

OBSERVATIONS ON VISIBILITY OF LIGHTS

RÉSUMÉ OF OBSERVATIONS OF LIGHTS EFFECTED BY GREAT BRITAIN FROM 1925 TO 1929 ; BY DENMARK FROM 1925 TO 1929 ; BY THE U. S. A. IN 1923 AND BY FRANCE IN 1925.

In accordance with the Resolution made under Section III.D by the International Hydrographic Conference held in London, in 1919, and in answer to Circular Letter N° 39 of 1922 issued by the Directing Committee, the International Hydrographic Bureau has received from a certain number of the States Members observations on the visibility of lights on their coasts, which have been made under various conditions during the last few years.

Special Publication N° 2, issued in March, 1924, by the International Hydrographic Bureau, and reproduced in the "*Hydrographic Review*", Vol. I, N° 2, of May 1924, pages 67-93, on the subject of *Observations of Lights made in the United Kingdom*, dealt with information which had been collected on the coasts of Great Britain and Ireland during a period of two years only.

The same number of the "*Hydrographic Review*" contained an article entitled *Visibility of Lights* by Mr. P. VAN BRAAM VAN VLOTEN, Engineer in Chief of the Lighthouse Service of the Netherlands, which gave an analysis, in the form of tables and diagrams, of the observations made in the Netherlands, during past years.

Special Publication N° 7, issued in August, 1925, by the International Hydrographic Bureau and reproduced in the "*Hydrographic Review*", of November, 1925, Vol. III, N° 1, pages 141-179, on the subject of *Observations of Visibility of Lights* was published to inform the States Members, and all those interested in this branch of maritime research, of the results obtained from certain observations recently made in Sweden, Denmark, Belgium and the Argentine, and also to put forward a certain number of notes which will be useful both in recording the observations and in the examination thereof, with the object of ensuring in the future better coordination of the observations which should be carried out over a considerable period of time and under different climatic conditions.

A certain number of preliminary general considerations on the subject of the visibility of lights, and on the ranges of lighthouses were reproduced in Special Publication N° 7, to which the reader is referred.

The object of the present note is to complete the information already published by the Bureau, giving a resumé of the results obtained during the years 1925, 1926, 1927, 1928, and 1929 from observations of British Lights which have been supplied to the Bureau through the courtesy of *Trinity House*.

The observations were made daily, by lighthouse keepers, three times during the night from each lighthouse, noting simply if the surrounding lights were *visible*, *faintly visible* or *not visible*.

A sheet containing the results of such observations was thus prepared for each month, and the sheets were centralised and sent annually to the International Hydrographic Bureau by the care of the *Hydrographic Department* of the British Admiralty.

The total sums for each group of lights were counted by the Bureau which worked up for each group the annual percentage of visibility, that is the ratio between the number of times the light was seen and the total number of observations taken (visible or not).

The accompanying statistical tabulation shows the general resumé of these yearly percentages for the years 1925, 1926, 1927, 1928 and 1929.

The character, candle power, height, distance of horizon of each observed light are given ; distance and bearing of observing light from light observed are also given.

The abbreviation (L. V.) has been used for Light Vessels.

When the character of a light was altered during the year, the corresponding percentage has not been given.

Colour sectors have been mentioned when necessary.

Information concerning visibility of light-buoys have been inserted, pro memoria, whenever available.

The observations of British Lights made by French lighthouse stations and provided by the *Service Central des Phares et Balises* have been incorporated in the Tables.

These Tables are to be used in conjunction with those appearing in the form of appendix to Special Publication N° 2 ("*Hydrographic Review*", Vol. I, N° 2, May 1924, page 77-93).

Certain groups, where the lights are visible from various distances all around and at different azimuths, as, for instance, groups 340 South Foreland ; 462 Orfordness ; 1776 Lundy South, etc., would lend themselves with comparative ease to closer study of the regional atmospheric transparency ; but these systematic experiments on reciprocal visibility should be accompanied by a methodical record of atmospheric conditions such as the temperature of air and sea and the hygrometrical state of the air.

The following Tables give the results of observations of lights made in Denmark by the *Fyrdirektoratet* from 1925 to 1929. These Tables form the continuation of those given in Special Publication N° 7, page 38 ("*Hydrographic Review*", Vol. III, N° 1, page 174) - Table IA — for the years 1921 to 1924.

Below is given also a Table summarising the observations of visibility of lights made in the United States of America by the *Bureau of Lighthouses*, during the year 1923, and for which 112 lighthouse stations and 27 light-vessels were used.

By applying the method of reduction of observations given on page 14 of Special Publication N° 7 ("*Hydrographic Review*", Vol. III, N° 1, page 151), the International Hydrographic Bureau has endeavoured to trace the curve of percentage of visibility for certain lights at various distances. But even when using the mean percentages obtained over a period of several years, the dispersion between the points obtained is very great at long distances and makes the values uncertain in these parts of the curve.

Let us call M the maximum range of visibility for a given light ; a the total range chosen for carrying out the percentages from 0 % to 100 % in the diagram (fig. 1). Granted that the general shape of the percentage curve at various distances will assume a parabolic form, the equation of this curve referred to the axes x and y shown in fig. 1 will be :-

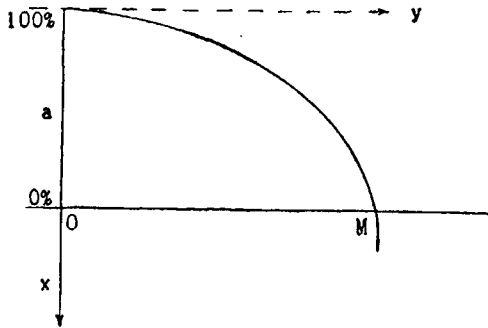


Fig. 1

$$y^2 = 2 px$$

In particular,
for the maximum range,

$$M^2 = 2 pa$$

from which $p = \frac{M^2}{2a}$

and $y^2 = \frac{M^2}{a} x$

By giving x in the last equation the values $9/10a$, $8/10a$ $1/10a$ and 0, we obtain for y the various ranges of visibility of 10 %, 20 %, 30 %..... 90 %, 100 %.

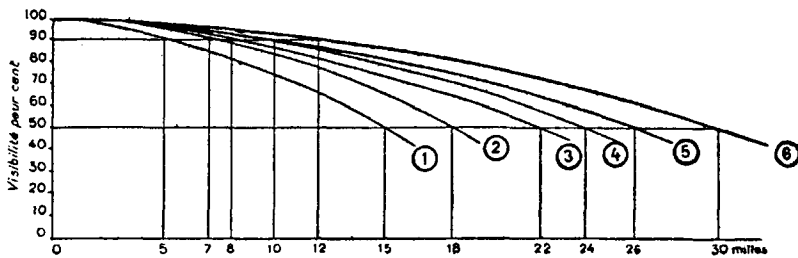
We obtain in this manner the following Table :-

Probable frequency of visibility.

0 %.....	at the maximum range of M nautical miles.
10 %.....	at a distance $M \sqrt{\frac{9}{10}} = 0.95 M$
20 %.....	» $M \sqrt{\frac{8}{10}} = 0.90 M$
30 %.....	» $M \sqrt{\frac{7}{10}} = 0.84 M$
40 %.....	» $M \sqrt{\frac{6}{10}} = 0.76 M$
50 %.....	» $M \sqrt{\frac{5}{10}} = 0.71 M$
60 %.....	» $M \sqrt{\frac{4}{10}} = 0.63 M$
70 %.....	» $M \sqrt{\frac{3}{10}} = 0.56 M$
80 %.....	» $M \sqrt{\frac{2}{10}} = 0.45 M$
90 %.....	» $M \sqrt{\frac{1}{10}} = 0.32 M$
100 %.....	» $M \sqrt{\frac{0}{10}} = 0$

According to this Table therefore, we may make an approximate estimate of the theoretical frequency of visibility of a light at various distances as a function of its maximum range.

The curves taken from practice differ somewhat from the arc of the theoretical parabola ; but the shape, for any given region and for a series of given lights, remains very nearly the same as that shown in fig. 2 which gives the actual visibilities for the principal lights of the French coast on the Channel.



- ① Cap Lévi - 6000^B
- ② Les Bœux de Bréhat - 20000^B
- ③ Chausey - 120000^B
- ④ Ile de Batz Ar. Men. - 200000^B
- ⑤ Ile Vierge - 500000^B
- ⑥ Gatteville - 15 000 000^B

Fig. 2

The characteristic curves, drawn from the data given by direct observation, may be used as a check for calculating, by interpolation, the ranges of intermediate lights, on which a sufficient number of observations have not yet been carried out.

We may also deduce from these curves the actual coefficients, analogous to the theoretical coefficients of range given in the preceding Table, which are used for estimating as closely as possible the probable frequency of visibility of each light at various distances.

Two of these distances are of particular interest and they are sometimes given in the column of range of visibility in the Light List : that at which during the period of one year, the light is visible 50 times out of 100 and that at which it is seen 90 times in a 100. The actual range of visibility is equal, or greater than, the first of these distances more than half of the time, and during 90/100 of the year it is equal, or greater than, the second. The first corresponds to the mean condition of the atmosphere and the second to a state, the transparency of which is exceeded during 90/100 of the year ; that is, to misty weather. It is considered unnecessary to include the ranges corresponding to frequencies of visibility less than 50 %, that is, to clear weather, because in those cases we obtain very high figures which may greatly exceed the geographical range.

According to the Table given above, we see that there is a theoretical

relationship between the range 50 % and the range 90 % of the same light. This theoretical ratio is approximately 2.2 and, therefore, knowing one of these ranges, we may estimate the approximate value of the other by means of this ratio.

The quantity M , maximum range, which is given in the numerical Table above, is not easily deduced from the curves plotted from the observations; the last actually furnish the ranges of 90 % and 50 % with much greater accuracy.

Let μ , for example, be the mean range of visibility, in clear weather; that is M 50 %. We then have:

$$\begin{aligned}\mu &= 0.71 M \\ M &= 1.41 \mu\end{aligned}$$

Consequently :

Probable frequency of visibility.

0 %.....	at the maximum range	1.41 μ
10 %.....	at a distance.....	1.33 μ
20 %.....	"	1.26 μ
30 %.....	"	1.18 μ
40 %.....	"	1.06 μ
50 %.....	"	μ
60 %.....	"	0.88 μ
70 %.....	"	0.78 μ
80 %.....	"	0.63 μ
90 %.....	"	0.45 μ
100 %.....	"	0

Such is the Table giving the theoretical coefficients which it is necessary to apply to the mean range during clear weather — generally given in the Light List — to obtain the ranges corresponding to the various states of atmospheric visibility.

The transparency of the air is subject at all times to very frequent and rapid changes; it may even vary for the same observer and at the same instant depending on the azimuth of the observation. It assumes mean values which differ considerably depending on the season, and even from one day to the next, and since these phenomena are reproduced in their entirety periodically every year, like all others depending on meteorological conditions, only a general approximation of the trend can be made.

The growing practice of taking meteorological observations at sea, assisted by more frequent reception of wireless meteorological messages which, as is well known, frequently include information as to visibility, provide the seaman, where he has not a special nephometer by which to obtain a concrete knowledge thereof, with fairly accurate means to learn the actual visibility conditions, by day as well as by night both in the open sea and along the coast.

We reproduce here the numerical notations which are in use to designate the degree of visibility at sea in meteorological messages of the new international code.

VISIBILITY.

Horizontal visibility.

0.	Objects not visible at	50 met. (55 yards)			
1.	Objects visible at	50 met. (55 yards)	and not visible at	200 met. (220 yards)	
2.	" "	200 " (220 ")	" "	500 " (550 ")	
3.	" "	500 " (550 ")	" "	1,000 " (1,100 ")	
4.	" "	1,000 " (1,100 ")	" "	2,000 " (1½ st. miles)	
5.	" "	2,000 " (1½ st. mile)	" "	4,000 " (2½ " ")	
6.	" "	4,000 " (2½ " ")	" "	10,000 " (6½ " ")	
7.	" "	10,000 " (6½ " ")	" "	20,000 " (12½ " ")	
8.	" "	20,000 " (12½ " ")	" "	50,000 " (31 " ")	
9.	" "	50,000 " (31 " ")	or more.		

Horizontal visibility from ships at sea.

0. *Dense Fog.* Objects not visible at 50 yards.
1. *Thick Fog.* Objects not visible at 1 cable.
2. *Fog.* Objects not visible at 2 cables.
3. *Moderate Fog.* Objects not visible at 5 cables.
4. *Thin Fog or mist.* Objects not visible at 1 nautical mile.
5. *Visibility poor.* Objects not visible at 2 nautical miles.
6. *Visibility moderate.* Objects not visible at 5 nautical miles.
7. *Visibility good.* Objects not visible at 10 nautical miles.
8. *Visibility very good.* Objects not visible at 30 nautical miles.
9. *Visibility excellent.* Objects visible more than 30 nautical miles.

A certain ratio of equivalence may be found between the figures in this Table and the percentages cited in the preceding Tables.

The various data, in conjunction with the information given by the Light Lists, permits the navigator to form some idea of the distance at which he should sight a given light at a given instant.

H. B.



OBSERVATIONS OF LIGHTS IN
GREAT-BRITAIN 1925 - 1929

OBSERVATIONS DE FEUX EN
GRANDE-BRETAGNE DE 1925 à 1929

OBSERVED LIGHT — Feu Observé				OBSERVING STATION - Station Observatrice				PERCENTAGES OF VISIBILITY Pourcentages de Visibilité					
N° List of Lights 1930. N° Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance.	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N° List of Lights 1930. N° Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé	Bearing from Light observed. Rèdèment pris du Feu observé	1925	1926	1927	1928	1929
1	Bishop Rock..... Gp. Fl. 20 sec. (2 w. Fl. 7/10 of a sec.each)	622	143 - 43.6 13.7	6	Round Island.....	15	7.8	037°	95	94	93	95	90
				10	Longships.....	12	29.6	067°	5	2	5	6	9
				11	Wolf Rock.....	12	25.2	080°	59	56	49	51	47
2	Penninis..... Fl. 30 sec. (w. Fl. 1/2 sec.).	100	110 - 33.5 12.3	1795	Pendeen.....	16	29.2	057°	4	4	1	1	4
				1	Bishop Rock.....	13	5.8	251°	92				89
				10	Longships.....	12	23.7	065°	16	11	16	20	25
6	Round Island..... Fl. 30 sec. (R. Fl. 1 7/10 sec.).	415	180 - 54.8 15.3	1795	Pendeen.....	16	27.8	065°	50	39	40	45	39
				1	Bishop Rock.....	13	7.8	217°	91	90	88	91	84
				7	Seven Stones(L.V.)	4	11.0	063°	80	83	77	85	79
10	Longships..... R. & W. sectors. (Occu. 1 min. ecl. 3 sec.)	35	110 - 33.5 12.3	10	Longships.....	12	23.2	077°	53	40	43	46	47
				11	Wolf Rock.....	12	20.4	095°	64	59	56	58	54
				6	Round Island (1)...	15	23.2	256°	50	54	52	60	50
11	Wolf Rock..... Alt. Fl. 30 sec. (W. & R. Fl.alt.2 s. each)	70	110 - 33.5 12.3	11	Wolf Rock.....	12	7.7	197°	94	94	88	95	89
				1	Bishop Rock.....	13	25.2	260°	29	23	28	30	36
				6	Round Island.....	15	20.4	276°	59	57	56	63	54
—	Runnelstone Buoy..... (W. occ. 10 sec.).	—	—	10	Longships.....	12	4.0	315°	90	92	88	90	81
				11	Wolf Rock.....	12	6.9	229°	72	73	63	66	48
				10	Longships.....	12	22.0	286°	36	33	31	30	23
22	Lizard..... Fl. 3 sec. (W. Fl. 1/10 sec.)	3000	230 - 70.0 17.4	10	Longships.....	12	22.0	286°	36	33	31	30	23
				11	Wolf Rock.....	12	23.4	268°	75	72	67	70	57
				10	Longships.....	12	22.0	286°	36	33	31	30	23
—	Manacles Buoy..... (W. occ. 10 sec.).	—	—	25	St. Anthony.....	10	5.7	010°	77	78	72	73	67
				25	St. Anthony.....	10			85	98	98	97	
				25	St. Anthony.....	10				98	98	94	
31	Fowey..... W. & R. sectors. (Fl. 5 sec. - fl. 2 sec.).	W. 2 R. 1	91 - 27.7 10.9	38	Eddystone (2).....	13	17.1	120°	19	8	9	6	7

(1) Red sector observed.

