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From 'Sick Comforts' to 'Doctor's Garden': British Naval Hospital Ships, 1620 to 1815

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ABSTRACT
British hospital ships of the seventeenth century were hired vessels providing 'sick comforts', and safe conveyance for sick and wounded men. Even after the establishment of Admiralty regulations in the eighteenth century, the medical staffing of hospital ships varied in quantity and quality. Nonetheless, these ships extracted sick and wounded men from warships, cared for them, conveyed them to Naval hospitals, accommodated them when convalescent, and repatriated them when invalided out. Under the Physician to the Fleet, hospital ships became part of the Navy's efforts to ensure that fresh provisions – the 'doctor's garden' – and medical necessities kept seamen fighting fit.

Introduction

Hospital ships have accompanied Royal Naval operations since the early seventeenth century, yet their use and development in following years has been somewhat neglected by historians. This paper builds on previous scholarship to focus on British hospital ship development and deployment to the early nineteenth century. Analysis of records at The UK National Archives, especially Admiralty musters and Navy Board ships' pay books, and additional sources such as surgeons' medical journals and physicians' memoirs, provides definitive evidence showing how, where and when the principal naval hospital ships were employed in different periods.

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Hospital Ships in the Seventeenth Century

The first example of a hospital ship in the Royal Navy is dated 1608 in a much-quoted paper by Shaw.[1] However, this early date appears to be based on a misreading of the cited reference to a 1620 naval expedition to Algiers.[2] A hired ship, *Goodwill*, served as a store ship, later provided the fleet with 'sick comforts', and for a short period took on board sick seamen from the king's ships. At this time, it was customary to land naval sick at the nearest port where they received lodging and care.[3]

The potential benefit of hospital ships in enabling the isolation of seamen with infectious or contagious diseases was explicitly recognised following the disastrous Cadiz expedition of 1625. Captain Nathaniel Butler advocated that each squadron of a fleet should have a hospital ship with cabins to accommodate sick men, well-furnished with medical supplies, and a dedicated 'chirurgeon' and mate. Such provision, however, was slow in coming.[4]

In the First Dutch War (1652-54), the fleet operated mainly in English coastal waters, and there is no evidence for hospital ships; fighting ships would have come into port to discharge their sick and wounded. During the Second Dutch War (1665-67), at the urging of James Pearse, Surgeon-General of the fleet, dedicated hospital ships with surgeons and medical provisions were employed for the first time to receive casualties from men-of-war after battle. Notably, the *Loyal Katherine* treated and evacuated over 500 men wounded in the Battle of Lowestoft, 3 June 1665.[5] In the Third Dutch War (1672-74), Pearse specified that hospital ships should be staffed by one surgeon, three or four able mates and two or three landsmen as cooks and nurses; he submitted to the Navy Board a detailed list of the equipment, stores and foodstuffs required.[6]

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[1]J. J. Sutherland Shaw, 'The Hospital Ship, 1608-1740', *Mariner's Mirror,* Vol. 22 (1936), pp. 422-426.

[2]M. Oppenheim, *A History of the Administration of the Royal Navy and of Merchant Shipping in Relation to the Navy from MDIX to MDCLX with an Introduction Treating of the Preceding Period*, (London: John Lane, 1896), pp. 187-188.

[3]J.J. Keevil, *Medicine and the Navy 1200-1900*, Vol. I, (Edinburgh: Livingstone, 1957), pp. 156-157; John Raymond Hailey, *Royal Naval Hospital Ships 1620-1720,* (M.A. Dissertation, University of Exeter, 2000), pp. 9-11.

[4]Keevil, *Medicine and the Navy*, Vol. I, pp. 196-197; Hailey, *Royal Naval Hospital Ships,* pp. 11-13.

[5]J.J. Keevil, *Medicine and the Navy 1200-1900*, Vol. II, (Edinburgh: Livingstone, 1958), pp. 84-86; David Stewart, 'Hospital Ships in the Second Dutch War', *Journal of the Royal Naval Medical Service,* Vol. 34, No. 1 (1948), pp. 29-35.

[6]C.P. Willoughby, 'Care and Diligence – the professional life of James Pearse, sea surgeon, courtier and the founder of naval medicine', *Journal of the Royal Naval Medical Service,* Vol. 105, No. 3 (2019), pp. 202-206.

During the War of the English Succession (1689-97) hospital ships became a regular feature of naval operations. Confined chiefly to the Channel and North Sea, they seem to have been underused and were inactive during the winter months. None were retained at the end of the war.[7]

Hospital ships of the late seventeenth century were usually old merchant ships with poor sailing qualities, hired for a minimum of six months. They typically displaced 650 tons or less, carried 22-40 guns, and had a crew of up to 70 men excluding the medical staff. Predominantly engaged during times of conflict, they underwent minimal alteration: provision of a storeroom for medical necessities; fitting of platforms and cradles; and the cutting of gratings between decks to aid ventilation. Since they were still regarded as fighting ships, however, fleet commanders could assign them to other duties such as convoy protection.[8]

The Early Eighteenth Century

Several improvements were made to hospital ships during the War of The Spanish Succession (1701-14). Firstly, the gun-deck was reserved for the accommodation of sick and wounded, bulkheads were removed and canvas screens used to separate infectious cases. Secondly, assistance available to the surgeon was increased to four mates, eight helpers and a boy. Thirdly, after an initial prohibition, women were employed as nurses and laundresses to the sick and wounded, a practice that began in the reign of William III.[9]

There was a marked expansion in the number of hospital ships; at least 20 different vessels were commissioned by the Navy and deployed in the Mediterranean all year round.[10] Thereafter, the vessels employed as naval hospital ships were either built in naval dockyards or purchased rather than hired. *Looe* (1707-37), a 40-gun 553-ton fifth-rate, was converted into a hospital ship with a complement of 60 at Sheerness in 1716-17.[11] The similar *Portsmouth* (1707-28), built at Deptford, was commissioned in 1720 for the Baltic, and fitted out as a hospital ship at Sheerness in 1721.[12]

[7]Keevil, *Medicine and the Navy*, Vol. II, p.174-178 & pp. 182-187.
[8]Hailey, *Royal Naval Hospital Ships,* pp. 24, pp. 37-38.
[9]Keevil, *Medicine and the Navy*, Vol. II, pp. 241-247; Hailey, *Royal Naval Hospital Ships,* pp. 38-48.
[10]Hailey, *Royal Naval Hospital Ships,* pp. 7-8.
[11]Royal Navy ships were rated according to their size, generally by the number of guns. Only ships with a certain number of guns (from 1756, 60 and above) were ships-of-the-line. Smaller ships functioned as support vessels. A ship smaller than a sixth-rate was unrated (unr).
[12]Rif Winfield, *British Warships in the Age of Sail, 1714-1792*, (Barnsley: Seaforth, 2007).

