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In collaboration with
Peter Hamersley

BT 98
Port Rotation Numbers Transcription

Technical notes

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This document details research into the system of port rotation numbers which were used to identify British registered ships in compiling registers of seafarers, masters and mates in the period from 1833 to 1857.

Introduction

Port rotation numbers were one of several methods of identifying ships in the registers of seafarers and the crew lists during the period 1833 to 1860. The various methods are summarised in Appendix 1

The port rotation numbers are part of a code used in the various registers of seafarers, specifically BT 113 and BT 124. The register entries show which ship seafarers had sailed on in a particular year and so provide a means of link to the crew documents which have survived.

Some of the seafarer register entries show the name of the ship and her port, and some of the entries after 1857 show the ship's official number. For these entries, finding more details about the ship and the crew documents is relatively easy.

However, in the period from 1837 to the mid 1850s, the ship was identified in the registers by a code, made up of a number for the port (the **port number**) and another number for the ship (the **port rotation number**). The code is annotated on each crew list.

The port numbers are well known but, up to now, no key or list for the port rotation numbers had been found. In particular, the way in which they were allocated had not been understood.

Peter Hamersley contacted CLIP and suggested that it would be possible to compile a database of port rotation numbers and ship's names drawn from the annotations on crew agreements. He suggested that the port rotation numbers remained with the ship and so persisted from one year to the next.

This seemed a plausible suggestion and constructing a simple database as suggested was a straightforward proposition.

We made further investigations based on sample data which Peter Hamersley had compiled from crew agreements for Whitby ships. We compared the sequence of port rotation numbers against a list of the ships registered at Whitby showing their port registration details. It quickly became clear that the port rotation numbers ran in the same sequence as the register entries. The way in which the port rotation numbers had been allocated became clear and we were able to describe the process, as detailed below.

This insight has enabled us to use registers and returns of shipping to cross-check data drawn from the crew agreements and add to it by interpolating numbers between data items drawn from the crew agreements.

Though there are inevitable gaps and mismatches caused by errors at any stage of the data chain, the insight has been fully borne out as we have added more data.

To publish the data, we have set up a search page as part of the CLIP web site which enables users to enter the port number and port rotation number and which then returns the name of the ship with a list of the BT 98 pieces which are likely to hold crew documents for that ship.

Allocation of port rotation numbers

This is our current understanding of the way in which port rotation numbers were assigned. Figure 1 below shows the data chains linking the data sources involved.

- The port rotation numbers were used at the Board of Trade (BoT) in London as a means of identifying specific ships and, though they were based on the registers at the ports of registry, there is no evidence that they were used outside of the BoT.

- The port rotation numbers provide a link between the registers of seafarers and the crew documents from which they were compiled. For some years, they provide the only link between the two sets of documents.

- There were two sets of port rotation numbers, the first used from 1833 to 1845 and the second from 1845 to 1855.

- The first set was used for the First and Second registers of seamen, 1833 to 1844, (BT 120 and BT 112) and for the crew lists and agreements in BT 98 up to 1845. It is not known how these numbers were allocated and there is no list, but BT 120 and BT 112 show the name of the ship, so this set of port rotation numbers is not needed to locate the documents for the ship.

- The second, and different, set of port rotation numbers was used for registers of seamen's tickets in BT 113 from 1845 to 1856 and in the Register of Masters and Mates Certificates of Experience in BT 124 from 1851 to 1854. They were used in crew lists in BT 98 from 1845 to 1854.

- The port rotation numbers are the only way of linking the seafarer's records with the crew lists that they were compiled from.

- There is no list of the port rotation numbers.

- After 1855, a new system was introduced using unique Official Numbers (ONs) allocated to each ship and the Port Rotation numbers were not used subsequently.

- This document and the data refer **only** to the port rotation numbers from 1845 to 1855.

- The list of port rotation numbers was begun in 1844 or early in 1845.

- The port rotation numbers were allocated to the ships registered at a particular port with a separate list for each port.

- The first entries were for earlier ships which were still registered in 1844, compiled in order of year and registration number for each port.

- Thereafter port rotation numbers were allocated in sequence, in step with the registrations for that port.

- The numbers were not re-used, for example if a ship was lost or the registry was transferred to another port.

