

Great Britain's Coasting Pilot
Carto-iconography in a Baroque Sea-atlas

Volume 1 of 2

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Abstract

The notion that Britain has only been successfully invaded twice, by the Romans and the Normans, while commonly expressed, remains a subject of speculation and debate. The events of the Dutch invasion of 1688, known as the “Glorious Revolution”, can be viewed from multiple historical or political perspectives and this study aims to explore one way in which the events of 1688 were narrated, examining the depiction of events and personalities involved from a cultural and cartographic perspective. The propaganda fight of the period was intense, from both Jacobite and Williamite sides and amongst the propaganda was the timely coincidence of a small naval operation, established by Charles II in 1681, to map the coastline of Great Britain. It is the result of this survey, *Great Britain's Coasting Pilot*, the proto-atlas of the British coastline, surveyed and drawn by Captain Greenville Collins of the *Merlin*, *Monmouth* and *Mary* yachts and published in 1693, that forms the subject of this dissertation.

Great Britain's Coasting Pilot resonates with the political moods of the era. Artistic elaboration mixes with scientific advances in cartography and a web of connections to the political and naval elite of the nation. This study of the intersections of art and cartography aims to uncover new levels of meaning and political leaning in a work which is every bit as much a mapping of times as of places. The atlas is explored in its political, cartographic and artistic context, and the symbolism and propaganda subtext of the major figures featured as dedicatees is examined. The publication sits at the boundary of a visual shift in hydrographic mapping, between the baroque and enlightenment approaches, but as a propaganda work it remains both politically and artistically part of a revolution.

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Author's Declaration

I declare that this dissertation is a presentation of original work and I am the sole author thereof. This work has not previously been presented for an award at this, or any other, university. All sources are acknowledged as references and in the Bibliography.

The Director of Research Programmes has granted exceptional permission for the Appendices to be included beyond the word limit.

Total word count of the text and footnotes is 30,316.

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Scientia sine arte nihil est.

Introduction
“A Most Exact and Usefull Undertaking”¹

Great Britain's Coasting Pilot is an atlas of the British sea coast. It was the result of the first exclusively British attempt to systematically survey the coastline of the British Isles. The publication consists of two parts, each of which begins with a section of sailing directions followed by a series of printed charts. The pages are substantial, being larger than folio format and are printed as bifolia, i.e. a single sheet folded in half to make two pages.² The bifolia are printed on one side only, and open from a stub binding to make a single spread map. Most are printed from a single plate, but several are larger, multi-plate charts, of several conjoined sheets folded to fit within the volume. The charts first appeared compiled as an atlas in 1693, dedicated to King William III.

The survey and cartographical preparation was the work of Captain Greenville Collins (1643-1694), with the survey carried out in vessels of the squadron of royal yachts from 1681-1687. The atlas was printed by Freeman Collins (1653-1713), like Greenville a Devonian and possibly a cousin, and was published and sold by Richard Mount, a bookseller and map dealer whose London business continued for the next century. Collins employed a number of prominent engravers, including James Moxon, Herman Moll, Francis Lamb and James Collins, and many of the charts were issued individually, as they became available. Therefore, many of the charts were produced some years prior to the publication of the atlas itself.

1 John Evelyn. *Diary*, 2 February 1683 ed. E.S de Beer (London: Everyman's Library, 2006), 659.

2 Folio pages are 307 x 445 mm, whereas the *Coasting Pilot* pages are 330 x 520 mm, opening out to be 660 x 520 mm across each bifolium map.

The atlas is a collection of hydrographic charts – maps of the coastline and sea-floor.³ Of the approximately 120 manuscript maps that were produced 46 were included in the 1693 atlas;⁴ 28 in Part One and 18 in Part Two.⁵ Part One, with numbered charts, covers the South Coast and Irish Sea, including selected ports on the Irish coast. Part Two, of lettered charts, follows the East Coast of Britain, including the North Sea and both Orkney and Shetland. The chart areas covered at small scale are shown in *Map 1*, and the more detailed large scale charts of coastlines and harbours are shown in *Map 2*. Each part concludes with a page of coastal silhouettes, as seen from offshore. There are gaps and inconsistencies in the numbering of the maps, most having been numbered only in a second state of the plate. The multi-sheet charts include more than one plate number and the distribution of charts in surviving copies does not necessarily follow the printed numbers, where these exist. It becomes clear that there were competing demands in the compilation of the atlas, dependent on the availability of charts, consumer demand and personal whim of the purchaser, with the result that there is variety between the surviving 1693 copies, as regards both contents and map order. This creates a tangible sense of the atlas as a dynamic production, rather at variance with our modern perceived expectations of a printed work as an immutable summation of acquired knowledge, but also gives useful clues as to the process of compilation and publication. It has therefore been necessary to create a form of “virtual” exemplar as a result of this lack of rigidity in the contents of the 1693 issues, the contents of which, conflated from charts in the primary sources examined, are given in *Table 1* and *Table 2* below.

3 The term “chart” is merely a linguistic convention for a nautical map, descended from the mariner's “card” to which sailors would add their personal observations of places, to record information for repeat visits. In this work the terms “chart” and “map” are used well-nigh interchangeably.

4 With the proviso that not all 1693 copies contain the same, or the full selection of, charts. The 46 is an amalgamation covering all those charts which were engraved.

5 There is also a small chart of Cocket Isle (Northumberland) in the text of the Sailing Directions to Part Two, and two pages of coastal views. Only the 46 major charts are independent maps and these are considered the main body of cartography here.

Table 1. Amalgamated Contents of a complete 1693 edition, Part One.

Chart No. Editorial in []	Title Editorial in []	Dedicattee	Date Editorial in []	UKHO ms ref.
3	[The North Sea]	Sir John Ashby	[1692]	
4	[The Channel]	Admirall Killegrew	[1691]	
5	[The Channel, incl. Brest]	The Lords Commissioners of the Admiralty	1693	
6	Included in multi-sheet 5		–	
7	Included in multi-sheet 5		–	
8	[Rye Harbour]	The Hon. Robert Austen esq.	[1691-]	
[10]	[Isle of Wight and Solent]	Rt Hon. Edward Russell	[1691-]	B901
12	[Portland Bill and Weymouth]	Captain George St Lo		B883
14	[Torbay and Exmouth]	Thomas, Earl of Pembroke	[1690-]	B884
15	Dartmouth	George, Lord Dartmouth	[-1688]	B885
16	Plymouth	Arthur Herbert, Earl of Torrington	[1689-]	
17	Fowey and Mounts Bay	Jonathan, Bishop of Bristol	[-1688]	B886
18	Falmouth	Sir Peter Killigrew, Bart.		
19	[The Lizard to Scilly]	Governors of the East India Company	1686	B887
20	The Islands of Scilly	Henry, Duke of Grafton	1689	B888
[21]	St George's Channel	Sir Richard Rooth	[1690]	
[22]	[The Severn or Channell of Bristol]	Sir Robert Southwell	[1690]	
[23]	The River Avon	Robert Yeates esq	[1693]	
24	Milford Haven	Henry, Duke of Beaufort	1687	
25	Milford Hauen and the Islands Adjacent	Sir Hugh Owen, Bart.	[1689-]	
26	The Coast of Wales	Sir Clodisley Shouell	[1690-]	B889
27	Holy-Head	Captain Thomas Hewetson / Captain William Wright		[B890] lost
28	[The Menai Strait]	Sir William Williams, Bart.		B891
29	[Irish Sea and Isle of Man]	Sir John Lowther, Bart.	1689	B894
30	River Dee, or Chester Water	William III	1689	B892
31	[The Isle of Man]	William, Earl of Derby		B893
32	[Carreckfergus Lough]	William III	[1690]	
33	[Carlingford Lough]	Mr Reeve Williams, Teacher of Mathematicks	[1693]	
34	[Dublin Bay]	James, Duke of Ormond		
[36]	Kingsale Harbour	Sir Robert Southwell	[1690]	
39	How these Severall Lands show at Sea		–	

Table 2. Amalgamated Contents of a complete 1693 edition, Part Two.

Chart No. Editorial in []	Title Editorial in []	Dedicatee	Date Editorial in []	UKHO ms ref.
-	[Part of Northumberland]	-		B878
[A]	[The East Coast of England]	Trinity House Deptford		
B	[Western North Sea]	Sir Ralph Delaval	[1692]	B877
C	The East Coast of Scotland	Hon. George Rook esq.	[1692-]	
E	Harwich, Woodbridg and Handfordwater	Hon. Samuel Pepys esq.	1686	B882
F	Yarmouth and the Sands about it	Henry, Duke of Norfolk		B881
G	[Blakeney Harbour]	Sir Clodisley Shouel	[1690-]	B880
H	The River Humber	Trinity House Kingston		
I	Burlington Bay, Scarborough & Hartlepoole	Captain Ralph Sanderson	1686	B900
L	[Northumberland Coast]	Trinity House Newcastle		
M	Holy Island, Staples and Barwick	Captain Will[iam] Davies	[1689-]	B878
N	[Edinburgh Firth]	James, Earl of Perth	[-1688]	B899
O	Leith	Sir James Fleming	[-1684]	
P	[Entrance to the River Tay]	Magistrates of Aberdeene		B898
Q	[The Firth of Murry]	Lord Viscount Torbat	1689	B897
R	The Islands of Orkney	Prince George of Denmark	[1689]	
S	Chiefe Harbours in the Islands of Orkney	Captain Will[iam] Bond	1688	
T	[Part of the Maine Island of Shetland]	Daniel, Earl of Nottingham		B896
V	[15 Coastal Silhouettes]		–	
W	The South Part of the Isles of Shetland	Mr John Colson, Teacher of Mathematicks		B895

Editorial numbering/lettering has followed the plate numbers on the charts where possible. Where there is no number or letter it has been assigned one based on the chart's position in geographic sequence around the coast. Such editorial numbers/letters are placed in square brackets. Collins titled only a few of the charts. Where available, Collins's own titles have been used and his spellings retained. Editorial titles are placed in square brackets and have been determined by one of two methods: either a main geographical feature central to the chart; e.g. [*The Menai Strait*], or derived from two features that define the bounds of the map; e.g. [*Torbay and Exmouth*]. The former use Collins's spellings where they appear on the chart or modern spellings otherwise. The latter use modern spellings.

This dissertation takes a relatively broad overview of significant aspects of the *Coasting Pilot* as there has been little previous systematic investigation of the primary/archival sources, and none considering the publication from an art historical perspective. A review of the literature is included in Chapter 1. Sitting as it does in a continuum of cartographical tradition descended from the Dutch “Waggoners”, and looking towards the more scientific approaches of French cartography after the turn of the century, the *Coasting Pilot* doubtless presents ample possibilities to focus on artistic details in considerable depth. However a wider-ranging *carto-iconographical* examination seems justifiable to place the atlas into an artistic, scientific and political context. These three aspects combine in the broader visual and political culture of the late Stuart era, in which maritime supremacy became a major focus of international prestige and the navy an icon of national pride. The combination of the atlas as both a workable tool for navigation, and an artistic achievement for the library shelf covers both of these aspects, examined in the iconography and meaning of the engraved title page. Context is further explored in a consideration of the surveying process and aspects of production and publication, which are outlined in Chapter 2. The development of Collins's drafting style is also examined, through his surviving manuscript works in both journal and *Coasting Pilot* drafts.

Collins's text makes clear that the proposed atlas was to be more comprehensive than that finally issued – “I could heartily wish that the West part of *Ireland* and *Scotland* may hereafter be surveyed, &c.”⁶ A suggested third part, covering Ireland, was not produced and those several charts of Irish harbours were included instead at the end of Part One. While the complexities of a running survey along the inhospitable western coasts of Scotland and Ireland were undoubtedly a factor in the omission of these areas, it is plausible that a political dimension was equally apparent – the areas of Highland uprisings and the Hiberno-nationalism of the Gaeltacht were clearly obstacles to Anglo-centric hydrographic activity, potentially beyond the reach of the Stuart crown in both physical and metaphorical senses. Although ostensibly a working tool, the undeniable political aspect of the *carto-iconography* makes the *Coasting Pilot* distinctive and this must be, at least to some extent, bound up with the views of the atlas's creator. These views Collins, a consummate professional of the officer cadre, never directly expresses, but the subtext of the atlas firmly plants Collins's colours.

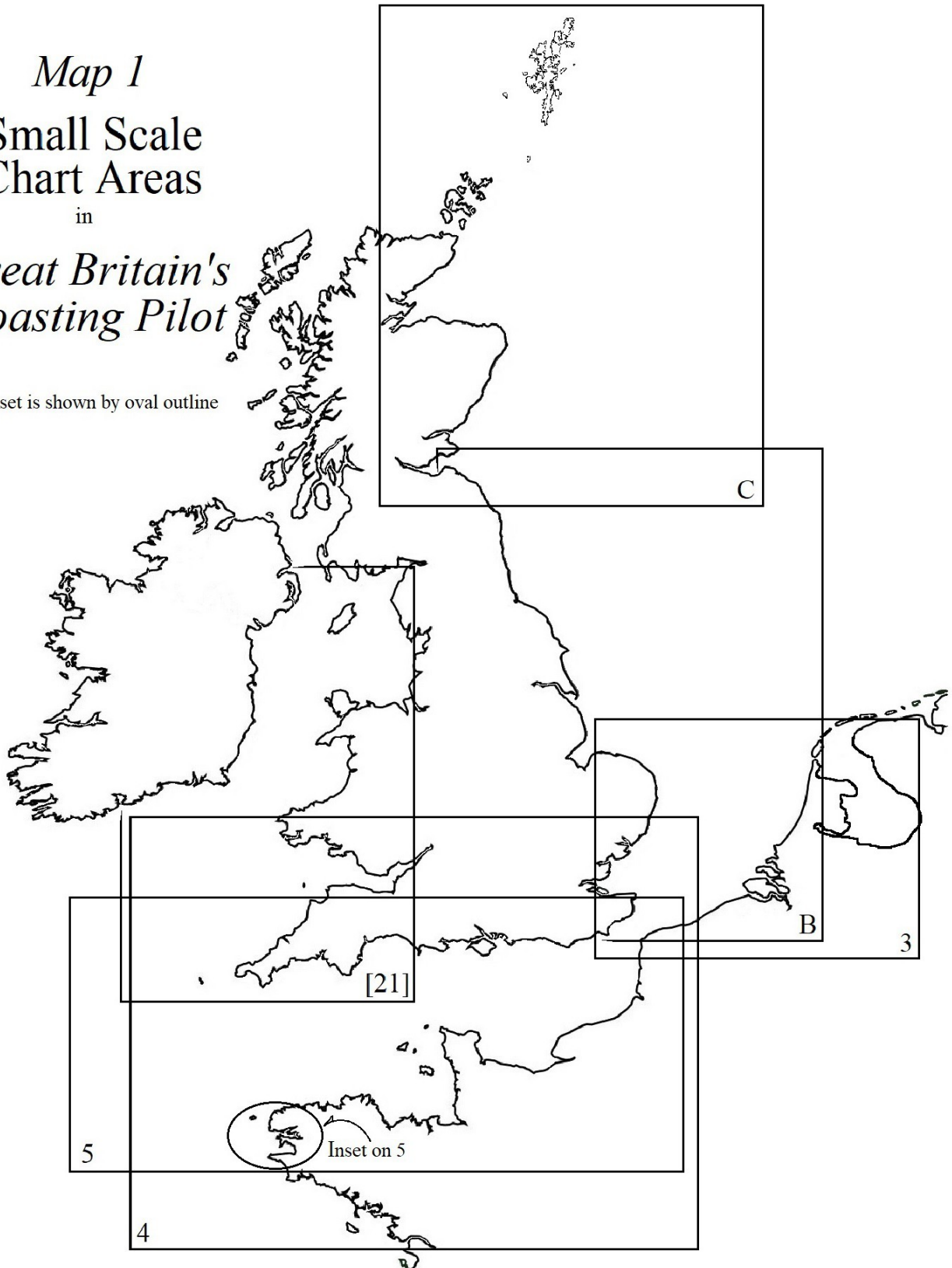
6 Collins, *Great Britain's Coasting Pilot, (1693)*, Sailing Directions in Part Two, 24.

While the political machinations behind the “Glorious Revolution” lie largely beyond the scope of this dissertation, Chapter 3 explores the visual impact of patronage in the post-revolution period in the three charts that Collins dedicated to Sir Robert Southwell, William III's Principal Secretary of State for Ireland at the time of the 1690 Irish campaign. The way in which the atlas was visually transformed from a navigational tool into a Williamite hagiography is the central thesis of Chapter 4. This change is also apparent in many other charts and the dating of these has a significant impact on their iconography. The change in, and increasing prominence of, the atlas's political stance is a direct result of the change in monarchical government after the Dutch invasion of 1688. The cartographic decorative schemes of the post-revolution maps reinforce a narrative of Protestant stability across the realm, with a marked change in the (very specific) selection and depiction of dedicatees from pre-1688 examples. This is elucidated further in Chapter 5.

While the historical significance of the *Coasting Pilot* as a proto-atlas in British hydrography is well-known, it was not universally welcomed at the time. Concerned by responses from other commercial rivals, Samuel Pepys, ever the critical naval professional, commissioned a comparison of the *Coasting Pilot* with the French *Neptune François* published the same year, the results of which reflected unfavourably on the more limited extent of Collins's surveying enterprise. This reception was, however, in marked contrast to the longevity of the publication, re-issues of which were frequent for the next century. The *Coasting Pilot* was also eventually reprinted in both Dutch and French editions. The latter is significant in the continuation of Collins's work in an artistically distinct tradition of French cartography that was to dominate the first half of the 18th century before British successors to Collins established supremacy in the art of hydrography in the form of the Admiralty Chart, still the benchmark today, and very much in the naval traditions of hydrographic work that Captain Collins's *Coasting Pilot* sought to establish.

Map 1
Small Scale
Chart Areas
in
*Great Britain's
Coasting Pilot*

Inset is shown by oval outline

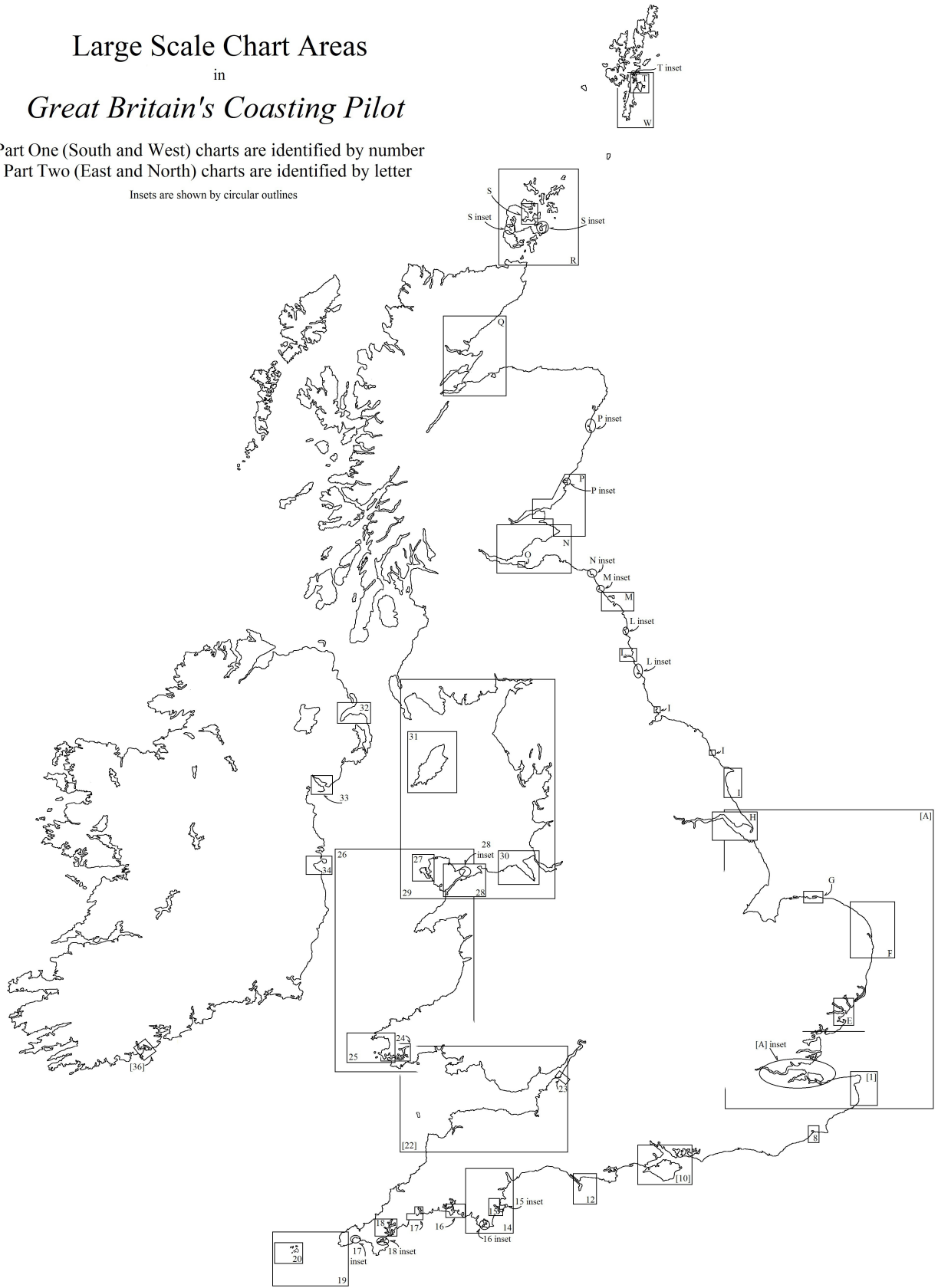


Map 2

Large Scale Chart Areas
in
Great Britain's Coasting Pilot

Part One (South and West) charts are identified by number
Part Two (East and North) charts are identified by letter

Insets are shown by circular outlines



1. “*All the Sea-Coast with a Chain*”⁷

Context, literature review and engraved title page

In the edition of 20-23 February 1692/3, and again the following week, there appeared a brief advertisement in the *London Gazette* -

Great Britain's Coasting Pilot; Being a New and Exact Survey of the Sea Coasts of England, Scotland and chief Harbours of Ireland, describing all the Harbours, Rivers, Bays, Roads, Rocks, Sands, Buoys, Beacons, Seemarks, Depths of Water, Latitude, Bearings, and Distances from Place to Place, and how to Harbour a Ship in the same with safety; Also Directions for coming in the Channel between England and France. By Captain Collins, Hydrographer in Ordinary to the King and Queen's Most Excellent Majesties; will be published this week, and sold by Richard Mount, Bookseller, at the Postern on Tower-Hill.⁸

This marked the culmination of a remarkable undertaking of survey and mapping of the coast, an achievement of the newly emerging scientific approach to measurement of all kinds, which was a feature of the intellectual enlightenment of the years after the Restoration of 1660.⁹ The advertisement marked a point of demarcation between, on the one hand, a dozen years of survey on land and sea, involving data collation, drafting charts, writing sailing directions, overseeing engravers and all the attendant details of publication, and, on the other hand, a course set for the atlas to become a benchmark of British hydrography, commercially available for the next 100 years.

7 Collins's commission from Charles II to undertake the survey. *Calendar of State Papers, Domestic, 1680-81*: 328. In Naish, “Hydrographic Surveys,” *Journal of the Institute of Navigation*, 9 (1956), 51.

8 Sarah Tyacke, *London Map Sellers 1660-1720* (Tring: Map Collector Publications, 1978), 58.

9 The Royal Society, granted its charter in 1662 was at the forefront of theoretical and practical developments in surveying, especially following the appointment of Robert Hooke as Curator of Experiments in November 1662. He, Edmund Halley, Samuel Pepys, Robert Southwell and Isaac Newton all commented on survey theory, the latter three being also Presidents of the Society.

The atlas which the advertisement announced was a well-supported undertaking, the subscribers list reading as something of a *Who's Who?* of the Restoration nobility and navy. At the head of the list are no fewer than three kings: Charles II, James II and William III; there follows a Prince and a Royal Duke, three other Dukes and a Marquis, nine Earls, two Viscounts, twenty-nine Baronets and Knights, six of whom numbered among the fifteen subscribing Admirals and senior administrators of the navy, and thirty-nine Captains in Their Majesties' Navy.¹⁰ The range and extent of subscribers was a clear seal of professional approbation, also emphasised by the royal approval granted by Captain Collins's role as "Hydrographer in Ordinary" signalled in the advertisement. The presence of the last three kings is particularly noteworthy in the context of the political and military upheavals of the time. The atlas was commissioned "out of his great Zeal for the better Improvement of Navigation" by Charles II, a "great Lover of the Noble Art of Navigation," who provided equipment and money to ensure its commencement.¹¹ James II, much less successful in balancing the competing political forces at play during his short reign, still maintained a detailed and informed interest in matters naval. His almost complete expurgation from the historical record can be regarded as one of the ways in which the Protestant Ascendancy after 1688 sought to legitimise the (theologically and politically dubious) usurpation of the throne by William and Mary. The significance of Williamite portraiture in the public sphere, ranging from medallions to ceiling paintings to popular pottery, lies in the depiction of the new king as firmly present and pervasive - never seen defeating James, but represented, crowned, in his stead. A sophisticated work such as Romeyn de Hooghe's frontispiece to *Relation du Voyage de Sa Majesté Britannique en Hollande* (1691) contrasts with English earthenware depictions of William derived ultimately from portraiture of Charles II, repurposed by the removal of the moustache and addition of initials.¹² However, both styles of representation serve the same purpose, placing the king's image before his subjects as frequently and ubiquitously as possible. The *Coasting Pilot* cast Collins's lot totally with the new regime, and amongst the competing and intersecting interests evident in the politics and iconography of the atlas, the frequency of, and emphasis placed on, the military triumphs of William III is one of the significant aspects. Nonetheless, James II, who had been Lord High Admiral for much of his brother's reign, and was generally held in some esteem by the naval officer cadre, remains on the subscribers list, between his brother and his successor, and the linear continuity of regal

10 The full subscribers list is in Appendix One.

11 Greenville Collins, *Great Britain's Coasting Pilot* (London: Richard Mount, Bookseller, 1693), Preface.

12 Charles Wilson (ed.) *The Dutch Connection* (Cambridge: Fitzwilliam Museum, 1988), 83. The examples cited are in the Fitzwilliam Museum, Cambridge: P.6-1984 and C.1631-1928.

government emphasised by this succession of monarchical sponsors perversely serves as a tacit affirmation of William's right to occupy the throne.

