.3	10	
31 Q	1	1	1	1	1	1	1	1	3	6	3	1	1	(5)	7	1	1	4	3	3	3	3	2	1	2.3	10	
Mean r _v	3.3	2.9	4.6	3.3	3.8	2.5	2.9	2.7	4.1	4.7	3.4	3.5	3.8	6.5	7.2	4.2	4.5	4.5	6.6	5.6	5.0	2.9	5.4	4.5	4.3	..	
V _r 10,000 ²	15	13	21	15	17	11	13	12	18	21	15	16	17	29	32	19	20	20	30	25	22	13	24	20	..	19	
	2	2	1	2	3	1									2	4	3	2	3	2							

HOURLY RANGES OF VERTICAL FORCE
Monthly, seasonal and annual means

92. ESKDALEMUIR (°v)

1932-3

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
1932																									
August	4.5	8.3	5.4	6.6	4.7	3.0	3.4	2.9	4.0	4.3	5.1	3.5	3.6	7.3	7.0	8.1	4.9	5.5	5.3	6.2	4.0	5.0	6.1	6.2	5.2
September	6.2	6.5	5.8	6.8	4.5	3.4	3.2	3.5	3.0	3.5	2.9	3.1	3.8	7.1	7.0	8.1	7.3	7.0	5.4	5.5	5.2	6.8	7.7	4.7	5.3
October	6.1	4.5	3.9	3.2	2.8	2.1	2.6	2.8	2.9	2.4	3.2	3.1	3.1	4.6	6.8	5.8	4.9	6.4	4.7	4.1	6.0	4.1	5.7	4.7	4.2
November	3.1	2.1	2.7	2.7	2.6	2.1	2.6	2.5	2.9	1.9	2.3	2.1	3.0	3.6	4.0	3.1	2.9	2.6	3.1	2.7	3.0	2.6	3.4	3.4	2.8
December	6.5	4.4	3.5	2.6	2.0	2.3	2.0	1.9	2.1	1.8	1.8	2.0	2.6	3.5	2.8	2.2	5.0	4.2	3.8	5.0	5.0	4.5	3.4	5.2	3.3
1933																									
January	3.9	4.4	4.6	3.1	3.3	2.9	2.2	2.2	2.3	1.9	1.5	1.7	2.2	4.0	2.9	4.0	4.2	3.6	3.6	3.7	3.6	4.7	3.0	3.8	3.2
February	4.8	4.7	5.6	4.0	3.4	3.0	2.6	2.5	2.5	2.0	2.6	2.4	2.8	3.8	6.3	6.5	6.1	4.2	4.2	5.4	3.3	6.0	6.2	7.3	4.3
March	5.6	6.6	6.1	5.5	4.5	4.4	3.4	3.7	2.6	3.2	3.7	4.0	3.5	4.1	6.8	7.6	4.9	4.4	4.2	5.1	5.8	4.0	7.4	7.2	4.9
April	6.3	7.2	4.9	5.8	3.3	3.6	3.5	2.5	2.9	2.6	3.8	3.8	4.3	7.0	6.2	5.5	5.1	5.2	4.4	4.6	9.1	6.8	10.4	7.5	5.2
May	8.0	11.0	6.2	6.5	4.7	4.3	4.0	3.4	4.0	4.0	3.7	3.1	5.0	6.9	7.5	11.8	12.9	10.3	7.2	11.0	9.5	13.8	8.4	8.2	7.3
June	5.8	5.6	6.5	5.6	5.8	3.5	3.4	2.6	2.9	3.7	4.1	3.2	4.2	5.2	4.6	6.6	4.5	2.4	2.9	3.5	3.0	4.0	5.0	4.5	4.3
July	4.0	4.6	4.7	4.2	3.5	2.7	2.8	2.2	3.4	4.0	4.5	4.6	3.9	4.5	5.0	6.4	5.1	3.3	3.5	3.0	3.2	3.3	4.5	4.8	4.0
August	3.3	2.9	4.6	3.3	3.8	2.5	2.9	2.7	4.1	4.7	3.4	3.5	3.8	6.5	7.2	4.2	4.5	4.5	6.6	5.6	5.0	2.9	5.4	4.5	4.3
Winter	4.6	3.9	4.1	3.1	2.8	2.6	2.3	2.3	2.5	1.9	2.1	2.1	2.7	3.7	4.0	3.9	4.5	3.7	3.7	4.2	3.7	4.5	4.0	4.9	3.4
Equinox	6.0	6.2	5.2	5.3	3.8	3.4	3.2	3.1	2.9	2.9	3.4	3.5	3.7	5.7	6.7	6.7	5.5	5.7	4.7	4.8	6.5	5.4	7.8	6.0	4.9
Summer*	5.4	6.7	5.6	5.3	4.6	3.4	3.4	2.7	3.6	4.1	4.1	3.6	4.2	5.9	6.1	7.7	6.8	5.3	4.9	5.9	5.1	6.3	5.9	5.7	5.1
Year*	5.3	5.6	5.0	4.6	3.7	3.1	2.9	2.7	3.0	3.0	3.2	3.1	3.5	5.1	5.6	6.1	5.6	4.9	4.4	5.0	5.1	5.4	5.9	5.5	4.5

Q and D denote the international "quiet" and "disturbed" days.
* In obtaining the summer and annual averages the means of the figures for the two Augusts were used.

