English logbooks1700 - 1850

Digital imaging project

How many, and where are they?

Precise estimates are difficult to make, but it is probable that c.100,000 logbooks are held in British archives covering the period 1700 to 1850

To date, only 6,000 have been examined for weather data, all as part of the CLIWOC project

The majority of the logbooks are held in one of three major collections

Public Records Office, Kew, SW London

British Library, Central London

National Maritime Museum, Greenwich, SE London

Other small local collections, e.g. Bristol and Hull are of little importance in the current context

The collections:

1. The National Maritime Museum

The NMM holds the complete British collection of lieutenant's logbooks.

They date from the 1670s, the collection concluding in 1810.

An estimated 62,000 logbooks are stored in the NMM together with a few hundred specialist items (some foreign logbooks and those for particular expeditions)

Of the three collections these are in the poorest state of preservation.

The collections:

2. The British Library

The BL holds the logbooks prepared by officers of the East India Company.

The earliest date from 1603, and they continue until the Company ceased to operate in 1832.

The are c.3600 logbooks of ships sailing regularly and annually between London and India and China. More so than Royal Navy logbooks, these are seasonal in character because the ships' movements were highly dependent upon favourable monsoon winds.

These logbooks are in an excellent state of preservation and the data of the highest quality.

The collections:

3. The Public Record Office

The PRO holds the Royal Navy captains' (c.24,000) and masters' logbooks (c.15,000) from 1670 onwards to 1850. Officers' logbooks were gradually replaced by ships' logbooks from 1830, and there are a further 4200 of these for the study period.

There are also small collections of logbooks from scientific voyages (Cook, etc.). These number c.250 logbooks, but they are of particular, and wider, interest.

There are c.400 Admirals' journals that also contain weather observations.

All logbooks for the study period are in a good to fair state of preservation.

Logbook contents

Logbook data for this period are principally, but not exclusively, non-instrumental, and consist of three elements

1. wind force (mostly pre-Beaufort terms – see CLIWOC dictionary)
2. wind direction (32 point compass)
3. general descriptions of the weather

Observations were made regularly at noon (and at other times).

After 1838 observations are made using Beaufort wind force numbers and weather codes. Barometric and thermometer data also become more frequent from that time.

How are the data recorded?

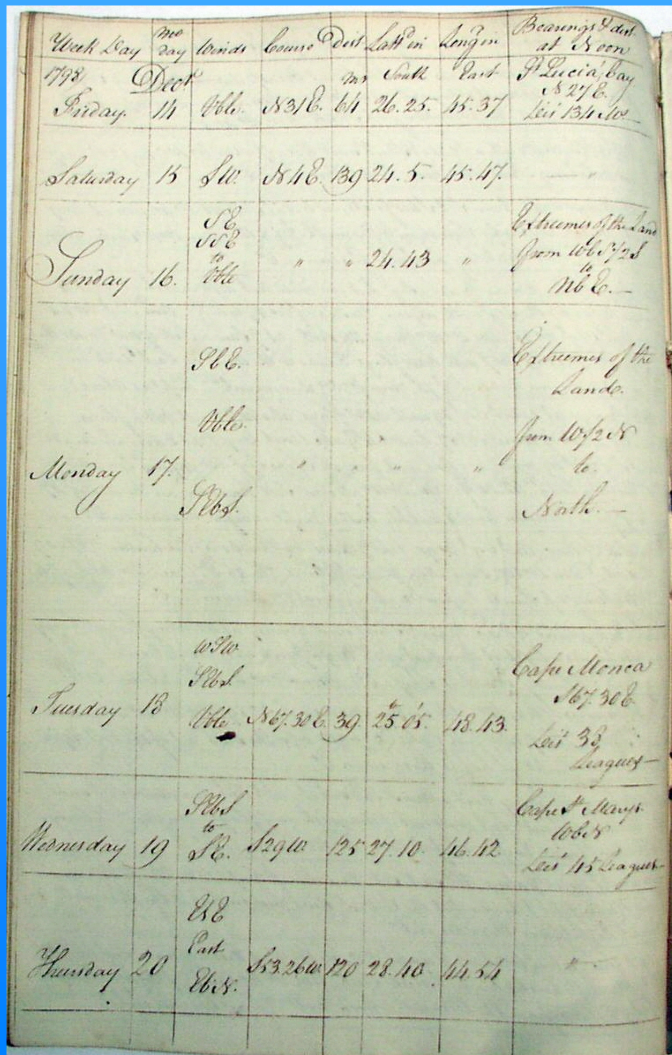
Logbook observations were standard in content, but not in presentation and different formats exist:

1. Royal Navy before c.1810.
2. Royal Navy after c.1810 (including post-1838).
3. East India Company logbooks 1750 to their conclusion, and a few Royal Navy books for pre-1810.