At the time of the Dutch invasion, the creator of the *Coasting Pilot* was serving as Master of the *Resolution*, flagship of Lord Dartmouth, the admiral charged with defending the English Channel for James II.¹³ Collins's Journal for the period gives a detailed, but curiously dispassionate, account of the unfolding crisis, interspersed with almost equal amounts of comment on the wind and weather.¹⁴ What Orangist sympathies Collins was unlikely to state in his journal in October 1688, he was far more willing to show in the carto-iconography of the atlas in 1693.

There was a further advertisement in the *London Gazette* just over a year later -

Captain Collins' Survey of the Sea Coasts being Printed, and Notice given last year in the Gazette, those Subscribers who have not had their Books are desired to send for them to Mr Mount on Tower-Hill Bookseller, before the first of July next, or they will be disposed of.¹⁵

In light of Mr Mount still having copies to be collected a year after publication, we cannot be certain how well the atlas sold in 1693, but we do know that *Great Britain's Coasting Pilot* went through many editions, the last of which, from almost unaltered plates, came out in 1792. Clearly there was profit to be made by re-printing well-beyond the period where the atlas could have had sufficient accuracy to be of practical use. The *Coasting Pilot* was at the time, and continues to be, as much a volume of artistic, political and historical interest as one of purely hydrographic record, but the 1693 editions that survive are not repetitions of each other and the significant disparities in contents and arrangement are only part of the complex web of interactions that the publication entailed.

A review of current literature

Copies are not uncommon, there being surviving examples of the 1693 edition in a number of libraries, and individual maps extracted, mostly from eighteenth-century editions, are often sold. The significance of the atlas as a prototype is well-known; Greenville Collins was “*as everyone knows*, the author of *Great Britain's Coasting Pilot*” (my italics) began Florence Dyer in her 1928 article about Collins's journals, the first modern study of his

13 The Master of a naval ship was a significant figure, ranking immediately below the Lieutenants, and was responsible for the safe conduct and navigation of the ship.

14 Greenville Collins, *Journal: June 1688- Jan 1689* (Greenwich, NMM, Caird Library, DAR/18).

15 *The London Gazette*, 17-21 May 1694 in Tyacke, *London Map Sellers*, 63.

work.¹⁶ Dyer drew attention to the manuscript charts and views that Collins added to his journal, now in The National Archives at Kew, and included black and white reproductions of several.¹⁷ Beyond that snippet, and some early career adventures under Sir John Narborough and Captain John Wood there has been relatively little written about Collins or his work.¹⁸

Only three other modern sources consider Collins at any length. Stuart Mountfield (1970) described the interactions between the Captain and Samuel Pepys, recounted in various minutes the latter recorded, which touch on his impact on the commissioning of the survey in 1681, and on the accuracy, or otherwise, of the finished atlas.¹⁹ In the same year Coolie Verner produced a more comprehensive overview, in R. V. Tooley's Map Collectors' Circle series of monographs.²⁰ Verner's focus was on carto-bibliographical analysis, and the monograph is a detailed source about the several states of the maps in various editions.²¹ He does not, however, examine the politics behind the publication, or explore the carto-iconography of the atlas beyond reproduction of the title page and some of the more decorative charts as illustrations. The third detailed account, by David Davies, fills in some missing biographical detail for 1680 when Collins served as Master of the frigate *Leopard* on an extensive cruise of the Mediterranean.²² Davies's account is based on a manuscript journal overlooked otherwise, in the National Library of Wales at Aberystwyth.²³ This volume, like that in TNA, includes significant numbers of views and charts in Collins's hand, but these lie without the scope of Davies's article and are not reproduced. Davies draws attention to the close proximity into which this episode brought Collins with the Duke of Grafton, (the "Royal Duke" of the subscribers list) the second illegitimate son of Charles II. Grafton was to have a profound influence on naval affairs in 1688, and was apparently the driving force behind Collins's appointment as Hydrographer to Trinity-House.²⁴ A recent volume from The National Archives has given some prominence to

16 Florence E. Dyer, "The Journal of Grenvill (*sic.*) Collins," *The Mariner's Mirror* 14, no. 3 (1928), 197.

17 The pictorial components of Collins's "Mediterranean" journal in TNA are extracted from ADM 7/688. and filed separately under shelf-mark: MPI 1/17 – 1/36.

18 Most sources repeat the biographical detail in Elizabeth Baigent, "Collins, Grenvile (d.1694), naval officer and hydrographer," *Oxford Dictionary of National Biography* (2004, updated 2010) or its predecessors: accessed Dec 3, 2017, <https://doi.org/10.1093/ref:odnb/5938>.

19 Stuart Mountfield, "Captain Grenvile Collins and Mr Pepys," *The Mariner's Mirror* 56, 1 (1970), 85-96.

20 Coolie Verner, *Captain Collins' Coasting Pilot* (London: The Map Collectors' Circle, 1970).

21 A single map, printed (or "pulled") from a plate is an *impression*. An *issue* consists of all impressions made from a single plate. However, between issues the plate might be amended and such changes produce issues referred to as different *states* of the plate. R. A. Skelton, *Decorative Printed Maps* (London: Spring Books, 1965), 4.

22 J. D. Davies, "The Lost Journal of Captain Grenvile Collins," accessed Oct 19, 2017, <https://jddavies.com/2015/06/22/the-lost-journal-of-captain-grenvile-collins-part-1/>.

23 MS Deposit 38B, The National Library of Wales.

24 J. R. Tanner, *Samuel Pepys's Naval Minutes* (London: The Navy Records Society, Vol 60, 1926), 388.

Collins, in an opening chapter about his “Mediterranean” Journal housed there, with a number of illustrations, albeit without analysis.²⁵

Amongst general books on the history of cartography, the *Coasting Pilot* receives uniform treatment, noted for its historical significance in the development of hydrography and with much repetition of the few biographical details given in the ODNB.²⁶ The recent *A History of Navigation* passes over the *Coasting Pilot* in a single paragraph, without naming Collins, and with the publication date given erroneously as 1683.²⁷ A. H. W. Robinson, in *Marine Cartography in Britain*, considers in some depth how Collins possibly went about his surveying process and gives a detailed appendix listing the charts, indicating which have manuscript originals in the Hydrographic Office Archives, although one of the manuscripts he lists is now missing.²⁸ He also provides an overview of the publication process, with some focus on contemporary criticism of the work from figures including Samuel Pepys and Philip Lea.²⁹ Further criticism of the “ill-performance” of Collins's charts forms almost the only reference to the *Coasting Pilot* in *English Maps: A History*, the otherwise authoritative survey of the topic by Catherine Delano-Smith and Roger Kain.³⁰ They impute blame to Collins's accuracy in scales of latitude on [19, *The Lizard and The Isles of Scilly*] as the cause of the loss of Sir Cloudesley Shovell's squadron in October 1707.³¹ In contrast, it is the lack of *longitude* on the charts which is the feature highlighted in “The Prime Meridian” by W. G. Perrin.³² A detailed analysis of the “latitude problem” is included in Cyril Everard's unpublished thesis, with emphasis on the charts of the Isles of Scilly³³ and some elaboration of Collins's survey methods and biography.³⁴ Rear Admiral Steve Ritchie also takes a more nuanced view in his survey of British hydrography –

25 The National Archives, *Tales from the Captain's Log: From Captain Cook to Charles Darwin, Blackbeard and Nelson – Accounts of Great Events at Sea from Those Who Were There* (London: Bloomsbury, 2017).

26 Elizabeth Baigent, “Collins, Greenville (d.1694), naval officer and hydrographer,” *ODNB* (2004, updated 2010).

27 Dag Pike, *A History of Navigation*. (Barnsley: Pen & Sword Books, 2018), 83.

28 A. H. W. Robinson, *Marine Cartography in Britain* (Leicester: Leicester University Press, 1962): Appendix C, 158-162.

29 *Ibid.*, 40-42.

30 Catherine Delano-Smith and Roger Kain, *English Maps: A History* (London: British Library, 1999), 78

31 This may be part of the cause, but it was accepted at the time that it was Shovell's inability to determine his *longitude* which was the prime cause, compounded by many days of fog, (“dirty weather” in Shovell's term), during which observations of latitude would have been impossible anyway.

32 W. G. Perrin, “The Prime Meridian,” *The Mariner's Mirror* 13, no. 2 (1927), 109-124.

33 Charts 19 and 20 of the *Coasting Pilot*.

34 Cyril Everard, *The Isles of Scilly and the Channel Islands: 'Bench-mark' Hydrographic Surveys and Geodetic Surveys 1689-1980*. (PhD thesis, London: Queen Mary, University of London, 2004).

Knowing that his [Collins's] instruments were probably confined to a five foot radius brass quadrant for use ashore, a Gunter's quadrant for hand-held use offshore, a measuring chain or wheel, a meridian compass and a lead-line [we] have to admire the clear drafts of ... the many ports and harbours around our shores.³⁵

An examination of the atlas as an artistic object, and placed in context of the political upheavals of the late Stuart period, does not elsewhere appear to have been attempted, and yet the atlas is rich in iconography. Beyond the obvious practical uses indicated in navigational signs and symbols there is a lavish decorative element which is far from being an arbitrary addition or filling of space. The decorative elements are carefully combined with both geographical context of the area mapped, and often with the associations of the dedicatee of the particular chart. Underlying these details are discernible themes in the pictorial “language”: stability; bucolic pastoralism; bounty and prosperity; naval power and, by extension, political power. These themes were not without precedent in Dutch mapping, which dominated the British market at the time, but the expanding greatness of the English Nation is a consistent thread that unifies much of the *Coasting Pilot's* iconography. There is a dynamic interplay of competing meanings throughout the atlas, which were not necessarily part of a planned conception, but represent a concatenation of ideas and purposes dependent as much on the context or politics of individual maps as on any over-arching narrative.

The Title Page of the 1693 edition

There is a pair of title pages, one of text and the other an engraving (fig. 1). These are presented in a double spread opening, the engraved image verso and the text recto. In only two copies of the 1693 edition is the engraved title page featured at the start of Part Two as well as Part One - those now in Cambridge University Library (CUL) and the British Library (BL1).³⁶ These two copies include the highest number of charts in their first state, which marks them as early compilations and can be considered the earliest complete copies of the atlas.

The design of the engraved title page is a tripartite arrangement, which distils the essence

35 G. S. Ritchie, *The Admiralty Chart: British Naval Hydrography in the Nineteenth Century* (Durham: The Pentland Press, 1995), 33.

36 CUL (Hanson.bb.63) is the version that Cooley Verner (Verner, 1969) refers to as “Cruising Association” and BL1 (7.Tab.108.) is the author's designation for the earliest of three 1693 editions in the British Library. Verner seems to confuse BL1 with BL2, the “King's” copy from the royal library, also stating that CUL/Cruising Association is the only copy with the duplicated title page. (Verner: 17).

of political, maritime and cartographical meaning of the atlas into a single composition. Here is an amalgamation of images of royalty, nationhood, mythology and maritime supremacy. It is an excellent example of the engraver's art, issued uncoloured with impressive texture and depth. Coloured examples are somewhat rare, but the lavish use of colour, as shown in the “King's copy” in fig. 1, makes a full baroque impact with obvious parallels in the painterly celebration of monarchy that characterised the Restoration period and, indeed, the establishment of the House of Orange that this title page celebrates.

At the top trumpet-blowing putti, wreathed in laurels of victory, hold the corners of a mantle containing the shield of arms of William and Mary: the English royal (Stuart) arms bearing an escutcheon of the Dutch Lion.³⁷ The circlet of the garter is topped by St Edward's crown, without the usual crest. The motto “Je Main:tiendray” seen on the scroll beneath the supporters was incorporated into the royal arms with the accession of William, it coming from the arms of the House of Orange-Nassau. The context firmly affixes the dominance of the new House of Orange over Britain's realm, the combination of familiar heraldry with the iconography of the trumpeting putti leaving the viewer in no doubt as to the winning side of the recent political upheavals. The imagery is further developed as a realignment of Britain's ancient maritime heritage. The central portion bears the atlas title on a scallop shell, held aloft by a bearded merman with traditional seaweed hair. The shell, taken from pilgrimage imagery, is symbolic of the universality of pilgrim origins, drawn from all corners of the world to converge on a single point at the base of the shell.³⁸ In the context of the atlas it can equally be viewed in the other direction, illustrating a dissemination of Britain's maritime strength, represented in the musculature of the merman at the shell's base, outwards across the seas. The title is inscribed in a curve following the shape of the shell: Great Britains (*sic.*) / Coasting Pylot / BEING / A NEW SURVEY / OF THE / Sea Coast / By Cap.¹ / GREENVILLE COLLINS / HYDROGRAPHER / to their / MAJESTYS (*sic.*) / 1693. The structure reinforces Captain Collins's royal patronage as Hydrographer to Their Majesties, consciously mimicking the heraldic layout above, the shell and title serving as the achievement of arms, the deities either side as heraldic supporters, redolent of images of national pride and maritime dominance. To the left Britannia sits on a globe, serene atop a grass-covered, sea-girt rock and bathed in radiant sun-beams. Her embossed Corinthian helmet's extravagant plumed crest nods to already

37 The blazon of the Dutch Lion is *Azure billetty a lion rampant Or armed and langued Gules.*

38 The scallop shell is particularly associated with Santiago de Compostela, but became a more generic symbol of pilgrimage.

established traditions of Britannia's Roman attire.³⁹ Around her shoulders a *palla* is loosely clasped, beneath which she is bare of abdomen, with part of a *strophium*, decorated with fish scales, visible covering her left breast.⁴⁰ While her posture adopts what was already becoming a conventional appearance – the seated position, one foot forward, a spear over her right shoulder, and her right hand resting on the top of a Hoplite shield, emblazoned here with the cross of St George – she additionally holds aloft a three masted ship, the starboard quarter toward the viewer, and above her left shoulder long tendrils of her hair wave in an almost Italian renaissance manner. These features combine with the piscine clothing to play out a developing maritime trope, beyond mere national personification of the land. This represents an early incarnation of the more overtly nautical depictions of Britannia familiar from the Victorian era, once Neptune had “resigned to Britannia the Empire of the Sea”⁴¹ after which she customarily bore Neptune's trident.

To the right of the title Neptune sits in a paddle-wheeled shell-chariot drawn by a pair of thrusting Sea Horses, webbed feet replacing hooves. Neptune holds his trident across his body, a complimentary balance to Britannia's spear, and his billowing cape curves over his head in a rhetorical device of *velificatio*. This is also a deliberate reference to traditional iconography of the gods as *velificantes*, the billowing mantle representing “vigorous energy” or the “vault of heaven”, an encompassing of the world (fig. 2).⁴² The vicarious extension of this energy and universal authority to the new British monarchy needs little emphasis, and the overt references to classical deification further enhance the implied assumption of dynastic continuity that the Williamite ascendancy needed. In the background, sailing ships cruise the horizon, spreading Britain's expanding mercantile and naval presence across the seas of the atlas and beyond.

The lowest section of the composition ties the imagery of the title page more specifically to the cartographical purpose of the atlas. A merman to the left and a winged mermaid to the right hold either side of an unscrolled map of the British Isles, orientated North-to-the-right, labelling the nations of England, Scotland and Ireland and the “German Sea” to the east, the whole covered with diagonal rhumb-lines. In the German Sea the Dogger Bank,

39 The earliest such depictions of Britannia as a recognisable personification of the island of Great Britain date from the Roman occupation, appearing by, at the latest, the mid 2nd century CE. Virginia Hewitt, “Britannia.” ODNB online, 2017, accessed Sept 20, 2018, <https://doi.org/10.1093/ref:odnb/68196>.

40 Millia Davenport, *The Book of Costume* (New York: Crown Publishers Inc, 1972), 73, 74.

41 William Dyce, *Neptune Resigning to Britannia the Empire of the Seas*. Fresco (1847), Osborne House.

42 Mat Auryn, “The Etymology of Auras.” Patheos, 2018, accessed Jun 27, 2019, <https://www.patheos.com/blogs/matauryn/2018/07/11/auras/>.

rich source of Britain's ichthyological bounty and therefore a major geographical and economic feature, is heavily shaded. Putti to either side hold implements of navigation and nautical survey: a cross-staff and a lead-line, above a third putto floating a wooden barrel-buoy in the sea. Before the advent of the sextant,⁴³ these represented the “modern” state of navigational and survey science, and the visual currency of these symbols of modernity can also be seen in the mechanical paddle-wheel attached to Neptune's shell-chariot, and depicted here with considerable clarity and prominence.

These allegorical themes are part of a wider culture of royal iconography, with a strongly maritime flavour, which came to prominence with the increasing exposure of Britain to continental baroque artistic styles after the Restoration. The comparison of monarchs with classical deities, or at least depiction attended by them, was quite standard, but a new, and far more elaborate, baroque conception was revealed in spectacular form in the *Sea Triumph of Charles II* by Antonio Verrio (c.1636-1707) in which the monarch, like Collins's Neptune and Britannia, serves as a personification of command over the oceans, attended by a panoply of classical deities.⁴⁴ Even the far more sober Prince of Orange, once established on the British throne, was placed amongst the classical deities and billowing winds of British naval supremacy by James Thornhill (1675-1734) in the ceiling of the lower hall in the Royal Naval Hospital in Greenwich (1707). Britannia, as mentioned above, was becoming an established personification, but a clear naval context was only regularly used from the reign of Charles II. Her recognisable profile can be seen on the medal struck to celebrate the Peace of Breda at the end of the Second Anglo-Dutch War in 1667 (fig. 3). This is the same imagery that Collins (or his engraver) draws upon to unite the title page of the *Coasting Pilot* and the baroque vocabulary calls attention to the modernity of the work as much as to the strengths that the imagery implies.

The title page thus establishes *ab initio* themes which will recur throughout the decorative scheme of the atlas: British maritime supremacy; Britain's “natural” right to rule the seas, represented by the divine, if mythological, supporters; comprehensiveness of the atlas, shown in the complete map, and above all the authority of the new, Protestant, royal government. While this imagery was a part of the developing baroque vocabulary of maritime and national visual representations, its use in the title page was a departure from

43 The sextant was not in regular use until well into the 18th century.

44 Richard Johns, “Antonio Verrio and the Triumph of Painting at the Restoration Court,” in *Court, Country, City: British Art and Architecture, 1660–1735*, ed. Mark Hallett, Nigel Llewellyn and Martin Myrone (New Haven and London: Yale University Press, 2016), 153-177.

the iconography of previous nautical atlases. The first such publication, Lucas Waghenauer's *Spiegel der Zee-vaert* of 1584 was rapidly republished in English as *The Mariners Mirrour* with a reissue of the title page from Waghenauer's original, only altered to achieve more prominence for the patronage arms (fig. 4).⁴⁵ The imagery here is quite different. There is no detail in the map, the prominent feature a blank globe, with mariners crowded around awaiting its completion; clearly a contrast to Collins's claims of comprehensive cartographical authority. The illustration of a panoply of navigational instruments is not surprising and certainly underscores the scientific advances of which Holland at the start of the *Gouden Eeuw* was so proud, but the emphasis remains on scientific endeavour and discovery, both of the globe and the techniques of rendering it comprehensible in print. A political aspect is present, seen in instruments being used to probe the mysteries of the sea, and in the references to intellectual endeavour being able to overcome, or at least beginning the process of overcoming, the dangers of the deep (the galleon at the bottom sails serenely between two spouting monsters, but remains undisturbed by them.) However, the language is very different, there being less of an overt claim to dominance, or possessive subjugation of the sea, such as shown in the *Coasting Pilot* title.

The only English precursor to *Great Britain's Coasting Pilot* was similar in stance to the *Mariners Mirrour*, although not without distinctive “English” features in its design. John Seller published *The English Pilot* in 1671, but the claims of modernity that it made were hard to sustain given that the maps in the atlas were entirely reprints of existing Dutch cartography, themselves often based on Waghenauer. The title page follows the general layout seen in *The Mariners Mirrour*, moving the emphasis from scientific figures to a representation of notable characters from the English “golden age” of exploration under Elizabeth I (fig. 5). The panorama of London underscores the commercial nature of Sellers's undertaking, drawing a visual comparison with the depiction of Old Father Thames on Collins's chart [A], and the inclusion of prominent royal arms certainly shows the same concern for authoritative symbols of patronage. In contrast, however, the principal emphasis is again on the utility of the work, the top being a repeat of the “crowd of geographers” image seen in Waghenauer, and the formal design concept is itself descended from the static title pages of the many “Theatre” publications of earlier cartography, in which an architectural structure served as proscenium for a tableau of recognisable scientific and cartographic images.⁴⁶

45 Ashley, Sir Anthony (translator), *The Mariners Mirrour*, published by John Charlewood, London 1584.

46 Works from Ortelius, *Theatrum Orbis Terrarum* (1570); Van Adrichom, *Theatrum Terrae Sanctae* (1592); Speed, *Theatre of the Empire of Great Britain* (1612) and Blaeu, *Theatrum Orbis Terrarum* (also known

Collins's subsumption of scientific endeavour and discovery in favour of an overt claim to navigational dominance and an implied divine right of the English to "rule the waves" marks a paradigm shift from images of the collegiate accumulation of knowledge that had theretofore characterised depictions of the processes of cartography. Further, the conscious utilisation of baroque, and therefore contemporary, pictorial language - the more freely flowing design elements - combines on the page to present a unified image of regal power and political meaning. The continental contemporaneity has a parallel in the French sea atlas *Le Neptune François* also published in 1693, by Alexis-Hubert Jaillot (1632-1712) (fig. 6). Neptune velificans again features centrally, charging across the sea in a similar hippocamp drawn paddle-wheel shell chariot, surrounded by mermen blowing on conch shells. While the visual language and symbolic devices are the same, this French composition shows a maturity of baroque design that the English equivalent had not yet achieved. In the *Neptune*, the whole unified image shows a baroque bellicosity redolent of the pomp surrounding *Le Roi Soleil*. Britannia's restrained stature is replaced here by a vigorous cloud-born Mars, sword swinging towards a trumpeting angel holding the title on a banner. While the sun's rays are also present, beneath the deity a fleet of war sets sail under thunderclouds and lightening bolts, and the side borders are filled with instruments of war as much as those of navigation. The message of this title page makes none of the allegorical glances of that of the *Coasting Pilot*. Here the marine purpose is not trade and discovery but conquest, and the armada is both vast and French, the royal fleurs-de-lys appearing both above and below the central image.

The baroque formalisation of imagery in the *Coasting Pilot* title page was unlikely to have occurred in the intellectual environment of the period prior to the Dutch invasion of 1688. It shows distinctly how scientific advance could be re-purposed to illustrate the multiple aims to which the *Coasting Pilot* was put. Not only is the growing mercantile power of England reinforced, but the change of the nation's new Dutch ruler into an English monarch with pretensions to rival the power of Louis XIV shows the political underpinnings of the atlas project moving as seamlessly as the allegiances of the naval officers involved did after 1688.

as the *Atlas Maior* (1635) are four that specifically use the term.

2. “*A New and Exact Survey*”⁴⁷

Art and Science in the *Coasting Pilot Survey*

The purpose of hydrographic charts is to provide cartographical information on marine and coastal environments. A chart is therefore a scientific document, predicated on accurate measurement of any number of parameters. And yet, as the popularity of antique maps and charts continues to demonstrate, the chart is just as much a work of art as it is of science. Cartography itself is no more than the art of drawing – rendering a picture of the earth's surface at a comprehensible scale, and divided into easily viewable segments – and the combination of line, shading, symbol, text and decoration is as essential a part of hydrographic cartography as is the measurement of sounding, distance, angle and meridian. This is the essence of *carto-iconography*; the map as an artistic object just as much as a navigational tool, casting the hydrographic chart in a long lineage of marine artistry from sailors' decorated rutters to grand decorative paintings. The creation of a nautical atlas in the late seventeenth century was an amalgam of measurement and artistic depiction, of scientific accuracy and imaginative interpretation.

While essentially a map of the coastline and geographical features along the coast and offshore, the hydrographic chart is distinctive from a land map in a number of ways. Both aim to represent the surface features of the earth by means of measurement and illustrative symbols. In mapping the land the features being measured are visible and can be re-surveyed to confirm the accuracy of measurement. On the water, not only is the majority of the subject matter invisible beneath the surface, but the water itself provides an unstable

⁴⁷ *The London Gazette*, 20-23 February 1692/3 in Sarah Tyacke, *London Map Sellers 1660-1720* (Tring: Map Collector Publications, 1978), 58.

medium from which the measurements are taken, both in respect of the sideways movement of currents and also the vertical movement of the waves and tides. Measurement in such circumstances becomes often no more than an amalgamation of values, each representative of a moment in time. The significant parameters of measurement are also different on a chart from a map. The principal measurements are lines; two of distance (*along* the coast, and offshore *from* the coast) and one of depth, from the surface of the water down to the sea-floor. Area, crucial in the creation and uses of land maps, is less significant at sea than line. The route, actual or proposed, of a ship at sea describes a line, not an area, and the concept of deploying cartography to mark boundaries, enclose areas of ownership or demarcate areas of responsibility is unknown in the use of a sea-chart. Only the coastal boundary is presented as a cartographic demarcation, separating the “safety” of open water from the “danger” of rock, sand, mud or other environments fatally uncondusive to flotation.