- A port rotation number was unique to that registry for that ship and continued from one year to the next, until that registry was closed for any reason.

- If a ship was re-registered de-novo at the port, it was allocated a new port rotation number in sequence, so a single ship might have had several port rotation numbers.

- Ships transferred from another port and re-registered were allocated a number in the sequence for their new port of registration.

- Port register numbers start at 1 for each new year, but the port rotation numbers carry on in sequence. There is sometimes a small jump in the port rotation numbers sequence at the start of the new year.

- There are a small number of apparent anomalies and jumps in some sequences.

- While the original lists of port rotation numbers have not survived, they can be recreated by extracting data from the crew lists in BT 98 and correlating that with data from the shipping returns in BT 162 and BT 111.

- There is excellent evidence from the data that the understanding described above is correct. Investigation of details of the allocations and anomalies provided convincing explanations which increase confidence in the correctness of the model, rather than decrease it.

- As with any good theory, the fit between the data from BT 98 and the shipping returns makes it possible to make predictions of the port rotation numbers for many ships for which no data had been found in BT 98. These predictions have been confirmed as more data is gathered.

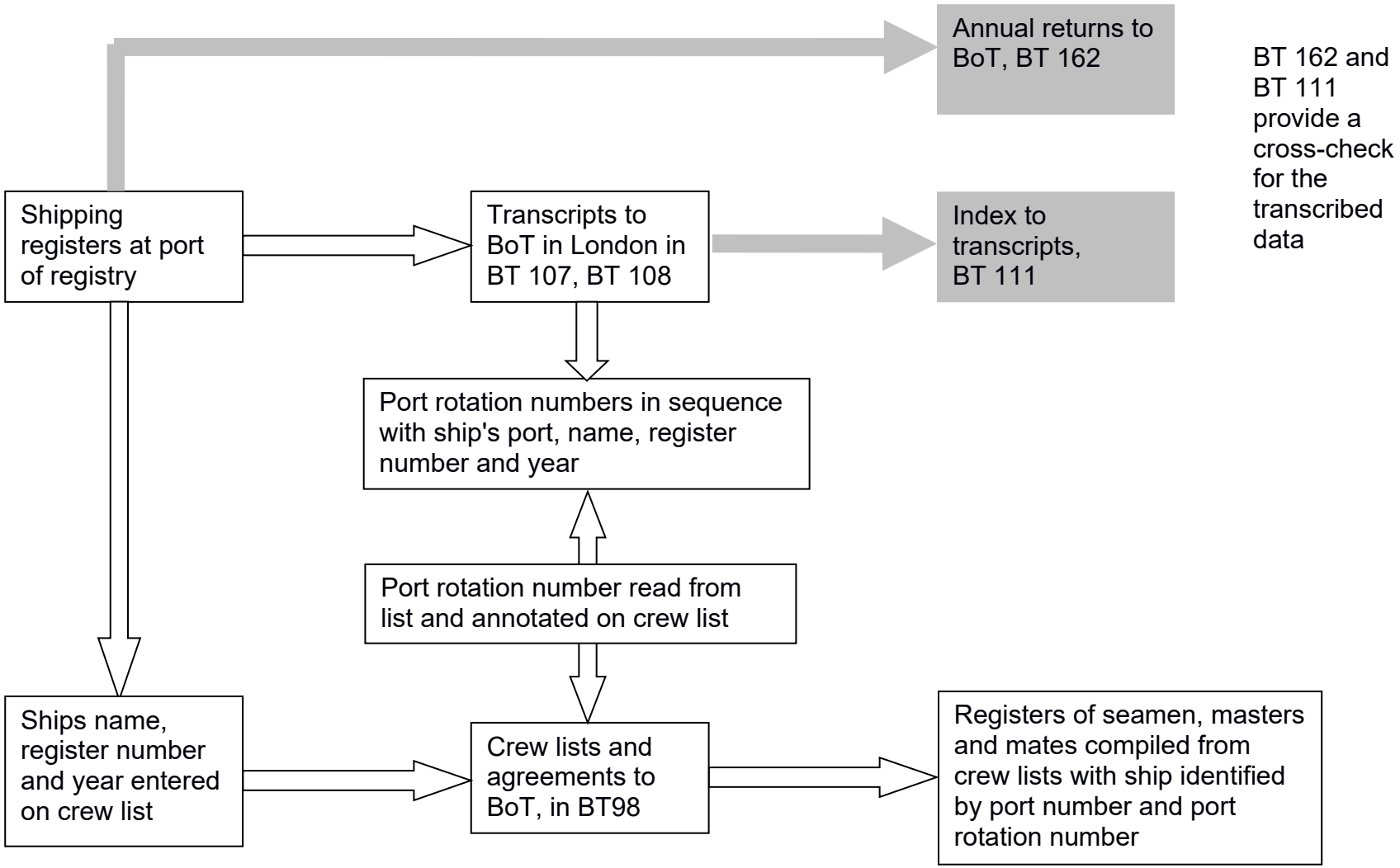

Figure 1: Data chains for the port rotation numbers

Re-creating the list of port rotation numbers

These are the steps which we have taken to re-create the list of port rotation numbers: Figure 2 below shows the processes involved.

The crew lists are stored in boxes at The National Archives in BT 98 and are also available to view online via Family Search at LDS Church Family History Centres and Affiliate Libraries.