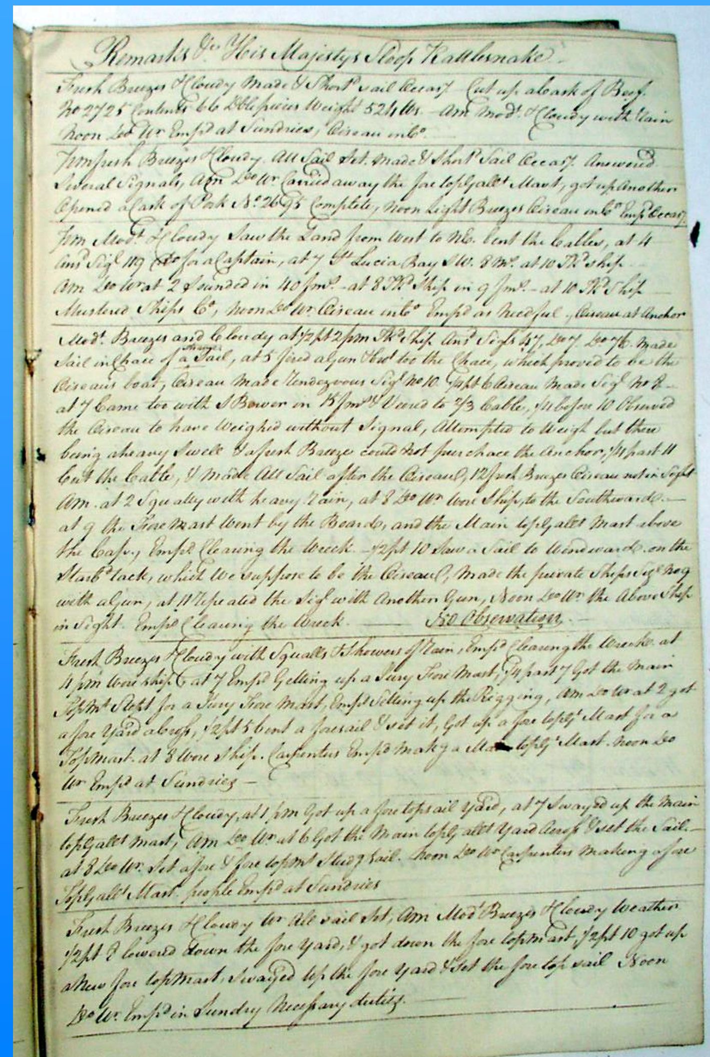
Format 1 provides an average of 11 days of data spread over two facing pages.

Formats 2 & 3 provide two days of data per page, commonly with much sub-daily data.

Logbook contents and layout 1: Royal Navy logbooks (pre-1810)



Week Day	Mo. day	Winds	Course	Dist.	Latd. in	Longd. in	Bearings & dist. at Noon
1798	Decr.			m	South	East	St. Lucia bay
Friday	14	WbS	N31E.	64	26.25.	45.37	N27E. Dist. 134 ms.
Saturday	15	SW.	N41E.	139	24.5.	45.47.	—
Sunday	16.	SE SbE to WbS	"	"	24.43	"	Extreemes of the Land from WbN½S to NbE. —
Monday	17.	SbE WbS SbS	"	"	"	"	Extreemes of the Lands from W½N to North —
Tuesday	18	WSW SbS WbS	N67.30E.	39	25.05.	48.43.	Cape Monca N67.30E Dist. 33 Leagues —
Wednesday	19	SbS to SE.	N29W.	125	27.10.	46.42.	Cape St. Marys WbN Dist. 45 Leagues
Thursday	20	EbE East EbN.	N3.26W.	120	28.40.	44.54	—



Remarks &c. His Majestys Sloop Rattlesnake

Fresh Breezes & Cloudy Made & Shortd. sail Occasy. Cut up a Cask of Beef No. 2725 Contents 66 Double pieces Weight 524 lbs. — AM Modt. & Cloudy with Rain Noon Do. Wr. Empd. at Sundries, Oiseau in Co.