According to *Looe*'s pay books, while in the Baltic in June 1717, the surgeon was accompanied by his servant, mates (3) and assistants (8).[13] *Looe* was paid off in November, recommissioned for the Baltic in March 1718 and was with the fleet at the Battle of Cape Passaro, Sicily, 11 August 1718. The nominal surgeon's complement of 22, including the surgeon, mates (4), assistants (8), boy (1), helpers (5) and laundresses (3) was not reached and was further depleted by men and women discharged, run (deserted), or dead before the battle.[14]

On *Portsmouth*, a complete surgeon's company of 22 with similar composition, except for assistants (9) and laundresses (2), was assembled in March 1721. A physician's servant was also borne, but his master was not identified.[15] In May 1726, with an expanded complement of 74, the surgeon's list numbered 22 on sailing for the Baltic, although one mate, a helper and two laundresses had died by November when the ship returned to Woolwich. A similar medical complement was aboard at Copenhagen from May to July 1727.[16]

In 1730, the operation of hospital ships was codified in Admiralty regulations which echoed earlier developments and remained unaltered during the century (Figure 1). Gun-decks were 'entirely set apart for the Reception of Sick Men'. Ventilation scuttles were installed, and cabins and bulkheads removed and replaced with deal or canvas partitions to separate 'such as have malignant Distempers'.[17] The gun-deck also held all necessary cradles with bedding and 'two pair of chequer'd Linnen Sheets' per bed. The ship had an experienced surgeon, his servant, mates (4), men assistants (6), a baker, and washermen (4), and housed the squadron's physician. The 'Men under Cure' were fed 'the best and newest Provisions in the Ship' including fresh meat when available.[18]

[13]The National Archives (hereinafter TNA) ADM 33/301 Navy Board, Ships' Pay Books, *Looe*, 1717.
[14]TNA ADM 33/318, Navy Board, Ships' Pay Books, *Looe*, 1718-22.
[15]TNA ADM 33/298 Navy Board, Ships' Pay Books, *Portsmouth*, 1721.
[16]TNA ADM 33/320 Navy Board, Ships' Pay Books, *Portsmouth*, 1726-27; ADM 36/2712-13 Admiralty, Royal Navy Ships' Musters, *Portsmouth*, 1726-27.
[17]Admiralty. Regulations and Instructions relating to His Majesty's Service at Sea (London, 1731), pp. 137-139; and Thirteenth Edition (London, 1790), pp. 139-141.
[18]Ibid.

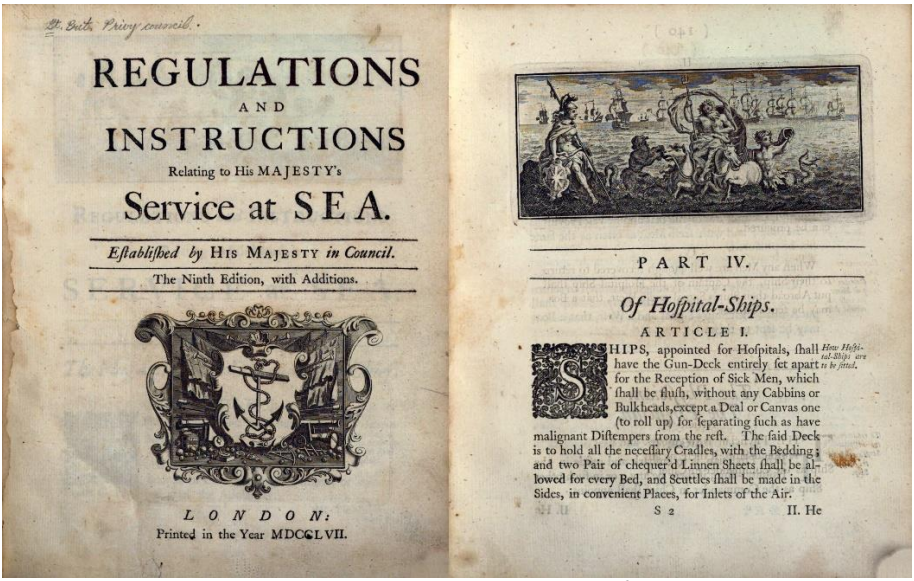


Figure 1: Admiralty Regulations and Instructions.[19]

The new regulations were closely reflected in *Looe,* which had been refitted as a fifth-rate and was later re-converted to serve as a hospital ship with a complement of 117 off Lisbon and the Tagus from August 1735 to April 1737. Between December 1735 and July 1736, the ship took more than 100 sick and hurt seamen from 15 ships.[20] Also on board were Dr James Lidderdale, later appointed 'Physician to the Squadron of His Majesty's Ships and Vessels to be Employed in the Mediterranean' by warrant of 4 May 1738, and his servant.[21]

Hospital Ships of the 1740s

During the next major conflicts, the War of Jenkins' Ear (1739-48) and the War of The Austrian Succession (1740-48), the Navy again employed hospital ships (Table 1). These were either purchased storeships, including a former French prize, or fourth- and sixth-rates of up to 50 guns and 750 tons, which were refitted to serve as hospital ships. Sea-going vessels deployed in the Caribbean, Mediterranean or East Indies carried a complement of 65-120 men. Several ships that had seen the end of their sailing days served at home ports and required a reduced crew of only 12-36,

[19]Frontispiece and beginning of Part IV 'Of Hospital-Ships', 9th ed., (London, 1757).
[20]TNA ADM 33/353 Navy Board, Ships' Pay Books, *Looe*, 1735-37; ADM 36/1816-17 Admiralty, Royal Navy Ships' Musters, *Looe*, 1735-37.
[21]TNA ADM 6/15/113 Admiralty, Service Records, Dr James Lidderdale, 1738.

depending on size, which ranged from first- and second-rates of 1,500-2,000 tons at Portsmouth and Sheerness, to smaller vessels at Portsmouth, Plymouth and Tower Wharf.

SHIP	YEARS	TYPE	TONS	MEN	WHEN	WHERE	TNA RECORDS
Princess Royal	1739-50	24/unr	541	77/92	1740-43	Caribbean	33/362 & 372 36/2619-20
Scarborough	1739-44	18/unr	501	77/92	1740-44	Caribbean	33/381 36/3410-11
Blenheim	1706-63	90/2	1,557	32	1741-48	Portsmouth	33/391 36/301
Sutherland	1716-54	50/4	676	100	1741-45	Mediterranean	33/390 36/4118-20
Solebay	1711-48	20/6	272	12	1742-48	Tower Wharf	36/4168
Chester	1708-50	50/4	704	23	1744-48	Portsmouth	33/391 36/684
Enterprize	1709-49	40/5	531	36	1745-48	Plymouth & Portsmouth	33/403
Rochester	1716-48	50/4	719	100	1745-47	Mediterranean	33/394 36/2948
Dolphin	1732-55	20/6	428	65	1745-46	East Indies	33/384 36/867
Britannia	1719-50	100/1	1,895	36	1746-47	Sheerness	33/391
Apollo	1747-49	20/unr	744	120	1747-48	East Indies	33/400 36/114

Table 1: Principal Hospital Ships, 1739-48.[22]

From 1739 the fleet was afflicted by an epidemic of 'violent and malignant fever' which threatened manning levels. The three-decked *Blenheim* was fitted at Portsmouth to receive sick men from June 1740 and proved useful in stopping men from deserting.[23] The guns were removed, and the gun-decks reconditioned to accommodate the sick in wards designated according to various afflictions – Itchy, Fever, Flux, and Ague (scabies, fevers, dysentery and malaria, respectively) – with additional wards on the middle deck. There were 255 cradles on board and a scuttle was fitted in each

[22]When and where hospital ships served and the ship's complement at the time from specified TNA records; details of ships' years of naval service, type (guns/rate) and tons as built from Winfield, *British Warships, 1714-1792*.