Working on the crew lists for 1851, we extracted the details of each ship (Name, Register Year and Number, Tonnage) as entered on each crew list document, together with the port rotation number written on it.

We entered the data into a MS-Access database in a table **PRnumbersRaw**.

To remove duplicates, the data was then transferred to another table, **PRnumbersGrouped**.

In parallel with this, we have downloaded images of the returns of shipping for 1850 in BT 162/19 from TNA, which cover all British ports except London. We have also downloaded images of the indexes to register transcripts in BT 111 which covers the London registry from 1833 to 1856.

Data from these images has been entered into MS-Access tables, **BT162Ships** and **BT111Ships**. We have checked the data and also cross-checked it against other CLIP data as far as is possible. The data for BT 111 provides an almost complete list of London registries - the missing entries are shown in Appendix 2.

The data from BT 162 and BT 111 has been combined in a single MS-Access table, **UnionIndex** and provides as reliable a list as possible of the ships extant in the 1850s.

The data in **PRnumbersGrouped** was then matched, ship by ship, against the data in **UnionIndex**. Where there is a good match, the port rotation number was copied to **UnionIndex**.

Where there are good runs of port rotation numbers from BT 98, the copying can continue automatically until a mismatch is encountered.

An interpolation algorithm implemented as a MS-Access function is then used to interpolate data between the transcribed data points.

The completed data is then exported as a text file for transfer to the online search facility.

A progress summary for the data for London ships is in Appendix 3

The next section discusses the evidence we have found.