PM Fresh Breezes & Cloudy All Sail Set. Made & Shortd. Sail Occasy. Answered Several Signals, AM Do. Wr. Carried away the fore topGallt. Mast, got up Another Opened a Cask of Pork No. 2693 Complete, Noon Light Breezes Oiseau in Co. Empd. Occasy.

PM Modt. & Cloudy Saw the Land from West to NE. bent the Cables, at 4 Ansd. Sigl. 119 &c. for a Captain, at 7 St. Lucia Bay SW. 8 Ms. at 10 TKd. Ship AM Do. Wr. at 2 Sounded in 40 fms. — at 8 TKd. Ship in 9 fms. — at 10 TKd. Ship Mustered Ships Co., Noon Do. Wr. Oiseau in Co. Empd. as Needful, Oiseau at Anchor

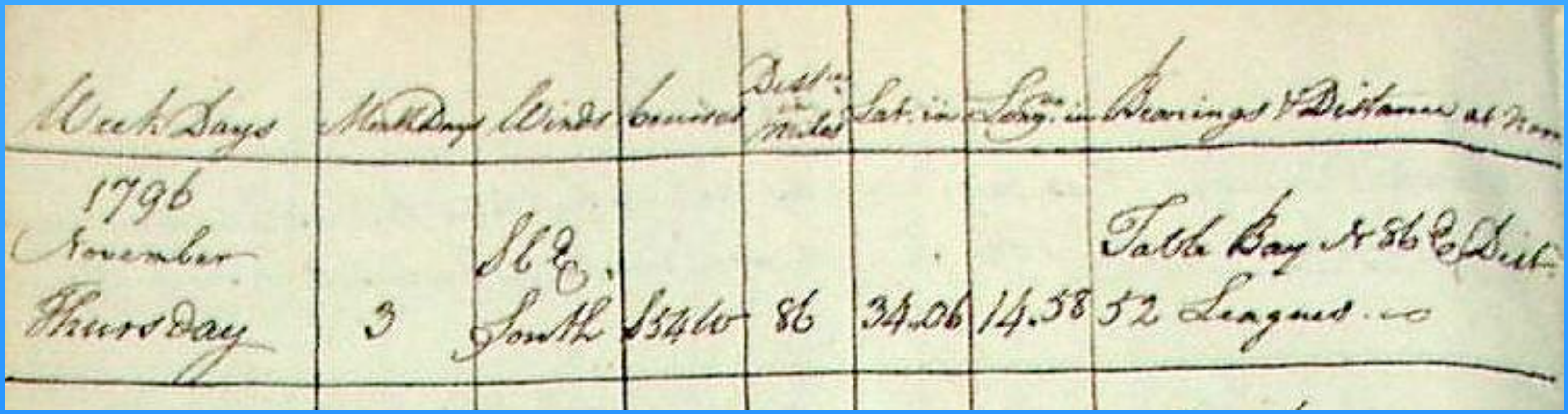
Modt. Breezes and Cloudy at ½ pt. 2 PM TKd. Ship Ansd. Sigls. 47, Do. 7, Do. 76. Made Sail in Chace of a strange Sail, at 5 fired a Gun Hauld. too the Chace, which proved to be the Oiseaus boat, Oiseau Made Rendezvous Sigl. No. 10. ½ pt. 6 Oiseau Made Sigl. No. 8 — at 7 Came too with S Bower in 15 fms. & Veered to ⅔ Cable, ½ before 10 Observed the Oiseau to have Weighed without Signal, Attempted to Weigh but there being a heavy Swell & a fresh Breeze could Not purchace the Anchor, ½ past 11 Cut the Cable, & Made All Sail after the Oiseau, 12 fresh Breezes Oiseau not in Sight AM. at 2 Squally with heavy Rain, at 8 Do. Wr. Wore Ship, to the Southward — at 9 the Fore Mast Went by the Board, and the Main topGallt. Mast above the Cap, Empd. Clearing the Wreck. ½ pt. 10 Saw a Sail to Windward on the Starbd. tack, which We Suppose to be the Oiseau, Made the private Ships Sigl. Nog with a Gun, at 11 Repeated the Sigl. with Another Gun, Noon Do. Wr. the Above Ship in Sight. Empd. Clearing the Wreck — No Observation. —