[23]Daniel A. Baugh, *British Naval Administration in the Age of Walpole*, (Princeton: Princeton University Press, 1965), pp. 179-186.

porthole to aid ventilation.[24] *Blenheim* was recommissioned as a hospital ship for a second time at Portsmouth (see below).

During this period, women nurses appear to have been common aboard hospital ships in port. Aboard *Blenheim*, on 1 April 1741, in addition to the surgeon, his servant, mates (7) and assistants (6), there were women nurses (8) and washerwomen (4). More nurses joined in May and June. From 1 April to 19 May 1748, when the ship was paid off, the complement of nurses stood at 15.[25] This is consistent with the maximum capacity of the ship, each nurse looking after 17 patients on average, equivalent to a set quota of six nurses to every 100 men.[26] One male nurse, Richard Palmer, later became an assistant. A complement of similar size is listed on *Britannia* and of about half the size on the smaller *Chester* and *Enterprize*.[27]

YEAR	MONTH	LOCATION	FLEET MOVEMENTS
1740	October November December	Spithead At Sea Dominica	Sailed 26 October 19 to 27 December
1741	January & February March to May June July to November December	Jamaica Cartagena Jamaica Santiago de Cuba At Sea	Arrived 9 January Returned 19 May Sailed 30 June Departed 28 November
1742	January & February March April onwards	Jamaica Porto Bello Jamaica & At Sea	Departed 3 April
1743	January	*Princess Royal* returned home	
1744	July	*Scarborough* returned home	

Table 2: Hospital Ships in the West Indies, 1740-44.[28]

[24]Christopher Lloyd and Jack L.S. Coulter, *Medicine and the Navy 1200-1900*, Vol. III, (Edinburgh: Livingstone, 1961), pp. 67-68.
[25]From 1 October 1746, by order of the Navy Board, the nurses and washerwomen in this ship were no longer victualled with the rest of the surgeon's company and were only recorded in pay books. It is not recorded where the women were drawn from.
[26]TNA ADM 106/938/232 Navy Board, In-letters, Richard Hughes, Portsmouth. Receipt of warrant to allow six nurses to every hundred men, 1 May 1741.
[27]References to individual ships are henceforth given in relevant Tables.
[28]Location of hospital ships from Admiralty musters (Table 1); dates of fleet movements from William L. Clowes, *The Royal Navy: From the Earliest Times to the Present, Vol. III,* (London: Sampson Low, Marston, 1898), pp. 63-80.

Among the sea-going vessels were two converted storeships, purchased in 1739, which served in the West Indies (Table 2). *Scarborough* had a surgeon, his servant, mates (4) and one washerman. *Princess Royal* initially had six mates of whom two were discharged to *Blenheim* and not replaced before sailing. Musters and pay books show no sign of any assistants, helpers or nurses. However, they do contain some useful information about the numbers of sick men from other ships taken on board, and their various fates.

The voyage across the Atlantic was blighted by infectious diseases, notably dysentery.[29] Between 28 October 1740 and 20 January 1741, *Scarborough* received 197 men of whom no fewer than 65 (33%) died, before those remaining were discharged in early February to their ships or to the hospitals at Port Royal, Jamaica. *Scarborough* then received 194 convalescent patients from Port Royal, most of whom would be discharged by mid-March. Some warships were especially badly affected: on 30 December 1740, 40 sick men from *Boyne* were received on *Princess Royal*; of these, 23 (58%) died and the rest would be discharged by early March 1741. In home waters during August and September 1740, by contrast, of 56 sick men taken aboard by *Princess Royal*, only four (7%) died.

The joint attack on Cartagena, a South American city in what is now Colombia, between March and May 1741, was a devastating failure owing to friction between naval and military commanders. By 25 March, 500 troops had already died and 1,500 more had fallen sick of disease, especially yellow fever which was endemic.[30] Sick soldiers were squeezed onto transports lacking medical equipment and medical personnel, which were also short of provisions. Naval surgeon, witness and author Tobias Smollett described patients left to fester in appalling conditions, and the naked bodies of the dead being thrown overboard, where they became prey for sharks and carrion fowl.[31]

Loss of life was huge. In his essay on yellow fever, Dr John Hume, then surgeon in charge of the naval hospital at Port Royal, Jamaica stated that, during 1741 and 1742, 11,800 sick men were sent to the Jamaican hospitals of whom 1,653 (14%) died. He estimated 7,000 had yellow fever of which 1,500 (22%) died.[32] An analysis of the

[29]Ibid., pp. 63-64.

[30]Ibid., pp. 67-80. Clowes asserts that the sick soldiers were put on board the two naval hospital ships but there is no evidence for this in the musters.

[31]G.A. Kempthorne, 'The Expedition to Cartagena, 1740-1742', *Journal of the Royal Army Medical Corps,* Vol. 64, No. 4 (1940), pp. 272-278.

[32]John Hume, 'An account of the true bilious, or yellow fever; and of the remitting and intermitting fevers of the West Indies'. In: *Letters and essays on the small pox and inoculation, the measles, the dry belly ache, the yellow, and remitting, and intermitting*

muster books belonging to the majority of the ships which served at Jamaica in 1741, but excluding the hospital ships, calculated that, from a total complement of 19,800 men, there were at least 3,500 (18%) deaths from all causes. The mortality rate on individual ships varied with several losing as many as 40% of their men.[33]

Between 16 March and 5 May 1741, *Princess Royal* received 112 sick men; of these at least 34 (30%) died at Cartagena, at sea, or at Port Royal. In the subsequent action at Cumberland Harbour, Cuba between 14 July and 2 December, the ship received 60 sick men, including 25 from *Worcester*, of whom 18 (30%) died there or at sea. Then, in January 1742, the hospital ship picked up sick men from the fleet and transferred them to hospital ashore about a week later. Between July and October, the ship bore convalescents discharged from the shore hospital. Finally, *Princess Royal* set off for England carrying 29 invalids, of whom 7 (24%) died on the return journey. The remainder were mostly sent to hospitals at Deal or Woolwich in January 1743.

It should be noted that the naval hospital ships in the West Indies were not reserved exclusively for sick or convalescent seamen. Muster records show that they were occasionally used to transport small numbers of marines, British Army officers and their servants, American officers and soldiers, Frenchmen and Spanish prisoners.

Sutherland served as hospital ship to the fleet in the Mediterranean (Figure 2). The ship arrived at Port Mahon's naval hospital in Minorca in January 1742 with the surgeon and his servant, mates (2), assistants (3) and washerwomen (4), and was joined in April by Dr Lidderdale and his servant. In summer *Sutherland* changed base to Villa Franca (Villefranche) and returned to Mahon in September. From June to December 1743, the ship took the fleet's sick and hurt men aboard at Hyères and, after spending the end of the year at Mahon, returned to the fleet at Hyères with recovered men in time for the battle of Toulon on 11 February 1744.[34]

fevers of the West Indies, (London: Printed for J. Murray, 1778), pp. 195-264, especially pp. 241-244

[33]Duncan Crewe, *Yellow Jack and the worm: British naval administration in the West Indies, 1739-1748*, (Liverpool: Liverpool University Press, 1993), pp. 63-75.

[34]Clowes, *The Royal Navy, Vol. III*. pp. 92-102.