Greenville Collins's task from 1681 was to measure and draw the entire coastline of the British Isles, as well as the shape and character of the invisible undersea environment. This was to be done with a single small ship, rudimentary equipment, and based on an existing understanding of the shape of the land not greatly advanced from the reign of James I, nearly 70 years earlier. Samuel Pepys records Collins in conversation observing that “in several instances the sea coast was better laid down by Speed than in our Waggoner.”⁴⁸ The latter is an anglicisation of (Lucas Janszoon) Waghenaer (1533/4-1606), whose *Mariners Mirrour* was so ubiquitous that his name had become the generic term for books of sea charts right through the 17th century.⁴⁹ John Speed published the first complete county atlas of printed maps of Great Britain in 1612, but even he did little actual survey and largely relied on still earlier maps by Christopher Saxton and John Norden, harking back to the reign of Elizabeth.

Collins therefore had to conduct his own survey of the land side of the coast as well as the sea, to provide at least one component of reasonably accurate distance, from which other measurements could be extrapolated, and much of the difficulty in this was financial. A natural consequence of the commercially driven nature of the seventeenth-century map trade was that reprints using existing plates made financial sense, but the cost of new surveys was beyond the means of even the most significant map sellers. Collins was

48 J. R. Tanner (Ed.), *Pepys's Naval Minutes* (London: The Navy Records Society, 1926), 136.

49 First published as *Spiegel der Zee-vaert* in Amsterdam in 1584; English translation published 1588.

certainly not alone in struggling with survey costs, which caused the collapse of many cartographical projects right through to the nineteenth century, and even with royal support for his work, the pressures of time and finance must have forced Collins to the contemporary practice of using existing land maps for much of his coastal outline.⁵⁰ In the amalgam of aesthetic and scientific approaches that the *Coasting Pilot* represents, the former is the extension of a long history of marine pictorial art, while the latter foreshadows the approach to cartography that flourished in the following century, and Collins's career output encapsulates this transition.

Collins left no sketches, notes or working material for the *Coasting Pilot*. The earliest material we have is the finished manuscript drafts in the UK Hydrographic Office Archives, prepared for the engraver to copy and which give no detail of the process of their production. It is necessary to look to Collins's earlier activities for indications of his possible working processes. In 1676 he undertook a voyage as Master of the *Speedwell* with the intention of discovering the route to China through the North-east passage. The ship was wrecked on the Arctic island of Novaya Zemlya, and the journal of the commander, Captain John Wood (active 1643-1690), was lost in the wreck. Collins's journal survives and includes a manuscript depiction of *Mount Missery*, where the crew camped while awaiting rescue (fig. 7). The journal and its cartography were used to allow Captain Wood to defend the conduct of the expedition in the court of inquiry into the wreck, and may, therefore, have been revised in preparation for this.⁵¹ The work is a combination of landscape drawing and map, and the circumstances of its creation precluded precise scientific measurement, placing it within the visual culture of sailors' records of places visited. The view is *bird's-eye* rather than plan; the hills are shown as a drawn landscape and there is an illustration of the stranded *Speedwell* on the rocks, without specific plotting of the location or extent of those rocks. There is no trigonometric plotting of the offshore details, nor even a scale. Indeed there is nothing here that could not have been re-created from memory after returning to England.

Nonetheless, many features of a hydrographic chart are present: a clear delineation of the coastline, diagrammatic indications of structures on the shore and of coastal features (river entrance and cliffs), cross symbols for rocks off the coast and some soundings of depth. In this drawing the intersections of measurement and observation, of dispassionate recording

50 Catherine Delano-Smith and Roger Kain, *English Maps: A History* (London: British Library, 1999), 98.

51 The manuscript journal was, at the time of writing, being advertised for sale by Arader Galleries of New York, who generously made available photographs of the illustrated pages.

and narrative flow, lie in the direction of artistic rendering – this is an imagined depiction seen from an impossible perspective – showing the carto-iconographic image as a blend of recorded and imagined realities. As a record of a past event, the picture also has significance as evidence that the *Speedwell's* crew were not reckless in losing their ship, and it thereby serves an additional purpose beyond the more conventional uses of marine cartography to picture and plan a future voyage.

The *Speedwell* inquiry drew Collins to the attention of Charles II, who was impressed enough to make a personal appointment of Collins to a brand-new ship preparing for service in the Mediterranean. In the journal of the subsequent cruise (1676-79) Collins included drafts and plans of harbours visited. Amongst these Collins's sketch map of Gibraltar represents a development of his cartographical craft (fig. 8). This view was made on site and has carefully positioned soundings, yet pictorial elements remain, most notably in the depiction of the silhouette of the town and rock. Although still more a drawing than a map, the cartographic detail takes on greater significance. There is a range of accurately drawn landmarks useful for navigation, including a light tower, a watch tower and a castle, and the Rock is given a measured height of 770 yards. There is also significant navigational detail in the text –

Thus sheweth Gibraltar when the hill at D beareth E[ast] b[y] S[outh] about half a mile from the Towne as we Rid at Anchor in Ten fatham water, this Place is a Peninsula Joyned to the Maine by the low Sandy Ismuss at C.

This is a more sophisticated record of the location than the *Mount Missery* sketch, and demonstrates the same interaction of visual references, compass bearings and descriptive text that will later run through the *Coasting Pilot*, predicated on the accurate observation and delineation of the spatial relationship between objects on the shore that allowed the mariner to make a visual recognition of place. Additionally the viewpoint is from a “mast-head” position that would render Gibraltar, with the carefully drawn silhouette of its rock, recognisable to an arriving mariner. Other drafts, from later in the cruise, show ports in the central Mediterranean in a plan map and separate view-and-text drawing, more as in the *Coasting Pilot*.

In practice, hydrography involved much visual estimation of distance to circumvent deficiency in accurate measurement. Collins writes in the *Coasting Pilot* sailing directions of his own practical assessments using the visibility, or not, of the coastline to approximate distance off-shore. At the Ower and Leman sands off the Norfolk coast he advises that

if you keep a fair sight of the land you will run within it, [the sand bank] for I could not see Land from the Masthead of the Yatch, (*sic.*) when I rid at Anchor close by the *Leman*; but being at Anchor three or four Miles within the *Leman*, I saw the Church and Land at *Hasebrough*.⁵²

Transferring such observations into a drawn chart was the principal point of demarcation between techniques of navigation and survey. “Coasting” as a navigation technique relied on the visual recognition of landmarks and coastal contours, placing the survey process and the use of its products on opposite sides of a paired maritime culture in which accurate observation enjoyed a continued value alongside, or at times even above, scientific measurement. In 1688, just after the end of Collins's British Isles survey, John Love published *Geodaesia, or the Art of Surveying*. Love, using the example of a river mouth, instructs the surveyor to “Measure first the sea coast on both sides of the River's Mouth, as far as you think you shall have occasion to make use thereof; and make a fair draught thereof.”⁵³ By the “fair draught” Love suggests the drawing of a coastal sketch plan, by eye and whatever coastal measurement might be possible. Collins's sketch of *Mount Missery* conforms to this idea of the “fair draught” – an essentially observational basis of mapping underscored by maritime traditions of recording – rather more than pointing to the mathematical calculations of Royal Society figures such as Edmund Halley (1656-1742) or Robert Hooke (1635-1703), which increased in prominence in the next century. Hooke was influential in the establishment of the Royal Observatory in Greenwich and became involved with the cartographical enterprises of John Ogilby (1600-76), for whose five volume *Britannia* he designed a number of survey instruments.⁵⁴ In hydrography he invented a device for measuring depth, but this was not yet available to Collins.⁵⁵ Edmund Halley was more concerned with the applications of astronomy, and proposed a complete triangulation of England, an undertaking well ahead of its time in Britain, and well beyond the resources of a one-ship operation such as Collins's, but which, together with Halley's groundbreaking insights into the errors in Newton's lunar tables, would bear rich fruits in later French cartography.⁵⁶ The difficulties of application of these scientific approaches to work at sea remained unresolved until the invention of more reliable measuring equipment, such as John Hadley's (1682-1744) reflecting octant, shown to the Royal Society in 1731. Collins's survey was without such devices, and some of the criticism of his charts levelled by scientific figures, Halley amongst them, does seem to betray a lack of consideration of

52 Collins, *Coasting Pilot*, Sailing Directions in Part Two, 8.

53 John Love, *Geodaesia, or the Art of Surveying* (London: John Taylor, 1688), 191.

54 Lisa Jardine, *Ingenious Pursuits* (New York: Nan A. Talese, 1999), 16, 203.

55 Catherine Delano-Smith and Roger Kain, *English Maps: A History* (London: British Library, 1999), 224.

56 David Barrie, *Sextant* (London: William Collins, 2014), 78.

the application of theory to the reality out on the water, where artistic rendering of observed coastal features remained predominant.

Pictorial representations remained as integral as maps for navigation and Collins includes three pages of coastal views in the *Coasting Pilot*; (39, *How these Severall Lands show at Sea* and V), together with the numerous silhouettes on the charts. In conjunction with the soundings given on the chart it was possible for the mariner to visually align landmarks shown in the views and achieve a reliably accurate position. Collins's manuscript view on the draft for chart 15, *Dartmouth* shows the town gradually revealed from behind the projecting heads of the harbour, seen from positions along a North-east course (fig. 9).⁵⁷ The visual positioning of the shoreline objects, provides a context for use irrespective of the mariner's ability to measure angle of bearing or distance from the coast. Keeping a higher landmark (e.g. Mount Wheeler in the middle view) aligned behind one on the shore (e.g. the town or castle), ensures the position of the ship along the line so produced, which can be plotted on the chart. For this purpose Collins includes "leading lines" for entry into harbours or river mouths (fig. 10). A navigator can align by eye the landmarks shown along the leading line, knowing that his position therefore lay somewhere along that line, with the concomitant assurance that the way ahead was clear of obstacles. The use of views and leading lines together produces a purely visual positioning system, which can be confirmed by depth sounding, and needs no reference to compass bearing or mathematical computation. Using the views in fig. 9, the mariner can locate the leading lines shown in fig. 10, which will bring the ship safely into Dartmouth Harbour, having avoided the rocks shown on an additional (left to right) "clearing" line.

Despite the comparatively straightforward application of the charts and directions to navigation by coasting, the process of making charts for publication was altogether more complex and in this, measurement was unavoidable. While much of his early work was essentially visual rendering of a coastal environment, Collins was undoubtedly well-versed in survey technique by the time he began the *Coasting Pilot* work in 1681. Indeed, two maps in the atlas are dedicated to mathematical teachers.⁵⁸ One of these, Reeve Williams (active 1682-1703), is known for a translation of *The Elements of Euclid Elected*, by Claude Dechaes, published in 1685.⁵⁹ The other, John Colson (active 1671-1709), is

⁵⁷ Noting that North is to the right on this chart.

⁵⁸ Charts W, *The South Part of the Isles of Shetland* to John Colson and 33 [*Carlingford Lough*] to Reeve Williams.

⁵⁹ Williams was also elected a Fellow of the Royal Society in 1699, but this is after Collins's death.

known to have operated a mathematical school in Wapping, intended for those destined for the sea. The area was a centre of maritime trade with chart-sellers and instrument makers, including John Seller (bapt. 1632-1697), based there.⁶⁰ Colson was also an “examiner in the skills of navigation on behalf of Trinity House,” of which Collins himself was a Younger Brother. Whether these mathematicians were teachers of Collins, or professional colleagues is unknown, but the dedications clearly place all three in the nexus of professional maritime operatives with an active interest in mathematical aspects of navigation.⁶¹ Collins may also have known of the several volumes on mathematical theory related to survey activity published in the 1650s through to the 1670s by John Collins (no known relation) (1625-1683), although John Collins's work was largely written for the use of his and other scholars and is not concerned with practical applications. The mathematics involved was of a complexity probably beyond the comprehension of even the best qualified mariners, but pointed in the direction that navigation and hydrography were ultimately headed.

Methods of hydrographic survey up to Collins's time had not changed significantly in the preceding centuries, yet we know relatively little about the actual techniques involved. The first text book on navigation and survey in English was not produced until 1577, with the publication of William Bourne's *A Regiment for the Sea*. This volume gave an outline of the process of taking cross-referenced compass bearings to define relationships between coastal features. Bourne also gives instructions for the use of the log to measure speed, and thereby estimate distance between coastal features by measurement of the time taken to traverse the distance between them.⁶² Such estimations were never more than approximations, at best. Richard Hakluyt's substantial *The Principall Navigations Voiages and Discoveres* (sic.) of the English Nation (1589) contains an early survey description -

[Note] diligently how the highest or notablest part thereof beareth off you, and the extreames also in sight of the same land at both ends, distinguishing them by letters, A. B. C. &c. Afterwards when you haue sailed 1. 2. 3. or 4. glasses (at the most) noting diligently what way your barke hath made, and vpon what point of the Compasse, do you againe set that first land seene, or the parts thereof, that you first obserued, if you can well perceiue or discern them.⁶³

60 Coolie Verner, “John Seller and the Chart Trade in Seventeenth-Century England,” in *The Compleat Plattmaker*, ed. Norman Thrower (Berkeley: University of California Press, 1978), 132.

61 Kevin Knox, *From Newton to Hawking* (Cambridge: CUP, 2003), 191.

62 A. H. W. Robinson, *Marine Cartography in Britain* (Leicester: Leicester University Press, 1962), 47.

63 'Glasses' refers here to the time taken to sail a distance measured by a number of rotations of a sand-glass timer; a fixed measure of time when paying out the log line. 'Way' in this sense means distance covered in a particular direction, whence the modern “under way”.

The observational nature of survey record is emphasised by the instruction to

drawe the maner of biting in of euery Bay, and entrance of euery harborow or riuers mouth, with the lying out of euery point, or headland, ... and make some marke in drawing the forme and border of the same, where the high cliffs are, and where lowe lande is, whether sande, hils, or woods.

Once these details are drawn

you shall thereby perceiue howe farre the land you first sawe, or the parts thereof obserued, was then from you, and consequently of all the rest: and also how farre the one part was from the other, and vpon what course or point of the Compasse the one lieth from the other.⁶⁴

Such instructions would serve as well for a student interested in learning the art of landscape painting, further enhanced for publication with measurements accumulated from numerous voyages, listing “heights, soundings, lyings of lands, distances of places, the variation of the compasse ... with the obseruation of the windes on seuerall coastes.”⁶⁵ From such published lists it was, at least in theory, possible to construct a chart or, with greater probability, update an existing one. At the remove from first-hand observation such processes were always susceptible to accumulated errors and misinterpretations of the data, compounded by the passage of time. Hence Collins's complaint to Pepys about the sea-coasts being no better charted in contemporary maps than they had been by Speed at the start of the century.

Survey technique lies outside the scope of this discussion, but some principles can be laid out to elucidate the probable process to which Collins adhered. For him the physical reality of coastal surveying remained intrinsically tied to the instruments shown on the title page of the *Coasting Pilot*, the cross staff and the lead-line, together with the compass and a rudimentary measuring wheel, or a hefty measuring chain, for determining land distances. By means of the lead-line dropped over the side of the ship, depth could be obtained relatively easily and this age-old technique is illustrated in one of Collins's cartouches in the *Coasting Pilot*, on a chart dedicated to the Brethren of Trinity House, the body responsible for overseeing buoyage, survey and coastal marks (fig. 11).

If this one of the three principle measurements of the hydrographic survey, depth, is relatively simple to ascertain, those of distance are more complex. Distance *along the coast* can be physically measured. The first requirement is to establish a base line of known

64 Richard Hakluyt, *Principal Navigations* (London: George Bishop *et al*, 1599), 436.

65 *Ibid.*, 825.

length, against which other distances can be compared. At sea this is impossible, so the base line for Collins's surveys must have been established on land, possibly using endpoints at two existing landmarks. Once the length of the baseline has been measured a process of triangulation, based on that known length and the angles of bearing to its endpoints, will establish the *distance offshore* of the observer.⁶⁶ This process, invented by Gemma Frisius around 1533, while fairly straightforward on land, was more challenging from the moving platform of a ship at sea. Various illustrations of the principle exist and the concept is the same offshore as on land (fig. 12). In the woodcut from Danfrie's *Declaration de l'usage du Graphometre* (1597) the two observers at the bottom can be imagined as mariners offshore, and the features they are triangulating as landmarks on the coast.

As an example, we can imagine a ship anchored at the end of an offshore sandbank. A headland on the coast bears ENE, *from the ship*. Having sketched a “fair draft” of the coast, the bearing can be reversed and plotted on the draft, *from the headland* WSW out to sea.⁶⁷ The ship (and, therefore, the end of the sandbank) lies somewhere on that line. Taking the bearings of a number of separated shore marks and plotting the resultant reverse-bearing lines out to sea will produce an intersection, which shows the position of the ship on the water. Thus the location of the end of the sandbank in relation to the shore features becomes known. Any bearing line forms, with the original baseline, a second side of the triangle, and the (now identified) location of the ship a third vertex of the triangle. Knowing the length of the baseline and the internal angles allows the distance of the ship from the shore mark to be computed.

With this information, the lengths of the remaining sides of the triangle(s) (from the other shore marks to the ship) can be determined. Moving the ship around the edge of the sandbank (the edge determined by sounding depths with the lead-line) and repeating the process will reveal the outline of the sandbank, like a giant join-the-dots game. Repetition of this process along the coast allows a relationship of distances to be established between a whole range of measured positions, albeit in a time-consuming and laborious process, highly dependent on consistent accuracy of measurement of the triangular angles. Such measurements of distance offshore also allowed the surveyor to develop a reasonably

66 The basis of triangulation lies in the fact that if the length of one side of a triangle, and two of its interior angles are known, the remaining angle and the length of the other two sides can be determined.

67 In modern terms, this is the same as subtracting 180° from a measured bearing. Standing at one end of a line, a viewed object bears, say, 270°; *from* that object, the original viewing point will bear 90°. In Collins's time points of the compass, not degrees, were used.

reliable visual estimation of offshore distance, which was used to supplement measured distance in most cases, and especially where the visibility (or not) of the coast was involved, as Collins described at the Leman Sands.

This dynamic interaction between visual and determined measures of value can be seen in a further stage in development towards the finished engraved maps of the *Coasting Pilot*. In the British Library, is a bound collection of Irish manuscript maps, which includes Collins's only draft chart in pencil (fig. 13).⁶⁸ The purpose or commission of this chart is unclear, and the survey is not that which resulted in the chart of Dublin Bay in the *Coasting Pilot*.⁶⁹ It has been suggested, in the BL catalogue amongst other places, that this draft belongs with the collection of Collins's manuscript charts in the Hydrographic Office Archives as one of the drafts for the *Coasting Pilot*. However, this is unlikely on both stylistic and evidential grounds. The draft is dated November 1686 and was made at the end of the survey season when Collins was working along the Welsh coast “from Milford to Chester.” The *Coasting Pilot* itself states that the Dublin survey for that work occurred the following year. The chart is also quite different in style from those in the UKHO Archive and comparison with the printed chart in the *Pilot* shows, in orientation, depicted details and both manner and values of the soundings, that the *Pilot* chart reproduces a different draft.

But to return to Collins's processes, comparison of the Dublin Bay manuscript with the Gibraltar sketch (fig. 8) shows the greater level of sophistication in the mapping. This map uses a plan layout, shows detailed soundings and coastal delineation, with tide-line and inter-tidal features shown, and a sure grasp of scale and proportion more recognisable as a “map” in the modern sense. Although a slightly smaller sheet than the *Pilot* charts, there is additional survey detail on this draft, again suggestive of a not quite fully-formed technique. Collins experiments with a rather complicated system of coloured soundings, to represent depths in fathoms and feet, at both high and low water. A boxed note explains “Note that the black figur^{es} / shew the depth in fathams / at low, and the Read (*sic.*) at / high water exc^opt this mark / * by the figure then it is / ment feete.” This system was abandoned by the time the *Pilot* charts were prepared and in those Collins rarely strays from the basis of fathoms at low water as the only soundings, producing a clearer result.⁷⁰

68 British Library Maps K.Top.53.5. The chart is titled *A Map of the Bay and Harbour of Dublin Surveyed by Capt: Greenvil Collins November 1686*.

69 Chart 34 [*Dublin Bay*], dedicated to James, Duke of Ormonde.

70 Occasional large scale charts use an *f* beside the soundings to indicate feet. Soundings at high water do not occur in the *Coasting Pilot* except in the highly detailed chart 30, *Chester-Water*.

Although observational plotting is important in Collins's work, he makes several references in the sailing directions to where he considers the map to be a superior mode of information transfer. Describing Normans Land in the Isle of Wight he says “I refer you to the chart, which is so plain, that there needs no directions” and concluding the sailing directions of each Part of the atlas he gives a long list of distances between locations along the coast, harking back to the manner of Hakluyt's *Principall Navigations*, but comments “Courses and Distances from place to place are better demonstrated in the Mapps than this way; but at the instigation of some Seamen I have done this.”⁷¹ It is clear that maritime traditions of conservatism had longevity, but the visual aspects of cartography were coming to the fore by the time of the *Coasting Pilot*.

Away from the technicalities of survey we can also glean information about Collins's processes from the text of the *Pilot*. In Part Two he gives a brief outline of the areas surveyed in each year, his routes being shown on *Map 3*. Survey activity was largely confined to the summer months, as Collins confirms in the sailing directions –

[T]he North part of the Island of *Shetland*, I had not time to Survey; the Summer being well spent, at which time I went to the Islands of *Orkney*, and from thence to *Cromerty* and *Inverness*; from which place I parted at the latter end of *October* in the Year 1685.⁷²

Time constraints were a cause for concern in the survey, and the petition for payment made to the crown after completion, a sum amounting to over £1900, makes clear that Collins was essentially footing the bill during the whole period.⁷³ Having spent two summers working along the south coast of England, and a further summer in the Isles of Scilly and Bristol Channel, the pace of work was obviously increased by 1684 when the entire east coast of England and southern Scotland was surveyed. The drafts show no lessening of detail or quality of execution, and yet the sailing directions again give an indication of things that Collins did not have the time to explore fully. Off the Norfolk coast he says “I am told that there are more Banks and Overfalls to the north east of *Yarmouth* Land too, on which is but two Fathom and a half; but I have no authentick ground for it.” North of Foulness he has “no certain Account of these Banks and Shoals: I have discoursed many able Coasters and Colliers, who all differ much in their Bearing and Distances from the

71 Collins, *Coasting Pilot*, Sailing Directions in Part One, 18.

72 Collins, *Coasting Pilot*, Sailing Directions in Part Two, 24.

73 Collins's letter survives in the National Archives, *Admiralty Orders* ADM/A/i 8. Quoted in G. Naish, “Hydrographic Surveys by Officers of the Navy under the later Stuarts,” *Journal of the Institute of Navigation*, 9 (1956), 52.

land.”⁷⁴

The scale of the project was, of course, enormous and there are understandable omissions of detail. About the islands of Orkney Collins says “I have given you an Account of the best Harbours in these Islands; only there are several others, which are made use of but by small Vessels, which I have no occasion to mention, my only design being to harbour Ships in the best Harbours”, which might be thought to contradict the claims to comprehensiveness made by the atlas's title, and also to run against the utility and value placed on a chart of foreign parts by a sailor seeking shelter from a storm in the waters north of Scotland. The Captain's observation about having to quit the Shetlands to cover Orkney, Cromarty and Inverness before the weather turned in October 1685 suggests a more pressing reason for the omission of such harbours as he “has no occasion to mention.”

Other considerations with which Collins had to contend were war –

...between which Cliff and *Hartley-Pool* lyeth the River *Tease*, which River is not yet survey'd by me, but as soon as the Wars shall be over, I intend to survey it

Wells, Burnham, Lyn and *Boston* I have not survey'd, being hindred (*sic.*) by this present War; but as soon as the War shall be over, I intend to survey it all

– or lack of certainty: “some say there lieth a Shoal right off of (*sic.*) Beachy-Head, but I could not find it; however, it may be a small Spot, and hard to find, therefore the best way is not to come too near it” – or, at Barnstaple, a simple absence of divine assistance: “This Place is not yet surveyed by me, but I intend it God willing &c.” Whether or not Collins was aware of other survey activity being carried out at the same time is not recorded, but he is unlikely to have been ignorant of other practitioners in the field. Indeed, the *Wells, Burnham, Lyn* and *Boston* areas that he did not survey were included in a highly detailed chart of The Wash by C. Merit, published the same year as the *Coasting Pilot*.⁷⁵ It is apparent from stylistic similarities, even to the engraving of royal arms identical to those depicted in Collins's 4 [*The English Channel*], that Collins's work was not in isolation, at least by the engraving and publication stage.

In comparison with the level of detail and focus that small-scale operators such as Merit

⁷⁴ Collins, *Coasting Pilot*, Sailing Directions in Part Two, 8.

⁷⁵ A. H. W. Robinson, *Marine Cartography*, 70.

were able to devote to their locally-focused activity, in Collins's case a picture forms of an under-funded operation, working with minimal resources and against impossible deadlines, and this was always the principle drawback of the one-vessel running survey. In spite of these shortcomings, the workmanship remained consistent and the end result of the survey and atlas was a marked improvement on anything that had been produced before. The notable omission from the survey schedule, shown on *Map 3*, is any mention of survey in the area of the Thames Estuary. The chart thereof, at the beginning of atlas Part Two is nonetheless a magnificent double spread map (fig 14). Elaborately ornamented, and dedicated to Trinity House, Collins's ostensible over-seers and, to a lesser extent, financial backers, the chart includes an inset of the course of the river, presided over by Old Father Thames and with the metropolis boldly laid out in plan. The dedicatory cartouche brims with confidence, the text inscribed on the sails of a full-rigged ship of two gun decks, the topsail bearing the arms of the worshipful company of Trinity House, and the water and background teems with navigation aids, lighthouses, buoys and beacons. The dedication to Trinity House is a significant gesture, Collins, the official Hydrographer to Trinity House, noting of the Thames Estuary that –

upon consideration that these Places are under the Care of Pilots, and for the constant supply of them, the *Trinity-house of Deptford-Strond*, have taken care that there be a sufficient number of them, both for great and small ships, &c. I laid the Sands down in the Sand-Chart, from the *Thames* into the *Downs*, and from the *Thames* to the *Buoy of the Gunfleet*, as they were most carefully survey'd by *Trinity-house*; but all the rest of the Charts or Mapps were actually survey'd by myself.