Fresh Breezes & Cloudy with Squalls & Showers of Rain, Empd. Clearing the Wreck at 4 PM Wore Ship & at 7 Empd. Getting up a Jury Fore Mast, ½ past 7 Got the Main TopMt. Stept for a Jury Fore Mast, Empd. Setting up the Rigging, AM Do. Wr. at 2 got a fore Yard abreast, ½ pt. 5 bent a foresail & set it, Got up a fore topGt. Mast for a TopMast. at 8 Wore Ship. Carpenters Empd. Making a Main topGt. Mast. Noon Do. Wr. Empd. at Sundries —

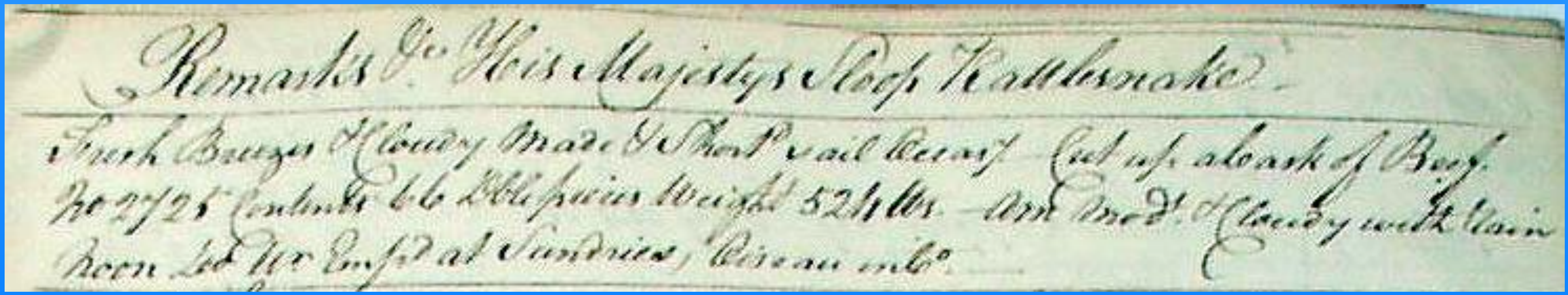
Fresh Breezes & Cloudy, at 1 PM Got up a fore topsail Yard, at 7 Swayed up the Main topGallt. Mast, AM Do. Wr. at 6 Got the Main topGallt. Yard Aloft & set the Sail. at 8 Do. Wr. Set a fore & fore topMt. Stayd. sail. Noon Do. Wr. Carpenters Making a fore TopGallt. Mast. People Empd. at Sundries

Fresh Breezes & Cloudy Wr. All sail Set, AM Modt. Breezes & Cloudy Weather ½ pt. 8 lowered down the fore Yard, & got down the fore topMast, ½ pt. 10 got up a New fore topMast, Swayed up the fore Yard & Set the fore top sail Noon Do. Wr. Empd. in Sundry Necessary duties.