(2) White sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
No List of Lights 1930. <i>N° Livre des Phares 1930</i>	NAME & CHARACTER. <i>NOM ET CARACTÈRE</i>	Candle Power. <i>Puissance</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	No List of Lights 1930. <i>N° Livre des Phares 1930</i>	NAME. <i>N O M</i>	Approximate distance of horizon <i>Distance approchée de l'Horizon</i>	Distance from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Relèvement pris du Feu observé</i>	1925	1926	1927	1928	1929
									34	<i>Polperro, Spy House Point</i> (W. F.).	—	60 - 18.3 8.9	38
36	<i>Looe Pier</i> (F. W. R. sector).	—	26 - 7.9 5.8	38	<i>Eddystone</i> (1).....	13	12.6	145°	11	8	7	6	5
38	<i>Eddystone</i> Gp. Fl. 30 sec. (2 Fl. 1 sec. each).	292	133 - 40.5 13.2	41	<i>Penlee Point</i>		8.7	021°	93	94	87	90	82
				42	<i>Plymouth Breakw.</i>	9	10.1	024°	87	89	84	89	73
—	<i>Draystone Buoy</i> (W. occ. 10 sec.).			41	<i>Penlee Point</i>		0.3	315°	99	99	99	99	96
				42	<i>Plymouth Breakw.</i>	9	1.5	049°	98	97	97	99	93
—	<i>Maker</i> Gp. Fl. 5 sec. (2 Fl. 0.3 sec. each).		52 - 15.8	42	<i>Plymouth Breakw</i>	9							96
42	<i>Plymouth Breakwater</i> R. & W. sectors. Occ. 30 sec.(ecl. 3 sec.).	W. 13 R. 5	63 - 19.2 9.1	38	<i>Eddystone</i> (2).....	13	10.0	204°	78	76			
				41	<i>Penlee Point</i>		1.5	229°	99	98			
	Fl. 10 sec. (fl. 1 ½ sec.).	W. 13 R. 5	63 - 19.2 9.1	38	<i>Eddystone</i>	13	10.0	204°				74	67
				41	<i>Penlee Point</i>		1.5	229°				99	97
—	<i>New Grounds Buoy</i> W. occ. 10 sec.			42	<i>Plymouth Breakw.</i>	9	0.5	204°	99	98	99	99	99
43	<i>Mount Batten Breakwater</i> . (2 R. F.).		22 - 6.7 5.4	42	<i>Plymouth Breakw.</i>	9	1.7	211°		91	87	86	83
113	<i>Portland Bill</i> Gp. Fl. 20 sec. (4 W. Fl. 1/4 sec. each).	256	141 - 43.0 13.6	131	<i>Shambles (L. V.)</i> ..	4	4.5	091°	96	95	91	90	88
				190	<i>Anvil Point</i>	14	19.5	077°	57	55	54	60	50
114	<i>Portland D Head</i> R. occ. 30 sec. (Ecl. 5 sec.).		30 - 9.1 6.3	120	<i>Portland Breakw.</i>	9	1.0	005°	99	98	91	99	98
115	<i>Breakwater Fort</i> F. R.		30 - 9.1 6.3	120	<i>Portland Breakw.</i>	9	0.1	292°	100	100	100	100	99
120	<i>Portland Breakwater</i> Fl. 10 sec. (W. Fl. 1 ½ sec.).	12	71 - 21.3 9.7	131	<i>Shambles (L. V.)</i> ..	4	5.5	144°	93	92	86	88	83
121	<i>Portland B Head</i> R. occ. 15 sec. (Ecl. 5 sec.).		36 - 11.0 6.	120	<i>Portland Breakw.</i>	9	0.7	129°	99	98	99	99	97

(1) Red sector observed.

(2) White sector observed.

OBSERVED LIGHT — Feu Observé				OBSERVING STATION - Station Observatrice				PERCENTAGES OF VISIBILITY Pourcentages de Visibilité					
N° List of Lights 1930. N° Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance.	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N° List of Lights 1930. N° Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé	Bearing from Light observed. Relèvement pris du Feu observé	1925	1926	1927	1928	1929
125	Portland C Head..... W. occ. 15 sec. (Ecl. 5 sec.).		30 - 9.1 6.3	120	Portland Breakw.	9	0.8	135°	99	98	99	99	98
131	Shambles (L. V.)..... Gp. Fl. 30 sec. (2W. Fl. 5 sec. & 1 1/2 sec.)	8	38 - 11.6 7.1	113	Portland Bill.....	13	4.5	271°	94	94	92	94	87
				120	Portland Breakw.	9	5.5	324°	94	91	90	93	87
				190	Anvil Point.....	14	15.0	072°	46	40	43	43	35
141	Casquets..... Gp. Fl. 30 sec. (3W. Fl. 1 2/10 sec.)	184	120 - 36.6 12.6	142	Alderney.....	12	8.3	087°	96	94	93	95	90
				146	Serk.....	16	17.2	176°	73	73	68	77	67
				161	Les Hanois.....	11	21.4	227°	60	52	56	71	48
142	Alderney..... Gp. Fl. 15 sec. (4 W. Fl. 1/4 sec. each).	400	121 - 36.9 12.7	141	Casquets.....	12	8.3	267°	94	94	93	94	90
				146	Serk.....	16	18.8	202°	61	70	66	75	63
				—	Cap Levi (Fr.) ...		27.5	094°	14				
				—	Barfleur (Fr.).....		34.9	093°	6				
146	Serk..... Fl. 15 sec. (R. Fl. 1 sec.).	92	213 - 64.8 16.7	141	Casquets.....	12	17.2	356°	61	56	55	63	52
				142	Alderney.....	12	18.8	022°	63	56	55	66	52
147	Platte Fougère..... Fl. 10 sec. (W. Fl. 1 sec.).	1 1/2	50 - 15.2 8.1	141	Casquets.....	12	13.3	18°	27	21	28	18	11
161	Les Hanois..... Fl. 45 sec. (W. Fl. 9 sec.).	74	100 - 30.5 11.5	141	Casquets.....	12	21.4	037°	53	40	48	49	38
				—	Roches Douvres (F)		20.2	193°	62				
—	Cap de la Hague (Fr.)..... Fl. 5 sec. (W. Fl. 1/2 sec.).	250	154 - 46.8 14.2	141	Casquets.....	12	16.7	270°	33	28	29	19	15
				142	Alderney.....	12	8.4	272°	93	92	91	93	88
				146	Serk.....	16	23.0	222°	61	70	66	75	50
—	Cap Carteret (Fr.)..... Gp. Fl. 10 sec. (2 W. Fl. 1/2 sec. each).	100	262 - 79.8 18.5	146	Serk.....	16	21.3	280°	56	46	47	60	46
—	Roches Douvres (Fr.)..... Fl. 4 sec. (W. Fl. 1 2/10 sec.).	80	180 - 54.8 15.3	161	Les Hanois.....	11	20.2	013°	63	55	57	67	48
176	La Corbière..... F. W. & R. sectors. Red sector.	11 7/10	119 - 36.3 12.5	146	Serk.....	16	16.2	346°	21	13	15	18	20
				—	Roches Douvres (F)		22.5	259°	38				
				—	Cap Fréhel (Fr.) ..		30.0	185°	19				
	White sector.	29 1/2		161	Les Hanois.....	11	23.7	310°	24	13	12	15	11

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. <i>Puissance</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME. N O M	Approximate distance of horizon <i>Distance approchée de l'horizon.</i>	Distance from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Rétoisement pris du Feu observé</i>	1925	1926	1927	1928	1929
									190	<i>Anvil Point</i> Fl. 10 sec. (W. Fl. 1 4/10 sec.).	74 ½	149 - 45.3 13.9	113 131 204 274
204	<i>Needles</i> W. R. & G. sector. (Gp. occ. 20 sec.). (2 ecl. 2 sec. each). White sector. Red sector.	35 35	80 - 24.4 10.3	190 274	<i>Anvil Point</i> <i>St. Catherine</i>	14 13	14.7 12.2	253° 115°	62 65	61 61	58 61	63 60	52 53
—	<i>Bridge Buoy</i> Gp.Fl.(3W.Fl.ev.10sec.)			204 274	<i>Needles</i> <i>St. Catherine</i>	10 13	0.8 12.0	086° 112°	99 2	98 2	96 9	99 6	96 4
—	<i>S. W. Shingles Buoy</i> W. occ.			204	<i>Needles</i>	10	1.0	095°	96	98	98	97	93
208	<i>Hurst (Low)</i> W. occ. 4 sec. (ecl. 2 sec.).	6	49 - 14.9 8.0	204	<i>Needles</i>	10	3.1	209°	92	94	87	96	91
209	<i>Hurst (High)</i> W. & R. sectors. occ. 15 sec. (ecl. 3 sec.).	6	76 - 23.2 10.0	204	<i>Needles</i>	10	3.2	210°	96	96	96	97	93
—	<i>Warden Ledge Buoy</i> W. occ.			204	<i>Needles</i>	10	2.2	215°	95	96	96	97	92
—	<i>East Lepe Buoy</i>			221	<i>Calshot Spit</i> (L.V.)	4	3.0	043°	92	87	92	89	83
220	<i>Egypt Point</i> Fl. 10 sec.(Fl. 3/10 sec.).	25	25 - 7.6 5.7	221	<i>Calshot Spit</i> (L.V.)	4	2.5	020°	96	86	96	92	
222	<i>Calshot Float</i> W. Gp. occ. 8 sec. (2 ecl. 1 sec. each).	—	30 - 9.1 6.2	221	<i>Calshot Spit</i> (L.V.)	4	0.4	244°	99	97	97	99	97
—	<i>West Bramble Buoy</i> W.Gp. Fl.(3 Fl.ev. 10 s.)			221	<i>Calshot Spit</i> (L.V.)	4	1.4	035°	92	96	95	96	92
—	<i>East Bramble Buoy</i> W. occ.			221	<i>Calshot Spit</i> (L.V.)	4	2.6	296°	96	95	94	95	86
—	<i>West Ryde Middle Buoy</i> ... (2 w. Fl. ev. 10 sec.).			221	<i>Calshot Spit</i> (L.V.)	4	2.2	328°	96	95	93	93	84
—	<i>S. E. Ryde Middle Buoy</i> (4 W. Fl. every 15 sec.).			221	<i>Calshot Spit</i> (L.V.)	4	4.1	306°	87	83	84	87	76

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>					PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>				
N° List of Lights 1930. N° Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. <i>Puissance.</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N° List of Lights 1930. N° Livre des Phares 1930	NAME. NOM	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distances from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Rélevement pris du Feu observé</i>	1925	1926	1927	1928	1929
									246	<i>Spit Fort</i> Fl. 5 sec. (R. Fl. 1 sec.).	1/2	58 - 17.7 8.7	268
—	<i>Spit Buoy</i>			268	<i>Warner (L.V.)</i>	4	2.6	159°	87	81	84	85	79
	Gp. Fl. (2 R. Fl. ev. 10 s.).												
251	<i>Horse Fort</i>	1 4/10	60 - 18.3 8.9	268	<i>Warner (L.V.)</i>	4	1.3	175°	98	97	97	98	94
	Gp. Fl. 10 sec. (2 W. Fl. 1 sec. each).												
—	<i>Horse Elbow Buoy</i>			268	<i>Warner (L.V.)</i>	4	0.6	190°	98	98	98	99	97
	W.Gp. occ. (2 ecl. ev. 10 s.)												
270	<i>Nab</i>	12	105 - 32.0 11.7	268	<i>Warner (L.V.)</i>	4	5.8	310°	90	84	89	90	88
	Fl. 10 sec. (W. Fl. 1 sec.).			176	<i>Owers (L.V.)</i>	4	10.8	105°	81	70	73	76	74
—	<i>Nab end buoy</i>			268	<i>Warner (L.V.)</i>	4	3.3	296°	86	82	88	88	84
	Occ. W. ev. 10 sec.												
274	<i>St. Catherine</i>		136 - 41.5 13.4	190	<i>Anvil Point</i>	14	25.2	272°	54	53	53	58	48
	Fl. 5 sec. (W. Fl. 0.2 sec.).			204	<i>Needles</i>	10	12.2	295°	84	83	85	88	74
				276	<i>Owers (L.V.)</i>	4	23.2	083°	28	25	35	27	22
—	<i>Marlborough Wreck Buoy</i> .			—	<i>Barfleur (Fr.)</i>		56.0	178°	4				
				276	<i>Owers (L.V.)</i>	4			85				
298	<i>Beachy Head</i>	274	103 - 31.4 11.6	299	<i>Royal Sov. (L.V.)</i>	4	8.0	100°	90	84	87	89	84
	Gp. Fl. 20 sec. (3 W. Fl. 7/10 sec.).												
—	<i>Ariadne Wreck Buoy</i>			298	<i>Beachy Head</i>	11			50				
				299	<i>Royal Sover. (L.V.)</i>	4			88				
299	<i>Royal Sovereign (L.V.)</i> ...	12	38 - 11.6 7.1	298	<i>Beachy Head</i>	11	8.0	280°	77				
	Gp. Fl. 45 sec. (3 W. Fl. 2 1/2 sec. each).												
	Gp. Fl. 15 sec. (3 W. Fl. 1/2 sec. each).	750	40 - 12.2 7.2	298	<i>Beachy Head</i>	11	8.0	280°		86			
	Fl. 30 sec. (W. Fl. 2.5 sec.).	180	40 - 12.2 7.2	298	<i>Beachy Head</i>	11	8.0	280°				78	
—	<i>Duchesse Wreck Buoy</i>			299	<i>Royal Sover. (L.V.)</i>	4			87				
312	<i>Dungeness (High)</i>	164	130 - 39.6 13.1	316	<i>Varne (L.V.)</i>	4	11.8	082°	75	68	67	72	65
	Fl. 10 sec. (W. Fl. 1.3 sec.).			323	<i>Dover Pier</i>	9	18.0	048°	50	49	47	47	40
	F. R.	65	55 - 16.8 8.5	340	<i>South Foreland</i>	22	20.5	047°	42	38			

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Liste des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. <i>Puissance.</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N ^o List of Lights 1930. N ^o Liste des Phares 1930	NAME. NOM	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distance from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Rélevement pris du Feu observé</i>	1925	1926	1927	1928	1929
									313	<i>Dungeness (Low)</i> Fl. 5 sec. (W. Fl. 2 sec.).	11	38 - 11.6 7.1	316
316	<i>Varne (L. V.)</i> Fl. 20 sec. (R. Fl. 2.3 sec.)	5	36 - 11.0 6.9	312 323	<i>Dungeness</i>	13	11.8	262°	24	11			3
					<i>Dover Pier</i>	9	10.5	010°	32	29	23		16
319	<i>Folkestone Pier</i> Gp. Fl. 10 sec. (2 w. Fl. ½ sec. each).	7	45 - 13.7 7.7	312 323	<i>Dungeness</i>	13	13.0	220°	46	49		53	38
					<i>Dover Pier</i>	9	5.4	067°	95	94	92	91	85
323	<i>Dover Pier</i> Fl. 7 ½ sec. (W. Fl. 1 sec.).	100	70 - 21.3 9.6	312 316 340 344 345	<i>Dungeness</i>	13	18.0	228°	47	49		49	45
					<i>Varne (L. V.)</i>	4	10.5	190°	70	65	65	67	62
					<i>South Foreland</i>	22	2.5	043°	96	92			
					<i>S. Goodwin (L.V.)</i>	4	5.6	065°	91	88	89	89	83
					<i>E. Goodwin (L.V.)</i>	4	12.2	059°	56	49	52	55	60
—	<i>Cap Gris-Nez (Fr.)</i> Fl. 5 sec. (W. Fl. 1/10 sec.).	20.000 to 30.000	233 - 70.9 17.5	312 316 323 340 344 345	<i>Dungeness</i>	13	23.2	276°	49	39	41	57	51
					<i>Varne (L. V.)</i>	4	12.1	290°	80	74	83	67	68
					<i>Dover Pier</i>	9	17.6	326°	71	65	67	64	59
					<i>South Foreland</i>	22	18.1	334°	61	54			
					<i>S. Goodwin (L.V.)</i>	4	17.4	345°	66	58	63	69	64
					<i>E. Goodwin (L.V.)</i>	4	21.0	002°	50	41	48	52	45
—	<i>Calais (Fr.)</i> Gp. Fl. 15 sec. (2 w. Fl. 7/10 sec. each).	900	190 - 57.8 15.8	323 340 344 345	<i>Dover Pier</i>	9	21.7	294°	46	37	34	33	22
					<i>South Foreland</i> ...	22	21.1	300°	45	35			
					<i>S. Goodwin (L.V.)</i>	4	18.5	307°	41	31	39	38	29
					<i>E. Goodwin (L.V.)</i>	4	17.9	328°	50	41	48	53	46
—	<i>Dunkerque (Fr.)</i> Gp. Fl. 10 sec. (2 W. Fl. 3/10 sec. each).	6500	193 - 58.7 15.9	340	<i>South Foreland</i>	22	38.0	277°	3	2			
—	<i>Sandettié (L.V.) (Fr.)</i>	35	39 - 11.9 7.2	340	<i>South Foreland</i>	22	20.5	256°	19	15			
340	<i>South Foreland</i>	1000	374 - 114.0 22.2	312 316 323 344 345 346 347 355 —	<i>Dungeness</i>	13	20.5	227°	54	52	53	54	47
					<i>Varne (L.V.)</i> ...	4	12.6	196°	72	68	66	74	65
					<i>Dover Pier</i>	9	2.5	223°	98	95	95	97	95
					<i>S. Goodwin (L.V.)</i>	4	3.4	080°	95	91	92	93	91
					<i>E. Goodwin (L.V.)</i>	4	9.8	062°	83	79	82	84	79
					<i>Gull (L. V.)</i>	4	8.5	027°	82	76	74	81	
					<i>N. Goodwin (L.V.)</i>	4	13.9	035°	67	59	61	69	63
					<i>North Foreland</i>	16	14.3	011°	67	64	64	70	63
					<i>Sandettié (L.V.) (F.)</i>	4	20.5	076°	65				