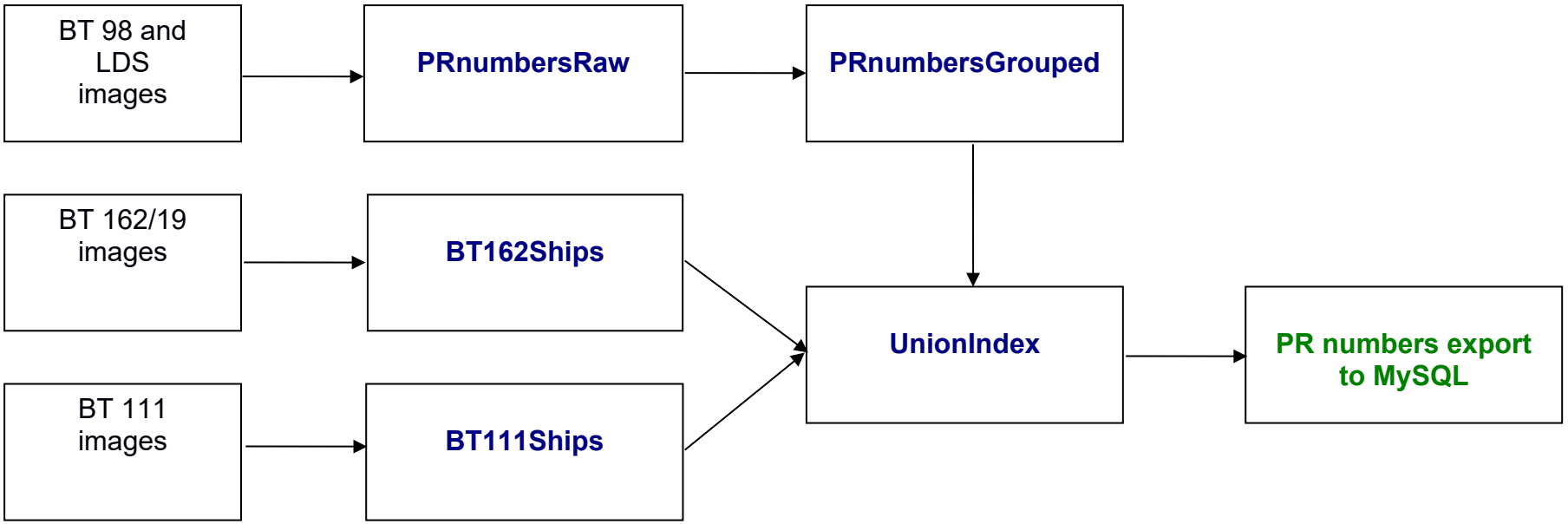

Figure 2: Compiling the port rotation number list

Evidence for the link between port rotation numbers and register numbers

Note: We have examined the evidence in detail for the London ships, because London is by far the largest port, we have most data for those ships and because BT 111 provides a nearly complete list of the registrations.

From midway through 1844, the port rotation numbers go exactly in step with the register numbers, as shown in the example below. The entries in green are data found from BT 98 and BT 111. No entries have yet been found in BT 98 for the ship CONSTANT (201/1849) but it can be seen that it is highly likely that her port rotation number was 5495, by interpolation.

Name	PR Number	Register Year	Register Number
ADMIRAL YORK	5493	1849	199
ADMIRAL JERVIS	5494	1849	200
CONSTANT		1849	201
BETSEY	5496	1849	202
BENJAMIN ELKIN	5497	1849	203
DREADNOUGHT	5498	1849	204

Table 1: PR numbers running in sequence with register numbers - London, 1849

The two runs of data are an excellent fit to each other right through to 1851. Only a few discrepancies have been found which may well be resolved with more data.

It is perhaps worth emphasising just how close the adherence is to the sequence and that this insight is also true for the data for all the other ports which have worked on so far. There is overwhelming evidence that our understanding is correct as set out above.

As might be expected, there are data errors, gaps in the sequence and anomalies but investigations of those provides convincing explanations as described below. If anything, they then serve to increase our confidence in the model.

Our summary of the data for the London registered ships which we have gathered so far is shown in Appendix 3.

Gaps in the sequence in data for ships registered pre-1844.
Prior to mid-1844, there are gaps in the sequence - there appear to be no port rotation numbers for some ships, as shown in Table 2 below.

Name	PR Number	Register Year	Register Number	Registry closed
LADY OF THE LAKE	1972	1840	408	Page obscured
JANE		1840	409	RDN 65/1848
BUSSORAH MERCHANT		1840	410	RDN 102/1842, 27/1845
CHUNAUB		1840	411	Vessel lost, Dec 1840 (Lloyd's List)
TYRIAN		1840	412	RDN 352/1844
GLAPHYRA	1975	1840	413	

Table 2: PR numbers not running in sequence with register numbers - London, 1840

Four ships appear in the registers between 408/1840 and 413/1840, but there are only port rotation numbers for two, so two of those four registries did not have a matching port rotation number.

The likely reason for this is that the missing entries relate to registrations which had been closed when the port rotation numbers list was compiled in 1844. For example, the CHINAUB, was lost soon after registration, so the register entry would have been closed before the list was compiled.

Similarly, the BUSSORAH MERCHANT was re-registered de-novo (RDN) in London in 1842, and the 1840 registry closed. A port registration number would have been allocated for the 1842 registration, but not for the 1840. (Later, a second one would have been allocated for the 1845 re-registry).

By interpolation, it is likely that the port rotation number for the JANE (409/1840) would have been 1973 and for the TYRIAN (412/1840) would have been 1974.

Table 3 below shows another example. The registry for the ORION (338/1841) would have been closed in 1842 so she would not have been allocated a London port rotation in 1844 - if she was still registered at Weymouth, she would have been allocated a number from the Weymouth list.

The EDINBURGH would probably have been allocated 2249, though this may have been quickly superseded by a new number corresponding to the 96/1844 re-registry.