Logbook details



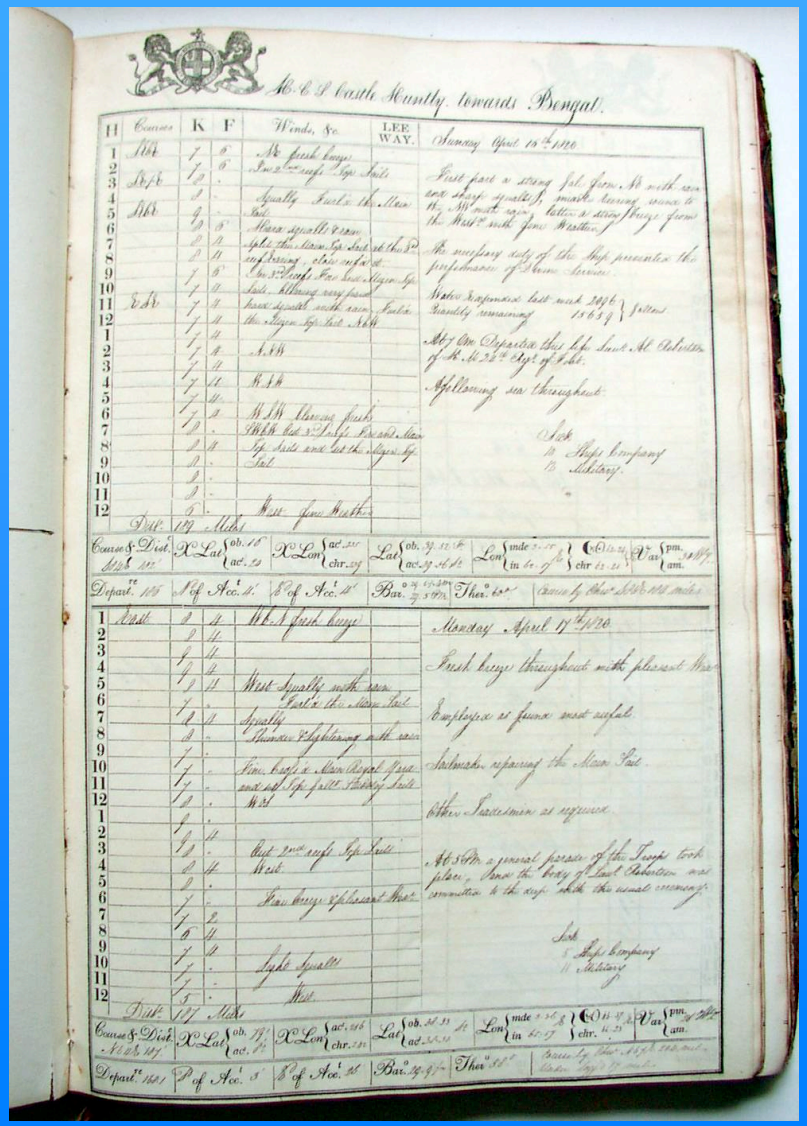
Week Days	Month Days	Winds	Courses	Dist. in Miles	Lat. in	Long. in	Bearings & Distance at Noon
1796 November Thursday	3	SbE. South	S54W	86	34.06	14.58	Table Bay N 86 E Dist. 52 Leagues

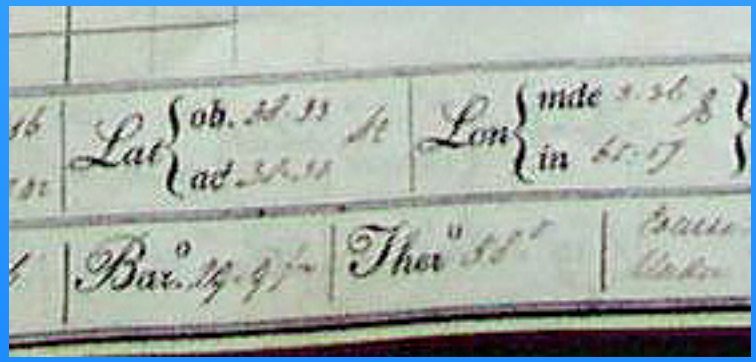


Remarks &c. His Majestys Sloop Rattlesnake

Fresh Breezes & Cloudy Made & Short'd sail occas. Cut up a cask of Beef No 2721 Contents 66 Pieces Weight 524 lbs. Am Mod. & Cloudy with Rain Noon Emp'd at Sundries, Rec'd &c.

Logbook contents and layout 2 & 3: East India Co. logbooks





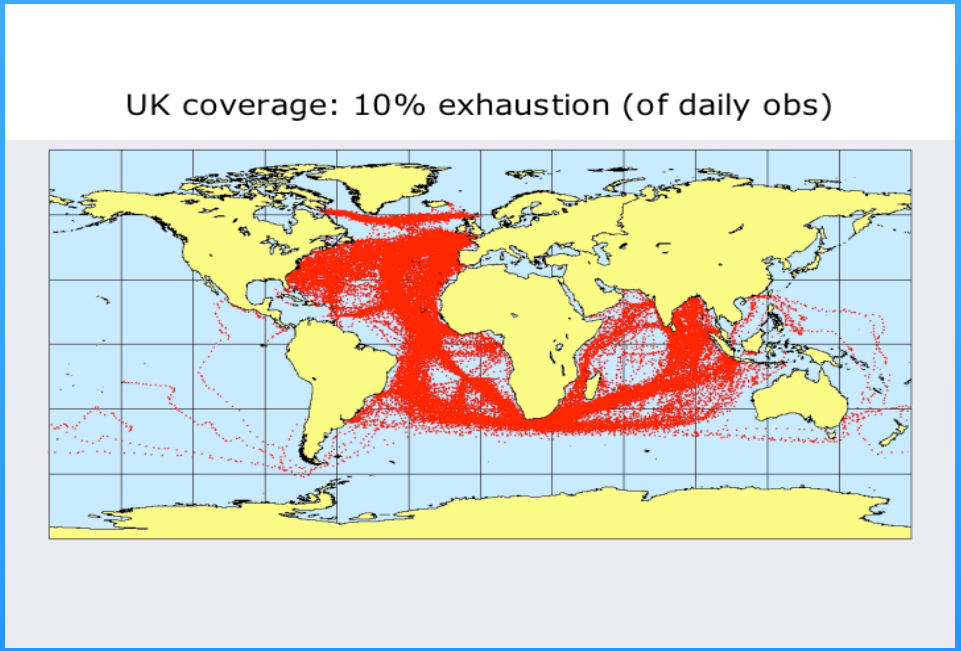
Logbook contents and layout: merchant service logbooks