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
No List of Lights 1930. <i>No Livre des Phares 1930</i>	NAME & CHARACTER. <i>NOM ET CARACTÈRE</i>	Candle Power. <i>Puissance.</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	No List of Lights 1930. <i>No Livre des Phares 1930</i>	NAME. <i>N O M</i>	Approximate distance of horizon <i>Distance approchée de l'horizon</i>		Bearing from Light observed. <i>Rèlevement pris du Feu observé</i>	1925	1926	1927	1928	1929
						Distance from Light observed. <i>Distance du Feu observé</i>							
349	South Goodwin (L. V.)..... Gp. Fl. 30 sec. (2 W. Fl. 1 ½ & 5 s. each)	8	36 - 11.0 6.9	323	Dover Pier	9	5.6	245°	90	88	86	70	81
				345	E. Goodwin (L.V.)	4	6.6	054°	81	75	78	82	76
				346	Gull (L. V.)	4	7.1	002°	78	72	69	75	
345	East Goodwin (L. V.) Fl. 10 sec. (W. Fl. 1 sec.)	20	40 - 12.2 7.2	323	Dover Pier	9	12.2	239°	51	45	47	43	30
				340	South Foreland ...	22	9.8	242°	60	51			
				344	S. Goodwin (L.V.)	4	6.6	234°	76	69	72	77	73
				346	Gull (L. V.)	4	5.7	302°	88	77	74	78	
				347	N. Goodwin (L.V.)	4	7.4	350°	77	66	66	70	65
346	Gull (L. V.)..... Gp. Fl. 20 sec. (4 W. Fl. 1.2 sec. each)	8	38 - 11.6 7.1	344	S. Goodwin (L.V.)	4	7.1	182°	73	68	69	75	
				345	E. Goodwin (L.V.)	4	5.7	122°	79	77	79	79	
				347	N. Goodwin (L.V.)	4	5.6	041°	74	67	73	75	
				355	North Foreland....	16	6.5	352°	73	68	66	73	
—	Gull Gas Buoy			347	N. Goodwin (L.V.)	4	2.3	249°	89	74	68	83	81
	Gp. Fl. 10 sec. (2 W.Fl.)			355	North Foreland ...	16	4.0	320°	70	68	66	73	76
—	Elbow Gas Buoy..... W. Fl. 5 sec.			347	N. Goodwin (L.V.)	4	3.4	328°	79	73	74	83	83
				355	North Foreland....	16	3.5	093°	78	78	76	80	81
347	North Goodwin (L. V.) ... Gp. Fl. 1 min. (3 W. Fl. 3 ½ sec. each).	12	40 - 12.2 7.2	345	E. Goodwin (L.V.)	4	7.4	080°	81	80	77	79	70
				346	Gull (L. V.)	4	5.6	221°	83	80	77	82	
				355	North Foreland....	16	5.2	295°	83	83	86	90	87
355	North Foreland..... W. & R. sect. oc. 30 sec.	35	188 - 57.2 15.7	340	South Foreland(!)	22	14.3	191°	40	37			
				344	S. Goodwin (L.V.)	4	13.5	177°	66	58	64	67	65
				345	E. Goodwin (L.V.)	4	11.3	148°	71	66	69	74	67
				346	Gull (L. V.)	4	6.5	172°	85	83	79	84	
				347	N. Goodwin (L.V.)	4	5.2	115°	88	85	84	87	86
				362	Tongue (L.V.).....	4	8.4	343°	74	69	71	73	68
362	Tongue (L. V.)..... Alt. Gp. Fl. 30 sec. (2R. & W. alt. Fl. 2 sec.).	W. 8 R. 6	40 - 12.2 7.2	355	North Foreland....	16	8.4	163°	59	55	54	67	68
				365	Edinburgh (L.V.)	4	5.4	303°	80	75	75	82	79
364	Girdler (L. V.)..... Fl. 30 sec. (W. Fl. 1 ½ sec.).	275	32 - 9.8 6.5	365	Edinburgh (L.V.)	4	7.5	055°	79	75	72	79	75
				420	Mouse (L. V.)	4	5.1	285°	92	89	93	90	86
				421	Mid Barrow (L.V.)	4	6.5	024°	82	85	79	83	80
				422	Maplin.....	6	5.8	348°	91	86	84	85	85
—	North East Spit Buoy.... Gp. Fl. 10 sec. (2 W. Fl.).	3		355	North Foreland....	16	5.3	175°	63	57	56	67	70
				362	Tongue (L. V.) ...	4	3.5	326°	80	75	77	82	78
—	East Tongue Buoy..... W. Fl. 10 sec.			362	Tongue (L. V.)....	4	2.9	231°	86	85	85	87	81

(1) White sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION — <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N° List of Lights 1930. N° Liore des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. <i>Puissance.</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N° List of Lights 1930. N° Liore des Phares 1930	NAME. NOM	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distance from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Relèvement pris du Feu observé</i>	1925	1926	1927	1928	1929
—	N° 1 Shingles Patch Buoy. Gp. Fl. 10 sec. (2 W. Fl.)			362	Tongue (L. V.)....	4	2.7	293°	89	88	90	92	87
				365	Edinburgh (L. V.)	4	2.7	132°	83	81	82	89	82
—	South W. Longshand Buoy Gp. Fl. 10 sec. (2 W.Fl.).			362	Tongue (L. V.)....	4	2.6	125°	85	82	84	86	83
				365	Edinburgh (L. V.)	4	2.7	302°	81	76	75	81	80
—	North East Shingles Buoy. Alt. Gp. Fl. 5 sec. (2 R. & W. alt. Fl.).			365	Edinburgh (L. V.)	4	1.1	031°	98	92	92	96	91
365	Edinburgh (L. V.) Fl. 5 sec. (W. Fl. 1.2 sec.).	2 ½	35 - 10.7 6.8	362	Tongue (L. V.)....	4	5.4	123°	83	77	81	84	79
				364	Girdler (L. V.)	4	7.5	235°	72	66	71	70	70
				421	Mid Barrow(L.V.)	4	3.8	296°	88	88	85	88	83
				422	Maplin.....	6	7.5	282°	77	74	73	73	
—	East Oaze Buoy Occ. W.			420	Mouse (L. V.).....	4			85	85	86	88	84
—	West Oaze Buoy Gp. Fl. 10 sec. (2 W. Fl.)			364	Girdler (L. V.)	4	5.8	270°	29	25	20	18	8
				420	Mouse (L. V.).....	4	1.6	030°	94	93	88	91	88
—	East Redsand Buoy W. Fl. 5 sec.			364	Girdler (L. V.).....	4	1.3	282°	96	95	93	95	91
—	Knob Gas Buoy..... Occ. W. 10 sec.			364	Girdler (L. V.).....	4	1.8	181°	96	94	93	95	93
				420	Mouse (L. V.).....	4	5.1	085°	80	79	78	81	73
				422	Maplin.....	6	4.2	342°	82	82	80	79	79
—	South East Girdler Buoy. Occ. W. 10 sec.			364	Girdler (L. V.).....	4	3.4	089°	81	78	79	79	83
367	Nore (L. V.)..... Fl. 30 sec. (W. Fl. 5 sec.)	2	35 - 10.7 6.8	398	Chapman.....	7	9.4	279°	52	41	33	41	40
				420	Mouse (L. V.).....	4	3.8	069°	82	83	80	86	81
390	Southend Pier..... (F. R.).	4/10	60 - 18.3 8.9	398	Chapman.....	7	4.0	268°	53	51	39	54	45
—	N° 1 Sea Reach Buoy W. Fl. 10 sec.			367	Nore (L. V.).....	4	3.0	092°	88	78	80	81	75
398	Chapman W.&R. sec.G.oc.30 sec. (2 ecl. 3 sec. each).	W. 8 R. 4	40 - 12.2 7.2	367	Nore (L.V.) ⁽¹⁾	4	9.4	099°	62	45	48	49	52
—	Middle Blyth Buoy W. Fl. 5 sec.			398	Chapman.....	7	2.6	078°	75	80	82	83	75
—	West Blyth Buoy..... Gp. Fl. 10 sec. (2 W. Fl.)			398	Chapman.....	7	4.7	081°	51	52	48	49	47

(1) White sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Livre des Phares 1930.	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. <i>Puissance.</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N ^o List of Lights 1930. N ^o Livre des Phares 1930.	NAME. NOM	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distance from Light observed. <i>Distance du Feu observé</i>	Bearing from Light observed. <i>Relèvement pris du Feu observé</i>	1925	1926	1927	1928	1929
420	Mouse (L. V.) Fl. 20 sec. (R. Fl. 1 sec.).	110	32 - 9.8 6.5	367	Nore (L. V.).....	4	3.8	249°	81	83	84	86	81
				422	Maplin.....	6	5.9	040°	87	84	81	79	80
—	West Mouse Buoy..... Gp. Fl. 10 sec. (2 W. Fl.)			420	Mouse (L. V.).....	4	3.1	222°	86	82	80	86	81
				422	Maplin.....	6	2.8	040°	87	84	82	84	84
421	Mid Barrow (L. V.)..... Alt. Fl. 30 sec. (W. & R. Fl. 1.5 s. each).	10	32 - 9.8 6.5	364	Girdler (L. V.).....	4	6.5	204°		58	77		
				365	Edinburgh (L.V.).....	4	3.8	296°		84	86		
				424	Swin Middle(L.V.).....	4	4.3	325°		86			
			20 - 6.1 5.1	364	Girdler (L. V.).....	4	6.5	204°					76
				305	Edinburgh (L. V.).....	4	3.8	296°					87
				422	Maplin.....	6	4.0	263°					85
422	Maplin ⁽¹⁾ R. & W. sec. occ. 30 sec. (Ecl. 3 sec.)....	W. 11 R. 4	36 - 11.0 6.9	364	Girdler (L. V.)....	4	5.8	168°	84	81	84	85	84
				420	Mouse (L. V.).....	4	5.9	220°	86	78	79	84	79
				421	Mid Barrow (L.V.).....	4	4.0	088°	84	85	76	87	83
				424	Swin Middle(L.V.).....	4	4.0	022°	91				
424	Swin Middle (L. V.) Gp. Fl. 20 sec. (3 W. Fl. 1/2 sec. each).	7	27 - 8.2 6.0	365	Edinburgh (L.V.) .	4	7.9	132°		40	40	42	56
				421	Mid Barrow(L.V.)	4	4.3	145°		82	78		80
				422	Maplin.....	6	4.0	202°					85
				426	Gunfleet	7	11.5	049°					14
—	Maplin Spit Buoy(W.occ.)			424	Swin Middle(L.V.)	4	4.1	019°	84				
—	N.E. Maplin Buoy(W.oc.)			421	Mid Barrow(L.V.)	4	3.6	127°	79	80	80	81	78
				424	Swin Middle(LV)	4	1.4	015°	96				
—	Outer Bar Buoy.....			367	Nore (L. V.)	4	1.2	046°	91	93	94	95	92
—	N ^o 3 Bar Buoy.....			367	Nore (L. V.).....	4	2.0	062°	85	88	83	87	82
—	N ^o 5 Bar Buoy.....			367	Nore (L. V.).....	4	2.9	067°	78	78	78	82	77
—	N ^o 9 Bar Bouy.....			367	Nore (L. V.).....	4	4.2	068°	77	62	64	72	69
—	Grain Spit Buoy..... Gp. Fl. 15 sec. (4 W. Fl.)			367	Nore (L. V.).....	4	4.1	074°	77	67	70	73	62
—	N ^o 3 Buoy.....			398	Chapman.....	7	2.4	282°	81	83	80	86	75
—	N ^o 2 Buoy.....			398	Chapman.....	7	4.4	281°	46	48	45	52	46
—	N ^o 8 Barrow Gas Buoy.... Gp. Fl. 10 sec (2 W. Fl.).			421	Mid Barrow(L.V.)	4	3.4	224°	81	80	79	83	75
—	N ^o 15 Barrow Gas Buoy. W. Fl. ev. sec.			422	Maplin.....	6	2.3	336°	89	86	84	86	85

(1) Girdler observed white sector ; Mouse, Midd Barrow and Swin Middle observed red sector.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N° List of Lights 1930. N° Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N° List of Lights 1930. N° Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé	Bearing from Light observed. Relèvement pris du Feu observé	1925	1926	1927	1928	1929
—	N° 17 Barrow Gas Buoy. W. Fl. ev. sec.			420	Mouse (L. V.).....	4	2.8	254°	88	85	80	87	84
—	West Buxey Gas Buoy.... W. Fl. 5 sec.			424	Swin Middle (LV)	4	3.9	100°	80				
—	Whittaker Gas Buoy W. Fl. 5 sec.			424	Swin Middle (LV)	4	2.9	230°	89				
—	S.W. Middle Gas Buoy Gp. Fl. 10 sec. (2 R.Fl.).			424	Swin Middle (LV.)	4	0.7	011°	95				
425	Barrow Deep (L. V.)..... Gp. Fl. 30 sec. (W. 4 Fl. 1 3/4 s. each).	25	32 - 9.8 6.5	426	Gunfleet	7	4.6	008°	87				
	Fl. 15 sec. (W. Fl. 1 sec.).	25	20 - 6.1 5.1	426	Gunfleet	7	4.6	008°		77	83	79	
426	Gunfleet..... Fl. 15 sec. (R. Fl. 0.7 sec.)	80	41 - 12.5 7.3	425	Barrow Deep (L. V.)	4	4.6	188°	88	88	88	91	87
				429	Longsand (L. V.)	4	10.2	081°	21	15	13		
				460	Cork (L. V.).....	4	10.4	010°	54	51	42	50	45
427	Sunk (L. V.)..... Alt. Fl. 90 sec. (W. R. alt. Fl. 5 s. each).	8	38 - 11.6 7.1	426	Gunfleet	7	11.8	239°	32	30	30	31	42
				429	Longsand (L. V.)	4	4.6	184°	78	77	72		
				460	Cork (L. V.).....	4	9.3	296°	43	36	22	34	35
				461	Shipwash (L. V.)	4	11.3	035°	16	20	20	17	18
				462	Orfordness	11	13.0	353°	45	37	30	33	35
429	Longsand (L. V.)..... Gp. Fl. 30 sec. (2 Fl. 1.7 sec. each).	16	38 - 11.6 7.1	426	Gunfleet	7	10.2	261°	26	24	25		
				427	Sunk (L. V.).....	4	4.6	004°	85	82	83		
				430	Kentish Knock (L.V)	4	9.0	354°	64	57	57		
				431	Galoper (L. V.)...	4	11.0	107°	34	30	31		
—	Longsand Head Buoy.....			427	Sunk (L. V.).....	4							67
430	Kentish Knock (L. V.) Fl. 1 min. (W. Fl. 5 sec.)	180	39 - 11.9 7.2	427	Sunk (L. V.).....	4	13.4	350°	28	23	21		
				429	Longsand (L. V.)	4	9.0	174°	75	75	69		
				431	Galoper (L. V.).....	4	11.9	064°	49	51	47		
	Gp. Fl. 15 sec. (3 R. Fl. 0.5 sec. each).	300	40 - 12.2 7.2	427	Sunk (L. V.).....	4	13.4	350°					17
				431	Galoper (L. V.) ...	4	11.9	064°					15
460	Cork (L. V.)..... Fl. 30 sec. (W. Fl. 5 sec.)	2	35 - 10.7 6.8	426	Gunfleet	7	10.4	190°	54				
				462	Orfordness	11	11.0	037°	56				
	Fl. 30 s. (W. Fl. 0.4 sec.)	20	20 - 6.1 5.1	426	Gunfleet	7	10.4	190°			51	59	52
				462	Orfordness	11	11.0	037°			53	51	37

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N° List of Lights 1930. <i>N° Livre des Phares 1930</i>	NAME & CHARACTER. <i>NOM ET CARACTÈRE</i>	Candle Power. <i>Puissance</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N° List of Lights 1930. <i>N° Livre des Phares 1930</i>	NAME. <i>NOM</i>	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distance from Light observed. <i>Distance du Feu observé.</i>	Bearing from Light observed. <i>Réseau pris de Feu observé.</i>	1925	1926	1927	1928	1929
461	<i>Shipwash</i> (L. V.)..... Gp. Fl. 30 sec. (3 W. Fl. 1.5, 5 & 1.5 sec.)	8	39 - 11.9 7.2	462	<i>Orfordness</i>	11	8.7	294°	70	68	63	59	46
				464	<i>Outer Gabbard</i> (L. V.)	4	10.7	101°	20	16	27	36	31
462	<i>Orfordness</i> W. R. & G. sectors. (Fl. 5 s. W. Fl. 0.3 sec.). (R. & G. sectors F.).	315 R. 34 G. 21	93 - 28.3 11.1 46 - 14.0 7.8	427	<i>Sunk</i> (L. V.).....	4	13.0	173°	81	68	60	63	58
				429	<i>Longsand</i> (L. V.)	4	17.9	167°	25	20	16		
				464	<i>Out. Gabbard</i> (L. V.)	4	19.6	107°	22	17	26	36	32
				460	<i>Cork</i> (L. V.) ⁽¹⁾	4	8.7	114°	76	72	70	76	65
				465	<i>Southwold</i>	12	15.0	015°	55	60	57	59	50
—	<i>N. Shipwash Gas Buoy</i> Gp. Fl. 10 sec. (2 W. Fl. 1.5 sec. each).			461	<i>Shipwash</i> (L. V.)	4	5.7	089°	52	49	49	55	46
				462	<i>Orfordness</i>	11	4.3	328°	71	68	67	72	
—	<i>N. Aldeburgh Napes Buoy</i> . W. Fl. 10 sec.			462	<i>Orfordness</i>	11	6.8	228°	47	42	52	50	31
464	<i>Outer Gabbard</i> (L. V.)..... Fl. 15s. (W. Fl. 1 3/4 sec.) Gp. Fl. 15 sec. (4 W. Fl. 1/2 sec. each).	20 500	40 - 12.2 7.2 40 - 12.2 7.2	461	<i>Shipwash</i> (L. V.)	4	10.7	281°	31	32			
				431	<i>Galoper</i> (L. V.) ...	4	15.6	195°				33	20
				461	<i>Shipwash</i> (L. V.) ..	4	10.7	281°					62
				462	<i>Orfordness</i>	11	19.6	287°					18
465	<i>Southwold</i> (W. & R. sectors). (Gp. Occ. 20 sec.).	W. 35 R. 45 & 29	120 - 36.6 12.6	462	<i>Orfordness</i> (2).....	11	15.0	195°	47	40	39	35	29
—	<i>Cork Spit Buoy</i> W. Occ. 5 sec.			460	<i>Cork</i> (L. V.)	4	1.0	059°	94	97	95	98	96
—	<i>Platters Buoy</i>			460	<i>Cork</i> (L. V.)	4	1.7	062°	92	92	92	95	90
—	<i>Rolling Ground Buoy</i> W. occ. 5 sec.			460	<i>Cork</i> (L. V.)	4			90	88	85	91	77
—	<i>Beach end Buoy</i> W. Gp. Fl. (2 Fl.) 10 sec.			460	<i>Cork</i> (L. V.)	4			88	85	83	86	67
—	<i>Rough Gas Buoy</i> W. Fl. 1 sec.			460	<i>Cork</i> (L. V.)	4	3.6	291°		80	82	81	65
—	<i>North Newcomb Spit Buoy</i> . W. occ.			479	<i>Lowestoft</i>	12	1.0	290°	94	94	95	97	96
—	<i>Inner Shoal Buoy</i>			479	<i>Lowestoft</i>	12	0.7	317°	96	95	95	95	94
	R. Fl. 5 sec.			481	<i>Corton</i> (L. V.)	4	3.9	037°	49	48	35	34	28