In essence, art trumps science in this splendid map, which is no more cartographically advanced than the surveys carried out before Collins began, but it is one of few instances where Collins has allowed the work of other hands to sit alongside his own.⁷⁶ The final line of his text above has some feel of self-justification, but there is also an undeniable pride in the work of Trinity House, held up as an exemplar of survey standards and quality. This sits at some remove from Collins's own reluctance to allow his fellow brethren of the House to scrutinise his charts prior to publication, which was part of the stipulation for Collins to use the style and title “Hydrographer to Trinity House.”⁷⁷ Pepys in particular complains of Collins's making use of the reputation and backing of Trinity House, without submitting his work to their scrutiny.⁷⁸ On the other hand, as well as chart [A] Collins dedicated the whole atlas to the Brethren of Trinity House, in addition to the dedication to

76 The other named example is P [*River Tay*] in which “The Sea Coast from Fiffness to Montros was Surveyd by Mr Mar, an Injenious Marriner of Dundee”.

77 In fact, Collins never uses the title in the *Coasting Pilot*.

78 J R Tanner (Ed.), *Samuel Pepys's Naval Minutes* (London: Navy Records Society, 1926), 188.

William III. Possibly this was a way of circumventing criticism, possibly it was a sign of commercial acumen. Equally possibly it was a simple gesture of respect for the work of that body, reinforced in the additional dedications of two further charts to the other “branches” of Trinity House, those in Hull and Newcastle, on H, *The River Humber* and L [*Northumberland Coast and Newcastle*].

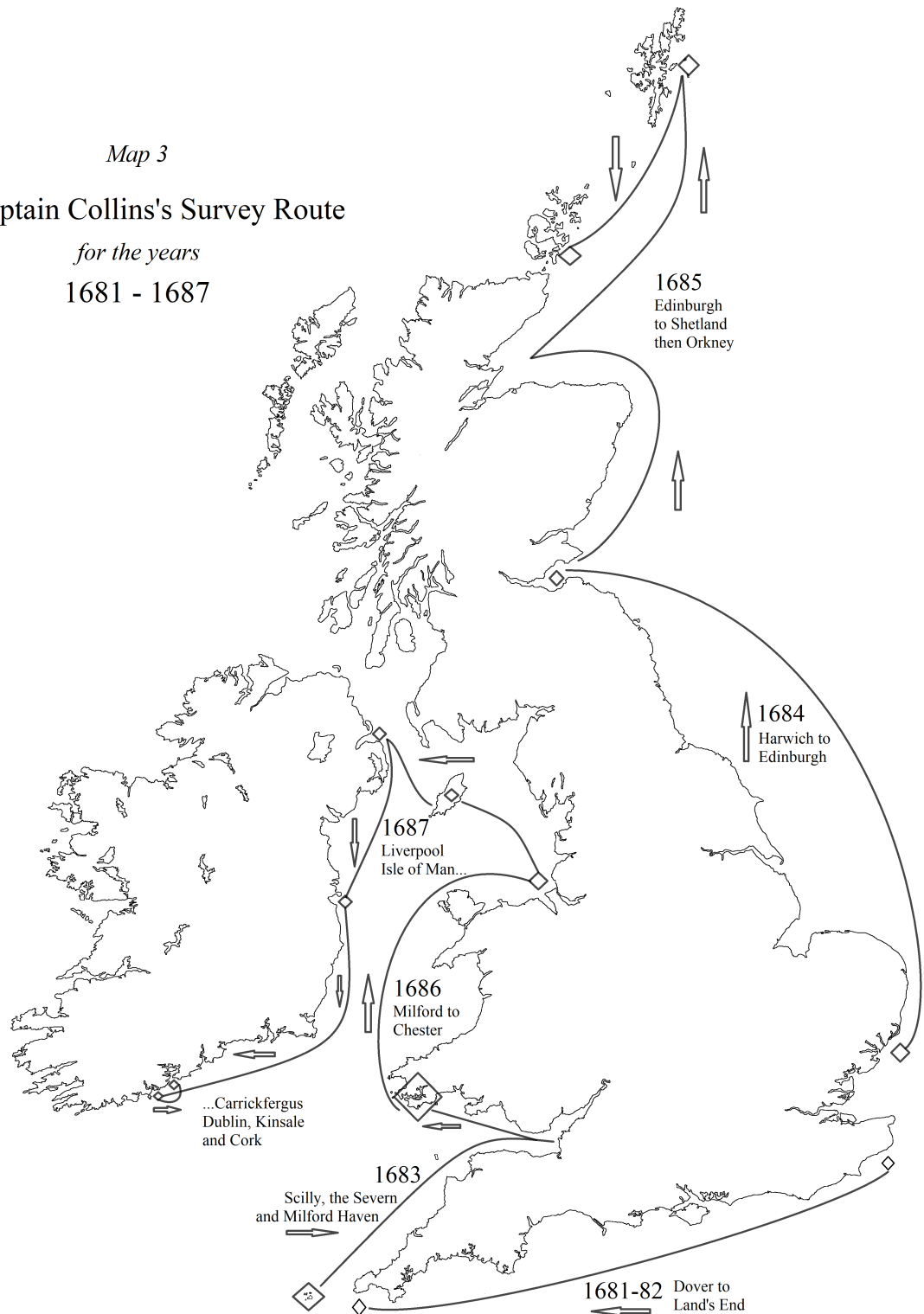
In the text Collins reveals more of his aspirations for navigation in urging Trinity House to encourage all returning sailors –

to bring you in their Journals, and a person appointed to inspect them ... by imparting their Observations and Discoveries of the true Form and Prospect of the Sea-Coast ... by which means, in a few years, we might have much more exact Sea-Charts and Maps.⁷⁹

Not only did he have regard for the House, but Collins would not have approved of the hundred-year longevity of his own 'Book of Sea-plats', even knowing of the glacial pace of development in cartographic survey up to his time. Had he known the leaps that hydrography would make in the coming century, shedding its last vestiges of the mariner's art to become a fully fledged scientific undertaking, he would, in all likelihood, have been keen to be at the forefront of the advances to come.

⁷⁹ Collins, *Coasting Pilot*, Epistle Dedicatory, [1].

Map 3
 Captain Collins's Survey Route
 for the years
 1681 - 1687



Map 3. Collins's survey activity from 1681 to 1687.⁸⁰

⁸⁰ "1681 [and] 1682. I surveyed the Channel from *Dover* to the *Lands end* (*sic.*) in *Cornwall*. / 1683. Surveyed the *Islands of Scilly* and the *Severn*, with *Milford Haven*. / 1684. Surveyed the Coast from *Harwich* to *Edinburgh*. / 1685. Surveyed the Coast from *Edinburgh* to *Orkney* and *Shetland*. / 1686. Surveyed the Coast from *Milford* to *Chester*. / 1687. Surveyed *Liverpool*, the *Isle of Man*, *Carrackfergus*, *Dublin*, *Kinsale* and *Cork*, which is all that is surveyed" Collins, *Coasting Pilot*, *Sailing Directions*, 24.

3. The King, the Courtier and the Captain

Visual Patronage in post-1688 Cartography

Sir Robert Southwell (1635-1702) is one of only three dedicatees to appear in *Great Britain's Coasting Pilot* more than once, the other two being William III and Admiral Sir Cloudesley Shovell. Along with those two famous figures, he was also a subscriber to the publication. From a strongly royalist background, yet closely allied to the Protestant reign established after 1688, Sir Robert is an enlightening example of the way in which the atlas was used to sustain political and commercial agendas alongside a more purely cartographical purpose, and the iconography of the maps dedicated to Southwell demonstrates the multi-layered levels of meaning that these parallel agendas support.

Southwell's background was not untypical, but his intellectual accomplishments marked him out early as a target of royal favour in government service. By the 1670s, Southwell was in the market for a substantial property in England and purchased an estate at King's Weston, just outside Bristol. Even having permanently absented himself from his origins in Munster, Southwell kept a close watch on his Irish properties, regularly encouraging the development of his birthplace Kinsale as a naval provisioning centre and patronising the sons of tenants for naval or government preferment, but it is his English estate which proved the central link to his inclusions in *Great Britain's Coasting Pilot*.⁸¹

81 Toby Barnard, "Sir Robert Southwell," ODNB, 2004, accessed July 5, 2018, <https://doi.org/10.1093/ref:odnb/26066>.

There are three principal strands to Southwell's prominence: a close association with naval affairs, through ownership of Kinsale, political representation of Penryn and possession of Naval sinecures; a professional career intimately connected to royal government; and geographical fortune in acquiring a West Country property well-positioned as a staging post for travel to both London and southern Ireland. This last point is especially significant in view of the events of William III's Irish campaign of 1690-91, just before the *Coasting Pilot* was published, and which brought Southwell and Collins into close and presumably prolonged proximity, Southwell as Secretary and host to the King, Collins as Commanding Officer of the king's own yacht on which they travelled. In the *Coasting Pilot* Collins seizes the opportunity to weave the personal narratives of the King, the Patron and the Navigator together using the illustrative power and immediacy of decorated cartography to give meaning to place and events in a combined geographical and historical setting.

Sir Robert is the dedicatee of [22, *The Bristol Channel*] (fig. 15), and [36] *Kingsale* (sic.) *Harbour* (fig. 17) and is prominently featured in the iconography of [23] *The River Avon* (fig. 16), itself one of the most elaborate and multi-layered maps in the atlas. The three charts are intimately linked in politics, narrative and decoration, providing some of the most resonant illustrations of the atlas as an historical, commercial and political text, far beyond its more superficial use as a geographical delineation of coastlines, but each of the three also has a singular emphasis and focus towards one of the three “protagonists”: King, Knight and Captain.

Chart [22, *The Bristol Channel*] is untitled and the design is unusual in lacking a cartouche. In its place, the dedication to Sir Robert is surmounted by a finely wrought engraving of the Southwell achievement of arms, helmed, crested, and spectacularly mantled (fig. 18).⁸² The engraving exploits richness of line and wide gradations of tone to produce deep shadowing in the mantle and detailed three-dimensionality in the crest and helm. The style is akin to the engraving of the fine royal arms seen in 4, [*The Channel*], where the arms also surmount a scene of Protestant naval triumph. The elaborate engraving emphasises the significance of the dedicatee as an armigerous personage in a manner comparable to references to the King, to whom the depiction of arms in this way immediately draws a connection. In fact, this chart is essentially about the King, but Sir Robert's significance at the King's side is manifest.

⁸² The Southwell arms (argent, three cinquefoils gules) are in the dexter chief position (upper left of the shield), quartered with five other arms, all beneath the Southwell crest of a crown-collared goat.

Sir Robert was an important servant of the King's cause, especially in relation to the Irish campaign, and the dedication underscores the narrative of William III's triumphant progress, and Sir Robert's association with it:

To the / Right Honourable / S.^R ROB.^T SOUTHWELL K^T / Who attended his
Maj.^{TY} K WILLIAM / the 3rd; in his Expedition for Ireland in / Quality of
Principall Secretary of State for / that Kingdom.

The significant hydrographic detail occurs some way up the Bristol Channel, where soundings are concentrated, various sands are indicated and eight, lettered features are named. These include the entrance to the Avon River (marked C) and the anchorage at “King Roade”, immediately south-west of the river mouth, (marked D), providing setting and context to the illustrative scene below the charted area. Bristol is shown in plan, and between it and the coast, Kings Weston House is named. Although small, the depiction is significant, anchoring the scene below to a cartographical setting and also drawing a tangible connection with the large-scale chart, [23] *The River Avon*, which follows, and in which the carto-iconography of Sir Robert and the King is developed further.

Although [22, *The Bristol Channel*] is cartographically conventional, the iconography is significant. Apart from the exquisite heraldry, the most prominent feature is the scene in the bottom right corner, in the same mould as Collins's depiction of the King's landing at Carrickfergus, in 32 [*Carreckfergus Lough*] (fig. 19). Where that scene depicts the landing of the King in Ireland to take personal control of the military campaign, here we have a corresponding scene of the King's return, defining a longer narrative of Williamite military action across the spread of charts in the atlas. The Carrickfergus scene gives a *dramatis personae* of ships, captains and royals, and the River Avon version fleshes out the story with additional text above:

At Sherehampton near King Road, landed his Maj.^{tie.} on the 6.^t of Sept.^r 1690 he sailed in 27 hours from Duncannon Fort to King Road and lay that night at Kings Weston at the house of S.^r Robert Southwell.

This was William's “glorious return” after the Battle of the Boyne, which had been fought on 1 July 1690.⁸³ Once again the detail places Southwell centrally in the story of the King's military and political successes, drawing attention to the personal favour bestowed upon

83 Old Style; the New Style moves the date forward to the familiar “Glorious 12th”, beloved of Northern Ireland's Orange Order.

him by the King's presence as his domestic guest.

While the twenty-seven hour crossing is a brief nod to Captain Collins's sailing prowess, the reference to William's departure from Duncannon Fort is telling, this being also the location from which James II had fled to France after the Boyne (coincidentally going by way of Kinsale). Equally telling, if by omission, is any reference to the disastrous Battle of Beachy Head, in which the combined Dutch and English fleets, under the command of the Earl of Torrington (q.v. 16, *Plymouth*) were heavily defeated by a French force two days before the Battle of the Boyne, allowing the French, at least temporarily, to control the English Channel.⁸⁴ Had the French followed up the victory and taken the Irish Sea the King's return to King's Weston may well have been less glorious, or not occurred at all. The omission is hardly surprising given the Protestant leanings in the politics of the *Coasting Pilot*, but does underscore the ambiguity of choices made in creating a “version” of the historical record.

The cartography is elaborated in the scenic depiction of the King going ashore to King's Weston. William's military triumph sits at the forefront of the illustrative purpose, but the layered meanings also emphasise the stature of the patron, Sir Robert, and further show a more subtle personal aggrandisement on the part of Captain Collins. The squadron is shown at anchor in the roadstead, with a number of vessels in the River Avon behind. In the centre of the scene is the royal barge rowing the King ashore, a substantial standard flying from the prow. Here as elsewhere the Royal Standard has a visual currency that implies the presence of the royal person at scales where the depiction of individuals is not possible. The King's destination is shown slightly inland, Sir Robert's house at King's Weston, raised up on a knoll, and the considerable extent of his park taking up much of the land area to the left of the Avon. The version shown in fig. 19 is actually a second state of this engraving, developing the Southwell connection further by including the label of Kings Weston house, visible by the mainmast pennant of the large ship centre-left.⁸⁵ These various states provide minor but telling clues as to the incremental development of the charts once engraved, and underline a continuing attention to political, as well as navigational, currency. To the right of the scene a single masted yacht is prominent, a long pennant flying from its masthead. Although in this scene Collins does not, (as in 32, [*Carreckfergus*]) name any of the vessels shown, the depiction of the yacht is identical to that in [32] and it is clear that this is the *Mary Yacht*, in which Collins, as Commanding

84 Commanded by Vice-Admiral Anne-Hilarion de Costentin, Comte de Tourville (1642-1701).

85 The label does not appear in the first state charts in CUL, BL, MCC or BOD.

Officer, transported the King to Ireland. Collins commanded the *Mary Yacht* from March 1689 until November 1693, and it is reasonable to assume that the King was carried back from Ireland in the same yacht as he used to get there, attached as it was to Admiral Shovell's squadron.⁸⁶ Even if this were not the case, it is plausible that Collins was willing to allow the viewer to assume, by his prominent depiction of the yacht foreground, and immediately astern of the King's barge, that the yacht is Collins's *Mary*. This, then, is the ship of the twenty-seven hour crossing from Duncannon. Other, larger, ships are pushed to the background or the edges in this scene. Thus the scene brings together the King, Sir Robert and Captain Collins, represented pictorially by the standard, the house and the yacht respectively. The intertwining of the personal narratives of the three was of inestimable benefit to the Captain particularly, as the atlas was his own commercial undertaking, enhanced by association with the influence of Sir Robert, and the increasing stability of the King. That Collins's nautical ability played a part in the emphatic military and navigational triumph that the chart serves to both facilitate and glorify is clearly emphasised.

The chart immediately following is one of the artistic high-points of the *Coasting Pilot* (fig. 16). Chart [23] *The River Avon From the Severn to the City of Bristoll* is mapped at large scale, and yet is of only light navigational detail; the River Avon is un-sounded from the sea to Bristol; King Road shows only sixteen individual soundings; there are no navigational instructions for entering the river, nor for traversing the Avon Gorge. Admittedly the sailing directions at the start of the Atlas do give brief details including an exhortation to “be sure when you anchor at High-water, that you consider how much the Tides fall. Here you take a Pilot to carry you into Hung Road ... Lesser Ships go up to the City of *Bristol*.”⁸⁷

The chart is a double-plate spread, spaciously laid out and elaborate, immediately suggesting a change in the balance of hydrographical and illustrative purposes. Throughout the *Coasting Pilot* there are different interests at play; commercial, hagiographic, navigational or political, and the emphasis changes from chart to chart, producing differing nuances of pictorial or cartographical emphasis. This map, one of only three larger than a single plate, places its emphasis not only on the hagiography of the King, but weaves into this sub-texts of patronly praise and the commercial significance of the city of Bristol. As

⁸⁶ Dates of command for the *Mary Yacht* taken from Admiralty records are available at https://threedecks.org/index.php?display_type=show_ship&id=5297.

⁸⁷ Collins, *Coasting Pilot*, 6.

ever, Collins has his eye on more than just the hydrography and the decoration is so elaborate that the chart immediately sets itself apart from most others. Indeed, the earliest versions of the 1693 issue of the *Coasting Pilot* do not include this chart, it being missing from CUL, BL1, BL2 (King's) and MCC - Samuel Pepys's copy. As CUL and BL1, the earliest extant copies of the atlas, are both complete and CUL is in contemporary bindings it must be assumed that the Avon chart was not yet finished when the first copies were produced.⁸⁸

The dedication is to “Robert Yate esq, Mayor of Bristoll and Master of the Merchants Hall in that City.” Robert Yate (1643-1737) was a long-standing political and commercial figure in Bristol, but served only one term as mayor of the city, from 1693-94, providing definitive dating of this chart to the exact period of the atlas's publication, either 1693 itself, or, as mentioned above, potentially added the year following. That there is a known copy of the chart without the dedication suggests that Collins was willing to wait until he had secured the agreement of his chosen dedicatee. Yate was elected MP for Bristol in 1695, and he held the seat until 1710.⁸⁹ He was thus of a younger “generation” of parliamentarians than Southwell, who did not seek re-election after the events of 1688. Like Southwell, “Sir Robert Yates (*sic.*), Bristol”, was a subscriber to the *Coasting Pilot* and forms thus another thread in the web of Captain Collins's cultivation of patronage.

On this large scale, the chart marks a place on the banks of Hung Road “Here King William Landed Septemb.^r 6:th 1690,” indicates Sherehampton village and church, surrounded by trees, and shows the park and house of Kings Weston in some detail. Although the navigational details are few, this is the only chart in the *Coasting Pilot* to show the additional signature “Surveyed by G. Collins” as well as the usual dedicatory presentation, and must therefore have been a work of which the Captain was especially proud, or with which he wanted to be directly and tangibly associated, to a greater extent even than in the rest of the maps, all of which bear his name, but none other twice (fig. 20).

The two significant iconographic features of this chart are the flotilla of saluting ships off King Road, and the title cartouche, an elaborate engraving with geographical and nautical

88 Verner, *Captain Collins Coasting Pilot*: 13 says that the King's copy does include this chart, albeit not in the earliest state. In fact of the three 1693 BL copies only BL3 includes this chart, but this is not the King's copy, which is BL2 (shelf-mark C.8.d.7). The first state of [23] exists in a single copy, in the University of Edinburgh Library, with the dedication lacking.

89 Andrew Hanham, “Yate, Robert (1643-1737), of Wine Street and the Red Lodge, Bristol.” History of Parliament Online, 2002, accessed Jan 31, 2018, <http://www.historyofparliamentonline.org/volume/1690-1715/member/yate-robert-1643-1737>.

significance, and both tie the chart intrinsically to Sir Robert Southwell, more than to the dedicatee, Robert Yate. The layout essentially divides the map in three: on the right, Sea – principally focussed on the King, in the centre, Land – centred on Southwell's estate and, on the left, City – the commercial centre and atlas-buying populace of Mr Yate's Bristol. The multi-layered purposes that the map serves add to the richness of interpretation and interplay between the political, commercial and carto-iconographic aspects.

The ships in King Road are amongst the best engraved in the *Coasting Pilot* (fig. 21). A substantial squadron is depicted: four two-deck ships of the line, three yachts, one galiot and four smaller vessels. The large ships are shown in a variety of attitudes, with a tangible sense of movement in the different view angles, a feel of the ships jostling for position as the squadron comes to anchor. We see the same delight in the depiction of ships from various angles, of the movement of hulls through water and the twisting and turning of sails and rigging in Collins's own manuscript drawings, recorded in the journals of his Mediterranean cruises of the 1670s, and it is at least plausible that Collins provided the ship sketches from which the engravers worked (fig. 22).

All the major ships have clouds of gun-smoke billowing in a panoply of salutes. To the top left of the scene, three royal yachts are depicted, once again implying the presence of Captain Collins in the scene, and these return the salutes of the men-of-war. This pictorial representation of the drama of the King's arrival is a further visual context familiar from the depictions of royal progress in contemporary painted scenes. The clouds of smoke that accompanied the arrival or departure of royal persons has a visual currency across media, as seen in Van de Velde the younger's *The departure of William of Orange and Princess Mary for Holland, November 1677*,⁹⁰ or even more dramatically in Van de Velde's depiction of the *Mary Yacht* only the month before Collins took command of her in *'The Mary' Yacht, Arriving with Princess Mary at Gravesend in a Fresh Breeze, 12 February 1689* (fig. 23).⁹¹

All the saluting on the map is in honour of the royal barge, carrying the King into the river, on his way to Sir Robert's house at King's Weston. In the midst of the squadron a finely-wrought wind-rose forms a central focus to the composition, the shortest bearing lines encompassing the mouth of the River Avon. The royal barge is seen entering the river

90 Greenwich: National Maritime Museum, BHC0322.

91 Greenwich: National Maritime Museum, BHC0328.

mouth, the large Royal Standard flying from the prow. So, as in the scenic depiction in chart [22], we see once again a re-enactment of the King's landing on the return from the Boyne, a moment of royal glory and martial grandeur captured in time on the map; geography is no boundary to the movement of the military King, and Sir Robert Southwell was that King's host.

The tripartite delineation of the map is a visual reflection of the triumvirate of personages around whom the iconography revolves. The dedication panel is placed in the bottom left corner, directly below the map of Bristol. A simple stone tablet, buttressed with a fruit and verdure swag, it is adorned with an oval cameo of the arms of the City of Bristol.⁹² Moreover, the city plan gives an indication of the size, and by extension, the importance of Bristol, and thus the significance of its Mayor and Master of the Merchants Hall, Mr Yate. The Mayor, on the landward side, serves as a counterpoint to the King on the seaward side with Sir Robert Southwell's park on the expanse of countryside in-between, combining commercial context, with political subtext and breadth of dedicatory tribute that can have done Collins's commercial imperative no harm at all.

Three quarters of the chart is land-based cartography, horizontally bifurcated by the sinuous River Avon. Inevitably, this geography must result in a large blank area; the land below the river, between Bristol and the coast, and here the decorative elements come into their own. A broad landscape engraving surrounds the title of the chart – too substantial and free-formed to be a “mere” cartouche – and the space afforded by both the distinctive topographic layout and the double page spread of this particular map has given the engraver a rare chance to explore landscape in a more expansive format (fig. 24). The scene is a combination of classical and proto-romantic illustrations – a classical symmetry of structure being paired with a baroque freedom in the depiction of the natural landscape. To either side of the title pastoral deities recline in mirrored poses wearing nought but loose drapery across their laps. Both are depicted as traditionally robust physical specimens, well-fed and full-of-figure, an anatomical parallel to the fecundity of the land. Each deity reclines on one elbow, an arm resting on a spring outlet, gushing with the

92 The complex blazon of the arms of the City of Bristol is poetic in itself: “Gules on the sinister side a Castle with two towers domed all argent on each dome a Banner charged with the Cross of St George the Castle on a Mount Vert the dexter base Water proper thereon a Ship of three masts Or the rigging Sable sailing from a port in the dexter tower her fore and main masts being visible and on each a round top of the fifth on the foremast a sail set and on the mainmast a sail furled of the second.” The arms depicted on the chart are, thus, slightly incorrect as the ship is shown with a sail furled on the foremast, below a sail set, and the mainmast is shown with a sail set, not furled. The ship itself is rather “modern” i.e. a 17th century style ship, rather than the 15th century “cog” style used as the standard heraldic charge for a ship.

watery bounty that sustains the land and feeds the river. In their other hand they hold further signs of bounty, the male a spade for the digging of the earth, and the female a cornucopia of its plenteous produce. Their gaze is directed approvingly towards the map title, A V O N written in broadly spaced capitals, the whole title being surrounded by rocky features, as if emerging from an Arcadian grotto. The essence of baroque art is the multi-faceted interpretations that pictorial images can carry and the various layers of commercial and political interest at play in the *Coasting Pilot* are neatly encapsulated by the illustrative title of chart [23]. Beneath the obvious pictorial richness is a message that says “this land is wealthy and well-run.” The Merchants Hall of Bristol is the conduit of this bounty, the munificence of the land-owner the means by which abundance is maintained and the stability brought by the new monarch, with a Protestant sobriety and work effort, will make the land forever prosperous.

This magnificent illustration moves on to a free interpretation of the local landscape, the rocky outcrops and steep sides of the Avon Gorge rising loftily above the deities, the title and the river. Although wild goats are natural inhabitants of such landscapes it is surely no coincidence, the crest of the Southwell arms being a goat, that here, with King's Weston neatly tucked in just to the right of the illustration, six splendidly horned goats adorn the rocky landscape (fig. 25). Sir Robert Southwell is thus shown to be not only the political confidant of the victorious King, but an invariable presence in the Bristol area. There is a more romantic treatment of the landscape, not shown as the tamed Arcadia of the mythical deities, but suggestive of a rugged independence and self-sufficiency only enhanced by the bearing and habitual ease of the gorge's caprine denizens.