Logbook numbers: a summary

Logbook source	pre-1700	1700-1749	1750-1850	Total for 1700-1850
NMM lieutenants'	3500	24000	35000 (1)	59000
PRO captains'	1210	3500	19700	23200
PRO masters'	783	2100	11950 (2)	14050
BL East India Company	570	670	2700 (3)	3940

(1) For the period 1750 to 1810 only; (2) for the period 1750 to 1840; (3) for the period 1750 to 1832 only

Logbook coverage: spatial

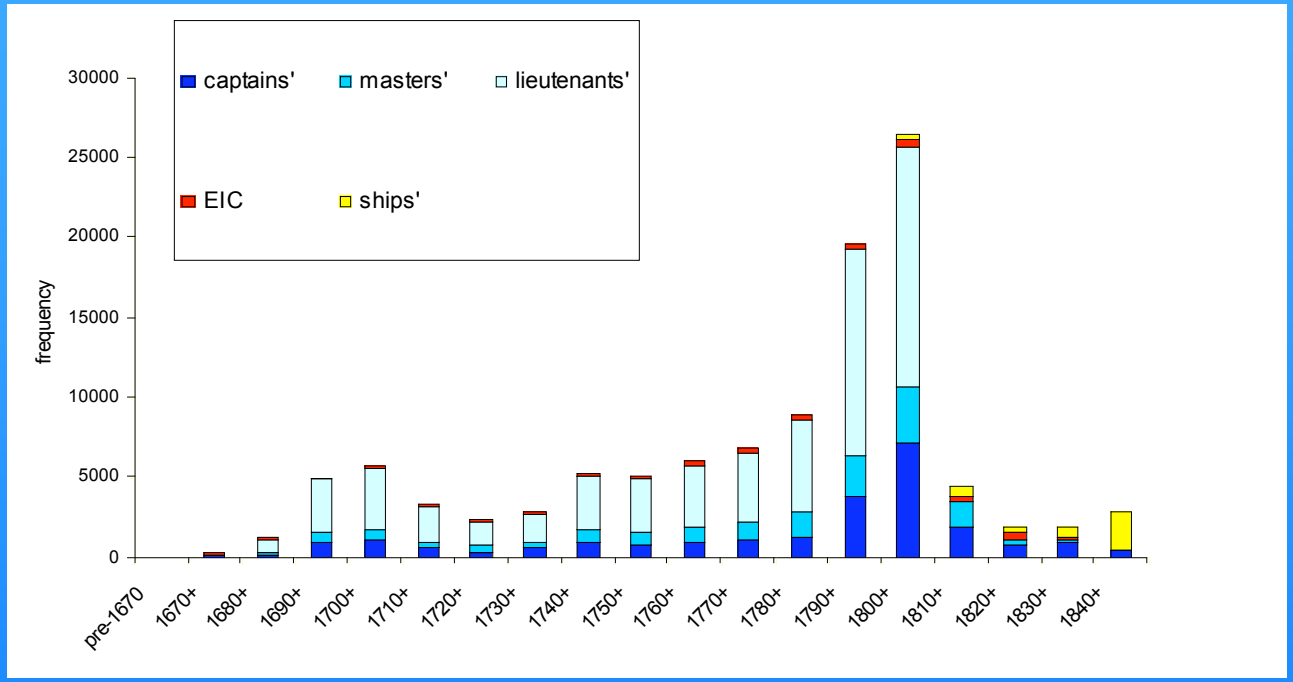


Coverage will not differ greatly from that established with CLIWOC (right):

1. North and South Atlantic and Indian Oceans – good
2. Pacific Ocean - poor

There is, however, the opportunity of intensifying the coverage over space and time, and of including areas specifically excluded from CLIWOC – the Caribbean and Mediterranean.

