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Vertical log current meter measurements from the Coningsbeg
and Daunt Lightships. December 1961-May 1962

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In December 1961 a Carruthers' vertical log current meter was installed on the Coningsbeg lightvessel, and in January 1962 one was installed on the Daunt lightvessel. The run of the current was noted every hour and the direction every thirty minutes. The velocity and direction of the wind was noted every three hours. The resultant tidal drift and mean wind direction for each calendar month was calculated.

Coningsbeg Lightvessel

CURRENT

Period	No. of days	North Component.	East Component
2nd-31st December	29½	+ 42530	- 53800
1st-31st January	31	+ 34975	+ 53279
1st-28th February	28	- 30679	+ 30810
1st-31st March	31	+ 7943	- 31487
1st-30th April	30	- 7351	+ 19969
1st-31st May	31	- 14781	- 11328
2nd Dec.-31st May	180½	+ 32637	+ 7443

WIND

Period	No. of days	North Component	East Component
2nd-31st December	29½	- 2972	+ 2799
1st-31st January	31	- 1718	- 7352
1st-28th February	28	+ 797	- 787
1st-31st March	31	- 1296	+ 2101
1st-30th April	30	+ 1597	- 1965
1st-31st May	31	+ 682	- 2035
2nd Dec.-31st May	180½	- 2910	- 7239

Daunt Lightvessel

CURRENT

Period	No. of days	North Component	East Component
13th-31st January	19	+ 25351	+ 43272
1st-28th February	28	- 21251	- 5668
1st-31st March	31	- 19793	- 29905
1st-30th April	30	- 11904	+ 4782
1st-31st May	31	- 1559	+ 1454
13th Jan.-31st May	139	- 29156	+ 13935

WIND

Period	No. of days	North Component	East Component
13th-31st January	19	- 1139	- 4054
1st-28th February	28	+ 2730	- 1344
1st-31st March	31	- 725	+ 1592
1st-30th April	30	+ 1546	- 1807
1st-31st May	31	+ 1126	- 2693
13th Jan.-31st May	139	+ 3538	- 8306

The components of current and wind are resolved into the resultant monthly mean velocity and direction. In evaluating the 1961 results a run of 380 half-revolutions was taken to represent one nautical mile (O'Riordan 1961). Since that date the meters have been recalibrated with a view to allow for overcoming of initial inertia of the cup system (Ellett - private communication) and the equation now applicable is $y = .00166x + 0.30$, where y = velocity in knots and x = number of half-revolutions per hour. The data for both lightvessels are interpreted below.

Coningsbeg Lightvessel

Period	CURRENT			WIND		
	Mean Direction	Resultant	Velocity (Knots)	Mean Direction	Resultant	Velocity (Knots)
2nd-31st Dec.	308°	68580	0.461	137°	4083	5.8
1st-31st Jan.	57°	63740	0.442	257°	7551	10.2
1st-28th Feb.	135°	43470	0.407	315°	1121	1.7
1st-31st Mar.	284°	32480	0.372	122°	2470	3.3
1st-30th Apr.	110°	21270	0.349	309°	2532	3.5
1st-31st May	217°	18620	0.342	289°	2146	2.9
2nd Dec.-31st May	130°	33471	0.313	248°	7801	1.8

Daunt Lightvessel

Period	CURRENT			WIND		
	Mean Direction	Resultant	Velocity (Knots)	Mean Direction	Resultant (Naut.mls.)	Velocity (Knots)
13th-31st Jan.	60°	50150	0.483	254°	4212	9.2
1st-28th Feb.	195°	21994	0.354	334°	3042	4.5
1st-31st Mar.	237°	35860	0.380	114°	1750	2.4
1st-30th Apr.	158°	12829	0.330	311°	2378	3.3
1st-31st May	137°	2132	0.305	293°	2920	3.9
13th Jan.-31st May	154°	32315	0.316	293°	9029	2.7

It should be emphasized that the bearings of wind and current are expressed with regard to conventional terminology; thus a west wind is expressed as 270° and an east-going current as 90°. Both, however, travel in a west-east direction.

It is difficult to account for the discrepancy of 107° between the mean directions of wind and residual current during May at the Coningsbeg, and to a lesser extent during February and March at the Daunt. A scrutiny of all the mean directions reveals no constant pattern of variation. The wind direction on the two vessels are in close agreement. On the Daunt, part of the direction viewing apparatus carried away in early March, and was replaced temporarily with a makeshift part, which may have caused some error in the readings.

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Reference

O'RIORDAN, C. 1961 "Vertical log current meter measurements from the Coningsbeg and Daunt Lightships in the Spring of 1961".

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