(1) Cork and Southwold observed red sectors. (2) Red sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N° List of Lights 1930. N° Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance.	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N° List of Lights 1930. N° Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé	Bearing from Light observed. Relèvement pris du Feu observé	1925	1926	1927	1928	1929
—	South Holm Buoy Gp. Fl. (2 W. Fl.) 10 sec.			479	Lowestoft.....	12	2.8	330°	88	88	90	90	79
—	East Newcomb Buoy..... W. Fl. 5 sec.			479	Lowestoft.....	12	2.8	296°	92	93	93	87	91
—	North Holm Buoy..... W. Fl. 1 sec.			482	St. Nicholas (L. V.)	4	3.2	004°	84	83	81	82	72
				481	Corton (L. V.)	4	2.6	091°	84	79	77	81	75
479	Lowestoft..... Fl. 30 sec. (W. Fl. 2 sec.).	274	123 - 37.5 12.7	465	Southwold	12	10.0	195°	49	57	58	61	54
	F. R.	2	99 - 30.2 11.4	481	Corton (L. V.)	4	3.9	048°	93	92	94	95	87
				482	St. Nicholas (L. V.)	4	5.9	005°	90	88	88	86	82
				483	Cross Sand (L. V.)	4	11.8	040°	73	71	75	77	69
				493	Cockle (L. V.).....	4	12.7	003°	65	64	63	72	62
				494	Newarp (L. V.) (1) ..	4	18.3	015°	46	48	43	32	26
481	Corton (L. V.)..... Fl. 20 sec. (R. Fl. 2.3 sec.).	8	36 - 11.0 6.9	479	Lowestoft.....	12	3.9	228°	8	88	88	87	76
482	St. Nicholas (L. V.)..... Alt. 40 sec. (W. & R. Fl. 2.5 sec. each)	8	36 - 11.0 6.9	481	Corton (L. V.)	4	4.0	144°	85	84	86	87	81
				493	Cockle (L. V.).....	4	6.7	001°	78	71	72	78	66
483	Cross Sand (L. V.)..... Gp. Fl. 30 sec. (2 W. Fl. 5 & 1.5 s. each)..	8	39 - 11.9 7.2	479	Lowestoft.....	12	11.8	220°	51	51	45	60	36
				481	Corton (L. V.)	4	7.9	215°	75	71	70	78	64
				482	St. Nicholas (L. V.)	4	7.6	245°	82	79	77	77	67
				493	Cockle (L. V.).....	4	7.7	118°	79	72	72	74	71
				494	Newarp (L. V.).....	4	8.9	350°	77	70	66	69	49
				498	Haisborough	13	18.0	128°	24	25	18	20	
—	Scroby Elbow Gas Buoy. Fl. W. 5 sec.			493	Cockle (L. V.).....	4	4.7	000°	68	58	56	50	45
—	Middle Caister Buoy..... Gp. Fl. 10 sec. (3 w. Fl.).			493	Cockle (L. V.).....	4	1.1	012°	94	92	94		
—	North Caister Buoy.....			493	Cockle (L. V.).....								97
485	Yarmouth S. Pier Head F. R.	2/10	30 - 9.1 6.3	482	St. Nicholas (L. V.)	4	1.4	057°	94	94	91	91	91
486	Yarmouth N. Pier Head.... F. G.		30 - 9.1 6.3	482	St. Nicholas (L. V.)	4	1.3	059°	92	92	87	91	88
490	Yarmouth Jetty..... F. G.		20 - 6.1 5.1	482	St. Nicholas (L. V.)	4	1.6	133°	72	51	76	86	81
491	Britannia Pier		35 - 10.7 6.8	482	St. Nicholas (L. V.)	4	1.8	144°	66	50	40	49	42

(1) Newarp observed red sector

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N° List of Lights 1930. N° <i>Listre des Phares 1930</i>	NAME & CHARACTER. <i>NOM ET CARACTÈRE</i>	Candle Power. <i>Puissance</i>	Height above high Water and distance of Horizon. <i>Hauteur au-dessus de la pleine Mer et distance de l'Horizon</i>	N° List of Lights 1930. N° <i>Listre des Phares 1930</i>	NAME. <i>N O M</i>	Approximate distance of horizon <i>Distance approchée de l'horizon</i>	Distance from Light observed. <i>Distance du Feu observé.</i>	Bearing from Light observed. <i>Relèvement pris du Feu observé</i>	1925	1926	1927	1928	1929
									493	<i>Cockle (L. V.)</i> Fl. 1 min. (W. Fl. 10 s.).	20	38 - 11.6 7.1	479
				482	<i>St. Nicholas (L.V.)</i>	4	6.7	181°	80	81	79	79	70
				483	<i>Cross Sand (L.V.)</i>	4	7.7	298°	79	74	77	76	67
				494	<i>Newarp (L. V.)</i>	4	6.8	035°	85	77	79	56	66
				—	<i>Would (L. V.)</i>	4	8.6	006°	67	57			
				498	<i>Haisborough</i>	13	11.6	312°	42	45	46	41	
—	<i>N. Cockle Buoy</i> W. Fl. 5 sec.			493	<i>Cockle (L. V.)</i>	4	1.9	146°	89	84	88	91	90
494	<i>Newarp</i> Gp. Fl. 1 min. (3 W. Fl. 3 sec. each).	12	39 - 11.9 7.2	479	<i>Lowestoft</i>	12	18.3	195°	44	48			
				483	<i>Cross Sand (L.V.)</i>	4	8.9	170°	79	74			
				493	<i>Cockle (L. V.)</i>	4	6.8	215°	79	76			
				—	<i>Would (L. V.)</i>	4	4.3	315°	71	71			
				498	<i>Haisborough</i>	13	12.8	280°	35	38			
				501	<i>Cromer</i>	19	21.9	293°	7	9			
	Fl. 10 sec. (W. Fl. 1 sec.).	750	40 - 12.2 7.2	479	<i>Lowestoft</i>	12	18.3	195°				64	34
				483	<i>Cross Sand (L.V.)</i>	4	8.9	170°				84	73
				493	<i>Cockle (L. V.)</i>	4	6.8	215°				91	83
				498	<i>Haisborough</i>	13	12.8	280°				75	
				501	<i>Cromer</i>	19	21.9	293°				46	34
—	<i>S. Winterton Ridge Buoy.</i> W. Occ. 10 sec.			494	<i>Newarp (L. V.)</i> ...	4	5.6	264°	8	5		32	34
—	<i>Would (L. V.)</i> W. Fl. 5 sec.	8	39 - 11.9 7.2	493	<i>Cockle (L. V.)</i>	4	8.6	186°	51	47			
				498	<i>Haisborough</i>	13	9.5	265°	54	55			
				499	<i>Haisbro (L. V.)</i>	4	12.0	317°	11	6			
				501	<i>Cromer</i>	19	18.2	287°	13	16			
495	<i>Smiths Knoll (L. V.)</i> Alt. Gp. Fl. 20 sec. (2 Fl. R.W. 1.5 s. each)..	8	40 - 12.2 7.2	494	<i>Newarp (L. V.)</i>	4	15.0	284°	8	2	5	2	
498	<i>Haisborough</i> W. Oc. 30 sec. (Ecl. 5 s.)	35	136 - 41.5 13.4	493	<i>Cockle (L. V.)</i>	4	11.6	132°	66	63	63	72	
				494	<i>Newarp (L. V.)</i>	4	12.8	100°	63	61	58	67	
				—	<i>Would (L. V.)</i>	4	9.5	085°	62	70			
				499	<i>Haisbro (L. V.)</i> ...	4	9.6	008°	79	73	67	74	
499	<i>Haisbro (L. V.)</i> Gp. Fl. 20 sec. (4 Fl. 1.2 sec. each).	8	40 - 12.2 7.2	498	<i>Haisborough</i>	13	9.5	265°	57	58	53	58	
				501	<i>Cromer</i>	19	9.8	070°	48	51	46	53	54
501	<i>Cromer</i> Fl. 1 min. (W. Fl. 11 sec.)	49	274 - 83.4 19.0	498	<i>Haisborough</i>	13	10.0	128°	63	62	61	63	66
				499	<i>Haisbro (L. V.)</i>	4	9.8	250°	76	72	68	74	
				517	<i>East Dudgeon (l.v.)</i>	4	27.0	335°	3	3	1	4	1
				519	<i>Cromer Knoll (l.v.)</i>	4	20.2	357°	26	33	30	32	35

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
No List of Lights 1930. No Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	No List of Lights 1930. No Livre des Phares 1930	NAME. N O M	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance de Feu observé	Bearing from Light observed. Relevement pris de Feu observé	1925	1926	1927	1928	1929
—	<i>Smithic Buoy</i> (W. Fl. 5 sec.).			579	<i>Flamborough</i>	16	1.2	356°	92	92	94	88	85
615	<i>Heugh</i> (W. Occ. 5 s. Ec. 1 sec.). (Gp. Fl. 10 sec., 2 W. Fl. 1 sec. each).	61	85 - 25.9 10.6 62 - 18.9 9.0	626	<i>Souter Point</i>	14	17.9	339°	10	15			
617	<i>Seaham</i> Fl. 10 sec. W. Fl. 1 sec.	43	40 - 12.2 7.2	626	<i>Souter Point</i>	14	8.1	351°	21	36	20	25	23
622	<i>Roker</i> Fl. 5 sec. (W. Fl. 0.1 sec)	175	83 - 25.3 10.4	626	<i>Souter Point</i>	14	3.0	356°	89	90	89	87	
626	<i>Souter Point</i> Fl. 5 sec. (R. Fl. 0.2 sec.).	490	150 - 45.6 14.0	635	<i>St. Mary</i>	12	6.8	335°	65	73	66	61	59
				647	<i>Coquet</i>	10	22.7	344°	13	24	14	17	14
627	<i>Tyne North</i> Gp. Fl. 10 sec. (3 W. Fl. 0.5 sec. each).	70	85 - 25.9 10.6	626	<i>Souter Point</i>	14	2.9	153°	83	92	91	90	85
				635	<i>St. Mary</i>	12	3.9	336°	82	88	85	85	81
				647	<i>Coquet</i>	10	14.8	347°	18	26	17	21	16
628	<i>Tyne South</i> W. R. & G. sectors Occ. 10 sec. (Ecl. 2 sec.).	W 1 R ½	49 - 14.9 8.0	626	<i>Souter Point</i> (1).....	14	2.8	152°	80	85	83		77
				635	<i>St. Mary</i> (2).....	12	4.0	335°	63	72	73		70
635	<i>St. Mary</i> Gp. Fl. 20 sec. (2 W. Fl. ½ sec. each.).	374	120 - 36.6 12.6	626	<i>Souter Point</i>	14	6.8	155°	72	80	74	73	68
				647	<i>Coquet</i>	10	16.2	349°	44	43	42	46	41
				663	<i>Longstone</i>	10	34.7	351°	0	1	0	1	0
639	<i>Blyth, East Pier</i> Gp. Fl. 10 sec. (4 W. Fl. 0.3 sec. each).	60	63 - 19.2 9.1	626	<i>Souter Point</i>	14	9.7	154°	44	55	41	46	38
				635	<i>St. Mary</i>	12	3.0	154°	88	91	89	90	86
				647	<i>Coquet</i>	10	13.1	348°	41	46	39	42	33
647	<i>Coquet</i> (W. & R. sec. occ. 30 s.) Ecl. 3 sec.	35	84 - 25.6 10.5	626	<i>Souter Point</i> (3).....	14	22.7	164°	12	9	7	6	6
				635	<i>St. Mary</i>	12	16.2	169°	25	38	26	28	21
				663	<i>Longstone</i>	10	19.0	353°	29	36	34	38	30
649	<i>Warkworth N. Pier</i> W. Occ. 2 sec.		34 - 10.4 6.7	647	<i>Coquet</i>	10	1.1	110°	94	96	95	96	94
660	<i>Bamburgh</i> W. & R. sectors. Gp. Occ. 15 s. 2 Ec. 2.5 s.	W. 3.5 R. 1.5	44 - 13.4 7.6	663	<i>Longstone</i> (4).....	10	4.2	067°	85	85		88	85
662	<i>Farn</i> W. & R. sectors. (Oc. 10 s. Ec. 2.5 sec.).	W. 2.7 R. 1.2	87 - 26.5 10.7	663	<i>Longstone</i> (5).....	10	2.4	044°	81	95		96	95

(1) Souter Point observed red sector.
(2) St. Mary observed white sector.

(3) Red sector observed.
(4) Red sector observed.

(5) Red sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME. N O M	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé.	Bearing from Light observed. Relèvement pris du Feu observé	1925	1926	1927	1928	1929
663	Longstone Fl. 30 s. W. Fl. 3 sec.	206	75 - 22.9 9.9	647	Coquet.....	10	18.9	173°	48	55	50	58	53
694	St.-Abbs Head..... Fl. 10 sec. (W. Fl. from 0.5 to 1 s.).	173	224 - 68.2 17.2	663	Longstone.....	10	24.2	133°	41	52	45	52	45
792	May Island Fl. 20 s. W. F. 0.5 sec.	1250	240 - 73.1 17.8	663	Longstone.....	10	45.6	133°	0.1	0	0	0.3	0
1361	Little Ross Island Fl. 5 s. (W. Fl. 0.5 sec.).	69	175 - 53.2 15.2	1407	St.-Bees	21	21.8	134°	49	47	47	46	45
1407	St.-Bees..... Gp. Occ. W. 30 sec. (2 Ecl. 2 sec. each).	35	336-102.4 21.0	1437	Selker (L. V.).....	4	14.8	169°	70	66	57	67	61
1408	Ayre Point..... Alt. Fl. 1 min. (W. & R. Fl. 8 sec. each)	66	106 - 32.3 11.8	1407	St.-Bees	21	26.8	077°	41	42	42	42	41
1430	Maughold Head..... Gp. Fl. 30 sec. (3 W. Fl. 1 sec. each).	569	212 - 64.5 16.7	1407	St.-Bees	21	27.5	029°	46	48	46	47	41
1437	Selker (L. V.) Alt. Gp. Fl. 30 sec. (2Fl.(W.R.) 1.7 s. each).	W. 8 R. 6	30 - 9.1 6.3	1407	St.-Bees	21	14.8	349°	40	51	47	43	40
1439	Walney Fl. 1 min. (W. Fl. 10 s.).	4	70 - 21.3 9.6	1452	Morecambe Bay ... (L. V.).	4	15.5	307°	26	16	16	21	15
1584	Skerries..... Gp. Fl. 10 sec. (2 W. Fl. 0.2 sec. each).	4000	119 - 36.3 12.5	1586 1601	Holyhead Breakw. South Stack	9 16	5.3 7.6	183° 203°	97 94	96 91	96 92	97 94	93 91
1586	Holyhead Breakwater Fl. 7.5 sec. (R.Fl. 0.7 s.).	31	70 - 21.3 9.6	1584	Skerries	12	5.3	003°	95	92	90	93	89
—	Clipera Gas Buoy.....			1586	Holyhead Breakw.	9	0.6	250°	98	97	99	99	97
1601	South Stack..... Fl. 10 s. (W. Fl. 0.7 sec.)	274	197 - 59.9 16.1	1584 —	Skerries Carnarvon Bay (LV)	12 4	7.6 13.4	023° 197°	95 83	91	89	92	89
—	Carnarvon Bay (L. V.) Alt. Fl. 1 min. (2 W. 1 R. Fl. 3.5 s. each).	W. 8 R. 6	36 - 11.0 6.9	1601	South Stack	16	13.4	017°	64				

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
No List of Lights 1930. No Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTERE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	No List of Lights 1930. No Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approximée de l'horizon.	Distance from Light observed. Distance du Feu observé.	Bearing from Light observed. Règlement pris du Feu observé.	1925	1926	1927	1928	1929
1611	<i>Bardsey</i> Gp. Fl. 15 sec. (5 W. Fl. 0.2 sec. each).	270	129 - 39.3 13.0	—	<i>Carnarvon Bay</i> l.v	4	21.0	358°	42				
1629	<i>Strumble Head</i> Gp. Fl. 15 sec. (4 W. Fl. 0.2 sec. each).	400	148 - 45.0 13.9	1630	<i>South Bishop</i>	13	16.7	230°	77	73	68	74	62
1630	<i>South Bishop</i> Fl. 20 sec. (W. Fl. 1.5 s.).	129	144 - 43.9 13.8	1629	<i>Strumble Head</i>	14	16.7	050°	70	65	63	68	61
				1631	<i>Smalls</i>	12	12.5	229°	83	80	76	81	76
				1632	<i>Skokholm</i>	15	10.4	154°	78	84	79	83	75
1631	<i>Smalls</i> Gp. Fl. 15 sec. (3 W. Fl. 0.3 sec. each).	477	126 - 38.4 12.9	1630	<i>South Bishop</i>	13	12.5	049°	87	84	82	85	80
				1632	<i>Skokholm</i>	15	14.4	096°	81	78	73	79	74
				1634	<i>St-Anns</i>	14	18.8	097°	71	68	66	70	66
1632	<i>Skokholm</i> Fl. 10 sec. R. Fl. 3 sec.	11	177 - 53.9 15.2	1630	<i>South Bishop</i>	13	10.4	334°	77	73	71	76	71
				1631	<i>Smalls</i>	12	14.4	276°	68	62	61	65	61
				1634	<i>St-Anns</i>	14	4.4	100°	93	94	93	93	93
				1652	<i>St-Goven (L. V.)</i> .	4	14.5	136°	69	61	56	63	62
1634	<i>St-Anns</i> W. & R. Sectors. (Occ. 30 sec. Ecl. 3 sec.).	35	159 - 48.4 14.5	1631	<i>Smalls</i>	12	18.8	277°	60	61	61	65	59
				1632	<i>Skokholm</i>	15	4.4	280°	96	94		94	93
				1652	<i>St-Goven (L.V.)</i> ..	4	11.2	149°	85	77		82	77
1652	<i>St-Goven (L. V.)</i> Fl. 15 s. (W. Fl. 1.7 sec.).	20	40 - 12.2 7.2	1632	<i>Skokholm</i>	15	14.5	316°	60	55	53	55	51
				1634	<i>St-Anns</i>	14	11.2	329°	68	65	63	65	62
				1653	<i>Caldy Island</i>	16	13.9	062°	56	45			
1653	<i>Caldy Island</i> W. & R. sectors. (Gp. Occ. 30 sec., 2 Ecl. 3 sec. each.)	W. 35 R. 14	214 - 65.1 16.8	1652	<i>St-Goven (L. V.)</i> .	4	13.9	242°	79				
				1666	<i>Hellwick (L. V.)</i> ⁽¹⁾	4	12.2	127°	81				
				1775	<i>Lundy North</i>	14	26.1	180°	42	33			
				1776	<i>Lundy South</i>	15	28.5	178°	38	25			
	W. & R. sectors. (Gp. Fl. 20 sec., 3 Fl. 1 sec. each).	W. 10 R. 4	214 - 65.1 16.8	1652	<i>St-Goven (L. V.)</i> .	4	13.9	242°				58	54
				1666	<i>Hellwick (L. V.)</i> ⁽²⁾	4	12.2	127°				64	60
				1775	<i>Lundy North</i>	14	26.1	180°				4	5
				1776	<i>Lundy South</i>	15	28.5	178°				3	6
1661	<i>Bury Holm</i> Gp. Fl. 10 sec. (2 W. Fl. 1 sec. each).	3/10	112 - 34.1 12.1	1666	<i>Hellwick (L. V.)</i> ...	4	7.2	304°	75	70		76	71
1666	<i>Hellwick (L. V.)</i> Fl. 30 sec. (W. F. 1.7 s.).	20	40 - 12.2 7.2	1653	<i>Caldy Island</i>	16	12.2	307°	59	56			
				1770	<i>Bull Point</i>	14	20.6	156°	8	6	5	9	11
				1775	<i>Lundy North</i>	14	21.0	207°	11	14	14	15	13

(1) White sector observed.