Figure 2: *Sutherland* Hospital Ship.[35]

After spending the summer in Vado Bay off Vado Ligure, Italy and later at sea, *Sutherland* was paid off at Mahon in March 1745. The physician, and the surgeon with much of his complement, were transferred to *Rochester*, which spent May to July at Livorno, Italy and then at sea, before operating from Gibraltar until August of the following year when most of the remaining medical staff were discharged before the ship's return to England. On this voyage the ship carried 55 invalided seamen from 15 ships of the fleet: eight died, six were discharged 'unserviceable', and 41 were moved to *Blenheim* on 12 October 1746. Five of these were later discharged to hospitals in London.

The *Apollo* hospital ship, a re-fitted former French East Indiaman, carried five women nurses as part of the surgeon's complement on sailing for the East Indies in November 1747, all of whom were still aboard at Calcutta a year later.[36] *Dolphin*, designated as

[35]Royal Museums Greenwich. PAD8497. Drawing made while the ship was attached to the Mediterranean fleet, c. 1744. Credit: © National Maritime Museum, Greenwich, London.

[36]Ibid., pp. 130-132.

both a store and hospital ship, appears to have carried only a surgeon, his servant and one mate.

The Seven Years' War

The quartering system of care in private homes was convenient when ships were close to home and sick seamen could be landed nearby. However, it was liable to flaws including fraud, high cost, inadequate care, public health risks and manpower loss from malingering and desertion. Small naval hospitals ashore, including the first at Plymouth, had been set up in the seventeenth century, followed by more in Deal, Gosport and Rochester during the War of The Spanish Succession. Abroad, naval hospitals, both government-built and run under contract, were set up notably in Jamaica, Lisbon, Gibraltar, Minorca and Naples. The great naval hospitals of Haslar (Gosport) and Stonehouse (Plymouth) began admitting patients as early as 1753 and 1760, respectively.[37]

During The Seven Years War (1756-63), despite the advent of the new home hospitals, additional accommodation had to be provided by hospital ships at the major ports (Table 3). Larger second- to fourth-rate vessels, of 50-90 guns and 1,000-1,500 tons, were converted, as had happened a decade previously. *Blenheim* was commissioned for a second time at Portsmouth, *Rupert*, *Ruby* and *Canterbury* at Plymouth, and *Princess Caroline* at Sheerness. A smaller vessel, *Phoenix*, was located at Tower Wharf.

SHIP	YEARS	TYPE	TONS	MEN	WHEN	WHERE	TNA RECORDS
Princess Caroline	1731-64	80/2	1,353	33	1755-62	Sheerness	36/7145
Rupert	1740-67	60/4	1,070	n/s	1755-62	Plymouth	36/7177
Blenheim	1706-63	90/2	1,557	32	1756-61	Portsmouth	36/7138
Ruby	1745-65	50/4	989	n/s	1756-62	Plymouth	36/7176
Canterbury	1744-70	60/4	1,117	27	1757-63	Plymouth	36/7145
Phoenix	1743-62	20/6	515	10/16	1757-62	Tower Wharf	36/7173
Thetis	1747-67	44/5	720	100	1757-58	Mediterranean	33/691 36/6862

Table 3: Principal Hospital Ships, 1755-63.[38]

[37]Kathleen Harland. 'Naval Medical Care 1620-1770', *Journal of the Royal Naval Medical Service,* Vol. 91 (2005), pp. 64-82; E. Birbeck. 'The Royal Hospital Haslar: from Lind to the 21st century', *Journal of the Royal Naval Medical Service,* Vol. 98 (2012), pp. 36-38.

[38]Details as in footnote to Table 1 (See Fn 22).

The ships' medical complements varied one from another and with time. *Blenheim* usually carried surgeon's mates (3-4) and assistants (5-6) but nurses and washerwomen are not mentioned in the musters.[39] The three hospital ships at Plymouth typically had fewer mates (2-3) and assistants (2-3) but a good number of women nurses (8-9). *Princess Caroline*, by contrast, appears to have made do with mates (2-3) and male helpers (3-4), although some women nurses appear to have been hired briefly in July 1758. There is no indication of the relevant personnel in *Phoenix*.

Thetis spent the second half of 1757 in home waters before serving in the Mediterranean during 1758. The ship began the year with a surgeon, servant, mates (2) and assistants (5), mostly landsmen and ordinary seamen, and a single woman nurse. Dr Walter Farquharson, who would later be appointed 'First Commissioner of the Sick and Wounded Seamen and for Exchanging Prisoners of War', had been appointed physician.[40] In January 1758, 114 French prisoners from the *Providence*, a privateer, that had been taken by the *Monmouth* were sent on board. One appears to have been made a surgeon's assistant, while the remainder were discharged on 7 February to a cartel, a ship which exchanged prisoners in time of war. On 14 February, *Thetis* received eight sick men from *Swiftsure*, discharging them to Gibraltar's naval hospital a week later.

By 27 April, there were more assistants (6), women nurses (6) and washermen (6), and a baker was also on board. Twenty-eight sick men from a cartel were received from *Revenge* on 29 April. A further 56 followed from the same ship on 16 May, and 30 prisoners from the French *Foudroyant* on 18 May. The majority of the sick and prisoners were transferred to *Revenge* on 27 May. Only one nurse remained after July, and the entire medical establishment was discharged shortly after 28 December.

Winfield cites the 44-gun fifth-rate *Crown* (1747-70) as a hospital ship in 1761; musters suggest that this ship was fitted as a storeship but may also have acted occasionally as a hospital ship. On 7 October 1759, for example, the ship received 25 invalids from the hospital at Halifax, Nova Scotia and returned them to Portsmouth the following month.[41]

Hospital Ships of the 1770s and 1780s

Large hospital ships continued to be stationed at home ports during the American Revolutionary War (1775-83) and the Anglo-French War (1778-83) as shown in Table 4. *Tiger,* a Spanish prize, and *Orford* were at Plymouth and Sheerness respectively.

[39]See Fn 25.
[40]TNA ADM 6/22/228, Admiralty, Service Records, Dr Walter Farquharson, 1781.
[41]TNA ADM 36/5215-17, Admiralty, Royal Navy Ships' Musters, *Crown*, 1759-62.

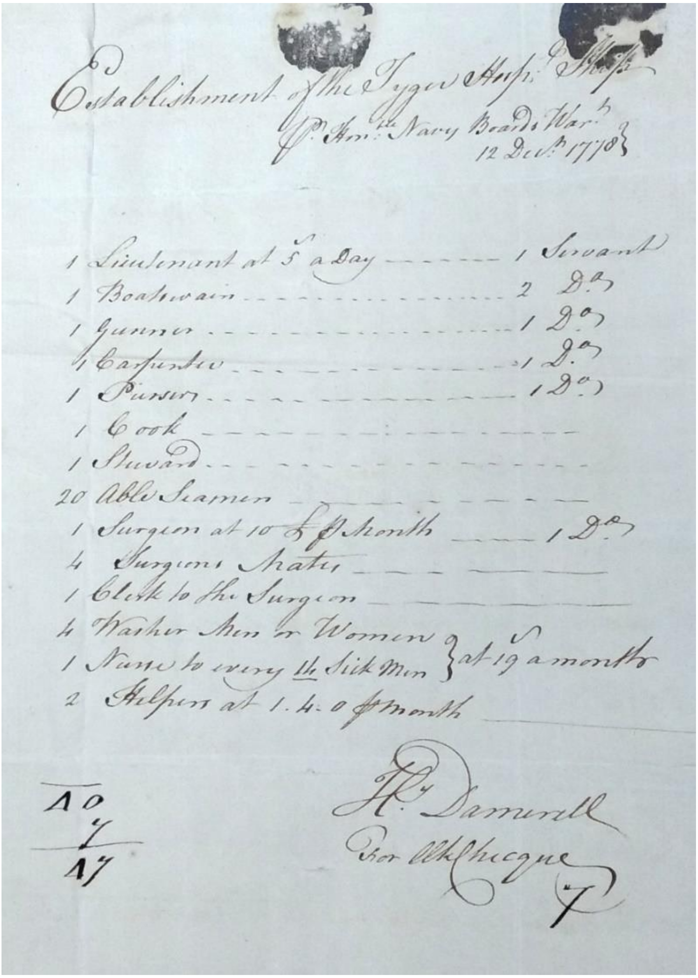
Nightingale at Tower Wharf had briefly served as a hospital ship in 1770-71.[42] *Mars*, previously a prison ship, was designated for the use of convalescing patients at Portsmouth. Two storeships, *Lioness* and *Nabob*, were purchased to act as additional convalescent ships at Portsmouth and Sheerness. A third purchased vessel, the sloop *Lynx*, operated as a hospital ship in the Solent, variously anchored off Spithead or St Helen's Roads, east of the Solent.