Notwithstanding Captain Collins's statement that “lesser ships go up to the City of Bristol” the illustrative scheme of [23] *The River Avon...* culminates in the view of a fine full-rigged ship between the rocky outcrops of the Avon Gorge. The implication is again one of prosperity, supremacy over the waters and the unconquerable strength of the English, Williamite, navy. The stern view is unusual and draws immediate comparison with the famous portrait by Peter Lely of Peter Pett, depicted with the stern of the *Sovereign of the Seas* filling the left half of the canvas.⁹³ The expansive and detailed possibilities of a one-and-a-half metre painting are greater than those of a twelve centimetre engraving, but technicalities aside, the composition and implications of the two works are comparable

93 Circa 1645-50. The painting of the ship is now generally attributed to Isaac Sailmaker, the portrait to Lely. “Peter Pett and the 'Sovereign of the Seas' (BHC2949)”, National Maritime Museum, accessed Feb 24, 2018, <http://www.collections.rmg.co.uk/collections/objects/14422.html>.

(fig. 26). The ship is seen juxtaposed against a dark and lofty cliff-scape; the strength and detail of the stern structure forms the central focus of the ship's depiction, and the significantly sized stern gun-ports and lanterns are prominent in both images. The ensign in both is large, and drapes over the starboard quarter, while each flies at the main masthead the cross of St George. In the Collins engraving, this is in the form of a long swallow-tailed pennon. The painting of the *Sovereign of the Seas* is famous as a detailed account of the iconographic scheme of the stern decoration, abounding in metaphor and allusions to mythology, all supporting the notion of the divine right of English warships to dominate the seas. The engraving on chart [23] is less able to render such detail, but the implications are clear – in the size of the ship, dominating the gorge as it does, in the multiple tiers of stern galleries, in the well-filled sails, and substantial, billowing flags, in the grandeur of the ship's stately progress through the natural wonder of the Avon Gorge – here we see the essence of maritime power, projected both at home (if we see the ship as heading up the gorge) or throughout the wider waters (if we see the ship as heading down the gorge); an unassailable English, Protestant naval presence, supporting a victorious King, underscoring a legitimacy to rule, for both the navy over the seas and the King over the realm, such legitimacy enforced under the banner of St George. In this political context it is not inappropriate to paraphrase the motto from the cannon on the *Sovereign of the Seas*: *Wilhelmus Edgari sceptum stabilivit aquarum* – William has firmly grasped Edgar's sceptre of the waters.⁹⁴

The third map dedicated to Sir Robert Southwell shifts the focus again. Kingsale (now Kinsale) on the southern shore of County Cork, provided Sir Robert with much of his income and having possession of a fine natural harbour in his Irish lands, it is not surprising that Southwell expended much energy in promoting the use of Kingsale as a victualling base for naval ships; indeed his position as the (hereditary) Vice Admiral of Munster gave him the connections and naval interest to make such a move likely.

The chart of Kingsale that Collins included in the atlas was, however, a later addition (fig. 17). Reflecting the absence of chart [23] *The River Avon* from early versions of the atlas, [36] *Kingsale Harbour* makes no appearance until the later 1693 issues.⁹⁵ A surprising aspect from the point of view of atlas compilation, is that the significantly bigger, more established and better located harbour of Cork is not included at all. And yet, in the sailing

94 The original reads “Carolus Edgari sceptum...”.

95 It is absent from CUL, BL1 and BL2, and is first found in EUL, BOD, and MCC and therefore does date from earlier than chart [23], which is wanting in MCC.

directions of Part Two Collins says that in 1687 he “surveyed Liverpool, the Isle of Man, Carrackfergus (*sic.*) Dublin, Kinsale *and* Cork, [my italics] which is all that is surveyed, and is the most usefulest and necessary part to Navigation.”⁹⁶ In the directions in Part One he was somewhat more optimistic about possibilities, assuring readers that “this is all that is surveyed of the coasts of England as yet. I have added some harbours that are most useful in Ireland, being a Third Part of *Great Britain's Coasting Pilot*.”⁹⁷ That “third part” only consisted of Carrickfergus Lough, Carlingford Lough and Dublin Bay appended to the end of Part One in the early editions, and was extended by only the appearance of [36] *Kingsale Harbour* before Collins's death.

So why did Collins, on extending the Irish component of the Pilot, choose Kingsale over Cork? The map itself shows that the same care and attention to design was employed; this was no last minute addition, and the dedication to Sir Robert provides the telling clue. The charting of the harbour of Kinsale itself is extremely detailed, and, although there is a bar, broadly stretched across the map of the harbour mouth, it has not less than 1½ fathoms of water on it, surrounded by detailed soundings from well out between the heads, right up to the town itself (fig. 27). This wealth of soundings is indicative of a professional level of survey such as would be most useful for larger, potentially naval, vessels. The orientation of the chart is also unusual, but curiously specific; North, customarily to the right in most of Collins's charts, but occasionally orientated to other cardinal points, is here shown to the bottom right. The orientation allows the alignment of the Old Head of Kinsale (prominent on this coast, and defining the outer limits of Kinsale Harbour) on a North-South axis, through the sole compass rose in the middle of Old Head Bay, and straight into the harbour mouth of Kinsale, the great New Fort on the southern shore serving as a leading mark, due north ahead. It is a visual command that says this harbour is important; the entrance is of noble ease and the waters capacious and deep; it is an advertisement for shipping to enter.

Collins was certainly not retiring when it came to putting forward his opinions and the cultivation of patronage was a significant part of getting the survey completed and paid for. Southwell's known enthusiasm to encourage the navy to use (and pay for) the facilities of Kinsale Harbour was handily advanced by the inclusion of that harbour in a brand-new and news-worthy publication of sea-charts. The very detailed town view that Collins includes on the map, as well as the significant size of the forts depicted on both sides of the harbour

⁹⁶ Collins. *Coasting Pilot*, Part One, 24.

⁹⁷ *Ibid.*, Part Two, 22.

seems designed to impress upon Collins's superiors at the Admiralty the myriad benefits and safe harbouring that Kinsale could offer. In this chart we see the hydrographer and patron step back somewhat, to be replaced at the forefront by two men of commercial acumen, each bringing their own attributes (skill on the one hand, money on the other) to a likely business deal that served both the interests of cartography, the development of the port, and the furtherance of sales of the atlas – the more ships that used Kinsale, the more would need a good modern atlas aboard.

Over the three maps with which Sir Robert is associated, there is then a subtle shifting of purpose from the primarily political meaning of [22, *The Bristol Channel*], to a broader amalgamation of interests in [23] *The River Avon*, satisfying multiple sources of patronage across a single chart, to a more overt sense of what we would now call “marketing” in the inclusion of Kinsale as chart [36]. It is only in the eighteenth-century reprints that Collins's assertion of having surveyed Cork was made good in the atlas, but on that chart Collins's name does not appear.

4. Prosperous, Peaceful and Protestant

A Williamite Hagiography

We have no overt statements of Captain Greenville Collins's political views, but that he was favoured in court circles is well established. He had come to the attention of Charles II, and the Duke of York, in 1676, when his journal was the principal surviving record of the wreck of the *Speedwell*, and was relied upon in the inquiry that exonerated the expedition leader. As a result Collins was given the signal honour of the position as Master of two new ships consecutively, the *Charles Galley* and the *James Galley*, operating out of the English base at Tangier.⁹⁸ The King had taken a keen interest in the design and construction of these ships, a cross between a Mediterranean oared galley and a ship-rigged sailing frigate, and his personal selection of officers to man them was a clear sign of favour. This royal patronage is more than hinted at in Collins's preface to the *Coasting Pilot*, in which he addresses the Master, Wardens and Assistants of Trinity House –

When first His Majesty King CHARLES the Second, was pleased to make Choice of me for Surveying the Sea-Coast, I then, as Duty-bound (being a younger Brother) did acquaint you with it, and most humbly laid the Proposals before you.⁹⁹

The significance for the visual development of the maps is that by the time the atlas was published as a complete volume, the invasion of 1688 had established a new political order, headed by the leader of the producers of those competing charts that Collins airily dismisses, quoting Charles II in “finding that there were no Sea-Charts or Maps of these Kingdoms but what were *Dutch*, ... and those very erroneous.”

⁹⁸ Collins's journal for this period is preserved in The National Archives - ADM 7/688.

⁹⁹ Greenville Collins, *Great Britain's Coasting Pilot* (London: Richard Mount, Bookseller, 1693), Preface.

Although he served as Master of the flagship charged with preventing the Dutch invasion, without apparently skipping a beat Collins then changed tack, along with much of the officer corps of the Stuart navy, and when the *Coasting Pilot* was published five years later he was able to dedicate the whole work to “His Most Sacred Majesty William III of Great Britain, France and Ireland King.” The King, or those acting on his behalf, appeared happy to indulge the conceit of his “most faithful subject and servant,” for the warrant to publish bears without irony the conventional injunction that “being about to publish ... our Trusty and Welbeloved (*sic.*) Servant, Captain Greenville Collins, Our Hydrographer ... hath humbly besought Us to grant him Our Royal Licence ... We have thought fit to condescend to that his Request.”¹⁰⁰ Collins managed to gibe easily enough when he saw which way the wind was blowing, retaining his title of Hydrographer to the King, merely updating it to “Hydrographer to Their Majesties” in the dedication of 25, *Milford Haven*, and the more elaborate “Hydrographer in Ordinary to the King and Queens (*sic.*) Most Excellent Majesties” on the title page of the atlas. This small transaction in the licence to publish encapsulates the successful transition from Stuart to Orange monarchy which underscored the whole of the establishment of a new political order, without visible upheaval. In this seamless shift of allegiance Collins was no different from many of the nobility, or those in positions of authority in naval affairs, for whom loyalty to an idea of the state over-rode loyalty to the individual, even where that individual represented the state. Continuity of heading, as it were, being the new sailing orders, the atlas was published with all references to the preceding Stuart monarchs retained, and those maps which were completed prior to the revolution of 1688 are included without change or comment.¹⁰¹ The visual feel and detail of many of the post-revolution charts is, however, quite different from the earlier charts and the most significant iconographical shifts are seen in the maps centred on, or dedicated to, the King himself.

The new King, crowned together with his wife Queen Mary II on 11 April 1689, was recognised as a *fait accompli* by most of the population. He makes his first appearance in the *Coasting Pilot* on the spectacular chart of Torbay (fig. 28). Although the King's image does not appear, this is cartography as portraiture without a doubt. In the centre is Torbay, with “King William Landed Here” clearly inscribed on the southern shore, an inscription which also features on Collins's manuscript draft of this map.¹⁰² The inclusion of text to reflect events moves the map away from straightforward cartography into an intersection

100 *Ibid.*, Licence.

101 An analysis of the chart datings follows in Chapter 5.

102 Taunton: UK Hydrographic Office Archives, Ms B884.

of mapping, reportage and politics. The words of the King's landing are journalistic, and unrelated to the cartographical purpose of the map, but have a strong resonance in the carto-iconography and political alignment of the atlas with the new regime.

While we might expect such a hagiographic work to be dedicated to the new King, the actuality is more subtle. The chart is dedicated to Thomas, eighth Earl of Pembroke and fifth Earl of Montgomery. Pembroke had been made First Lord of the Admiralty in January 1690, and is so named in the dedication “Primier Commisi.^r for Executing the Office of Lord High Admirall of England” so the printing of the chart must post date the beginning of 1690. The choice of dedicatee establishes a pattern in the later dedications in the *Coasting Pilot*, with an emphasis on senior naval figures that was less conspicuous in earlier charts.¹⁰³ While Pembroke was a supporter of James II, and bore the third sword at his coronation, he was a “moderate Tory” - a rare thing of the times. Although in some later conflict with James II he nonetheless voted against declaring William and Mary monarchs and pressed for a Regency instead. However, when this position was defeated, Pembroke readily accepted the changed circumstances and served not only as a Privy Councillor from 1689, but between April and October of that year served the new King as Ambassador to the Dutch States General.¹⁰⁴ Thus Collins ties the landing of the Dutch Prince to one of the more realistic English nobles who, nonetheless, had a recent and close connection to the political leadership of the invader, while simultaneously maintaining the veneer of commemorating senior naval figures, and depicting the Dutch invasion as an essentially English political event. This simple dedicatory decision is a neat illustration of the careful balancing act that pervaded the political negotiations, which eventually resulted in the broader process of re-creating the 1688 invasion as a “glorious” event.

The cartouche, much the most visually commanding feature of the map, dominates the inland map area, but ties intricately to the geographical place and the significance of the events shown as happening there (fig. 29). There is a visual connection made between the bird's-eye view of Torbay and the cartographical delineation of it immediately below, serving to flesh out the events, and turning the chart into a map of time as much as of place. Being on chart 14, the sixth map of most copies, this substantial and elaborate cartouche, with multi-layered levels of meaning, much of it related to monarchy,

103 See Chapter 5 for a full consideration of this idea.

104 R. O. Bucholz “Herbert, Thomas, eighth earl of Pembroke and fifth earl of Montgomery,” *Oxford Dictionary of National Biography* (2004, updated 2009) accessed Mar 9, 2018, <https://doi.org/10.1093/ref:odnb/13050>.

government and stability, is the first visible sign in the maps of a propaganda tendency and takes up a full quarter of the map area. This is far more than most cartouches, yet the vast blank space was present in the manuscript draft of this map as well (fig. 30). The scale of the decoration clearly serves to underscore the significance of the historical events that took place within the bounds of this chart, and was part of the visual conception from the outset of drafting.¹⁰⁵

Taking the form of a massive memorial tablet, the cartouche is linked to the surrounding countryside of Devon by verdant saplings either side. Although not clearly identified they are plausibly laurel, indicative of victory, and olive, indicative of peace. The central roundel is flanked by inscribed plinths, identifying the figures as Justice and Prudence, both clad in flowing Roman attire. Justice on the left carries her scales in her right hand, and has her left hand draped around the neck of a surprisingly un-Devonian ostrich. The symbolism, however, is distinctive; the ostrich was the symbol of the Egyptian goddess Ma'at, who would weigh a dead person's heart against an ostrich "feather of truth." The allegorical figure of Justice acquired Ma'at's scales and the ostrich feather has remained a symbol of truth. Tied to the Protestant invasion from the beach at Torbay, the political sub-text is obvious. On the other plinth, Prudence is shown with her traditional attributes: the mirror of self-awareness and the snake of wisdom.¹⁰⁶ Thus we see the revolution portrayed as a righting of injustices and an act of wisdom, supported even by the verdure of the kingdom's soil. Viewed from our later historical position, this sets the atlas clearly within the larger framework involved in creating a justification for the invasion and recasting it as part of a logical linear progression towards stable Protestant government, for a prosperous Protestant realm. The same symbolism occurs in contemporary painted allegories extolling William and Mary, such as are still to be seen in Hampton Court or the Painted Hall in the Old Royal Naval College in Greenwich. Whether aristocratic Tories like the Earl of Pembroke, who agonised over the need to swear allegiance to a new monarch, fully aware of their existing oath to a still-living anointed sovereign, saw the same prudence and truth in the matter is much less easy to confirm.

At the top of the cartouche, putti hold the corners of a banner bearing the dedicatory text, and the entablature is surmounted by the Herbert arms, topped with the earl's coronet.¹⁰⁷

105 The chart is signed *I Harris sculp* and the cartouche bears no separate signature.

106 The anguine symbolism is biblical: "Behold, I send you forth as sheep in the midst of wolves: be ye therefore wise as serpents, and harmless as doves." *Matt. 10:16*. Ivor Evans (ed.), *Brewer's Dictionary of Phrase and Fable* (London, Guild Publishing, 1985), 1014.

107 *Per pale azure and gules, three lions rampant argent*. The earldom was originally a creation of King

Trumpets, lances and banners project beyond the putti; one lance holds up the end of a swag, fruit to the left and sea-shells to the right. In a charming asymmetrical touch, a basket of fruit, leaves and sheaves sits atop the entablature between the earl's arms and the putto to the right, balanced by a large flowing frond coming over the other putto's left arm. The whole surround is a paean to valour and military might, and the justice, providence and plenty that will result. Beneath the central roundel, partly in the shadow of its stony projection, two substantial cannon, more lances and the drum of war give a, perhaps somewhat more ominous, reminder of the power that sustains the realm (fig. 31). On early states of this chart, the banner above and to the right of the drum bears the interlaced W and M monograms of the new monarchs. Their martial authority is apparent, if less ostentatiously displayed than their wisdom, prudence and peaceful intentions.

In the midst of this allegorical detail is a roundel depicting the Dutch fleet at anchor in Torbay, thirty-eight ships strong and disgorging troops towards the shore in a flotilla of sixteen minutely engraved rowing boats. Even at this scale there is a sense of the extent of the Dutch fleet, filling the visible scope of the bay, which ties in with contemporary depictions of the fleet in progress through the English Channel. William specifically ordered the fleet to sail in an open, expansive formation maximising the spread of ships across the sea between Dover and Calais. The contemporary chronicler Gilbert Burnet, in “The Expedition of His Highness the Prince of Orange for England” printed in *A Collection of Papers Relating to the Present Juncture of Affairs in England* (1688) records that “our Fleet reached within a league of each place ... This sight would have ravish'd the most curious Eyes of *Europe*. When our Fleet was in its greatest splendour, the Trumpets and Drums playing various Tunes to rejoyce our hearts.” Spectators at Dover recorded that the invasion fleet was sailing past from ten in the morning until five at night.¹⁰⁸ Contemporary versions of this imagery tend therefore to emphasise, as the Collins cartouche does, the scale of the undertaking, playing to existing concepts of the Dutch *Gouden Eeuw* in which the Protestant republic saw itself as an ever expanding mercantile force, founded on stability, good government and the free exercise of trade – features readily adopted in post-invasion Britain but predicated first on the ability to control the seas, both features emphasised by the cartouche of chart 14. Romeyn de Hooghe's engraving of William's arrival at Brixham is very much in this narrative of a full-scale invasion (fig. 32), while an anonymous painting in the National Maritime Museum serves

Stephen in 1138 for the great de Clare family. By Thomas Herbert's time he was of the 10th creation of the earldom, dating from 1551.

108 Vallance, *The Glorious Revolution*, 125.

as an example of the kind of parallels noticeable in the Collins cartouche, not least in the mass of warships, sterns and flags towards the viewer, and the multitude of troops already heading for the shore (fig. 33). The record of the King's deliberately arranged display is at variance with the later narrative of “invited acquisition” of an as-good-as-abandoned throne, and most later depictions of the landing focus on the person of William, astride a horse, either black or (more latterly, and certainly in the Orangist hagiography that still plays out in Northern Ireland) white, in which the Prince appears more as a local commander rallying support to his side. Jan Wyck's iconic portrait of the Prince, from which so much of modern Protestant imagery descends, places the invasion fleet very much in the distant background (fig. 34). It is as if the Prince has invaded on his own, his direct stare out of the canvas, and up-raised marshal's baton entreat the viewer to join him, a view reinforced by subsequent folklore re-telling of stories of the Prince's interaction with, and adoption by, the local populace. The view seen in the cartouche of chart 14 pre-dates the formalisation of such propaganda and ties in more with the Dutch perspective of the grand invasion fleet. It is unlikely that this was intentional – indeed the “Dutchness” of the King was very much underplayed, even at the time of the invasion. What such a depiction does underscore is the shifting perceptions of the invasion at a time when the formalised narrative of 1688 as a British, and a “glorious” event was not yet as firmly established as it would become.

The next maps of the atlas featuring the King are the two which Collins dedicated to William himself: Charts 30, *A New and Exact Survey of the River Dee or Chester-Water*, in which William is “*his Most Sacred Maj,ⁱ WILLIAM the III KING of Great Brita,ⁱⁱ (sic.) Fran,^{ee} & Ireland*”; and 32 [*Carreckfergus Lough*], where William has become “*the most Potent and Heroik Prince WILLIAM the III of Great Britain, France and Ireland KING Defender of the Faith &c*”. These two works came later in the survey, and to examine these we must leave the peaceful unloading going on in the Brixham of 1688 and turn to the far-from-bloodless, and decidedly inglorious activities of the new King across the water, in Ireland.

In 30, *The River Dee or Chester-Water*, the King is more explicitly referred to (fig. 35). This chart also tells us more than most about the process and development of the publication and gives an insight into the development of the carto-iconography that few others do. The manuscript draft survives and shows the same levels of detail in the

mapping that the printed chart gives.¹⁰⁹ This is one of the most comprehensive maps in terms of pure geographical information, underlining the importance of the Mersey/Dee area. It is one of very few with a specifically known publication date, again tied intricately to the activities of William III. The chart was advertised for sale in the London Gazette, 8-12 August, 1689. The advertisement emphasised the military significance of the area as a point of embarkation for the campaign in Ireland, strikingly described in the present tense, this well before the outcome of events was known, but redolent of the same confidence in the cause that the illustrative aspects of the chart show.

There is now Published by Captain Collins a New and Exact Survey of Chester-Water, Liverpoole, Hylake, &c. where their Majesties Forces are Embarking for Ireland. Sold by Mr Lea in Westminster-Hall, Mr Mordant at the Atlas in Cornhill, and Mr Fisher at the Postern-Gate, Tower Hill.¹¹⁰

This chart was far from unique however, there being a number of other maps of Ireland and the seas thereabouts advertised at the same time, cartographers being as keen then as later to make the most of a military situation likely to be of interest to the general public. Just within the remainder of 1689 there was “A True Survey of the Baronie of Enishowen in Ireland” with a “true Survey of the City of Londonderry” by Captain Thomas Philips, Engineer; “*Hibernia Anglicana*, or, The History of Ireland” with “a new and exact Map of the same” by Richard Cox, Esq, Recorder of Kinsale; “A Geographical Description of the Kingdom of Ireland collected from the actual Survey made by Sir William Petty”¹¹¹ and a “General Map of Ireland” also “exactly engraved from Sir William Petty's Survey” available at the Globe at Charing-Cross and the Atlas in Cornhill.¹¹² It is clear that Collins was working in a favourable market, but nonetheless would have been under pressure to make his offering as distinctive and attractive as possible to the buying public.

From a navigational perspective chart 30 is the most detailed in the *Coasting Pilot*, with soundings showing both high and low water levels (indicated by a pair of figures above and below a horizontal line.) The coastlines are a mass of mills, steeples, prominent houses and natural features of geography, many of which are used to align no fewer than eleven leading lines to provide visual guidance over the sandbars at the entrances to both the Mersey and the Dee rivers. The use of leading lines to provide visual positioning in enclosed waters, allied to confirmation by depth sounding, lies at the very centre of

109 Taunton: UK Hydrographic Office Archives, Ms B892.

110 Sarah Tyacke, *London Map-Sellers 1660-1720*, 45.

111 Engraved and sold by Francis Lamb, who had earlier engraved the chart of Dartmouth in the *Pilot*.

112 Tyacke, *London Map-Sellers 1660-1720*, 45-6.

coasting as a navigation technique, and negates the need for reliance on compass bearings and latitude calculations. Nonetheless the right-hand margin does include latitude marks from 53°33'N at Formby Sand in the north to 53°11'N at Chester in the south, which compares with high accuracy to modern measurements. By the time of publication (1689) Collins had some idea of the royal/military uses to which the chart might be put, with he himself commanding the yacht that carried the King across the Irish Sea. Such considerations must have played a part in the creation of a chart of this detail even if the original survey pre-dates the invasion of Ireland.

While it is therefore plausible for 30, *Chester-Water* to be considered a “by-the-King's-command” production, further opportunities to reinforce the royal connection developed later. The cartouche is substantial and clearly in two discrete parts: a depiction of a pastoral scene above, and an unusual boating scene below (fig. 36). There is no apparent link between the two and, indeed, it is likely that the lower scene is a later addition.

Unfortunately no first state of the map survives to confirm this, but the design of the cartouche is less tight than most, and part of the cartography is obscured where the town of St Asaph, and its river, are subsumed beneath the waters and boat hull. This is not seen in other charts and, combined with the additional dated signature “Ja: Collins Sculpsit. 1689”, also not customarily seen, seems to suggest an expansion of the cartouche after the initial printing. From a design perspective, the royal arms balanced on the head at the top of the text border, also looks distinctly uncomfortable, and was probably added at the same time as the boating scene.

Why was the addition necessary? The chart was always going to be important, because of the geographical importance of the two rivers it shows. However, once William III was actively involved a clear opportunity for hagiographic embellishment presented itself in an appealing coincidence from the mists of British mythology. The boating scene at the bottom of the cartouche is the key. It depicts a curious scene of crowned figures rowing an elaborate barge. One larger crowned figure sits, raised up, at the stern, controlling the steering oar, and the rowers number, strangely, seven.¹¹³ The story depicted is that of King Edgar I, crowned at Bath in 973 CE after fourteen years on the throne. The coronation was considered the apogee of Edgar's reign, by which time he had united the thrones of Mercia, Northumberland and, from 959 CE, Wessex. Edgar, a great-grandson of Alfred the Great,

¹¹³ Other sources originally mentioned six kings, and by Victorian times the more obvious “rowing” number had increased to eight. The retention by J Collins of seven suggests a detailed knowledge of the story in its seventeenth-century incarnation.

was thus the first Saxon ruler to become king of all the English. After the coronation he is said to have marched his army along the Welsh border (showing his authority over the Welsh lands and peoples) and sailed a substantial fleet up the Irish Sea (demonstrating a comparable control over Irish and Norse ruled areas.) These forces met at Chester, where seven sub-kings of Wales, Scotland and Strathclyde swore fealty to Edgar, demonstrating their submission by rowing Edgar's state barge up the River Dee with the King at the helm.¹¹⁴ There are multiple versions of the story, and later re-interpretations have suggested less submission and more collegiate co-operation, but in the 1690s the imagery was not in dispute and the allegory of the over-King subjugating all rivals played neatly into the political narrative that William III was attempting to establish with the campaign in Ireland. The concatenation of fable, meaning and geographical location must have been too good to pass up, hence the embellishment of the cartouche once the King was known to be embarking for Ireland from Chester.