Name	PR Number	Register Year	Register Number	Registry closed
GEORGE LORD	2248	1841	336	
EDINBURGH		1841	337	RDN 96/1844
ORION		1841	338	RDN 8/1842, Weymouth 6/1842
DIANA	2250	1841	339	RDN 20/1852

Table 3: PR numbers not running in sequence with register numbers - London, 1841

Large anomalies in port rotation number allocation, 1841-1842

There are a set of anomalies in the sequence of port rotation numbers for 1841 and 1842 as shown in Table 4 below.

Groups of port rotation numbers were allocated out of sequence, although within each group the sequence was maintained from one record to the next.

What may have happened is this:

The clerks will have compiled the port rotation number list from lists of still-open registries. The simplest explanation for the anomalies is that one of the clerks picked up the wrong piece of paper and carried on writing for some time until the error was discovered - round about port rotation number 2392.

By that time, they were well into the data for 1842, but with the rest of 1841 and the first part of 1842 not done.

Short of starting again, the simplest way was probably to just carry on and hope that no-one noticed. Perhaps no-one did, until now.

PR Number	Name	Register Year	Register Number
2206	EDWARD BARNETT	1841	264
2214	LADY OF THE LAKE	1841	278
2226	LORD HUNGERFORD	1841	302
2248	GEORGE LORD	1841	336
2250	DIANA	1841	339
2273	GOOD INTENT	1841	368
2327	ATHENIAN	1842	144
2338	CITY OF THE SULTAN	1842	165
2339	BATHURST	1842	166
2361	JOSHUA CARROLL	1842	190
2370	COLUMBINE	1842	201
2374	SAINT GEORGE	1842	205
2388	GAMBIA	1842	220
2392	QUEEN	1842	226
2401	BERMONDSEY	1841	381
2456	WILLIAM STOVELD	1841	460
2457	ARCHIMEDES	1841	461
2460	WILLIAM HYDE	1841	465
2462	ASPASIO	1841	470
2467	CYBELE	1842	7
2473	DEDE	1842	18
2488	CHARLES KERR	1842	38
2496	CASSANDRA	1842	46
2499	GLENLYON	1842	49
2500	ADEN	1842	50
2502	REGINA	1842	52
2519	RANGER	1842	72
2526	GOVERNOR MACLEAN	1842	244
2535	CANDIDATE	1842	258
2547	MARY	1842	272
2551	AGNES	1842	278
2552	CALYPSO	1842	279
2557	EAGLE	1842	284
2567	AUSTRALIA	1842	295
2572	TAGUS	1842	301
2580	CERES	1842	310
2599	CHAMPION	1842	329
2613	BLUE EYED MAID	1842	351

Table 4: Anomalies in the sequence of port rotation numbers in 1841-1842 for London

Up to 2273, the allocation runs in sequence with the register numbers (though with many non-extant ships). It then jumps at 2327 to 842 registrations, then back at 2401 to 1841, then back to the start of 1842 at 2467, and then continues with the remainder of 1842.

Port rotation numbers continue from one year to the next

It is an important part of our understanding that a port rotation number allocated to a ship should remain with that ship from one year to the next, until the registry it applies to is closed.

So data from crew agreements for one year should match with data from another year.

At present, we only have a small sample of crew list data for years other than 1851 for London (BT 98/1326 for 1847 and BT 98/3869 for 1854). Data from these samples fits exactly into the sequence as we would expect.

In particular, crew lists for the JOSEPH & ANN for both 1854 and 1851 show the same port rotation number - 4623, as do the crew lists for the JOSEPH SHEPHERD - 5518.

Table 5 below shows an example of how data from two different years fits into the same sequence.

Name	PR Number	Data source	Source Year	Register Year	Register Number
CHRISTABEL	4619	BT 98/2598	1851	1847	243
REQUEST				1847	244
MINNA				1847	245
PACHA	4622	BT 98/3869	1854	1847	246
JOSEPH & ANN	4623	BT 98/2612	1851	1847	247
JOSEPH & ANN	4623	BT 98/3869	1854	1847	247
HIGHLAND MAID				1847	248
HAPPY RETURN				1847	249
CAMPERDOWN	4626	BT 98/2597	1851	1847	250