SHIP	YEARS	TYPE	TONS	MEN	WHEN	WHERE	TNA RECORDS
Nightingale	1746-83	22/6	522	10-19	1776-83	Tower Wharf	36/8435-38
Jersey	1736-83	60/4	1,065	140	1776-80	New York	34/430 36/8571-74
Orford	1749-83	70/3	1,415	46-51	1777-83	Sheerness	36/10150
Tiger	1762-84	74/3	1,886	47	1778-83	Plymouth	36/10150
Lioness	1777-83	26/unr	711	72	1780-83	Portsmouth	36/10150
Lynx	1777-83	16/unr	324	55/56	1780-83	Channel	34/469-70 36/10031
Mars	1759-84	74/3	1,556	72	1780-83	Portsmouth	36/9712
Nabob	1777-83	26/unr	637	72/73	1780-83	Sheerness	36/10150

Table 4: Principal Hospital Ships, 1775-83.[43]

The establishment in *Tiger* included the surgeon and his servant, a clerk, mates (4), washermen or washerwomen (4), helpers (2), and one nurse to every 14 sick men (Figure 3). By April 1779 there were seven nurses, and the number was maintained at this level by replacing any who had been discharged. This suggests that about 100 men were cared for. *Orford* appears to have been run along the same lines with a similar number of nurses on board at the end of 1777. On this ship, several nurses were discharged during the year; one became a washerwoman, and another was re-engaged as a nurse.

[42]TNA ADM 36/7190, Admiralty, Royal Navy Ships' Musters, *Nightingale*, 1770-71.
[43]Details as in footnote to Table 1 (See Fn 22).



Establishment of the Tyger Hosp: Ship
Pr. Hon:ble Navy Boards Warr.t
12 Decr 1778

1 Lieutenant at 5s a Day ------ 1 Servant
1 Boatswain ------ 2 Do
1 Gunner ------ 1 Do
1 Carpenter ------ 1 Do
1 Purser ------ 1 Do
1 Cook ------
1 Steward ------
20 Able Seamen ------
1 Surgeon at 10 £ p Month ------ 1 Do
4 Surgeons Mates ------
1 Clerk to the Surgeon ------
4 Washer Men or Women } at 19s a month
1 Nurse to every 14 Sick Men
2 Helpers at 1.4.0 p month

H. Damerell

Figure 3: Establishment of the *Tiger* Hospital Ship.[44]

In the eighteenth century, officers and men of the Navy, including the crews of hospital ships, were given a specific ration of victuals by the Victualling Commissioners. For the sick and wounded in hospital ships a contract was made between the Commissioners and the ship's purser at so much a head irrespective of diet. After 1762, this role was taken over by the Commissioners for Sick and Wounded (or Sick and Hurt Board). Patients on the *Nightingale* might be victualled on a low, half or full diet. Nurses were

[44]Attached to the ship's muster referenced in Table 4.

victualled in the same manner as sick men on full diet and their wages were paid by the Navy Board. The purser was allowed 'elevenpence per man a day for every sick Seaman or Marine, and likewise the same for every nurse'.[45]

Dr John Lind, who succeeded his illustrious father James as Physician at Haslar in 1783, recalled that the hospital had 1,800 beds, of which 480 were in garret wards only suited to convalescents, such that 300 extra beds had to be placed in lobbies and other spaces to accommodate patients coming from the fleet. At the beginning of 1780, there were more than 2,400 men in the hospital. To relieve the pressure, *Mars*, in which patients lay in hammocks instead of cradles 'for the sake of holding a greater number', and *Lioness* were added to the hospital establishment. The former held 400 men, the latter 200. By contrast, the relief obtained from private quarters had been 'comparatively but a small one'.[46]

Sir Gilbert Blane, who is credited with vastly improving the health of seamen in the 1780s and 1790s by implementing basic hygiene measures, ensuring the supply of necessary medicines and – not least – providing fruit and vegetables to prevent scurvy, accompanied Rodney's fleet to the West Indies as physician in 1779.[47] Subsequently Blane made several recommendations in a Memorial to the Board of Admiralty, including strict regulations to enforce cleanliness, the separation of diseases, and an allowance of adequate space for each man. Tellingly, he added: 'I would farther propose that hospital ships be established for the reception of the sick or recovering. I know from extensive experience and close observation, that these circumstances are more essential than even medicine and diet'.[48]

Jersey, a hospital ship during the American Revolutionary War sailed for America in May 1776 carrying the ship's surgeon, his servant and mates (4), plus physician Thomas Poole and his servant, and arrived off Staten Island in August. In early September, male nurses (6) and washerwomen (4) were brought on board. By the end of 1777, two of the nurses had died and three had deserted. Dr Poole died in May 1778, by which time the ship's original complement of 140 had reduced by half. Musters show that the ship carried invalids between August and December 1778, and hundreds of American and

[45]H.R.H. Vaughan. 'Hospital ship victualling in the later eighteenth century', *Journal of the Royal Naval Medical Service,* Vol. 8, No. 4 (1922), pp. 299-300.
[46]Sir Gilbert Blane, *Select Dissertations on Several Subjects of Medical Science*, (London: T & G Underwood, 1822), pp. 47-50.
[47]Mary Wharton, 'Sir Gilbert Blane Bt (1749-1834)', *Annals of the Royal College of Surgeons of England*, Vol. 66, No. 5 (1984), pp. 375-376.
[48]Gilbert Blane, *Observations on the diseases incident to seamen*. (London: John Murray, 1785), pp. 329-341.

French prisoners from March 1779. The surgeon and his remaining staff were discharged on 25 December 1780.