As in the charts discussed earlier, and those considered in Chapter 3, the atlas makes much play on cartography as an allegorical portrait of the sovereign. In 32 [*Carreckfergus Lough*] we reach a point of culmination that brings together many of the strands that have been woven through earlier maps (fig. 37). The illustrative aspects date the chart to 1690 or later, and there is a sophisticated interplay of cartography, iconography and reportage showing the map operating on multiple levels at once. Finally amongst the “portrait” maps, we have the King depicted in person, surmounting the cartouche as a bust in Roman mien, being crowned with a wreath of laurel by Britannia herself, while Plenty looks on with approbation (fig. 38). In the surrounds of the cartouche the mixture of verdure and weaponry seen elsewhere has been replaced with the full panoply of martial splendour in the grand manner: flags and banners, spears and pikes, drums and cannon surround the text, and to either side a suit of armour only awaits the king to choose one to wear.

Cartographically, the chart is more straightforward than that of *Chester-Water*, and there is only a single rose placed in the broad mouth of Carrickfergus Lough. The navigational complexity is much less and there is an even distribution of soundings up the length of the lough and into the River Lagan leading to Belfast, at that time still a less-significant settlement than Carrickfergus, where the Norman castle dominated the surrounding area.

114 This is the same King Edgar whose sea-dominating sceptre was appropriated to Charles I on the cannon of the *Sovereign of the Seas*.

The chart is, however, particularly topical and marks the locations of events covering the early stages of the Irish campaign. On the County Down shore, Bangor is indicated not as a harbour, nor indeed as the site of an ancient Abbey, but as the place where “Scomberg Landed, 1689.”¹¹⁵ Carrickfergus itself shows the plan layout of the castle's outer bailey, with the note “King Will: Landed 1690” and between there and Belfast the wind-rose line West-by-south points to “White house here K. Will. Army Landed.”¹¹⁶ All around the landward sides of the lough are pictograms of bonfires, indicated on the key in the top left corner as “Bonfiers on the Shoare” - the Protestant people welcoming their rightfully Protestant monarch, recorded for posterity from north of Whitehead, all round Belfast, to Donnaghadee near the Mourne Mountains.

This depiction of events as well as geography has already been seen in chart 22, showing the King's return from Ireland to King's Weston, but 32 [*Carreckfergus Lough*] carries the idea to a more fully encompassing narrative, with an almost journalistic character that sits appositely with the currency of the maps of Ireland advertised in the *London Gazette*. There is a cross-fertilization of cartography, history, politics and commercial acumen, as maps have always made great play of equating modernity with accuracy. The inclusion of the significant political events of the day only adds to the authority that the map can present. A further comparison with chart 22, alluded to earlier, is found in the scenic vignette upper left on chart 32, and here again we have a combination of reportage, hagiography and Captain Collins's more personal emphasis on the support given by himself and his naval colleagues to the successes of the new King (fig. 39). This vignette is particularly interesting, as the angle of view, from out on the water beyond Carrickfergus Castle and harbour is indicative of a drawing made on the spot, making it at least plausible that the drawing was made by Collins himself. Certainly there are stylistic similarities between this and the only similar sketch on the manuscript charts, that of Peel Castle in the Isle of Man.¹¹⁷ Especially noticeable is the similar treatment of the curtain walls of Peel Castle and the town walls of Carrickfergus, seen behind the castle (fig. 40). We can say with reasonable security that the Carrickfergus view is thus a piece of first hand reportage and Collins almost goes so far as to “sign” the work. In the centre of the view is the familiar shape of one of the royal yachts. This is indicated by the letter “A”, and a second yacht to the left of the scene is labelled “B”, with a barge between them labelled “C”.

115 Frederick, 1st Duke of Schomberg (1615-1690) commanded the Williamite forces in Ireland from 13 August 1689 and was killed at the Battle of the Boyne.

116 The suburb of Whitehouse, now part of Newtownabbey on the northern (Antrim) shore of Belfast Lough, recalls the fortified house referred to in the chart, originally built c.1574.

117 Taunton: UK Hydrographic Office Archives, Ms B893.

There is, therefore, rather more activity in the scene than there was in the Chart 22 vignette and here Collins provides a key to the salient features, showing that in the centre is the *Mary Yacht* under Collins's own command, and from which the King has just disembarked. The second yacht is the *Henrietta Yacht*, under the command of Captain Sanderson and carrying Prince George of Denmark, the husband of Princess (later Queen) Anne. The King, between the two yachts, is shown in Sir Cloudesley Shovell's barge, while that Admiral's flag ship *Monk* (sic.) and squadron of men-of-war is anchored to the right and labelled "D".¹¹⁸ The drawing therefore has a dynamic expansion of time, as the Royal Standard still flying from the *Mary Yacht* and simultaneously from the barge containing the King captures two moments that would not, in reality, occur in tandem. As in the vignette on Chart 22, this small illustration serves several purposes; on the one hand it illustrates an important event in a place that even well-travelled English people would probably never visit, while on the other hand it reinforces the politics of the whole map as a Protestant military and naval success. Underlying these purposes is once again the commercially sensible suggestion that the creator of the map is somebody intimately associated with, and trusted by, the Sovereign himself.

This drawing has an interesting afterlife as well. It is, as far as is known, the only part of the *Coasting Pilot* to have been transferred *post factum* to another medium, for there exists in the National Maritime Museum a slightly later oil painting of the same scene, in a Van de Velde style, but of unidentified authorship (fig. 41).¹¹⁹ The arrangement is slightly adjusted, and some additional vessels have been added, but the place, activity and layout are clearly retained. The painting might date from the reign of Queen Anne, as the flag of the Lord High Admiral depicted is that from her reign, not from that of William III, and the Royal Standard is that of the Stuarts, not of William. The Lord High Admiral from 1702-1714 was Prince George, who was at Carrickfergus as William's brother-in-law, sailing in the *Henrietta Yacht*, so it is possible that Collins's drawing has been slightly re-purposed to become a work commemorating Prince George's part in the Irish campaign. Such a reuse of material was common in the decorative elements that adorned the charts, so it is perhaps no surprise to see the practice appearing in parallel art-forms where the historical narrative was treated with the same flexibility, dependent on the patron and message intended.

118 All three are *Coasting Pilot* chart dedicatees; Captain Sanderson on Chart I, *Burlington Bay, Scarborough and Hartlepoole*, Prince George on Chart R, *The Islands of Orkney*, and Sir Cloudesley Shovell on 26, *The Coast of Wales* and G [*Blakeney Harbour*]. All three were also subscribers.

119 The NMM website suggests that a plank floating in the water might be inscribed "C. Pocock. V V" but no artist of this name is otherwise identified and the meaning of the V V (or possibly W) is unknown. <https://collections.rmg.co.uk/collections/objects/11822.html>

5. Carto-iconography

A Portrait of the Nation in Maps

The artistic and decorative aspects of antique maps – elaborate cartouches, decorated compass roses, text and scale surrounds, or illustrative ornamentation of local scenes, ships, monsters or towns – have always been amongst their most appealing features, but carto-iconography also has significance for our understanding of the context and meaning of both individual charts and an atlas as a whole. Late seventeenth-century works in the visual or dramatic arts equally relied on commentary on the events of the time as a customary aspect, which served not only to increase interest amongst the purchasing public, but also to parade, as it were, the “up-to-date” nature of the publication. What to the modern collector has value as an artistic decorative aspect was to the contemporary purchaser a marker of where a publication stood in relation to the political and scientific advances of the day. Thus, carto-iconography can tell us much about the production of and intention behind individual charts, as well as giving an insight into Captain Collins's rationale and political stance at a time when political allegiance was of utmost importance.

In common with other print media, the political aspects of the carto-iconography in the atlas create an intrinsic visual link with the notion of contemporaneity. It is, however, more difficult to be certain as to the extent to which Collins made any consistent decisions to emphasise a political stance one way or the other at the level of the complete atlas. Undoubtedly, the accumulation of iconographic detail from individual maps, where such choices had to be made, represents an amalgamation of political emphases, more obviously displayed in the distillation of the complete atlas. This concentration of iconography carries

a level of meaning that places the atlas firmly in the nexus of political propaganda, which the post-invasion regime of the 1690s was willing to support and exploit. The iconographical differences between the maps published before or after the Dutch invasion of 1688 strongly point to an increased awareness of political context in the design and language of the later maps, in which a consistent viewpoint is apparent, which had not been a feature of the earlier charts.

It is impossible to date the engraving of the plates exactly, other than those which carry a year of publication, but stylistic consistencies can provide reasonably precise dating, and an analysis of these shows the significant change in emphasis of the decorative schemes after the political upheaval of 1688. Collins himself refers to his commission to produce a survey, but makes no reference to any commission to produce an atlas, which may imply that the idea of compiling the charts into an atlas was only conceived after the completion of the survey in 1687, and the greater consistency of dedications and visual language in the later charts reflects this possibility. The earlier published output was of single maps for navigational use and most of these are dedicated and decorated with a local focus, often to aristocratic land-owners. After 1688, the emphasis moves to a more specific political and military view, with dedications almost exclusively to senior naval figures, and a concomitant iconographic shift to imagery associated with military valour, naval victory and political strength. Two examples, from the charts of *Falmouth* and *Plymouth* (fig. 42 and fig. 43), contrast markedly different styles of cartouche design, which serve to set the scene for the internal contrasts of the other charts. The bucolic, essentially pastoral, imagery of fig. 42 is paired with a dedication of local significance, surrounded by the bountiful produce, local activities and fauna of the region mapped. Fig. 43 establishes the tone of later cartouches, dedicated to the Admiral commanding The Prince of Orange's invasion fleet, while Britannia gestures approvingly towards his name. Even the maritime deity is cast into the shadows below the text banner, beneath which cannon and anchors establish naval authority while Mercury, with caduceus and money bags, and a trumpeting figure of Victory declare the Protestant triumph above.

This shift in dramatic emphasis also implies a change of commercial focus away from local nautical use, of individual charts, towards a more encompassing view of the nation, bound in an atlas, which finds a parallel in the expansion of military activity on a national scale to support the European wars of the new regime. The possibility that a complete atlas

publication was only considered at this later point pairs neatly with the commercial possibilities presented by a more consistent stylistic approach. This is not necessarily to say that there was a conscious artistic or political decision on the part of Captain Collins (although that is a possibility), but it is certainly an acknowledgement of the changed political landscape of the nation after the invasion, and of the navy's role in that new environment, both as protector of the nation and as a driving force in the military and political direction of the realm under William III. The change of orientation in politics is brought vividly to the fore in noting that the dedicatee in fig. 43 was The Prince of Orange's victorious admiral of 1688, while the dedicator was Master on the flagship of that admiral's vanquished foe, James II's Admiral of the Fleet, Lord Dartmouth.

The dedications and iconographies of the printed charts thus fall broadly into two groups, coincidental with this political change at the Dutch invasion. Three of the charts published as individual items carry the date 1686 on the cartouche. These are shown in Table 3, and carry dedications to: The East India Company; Samuel Pepys, naval administrator and MP for Harwich; and a colleague of Collins's in the squadron of royal yachts (Captain Sanderson of the *Henrietta Yacht*). There is additionally a chart dated 1688 itself, dedicated to another mid-ranking naval figure, Captain Will[iam] Bond, possibly a sea-captain from Wiltshire (1655-after 1717), and thus maybe a West Country colleague of the Devonian Collins. The only other dated chart made before 1688 is a proof copy of 27, *Milford-Haven* in the Pepys Library in Cambridge, lacking several legends, the inset and key.¹²⁰ On the back, Pepys has inscribed "1687. The new Mapp of Milford-Haven layd down by Capt. Collins" but such helpful additions are scarce. Three other pre-1688 charts can be dated by internal evidence about the political or career status of the dedicatees, and a further five by stylistic similarities, as shown in Table 3.

120 Sarah Tyacke. "Maps" in *Catalogue of the Pepys Library at Magdalene College, Cambridge, Vol. 4, Music, Maps and Calligraphy*, ed. Robert Latham (Cambridge: D.S. Brewer, 1989), 41.

Table 3. Pre-Invasion Charts: Dates and Definitive Internal Evidence		
Chart	Chart date	Internal Evidence
19 [Lizard]	1686	
E, Harwich	1686	
I, Burlington Bay	1686	
24, Milford-Haven	1687	ms annotation on verso of Pepys 1296
S, Orkney	1688	
15, Dartmouth		1688 Dartmouth deposed as Master General of Ordnance
17, Fowey		1688, Nov. Bishop Trelawny translated from Bristol to Exeter
N, Edinburgh Firth		1688 Drummond deposed as Lord Chancellor
Stylistically Similar Cartouche Design and Dedications		
18, Falmouth		Sir Peter Killigrew
31 [Isle of Man]		The Earl of Derby
34 [Dublin Bay]		The Duke of Ormonde
F, Yarmouth		The Duke of Norfolk
T, Shetland		The Earl of Nottingham

The four charts at the bottom of Table 3 share stylistic (largely generic) cartouche design, and dedication to great peers – all significant political or administrative figures in the reign of James II. None was a great enthusiast for the Williamite accession, nor were they predominantly naval figures. Only the Earl of Nottingham had a role in the Admiralty in the later years of Charles II's reign, while the other three all had land-holdings or titles intrinsically linked to the area of the dedicatory chart. The cartouches follow the pattern of armorial bearings, carried by putti, with a surround of pastoral symbolism, and includes the only cartouche design in the *Coasting Pilot* identified in another source – 34 [*Dublin Bay*] – which appeared in *Nova Totus Angliae* (c.1680) by the Amsterdam publisher Frederick de Wit and *A Chart of the Narrow Seas* by John Seller in 1672 (fig. 44).¹²¹ These issues further demonstrate the somewhat *ad-hoc* nature of the earlier engraving and publication process. Chart F, *Yarmouth*, makes more contextually specific play with the local industry, surrounding the title with “heraldic” swags of abundantly filled fishing nets, the putti seen elsewhere replaced here by mermen. The accent is distinctly coastal, and a similar ichthyological emphasis is also prominent in the design of 15, *Dartmouth* (fig. 45). Both

121 Verner, *Captain Collins' Coasting Pilot*, 8.

expand the tenor of the earlier cartouche designs from a generic pastoralism-and-prosperity motif, into a geographically specific illustration of local economic drivers. In both cases, however, the dedicatory personage (the Earl Marshall of England in F, and James II's Admiral of the Fleet in 15) remains essentially an adjunct to the politics of the map, featuring as local land-holder, rather than as national-political figure. This pattern is consistent in pre-1688 charts, but is not seen again in the changed political circumstances of the post-invasion cartographical landscape.

As mentioned above, these stylistic threads are unlikely to be conscious artistic choices, as the early maps were published piecemeal and underlying trends in design become apparent when considering the group of maps as a whole. As a result, there are some aspects of design that cross over from one group of charts to another. A prominent version of such an artistic bridge is seen in the only chart with a religious dedication.¹²² While classical deities served as allegories of various desirable attributes: wisdom, plenty, prudence, justice etc, and in the form of Britannia as a personification of the nation, specifically Christian imagery is much less apparent, and not at all in the post-1688 charts. That dedicated to a religious figure is 17, *Fowey and Mounts Bay*, to Sir Jonathan Trelawny, 3rd Baronet and Lord Bishop of Bristol (fig. 46). The cartouche uses religious iconography, but in fact the language and design of the decoration obscures a political sub-text that links this earlier chart with those of the post-1688 group. In the cartouche the title is inscribed on the Book of the Word, supported by bearded figures of St Paul with his sword and St Peter holding the keys of heaven, below the mitred arms of the Diocese of Bristol.¹²³ While the traditional association of Saints Peter and Paul with the papacy is undeniable, their presence as supporters should not deceive us into reading a Catholic sentiment into either the politics of the map, or of the bishop. Trelawny was a leading Protestant figure in the late 17th century, but he was an *Anglican* Protestant and Anglican theology did not see the break with Rome as a branching of the Apostolic Succession, but as a righting of the line that had drifted awry under the papacy. Therefore the foundation figures of the early church are used here to underscore the apostolic significance of the episcopal patron, rather than to tie him to a perceived allegiance to a Roman lineage that the Anglican Protestants repudiated. Indeed, as shown in Table 3, the chart can be dated to 1688 only because Trelawny was translated to the Diocese of Exeter by William III before the end of that year.

122 Notwithstanding that 27, *Holy-Head* and M, *Holy Island, Staples and Barwick* make use of the geographical religious nomenclature to inform the design of the cartouche, albeit in a more generic format.

123 The arms of the Diocese of Bristol: *Sable, three ducal coronets in pale Or.*

The principal reason for the dedication is, however, because the Trelawny baronets were resident at Pelynt, only a few miles east of Fowey Harbour.¹²⁴ The Bishop thus fits the local landowner format of other early Collins charts, but has an added significance in his reputation as a stalwart figure of Cornish Protestantism, imprisoned by James II for petitioning against the 1687 Declaration of Indulgence. The Trelawny family's fame extends to the folklore of Cornwall in the politically loaded *Song of the Western Men*; “And shall Trelawny die? / Here's twenty-thousand Cornish men / Will know the reason why” has an undeniable resonance with the plight of the Protestant Bishop under the Catholic King.¹²⁵ This family reputation as Protestant heroes must have been, at least, in the background of the dedicatory choice, and plausibly reinforces an unstated Protestant leaning on Collins's part, even before the invasion.

If the pre-1688 charts cover a range of iconographies and deploy a broad, if somewhat standardised, repertoire of devices and imagery to underscore the industry, prosperity, and stability of the realm Captain Collins was charting, the maps published after the Dutch invasion take on a greater singularity of purpose, one which rested firmly on establishing the new Protestant government of William III and Mary II across the nation, and which made great play of the navy's significance in bringing it about. Table 4 shows four charts dated in the title 1689 and one dated later.¹²⁶ The 1689s show stylistic features that bridge both the pre- and post-invasion imagery, but even amongst these only one – Q, *The Firth of Murry* – is not dedicated with a naval emphasis. This chart, possibly the last dedication to a great peer, is nonetheless dedicated to one of the Scottish nobles quickest to jump ship to the Williamite cause once the direction of the political wind was clear. The later datable charts consistently emphasise the new political reality and Collins casts his net of dedications far beyond the local gentry, yet only seeking a haul of Admirals. This was in parallel with the commercial expansion of his cartographical business beyond individual charts for local navigation use, towards an elaborate atlas aimed at a national stage and recounting a drama that played out as much on the library shelves of the great and the good as on the chart tables of the working mariner.

124 The fourth of Trelawny's 12 children had a naval career, and died in the wreck of Admiral Shovell's flagship *Association* off the Isles of Scilly in 1707, but there is no known record of whether this Trelawny was known to Collins.

125 The Bishop is often referred to as the inspiration behind this Cornish patriotic song (also known as *Trelawny*), although it is more likely to refer to his Grandfather, imprisoned by Parliament during the civil war. The re-purposing of the song to the grandson reflects the significance of the Bishop in his own times.

126 Noting that 22 [*The Bristol Channel*] and 32 [*Carreckfergus Lough*] include illustrative scenes dated 1690, but the titles or dedications do not carry dates themselves.

Table 4. Post-Invasion Charts: Dates and Definitive Internal Evidence		
Chart	Chart Date	Internal Evidence
20, Scilly	1689	[The Duke of Grafton, Vice-Admiral of England]
29 [Irish Sea]	1689	[John Lowther, Commissioner of the Admiralty]
30, Chester Water	1689	[William III]
Q [Firth of Murry]	1689	[Viscount Torbat, Lord Clerk Register]
[22, The Severn]	1690	Scene on map dated 6 September 1690
32 [Carreckfergus]	1690	1690 William III landing at Carrickfergus depicted in scene
5 [The Channel]	1693	[Commissioners of the Admiralty]
3 [North Sea]		1692 John Ashby made Admiral of the Blue
4 [The Channel]		1691 Admiral Killigrew made Admiral of the Blue
8 [Rye Harbour]		1691 Robert Austin made Commissioner of the Admiralty
[10, Isle of Wight]		1690 Edward Russell made Admiral of the Fleet
14 [Torbay]		1690 Thomas Herbert made Lord High Admiral
16, Plymouth		1689 Arthur Herbert made Earl of Torrington
[23] River Avon		Not included in earliest 1693 issues
25, Milford Islands		G.C. Styled as Hydrographer to “Their Majesties”
26, Coast of Wales		1690 Admiral Shovell made R. Admiral of the Blue in June
[36] Kingsale		Not included in earliest 1693 issues
B [W North Sea]		1692 Ralph Delaval made Vice Admiral of the Red
C, Scotland E Coast		1692 George Rooke made Vice Admiral of the Blue
G [Blakeney]		1690 Admiral Shovell made R. Admiral of the Blue in June
M, Holy Island		1689 William Davies made Vice Admiral to, and Arthur Herbert elevated as, the Earl of Torrington
O [Leith]		Not included in the earliest 1693 issues

The later charts in Table 4 show eleven dedications to Admirals, as opposed to none at all prior to the change of government.¹²⁷ Their promotions provide an accurate timeline for the dating of these later charts, at least as far as the final details of cartouche and publication are concerned. From 1689 onwards there are no further inclusions of the land owners, baronets and nobles seen in the pre-invasion dedications. A corresponding shift in the decorative schemes of the cartouches underlines the increased prominence of such naval

¹²⁷ Noting that George Legge, Lord Dartmouth receives the dedication of 15, *Dartmouth* not as Admiral of the Fleet, which he was later in James's reign, but as Master General of the Ordnance.

figures in the political life of the nation. The navy flourished under William III, who was keen to promote able men, not only to assist in the wars against France, but to secure allegiance of officers and, thereby, of their crews. The fact that the royal navy of James II, under Lord Dartmouth (with Captain Collins in control of his flagship *Resolution*), was less than resolute in repelling the Dutch forces in November 1688 seems to have been, perhaps conveniently, forgotten, both by the new King, accepting the dedication of the completed atlas in 1693, and by Collins, with his eye firmly fixed to the commercial market for adulatory British, Protestant publications.

Of the 1689 maps 20, *The Islands of Scilly* sets the tone, carrying a dedication to the Duke of Grafton, Vice-Admiral of England, younger bastard son of Charles II, and an early and significant supporter of the Protestant cause. Grafton was also a former shipmate of Collins, who potentially instructed the Duke in navigation when the latter was a young officer training for the sea on the 1680 *Leopard* cruise in the Mediterranean (in which Collins served in his customary rank of Master), so some personal connection is still to be discerned.¹²⁸ The Yeates engraved cartouche is in a similar style to those on the earlier charts, surrounding the text with animals, eels, birds and fish such as abounded in and around the Islands, but the scale surround shows the ducal coronet being placed atop the arms of the garter by a mermaid and merman, and the main cartouche gives prominence to the royal arms, labelled for difference and again topped by the strawberry leaves. A similar mixed style is seen in 29 [*The Irish Sea and Isle of Man*] which has a commercial emphasis akin to that accorded to Sir Peter Killigrew on the earlier Chart 18. The distinction lies in the dedication; Sir John Lowther, who, in developing the coal industry and port facilities at Whitehaven in Cumbria was to that town what Sir Peter Killigrew was to Falmouth, is also noted here as being “one of the Commissiners (*sic.*) for Executing the Office of Lord Highe Admirall of England”, placing him in the very upper echelons of the naval administration.¹²⁹ The other charts dated 1689 or 1690 are dedicated to the King and Sir Robert Southwell, considered in Chapters 3 and 4.

From 1690 on the charts speak in a unified iconographic language, with a clearer emphasis on the significance of the Williamite monarchy and the role of the navy and its senior officers in bringing about the Protestant transformation of the national identity. The royal

128 David Davies, “The Lost Journal of Captain Greenville Collins”, <https://jddavies.com/2015/06/22/>, 2.

129 Ian Mortimer, *Restoration Britain 1660-1700*, 47. This Sir John Lowther, made Viscount Lonsdale in 1696, was the probable owner of the earliest surviving copy of the *Coasting Pilot*, now in Cambridge University Library and bearing the bookplate of his descendant Earls of Lonsdale.

arms become increasingly prominent and the cartouche designs increasingly baroque. This is not to say that individuality of design or meaning is any greater than in the earlier maps; in many respects the more homogeneous message makes for a lesser level of visual variety, but this is undoubtedly compensated by an increased exuberance, redolent of artistic styles of the continent. The regular use of the royal arms as a crowning decorative device underscores an increased awareness of the nation, and of the atlas as a national undertaking, reflected, of course, in its eventual title. The billowing clouds and air-borne cherubs surrounding the cartouche on the giant Chart 5 [*The Channel*] would not look out of place in a royal apotheosis of Antonio Verrio or Charles Le Brun, and the scale of conception on this three-plate map suggests an increased confidence that the successfully accomplished “revolution” in monarchical government was happy to claim as its own doing (fig. 47). The extent of the chart expands upon the decorative scale of the cartouche, bringing mapping and national imagery into a closer connection where the full extent of the south coast is rendered on a single chart. The concept of the island nation, separate and entire, is more fully realised here than in previous, large scale, charts of harbours or sections of coast. The dedication is one of only two in which Collins styles himself as Hydrographer to “the King and Queens (*sic.*) Most Excell[en]t Majestie” in a prominent acknowledgement of the new royal duality and, while not in itself endowed with bellicose symbolism, the ebullient layout and heraldry of this cartouche, together with the trumpet-blowing putto above and the corresponding figure brandishing a sword at the bottom, leave little doubt as to the heroic way the monarchy represented wished to be perceived.

This map, the largest in the atlas, is dedicated to the collective “Lords Commissioners for Executing the Office of Lord High Admirall of England” and it can be seen as a summation of the grandeur of conception and pictorial scope that Collins achieved in the later maps. A three-plate engraving, showing the whole English Channel from beyond the Isles of Scilly and the island of Ushant, right through to the Straits of Dover, it includes the full French coast and a detailed inset of Brest Harbour, the main Atlantic base of the French fleet, which had been fortified by the Comte de Vauban (1633-1707) as recently as 1680. Clearly re-using earlier material for the French coast, which Collins did not survey, there is also a nod to earlier patterns of cartographic decoration where the Channel is enlivened with no fewer than fifteen illustrations of ships under-way, serving as a context for the prominence of naval affairs in the remainder of the atlas's later charts. The use of collective Lords Commissioners in place of the single Lord High Admiral (for much of the previous decades of course the Duke of York) is equally illustrative of the influential position that

senior naval officers managed to achieve in shaping the new regime, and further shows the developing importance of the navy as an organ of national government and a point of national pride, a facet that Captain Collins was clearly happy to exploit for commercial ends in promoting his published output.