DIURNAL VARIATION OF HOURLY RANGES OF THE TERRESTRIAL MAGNETIC ELEMENTS ON INTERNATIONAL QUIET DAYS

Monthly, seasonal and annual means for periods ending at the hours of Greenwich Mean Time

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
93. ESKDALEMUIR																									
HORIZONTAL FORCE																									
1932-3																									
1932	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
August	8.6	6.2	6.2	4.2	5.0	6.6	5.4	7.8	9.6	7.0	8.4	10.6	13.0	12.0	11.6	11.0	8.8	9.2	12.8	5.6	7.4	7.8	6.2	5.0	8.2
September	6.8	6.4	6.6	5.2	3.6	6.4	5.8	8.8	6.8	5.4	7.0	8.6	9.6	14.6	11.6	13.6	9.8	10.0	8.4	6.0	7.6	7.8	8.8	10.0	8.1
October	6.0	6.6	3.6	4.2	7.2	4.4	2.8	7.8	9.0	12.4	9.4	10.8	10.0	10.2	12.6	8.0	5.6	9.0	5.8	8.6	8.0	9.8	11.0	5.8	7.9
November	4.8	5.6	4.8	4.2	4.6	5.8	6.4	8.4	8.0	7.8	5.8	6.6	7.2	6.0	4.6	5.6	4.0	5.6	5.0	3.8	6.0	5.6	4.0	3.0	5.5
December	6.8	7.0	6.6	4.8	4.4	4.4	7.0	7.0	7.0	6.6	6.4	4.6	5.2	4.2	3.0	3.8	2.6	2.6	3.6	3.2	3.2	4.8	5.6	7.6	5.1
1933	5.6	3.4	3.0	2.4	4.6	2.8	3.6	3.6	5.8	4.4	6.4	5.0	5.0	5.0	6.4	4.2	4.4	3.8	3.2	4.2	5.0	5.4	3.8	5.0	4.4
January	6.0	5.2	4.8	3.6	3.0	2.8	2.2	4.6	5.2	5.8	4.4	5.0	7.0	5.6	4.2	3.8	3.6	3.8	3.8	2.6	4.6	6.6	6.2	3.0	4.5
February	11.6	6.8	5.0	3.8	4.2	3.8	4.0	5.0	5.8	6.8	7.6	6.2	7.6	9.6	12.4	10.2	5.6	4.0	8.2	5.4	4.8	8.2	10.0	5.8	6.8
March	9.8	6.8	4.6	5.8	3.6	4.6	4.8	7.4	10.6	9.4	9.0	10.8	13.2	12.8	11.4	9.4	10.6	9.6	9.4	7.4	5.2	6.6	7.2	9.2	8.3
April	4.6	3.8	4.8	4.0	3.6	4.8	8.0	10.0	7.8	6.4	8.0	9.0	9.2	11.2	10.0	8.8	7.8	7.6	5.4	5.6	5.4	6.2	5.4	7.6	6.9
May	7.4	5.2	4.8	5.0	4.2	7.8	9.8	8.2	6.6	6.2	6.0	9.6	8.8	10.6	10.4	7.2	8.8	6.6	8.4	9.2	4.8	7.6	6.4	5.6	7.3
June	9.2	6.8	6.2	4.6	5.8	5.6	6.8	7.4	6.6	6.4	9.2	11.4	9.6	14.0	14.0	10.4	10.6	10.8	7.4	9.2	9.0	6.6	7.4	5.6	8.4
July	5.8	5.6	4.0	3.6	3.6	5.6	5.6	8.2	10.2	5.4	6.8	8.8	12.2	9.6	10.4	10.4	8.6	9.2	7.4	7.4	6.6	8.2	7.6	7.0	7.4
August	5.8	5.6	4.0	3.6	3.6	5.6	5.6	8.2	10.2	5.4	6.8	8.8	12.2	9.6	10.4	10.4	8.6	9.2	7.4	7.4	6.6	8.2	7.6	7.0	7.4
Winter	5.8	5.3	4.8	3.7	4.1	3.9	4.8	5.9	<u>6.5</u>	6.1	5.7	5.3	6.1	5.2	4.5	4.3	3.7	3.9	3.9	<u>3.5</u>	4.7	5.6	4.9	4.7	4.9
Equinox	8.5	6.7	4.9	4.7	4.7	4.8	<u>4.3</u>	7.3	8.1	8.5	8.3	9.1	10.1	11.8	<u>12.0</u>	10.3	7.9	8.1	7.9	6.9	6.4	7.9	9.3	7.7	7.8
Summer*	7.1	5.4	5.2	<u>4.4</u>	4.5	6.1	7.5	8.4	7.7	6.3	7.7	9.9	10.1	<u>11.7</u>	11.3	9.3	9.0	8.5	7.8	7.6	6.5	7.1	6.5	6.2	7.6
Year*	7.1	5.8	5.0	<u>4.3</u>	4.4	4.9	5.6	7.2	7.4	7.0	7.2	8.1	8.7	<u>9.5</u>	9.3	8.0	6.8	6.9	6.6	6.0	5.9	6.9	6.9	6.2	6.7