Logbook coverage: temporal



Temporal coverage is continuous, but variable depending upon states of peace or war (note the effect of the Napoleonic War).

Logbook numbers: the problem

There about 70,000 logbooks for the period 1750 to 1850 alone.

It is impossible to 'image' all of them. Fortunately it is not necessary to do so as there is a good deal of duplication or near-duplication.

1. Lieutenants' logbooks: Royal Navy ships would have between 1 and 6 lieutenants depending upon the ship's size. So we need only image about one third of these to avoid duplication.

2. Captains' and masters' logbooks tend to be paired as most ships had both officers.

3. There is further duplication between captains' and lieutenants' logbooks. Because of the different cataloguing systems, this degree of duplication cannot be determined at present.

4. There is also some near-duplication in EIC logbooks where ships were in convoy or sailed at similar times. About half of the logbooks fall into this loosely-defined category

Logbook numbers rationalised (but realisable?):

If the project's objective to image a sample of logbooks to provide optimum observational coverage without duplication, a combination of lieutenants', captains', ships' and EIC logbooks may provide the information, and the number of items needed to accomplish this falls to about:

23,000 logbooks

As each logbook contains, on average, c.50 pages. This equates to:

1,150,000 images

These will provide data equivalent to:

6,900,000 days of observations

Imaging practicalities: National Maritime Museum

Preferred method of imaging:

employment of 'external' team who would be contracted through the NMM.

Costs:

- contract payment on the basis of £25,000 p.a. ($43,750) plus 10% for NI and contributory payments).

- 2 (3?) photographers for 9 months each (assuming 1 year project duration) – see PRO arrangements also.

- possible employment of part-time staff to assist in the supply of logbooks and transfer to and from the archive storage.

No problems with Crown Copyright.

Imaging practicalities: British Library

Necessary method of imaging:

by BL staff only working to official standards

Costs:

£2 ($3.50) per page for colour

or £1.25p ($2.2) per page for grey scale images.

No problem with Crown Copyright.

Imaging practicalities: Public Records Office

Preferred method of imaging:

policy is currently being decided, but at present the PRO will consider doing some of the work ‘in house’ with the possibility of making arrangements for ‘contracted’ photographers (same as NMM team). Much here depends on the degree to which we will use PRO sources.

Costs:

£0.80 ($1.40) per page if done ‘in house’

or

£25,000 ($43,750) p.a. per contracted photographer.

No problem with Crown Copyright.

Imaging practicalities: management

In the case of all three archives the efficient operation of the project requires employment of an experienced manager to:

1. Identify logbooks to be used (NMM, BL and PRO)
2. Catalogue and manage image files (NMM and PRO only)
3. Assist in physical supply of logbooks to the photographers (NMM only)

This manager will need a three month lead-in time to set up the scheme and keep ahead of logbook demand – hence the suggestion of a 9 month ‘production’ phase.

Costings & productivity: an overview (1)

1.	manager @	$75,000 p.a.
2.	part-time assistant (NMM only)?	$15,000?
3.	coordination (DAW) expenses only	$5000
4.	contracted photographer @ $48,000 p.a.	
	but for 9 months	$36,000
	team of 2	$72,000
5.	consumables	$5000
	TOTAL	$157,000

Leaves from Scott's original budget $183,000

For BL/PRO imaging?

Costings & productivity: an overview (2)

Two photographers for 9 months working at 2 images per minute would produce 17,000 images/month each

or 302,400 images in nine months

The sum of $183,000 would pay for:

52,200 BL images (colour)

83,600 BL images (grey scale)

130,700 NMM images

Max. possible number of images 433,100 (min. 354,600)

from a potential 1,150,000

Other possibilities include:

reduction of study period by 20%to 1750-1830

Costings & productivity: an overview (3)

The most cost effective means of production is to use contract photographers (23 cents/image)

Imaging potential could be increased by employing a third photographer. This would yield an additional 153,000 images, but reduce from $183,000 to $147,000 the budget for ‘in house’ production, with a commensurate reduction of image numbers to:

42,000 BL (colour) images

67,000 BL (grey scale) images

105,000 PRO images

New maximum possible is 558,500 images (min. 497,000)

Conclusions:

1. The project has the enthusiastic support of all host archives.
2. Only a sample of logbooks can, and need be, imaged.
3. Costs may restrict imaging to 50 – 60% of the potential, but will still provide c.500,000 images or 3,500,000 days of data.