(2) White sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N ^o List of Lights 1930. N ^o Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé	Bearing from Light observed. Relèvement pris du Feu observé	1925	1926	1927	1928	1929
1667	<i>Mumbles</i> Gp. Occ. 20 sec. (2 Occ. 2 ½ sec. each).	8	114-34.7 12.2	1687 1689 1765	<i>Scarweather</i> (L.V.) <i>Nash</i> <i>Lynmouth Forel...</i>	4 15 17	7.0 18.5 20.7	169° 123° 161°	84 23 35	73 17 24	79 23 32	84 24 27	79 24
1682	<i>Port Talbot</i> R. & W. sectors. (Occ. 15 sec. 2 Ecl. 5 s.).	W. 1 R. ½	49-14.9 8.0	1687	<i>Scarweather</i> (l.v) ⁽¹⁾	4	9.0	030°	64	60	65	55	
1687	<i>Scarweather</i> (L. V.)..... Fl. 5 sec. (W. Fl. 1 sec.).	8	38-11.6 7.1	1689 1765 1770	<i>Nash</i> <i>Lynmouth Forel...</i> <i>Bull Point</i>	15 17 14	14.4 13.6 18.2	102° 165° 213°	41 42 26	36 46 20	27 46 17	32 42 20	32 42
1689	<i>Nash</i> W. & R. sectors. (Occ. 30 sec. Ecl. 4 sec.)	35	184-56.0 15.5	1687 1690 1765 1770	<i>Scarweather</i> (l.v) ⁽²⁾ <i>Breaksea</i> (L.V.) ⁽³⁾ <i>Lynmouth Forel...</i> <i>Bull Point</i>	4 4 17 14	14.4 10.5 12.7 27.2	232° 112° 222° 243°	58 71 81 34	50 71 82	49 74 87	48 74 87	26
—	<i>Nash W. Gas Buoy</i>			1689	<i>Nash</i>	15	8.2	104°	27	22	23	10	27
1690	<i>Breaksea</i> (L. V.)..... Fl. 15 sec. (W.Fl. 1.7 s.)	12	37-11.3 7.0	1689 1699 1765	<i>Nash</i> <i>Flatholm</i> <i>Lynmouth Forel...</i>	15 14 17	10.5 7.0 19.4	292° 070° 253°	64 84 33	48 86 35	55 81 42	54 78 29	50 77 28
1692	<i>Barry West Pier</i> Fl. 2.5 s.(W. Fl. 0.1 sec.)	1	40-12.2 7.2	1690	<i>Breaksea</i> (L. V.)..	4	3.6	202°	90	93	87	90	86
1699	<i>Flatholm</i> W. & R. sectors. (Gp. Occ. 30 s. 2 Ecl. 3 sec. each).	W. 35 R. 14	164-49.8 14.6	1690 1723 1765	<i>Breaksea</i> (L. V.) ⁽⁴⁾ <i>Eng. Welsh Gr.</i> (l.v) <i>Lynmouth Forel...</i>	4 4 17	7.0 6.3 26.5	250° 048° 252°	86 87 32	90 88 31	85 85 40	89 89 30	83 81 25
—	<i>Merkur Gas Buoy</i>			1690	<i>Breaksea</i> (L. V.)...	4	2.1	298°	88	94	91	92	85
—	<i>Zelo Gas Buoy</i>			1690	<i>Breaksea</i> (L. V.)...	4			88				
1700	<i>Monkstone</i> Fl. 5 sec. W. Fl. 0.8 sec.	5	43-13.1 7.5	1690 1699 1723	<i>Breaksea</i> (L. V.)... <i>Flatholm</i> <i>Engl. & Welsh Gr.</i> (L. V.).	4 14 4	8.6 2.5 4.2	236° 197° 063°	61 97 84	69 98 89	64 96 85	70 97 89	61 94 83
1723	<i>English & Welsh Grounds</i> (L. V.) Fl. 30 s. (W. Fl. 3.3 sec.)	12	36-11.0 6.9	1699	<i>Flatholm</i>	14	6.3	228°	84	87	82	85	79
—	<i>W. Cardiff Buoy</i>			1699	<i>Flatholm</i>	14	1.9	152°	97	98	96	96	94
1753	<i>Blacknore</i> Gp. Fl. 10 sec. (2 W. Fl. 0.5 sec. each).	12	36-11.0 6.9	1699 1723	<i>Flatholm</i> <i>English & Welsh</i> <i>Grounds</i> (L.V.).	14 4	13.7 7.8	241° 253°	50 78	59 78	50 76	55 78	40 69

(1) White sector observed.

(2) Scarweather obs. red sector.

(3) Breaksea, Lynmouth and Bull Point obs. white sector.

(4) White sector observed.

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>						
No List of Lighth 1930. No Livre des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	No List of Lighth 1930. No Livre des Phares 1930	NAME. NOM	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé.	Bearing from Light observed. Relevement pris du Feu observé	1925	1926	1927	1928	1929	
1758	<i>Burnham</i> W. Gp. Occ. 1 min. (2 Ecl. 2 sec. each).	10	91 - 27.7 10.9	1689	<i>Nash</i>	15	22.8	293°	26	25				
				1690	<i>Breaksea (L. V.)</i> ...	4	13.1	295°	70	68				
				1699	<i>Flatholm</i>	14	8.7	330°	78	78				
				1765	<i>Lynmouth Forel...</i>	17	29.5	269°	2	4				
		W. Occ. 5 sec. (Ecl. 2.5 sec.).	40	91 - 27.7 10.9	1689	<i>Nash</i>	15	22.8	293°				34	34
					1690	<i>Breaksea (L. V.)</i> ...	4	13.1	295°				74	64
					1699	<i>Flatholm</i>	14	8.7	330°				76	76
					1765	<i>Lynmouth Forel...</i>	17	29.5	269°				13	9
	—	<i>N. W. Elbow Gas Buoy.</i>			1723	<i>English & Welsh Grounds (L. V.)</i> .	4	1.0	184°	92	94	88	94	92
	—	<i>Clevedom Gas Buoy</i>			1723	<i>English & Welsh Grounds (L. V.)</i>	4	2.5	261°	82	83	71	80	70
—	<i>N. Elbow Gas Buoy</i>			1723	<i>English & Welsh Grounds (L. V.)</i>	4	1.8	259°		90	94	86	85	
1765	<i>Lynmouth Foreland</i> Gp. Fl. 15 sec. (4 W. Fl. 0.2 sec. each).	190	220 - 67.0 17.0	1687	<i>Scarweather (L.V.)</i>	4	13.6	345°	81	77	76	80	73	
				1689	<i>Nash</i>	15	12.7	042°	81	85	78	83	75	
				1690	<i>Breaksea (L. V.)</i> ...	4	19.4	073°	62	62	62	58	47	
				1699	<i>Flatholm</i>	14	26.5	072°	43	50	47	43	37	
				1775	<i>Lundy North</i>	14	33.7	265°	3	4	3	3	2	
				1776	<i>Lundy South</i>	15	33.2	261°	6	5	4	5	5	
				1770	<i>Bull Point</i>	182	154 - 46.8 14.2	1666	<i>Hellwick (L. V.)</i> ...	4	20.6	336°	31	35
1687	<i>Scarweather (L.V.)</i>	4	18.2					033°	39	39	36	40	29	
1689	<i>Nash</i>	15	27.2					063°		36	42		35	
1775	<i>Lundy North</i>	14	17.8					270°	73	73	67	74	65	
1776	<i>Lundy South</i>	15	17.2					263°	73	71	65	73	64	
1773	<i>Bideford</i>	31	93 - 28.3 11.1					1776	<i>Lundy South</i>	15	16.9	286°	52	42
				1778	<i>Hartland Point</i>	12	12.0	251°	75	75	70	79	66	
1775	<i>Lundy North</i>	374	165 - 50.2 14.7	1634	<i>St.-Anns</i>	14	34.0	327°	1	0	1	1	1	
				1653	<i>Caldy Island</i>	16	26.1	000°	54	39				
				1666	<i>Hellwick (L.V.)</i> ...	4	20.9	027°	39	41	36	32	33	
				1765	<i>Lynmouth Forel...</i>	17	33.7	085°	8	7	9	7	7	
				1770	<i>Bull Point</i>	14	17.8	090°	71	70	66	75	64	
1776	<i>Lundy South</i>	206	175 - 53.2 15.2	1653	<i>Caldy Island</i>	16	28.5	358°	54	44				
				1666	<i>Hellwick (L.V.)</i> ...	4	22.6	023°	26	32		19	22	
				1765	<i>Lynmouth Forel...</i>	17	33.2	081°	8	7		8	12	
				1770	<i>Bull Point</i>	14	17.2	083°	71			75	64	
				1773	<i>Bideford</i>	11	16.9	106°	71	68		73	64	
				1778	<i>Hartland Point</i>	12	9.7	150°	91	90		91	85	
				1783	<i>Treose Head</i>	16	34.2	213°	0	0		1	0	

OBSERVED LIGHT — <i>Feu Observé</i>				OBSERVING STATION - <i>Station Observatrice</i>				PERCENTAGES OF VISIBILITY <i>Pourcentages de Visibilité</i>					
N ^o List of Lights 1930. N ^o Liste des Phares 1930	NAME & CHARACTER. NOM ET CARACTÈRE	Candle Power. Puissance	Height above high Water and distance of Horizon. Hauteur au-dessus de la pleine Mer et distance de l'Horizon	N ^o List of Lights 1930. N ^o Liste des Phares 1930	NAME. N O M	Approximate distance of horizon Distance approchée de l'horizon	Distance from Light observed. Distance du Feu observé.	Bearing from Light observed. Relèvement pris du Feu observé.	1925	1926	1927	1928	1929
1778	<i>Hartland Point</i>	115	120 - 36.6 12.6	1773	<i>Bideford</i>	11	12.0	071°	84	84			
				1776	<i>Lundy South</i>	15	9.7	330°	91	92			
	Gp. Fl. 15 sec. (6 W. Fl. 0.1 sec. each).	1250	120 - 36.6 12.6	1666	<i>Hellwick (L.V.)</i> ...	4	29.6	007°				14	15
				1773	<i>Bideford</i>	11	12.0	071°				91	78
				1776	<i>Lundy South</i>	15	9.7	330°				44	88
1783	<i>Trevoze Head</i>	248	204 - 62.1 16.4	1788	<i>Godrevy</i>	12	23.2	217°	42	46		43	40
				1795	<i>Pendeen</i>	16	33.8	227°	3	4	1	0	2
1788	<i>Godrevy</i>	68	120 - 36.6 12.6	1783	<i>Trevoze Head</i>	16	23.2	037°	46	40	43	47	39
1793	<i>St-Yves Inner Pier</i>		28 - 8.5 6.1	1788	<i>Godrevy</i>	12	3.1	240°	75	78		87	
1794	<i>St-Yves West Pier</i>		24 - 7.3 5.6	1788	<i>Godrevy</i>	12	3.3	240°	13	38		28	
1795	<i>Pendeen</i>	190	195 - 59.3 16.0	1783	<i>Trevoze Head</i>	16	33.8	047°	46				
				6	<i>Round Island</i>	15	27.8	245°	47				
				7	<i>Seven Stones(L.V.)</i>	4	16.8	248°	74				
				10	<i>Longships</i>	12	6.4	207°	40				
	Gp. Fl. 15 sec. (4 Fl. 0.2 sec. each).	2000	195 - 59.3 16.0	1783	<i>Trevoze Head</i>	16	33.8	047°			17	18	19
				6	<i>Round Island</i>	15	27.8	245°			55	62	52
				7	<i>Seven Stones(L.V.)</i>	4	16.8	248°			73	83	75
				10	<i>Longships</i>	12	6.4	207°			71	66	

OBSERVATIONS OF LIGHTS IN
DENMARK 1925 - 1929

OBSERVATIONS DE FEUX AU
DANEMARK DE 1925 A 1929

N° in Light List 1929. N° Liste des Phares 1929	NAME OF LIGHT OBSERVED. NOM DU FEU OBSERVÉ	Height above H. W. Hauteur au-dess. de la P.M.	POWER in Hefner units PUISSANCE lumineuse en Hefner	Geogr. range (eye : 5 met.) Portée géog. haut de l'œil: 5 m.	Percentage of visibility of light observed Pourcentage de visibilité du feu observé					Distance from light obs. Distance du feu observé	Dist. of horiz. of observer Dist. de l'hor. de l'observ.	NAME OF OBSERVING STATION NOM DE LA STATION OBSERVATRICE	N° in Light List 1929. N° Liste des Phares 1929
					1925	1926	1927	1928	1929				
					n. m. m.m.	n. m. m.m.	n. m. m.m.	n. m. m.m.	n. m. m.m.				
43	Blaavands-Huk.....	55	180.000	19.7	83	75	77	76	74	11.4	10.6	Soedenstrand.....	13
52	Boubjerg	62	16.000	20.6	61	52	48	51	52	19.4	14.3	Lodbjerg	60
60	Lodbjerg	48	80.000	18.8	56 49	49 41	45 41	45 36	46 35	19.4 20.5	15.9 16.4	Boubjerg..... Hansthalm.....	52 69
69	Hansthalm.....	65	8.000.000	21.	73	68	67	67	67	20.5	14.3	Lodbjerg	60
78	Rubjerg-Knудde.....	90	240.000	24.2	88	85	83	84	84	9.8	15.4	Hirshals.....	80
80	Hirshals.....	57	140.000	20.0	87 59	81 53	79 52	81 50	82 49	9.8 24.1	19.4 13.6	Rubjerg-Knудde..... Skagen.....	78 86
86	Skagen.....	44	350.000	18.1		58 98 80	57 97 76	54 98 79	51 96 79	24.1 2.4 15.	15.4 7.6 11.2	Hirshals..... Hojen..... Hirshalm.....	80 85 95
95	Hirshalm.....	30	36.000	15.8	79 88	78 85	73 82	74	74	15. 12. 2	13.6 8.2	Skagen..... Nordre-Ronner.....	86 97
97	Nordre-Ronner.....	16	(1925) 2.000 (1928) 8.500	12.7 12.7	66	59	59		70	12.2 12.2	11.2 11.2	Hirshalm..... Hirshalm.....	95 95
107	Lysegrund	14	300			78	77	79	78	6.9	12.9	Hesselo	108
108	Hesselo	40	250.000	17.5		55	52	49	49	22.	15.	Nakke-Hoved.....	222
146	Fornæs	32	350.000	16.1	76	69	68	70	69	19.3	14.4	Hjelm.....	154
154	Hjelm.....	50	100.000	19.	64 89 74	56 84 69	57 84 69	56 86 68	56 82 68	19.3 10.1 15.9	11.6 8.4 11.4	Fornæs	146
189	Æbelo.....	20	60.000	13.7	73	67	70	65	64	15.2	12.2	Sletterhage..... Sejro	160 211
191	Enebærøde.....	13	2.000				46	45	50	15.1	12.2	Vestborg.....	194
194	Vestborg.....	35	60.000	16.8	84	76	78	79	80	11.1	10.	Vestborg.....	194
207	Revsnæs	24	150.000	14.6	83 75 73	78 70 66	79 71 64	79 70 62	78 68 64	11.1 12.8 14.1	12.2 11.4 8.4	Vestborg..... Sejro	194 211
211	Sejro	31	35.000	15.9	73 77	68 73	68 74	68 73	67 72	15.9 15.9	14.4 14.4	Romso.....	338
215	Sjølønds Rev. (B)....	14	350	12.2	39	39	35	42	38	14.2	14.4	Hjelm.....	154
217	Spødsbjerg.....	40	3.000			59	53	53	53	14.0	12.9	Hesselo	108
222	Nakke-Hoved.....	54	250.000	19.8	69	65	62	62	62	22.	12.9	Hesselo	108
282	Middelgrunds-Fort....	30	800.000	15.8		97 95	97 96	97 97	95 96	2. 5.1	9.1 7.6	Trekroner	256
294	Flak Fort.....	21	30.000	14.		96 94	97 96	97 95	96 94	2.4 4.0	11.2 9.1	Nordre-Rose.....	303
303	Nordre-Rose.....	14	30.000	12.2		90	93	94	91	5.1	11.2	Middelgrunds-Fort....	282
326	Sprøge.....	44	35.000	18.1	82 82 87	76 77 81	74 75 80	77 75 80	77 76 79	12.3 11.7 11.1	8.4 9.3 7.1	Middelgrunds-Fort.... Trekroner	282 256
338	Romso.....	17	6.000	13.	71 76	66 69	65 70	61 66	62 66	14.1 12.3	10.1 13.6	Romso..... Omø..... Hov	338 369 363
												Revsnæs..... Sprøge.....	207 326