94. ESKDALEMUIR																									
DECLINATION																									
1932-3																									
1932	1.4	0.9	1.3	0.9	1.3	1.4	1.0	0.9	1.2	2.1	2.7	3.0	2.2	1.5	1.5	1.6	1.0	0.9	1.2	0.8	0.7	1.1	1.1	0.8	1.3
August	1.4	1.3	1.1	0.8	1.0	1.0	1.0	1.1	1.2	3.2	2.7	1.8	1.0	1.5	2.1	1.6	1.0	0.6	0.9	1.1	2.7	1.6	1.9	1.4	1.4
September	2.0	1.3	1.0	0.8	1.2	1.1	0.6	1.7	1.1	1.1	2.4	2.7	1.8	1.2	1.2	2.0	0.8	0.8	0.7	2.1	1.6	1.4	1.9	1.5	1.4
October	1.2	1.4	1.1	0.8	0.9	0.7	0.7	0.9	0.8	1.3	1.9	1.5	0.9	0.8	1.0	0.7	0.9	0.7	0.7	1.1	1.8	1.3	0.5	0.6	1.1
November	2.1	1.3	1.1	1.2	1.6	1.0	0.8	0.9	0.7	0.9	1.4	0.9	0.8	0.8	0.7	0.6	0.3	0.4	0.6	0.4	0.6	1.4	0.8	1.0	0.9
December	1.7	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.8	1.1	1.4	1.4	0.9	1.2	0.6	0.6	0.5	0.4	0.4	0.9	0.7	0.7	0.7	0.8
1933	0.8	1.2	1.2	0.8	0.6	0.6	0.5	0.4	0.7	0.8	1.3	0.9	1.2	1.0	0.9	1.0	0.6	0.6	0.4	0.6	1.1	0.8	0.6	0.7	0.8
January	1.6	1.4	0.7	1.2	0.8	0.7	0.6	1.1	1.0	1.3	2.3	2.5	1.6	1.1	1.6	1.9	1.3	0.7	0.8	0.8	0.9	1.5	1.2	1.2	1.2
February	1.3	2.0	1.6	1.5	1.1	1.1	1.2	1.5	1.1	1.9	2.4	2.9	3.3	1.4	1.8	1.3	1.1	1.0	1.2	1.0	1.2	1.0	1.1	1.9	1.7
March	0.5	0.8	1.0	1.5	1.8	1.6	1.2	1.1	2.0	2.5	2.9	2.9	1.3	0.8	1.3	1.7	1.2	0.7	0.4	0.5	0.4	0.7	1.1	0.9	1.3
April	1.5	1.3	1.3	1.3	1.6	2.0	1.5	1.3	1.6	2.1	3.1	2.6	1.0	0.5	0.7	1.4	1.1	0.6	0.8	0.7	0.5	0.9	1.4	1.3	1.4
May	1.9	1.5	1.4	1.5	1.6	1.6	1.3	1.2	1.1	1.9	3.0	1.9	1.5	1.1	0.9	1.0	0.9	1.0	0.6	1.0	0.7	0.9	1.5	1.7	1.4
June	1.0	1.1	1.6	1.7	1.0	1.4	0.9	1.1	1.4	2.6	3.1	2.6	1.9	1.2	1.8	1.7	1.1	1.5	0.8	0.7	0.8	1.1	1.7	1.6	1.5
July	1.0	1.1	1.6	1.7	1.0	1.4	0.9	1.1	1.4	2.6	3.1	2.6	1.9	1.2	1.8	1.7	1.1	1.5	0.8	0.7	0.8	1.1	1.7	1.6	1.5
August	1.0	1.1	1.6	1.7	1.0	1.4	0.9	1.1	1.4	2.6	3.1	2.6	1.9	1.2	1.8	1.7	1.1	1.5	0.8	0.7	0.8	1.1	1.7	1.6	1.5
Winter	<u>1.5</u>	1.2	1.0	0.8	0.9	0.7	0.6	0.7	0.7	0.9	1.4	1.2	1.1	0.9	0.9	0.7	0.6	0.5	<u>0.5</u>	0.6	1.1	1.1	0.7	0.7	0.9
Equinox	1.6	1.5	1.1	1.1	1.0	1.0	0.9	1.3	1.1	1.9	<u>2.5</u>	2.5	1.9	1.3	1.7	1.7	1.0	0.9	<u>0.8</u>	1.2	1.2	1.5	1.5	1.6	1.4
Summer*	1.3	1.2	1.3	1.4	1.5	1.6	1.3	1.1	1.5	2.2	<u>3.0</u>	2.5	1.5	0.9	1.1	1.4	1.1	0.9	0.7	<u>0.6</u>	0.9	1.3	1.3	1.3	1.4
Year*	1.4	1.3	1.1	1.1	1.2	1.1	0.9	1.1	1.1	1.7	<u>2.3</u>	2.1	1.5	1.0	1.3	1.3	0.9	0.8	<u>0.7</u>	0.8	1.0	1.1	1.2	1.2	1.2