In all primary sources of the 1693 atlas, the multi-plate map of the Channel discussed above appears in Part Two, the plate number notwithstanding. The opening chart of all but one 1693 copy of the atlas is the other map of *The Channel*: Chart 4, dedicated to Admiral Killigrew (fig. 48).¹³⁰ This small-scale map also covers the whole of the English Channel, on both French and English coasts and serves as a cartographic overture, resounding with the trumpets and drums of Purcell's finest exordia. To the modern eye, it looks almost entirely as we would expect the Channel to be mapped; the coastlines have the shape with which we are familiar, the soundings are evenly spread across the map, the coastal towns, harbours and projections are familiar and the whole has a clean completeness that looks modern. In a map like this we see the Collins of cartographic maturity, clearly pointing the way to the scientific manner of cartography that we recognise today. The interplay of cartography and iconography is significant here, for not only is the martial nature of the Williamite realm made clear in the decorative scheme, but the mapping itself shows the full extent of that realm in its home waters context. The apartness of the island nation, juxtaposed figuratively and cartographically against the French continental mainland places a visual emphasis on the distinctively insular nature of the British realm. Two features stand out: the asymmetrical cartouche filling the space between Bristol and London, and the scenic vignette lower right, surmounted by a monumental royal arms. The cartouche is in many ways a summation of much of the atlas's visual language (fig. 49). There is familiar symbolism, as seen elsewhere, but with a distinctive baroque rhythm and counterpoint – Neptune velificans stands to the right, his trident now firmly planted on the coast while roses of England are blown around his feet by a wind-cherub partly obscured behind two vigorous winged wind-deities in the sea. Their breath fills a sail on which the text is displayed, and on the yard arm from which it hangs, the helmeted Britannia perches, clasping King Edgar's sceptre of the seas, while her other arm embraces Plenty's attribute of the cornucopia. As she dangles her sandal-clad feet from the yardarm, she and Neptune engage in gentle, almost flirtatious, conversation over their dominion of the globe resting between them. The whole composition is a flowing baroque assemblage of devices and

¹³⁰ The exception is BL3, in which both channel charts appear in Part Two, Chart 4 after Chart 5. This copy has been re-bound, so the order may not be original.

symbols, all endowed with a swirling clockwise motion as free as the wind that the deities push down-channel, across to the coasts of the Old Enemy, possession by whom the globe shall not endure.

The significant representation of the French coast in Chart 4 harks back to English ideas of domination of their neighbour; the *Coasting Pilot* bears the dedication to William III as “of / Great Britain, France and Ireland / KING”. At the base of this map is another scenic vignette, topped by royal arms, which are the best engraved in the atlas. Indeed, this particular engraving appears in many publications of the time, but in this context it has a dominant aspect even more than the cartouche. (fig. 50). While the other scenic vignettes of the atlas serve as much as autobiographical as historical detail, this battle scene has no intimation of personal connection, and is probably not from the hand of the Captain himself. Given its placement on a map of the Channel, immediately below the Cherbourg Peninsula of the Normandy Coast and adorned so prominently with the Williamite arms, it is most likely a depiction of the Battle of La Hogue, fought on 3 and 4 June 1692. Several details also suggest this particular engagement: the burning ships on the left are major ships-of-the-line, with two and three decks of gun ports. They are depicted hard on the shore and their guns are not firing; from seaward come swarms of small boats, while the main attacking force stands well off the coast; perhaps most tellingly, the defending fire is coming from forts along the coast, the very gun-emplacements where James II, assembled with troops to invade his kingdom with the aid of the French navy, witnessed the final destruction of his military ambitions, but supposedly could not help admiring the daring of “his brave English” sailors.¹³¹ This late chart therefore takes pride of place at the start of the atlas, setting out the grand overview of the Narrow Seas, completely dominated by its new Protestant monarch, putting to flight the last vestiges of resistance from the *Ancien Regimes* on both sides of the Channel.

Neptunic claims to rule the seas were common on both sides, and were subjects of satire in the aftermath of the La Hogue. A contemporary medal struck by Jan Smeltzing in Leiden depicts the battle in similar manner of reportage to that on Chart 4, with the obverse bearing portraits of William and Mary and the inscription “Asserta Maris Imperii Gloria” (The Glory of the Empire of the Sea Asserted) (fig. 51, left). The French claims to naval supremacy are mocked in a medal of the same period by Regnier Arondeaux, in which the

¹³¹ John Callow, *James II; King in Exile* (Stroud: The History Press, 2017), 235.

reverse features the English and Dutch Admirals Russell and Almonde sweeping Louis XIV from the seas, he leaping from a chariot drawn by frogs, under the inscription “Pseudo Neptuno Mari Eiecto” (The False Neptune Driven from the Sea) (fig. 51, right).¹³² The unusual feature of 4 [*The Channel*] is that this very obvious military-political statement is dedicated to an Admiral who took no part in the events depicted. Admiral Killigrew at that point was without command as his relations with Admiral Russell had become increasingly strained. It is ironic then that Russell, the hero of La Hogue, is only commemorated on the rather smaller 10 [*The Isle of Wight and the Solent*] while Killigrew, who complained to the Earl of Nottingham that “a blessing of so large a spread should import evil to no one of the winning side but to me alone. I see myself rendered by it not only useless at present but perhaps for my whole life”, receives the dedication in the manner of a triumphal accolade.¹³³ At least the dedication of this fine chart, albeit with the decorative details potentially added later, should have been consolation.

Admiral Russell needed no such boost, his influence in government and in the navy remaining considerable throughout William's reign, eventually resulting in elevation as the Earl of Orford in 1697. Although he is one of the surprising omissions from the list of *Coasting Pilot* subscribers (the others notable being Admiral Lord Torrington and Samuel Pepys) Russell certainly appreciated the artistic endeavours of the baroque that feature so prominently in the carto-iconography of the atlas. The trumpeting figure of Victory used frequently in Collins's later cartouches (heralding the Admiralty in Chart 4; Admiral Herbert in 16, Sir Robert Southwell in [36] and the City of Edinburgh in O) was a strong symbol of military vigour, and also of personal fame. In this context it re-appears in a splendid three-dimensional version of the imagery seen in the *Pilot* cartouches in the mirror frame Russell commissioned, probably to celebrate his appointment as Admiral of the Fleet in 1693, the rank with which he is endowed in the Collins cartouche on Chart [10] (fig. 52). Not only is the production exactly contemporary, the imagery follows the same patterns seen in the atlas – Fame, here with two trumpets, flies beneath, while mermen and putti support the heraldic achievement above. To either side stand masculine deities: the winged-helmeted Mercury (with money bags) to the right and Hercules (with club and the Apples of Hesperides) a symbol of military might to the left.¹³⁴ In the same way that this elaborate mirror trumpets Russell's fame and valour, the quality of workmanship, no less

132 Charles Wilson (Ed.), *The Dutch Connection* (Cambridge: Fitzwilliam Museum, 1988), 114-115.

133 Killigrew to Nottingham, 28 May 1692, *Finch MSS*, 4.192 in J Laughton, “Killigrew, Henry (c.1652-1712)” ODNB Online, 2010, accessed Jul 7, 2019, <https://doi.org/10.1093/ref:odnb/15535>

134 Cambridge: Fitzwilliam Museum, M.2-2017.

than the precision and detail of the carto-iconography in Collins's charts, is a testament to the wealth, knowledge and taste of the patron who commissioned the one, and the patrons who inspired the other.

As has been noted, it is not necessarily the case that Collins made the politically loaded decisions as to dedications, chart inclusions or carto-iconography with any over-riding sense of comprehensive political design, at least in the earlier map publications. The political stance of the atlas was as much a concatenation of individual dedications and emphases as an over-arching conception, but those individual decisions do tend to point, in the longer-term of accumulation in the atlas, in the same direction. That Collins was immersed in the naval milieu of his times, and known to the major figures featured in the atlas, is indisputable, not least because of his somewhat elite position as a commander in the squadron of royal yachts. His access to the political discussions and attitudes that occupied the upper levels of the navy, and indeed the Monarchy at times of the king's travel in Collins's yacht, was therefore rather greater than might be expected for other officers of Collins's rank. The royal yachts, in which Collins served for the whole of the command period of his career, were themselves the frequent subject of paintings and *penschilderij* by the likes of the Van de Veldes, father and son, and their followers. Unsurprisingly, they feature in a number of the scenic vignettes of the atlas charts, where they serve almost as extra signatures of the Captain, placing him visually “on the map” that he created.¹³⁵ The depiction of the yacht, and thereby the implied proximity of the Captain to important naval and royal personages, doubtless enhanced the authority with which Collins as author was able to imbue the cartography.

There is, with so many naval figures featured in the atlas, a feeling of the collegiate nature of the officer class. Although only three of the dedications are to colleagues of Captain rank, thirty-nine such officers nonetheless subscribed to the publication. Of greater importance, both commercially and visually, were the senior officers and rulers of the Admiralty. Amongst these the dedicatees are a veritable roll-call of the great figures of late-seventeenth-century naval history: Admiral Ashby – Commander of the Blue Squadron at Barfleur; Admiral Killigrew – Lord Commissioner of the Admiralty; Admiral Russell – the Hero of Barfleur and La Hogue; Admiral Lord Dartmouth – Admiral of the Fleet and personal patron of Collins; Admiral Shovell – “the best officer of his age” according to

135 The other particularly good depiction of the yacht is in the scenic vignette of Leith Harbour on Chart O.

Queen Mary;¹³⁶ Admiral Delaval – Commander of the *Royal Sovereign* at La Hogue; Admiral Rooke – Admiral of the Fleet and later the Hero of Vigo Bay. And yet, amongst these luminaries of the time, Collins's own career was perhaps most closely mirrored, on a vastly greater scale, in the background of the enigmatic Arthur Herbert, Earl of Torrington. The Herald of Victory appears atop the cartouche of 16, *Plymouth*, which commemorates this war-like English Admiral, the great nemesis of Collins's patron Lord Dartmouth, and of Samuel Pepys, who fought his promotion to Admiral in 1680 (fig. 43). Herbert contributed funds to Sir John Wood's *Speedwell* expedition, on which the young Collins sailed, worked under Sir John Narborough (as did Collins), saw action in the Mediterranean (ditto Collins) including at Tangier, (ditto Collins), but remained staunchly and unequivocally Protestant, as the atlas strongly suggests Collins did also. As one of William's closest advisors, his elevation to the Peerage was all but a certainty, and the tone of the *Plymouth* cartouche makes a marked contrast with the restrained pastoralism of the *Falmouth* cartouche (paired with it in fig. 42), or indeed with that dedicated to George Legge, Lord Dartmouth, by geographical coincidence the previous chart in the *Coasting Pilot* (fig. 45).

It is not known that Collins had any personal connection with Torrington, certainly not the friendly relationship his journals suggest he enjoyed with Lord Dartmouth.¹³⁷ However, given his abandonment of the navy of James II to lead the enemy fleet in invasion, and his responsibility for the disastrous Battle of Beachy Head in 1690, Torrington's prominent presence in the *Pilot* stands as a model for the greater rehabilitation of the navy to which the atlas, in part, contributed. The panoply of trumpet-heralded Admirals adorning the charts, and other memorials of the time, sits in some contrast to the actuality of British naval success, in the 1688 crisis at least. After that upheaval, the navy, along with the nation, moved to a largely unified backing of the regime of William III, enhanced and aided in many respects by national admiration for Queen Mary. The King's European outlook cast Britain more than ever into international affairs, in which the navy played a major role, and comprehensive cartographic delineation of the British coast became even more important in the long period of war that resulted. Like so much of the political agenda behind the *Coasting Pilot*, once the new regime was firmly established, the

136 Queen Mary writing to William III, 6/16 July 1690, *CSP dom., 1690–91*, 53 in John Hattendorf, "Shovell, Sir Cloudesley" ODNB Online, 2015, accessed Jul 9, 2019, <https://doi.org/10.1093/ref:odnb/25470>.

137 Collins, *Journal, June 1688–Jan 1689*. Greenwich: NMM, Caird Library, DAR/18. Entry for 27 September 1688, including a visit to Collins's sickbed and a gift of £10 to cover expenses in recovery.

reconstruction of the navy, both physically and, perhaps more importantly, in the eye and imagination of the nation, became possible. Cast as a bulwark of the Protestant cause for the next several decades, and eventually as an ideal of national, island strength, the navy's rehabilitation was a necessary reversal of the ignominy of failure to prevent the Dutch invasion. In establishing the shape and nature of the realm's coastline with greater detail and accuracy than had been possible at any time previously, *Great Britain's Coasting Pilot* played its part in bringing about an increased sense of Britain as a unified island nation. Being predicated on an emerging scientific basis of survey and drafting, as well as casting its lot firmly with the Protestant cause in the carto-iconography by which the charts were elaborated and enlivened, further helped Captain Collins's *magnum opus* to contribute to the re-creation of the events of late 1688 as something revolutionary and, in the long run, glorious.

Appendix One

Subscribers to the 1693 edition

Version One – as printed.

The NAMES of those Persons that Incouraged this WORK by Subscription, and Advancing money towards the Charge and Printing thereof for the Publick Good

King Charles the Second
King James the Second
King William the Third
Prince George

A

Earl of Arran, Scotland
Sir John Ashby, Admiral of the Blew
Sir Samuel Astry, Glostershire
City of Aberdeen, Scotland
Mr Thomas Alcock, Bristol
Mr William Anguish, Purser in the Navy
Capt Jonthan Andrewes, Kenton-Park

B

Duke of Beaufort
Earl of Berkley, Vice-Admiral of the Blew
William Blathwaite Esq, Secretary of War
Arnold Browne Esq, Stepney
Sir John Barlow, Wales
John Boscauen Esq, Cornwall
Capt James Bonnell, London
Thomas Barker Esq, Consul at Algier
Mr John Bulfinch, Wapping

Capt Robert Bristol
Capt John Bowers, Rotheriff
Capt William Bond, Rotheriff
Capt Hopfor Bendall, Stepney

C

Marquess of Carmarthan
Earl of Clarendon
City of Chester
Capt John Clements in the Navy
Sir John Clayton, Parsons-Green
Capt Anthony Crow in the Navy
Mr Robert Castell, Deptford
Sir Arthur Chichester, Devonshire
Capt Thomas Cole in the Navy
Capt James Conway, Limehouse
Mr John Colson, Goodmans-fields
Mr Thomas Cullman, London

D

Earl of Darby
Earl of Danby
Lord Dartmouth
Trinity House of Deptford Strond

William Davies, Vice-Admiral of the Red
Sir Ralph Delaval Admiral
Edmund Dunmar Esq, Surveyor of the Navy
Mr Robert Dawson, Greenwich
Capt Robert Dorrell, London
Mr Samuel Deane, London

E

City of Edinburgh
Mr Thomas Enys, Penrin
Capt Benjamin England, Wapping
Walter Etrick, Sunderland
Capt Thomas Elkins of Silly

F

John Flamsteed M.R. Greenwich
Mr Joseph Fownes, Clerk of the Check,
Deptford
Capt William Falsby in the Navy
Capt John Frost, London

G

Duke of Grafton
Capt Christopher Gunman in the Navy
Sir Thomas Grantham, London
Mr John Gayar, London
Sydney Godolhin Esq, Cornwall
Capt Nicholas Goodridge, London
Capt Charles Gibson, London

H

Sir Richard Haddock, Comptroller of the
Navy
Trinity-House, Hull
Town of Harwich
Capt Thomas Hobson in the Navy
Capt Thomas Harlow in the Navy
Mr Peter Hallimore, Penrin
Mr James Harle, Penrin
Mr Benjamin Hatley, London
Capt William Heath, Limehouse
Mr Robert Henley, Bristol

I

Sir Henry Johnson, Blackwall
Mr Jeffry Jeffrys, London

K

Earl of Kent
Sir Peter Killigrew, Cornwall
Henry Killigrew Admiral
Mr James Kemp, Penrin
Mr John Kent, London

Mr Philip Keale, Penrin
Killingworth (*sic.*)

L

Sir John Lowther, Commissioner of the
Admiralty
Rowland Langherne Esq, Wales
Town of Liverpool
Capt Edward Ledger, London
William Lownds Esq, Westminster
Mr Thomas Lane Merchant
Mr Gyles Lytcot, London

M

Earl of Manchester
Sir Humphrey Mackworth, London
Capt John Marr of Dundee (Surveyor of P)
Capt Thomas Monk in the Navy
Mr Richard Mount Bookseller, London
Capt Erby Montague, Westminster

N

Duke of Norfolk
Sir Dudley North
Trinity-House, Newcastle
Mr John Newman, Penrin
Sir Walter Norris, Penrin
John Nance Esq, Cornwall
Town of Newcastle

O

Duke of Ormond
Sir Hugh Owen, Wales
Arthur Owen Esq, Wales
Capt William Oxtan, London

P

Earl of Portland
Hector Philips Esq, Wales
Sir Peter Pett, London
Capt Peter Pickard in the Navy
Samuel Pett Esq, Battersey

Sir Philip Parker, Suffolk
Capt Samuel Philips, London
Mr Samuel Parke, Ipswich
Capt Peter Paggon, London
Mr James Pearla Jun. Westminster

R

Sir Richard Rooth, Kingsale
Sir George Rooke Vice-Admiral
Jonathan Rashley Esq, Cornwall

Sir Robert Robinson in the Navy
Colonel Jacob Richards
John Romsey Esq, London
Sir Paul Rycout, London

S

Charles Sargison Esq Commissioner of the
Navy

Sir Henry Shere Kt, Kent
Sir Robert Southwell, Kings-weston
Capt Ralph Sanderson in the Navy
Capt George St. Lo in the Navy
George Spry Esq, Cornwall
John Sansom Esq, London
James Sotherne Esq, Secretary of the
Admiralty
Sir Cloudsley Shovel Admiral
Mr Nathaniel Symons, Yarmouth
Joseph Saule Esq, London

T

Lord Viscount Torbet, Scotland
Capt Richard Travaion
Sir Jonathan Trelawny Lord Bishop of Exon
Capt John Tyrrel in the Navy
Sir Jos. Tredenham, Cornwall

Mr John Tucker, Westminster
Mr William Tregae, Cornwall
Mr Thomas Taylor, London

V

John Vivian Esq, Cornwall
Henry Vincent Esq, Cornwall

W

Sir Francis Wheeler in the Navy
Colonel John Windham, Sarum
Capt Lawrence Wright in the Navy
Sir Christopher Wandesford, Yorkshire
Mr William Worth, Penrin
Mr Thomas Worth, Penrin
Sir William Williams, Wales
Mr Thomas Weedon, London
Capt William Wright in the Navy
Mr Reeve Williams, London
Capt Thomas Warren, London
Capt Andrew Wardlow, Rotheriff

Y

Earl of Yarmouth
Mr Robert Yates, Bristol
Town of Yarmouth

Version Two - The Subscribers arranged in Alphabetical Order (retaining the position of High Nobles first, in rank order, followed by cities or corporate bodies, then individuals in conventional alphabetical order.) An asterisk and number/letter (*3 or *H) indicates a dedicatee, and the chart dedicated thereto.

King Charles the Second
King James the Second
King William the Third (*30 and *32)
Prince George (*R)

A

Arran, the Earl of, Scotland
Aberdeen, the City of, Scotland (*P)
Alcock, Mr Thomas, Bristol
Andrewes, Capt Jonthan, Kenton-Park
Anguish, Mr William, Purser in the Navy
Ashby, Sir John, Admiral of the Blew (*3)
Astry, Sir Samuel, Glostershire

B

Beaufort, the Duke of (*24)
Berkley, the Earl of, Vice-Admiral of the
Blew
Barker, Thomas Esq, Consul at Algier
Barlow, Sir John, Wales
Bendall, Capt Hopfor, Stepney
Blathwaite, William Esq, Secretary of War
Bond, Capt William, Rotheriff (*S)
Bonnell, Capt James, London
Boscauen, John Esq, Cornwall
Bowers, Capt John, Rotheriff
Bristol, Capt Robert
Browne, Arnold Esq, Stepney
Bulfinch, Mr John, Wapping

C

Carmarthen, the Marquess of
 Clarendon, the Earl of
 Chester, the City of
 Castell, Mr Robert, Deptford
 Chichester, Sir Arthur, Devonshire
 Clayton, Sir John, Parsons-Green
 Clements, Capt John, in the Navy
 Cole, Capt Thomas, in the Navy
 Conway, Capt James, Limehouse
 Colson, Mr John, Goodmans-fields (*W)
 Crow, Capt Anthony, in the Navy
 Cullman, Mr Thomas, London

D

Darby, the Earl of (*31)
 Danby, the Earl of
 Dartmouth, George Legge, Lord (*15)
 Davies, William, Vice-Admiral of the Red
 (*M)
 Dawson, Mr Robert, Greenwich
 Deane, Mr Samuel, London
 Delaval, Sir Ralph Admiral (*B)
 Dorrell, Capt Robert, London
 Dunmar, Edmund Esq, Surveyor of the Navy

E

Edinburgh, the City of (*O)
 Elkins Capt Thomas of Silly
 England Capt Benjamin, Wapping
 Enys Mr Thomas, Penrin
 Etrick Walter, Sunderland

F

Falsby, Capt William in the Navy
 Flamsteed, John M.R. Greenwich
 Fownes, Mr Joseph, Clerk of the Check,
 Deptford
 Frost, Capt John, London

G

Grafton, the Duke of (*20)
 Gayar, Mr John, London
 Gibson, Capt Charles, London
 Godolphin, Sydney Esq, Cornwall
 Goodridge, Capt Nicholas, London
 Grantham, Sir Thomas, London
 Gunman, Capt Christopher, in the Navy

H

Harwich, the Town of
 Haddock Sir Richard, Comptroller of the
 Navy

Hallimore, Mr Peter, Penrin
 Harle, Mr James, Penrin
 Harlow, Capt Thomas in the Navy
 Hatley, Mr Benjamin, London
 Heath, Capt William, Limehouse
 Henley, Mr Robert, Bristoll
 Hobson, Capt Thomas in the Navy

I

Jeffrys, Mr Jeffry, London
 Johnson, Sir Henry, Blackwall

K

Kent, the Earl of
 Kemp, Mr James, Penrin
 Kent, Mr John, London
 Keale, Mr Philip, Penrin
 Killingworth (*sic.*)
 Killigrew, Henry Admiral (*4)
 Killigrew, Sir Peter, Cornwall (*18)

L

Liverpoole, the Town of
 Lane, Mr Thomas Merchant
 Langherne, Rowland Esq, Wales
 Ledger, Capt Edward, London
 Lownds, William Esq, Westminster
 Lowther, Sir John, Commissioner of the
 Admiralty (*29)
 Lytcot, Mr Gyles, London

M

Manchester, the Earl of
 Mackworth, Sir Humphrey, London
 Marr, Capt John of Dundee (Surveyor of P)
 Monk, Capt Thomas in the Navy
 Montague, Capt Erby, Westminster
 Mount, Mr Richard Bookseller, London

N

Norfolk, the Duke of (*F)
 Newcastle, the Town of
 Nance John Esq, Cornwall
 Newman Mr John, Penrin
 Norris, Sir Walter, Penrin
 North, Sir Dudley

O

Ormond, the Duke of (*34)
 Owen, Sir Hugh, Wales (*25)
 Owen, Arthur Esq, Wales
 Oxtan, Capt William, London

P

Portland, the Earl of
 Paggon, Capt Peter, London
 Parke, Mr Samuel, Ipswich
 Parker, Sir Philip, Suffolk
 Pearla, Mr James Jun. Westminster
 Pett, Sir Peter, London

Pett, Samuel Esq, Battersey
 Philips, Hector Esq, Wales
 Philips, Capt Samuel, London
 Pickard, Capt Peter in the Navy

R

Rashley, Jonathan Esq, Cornwall
 Richards, Colonel Jacob
 Robinson, Sir Robert, in the Navy
 Romsey, John Esq, London
 Rooke, Sir George Vice-Admiral (*C)
 Rooth, Sir Richard, Kingsale
 Rycaut, Sir Paul, London

S

Sanderson, Capt Ralph, in the Navy (*I)
 Sansom, John Esq, London
 Sargison, Charles Esq Commissioner of the
 Navy
 Saule, Joseph Esq, London
 Shere, Sir Henry Kt, Kent
 Shovel, Sir Cloudsley Admiral (*26 and *G)
 Spry, George Esq, Cornwall
 Sotherne, James Esq, Secretary of the
 Admiralty
 Southwell, Sir Robert, Kings-weston
 (*[22] and *[36])
 St. Lo, Capt George, in the Navy (*12)
 Symons, Mr Nathaniel, Yarmouth

T

Torbet, Lord Viscount, Scotland
 Trinity House of Deptford Strond (*[A])
 Trinity-House, Hull (*H)
 Trinity-House, Newcastle (*L)
 Taylor, Mr Thomas, London
 Travaion, Capt Richard
 Tredenham, Sir Jos., Cornwall
 Tregea, Mr William, Cornwall
 Trelawny, Sir Jonathan, Lord Bishop of Exon
 (*17)
 Tucker, Mr John, Westminster
 Tyrrel, Capt John, in the Navy

V

Vincent, Henry Esq, Cornwall
 Vivian, John Esq, Cornwall

W

Wandesford, Sir Christopher, Yorkshire
 Wardlow, Capt Andrew, Rotheriff
 Warren, Capt Thomas, London
 Weedon, Mr Thomas, London
 Wheeler, Sir Francis in the Navy
 Williams, Mr Reeve, London (*33)
 Williams, Sir William, Wales (*28)
 Windham, Colonel John, Sarum
 Worth, Mr Thomas, Penrin
 Worth, Mr William, Penrin
 Wright, Capt Lawrence in the Navy
 Wright, Capt William in the Navy

Y

Yarmouth, the Earl of
 Yarmouth, the Town of
 Yates, Mr Robert, Bristol (*[23])

Version Three - The Subscribers arranged by rank.