No in Light List 1929 No Liste des Phares 1929	NAME OF LIGHT OBSERVED NOM DU FEU OBSERVÉ	Height above H. W. Hauteur au-dessus de la P. M.	POWER in Hefner units. PUISSANCE lumineuse en Hefner	Geogr. range (eye: 5 met.) Portée géog. haut. de l'œil: 5 m.		Percentage of visibility of light observed. Pourcentage de visibilité du feu observé					Distance from light obs. Distance du feu observé	Dist. of horiz. of observer Dist. de l'horiz. de l'observ.	NAME OF OBSERVING STATION NOM DE LA STATION OBSERVATRICE	No in Light List 1929 No Liste des Phares 1929
				n. m. m. m.	n. m. m. m.	1925	1926	1927	1928	1929				
342	Knudshoved	14	2.000	12.2	94	91	92	94	91	4.7	13.6	Sprago.....	326	
364	Trannekjær	14	3.500 5.000	12.2	61	56	56	50	47	13.3	9.3	Omo	369	
369	Omo	21	11.000	14.	81 95 80	76 90 74	74 91 73	76 91 68	76 91 70	11.7 6.1 13.3	13.6 7.1 7.6	Sprago..... Hov	326 363	
400	Baago.....	12	600	11.6	47	52	45	41	34	11.5	11.2	Helnaes.....	408	
408	Helnaes	30	6.000	15.8	57 88	50 80	57 80	56 80	55	12.6 7.6	11.6 10.6	Skjoldnaes..... Taksensand	409 418	
409	Skjoldnaes.....	32	60.000	16.1	80 90	73 84	78	77	76	12.6 8.7	11.2 10.6	Helnaes	408	
416	Nordborg	27	6.000	15.2	80	75	77		79	9.8	11.2	Helnaes	408	
423	Gammel Pol	20	1.300				75	75	73	7.3	11.6	Skjoldnaes	409	
430	Kegnæs.....	32	2.000	16.1	76	71	72		74	10.3	11.6	Skjoldnaes	409	
443	Hyllekrog	19	85.000	13.5	54	53	58	63	58	16.3	10.4	Gjedser	450	
450	Gjedser	26	140.000	15.0	71	63	69	74	74	16.3	8.9	Hyllekrog	443	
461	Hellehavn-Nakke.....	40	3.300	17.5	52	50	49	41	44	17.2	16.3	Stevns.....	317	
467	Hammeren.....	91	16.000	24.2	98 82	95 75	96 75	95 75	97 77	0.8 15.	9.3 11.	Hammer-Odde..... Christianso.....	469 477	
469	Hammer-Odde.....	21	12.000	14.	72	66	66	64	68	14.4	11.	Christianso.....	477	
477	Christianso.....	29	50.000	15.5	75 82 89	72 75 83	69 74 86	70 73 84	72 74 85	15. 14.4 11.4	19.5 9.3 9.1	Hammeren..... Hammer Odde..... Svaneke	467 469 485	
485	Svaneke.....	20	35.000	13.7	89	84	83	81	81	11.4	11.	Christianso.....	477	
565	Egense.....	19	5.000			93	92	94	91	4.4		Hals Barre	127	
608	Vejro.....	19	6.000	13.5	75	68	70	68	70	10.8	9.3	Omo	369	

OBSERVATIONS OF LIGHTS IN
U. S. A. IN 1923

OBSERVATIONS DE FEUX AUX
ÉTATS-UNIS D'AMÉRIQUE EN 1923

No. in 1923 Light List. N° dans la Liste des Phares de 1923	NAME OF LIGHT OBSERVED. NOM DU FEU OBSERVÉ	Height above High Water (in feet). Hauteur au-dessus des Pl. Mers (en feet)	Color Char. Light. flash (in sec.) Couleur Caractère du Feu. Éclats en sec.	Power of Light in Internat. Candles. Puissance du Feu en bougies internationales	Geographical range. Nautical Miles. Portée géographique en milles marins	% Visibility. % de Visibilité	Distance to Obser. Station Nautical Miles. Distance à la station observatrice en milles marins	NAME OF OBSERVING STATION. Observation point about 20 ft. above water. NOM DE LA STATION OBSERVATRICE Point d'observation à environ 6 mètres au-dessus de l'eau	No. in 1923 Light List. N° dans la Liste des Phares de 1923
	<i>Bantam Rock G. & W. Buoy.</i>					65		<i>The Cuckolds.....</i>	64
9	<i>Moose Peak.....</i>	72	Fl. W. 4.0 F. R.	110.000	14.82	81	9.0	<i>Libby Island.....</i>	8
7	<i>Avery Rock.....</i>	54		870	13.52	81	5.3	" "	"
10	<i>Emms Rock.....</i>	23	Fl. W. 0.3 F. R.	70	10.60	12	9.0	" "	"
11	<i>Nash Island.....</i>	51	F. W.	150	13.29	37	7.7	<i>Petit Manan.....</i>	14
12	<i>Narraguagus.....</i>	54	F. W.	350	13.52	78	5.5	" "	"
21	<i>Baker Island.....</i>	105	F. W.	2.900	16.83	26	16.5	" "	"
"	" "	"	Fl. W. 5.0	24.000	"	50	"	" "	"
13	<i>Southeast Rock G. Buoy....</i>	16	Fl. W. 5.0 F. W.	390	9.68	80	3.5	" "	"
14	<i>Petit Manan.....</i>	123	F. W.	17.000	17.78	2	26.5	<i>Mount Desert.....</i>	17
"	" "	"	Fl. W. 6.0 F. W.	180.000	"	18	26.5	" "	"
21	<i>Baker Island.....</i>	105	F. W.	2.900	16.83	23	16.5	" "	"
"	" "	"	Fl. W. 5.0	24.000	"	60	"	" "	"
23	<i>Great Duck Island.....</i>	67	Fl. R. 1.0	8.400	14.47	52	11.6	" "	"
39	<i>Two Bush Island.....</i>	65	Fl. W. 0.5 F. W.	28.000	14.33	43	14.5	<i>Matinicus Rock.....</i>	37
56	<i>Monhegan Island.....</i>	178	F. W.	1.400	20.35	0	20.0	" "	"
"	" "	"	Fl. W. 5.6 F. W.	150.000	"	39	20.0	" "	"
47	<i>Whitehead.....</i>	75	F. W.	12.000	15.01	20	16.5	" "	"
30	<i>Saddleback Ledge.....</i>	54	F. W.	2.900	13.52	14	14.8	" "	"
103	<i>Isle of Shoals.....</i>	82	Fl. W. 3.7 Fl. R.	60.000	15.47	78	11.3	<i>Boon Island.....</i>	"
"	" "	"	Fl. R. 3.7 Fl. W.	18.000	"	68	11.3	" "	"
97	<i>Whaleback.....</i>	59	0.4 F. R.	37.000	13.89	80	10.0	" "	"
94	<i>Cape Neddick.....</i>	88	F. R.	870	15.83	73	5.8	" "	"
95	<i>Boon Is. G. & W. Buoy...</i>	16	Fl. W. 5.0 F. W.	390	9.68	79	2.5	" "	"
96	<i>Boon Island.....</i>	133	F. R.	17.000	18.29	63	11.3	<i>Isle of Shoals.....</i>	103
94	<i>Cape Neddick.....</i>	88	F. R.	870	15.83	25	12.0	" "	"
97	<i>Whaleback.....</i>	59	Fl. W. 0.4 F. R.	37.000	13.89	87	6.5	" "	"
98	<i>Portsmouth Harbour.....</i>	52	F. W.	870	13.36	53	7.4	" "	"
115	<i>Cape Ann.....</i>	162	F. R.	22.000	19.66	42	19.5	" "	"
53	<i>Tenants Harbor.....</i>	64	F. R.	55	14.26	0	5	<i>Two Bush Island.....</i>	"
"	" "	"	Fl. R. 3.0 F. W.	180	"	60	"	" "	"
54	<i>Marshall Point.....</i>	30	F. W.	180	11.37	50	8.5	" "	"
56	<i>Monhegan Island.....</i>	178	F. W.	1.400	20.36	8	16.0	" "	"
"	" "	"	Fl. W. 5.6 F. W.	150.000	"	62	16.0	" "	"
40	<i>Whitehead.....</i>	75	F. W.	12.000	15.01	92	2.4	" "	"

No. in 1923 Light List. No dans la Liste des Phares de 1923	NAME OF LIGHT OBSERVED. NOM DU FEU OBSERVÉ	Height above High Water (in feet). Hauteur au-dessus des Pl. Mars (en feet)	Color Char. Light. Flash (in sec.). Couleur. Caractère du Feu Eclats en sec.	Power of Light in Internat. Candles. Puissance du Feu en bougies internationales	Geographical range. Nautical Miles. Portée géographique en milles marins	% Visibility. % de Visibilité	Distance to Obvgr. Station Nautical Miles. Distance à la station obser- vatrice en milles marins	NAME OF OBSERVING STATION. Observation point about 20 ft. above water. NOM DE LA STATION OBSERVATRICE Point d'observation à environ 6 mètres au-dessus de l'eau	No. in 1923 Light List. No dans la Liste des Phares de 1923
30	Saddleback Ledge	54	F. W.	2,900	13.52	27	15.0	» » »	»
43	Browns Head	39	F. W.	490	12.29	4	11.5	» » »	»
81	Cape Elizabeth East	130	F. W.	22,000	18.14	91	5.0	Portland L. S.	79
85	Portland Head.....	101	F. W.	3,800	16.59	86	7.5	» »	»
84	Ram Island Ledge.....	77	Fl. W. 0.3	15,000	15.14	86	7.5	» »	»
78	Half-way Rock	76	F. W.	12,000	15.07	83	8.5	» »	»
»	» »	»	F. R.	1,400	»	77	»	» »	»
»	» »	»	Fl. R. 5.0	14,000	»	80	»	» »	»
77	Seguin.....	180	F. W.	22,000	20.44	49	18.3	» »	»
91	Wood Island	71	F. R.	870	14.74	4	11.0	» »	»
»	» »	»	Fl. R. 3.0	7,200	»	12	11.0	» »	»
64	The Cuckolds.....	59	Fl. W. 0.3	24,000	13.89	1.4	25.0	» »	»
96	Boon Island.....	133	F. W.	17,000	18.28	1.4	29.5	» »	»
63	Burnt Island	61	Fl. R. 0.5	630	14.04	88	2.8	The Cuckolds.....	64
62	Ram Island	36	F. R.	150	11.97	87	2.7	» »	»
77	Seguin	180	F. W.	22,000	20.44	87	6.5	» »	»
81	Cape Elizabeth. East	130	F. W.	22,000	18.14	84	8.8	Halfway Rock	78
84	Ram Island Ledge.....	77	Fl. W. 0.3	15,000	15.14	88	6.7	» »	»
85	Portland Head.....	101	F. W.	3,800	16.59	81	7.7	» »	»
77	Seguin	180	F. W.	22,000	20.44	75	12.5	» »	»
79	Portland L. S.	70	Oc. W. 1.0	390	14.68	71	8.3	» »	»
121	Bakers Island.....	111	F. W.	490	17.16	70	6.0	Eastern Point	117
135	The Graves.....	98	Fl. W. 0.2	380,000	16.43	35	15.8	» »	»
170	Minots Ledge.....	85	Fl. W. 3.0	75,000	15.65	5	19.2	» »	»
126	Marblehead.....	130	F. R.	1,200	18.14	56	8.8	» »	»
123	Hospital Point	70	F. W.	4,300	14.68	94	3.0	Bakers Island.....	121
117	Eastern Point	57	Fl. W. 1.0	25,000	13.74	91	6.0	» »	»
126	Marblehead.....	130	F. R.	1,200	18.14	94	2.8	» »	»
135	The Graves.....	98	Fl. W. 0.2	380,000	16.43	76	11.0	» »	»
170	Minots Ledge.....	85	Fl. W. 3.0	75,000	15.65	59	16.0	» »	»
172	Boston.....	102	Fl. W. 8.0	100,000	16.65	76	13.5	» »	»
114	Cape Ann	162	F. W.	22,000	16.65	74	11.3	» »	»
124	Fort Pickering. Outer Isd....	28	F. W.	100	11.16	94	3.6	» »	»
169	Boston L. S.	48	Fl. W. 0.3	480	13.03	48	11.5	» »	»
175	The Narrows	45	F. R.	55	12.78	94	1.3	Boston.....	172

No. in 1923 Light List. N° dans la Liste des Phares de 1923	NAME OF LIGHT OBSERVED. NOM DU FEU OBSERVÉ	Height above High Water (in feet). Hauteur au-dessus des Pl. Mers (en feet).	Color Char. Light flash (in sec.). Couleur. Caractère du Feu Éclats en sec.	Power of Light in Internat. Candles. Puissance du Feu en bougies internationales	Geographical range. Nauti- cal Miles. Portée géographique en milles marins	% Visibility. % de visibilité	Distance to Obs. Station Nautical Miles. Distance à la station obser- vatrice en mille marins	NAME OF OBSERVING STATION. Observation point about 20 ft. above water. NOM DE LA STATION OBSERVATRICE Point d'observation à environ 6 mètres au-dessus de l'eau	No. in 1923 Light List. N° dans la Liste des Phares de 1923
158	Deer Island.....	53	F. W.	5.000	13.44	91	3.0	Boston.....	172
170	Minots Ledge.....	85	Fl. W. 3.0	75.000	15.65	84	6.8	"	"
169	Boston L. S.....	48	Fl. W. 0.3	480	13.03	75	6.0	"	"
135	The Graves.....	98	Fl. W. 0.2	380.000	16.43	95	2.4	"	"
160	Long Island Head.....	120	F. W.	5.500	17.63	91	3.0	"	"
126	Marblehead.....	130	F. R.	1.200	18.14	36	11.0	"	"
108	Duxbury Pier	35	F. R.	550	11.87	91	0.1	Plymouth (Gurnet)	185
189	Race Point.....	41	F. W.	2.400	12.43	23	16.5	"	"
"	"	"	Fl. W. 4.0	14.000	"	23	"	"	"
190	Wood End.....	45	Fl. R. 3.3	2.500	12.78	1	1.8	"	"
199	Cape Cod.....	183	Fl. W. 0.2	580.000	20.58	44	2.4	"	"
203	Chatham	80	F. W.	2.400	15.34	82	4.4	Pollock Rip L. S.	204
209	Stone Horse Shoal L. S.	39	Oc. W. 2.0	480	12.25	83	5.7	"	"
210	Handkerchief L. S.....	40	Fl. W. 0.3	480	12.34	49	10.8	"	"
217	Nantucket (Great Pt.).....	70	F. W.	12.000	14.68	47	15.0	"	"
218	Sankaty Head.....	166	F. W.	7.000	19.81	48	20.0	"	"
203	Chatham	80	F. W.	2.400	15.34	41	16.2	Great Round Shoal L. S.	215
218	Sankaty Head.....	166	Fl. W. 10.0	99.000	19.81	48	20.0	Pollock Rip L. S.	204
"	"	"	F. W.	7.000	"	83	7.4	Great Round Shoal L. S.	215
"	"	"	Fl. W. 10.0	99.000	"	"	"	"	"
217	Nantucket (Great Pt.).....	70	F. W.	12.000	14.68	84	6.0	"	"
210	Handkerchief L. S.....	40	Fl. W. 0.3	480	12.34	73	8.5	"	"
209	Stone Horse Shoal L. S.	39	Oc. W. 2.0	480	12.25	71	9.2	"	"
234	Cape Poge.....	55	Fl. R. 0.7	7.200	13.59	84	7.3	Cross Rip L. S.	232
217	Nantucket (Great Pt.).....	70	F. W.	12.000	14.68	74	11.5	"	"
234	Cape Poge.....	55	Fl. W. 0.7	24.000	13.59	88	7.3	"	"
239	East Chop.....	79	Fl. R. 3.0	15.000	15.27	47	12.5	"	"
228	Bishop & Clerks.....	56	Fl. W. 7.0	1.800	13.65	70	7.8	"	"
235	Hedge Fence L. S.....	42	F. W.	1.000	12.52	39	8.7	"	"
210	Handkerchief L. S.....	40	Fl. W. 0.3	480	12.34	39	10.4	"	"
250	Tarpaulin Cove.....	78	Fl. W. 0.4	30.000	15.21	86	5.5	Nobska Point	244
220	Gay Head	170	Fl. W. 5.0	80.000	20.01	70	13.2	"	"
"	"	"	Fl. R. 5.0	24.000	"	50	"	"	"
241	West Chop.....	84	F. W.	7.500	15.59	94	3.3	"	"
239	East Chop.....	79	F. R. 3.0	15.000	15.27	89	4.8	"	"