95. ESKDALEMUIR										VERTICAL FORCE										1932-3					
1932	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
August	1.4	1.6	1.2	1.4	1.8	1.2	1.4	1.8	2.2	3.0	4.4	5.4	3.4	2.8	5.2	5.4	3.2	2.8	1.8	2.2	1.2	1.4	1.2	1.6	2.5
September	1.4	1.4	1.2	1.2	1.2	1.4	1.0	3.0	3.4	3.6	3.0	3.0	3.0	2.8	4.2	4.8	3.0	1.6	2.6	2.2	1.2	1.4	3.0	2.6	3.4
October	3.4	2.6	2.0	1.2	1.4	1.6	1.8	2.4	1.4	1.4	2.4	3.4	1.6	2.6	4.0	2.0	1.4	2.0	1.0	1.2	1.4	1.6	2.6	1.0	2.0
November	1.4	1.0	1.4	1.2	1.0	1.0	1.4	2.2	2.0	1.0	1.6	1.6	1.4	2.0	1.8	1.6	1.2	1.2	1.2	1.0	1.2	1.2	1.4	1.0	1.4
December	2.0	1.8	1.4	1.6	1.0	1.0	1.2	1.4	1.2	1.4	1.2	1.0	1.0	2.2	1.6	1.0	1.0	1.0	1.0	1.0	1.2	1.4	1.0	2.2	1.3
1933																									
January	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.2	2.4	2.4	1.2	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.0	1.0	1.2
February	1.2	1.2	1.6	1.4	1.0	1.0	1.0	1.2	1.2	1.6	1.8	1.0	1.6	1.8	1.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.0
March	1.8	1.8	1.2	1.2	1.0	1.0	1.0	1.6	1.6	1.8	3.8	2.2	2.4	3.4	4.8	4.0	1.0	2.6	1.0	1.0	1.0	1.0	1.8	1.8	1.9
April	1.4	2.6	2.4	3.6	2.0	1.0	1.0	2.2	4.2	2.6	2.8	3.0	2.2	5.0	5.8	3.4	2.2	2.0	2.4	1.0	1.2	1.8	2.8	3.6	2.6
May	1.0	1.0	1.2	1.8	1.0	1.4	2.0	3.0	4.2	4.4	4.8	3.0	4.2	4.6	3.8	3.8	3.0	2.0	1.8	1.6	1.2	1.4	1.4	1.6	2.5
June	3.0	1.4	1.8	1.6	1.4	1.6	1.8	1.4	1.8	3.2	4.2	3.4	4.0	5.2	2.8	3.2	4.2	2.4	1.4	2.6	1.6	1.4	1.2	2.2	2.8
July	2.2	1.6	2.6	2.4	2.0	1.8	1.8	1.6	3.2	3.8	5.4	3.6	4.2	4.0	4.2	6.0	4.0	2.6	2.6	2.4	1.4	1.2	1.0	2.2	2.8
August	1.8	1.8	1.4	2.0	3.2	1.4	1.2	1.0	3.0	4.8	4.0	3.2	2.6	5.8	5.4	2.2	3.6	3.2	2.0	2.6	1.6	1.4	2.2	2.0	2.6
Winter	1.4	1.3	1.3	1.3	1.0	1.0	1.1	1.5	1.3	1.3	1.5	1.2	1.6	2.1	1.6	1.1	1.1	1.1	1.1	1.1	1.0	1.2	1.1	1.1	1.3
Equinox	2.0	2.1	1.7	1.8	1.4	1.3	1.2	2.3	2.7	2.3	3.0	2.9	2.3	3.8	4.9	3.1	1.5	2.3	1.7	1.1	1.3	1.9	2.5	2.5	2.2
Summer*	1.9	1.4	1.7	1.9	1.7	1.5	1.8	1.9	3.1	4.0	4.8	3.4	3.8	4.8	4.1	3.9	3.6	2.4	2.0	2.1	1.4	1.3	1.4	1.9	2.0
Year*	1.8	1.6	1.6	1.7	1.4	1.3	1.4	1.9	2.3	2.5	3.1	2.5	2.5	3.6	3.5	2.7	2.1	1.9	1.6	1.4	1.3	1.4	1.7	1.9	2.0

DIURNAL VARIATION OF HOURLY RANGES OF THE TERRESTRIAL MAGNETIC ELEMENTS FOR INTERNATIONAL DISTURBED DAYS

Monthly, seasonal and annual means for periods ending at the exact hours of Greenwich Mean Time