Table 5: Port rotation number data from different years for London

Appendix 1

Ship identifiers used with seafarers' records

Registers

Register of Seamen, Series I	1835-1836	BT 120
Register of Seamen, Series II	1835-1844	BT 112, (Index BT 119)
Register of Seamen's Tickets	1845-1854	BT 113, (Index BT 114)
Register of Masters	1845-1848	BT 115
Register of Seamen, Series III	1853-1857	BT 116
Masters and Mates, Foreign Trade	1851 on	BT 124

Crew lists and Agreements

BT 98/140 - BT 98/563	1835-1844	Boxed by port
BT 98/564 - BT 98/4758	1845-1856	Boxed by year, port and ship's name
BT 98/4759 - BT 98/5092	1857-1860	Boxed by year and official number
BT 99	1861 onwards	Boxed by year and official number

The table shows which identifiers were uses with each record set, whether the ship's name (Name), Port rotation number (PR#) or official number (ON). The port rotation numbers for 1835 - 1844 are **not** the same as the ones for 1845 - 1855

Year	BT 120, BT 112	BT 113	BT115	BT 116	BT 124	BT 98	BT 99
1835	Name, PR#					Name, PR#	
1836	Name, PR#					Name, PR#	
1837	Name, PR#					Name, PR#	
1838	Name, PR#					Name, PR#	
1839	Name, PR#					Name, PR#	
1840	Name, PR#					Name, PR#	
1841	Name, PR#					Name, PR#	
1842	Name, PR#					Name, PR#	
1843	Name, PR#					Name, PR#	
1844	Name, PR#					Name, PR#	
1845		PR#	PR#			PR#	
1846		PR#	PR#			PR#	
1847		PR#	PR#			PR#	
1848		PR#	PR#			PR#	
1849						PR#	
1850						PR#	
1851		PR#			PR#	PR#	
1852					PR#	PR#	
1853				Name	PR#	PR#	
1854				Name	PR#	PR#	
1855				Name	PR#	?	
1856				Name	Name	?	
1857				Name	ON	ON	
1858					ON	ON	
1859					ON	ON	
1860					ON	ON	
1861 on					ON		ON

Appendix 2

Missing register entries for London in BT 111

Year	Register Number
1834	203
1834	343
1838	256
1840	87
1840	108
1840	157
1840	307
1841	52
1842	108
1843	161
1844	127
1846	287
1847	267
1848	100
1848	147
1853	347
1854	613
1855	226
1855	356
1855	373

Appendix 3

BT 111 (Registers) and BT 98 (PR numbers) summary for London ships, 1833 to 1856, as at 7 November 2021

Year	Reg# max	Reg# count	Reg# percent	PR# Count	PR# start	PR# end	PR# percent	Match to sequence
1833	396	396	100	3	702	731	0	Closed registries so many gaps
1834	392	390	99	4	744	792	1	Closed registries so many gaps
1835	446	446	100	3	824	872	0	Closed registries so many gaps
1836	586	586	100	25	926	1119	4	Closed registries so many gaps
1837	473	473	100	10	1152	1266	2	Closed registries so many gaps
1838	547	546	99	16	1305	1521	2	Closed registries so many gaps
1839	484	484	100	22	1537	1759	4	Closed registries so many gaps
1840	508	503	99	22	1778	2032	4	Closed registries so many gaps
1841	472	470	99	19	2044	2462	4	Closed registries, anomaly between 2273 and 2526
1842	403	402	99	29	2327	2629	7	Closed registries, anomaly between 2273 and 2526
1843	393	392	99	25	2661	3021	6	Closed registries
1844	454	453	99	34	3037	3434	7	Closed registries, then excellent from 3344 onwards
1845	481	481	100	47	3452	3913	9	Excellent
1846	448	447	99	49	3942	4335	10	Excellent but PR# steps 1 around 4241
1847	458	457	99	74	4378	4828	16	Excellent but PR# steps 1 around 4567
1848	459	456	99	98	4840	5292	21	Excellent
1849	417	417	100	107	5296	5711	25	Excellent
1850	392	392	100	125	5713	6101	31	Excellent
1851	365	365	100	79	6109	6459	21	Excellent
1852	459	459	100	1	6475	6475	0	
1853	662	661	99	0			0	
1854	678	676	99	0			0	
1855	495	492	99	0			0	
1856	328	149	45	0			0	