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234	Cape Page	55	Fl. W. 0.7	24.000	13.59	77	10.8	Nobska point	244
"	" "	"	Fl. R. 0.7	7.200	"	57	"	" "	"
235	Hedge Fence Shoal L. S. ...	42	F. W.	1.000	12.52	62	8.1	" "	"
299	Sakonnet Point.....	68	Fl. W. 4.8	490	14.54	38	10.3	Vineyard Sound L. S. ...	256
257	Hen & Chickens L. S.	45	F. W.	1.000	12.78	75	4.5	Vineyard Sound L. S. ...	256
299	Sakonnet Point.....	68	Fl. R. 4.8	240	14.54	38	10.3	" " "	"
262	Dumpling Rock.....	48	F. W.	1.500	13.03	71	10.3	" " "	"
259	Cuttyhunk.....	61	F. W.	1.500	14.04	83	3.2	" " "	"
220	Gay Head	170	Fl. W. 5.0	80.000	20.01	80	7.8	" " "	"
"	" "	"	Fl. R. 5.0	24.000	"	71	7.8	" " "	"
117	Eastern Point	57	Fl. W. 1.0	25.000	13.74	31	15.0	Boston L. S.	162
114	Cape Ann	162	F. W.	22.000	19.65	30	20.0	" "	"
121	Bakers Island.....	111	F. W.	490	17.16	38	11.8	" "	"
126	Marblehead.....	130	F. R.	1.200	18.14	56	10.3	" "	"
135	The Graves.....	98	Fl. W. 0.2	380.000	16.43	89	5.0	" "	"
170	Minots Ledge.....	85	Fl. W. 3.0	75.000	15.65	90	4.5	" "	"
175	The Narrows	45	F. R.	55	12.78	44	7.3	" "	"
703	Five Fathom Bank L. S.	65	Oc. W. 4.0	480	14.33	37	11.5	Northeast End L. S.	"
528	Fire Island	167	Fl. W. 5.0	170.000	19.88	84	9.4	Fire Island L. S.	527
706	Cape May	165	Fl. W. 5.0	13.000	19.79	35	20.0	Five Fathom Bank L.S.	703
701	Northeast End L. S.	49	Oc. W. 1.0	480	13.12	44	11.5	" " "	"
543	Navesink.....	246	Fl. W. 0.3	710.000	23.04	87	8.0	Ambrose Channel L. S.	544
561	Sandy Hook.....	88	F. W.	7.300	15.83	77	8.0	" " "	"
586	Romer Shoal.....	54	Fl. W. 0.5	15.000	13.51	69	8.5	" " "	"
546	West Bank.....	69	Oc. W. 4.5	1.700	14.61	62	10.0	" " "	"
384	Orient Point.....	64	F. R.	150	14.26	34	7.5	Cornfield Point L. S. ...	437
354	Little Gull Island.....	91	F. W.	10.000	16.01	69	12.5	" " "	"
"	" " "	"	"	"	"	95	4.0	Bartlett Reef L. S.	381
353	Race Rock.....	67	Fl. W. 0.5	18.000	14.47	41	15.0	Cornfield Point L. S. ...	437
"	" "	"	"	"	"	92	4.0	Bartlett Reef L. S.	381
"	" "	"	Fl. R. 0.5	16.000	"	40	15.0	Cornfield Point L. S. ...	437
"	" "	"	"	"	"	92	4.0	Bartlett Reef L. S.	381
396	Saybrook	71	F. W.	2.900	14.74	94	3.5	Cornfield Point L. S. ...	437
381	Bartlett Reef L. S.	28	Oc. W. 5.0	700	11.16	32	12.0	" " "	"
440	Hortons Point.....	103	F. W.	7.300	16.71	86	8.0	" " "	"

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445	Falkners Island.....	94	Fl. W. 1.0	14.000	16.19	54	12.5	Cornfield Point L.S.	437
437	Cornfield Point L. S.	63	Oc. W. 1.0 F. R.	600	14.19	54	11.0	Bartlett Reef L. S.	381
"	" " " "	43		300	12.61	3	"	" " " "	"
362	New London Harbor.....	89	Fl. R. 0.3	660	15.89	93	3.0	" " " "	"
361	New London Ledge	58	Fl. W. 0.7	14.000	13.82	94	3.0	" " " "	"
"	" " " "	"	Fl. R. 0.7	"	"	"	"	" " " "	"
346	Montauk Point.....	168	Fl. W. 0.5 F. R.	130.000	19.93	47	16.0	" " " "	"
"	" " " "	161		3.500	19.62	16	"	" " " "	"
349	Watch Hill.....	61	F. W.	1.700	14.04	37	12.0	" " " "	"
"	" " " "	"	Fl. R.	4.300	"	19	12.0	" " " "	"
316	Whale Rock.....	71	F. R.	150	14.74	90	2.4	Brenton Reef L. S.	300
301	Beavertail.....	64	Fl. W. 0.7 F. W.	9.100	14.26	94	1.5	" " " "	"
299	Sakonnet.....	68	F. W.	490	14.54	64	7.8	" " " "	"
"	" " " "	"	Fl. R. 4.8 F. W.	240	"	62	7.8	" " " "	"
333	Point Judith	65		2.900	14.33	80	6.4	" " " "	"
341	Block Island North	58	Oc. W. 2.0 F. W.	1.700	13.82	38	15.5	" " " "	"
344	Block Island S. East	201		13.000	21.31	45	18.5	" " " "	"
451	New Haven.....	61	Fl. R. 1.0	2.500	14.04	33	10.0	Stratford Shoal.....	460
459	Stratford Point.....	52	Fl. W. 3.0 F. W.	2.500	13.36	85	5.5	" " " "	"
463	Oldfield Point	76	F. W.	1.700	15.07	93	5.0	" " " "	"
478	Eatons Neck	144		7.300	18.83	63	10.0	" " " "	"
471	Pecks Ledge	54	Fl. W. 0.5 Fl. R.	22.000	13.51	62	9.0	" " " "	"
469	Penfield Reef	51	1.5 Fl. G.	430	13.29	44	6.0	" " " "	"
467	Bridgeport Breakwater.....	31	1.0 Oc. W.	130	11.47	38	7.0	" " " "	"
722	Fourteen Ft. Bank.....	59	8.0 Oc. W.	2.900	13.89	82	9.0	Elbow of Cross Ledge...	733
723	Miah Maul Shoal.....	59	2.5 Oc. W.	7.200	"	93	4.5	" " " "	"
731	Egg Island.....	47	1.0 Fl. W.	510	12.95	81	6.0	" " " "	"
743	Cohansey.....	42	0.3 Oc. W.	510	12.52	21	10.5	" " " "	"
742	Ship John Shoal.....	50	10.0 F. W.	2.900	13.20	80	9.0	" " " "	"
736	Mahon River	38		2.900	12.16	71	6.0	" " " "	"
707	Cape Henlopen	126	F. W.	13.000	17.94	98	1.3	Harbor of Refuge	712
706	Cape May	165	Fl. W. 5.0 Oc. W.	130.000	19.78	87	10.0	" " " "	"
705	Overfalls L. S.	57	10.0 Oc. W.	480	13.74	94	3.5	" " " "	"
709	Delaware Breakwater	61	2.5 Oc. W.	7.200	14.04	97	0.8	" " " "	"
718	Brandywine Shoal.....	60	27.0	12.000	13.97	75	11.0	" " " "	"

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1198	Cape Hatteras.....	191	Fl. W. 1.4	80,000	20.90	90	14.0	Diamond Shoal L. S. ...	1192
832	Assateague.....	154	F. W.	22,000	19.29	8	20.0	Winter Quarter L. S. ...	830
854	Cape Charles.....	180	Fl. W. 1.2	130,000	20.44	90	11.0	Cape Charles L. S.	853
855	Cape Henry.....	157	Fl. W. 1.0	80,000	19.43	77	18.0	» » »	»
841	Hoq Island.....	180	Fl. W. 3.5	280,000	20.44	64	19.0	» » »	»
822	Fenwick Island.....	83	Oc. W. 50.0	12,000	15.53	52	14.0	Fenwick Island L. S. ...	825
826	» » Buoy.....	16	Fl. W. 2.5	390	9.68	46	9.0	» » » ...	»
854	Cape Charles.....	180	Fl. W. 1.2	130,000	20.44	64	17.5	Thimble Shoal.....	870
855	Cape Henry.....	157	Fl. W. 1.0	80,000	19.43	85	12.0	» »	»
873	Old Point Comfort.....	54	F. R.	3,300	13.51	97	3.0	» »	»
962	Back River.....	133	Fl. R. 2.5	750	18.29	93	4.5	» »	»
867	Thimble Shoal Buoy N° 9...	12	Fl. W. 2.0	130	9.07	93	3.0	» »	»
868	» » » N° 10..	12	Fl. R. 1.0	40	»	95	1.5	» »	»
869	» » » N° 11..	12	Fl. W. 2.0	130	»	97	1.3	» »	»
871	Willoughby Spit Buoy.....	12	Fl. W. 2.5	130	»	98	0.8	» »	»
1201	Cape Lookout.....	156	Fl. W. 1.7	77,000	19.38	54	20.0	» »	»
1385	Cape Fear.....	159	Fl. W. 2.5	48,000	19.53	61	18.5	Frying Pan Shoal L. S.	1386
1422	Georgetown.....	85	F. W.	1,700	15.66	58	15.0	Cape Romain.....	1442
1443	Cape Romain G. & W. Buoy.	16	Fl. W. 3.0	390	9.68	20	14.5	» »	»
1442	Cape Romain.....	154	Fl. W. 5.0	170,000	19.29	67	15.0	Georgetown.....	1422
1444	Charleston.....	155	F. W.	13,000	19.34	98	9.0	Charleston L. S.	1445
1448	Fort Sumter Rge Front.....	20	Fl. W. 0.5	4,600	10.22	67	8.5	» »	»
1449	» » » Rear.....	51	F. W.	2,500	13.29	88	9.2	» »	»
1445	Charleston L. S.	44	Fl. W. 1.0	700	12.70	58	9.2	Fort Sumter Rge. Rear ..	1449
1507	Tybee Range Front.	44	Fl. W. 1.0	4,600	»	87	9.6	Savannah L. S.	1504a
1506	» » Rear.....	144	F. W.	13,000	18.83	91	10.5	» »	»
1538	Saint-Simon.....	104	Fl. W. 5.0	27,000	16.76	75	14.5	Brunswick L. S.	1536
1539	» Rge Front.....	40	F. W.	2,500	12.34	17	14.5	» »	»
1536	Brunswick L. S.	66	Fl. W. 2.0	700	14.40	46	14.5	Saint-Simon.....	1538
1570	St. Johns R. G. & W. Buoy...	16	Fl. W. 1.0	390	9.68	88	4.5	St. Johns River.....	1569
1704	Hetzel Shoal G. & W. Buoy...	16	Fl. W. 5.0	390	»	71	14.0	Cape Canaveral.....	1703
1729	Miami G. & W. Buoy"2 M"	16	Fl. W. 0.5	390	»	14	10.3	Fowey Rocks.....	1754
1730	Miami Ent. G. & B. Buoy ...	12	Fl. W. 0.5	70	9.07	37	10.2	» »	»
1739	Cape Florida Shoal.....	31	F. R.	50	11.47	81	3.6	» »	»
1741	Biscayne Light No. 3.....	15	F. W.	60	9.57	40	4.8	» »	»

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1740	Biscayne Light No. 12	15	F. R.	20	»	40	4.2	Fowey Rocks.....	1754
1742	» » No. 34	34	F. R.	50	11.77	45	5.9	» »	»
1754a	Pacific Reef.....	45	Fl. W. 0.3	1.700	12.78	80	13.3	» »	»
»	» »	»	»	»	»	94	9.7	Carysfort Reef.....	1755
1756	Malasses Reef.....	45	Fl. W. 0.5	1.700	»	27	15.5	» »	»
1764	Mosquito Bank.....	31	Fl. W. 0.5	230	11.47	19	13.3	» »	»
1769	Key West.....	91	Oc. W. 6.0	3.000	16.03	29	15.5	American Shoal.....	1752
»	» »	»	»	»	»	100	7	Sand Key.....	1768
1767	Key West Ent. G. & W. Buoy	16	Fl. W. 0.3	390	9.68	100	4.2	» »	»
1773	Whitehead Spit G. Buoy.....	15	Oc. W. 5.0	10	9.57	10	6.0	» »	»
1777	Northwest Bar.....	26	Fl. W. 0.3	230	10.94	2	10.6	» »	»
1782	Dry Tortugas.....	151	Fl. W. 0.3	370.000	19.15	90	18.6	Rebecca Shoal.....	1780
1781	New Ground G. & W. Buoy.	16	Fl. W. 0.5	390	9.68	70	8.8	» »	»
1791	Estero Pass.....	15	F. W.	60	9.57	98	2.6	Sanibel Island.....	1788
1790	Punta Rasa.....	45	F. W.	2.500	12.78	98	2.2	» »	»
1814	Tampa Bay Ent. G. & W. Buoy	16	Fl. W. 0.5	390	9.68	96	7.0	Egmont Key.....	1816
1818	N. Channel G. & B. Buoy ...	12	Fl. W. 0.3	70	9.07	97	2.2	» »	»
1819	Mullet Key G. & B. Buoy ...	12	Fl. W.	70	»	99	2.4	» »	»
1817	South West Channel	18	F. W.	60	9.96	96	1.5	» »	»
1821	Channel G. & B. Buoy "2B"	12	Fl. W. 0.3	70	9.07	60	7.5	» »	»
1856	Manatee Riv. Cut "A" Lgt. ...	30	F. W.	160	11.37	94	6.5	» »	»
1858	» » "D" Lgt n°1	20	Fl. W. 0.3	160	10.22	0	7.6	» »	»
1859	» » Rear	30	F. W.	30	11.37	95	7.0	» »	»
1811	Charlotte Harbor.....	36	Fl. W. 0.3	650	11.97	93	8.5	Gasparilla Island	1810
1806	» » Buoy	12	Fl. W. 0.3	70	9.07	96	4.7	» »	»
1804	Pine Island Sound No 15...	15	F. W.	60	9.57	83	4.4	» »	»
2018	Ship Island.....	73	F. R.	150	14.07	65	11.5	Biloxi	2021
»	» »	»	»	»	»	38	11.0	Chandeleur	2058
2058	Chandeleur	99	Fl. R. 0.5	11.000	16.48	71	11.0	Ship Island.....	2018
2065	South Pass	108	Fl. W. 1.5	48.000	16.99	84	13.0	Southwest Pass	2073
2073	Southwest Pass	124	F. W.	22.000	17.84	79	13.0	South Pass	2061
2155	Sabine Bank.....	72	Fl. W. 2.0	2.500	14.81	60	16.0	Sabine Pass.....	2156
2286	Buck Island	125	Fl. W. 0.5	450	17.89	29	19.0	Culebrita Island.....	2258
2885a	Sail Rock.....	125	Fl. W. 0.3	150	»	99	7.0	» »	»
2293	Hams Bluff.....	394	Fl. W. 0.5	39.000	27.79	55	39.0	» »	»

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2265	Point Mulas.....	68	F. W.	110	14.54	73	16.0	Culebrita Island	2258
125	Stony Point.....	57	Fl. W. 1.0	1.800	13.75	91	7.2	Galloo Island.....	124
124	Galloo Island.....	58	F. W.	2.900	13.82	42	13.3	Tibbetts Point.....	97
134	Braddock Point	92	F. W.	4.300	16.08	60	8.6	Charlotte	133
255	S. Buffalo Pierhead	43	Fl. R. 0.3	85	12.61	77	3.0	Buffalo	227
257	S. Buffalo S. Side.....	53	Fl. R. 0.3	150.000	13.44	80	3.1	"	"
343	Point Albino.....	87	Fl. W.	60.000	15.78	68	7.0	"	"
257	S. Buffalo S. Side.....	53	Fl. W. 0.3	150.000	13.44	80	3.1	"	"
277	Conneaut.....	55	Fl. W. 3.0	4.500	13.59	36	11.5	Ashtabula.....	282
293	Cleveland East Ent.....	59	Oc. W. 8.0	6.000	13.89	57	3.5	Cleveland	297
325	South Bass	60	F. R.	150	13.97	57	8.0	Marblehead.....	320
326	Green Island	57	Fl. W. 3.3	1.800	13.75	72	9.5	"	"
"	"	"	Fl. R. 3.3	540	"	"	"	"	"
307	Huron	48	F. W.	490	13.03	45	11.1	"	"
326	Green Island	57	Fl. W. 3.3	1.800	13.75	97	1.5	South Bass	325
"	"	"	Fl. R. 3.3	540	"	97	1.5	"	"
329	Niagara Reef G. Buoy.....	10	Oc. W. 10.0	120	8.72	22	6.4	"	"
328	Port Clinton.....	26	F. R.	100	10.94	29	7.9	"	"
320	Marblehead.....	67	Fl. W. 0.3	600.000	14.47	95	8.0	"	"
323	Ballast Island.....	92	Fl. W. 0.3	230	16.08	66	4.2	Green Island.....	326
325	South Bass	60	F. R.	150	13.97	93	1.5	"	"
328	Port Clinton.....	26	F. R.	100	10.94	23	8.2	"	"
320	Marblehead.....	67	Fl. W. 0.3	600.000	14.47	72	9.5	"	"
329	Niagara Reef G. Buoy.....	10	Oc. W. 10.0	120	8.72	24	4.8	"	"
342	Monroe.....	34	Fl. W. 0.3	230	11.77	31	7.8	Toledo Harbor	331
333	Maumee E. Front.....	42	F. W.	350	12.52	99	1.7	"	"
340	Manhattan Front	40	F. R.	36.000	12.34	93	7.7	"	"
341	" Rear	86	F. R.	56.000	15.71	91	8.1	"	"
331	Toledo Harbor	72	Fl. W. 1.0	13.000	14.82	98	3.3	Maumee Bay.....	334
"	"	"	Fl. R. 1.0	18.000	"	"	"	"	"
341	Manhattan Rear	86	F. R.	56.000	15.71	96	5.0	"	"
594	Round Island.....	53	Fl. R. 0.8	6.700	13.44	90	6.0	Old Mackinac Point.....	1073
592	Cheboygan.....	75	F. R.	750	15.01	55	15.0	"	"
588	Poe Reef L. S.....	40	Fl. W. 2.5	480	12.34	66	10.5	Spectacle Reef.....	587
601	Detour	80	Fl. W. 1.0	62.000	15.34	68	14.4	"	"