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
96. ESKDALEMUIR																									
HORIZONTAL FORCE																									
1932-3																									
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
August	20.4	35.6	35.6	18.6	19.4	34.2	38.0	32.4	37.8	29.4	22.0	39.2	42.6	58.4	54.2	59.0	70.0	68.2	51.4	49.8	24.2	52.8	45.2	34.4	40.5
September	13.6	21.8	24.2	27.4	19.0	31.2	25.0	21.2	27.8	23.4	20.0	28.2	37.2	31.6	51.2	57.0	45.4	35.4	33.4	53.4	56.6	41.4	28.2	30.0	32.7
October	19.6	23.4	18.0	22.8	30.6	23.4	19.0	22.0	28.2	25.6	26.4	21.2	23.8	21.8	31.0	35.0	35.0	32.0	25.0	34.6	33.2	36.6	41.2	22.4	27.2
November	9.6	8.8	14.0	17.0	22.2	23.0	29.6	25.8	22.8	19.0	20.6	16.6	28.6	34.2	29.8	17.4	23.0	21.6	24.4	22.8	27.4	28.0	23.2	24.2	22.2
December	52.4	55.2	15.2	11.2	10.4	9.8	11.2	11.2	12.2	12.8	11.6	19.0	24.6	23.6	22.6	19.8	40.6	35.0	27.0	32.6	45.0	42.6	25.6	34.8	25.3
1933	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
January	14.8	10.2	15.0	11.2	14.0	19.2	15.2	14.4	16.8	11.4	12.4	17.0	15.0	17.2	25.4	40.6	30.4	32.0	31.4	43.6	46.0	55.2	36.4	22.0	23.6
February	48.6	17.8	21.4	31.8	28.0	21.6	19.8	19.2	23.8	16.8	21.6	27.6	27.0	40.4	43.4	49.4	45.8	45.0	39.8	60.0	37.0	48.8	74.2	54.2	36.0
March	25.6	36.8	33.8	30.0	35.2	41.4	26.4	14.6	22.2	23.4	23.8	23.8	28.6	26.8	19.6	53.0	62.0	61.2	60.0	70.2	54.2	50.6	63.4	57.4	39.3
April	19.8	20.8	20.4	17.2	13.6	19.4	13.4	11.4	12.8	17.2	22.0	19.2	16.8	28.0	38.2	36.2	41.6	28.0	39.0	50.0	38.0	34.6	38.2	36.4	26.3
May	22.4	20.8	27.6	24.2	19.0	16.6	22.4	17.2	16.2	17.0	20.6	25.8	51.2	39.2	61.8	82.4	84.0	61.2	49.8	41.2	50.8	54.6	20.8	38.2	36.9
June	40.2	37.4	27.2	20.2	17.2	21.0	27.2	23.0	23.0	16.2	17.0	23.8	29.4	42.6	52.0	44.6	37.8	31.0	31.6	23.2	33.0	29.2	34.6	34.0	29.9
July	27.6	17.6	14.8	13.0	10.8	9.0	14.0	27.4	24.0	23.2	23.6	29.4	41.8	46.6	32.2	52.2	29.2	20.6	16.4	23.4	19.8	21.2	32.8	23.2	24.7
August	14.0	15.2	16.2	10.2	8.6	18.2	18.6	17.8	15.6	16.2	14.6	23.0	39.4	30.6	32.8	48.4	75.4	71.2	78.4	43.6	22.2	14.4	18.2	30.0	
Winter	31.3	23.0	16.4	17.8	18.7	18.4	18.9	17.7	18.9	15.0	16.5	20.1	23.8	28.9	30.3	31.8	34.9	33.4	30.7	39.7	38.9	43.7	39.9	33.8	26.8
Equinox	19.7	25.7	24.1	24.3	24.6	28.9	20.9	17.3	22.7	22.4	23.1	23.1	26.6	27.1	35.0	45.3	46.0	39.1	39.3	52.1	45.5	40.8	42.7	36.5	31.4
Summer*	26.9	25.3	23.9	17.9	15.3	18.2	23.0	23.2	22.5	19.8	19.9	27.5	40.9	43.2	47.4	58.2	55.9	45.6	40.7	35.3	34.4	35.6	29.5	30.4	31.7
Year*	25.9	24.7	21.5	20.0	19.5	21.8	21.0	19.4	21.4	19.1	19.7	23.6	30.4	33.0	37.6	45.1	45.6	39.4	36.9	42.4	39.6	40.0	37.4	33.6	29.9