After a career begun in the 1740s, which ranged from Cartagena to the Mediterranean, *Jersey* ended as a prison hulk.[49] 'Old Jersey,' or 'Hell' as the ship was commonly called, was the most notorious of the British prison ships in Wallabout Bay (now home to the Brooklyn Navy Yard) where prisoners from captured American privateers were kept (Figure 4).[50] There is evidence to suggest that prisoners may have received medical attention while *Jersey* was still, officially, a hospital ship.[51] However, as a floating dungeon the ship housed more than a thousand inmates under the most inhumane conditions, and is thought to have killed more Americans through disease than died in combat during the entire war.[52]

Figure 4: *Jersey* Hospital Ship.[53]

[49]Charles I. Bushnell. 'The prison-ship "Jersey",' In: *A Memoir of Eli Bickford: A Patriot of the Revolution,* (New York: privately printed, 1865), pp. 13-15.
[50]Henry R. Stiles. *A History of the City of Brooklyn, Vol. I*, (Brooklyn: by subscription, 1867), pp. 331-376.
[51]Maurice Bear Gordon, *Naval and Maritime Medicine during the American Revolution*, (Ventnor: Ventnor, 1978), pp. 106-111.
[52]Robert P. Watson. *The Ghost Ship of Brooklyn: An Untold Story of the American Revolution*, (Boston: Da Capo Press, 2017).
[53]The British hospital ships: the "Jersey" in the foreground. From 'The prison-ship martyrs', New York Public Library Digital Library.

Winfield records other hospital ships: the 60-gun fourth-rate *Pembroke* (1757-93) commissioned as a hospital ship at Halifax, Nova Scotia in 1776; the 74-gun third-rate *Warspite* (1758-1801) as a receiving and hospital ship at Portsmouth in 1780; and 18-gun sloop *Renard* (1780-84) as a convalescent ship at Antigua in 1782-83.[54] Surviving musters and pay books give no indication that these vessels were designated as hospital ships or carried additional medical staff. However, as noted earlier, sick or convalescing men might be borne briefly on other vessels in cases of need. For example, the 10-gun sloop *Hunter* (1756-80) at Boston, Massachusetts from late August to early September 1775 reportedly served as a hospital ship for smallpox patients at the time of an onshore epidemic.[55]

From 1790 to 1815

In peacetime, hospital ships were established at some ports as a cheaper alternative to shoreside hospital accommodation. The Navy Board chose and fitted out the ships, the Sick and Hurt Office supplied the medicines and surgeons, but the sick seamen were the responsibility of the commander-in-chief of the port. The Admiralty opposed plans to build additional hospitals in the 1790s on the grounds of cost, although the Sick and Hurt Board provided evidence that hospital ships were more expensive in the long run than shore hospitals. In the end, believing that low decks made it difficult to keep the air on board sufficiently pure, the Sick and Hurt Board recommended the use of two-deck rather than single-deck ships.[56]

Hospital ships had their heyday, certainly in numerical terms, during the period 1790 to 1815, which included the French Revolutionary War (1793-1802), the Napoleonic War (1803-15) and the War of 1812 with the United States (1812-15) - a period when naval manpower expanded considerably. Men-of-war captured from enemies were converted to hospital ships, some while still afloat and retaining their armaments, although these seem to have taken no active part in engagements. In addition, obsolete warships were converted to accommodate convalescent patients, were permanently stationed at naval ports, received injured from the fleet, and served as an adjunct to

[54]Winfield, *British Warships, 1714-1792*.

[55]TNA ADM 36/7870, Admiralty, Royal Navy Ships' Musters, *Hunter*, 1774-77; ADM 354/189/306, Navy Board, Out-letters, Philip Stevens, 12 January 1775; Ann M. Becker. 'Smallpox at the Siege of Boston', *Historical Journal of Massachusetts*, Vol. 45, No.1 (2017), pp. 43-75.

[56]Pat Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', In: David Boyd Haycock and Sally Archer (eds), *Health and Medicine at Sea, 1700-1900*, (Woodbridge: Boydell, 2009), pp. 90-107.

local hospitals and hospital ships. They also acted as prisons housing sick and wounded men from captured French, Spanish, Danish and American ships.[57]

SHIP	YEARS	TYPE	TONS	MEN	WHEN	WHERE	TNA RECORDS
Roebuck	1774-1811	44/5	886	100 120	1790-91 1793-94	Off Spithead West Indies	35/1515 36/10959 102/246 35/1516 36/11846-47
Dolphin	1781-1817	44/5	881	100-120	1793-99	Mediterranean	35/535 36/12337-41 36/14884
Charon	1783-1805	44/5	890	120/135	1793-95	Channel	35/292 36/11831-33
Medusa	1785-98	50/4	920	115-118	1797-98	Channel	35/1074 36/13400 102/576
Gorgon	1785-1817	44/5	911	121	1808-15	Baltic (1808-11) Mediterranean (1811-14) America (1814-15)	35/2819 & 3486 37/1935-36 37/2559-60 102/241 35/2819 & 3486 37/2560 & 3571 37/4296-97 35/3486 37/5297 102/242

Table 5: Principal Sea-going Hospital Ships, 1790-1815.[58]

Table 5 shows that the principal sea-going hospital ships during the period were generally fourth- or fifth-rates of approximately 900 tons and crewed by about 120 seamen. Each bore about 17 medical staff, typically including a matron, nurses (6) and washerwomen (4), several male assistants (up to 5) variously described as surgeon's assistants, hospital assistants or hospital men, and a baker. The complement of hospital attendants, which varied in number and composition at different times, was in addition to the ship's surgeon and mates. Moreover, a physician was appointed to each ship (Table 6).

[57]Admiralty, *Statistical Report of the Health of the Navy for the Year 1902*, (London: H.M.S.O., 1903), pp. 140-141.

[58]Details as in footnote to Table 1 (See Fn 22).

SHIP	PHYSICIAN	APPEARANCE	DISCHARGED
Roebuck	Gilbert Blane	1790, 16 October	1791, 3 September?
Dolphin	John Harness	1793, 13 May	1799, 10 July
Charon	Thomas Trotter	1794, 4 April	1795, 29 November
Medusa	Thomas Trotter	1797, 15 February	1798, 16 March
Gorgon	John Jamison William Burnett Alexander Denmark D.J.H. Dickson	1808, 7 June 1812, 7 June 1814, 27 March 1814, 17 December	1812, 21 January 1814, 21 January 1814, 16 September 1815, 12 February

Table 6: Hospital Ship Physicians, 1790-1815.[59]

Roebuck was converted into a hospital ship in 1790 but only 24 patients were listed on board between August and July 1791 and the ship was paid off on 3 September. Recommissioned in 1793, at the end of the year *Roebuck* sailed for the West Indies carrying staff of the General Army Hospital and took part in a joint naval and military expedition against French colonies during the first half of 1794, transporting sick and wounded soldiers, troops, women and children, and prisoners.[60] *Dolphin* was with Howe's fleet in the attack on Toulon in August 1793 and at the capture of Minorca in November 1798.[61] *Charon* and *Medusa* served at different times with the Channel Fleet and their service under Physician to the Fleet Thomas Trotter is considered further below.

In the Baltic, *Gorgon* had a medical staff of up to 20, comprising the physician and his servant, the surgeon and his clerk, assistant surgeons (4), a matron, nurses (4) and landsmen (7), and a similar complement in the Mediterranean, principally at Port Mahon, Minorca, and later in America. During the campaign in the Gulf of Mexico, the medical staff treated dozens of casualties, including seamen, soldiers and prisoners of war after the attack at Lake Borgne on 14 December 1814 and the Battle of New

[59]Details from muster and pay books quoted in Table 5.
[60]William L. Clowes, *The Royal Navy: From the Earliest Times to the Present, Vol. IV,* (London: Sampson Low, Marston, 1899), pp. 246-249.
[61]Ibid., pp. 203, 377.