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600	Martin Reef.....	35	F. W.	320	11.87	68	7.9	Spectacle Reef.....	587
391	Bois Blanc (C.).....	56	F. W.		13.65	64	11.6	" ".....	"
589	Cheybogan.....	54	F. W.	2.900	13.51	67	15.0	" ".....	"
342	Monroe.....	34	Fl. W. 0.3	230	11.77	41	10.8	Detroit River.....	375
950	Outer Island.....	130	Fl. W. 4.7	110.000	18.14	55	12.6	Devils Island.....	968
970	Sand Island.....	56	Fl. W. 1.5	750	13.65	66	9.7	" ".....	"
1073	Old Mackinac Point.....	62	Fl. W. 2.0	13.000	14.12	90	6.0	Round Island.....	756
898	Keweenaw Waterway.....	68	Oc. W. 2.0	6.500	14.54	57	12.5	Huron Island.....	895
580	Middle Island.....	78	F. R.	3.700	15.21	53	10.5	Thunder Bay.....	579
573	Sturgeon Point.....	69	Fl. W. 0.3	950	14.61	2	19.7	" ".....	"
1034	Blake Point.....	40	Fl. W. 0.3	130	12.34	85	3.0	Passage Island.....	1035
580	Middle Island.....	78	F. R.	3.700	15.21	43	12.1	Presque Isle.....	582
586	Forty Mile Point.....	66	Oc. W. 15.0	2.900	14.40	50	19.3	" ".....	"
582	Presque Isle.....	123	F. W.	12.000	17.78	78	12.1	Middle Island.....	580
97	Tibbetts Point.....	69	F. W.	490	14.61	53	13.3	Galloo Island.....	124
125	Stony Point.....	57	Fl. W. 1.0	1.800	13.75	91	7.2	" ".....	"
1243	Escanaba.....	44	F. R.	350	12.69	78	8.2	Eleven Foot Shoal L. S.....	1241
1242	Point Peninsula.....	40	Fl. W. 1.0	230	12.34	95	3.7	" " " ".....	"
1226	Pottawatomie.....	159	F. W.	1.700	19.52	67	13.0	" " " ".....	"
1230	Poverty Island.....	80	Fl. R. 2.5	1.900	15.34	88	4.0	St.-Martin Island.....	1228
1229	Little Gull Is'd. G. Buoy.....	10	Fl. W. 0.3	70	8.72	96	1.9	" ".....	"
1081	Ile aux Galets.....	58	F. W.	2.900	13.82	69	14.7	Beaver Island Harbor.....	1082
1077	White Shoal.....	125	Fl. W. 0.2	360.000	17.89	73	12.7	Old Mackinac Point.....	1073
1074	St. Helena.....	71	Fl. R. 0.5	870	14.74	77	6.9	" " " ".....	"
1207	Twin River Point.....	35	F. W.	2.900	11.87	54	15.0	Kewaunee.....	1208
"	" " " ".....	"	Fl. W. 6.0	19.000	"	64	15.0	".....	"
1211	Algoma Pier'h'd Front.....	22	F. R.	10	10.47	3	9.5	".....	"
1222	Pilot Island.....	48	Fl. W. 1.0	17.000	13.03	37	13.0	Cana Island.....	1220
1235	Seul Choix Pointe.....	80	F. W.	7.300	15.34	71	14.6	Squaw Island.....	1237
1238	Lansing Shoal L. S.....	42	Fl. W. 1.0	1.000	12.52	93	4.0	" ".....	"
1077	White Shoal.....	125	Fl. W. 0.2	360.000	17.89	63	18.9	" ".....	"
1235	Seul Choi Pointe.....	80	F. W.	7.300	15.34	36	14.7	Lansing Shoal L. S.....	1238
1077	White Shoal.....	125	Fl. W. 0.2	360.000	17.89	39	18.2	" " " ".....	"
1237	Squaw Island.....	57	F. R.	150	13.74	65	4.0	" " " ".....	"
"	" " " ".....	"	Fl. R.	540	"	90	4.0	" " " ".....	"

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1239	Garden Island G. Buoy.....	12	Fl. W. 0.3	70	9.07	77	3.7	" " " "	"
1259	Sherwood Point.....	61	F. W.	1.700	14.04	78	10.1	Green Island.....	1257
"	" " " ".....	"	Fl. R.	3.400	"	78	10.1	" " " ".....	"
1258	Peshtigo Reef L. S.	25	F. W.	320	10.83	76	7.0	" " " ".....	"
1257	Green Island.....	57	F. W.	1.700	13.74	78	10.1	Sherwood Point.....	1259
1258	Peshtigo Reef L. S.	25	F. W.	320	10.83	78	6.9	" " " ".....	"
1248	Cedar River Pier'h'd.....	38	Fl. W. 0.3	190	12.16	35	12.5	Chambers Island.....	1253
1255	Menominee Pier'h'd Fr't. ...	34	F. R.	150	11.77	52	11.5	" " " ".....	"
1256	" " R'r.	59	F. R.	750	0.89	52	11.6	" " " ".....	"
1253	Chambers Island.....	68	F. W.	1.700	14.54	76	11.5	Menominee Pier'h'd Fr't.	1255
"	" " " ".....	"	Fl. W.	14.000	"	80	11.5	" " " ".....	"
1259	Sherwood Point.....	61	F. W.	1.700	14.04	37	14.1	" " " ".....	"
"	" " " ".....	"	Fl. R. 1.3	3.400	"	32	14.1	" " " ".....	"
1209	Kewaunee Front.....	40	Fl. R. 0.3	20	12.34	0	9.5	Algoma Pierhead.....	1212
1210	" Rear.....	62	F. R.	220	14.12	0	9.5	" " " ".....	"
1208	" Pierhead.....	43	F. W.	5.000	12.61	66	9.5	" " " ".....	"
"	" " " ".....	"	"	"	"	56	15.1	Twin River Point.....	1207
1206	Two Rivers Pierhead.....	35	F. R.	80	11.87	50	4.8	Manitowoc B'kwater.....	1204
1203	Manitowoc S. Bkwater.....	41	Fl. W. 0.3	70	12.43	10	4.9	Two Rivers Pierhead....	1206
1204	" Brkwater.....	52	F. R.	2.000	13.36	77	4.8	" " " ".....	"
1205	" Pierhead.....	42	F. R.	1.200	12.52	77	4.8	" " " ".....	"
1186	Racine Reef.....	72	Fl. R. 0.7	840	14.82	91	3.4	Wind Point.....	1191
1188	" Pierhead.....	46	F. W.	490	12.86	90	2.7	" " " ".....	"
1190	" N. Pierhead.....	31	F. R.	20	11.47	72	2.7	" " " ".....	"
1184	Kenosha.....	50	Fl. R. 2.5	840	13.19	45	11.8	" " " ".....	"
1198	Milwaukee (N. Point).....	154	Fl. W. 1.6	9.100	19.29	20	15.5	" " " ".....	"
"	" " " ".....	"	F. W.	1.800	"	20	15.5	" " " ".....	"
1191	Wind Point.....	111	Fl. W. 6.0	32.000	17.16	97	3.4	Racine Reef.....	1186
1183	Kenosha Breakwater.....	42	Fl. R. 0.3	20	12.52	5	9.0	" " " ".....	"
1184	Kenosha.....	50	Fl. R. 2.5	840	13.19	52	9.0	" " " ".....	"
1191	Wind Point.....	111	Fl. W. 6.0	32.000	17.16	63	11.8	Kenosha.....	1184
1186	Racine Reef.....	72	Fl. R. 0.7	840	14.82	32	9.0	" " " ".....	"
1166	Chicago Harbor.....	82	Fl. R. 0.7	22.000	15.47	37	9.8	Calumet Harbor.....	1148
"	" " " ".....	"	Fl. W. 0.7	31.000	"	38	9.8	" " " ".....	"
1611	" Breakwater N.	29	Fl. W. 0.3	70	11.26	10	10.2	" " " ".....	"

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1144	Indiana Harbor E.	45	Fl. W. 1.0	230	12.78	18	5.1	Calumet Harbor	1148
1145	» » Bktr.	24	Oc. W. 1.0	70	10.21	21	5.0	» »	»
1160	Chicago Brkwr. S.	36	Fl. R. 0.3	100	11.97	13	9.5	» »	»
1166	» Harbor.	82	Fl. R. 0.7	22,000	15.47	36	11.2	Grosse Point	1179
1148	Calumet Harbor.	40	F. W.	300	12.34	21	9.8	Chicago Harbor	1166
1179	Grosse Point	119	F. W.	10,000	17.58	28	11.2	» »	»
»	» »	»	Fl. R. 6.0	32,000	»	26	11.2	» »	»
1116	Muskegon Pierhead.	50	F. R.	3,500	13.19	42	10.9	Grand Haven.	1122
1096	South Manitou	104	F. W.	7,300	16.77	93	7.0	North Manitou.	1094
1095	North Manitou L. S.	30	F. W.	320	11.37	92	3.2	» »	»
1121	Grand Haven Front.	42	F. R.	1,200	12.52	46	10.9	Muskegon	1116
1122	» » Rear	52	F. R.	2,000	13.36	52	10.8	»	»
»	» »	»	Fl. R.	13,000	»	55	10.8	»	»
1120	» » N. Prk'd.	30	Fl. W. 0.3	120	11.37	27	10.8	»	»
1094	North Manitou	70	Fl. R. 1.3	7,200	14.68	95	7.0	South Manitou	1096
»	» »	»	Fl. W. 1.3	24,000	»	94	7.0	» »	»
1095	» » L. S.	30	F. W.	320	11.37	95	6.4	» »	»
1098	Point Betsie	52	Fl. W. 1.3	70,000	13.36	18	20.9	» »	»
1081	Ile aux Galets	58	F. W.	2,900	13.82	77	10.0	White Shoal	1077
1078	Simmons Reef G. Buoy	10	Fl. W. 0.3	70	8.72	80	5.0	» »	»
1074	St. Helena	71	Fl. R. 0.5	870	14.74	45	11.5	White Shoal	1077
1073	Old Mackinac Point.	62	Fl. W. 2.0	13,000	14.12	40	17.5	» »	»
679	Lord Rocks.	33	Fl. W. 0.3	130	11.68	77	6.1	Tree Point	681
682	Barren Island	85	Fl. W. 0.5	130	15.65	27	15.0	» »	»
684	Mary Island	67	Fl. W. 0.3	600	14.47	7	20.0	» »	»
683a	Slate Islands.	33	Fl. W. 0.3	130	11.68	91	4.5	Mary Island	684
683	Black Rock.	55	Fl. W. 1.0	130	13.59	85	6.1	» »	»
681	Tree Point	86	Fl. W. 1.0	13,000	15.71	33	20.0	» »	»
709	Key Reef	35	Fl. W. 1.0	130	11.87	89	7.6	Lincoln Rock	706
708	Beck Island.	20	Fl. W. 0.3	10	10.22	61	5.5	» »	»
762	Shelter Island	19	Fl. W. 0.3	130	10.09	63	10.8	Sentinel Island	765
768	Little Island	50	Fl. W. 0.5	130	13.19	93	3.8	» »	»
768a	Vanderbilt Reef.	36	Fl. W. 1.5	230	11.97	93	4.1	» »	»
769	Point Sherman.	42	Fl. W. 0.3	230	12.52	67	7.6	Eldred Rock	770
748	Turnabout Island	23	Fl. W. 0.3	130	10.59	9	14.0	S. E. Five Finger.	751

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751a	The Brothers	37	Fl. W. 2.0	130	12.06	92	5.1	" " "	"
377	North Head	194	Oc. W. 6.0	13,000	21.03	58	22.0	Tillamook Rock.....	189
191	Cape Disappointment.....	220	Fl. R. 2.0	18,000	22.06	43	20.4	" " "	"
"	" " "	"	Fl. W. 2.0	60,000	"	64	20.4	" " "	"
180	Cape Meares.....	217	F. W.	13,000	22.59	19	27.0	" " "	"
"	" " "	"	Fl. R.	36,000	"	13	27.0	" " "	"
442	Point Wilson.....	50	F. W.	1,700	13.19	81	11.1	Smith Island.....	439
"	" " "	"	Fl. R. 2.0	1,900	"	71	11.1	" " "	"
437	New Dungeness.....	96	Oc. W. 2.0	7,300	16.31	76	13.3	" " "	"
510	Burrows Island	57	F. W.	1,700	13.74	81	10.8	" " "	"
377	North Head	194	Oc. W. 6.0	13,000	21.03	92	8.2	Columbia River L. S....	190
191	Cape Disappointment.....	220	Fl. R. 2.0	18,000	22.06	91	7.7	" " " "	"
"	" " "	"	Fl. W. 2.0	60,000	"	92	7.7	" " " "	"
189	Tillamook Rock.....	133	Fl. W. 1.0	48,000	18.28	84	16.5	" " " "	"
408	Cape Flattery.....	165	Oc. W. 4.0	13,000	19.79	84	14.1	Umatilla Reef L. S.....	407
"	" " "	"	"	"	"	75	13.2	Swiftsure L. S.....	409
39	Farallon.....	358	Fl. W. 4.5	280,000	26.74	75	15.0	Relief L. S. N° 76.....	41
97	Point Reyes.....	294	Fl. W. 1.0	80,000	24.71	75	21.5	" " "	"
45	Bonita Point.....	124	Oc. W. 25.0	16,000	17.84	82	8.8	" " " "	"
44	Mile Rock.....	78	Oc. W. 5.0	12,000	15.21	81	9.1	" " " "	"
38	Point Montara	70	Oc. W. 2.5	25,000	14.68	30	15.0	" " " "	"
103	Cape Mendocino.....	422	Fl. W. 4.5	78,000	28.59	92	4.5	Blunts Reef L. S.....	104
105	Table Bluff.....	176	Fl. W. 0.5	17,000	20.28	37	29.0	" " " "	"
104	Blunts Reef L. S.....	50	2 F. W.	320	13.19	17	29.0	Table Bluff.....	105
119	Trinidad Head.....	196	Fl. W. 0.5	18,000	21.01	19	22.4	" " " "	"
24	Anacapa	185	Fl. W. 2.0	390	20.66	57	10.9	Point Hueneme.....	"
26	Santa Barbara	178	Fl. W. 1.0	580,000	20.35	10	30.0	" " "	"
100	Point Cabrillo.....	84	Fl. W. 1.0	110,000	15.59	20	23.8	Point Arena.....	99
99	Point Arena.....	155	Fl. W. 0.5	390,000	19.34	11	23.8	Point Cabrillo	100
104	Blunts Reef L. S.....	50	2 F. W.	320	13.19	83	4.5	Cape Mendocino.....	103
41	San Francisco L. S.	57	Fl. W. 5.0	600	13.74	77	8.8	Bonita Point.....	45
39	Farallon.....	358	Fl. W. 4.5	280,000	26.74	52	23.4	" " "	"
44	Mile Rocks.....	78	Oc. W. 5.0	12,000	15.21	92	1.7	" " " "	"
42	Fort Point.....	81	Oc. W. 1.0	3,500	15.39	92	2.5	" " " "	"
43	Alcatraz	214	Fl. W. 0.5	80,000	21.83	90	5.2	" " " "	"

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45	Bonita Point.....	124	Oc. W. 25.0	16.000	17.84	71	5.2	Alcatraz.....	43	
48	Lime Rock.....	19	Fl. W. 0.5	230	10.09	81	2.7	»	»	
42	Fort Point.....	81	Oc. W. 1.0	3.500	15.39	85	2.8	»	»	
52	Point Blunt.....	60	Fl. W. 3.0	1.200	13.97	89	1.6	»	»	
45	Bonita Point.....	124	Oc. W. 25.0	16.000	17.84	93	1.7	Mile Rocks.....	44	
43	Alcatraz	214	Fl. W. 0.5	80.000	21.83	92	2.4	Angel Island.....	»	
44	Mile Rocks.....	78	Oc. W. 5.0	12.000	15.21	88	5.1	» »	»	
55	Oakland Harbor	43	Fl. W. 0.25	44.000	12.61	98	1.6	Goat Island.....	54	
»	»	»	»	»	»	78	6.0	Southampton Shoal	63	
»	»	»	»	»	»	50	10.9	E. Brothers Island.....	66	
54	Goat Island.....	95	F. W.	12.000	16.26	99	1.6	Oakland Harbor	55	
97	Point Reyes.....	294	Fl. W. 1.0	80.000	24.71	18	36.3	Point Montara.....	38	
39	Farallon.....	358	Fl. W. 4.5	280.000	26.74	43	24.8	»	»	
45	Bonita Point.....	124	Oc. W. 25.0	16.000	17.84	39	16.7	»	»	
37	Pigeon Point	148	Fl. W. 2.5	48.000	19.01	95	5.2	Ano Nuevo.....	36	
34	Point Pinos.....	89	Oc. W. 20.00	29.000	15.89	20	19.6	Santa Cruz.....	35	
35	Santa Cruz.....	67	Fl. W. 1.0	25.000	14.46	22	19.6	Point Pinos.....	34	
39	Farallon.....	358	Fl. W. 4.5	280.000	26.74	67	17.7	Point Reyes.....	97	
26	Santa Barbara.....	178	Fl. W. 1.0	580.000	20.35	10	37.8	Point Conception.....		
954	Barbers Point.....	43	Fl. W. 0.1	44.000	12.61	41	13.3	Honolulu Harbor.....	945	
939	Molokai	213	Fl. W. 0.25	620.000	21.79	70	38.3	Makapuu Point.....	943	
943	Makapuu Point	420	Oc. W. 7.5	29.000	28.53	64	38.3	Molokai.....	939	
944	Diamond Head.....	147	Oc. W. 2.0	25.000	18.96	99	16.6	Barbers Point.....	954	
954	Barbers Point.....	43	Fl. W. 1.0	44.000	12.61	92	16.6	Diamond Head.....	944	