97. ESKDALEMUIR										DECLINATION										1932-3									
1932																													
August	3.9	10.1	8.0	2.8	3.3	4.0	4.9	5.0	4.3	4.2	5.3	3.3	4.5	4.5	3.2	6.8	7.5	10.4	11.3	9.1	5.7	10.2	10.9	9.1	6.3				
September	3.1	5.5	5.5	4.5	6.7	4.2	3.8	3.7	3.1	3.4	3.3	3.4	3.2	3.2	3.1	11.1	8.2	8.5	6.8	10.6	10.1	8.5	7.4	5.7	5.7				
October	3.6	7.0	4.5	4.7	5.4	3.0	2.5	3.1	3.3	4.0	2.1	3.1	3.3	2.5	5.5	5.8	10.3	10.8	3.9	7.3	4.2	6.9	7.1	5.8	5.0				
November	2.2	2.2	2.6	4.4	4.0	4.4	5.3	3.7	5.1	3.1	3.2	4.0	3.9	3.5	6.5	3.8	3.2	6.8	7.5	3.3	5.1	4.6	5.1	4.9	4.3				
December	9.0	9.3	3.4	3.9	2.4	2.1	2.4	2.0	1.9	1.9	2.4	2.5	2.8	2.5	2.5	3.0	5.5	8.1	8.0	8.1	11.4	7.0	4.8	6.4	4.7				
1933																													
January	4.5	3.4	4.0	2.7	2.5	3.3	1.7	2.1	1.8	2.2	2.5	2.8	2.8	2.7	2.8	6.9	8.6	6.9	6.8	10.7	8.9	9.3	6.7	5.9	4.7				
February	7.8	5.8	6.0	6.0	4.4	3.1	2.4	3.8	4.7	3.2	4.2	3.5	4.0	5.5	7.4	8.9	11.9	7.9	15.1	13.7	5.0	10.0	11.4	13.5	7.1				
March	6.5	9.8	7.3	8.0	7.5	6.5	5.1	2.2	3.1	3.4	4.0	3.4	3.2	3.2	2.8	6.0	9.6	8.5	13.0	14.6	8.7	12.3	10.3	6.6	6.9				
April	4.0	3.7	6.4	3.7	3.0	2.4	3.2	2.2	1.7	2.8	3.9	3.2	4.6	3.4	3.7	2.8	3.6	2.8	4.9	7.0	12.3	7.5	8.6	7.4	4.5				
May	4.7	4.2	5.5	5.1	2.7	4.9	4.0	3.9	3.8	3.2	3.6	3.4	4.2	2.6	3.8	8.0	12.7	11.2	5.8	6.7	8.0	8.3	4.6	8.6	5.6				
June	9.0	4.4	6.4	9.0	4.4	5.7	4.5	3.5	2.3	3.5	3.0	2.9	3.2	2.9	2.6	4.0	3.2	2.1	3.9	3.0	3.5	4.2	6.4	6.5	4.3				
July	3.4	4.2	3.4	2.4	2.5	2.4	3.0	2.1	2.6	3.4	3.5	4.2	3.2	3.0	2.7	4.8	2.6	1.6	1.1	3.7	2.6	2.4	8.4	3.1	3.2				
August	2.6	2.3	3.4	3.9	1.9	2.6	3.0	3.3	3.4	3.4	3.8	3.6	3.4	3.1	2.8	4.6	6.5	6.0	12.3	16.8	8.6	3.3	4.6	5.8	4.8				
Winter																													
Winter	5.9	5.2	4.0	4.3	3.3	3.2	2.9	2.9	3.4	<u>2.6</u>	3.1	3.2	3.4	3.5	4.8	5.7	7.3	7.4	<u>9.3</u>	9.0	7.6	7.7	7.0	7.7	5.2				
Equinox																													
Equinox	4.3	6.5	5.9	5.2	5.6	4.0	3.7	<u>2.8</u>	2.8	3.4	3.3	3.3	3.6	3.1	3.8	6.4	7.9	7.6	7.2	<u>9.9</u>	8.8	8.8	8.4	6.4	5.5				
Summer*																													
Summer*	5.1	4.8	5.3	4.9	<u>3.0</u>	4.1	3.9	3.4	3.1	3.5	3.6	3.5	3.7	3.1	<u>3.0</u>	5.6	6.4	5.8	5.7	6.6	5.3	5.4	<u>6.8</u>	6.4	4.7				
Year*																													
Year*	5.1	5.5	5.1	4.8	4.0	3.8	3.5	<u>3.0</u>	3.1	3.2	3.3	3.3	3.5	3.2	3.9	5.9	7.2	6.9	7.4	<u>8.5</u>	7.3	7.3	7.4	6.8	5.1				

98. ESKDALEMUIR										VERTICAL FORCE										1932-3									
1932	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
August	11.4	33.0	14.2	21.4	8.4	4.2	5.4	6.0	6.8	5.2	6.0	3.8	5.0	9.4	9.4	20.0	8.8	13.2	14.6	20.2	6.6	17.8	18.6	19.0	12.0				
September	6.4	10.6	7.0	22.8	11.0	5.6	5.0	6.2	4.6	3.2	2.8	2.4	5.6	18.8	13.4	22.6	22.0	25.6	17.6	19.0	20.6	14.4	17.2	8.0	12.2				
October	12.8	8.4	7.8	8.0	8.2	5.8	5.8	5.0	5.8	5.0	5.6	3.0	4.4	5.0	13.6	11.8	13.6	24.2	16.2	9.4	12.2	8.6	19.2	7.8	9.5				
November	7.0	3.4	3.6	7.2	6.6	4.4	6.6	5.0	6.8	3.2	3.8	3.2	7.6	7.2	10.0	5.8	3.6	5.2	8.4	5.6	6.2	5.4	6.4	8.0	5.8				
December	23.0	10.2	7.6	2.4	4.0	5.8	4.8	4.0	4.0	3.2	2.2	4.4	5.2	4.4	5.2	4.0	18.4	15.8	9.6	14.4	16.6	15.2	8.0	14.2	8.6				
1933																													
January	4.2	4.0	5.0	3.6	3.4	3.2	3.2	2.4	2.0	2.0	1.8	1.2	2.6	5.2	4.4	13.2	14.6	11.2	11.0	12.6	8.4	14.0	5.8	9.4	6.2				
February	15.8	8.6	14.4	7.4	6.8	8.0	6.8	6.4	4.8	3.4	2.4	3.4	4.2	7.6	19.4	22.6	24.4	15.4	10.6	19.6	6.6	11.6	20.2	22.0	11.3				
March	9.8	20.8	19.0	10.4	10.6	11.0	9.2	9.6	5.8	4.0	3.8	3.2	5.4	3.2	10.2	17.4	11.8	10.6	12.6	19.6	17.4	10.4	24.0	15.4	11.5				
April	7.6	8.6	4.4	8.4	7.0	6.0	5.0	3.6	2.2	3.2	3.8	3.4	8.2	8.4	5.2	5.6	6.2	9.0	9.6	8.4	18.8	18.0	23.2	16.2	8.3				
May	6.4	10.2	6.6	6.6	10.4	9.4	7.2	4.6	4.8	4.6	2.2	4.4	7.0	10.6	21.2	49.0	56.6	46.0	19.4	39.6	39.2	58.2	25.6	23.0	19.7				
June	20.4	11.4	21.2	19.2	20.0	11.6	8.2	4.6	3.6	4.0	4.0	3.6	4.2	8.0	8.8	15.2	6.2	4.4	4.6	5.8	5.2	9.8	16.0	8.0	9.5				
July	7.4	6.6	9.0	11.0	8.2	6.0	5.4	2.8	5.2	4.8	4.0	4.0	5.4	6.2	7.2	10.4	7.6	5.8	4.8	4.6	7.0	4.8	17.4	9.8	6.9				
August	3.4	3.6	10.8	4.8	6.4	2.2	6.8	2.6	2.6	4.0	3.4	5.8	6.0	7.4	11.8	11.0	9.2	12.6	24.4	17.4	16.0	6.6	14.4	13.2	8.6				
Winter	12.5	6.5	7.7	5.1	5.2	5.3	5.3	4.5	4.4	2.9	<u>2.5</u>	3.1	4.9	6.1	9.7	11.4	<u>15.3</u>	11.9	9.9	13.1	9.5	11.5	10.1	13.4	8.0				
Equinox	9.1	12.1	9.5	12.4	9.2	7.1	6.3	6.1	4.6	3.9	4.0	<u>3.0</u>	5.9	8.9	10.6	14.3	13.4	17.3	14.0	14.1	17.3	12.9	<u>20.9</u>	11.9	10.4				
Summer*	10.4	11.6	12.3	12.5	11.5	7.8	6.7	<u>4.1</u>	4.6	4.5	4.2	4.2	5.5	8.3	11.9	<u>22.5</u>	19.9	17.3	12.1	17.2	15.7	21.3	18.9	13.7	11.6				
Year*	10.7	10.1	9.8	10.0	8.6	6.7	6.1	4.9	4.5	3.8	3.6	<u>3.4</u>	5.4	7.7	10.8	16.1	16.2	15.5	12.0	14.8	14.1	15.2	<u>16.6</u>	13.0	10.0				