Orleans on 8 January 1815.[62] The surgeon at the time, William Boyd, later wrote an account of these voyages, cases encountered, and treatments used.[63]

Table 7 shows a list of other hospital ships of the period for which musters or pay books are held at TNA.[64] The major ports of Portsmouth and Plymouth each had two or more hospital and convalescent ships. Some were prize ships: the French *Pégase* and *Caton,* which served as hospital ships for British sailors and prisoners of war alternately, and the Dutch ships renamed *Tromp* and *Prince Frederick*. The Spanish prize *Grana* served as a convalescent ship at Sheerness. Several large prison hospital ships including *Victory*, later famed as Nelson's flagship, were located off Chatham and the Medway.[65] Other vessels served as hospital ships off Tower Wharf and at Woolwich, Cork, Liverpool and abroad.

Winfield notes 16 more vessels, *Alfred, Centurion, Discovery, Duke, Falcon, Hornet, Iphigenia, Jupiter, Lizard, Magnanime, Panther, Renown, Romulus, Sagesse, Spiteful* and *Winchelsea*, which appear to have acted in various capacities, including lazarettos, convict ships and army hospital ships, at home and abroad.[66]

[62]William L. Clowes, *The Royal Navy: From the Earliest Times to the Present, Vol. VI,* (London: Sampson Low, Marston, 1901), pp. 148-150.
[63]William Boyd, 'Occurrences on Board H.M. Hospital-Ship Gorgon, between the 18th of September, 1814, and the 8th of May, 1815', *Medico-Chirurgical Journal and Review*, Vol. 5, No. 25 (1818), pp. 16-25.
[64]Hospital ships identified from TNA index showing dates of records held; details of likely location, years of naval service, type and tons as built, and comments from Rif Winfield, *British Warships in the Age of Sail, 1793-1817*, (Barnsley: Seaforth Publishing, 2005). At this time some smaller ships began to be rated by function or rig.
[65]W.J.L. Wharton, *A short history of H.M.S. 'Victory' gathered from various sources*, (Portsmouth: Griffin & Co, 1884), pp. 29-30.
[66]Winfield, *British Warships, 1793-1817*; a lazaretto was a ship set apart for the purposes of quarantine.

SHIP	DATES	LOCATION	YEARS	TYPE	TONS	COMMENT
Hospital Ships						
Africa	1798-1800	Sheerness	1781-1814	64/3	1,415	
Antelope	1815-16	Portsmouth	1802-1845	50/4	1,107	
Argonaut	1797-1828	Chatham	1782-1831	64/3	1,452	French prize
Batavier	1809-17	Woolwich	1799-1823	54/4	1,048	Dutch prize
Britannia	1799-1800	Portsmouth	1762-1812	100/1	2,091	
Caton	1790/94-99	Plymouth	1782-1815	64/3	1,407	French prize
Conflagration	1790-93	Portsmouth	1783-1793	fireship	426	
Courser	1800	Woolwich	1797-1803	brig	168	
Engageante	1795-1801	Cork	1794-1811	38/5	931	French prize
Enterprize	1790-1806	Off the Tower	1774-1807	28/6	594	
Enterprize	1806-16	Off the Tower	1806-1816	28/6	603	ex-*Resource*
Matilda	1800-09	Woolwich	1794-1810	28/6	573	French prize
Pegase	1790/94-97, 1803-05/ 08-09	Portsmouth	1782-1815	74/3	1,778	French prize
Princess	1807-16	Liverpool	1795-1816	28/6	677	Dutch prize
Spanker	1795-1802	Sheerness	1794-1810	battery	1,064	
Standard	1800	Sheerness	1779-1816	64/3	1,369	
Sussex	1801-16	Sheerness	1802-1816	90/2	1,781	ex-*Union*
Trent	1803-16	Cork	1796-1823	36/5	926	
Tromp	1803-10	Portsmouth & Falmouth	1796-1815	54/4	1,040	Dutch prize
Union	1790-91, 1793-1802	Chatham & Sheerness	1756-1802	90/2	1,781	see *Sussex*
Wilhelmina	1803-12	Prince of Wales Island, Penang	1798-1813	32/5	827	Dutch prize
Convalescent						
Chatham	1790,1793-1802	Plymouth & Falmouth	1758-1810	50/4	1,052	
Gladiator	1793-1802, 1807-14	Portsmouth	1783-1817	44/5	882	
Grana	1793-1800	Sheerness	1781-1806	28/6	528	Spanish prize
Prince Frederick	1800-04, 1809	Plymouth	1796-1817	64/3	1,267	Dutch prize
Sultan	1794-96	Portsmouth	1775-1805	74/3	1,615	
Triton	1810-13	Plymouth	1796-1820	32/5	856	
Prison Hospital						
Bristol	1790-1803	Chatham	1775-1810	50/4	1,049	
Buckingham	1800-02	Medway	1800-1812	64/3	1,372	ex-*Eagle*
Eagle	1798-1800	Medway	1774-1800	64/3	1,372	see above
Trusty	1809-11	Chatham	1782-1815	50/4	1,088	
Victory	1797-99	Chatham	1765-date	100/1	2,162	

Table 7: Other Hospital Ships, 1790-1815 (See Fn 64).

Hospital Ship to the Fleet

The most comprehensive account of the work undertaken by a hospital ship to the fleet at this period was written by the physician Thomas Trotter (Figure 5) in his *Medicina Nautica*.[67] On 3 April 1794, Trotter was appointed physician to His Majesty's fleet and the next day embarked on the hospital ship *Charon*. From 2 May, with the fleet at sea, *Charon* received sick seamen and fever-stricken French prisoners. After the Battle of the Glorious First of June, when approximately 300 British officers, seamen and marines were killed, and 800 more wounded, the fleet returned home to land the sick and injured.[68]

Charon arrived at Spithead on 13 June, took on board provisions, including vegetables, fruit, pickles, eggs, porter, milk etc. Cases of fever continued to be received until the fleet moved to St Helen's Roads on 22 August, whereupon all patients were sent ashore to clear the ship for sea-service. On 27 September, following damage sustained during heavy gales, *Charon* needed to return to Plymouth for repair and refit, and took home the whole of the fleet's sick, some 70 in number.[69]

While *Charon* was laid up, Trotter visited the Portuguese fleet, that had recently arrived in the Hamoaze to refit, and which was affected by a serious contagion. On inspecting *Europe*, designated and fitted as a hospital ship, he found 500 patients in different stages of fever – 'a hideous groupe of human misery' – crammed into the lower gun-deck and overflowing into other parts of the ship, the orlop deck 'literally pestiferous' and the fore and aft cockpits 'strongly charged with contagious matter'.[70] Convalescents on the upper deck, exposed to cold and wet, were prone to relapse. The Admiralty Board immediately ordered another hospital ship, and one of the squadron's own ships to be appropriated to house convalescents.[71]

The *Charon* returned to Torbay on 3 November carrying men who were fit to rejoin their ships. The ship then received the sick of the fleet, mainly suffering from diseases of the season (catarrhs, rheumatisms etc.), until the fleet returned to Spithead later in the month.[72] In the spring of 1795 *Charon* supplied the squadron of Admiral Colpoys with lemon juice, with the result that no deaths from scurvy occurred during a month-long cruise in the Channel.[73] *Charon* continued to supply each of the fleet's ships with