Royalty

King Charles the Second
 King James the Second
 King William the Third (*30 and *32)
 Prince George (*R)
 Grafton, the Duke of (*20)

Peers

Norfolk, the Duke of (*F)
 Beaufort, the Duke of (*24)
 Ormond, the Duke of (*34)
 Carmarthan, the Marquess of
 Arran, the Earl of, Scotland
 Berkley, the Earl of, Vice-Admiral

Clarendon, the Earl of
Darby, the Earl of (*31)
Danby, the Earl of
Kent, the Earl of
Manchester, the Earl of
Portland, the Earl of
Yarmouth, the Earl of
Dartmouth, George Legge, Lord (*15)
Torbet, Lord Viscount, Scotland

Baronets and Knights

Ashby, Sir John, Admiral of the Blew (*3)
Astry, Sir Samuel, Glostershire
Barlow, Sir John, Wales
Chichester, Sir Arthur, Devonshire
Clayton, Sir John, Parsons-Green
Delaval, Sir Ralph Admiral (*B)
Grantham, Sir Thomas, London
Haddock Sir Richard, Comptroller of the
Navy
Killigrew, Sir Peter, Cornwall (*18)
Johnson, Sir Henry, Blackwall
Lowther, Sir John, Commissioner of the
Admiralty (*29)
Mackworth, Sir Humphrey, London
Norris, Sir Walter, Penrin
North, Sir Dudley
Owen, Sir Hugh, Wales (*25)
Parker, Sir Philip, Suffolk
Pett, Sir Peter, London
Robinson, Sir Robert, in the Navy
Rooke, Sir George Vice-Admiral (*C)
Rooth, Sir Richard, Kingsale
Rycaut, Sir Paul, London
Shere, Sir Henry Kt, Kent
Shovel, Sir Cloudsley Admiral (*26 & *G)
Southwell, Sir Robert, Kings-weston
(*[22] & *[36])
Tredenham, Sir Jos., Cornwall
Trelawny, Sir Jonathan, Lord Bishop(*17)
Wandesford, Sir Christopher, Yorkshire
Wheeler, Sir Francis in the Navy
Williams, Sir William, Wales (*28)

Other Admirals

Davies, William, V.-Admiral (*M)
Killigrew, Henry Admiral (*4)

Officers of the Admiralty or Government

Anguish, Mr William, Purser in the Navy
Barker, Thomas Esq, Consul at Algier
Blathwaite, William Esq, Secretary of War
Dunmar, Edmund Esq, Surveyor of the Navy

Fownes, Mr Joseph, Clerk of the Check
Sargison, Charles Esq Commissioner of the
Navy
Sotherne, James Esq, Secretary of the
Admiralty

Municipal and Corporate Bodies

Aberdeen, the City of, Scotland (*P)
Chester, the City of
Edinburgh, the City of (*O)
Harwich, the Town of
Liverpoole, the Town of
Newcastle, the Town of
Yarmouth, the Town of
Trinity House of Deptford Strond (*[A])
Trinity-House, Hull (*H)
Trinity-House, Newcastle (*L)

Captains

Andrewes, Capt Jonthan, Kenton-Park
Bendall, Capt Hopfor, Stepney
Bond, Capt William, Rotheriff (*S)
Bonnell, Capt James, London
Bowers, Capt John, Rotheriff
Bristol, Capt Robert
Clements, Capt John, in the Navy
Cole, Capt Thomas, in the Navy
Conway, Capt James, Limehouse
Crow, Capt Anthony, in the Navy
Dorrell, Capt Robert, London
Elkins Capt Thomas of Silly
England Capt Benjamin, Wapping
Falsby, Capt William in the Navy
Frost, Capt John, London
Gibson, Capt Charles, London
Goodridge, Capt Nicholas, London
Gunman, Capt Christopher, in the Navy
Harlow, Capt Thomas in the Navy
Heath, Capt William, Limehouse
Hobson, Capt Thomas in the Navy
Ledger, Capt Edward, London
Marr, Capt John of Dundee (Surveyor of P)
Monk, Capt Thomas in the Navy
Montague, Capt Erby, Westminster
Oxton, Capt William, London
Paggon, Capt Peter, London
Philips, Capt Samuel, London
Pickard, Capt Peter in the Navy
Sanderson, Capt Ralph, in the Navy (*I)
St. Lo, Capt George, in the Navy (*12)
Travaion, Capt Richard
Tyrrel, Capt John, in the Navy

Wardlow, Capt Andrew, Rotheriff
Warren, Capt Thomas, London
Wright, Capt Lawrence in the Navy
Wright, Capt William in the Navy
Richards, Colonel Jacob
Windham, Colonel John, Sarum

Gentlemen with no other rank given

Alcock, Mr Thomas, Bristol
Boscauen, John Esq, Cornwall
Browne, Arnold Esq, Stepney
Bulfinch, Mr John, Wapping
Castell, Mr Robert, Deptford
Colson, Mr John, Goodmans-fields (*W)
Cullman, Mr Thomas, London
Dawson, Mr Robert, Greenwich
Deane, Mr Samuel, London
Enys Mr Thomas, Penrin
Etrick Walter, Sunderland
Flamsteed, John M.R. Greenwich
Gayar, Mr John, London
Godolphin, Sydney Esq, Cornwall
Hallimore, Mr Peter, Penrin
Harle, Mr James, Penrin
Hatley, Mr Benjamin, London
Henley, Mr Robert, Bristoll
Jeffrys, Mr Jeffry, London
Kemp, Mr James, Penrin
Kent, Mr John, London
Keale, Mr Philip, Penrin

Killingworth (*sic.*)
Lane, Mr Thomas Merchant
Langherne, Rowland Esq, Wales
Lownds, William Esq, Westminster
Lytcot, Mr Gyles, London
Mount, Mr Richard, Bookseller, London
Nance John Esq, Cornwall
Newman Mr John, Penrin
Owen, Arthur Esq, Wales
Parke, Mr Samuel, Ipswich
Pearla, Mr James Jun. Westminster
Pett, Samuel Esq, Battersey
Philips, Hector Esq, Wales
Rashley, Jonathan Esq, Cornwall
Romsey, John Esq, London
Sansom, John Esq, London
Saule, Joseph Esq, London
Spry, George Esq, Cornwall
Symons, Mr Nathaniel, Yarmouth
Taylor, Mr Thomas, London
Tregea, Mr William, Cornwall
Tucker, Mr John, Westminster
Vincent, Henry Esq, Cornwall
Vivian, John Esq, Cornwall
Weedon, Mr Thomas, London
Williams, Mr Reeve, London (*33)
Worth, Mr Thomas, Penrin
Worth, Mr William, Penrin
Yates, Mr Robert, Bristol (*[23])

Version Four - The Subscribers arranged by geographical location.

London

Deptford, Castell, Mr Robert
Deptford, Fownes, Mr Joseph
Greenwich, Dawson, Mr Robert
Greenwich, Flamsteed, John M.R.
Parsons-Green, Clayton, Sir John
Stepney, Bendall, Capt Hopfor
Stepney, Browne, Arnold Esq
Wapping, Bulfinch, Mr John
Wapping, England Capt Benjamin
Limehouse, Conway, Capt James
Limehouse, Heath, Capt William
Goodmans-fields, Colson, Mr John
Rotheriff, Bowers, Capt John
Rotheriff, Bond, Capt William
Rotheriff, Wardlow, Capt Andrew

Blackwall, Johnson, Sir Henry
Battersey, Pett, Samuel Esq
London, Bonnell, Capt James
London, Cullman, Mr Thomas
London, Deane, Mr Samuel
London, Dorrell, Capt Robert
London, Jeffrys, Mr Jeffry
London, Frost, Capt John
London, Gayar, Mr John
London, Gibson, Capt Charles
London, Goodridge, Capt Nicholas
London, Grantham, Sir Thomas
London, Hatley, Mr Benjamin
London, Kent, Mr John
London, Ledger, Capt Edward
London, Lytcot, Mr Gyles

London, Mackworth, Sir Humphrey
London, Mount, Mr Richard Bookseller
London, Oxton, Capt William
London, Paggon, Capt Peter
London, Pett, Sir Peter
London, Philips, Capt Samuel
London, Romsey, John Esq
London, Rycaut, Sir Paul
London, Sansom, John Esq
London, Saule, Joseph Esq
London, Taylor, Mr Thomas
London, Warren, Capt Thomas
London, Weedon, Mr Thomas
London, Williams, Mr Reeve
Westminster, Lownds, William Esq
Westminster, Montague, Capt Erby
Westminster, Pearla, Mr James Jun.
Westminster, Tucker, Mr John

England East

Harwich, the Town of
Ipswich, Parke, Mr Samuel
Suffolk, Parker, Sir Philip
Yarmouth, Symons, Mr Nathaniel
Yarmouth, the Town of

England North

Chester, the City of
Liverpoole, the Town of
Yorkshire, Wandesford, Sir Christopher
Sunderland, Etrick Walter
Killingworth (*sic.*)
Newcastle, the Town of
Kenton-Park, Andrewes, Capt Jonthan

England South

Kent, Shere, Sir Henry Kt

England West

Glostershire, Astry, Sir Samuel
Sarum, Windham, Colonel John
Bristol, Alcock, Mr Thomas
Bristoll, Henley, Mr Robert

Bristol, Yates, Mr Robert
Kings-weston, Southwell, Sir Robert
Devonshire, Chichester, Sir Arthur
Exon, Trelawny, Sir Jonathan, Lord Bishop
Cornwall, Boscauen, John Esq
Cornwall, Godolphin, Sydney Esq
Cornwall, Killigrew, Sir Peter
Cornwall, Nance John Esq
Cornwall, Rashley, Jonathan Esq
Cornwall, Spry, George Esq
Cornwall, Tredenham, Sir Jos.
Cornwall, Tregaea, Mr William
Cornwall, Vincent, Henry Esq
Cornwall, Vivian, John Esq
Penrin, Enys Mr Thomas
Penrin, Hallimore, Mr Peter
Penrin, Harle, Mr James
Penrin, Kemp, Mr James
Penrin, Keale, Mr Philip
Penrin, Newman Mr John
Penrin, Norris, Sir Walter
Penrin, Worth, Mr Thomas
Penrin, Worth, Mr William
Silly, Elkins, Capt Thomas
[Travaion, Capt Richard]

Scotland

Scotland, Arran, the Earl of
Scotland, Aberdeen, the City of
[Scotland], Edinburgh, the City of
Dundee, Marr, Capt John
Scotland, Torbet, Lord Viscount

Ireland

Kingsale, Rooth, Sir Richard

Wales

Wales, Barlow, Sir John
Wales, Langherne, Rowland Esq
Wales, Owen, Sir Hugh
Wales, Owen, Arthur Esq
Wales, Philips, Hector Esq
Wales, Williams, Sir William

Appendix Two

A Table of Concordances Between the 1693 Edition Primary Sources.

Key to abbreviations.

BL1, BL2 and BL3 – London: The British Library. BL1 is an early compilation, with engraved title page in both halves. BL2 is the “King's Copy” (the version used in the available scan on Early English Books Online (EEBO.) BL3 is an additional copy (uncoloured) from the Royal Library.

CUL – Cambridge University Library. Previously in the Cruising Association of Great Britain library. Originally owned by the Earls of Lonsdale. The other early compilation with dual engraved title pages.

EUL – Edinburgh University Library. Provenence given in *Hendersons Donation* Ms EUA IN1/ADS/LIB/2/Da.1.31: 52.

BOD – Oxford: Bodleian Library.

MCC – Cambridge: The Pepys Library, Magdalene College, Samuel Pepys's copy.

NMM – Greenwich: Caird Library, The National Maritime Museum.

LGH – London: Guildhall Library.

The copies are ordered on the table in approximate order of compilation, based on the prevalence of first state, or non-included, charts. As noted in the text ordering of contents is inconsistent, so some earlier individual charts do appear in later compilations. Broadly speaking BL1 and CUL can be firmly distinguished as the earliest compilations because of the doubled engraved title page and lack of the later charts of the River Avon and Kingsale. BL2 and MCC are also wanting these, but have only a single engraved title page. EUL and BOD are complete, but also feature a number of other first state charts. BL3, NMM and LGH are all later compilations, featuring a full representation of the charts engraved, mostly in their second state, although even here LGH has a number of first state charts amongst them.

No	Title	Dedication	BL1	CUL	BL 2	EUL	BOD	MCC	BL3	NMM	LGH
PART ONE											
[2]	2 appears top R of LH sheet of double spread map A in part 2		[✓]	[✓]	[✓]	[✓]	[✓]				
3	Nil [North Sea]	<i>To the Honourable S^r John Ashby K.^t ADMIRAL of the BLEW</i>	✓ after [A] in pt2	✓ after B in pt 2	✓ after [A] in pt 2	✓ after B in pt2	✓ after B in pt 2	✓ after B in pt 2	✓ after B in pt 2	✓ after [A] in pt 2	✓ after B in pt 2
4	Nil [The Channel]	<i>To the Right Honourable Admirall Killegrew</i>	✓	✓	✓	✓	✓	✓	✓ after 5	✓	✓
5	Nil [The Channel] Inset of Brest Harbour	<i>To the Right Honourable The LORDS COMMISSIONERS for Executing the Office of LORD HIGH ADMIRALL OF ENGLAND – 1693</i>	✓	✓ after 14	✓ after 12	✓	✓ after 14	✓	✓	✓	✓ after 14
[6]	6 appears top centre of three sheet spread			[✓]	[✓]	[✓]	[✓]				[✓]
[7]	7 appears bottom left of three sheet spread			[✓]	[✓]	[✓]	[✓]				[✓]
8	Nil [Rye Harbour]	<i>To the Hon^{ble} Robert Austen Esq, One of the Lds Commisrs for Executing the Office of Lord High Admirall of England &c</i>	✓ ms num	✓ no num	✓	✓	✓	✓	✓ on back of 10	✓	✓
[9]			[✓]								
[10]	Nil [Isle of Wight and The Solent]	<i>To the R.^t Hon.^{ble} EDWARD RUSSELL ADMIRALL of THEIR MA.^{TIES} FLEET. One of their Ma^{ties} most hon^{ble} Privy Council and Treasurer of y^e Navy &c</i>	✓ ms num 9	✓	✓	✓ no num	✓	✓	✓ no num	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
[11]											
12	Nil [Portland Bill and Weymouth Roads]	To Captain GEORGE S. ^T LO	✓	✓	✓	✓	✓	✓	✓	✓	✓
[13]											
14	Nil [Torbay and Exmouth]	<i>To the Right Honourable THOMAS Earl of Pembroke and Montgomery Baron HERBERT of Sherland &c Premier Commiss^r for Executing the Office of L^d High Admirall of England &c And one of their Ma^{ties} most Honourable Privy Council</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	DARTMOUTH	TO THE RIGHT HONORABLE (<i>sic.</i>) GEORGE LORD DARTMOUTH. M. ^[aste] ^R Generall of his Majesty's ORDNANCE &c	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	PLYMOUTH	<i>To the R,^t Hon,^{ble} ARTHUR EARLE of TORRINGTON Baron HERBERT of Torbay, First L^t of the Admiralty (<i>sic.</i>) ADMIRAIL (<i>sic.</i>) of their Ma,^{ties} Navy & Cap,^t Gen,^{ll} of the Narrow Seas</i>	✓	✓	✓	✓ no num	✓	✓	✓	✓	✓
17	FOWEY & MOUNTS=BAY (<i>sic.</i>)	To the RIGHT REVEREND FATHER IN GOD IONATHAN LORD BISHOP OF BRISTOLL	✓	✓	✓	✓	✓	✓	✓	✓	✓
18	FALMOUTH	To S. ^R PETER KILLEGREW Baronet	✓	✓	✓	✓	✓	✓	✓	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
19	Nil [Lizard to Scilly]	TO THE HON. ^{BLE} THE GOVERNOR (<i>sic.</i>) DEPUTY GOVERNOR (<i>sic.</i>) AND COMMITTEES OF THE EAST INDIA COMPANY 1686	✓ w. date	✓ w. date	✓ w. date	✓ w. date	✓ w. date	✓	✓	✓ w. date	✓ w. date
20	THE ISLANDS OF SCILLY	TO HIS GRACE HENRY DUKE OF GRAFTON; <i>VICE ADMIRAL OF ENGLAND</i> ; &[c] – 1689	✓	✓	✓	✓	✓	✓	✓	✓	✓
[21]	[St George's Channel] (This map advertised in London Gazette May 1690)	Nil [To S. ^R RICHARD ROTH <i>Kn.^l Late Govenor of their Ma^{ties} Fort Castle:ny:Park near Kinsale</i>] [dedication only on State 2; BL3 & NMM;]	✓ no ded	✓ no ded	✓ no ded	✓ no ded	✓ no ded	✓ no ded	✓	✓	✓ no ded
[22]	Nil [the Severn or Channell of Bristoll]	To the <i>Right Honourable</i> S. ^R ROB. ^T SOUTHWELL K. ^T <i>Who attended his MAJ.^{TY} K WILLIAM the 3.^d; in his Expedition for Ireland in Quality of Principall Secretary of State for that Kingdom</i>	✓ State 1	✓ State 1	✓ State 1	✓ State 1 after 23	✓ State 1	✓ State 1	✓ State 2 after 24	✓ State 2	✓ State 1 after 23
[23]	THE RIVER AVON from the SEVERN to the CITY of BRISTOLL	To the Right Worshipfull ROBERT YEATES, Esq ^r MAYOR of BRISTOLL and Master of the Merchants Hall in that City	x	x	x	✓ State 1 no num no ded	✓	x	✓ after 22	✓	✓
24	MILFORD HAVEN	<i>TO HIS GRACE HENRY Duke of BEAUFORT, and Earle of Worcester, Baron Herbert of Chepstoll, Raglan and Gower, Lord President, and Lord Lieu.^l of Wales, &c</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
25	Milford Hauen (<i>sic.</i>) and the Islands <i>Adjacent</i>	to S, ^t HUGH OWEN Bar. ^t	✓	✓	✓	✓	✓	✓	✓	✓	✓
26	The Coast of WALES	<i>To S,^r CLODISLEY SHOUELL K.^t and REAR ADM,^{LL} of the BLEW</i>	✓ no num	✓ no num	✓ no num	✓ no num	✓	✓	✓	✓	✓ no num
27	HOLY-HEAD	to Cap ^t William Wright * to Cap ^t Thomas Hewetson	✓* State 1	✓* State 1	✓ * State 1	✓ State 2	✓	✓	✓	✓	✓ State 2
28	Nil [Menai Strait]	<i>To the Right Worshipfull S.^r William Williams BARR.^T</i>	✓ no num	✓ no num	✓	✓	✓	✓	✓	✓	✓
29	Nil [Irish Sea & Isle of Man]	<i>To the Hon,^{ble} S,^R IOHN LOWTHER Bar.^t One of the Commissiners (<i>sic.</i>) for Executing the Office of Lord Highe (<i>sic.</i>) Admirall of England 1689</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
30	<i>A New & Exact Survey of the River DEE or CHESTER-WATER</i>	<i>to his Most Sacred Maj,^{ti} WILLIAM the III KING of Great Brita,ⁿⁱ Fran,^{ce} & Ireland</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
31	Nil [The Isle of Man]	<i>To the R.^t Honorable (<i>sic.</i>) WILLIAM, E,^{LE} OF DERBY Lord of y^e ISLE of MAN &[c]</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
32	Nil [Carreckfergus (<i>sic.</i>) Lough]	<i>To the most Potent and Heroik Prince WILLIAM the III of Great Britain, France and Ireland KING Defender of the Faith &c</i>	✓ no num	✓ no num	✓	✓ no num	✓	✓	✓	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
33	Nil [Carlingford Lough] [half size page]	<i>To M^r Reeve Williams Teacher of y^e Mathematiks in London</i>	✓ no ded	✓ no ded	✓ no ded	✓ no ded	✓ no ded	✓	✓	✓	✓ no ded
34	Nil [Dublin Bay]	To His Grace IAMES Duke of ORMOND &c	✓ State 1	✓ State 1	✓ State 1	✓ State 2	✓ State 2	✓	✓	✓	✓ State 2
[35]											
[36]	CHART of KINGSALE (sic.) HARBOUR	To the Right Hon. ^{ble} S ^r Robert Southwell Knight Vice Admirall of Munster and Principall Secretary of State for the Kingdom of Ireland	x	x	x	✓	✓	✓	✓	✓ after [22]	✓
[37]											
[38]											
39	How these Severall Lands show at Sea	Nil.	✓ ms no 29/39	✓ num 29/39	✓ num 1&2	✓ num 29/39	✓ num 1&2	✓	✓ ms no 29/39	✓ num 29/39	✓ num 29/39
PART TWO											
No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
[x]	[Part of Northumberland] in Sailing Directions in Part Two	Nil	✓	✓	✓	✓	✓	✓	✓	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
[A]	Nil [E Coast from Thames to Humber] [Inset of river] The River of THAMES <i>from London to the buoy of the Noure sold by Rich.^d Mount at the Postern on Great Tower Hill London</i>	<i>To the Right Worpp^{ll} the Master and Wardens of the TRINITY HOUSE of Deptford Strond</i>	✓	✓ after 3 as 3 rd map	✓ after B	✓ after 3 as 3 rd map	✓ after 3 as 3 rd map	✓ after 3 as 3 rd map	✓	✓ after B	✓ after 3 as 3 rd map
B	Nil [Western North Sea]	<i>To the Honourable S:^r RALPH DELAVAL K.^t Vice Admirall of the RED</i>	✓	✓ 1 st map	✓	✓ 1 st map	✓ 1 st map	✓ 1 st map	✓	✓	✓ 1 st map
C	THE EAST COAST of SCOTLAND <i>with the Isles of ORKNEY and SHETLAND</i>	To the Hon. ^{ble} GEORGE ROOK Esq Vice Admirall of the BLEW	✓	✓ after M	✓ after M	✓ after M	✓ after M	✓ after M	✓ after M	✓	✓ after M
[D]											
E	HARWICH <i>Woodbridg</i> (sic.) <i>and Handfordwater with the Sands from Nazeland to Hosely Bay</i>	<i>To y^e Hon.^{ble} SAMUEL PEPYS Esq:^r Secretary of the ADMIRALTY of ENGLAND President of y^e Royall Society & Maister</i> (sic.) <i>of y^e TRINITY HOUSE of Deptford:Strond ... 1686</i>	✓	✓	✓	✓	✓	✓	✓ after 3 (which is after B)	✓	✓
F	YARMOUTH and the Sands about it	<i>TO HIS GRACE HENRY DUKE OF NORFOLK &c</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
G	Nil [Blakeney Harbour]	<i>To S^r CLODISLEY SHOUEL K^t REAR ADM:^{LL} of the BLEW</i>	✓ no let	✓ no let	✓	✓	✓	✓	✓	✓	✓ no let
H	THE RIVER HUMBER	<i>To the Worshp.^{ll} Corporation of TRINITY HOVSE at KINGSTON vpon HULL</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
I	BURLINGTON BAY, SCARBROUGH (sic.) & HARTLEPOOLE	To Cap. ^t RALPH SANDERSON ... 1686	✓ no let	✓ no let	✓	✓	✓	✓	✓	✓	✓ no let
[K]											
L	Nil [Northumberland Coast & river Tyne, with inset of Durham coast & inset of Blyth Harbour]	<i>To the Worshp.^t the MASTER and the Rest of the Gentlemen Bretheren of TRINITY-HOUS (sic.) NEWCASTLE vppon TYNE</i>	✓ no let	✓ no let	✓	✓	✓	✓	✓	✓	✓
M	HOLY ISLAND Staples and BARWICK	<i>...to Cap.^t WILL DAVIES vice Admirall to the R.^t Honorable (sic.) the Earle of TORRINGTON</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
N	Nil [Edinburgh Firth]	To THE Right Hon. ^{ble} IAMES EARLE of PERTH <i>Lord Chancellor of the KINGDOM of SCOTLAND</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
O	Nil [Leith]	TO THE <i>Right Honourable</i> S. ^t IAMES FLEMING Lord <i>PROVOST</i> of y ^e City of EDINBURGH, and y ^e rest of y ^e Hon. ^{ble} <i>Councill of the said Burgh</i>	x	x	✓	✓	✓ no let	✓	✓	✓	✓ no let

No	Title	Dedication	BL1	CUL	BL2	EUL	BOD	MCC	BL3	NMM	LGH
P	Nil [Entrance to River Tay] [Insets of Montrose and of Aberdeen]	<i>To the Hon.^{ble} the Magistrates of the City of ABERDEENE</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Q	Nil [The Firth of Murry]	<i>To the R.^t Hon.^{ble} my Lord Viscount TORBAT Lord Register of the Kingdom of SCOTLAND 1689</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
R	THE ISLANDS OF ORKNEY	<i>TO HIS ROY,^L HIGH,^S GEORG (sic.) PRINCE of DENMARK</i>	✓ no let	✓ no let	✓	✓ no let	✓ no let	✓	✓	✓	✓
S	<i>The Cheife Harbours in the Islands of ORKNEY</i>	<i>... to Cap.^t WILL BOND ... 1688</i>	✓ no let	✓ no let	✓	✓	✓	✓	✓	✓	✓
T	Nil [Part of the Maine Island of Shetland]	<i>To the R.^t Honorable (sic.) DANIEL EARLE of NOTTINGHAM</i>	✓ no let	✓ no let	✓	✓	✓	✓	✓	✓	✓
V	Nil [15 coast views]	Nil	✓	✓	✓	✓	✓	✓	✓	✓	✓
W	The South Part of the Isles of SHETLAND	<i>... to M.^r John Colson Teacher of the Mathematicks in London</i>	✓	✓ after S	✓	✓ after W	✓ after T	✓ after S	✓	✓	✓ after T

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