MEAN VALUE OF $(H_r H + V_r V) 10^{-4}$ FOR EACH DAY

99. ESKDALEMUIR

Day	August	September	October	November	December	January	February	March	April	May	June	July	August
	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
1	67	38	32	58	27	50	18	28	45	450	83	38	23
2	83	43	35	35	26	43	33	29	33	105	38	32	25
3	84	27	39	27	19	21	19	34	47	62	34	38	21
4	64	32	30	40	23	13	23	25	51	76	22	29	23
5	55	36	38	36	17	12	20	15	40	58	26	28	123
6	40	89	26	18	20	47	16	21	44	85	18	33	65
7	26	37	28	23	12	27	25	22	65	46	25	27	35
8	31	78	28	24	42	20	19	25	42	31	50	44	38
9	27	63	46	17	54	16	21	20	44	21	52	67	28
10	20	26	50	18	34	12	18	28	34	22	33	49	24
11	28	21	35	19	17	12	12	45	24	29	22	51	24
12	65	22	28	28	14	15	16	29	17	22	30	38	27
13	56	27	26	31	39	15	13	39	21	41	151	27	80
14	31	29	19	51	110	22	31	32	39	71	78	28	54
15	32	30	111	31	95	56	41	20	73	63	57	24	41
16	24	24	63	112	92	24	13	21	76	39	25	29	34
17	28	23	63	64	63	20	11	25	95	59	27	48	50
18	27	48	32	40	33	16	23	102	94	84	23	57	92
19	23	77	30	30	32	49	90	122	90	46	48	30	56
20	22	52	105	30	17	42	83	123	82	28	71	38	58
21	55	40	81	18	14	14	141	93	86	27	34	26	73
22	60	54	56	14	14	77	116	96	73	39	30	29	25
23	38	110	78	16	13	52	114	119	65	32	24	73	54
24	25	126	53	11	15	51	94	118	51	29	25	102	73
25	31	142	36	33	34	44	87	50	40	39	52	35	39
26	24	67	19	16	35	56	85	30	51	19	38	44	46
27	98	74	31	17	39	88	41	55	31	46	40	71	29
28	200	27	20	29	38	73	25	61	39	40	78	36	24
29	132	45	22	40	17	50	..	57	26	56	50	30	22
30	102	48	46	20	30	46	..	38	72	87	36	27	24
31	48	..	24	..	48	28	..	43	..	72	..	30	22
Mean	53	52	43	31	35	36	44	51	53	62	44	41	44