[67]Brian Vale and Griffith Edwards, *Physician to the Fleet: The Life and Times of Thomas Trotter 1760-1832*, (Woodbridge: Boydell & Brewer, 2011).
[68]Thomas Trotter, *Medicina Nautica,* (London: Cadell and Davies, 1797), pp. 64-74.
[69]Ibid., pp. 77-97.
[70]Ibid., pp. 98-100.
[71]Ibid., pp. 101-102.
[72]Ibid., pp. 103-104.
[73]Ibid., pp. 116-122.

a large allowance of fruit and 30 gallons of juice in kegs; a further 250 gallons were retained on board to cover unexpected eventualities. The seamen's satisfaction with their vastly improved diet led them to call *Charon* 'the Doctor's Garden'.[74]

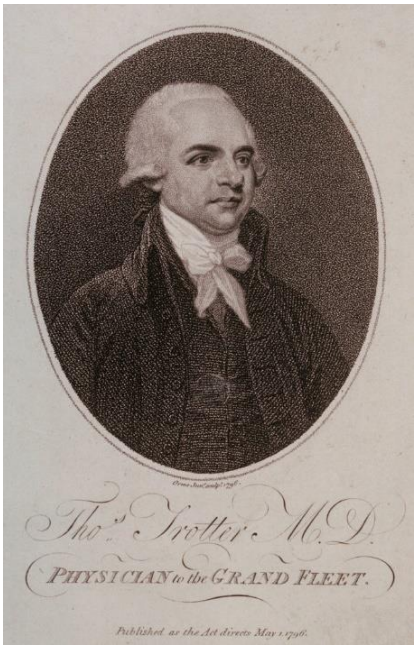


Figure 5: Thomas Trotter, M.D., Physician to the Grand Fleet.[75]

Charon sailed again with the fleet, leaving Spithead for Ushant on 12 June 1795. Forty-five wounded men of the fleet, including Captain Grindall of the *Irresistible* who had been severely wounded in the Battle of Groix on 23 June, were transferred from their ships to the hospital ship.[76] *Charon* sailed for England on 9 July, put into Weymouth on 15 July to drop Grindall at his home, and next day delivered the remaining patients to Haslar hospital. Resupplied, the ship left on 5 August and re-joined the fleet 10 days later. The sick and infirm of the squadron having been brought on board, the ship returned to Spithead, discharging all patients on 3 September. After a further round

[74]Ibid., pp. 131-134.
[75]Portrait of Thomas Trotter. Engraving by Daniel Orme, 1796. Credit: Wellcome Collection. Attribution 4.0 International (CC BY 4.0).
[76]Clowes, *The Royal Navy, Vol. IV*. pp. 260-261.

journey in October, on 16 November *Charon* was ordered to receive troops for passage to the West Indies, and the medical staff were paid off to join another ship.[77]

On 18 December 1796, Trotter was ordered on board the hospital ship *Medusa* at Plymouth. During 1797, the ship conveyed and distributed dietary stores and surgeons' necessaries to the fleet, received the worst cases from other ships, and transported them back to England.[78] Between 9 May and 27 October, the musters of sick and hurt seamen record 300 entries: the great majority were discharged to their ships or to the hospitals at Plymouth and Haslar; the bodies of the small number who died were either discharged to hospital or thrown overboard without ceremony.

During the year, the fleet had been afflicted by a malignant and apparently contagious disease characterised by ulcers of 'a most obstinate nature' that did not respond to the usual remedies.[79] The contagion recurred in great numbers in 1798, and Trotter observed that 'the first thing to be done for the relief of the unfortunate sufferer ought to be immediate removal from the ship' to protect the rest of the crew.[80] Unfortunately, *Medusa* had been dismissed in March.[81] Deprived of his primary means of communicating with the fleet, Trotter lamented that he appeared 'rather the historian of the afflictions of the sick, than their physician'.[82]

Conclusions

The first documented British hospital ship in 1620 was a hired storeship carrying 'sick comforts' which took sick seamen from the king's ships for brief periods. Hospital ship use increased in the late seventeenth century, mainly in home waters during wartime, whether victualling the fleet, or carrying surgeons and medical care, or transporting sick and wounded seamen to shore. Although the value of having a dedicated hospital ship to segregate cases of contagious disease was recognised at an early stage, no regular or consistent action was taken, even for overseas expeditions.

Improvements were made in the early eighteenth century when regulations were laid down for the provisioning and fitting-out of hospital ships, and when the surgeon's complement was enlarged. Over that century, and as and when required, the role of hospital ships was extended and adapted alongside developments in naval organisation and medicine. There is little to suggest that fundamental changes took place in the nature of the vessels employed, or in how they were adapted and staffed. However,

[77]Trotter, *Medicina Nautica*, Vol. I, pp. 134-151.
[78]Trotter, *Medicina Nautica*, Vol. II, (London: Longman and Rees, 1799), pp. 11-31.
[79]Ibid., pp. 170.
[80]Ibid., pp. 178-180
[81]Vale and Edwards, *Physician to the Fleet*, p. 127.
[82]Trotter, *Medicina Nautica*, Vol. III, (London: Longman and Rees, 1803), p. 13.

between 1790 and 1815, more ships fulfilled a wider variety of functions at more locations, and prize ships were used more frequently.

The 1740s saw larger vessels acting as stationary hospital ships in the main naval ports, initially as an alternative to the quartering system, and later as an adjunct to the naval hospitals, which were sometimes overwhelmed by the numbers of sick and wounded following significant sea battles or military expeditions abroad. In the late 1770s, ships specifically designated for the use of convalescent patients further relieved the pressure on shoreside hospitals, while from the 1790s, some were used as hospital ships for prisoners of war. Throughout the period, other vessels, especially storeships, briefly doubled as hospital ships in a manner reminiscent of the early 1600s.

The surgeon's complement aboard a hospital ship, in terms of the numbers of mates, assistants, helpers or nurses, and laundresses/washerwomen or washermen, varied according to the vessel's size and function. Sometimes it closely approached the regulation numbers, but there was significant variation, probably resulting from different naval needs, staff availability and the surgeons' preferences. The use of laundresses was inconsistent: they were replaced by washermen in the 1730 regulations but employed again as washerwomen from the 1740s. From this time, too, women nurses were commonly found, often on hospital ships in port, and increasingly aboard sea-going vessels.

The characteristics of hospital ships appear to have been malleable; not all vessels so designated bore a full surgeon's complement, and seagoing hospital ships combined treatment of the sick and wounded with the transport of convalescing patients and invalids. As naval vessels, they were fungible assets that could be fitted, redeployed or re-commissioned as required. Although the records of ships' musters and pay books are neither complete nor infallible, this study has shown that they do provide valuable information about where, when and how hospital ships were used, about their physicians, surgeons and hospital staff, and the number, origin and nature of the patients for whom they cared.

The utility of hospital ships can be illustrated no better than by considering their value at sea at the end of the eighteenth century. They would take sick or wounded men from ships of the fleet, care for them until they were fit to return to their own ships or convey them to a naval hospital. Afloat, they could facilitate the convalescence of patients no longer required to remain in hospital and return recovered men to the fleet. Re-stocked with essential foodstuffs – the 'doctor's garden' – and medical necessities, they would keep the surgeons of the fleet regularly supplied and helped to ensure that their charges remained fighting-fit at sea.