DIURNAL VARIATION OF $(H_{\text{R}} + V_{\text{R}}) 10^{-4}$

Mean values for periods of 60 minutes ending at the hours of Greenwich Mean Time

100. ESKDALEMUIR

Hour G. M. T.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
ALL DAYS																									
1932	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
August	44	58	47	50	39	34	39	39	47	48	44	49	52	71	76	80	67	69	66	59	42	52	56	52	53
September	52	55	49	53	39	39	36	37	35	40	34	41	46	59	67	77	72	63	49	57	67	74	50	50	52
October	54	42	33	30	31	26	28	32	35	34	37	36	45	52	62	56	51	54	43	47	61	49	57	46	43
November	29	20	26	25	28	26	30	30	35	27	28	28	35	39	40	35	36	34	35+	30	34	34	34	35	31
December	57	49	32	24	21	21	22	22	25	25	23	26	30	37	31	28	46	41	38	51	55	49	37	49	35
1933	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
January	38	42	41	28	31	33	27	27	31	27	21	24	27	38	37	41	41	38	41	45	44	55	42	39	36
February	55	43	46	40	33	28	27	27	32	27	33	33	36	45	53	60	53	45	47	54	42	61	72	66	44
March	48	56	51	48	44	43	33	35	34	42	40	45	44	46	60	71	60	57	51	57	58	48	71	71	51
April	50	57	43	44	32	42	39	31	37	32	44	45	52	67	66	65	61	59	55	61	78	59	82	71	53
May	73	72	49	47	38	37	40	35	36	34	36	39	53	64	76	99	105	87	76	88	74	96	63	69	62
June	51	47	49	41	42	34	35	31	33	35	38	39	47	60	61	70	53	40	39	39	36	41	47	44	44
July	39	42	37	32	30	24	28	29	36	38	41	49	49	55	55	67	53	42	39	36	37	32	42	44	41
August	34	29	39	28	29	27	33	36	41	41	31	39	49	56	61	54	60	60	73	62	48	34	45	40	44
Winter	45	39	36	29	28	27	27	27	31	27	26	28	32	40	40	41	44	39	40	45	44	50	46	47	37
Equinox	51	53	44	44	37	37	34	34	35	37	39	42	47	56	64	67	61	58	49	55	63	56	71	59	50
Summer*	50	51	45	40	36	31	35	33	37	38	38	43	50	61	65	75	69	59	56	56	48	53	51	51	49
Year*	49	47	42	38	34	32	32	31	34	34	34	37	43	52	56	61	58	52	49	52	52	53	56	53	45
QUIET DAYS																									
1932	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
August	20	17	15	13	16	16	17	23	29	32	38	33	35	43	43	32	28	23	31	14	18	18	17	13	25
September	17	17	16	14	11	17	14	28	26	25	25	27	29	43	41	36	23	29	24	15	19	26	27	32	24
October	25	23	15	12	18	14	13	24	21	27	27	33	24	29	39	22	15	24	14	19	19	23	30	14	22
November	14	13	14	12	12	14	17	24	22	17	17	18	18	19	16	16	12	14	13	10	15	14	13	9	15
December	20	20	17	15	11	11	17	18	17	17	16	12	13	17	12	10	8	8	10	9	10	14	13	23	14
1933	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
January	13	10	9	8	12	9	10	10	14	11	17	13	19	19	16	11	11	10	9	11	14	13	10	13	12
February	15	14	15	12	9	9	8	13	14	17	15	12	19	17	15	10	10	10	8	12	15	15	9	12	9
March	27	19	13	11	11	10	11	15	17	19	30	20	24	31	43	35	13	19	18	13	12	18	25	18	20
April	22	23	19	26	15	12	12	22	37	28	28	31	32	43	45	31	28	25	27	16	14	18	25	31	25
May	12	10	13	15	10	14	22	30	32	31	35	28	34	40	34	32	26	22	17	16	14	16	15	20	22
June	25	15	16	15	13	20	24	20	19	24	29	31	33	41	30	26	34	22	20	27	15	19	16	19	23
July	25	18	22	19	19	17	19	19	25	28	39	35	35	41	42	44	36	30	24	26	21	16	16	19	26
August	18	17	13	15	20	15	14	18	30	31	29	29	32	42	41	27	30	29	21	24	18	20	23	21	24
Winter	15	14	14	12	11	11	13	16	17	15	16	14	20	18	15	12	10	11	11	2	13	14	13	13	14
Equinox	23	21	16	16	14	13	13	22	25	25	27	28	27	37	42	31	20	24	21	16	16	21	27	24	23
Summer*	20	15	16	16	15	17	20	23	26	29	34	31	34	41	37	33	31	25	22	22	17	17	17	19	24
Year*	19	17	15	14	13	13	15	20	23	23	26	24	27	32	31	25	20	20	18	16	15	18	19	19	20
DISTURBED DAYS																									
1932	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
August	75	207	123	127	70	76	87	81	94	72	64	82	93	139	132	188	156	172	151	174	70	168	159	142	121
September	52	84	71	147	82	77	64	63	67	53	46	58	87	136	145	196	174	174	134	174	186	134	124	86	85
October	90	77	65	74	88	65	58	59	73	64	69	48	60	58	112	111	119	162	114	99	100	154	72	88	88
November	47	30	39	60	67	58	79	65	69	46	51	42	81	89	94	55	54	59	79	63	73	70	68	76	63
December	190	138	79	30	35	42	41	37	38	35	29	52	64	59	61	51	150	129	88	119	150	139	78	122	81
1933	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
January	44	35	47	34	48	46	35	39	37	28	29	33	37	52	62	126	116	103	101	129	114	155	86	79	67
February	152	69	101	86	77	72	64	61	62	43	47	61	64	101	159	183	177	144	114	188	91	133	214	189	111
March	86	154	141	97	106	118	85	67	63	57	57	54	71	58	79	166	156	150	157	205	168	131	213	164	117
April	67	73	54	66	53	59	44	35	31	42	53	47	65	84	86	85	97	86	107	121	147	138	167	133	81
May	66	81	76	70	79	70	69	50	49	49	53	63	116	113	198	357	393	308	170	246	260				