

A LIFE ON THE OCEAN WAVE DEATH AND DISEASE IN NELSON'S NAVY

Stephen Mortlock tells of the gonorrhoea, hernias and deadly splinters that were a way of life at sea.

amuel Johnson (1709-1784) observed: "Being on a ship is being in jail with the chance of being drowned." And although the British navy was probably one of the most formidable armed forces in the world in the time of Nelson, life aboard ship was for many sailors a miserable experience. They were often pressed into service, malnourished, worked

hard and in some cases subjected to brutal, arbitrary discipline by sadistic captains. If the ships boys (the youngest boy at the battle of Trafalgar was just eight years old) were caught up to mischief they might be made to "kiss the

gunner's daughter", which would mean being bent over a cannon and caned. For the able SCIENCE

seamen, punishment could range from "starting" (a strike across the back with a rattan cane), "running the gauntlet" (usually reserved for thieves), "flogging", "hanging" to my personal favourite "keel-hauling" (tying a sailor to a line that is looped beneath the vessel, throwing them overboard and dragging them under the ship's keel). Most died.

Then of course there was the possibility of military action. Between 1799 and 1815 Great Britain was at war with France under the leadership of Napoleon Bonaparte and there were a series of sea battles, the most notable being the Battle of Trafalgar in 1805. But, as with all service life during this time, the majority of deaths were not caused by battle but

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Right. Samuel Pepys was an administrator of the navy of England and also a Member of Parliament **Below.** Peter Durand was a British merchant credited with receiving the first patent for the idea of preserving food using tin cans

by diseases. In the casualty list of 1810, 50% of deaths were caused by illnesses, 41.7% by accidents or injuries, compared to only 8.3% killed due to enemy action.

Diet, drunkenness and Blane

The distribution of tobacco and alcohol was considered important to help alleviate the tedium of life at sea. The men were entitled to a gallon of beer and a half pint rum ration per day. However, this resulted in a certain amount of drunkenness that may have contributed to the large number of floggings.

It is also probable that the amount of alcohol available must have been a contributory factor to the number of men dying of individual accidents. Given the work they did in dangerous conditions, falling, crush injuries and being drowned were almost unavoidable consequences for the unwary sailor. In addition, the physician to the Fleet from 1779-1783, Sir Gilbert Blane (1749-1834) thought that cases of insanity were seven times more common among sailors.

In 1667 Samuel Pepys (1633-1703) first regularised naval rations through the introduction of a varied and nutritious diet. Documents maintained by the "Victualing Board" dispel the widespread perception that Georgian-era sailors barely scraped by on hardtack biscuits and rancid gruel. True, they ate hardtack – with the obligatory added Weevil larvae protein – but they also drank beer every day and consumed beef or pork four times a week, which was often a more varied diet than their land-based counterparts.

Naval vessels also carried dried peas, oatmeal, butter, cheese and sometimes even livestock for slaughter. Records show that three men were gored in the groin by young bullocks and one man, John Brimmer, sustained serious pelvic trauma. But, a study in 2009 which looked at the bones of sailors from the British warship Mary Rose, sunk in 1545, suggests



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that the British naval diet had remained virtually the same for over three hundred years. Change finally came with the widespread use of canning in the early 1800s. Unfortunately the first practical can opener was only developed 50 years later. The inventor of the canning process, Peter Durand (1766-1822), had been guilty of an incredible oversight.

It was also the introduction of fruit and vegetables that helped to revolutionise the diet of the British sailor. The work carried out by James Lind (1716-1794) was a good example of a controlled clinical trial to investigate the condition of scurvy. He selected twelve patients

suffering from scurvy with similar symptoms, putrid gums, spots, lassitude, and with weakness of the knees and fed them different diets and recorded the outcome. The most dramatic effects were shown in

dramatic effects were shown in two patients who received a diet which included oranges and lemons; one was fit for duty again after only six days. Lind was hesitant to recommend the use of oranges and lemons as they were expensive, but in 1795 Blane put into practice the issue of lemons, limes and fresh vegetables as routine stores for vessels of the British navy. Personal cleanliness was also ordered, and soap was made available, the cost being deducted from each man's pay. A calculation was submitted costing the illness due to uncleanliness as 10 times that of the cost of soap.

Diseases

Large numbers of men accommodated in cramped and damp conditions with inadequate nutrition and water provided a fertile breeding ground for disease, especially typhus. To physicians like John Woodall

(1570-1643), sin was the primary cause of disease. He believed that aside from living a moral life the best way to stay healthy was to avoid stinking vapours and cemeteries whenever possible. Although the noxious fumes emanating from bilge water probably ran a close second. The bilges of ships had previously been full of sand and shingle as ballast, which at the end of a voyage was a stinking cess pool, but towards the end of the 18th century the loose ballast was replaced with iron bars which helped to remove this infected mass in the lower parts of the ship. Ventilation of the lower decks was also improved by running brass tubes from the upper decks to the bilges as channels for fresh air.

By far the largest category of the reported diseases were the fevers, subdivided into continued and intermittent, and some of these were tropical diseases, such as yellow fever and malaria, which would strike down ships crews when they were stationed in the **Right.** Vintage engraving of showing Admiral Nelson and HMS Victory at the Battle of Trafalgar in 1805.

West Indies. The Brunswick went out to the West Indies in 1801 and was almost immediately hit by yellow fever with 287 men on the sick list, while the Hannibal lost 200 men in six months. With sailors living in such close proximity, infectious diseases like smallpox, measles and tuberculosis were still very common. A large number of sailors were afflicted with "Flux", this could be referring to either a haemorrhage but more likely to be bloody diarrhoea. There were also cases of kidney stones. This could be related to the sailors' diet, which was high in protein, and salt, and possible limited access to sufficient fresh drinking water.

Outbreaks of venereal disease were common while the ship was in port. It was divided into gonorrhoea and lux venereal (also known as lues or the French pox), which was syphilis. Twenty-threeyear-old Able Seaman Jason Darling, of HMS Albion presented to the ships surgeon with chancres of the glans and prepuce and a swelling in the groin. These symptoms appeared 10 days after "seeing a girl" and he was having difficulty walking. He was treated with lunar caustic, a mercury based ointment. Mr Parry, surgeon to HMS Adventure, noted that chancre and buboes were always symptoms of the pox and should be treated with mercury, but this should not be used with gonorrhoea. Gonorrhoea was treated with bed rest and a cooling regimen. This required not eating or drinking anything to inflame or heat the body such as wine, spices, onions, or meat. Instead sufferers were given barley water or milk. In The Marine Practice of Physic and Surgery, published in 1770, William Northcote also warned against, "amorous dalliance with women, obscene books and whatever inflames the fancy".

Medical intervention

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Trauma, ruptures and hernias were commonplace, but this is not surprising as the sailing of these vessels was a constant manual labour with skilled work



that required balance, timing, and strength. Michael Chris, a 28-year-old sailor, fell down a ladder joining decks and landed heavily on his perineum. His scrotum swelled to a huge size and, by the time he presented to the surgeon, it had begun to ulcerate. He was treated with bed (or rather hammock) rest and a scrotal support as well as various poultices. During a battle, apart from the obvious dangers of warfare, other major injuries were caused by wooden splinters - a cannonball slicing through the wooden structure of the ship sent a deadly spray of oak splinters, some over a foot long, flying across the decks.

The number of compound fractures and traumatic avulsions of limbs made naval surgeons adept at amputation. The common practice when treating amputations was to tie off the arteries and veins with ligatures and leave them hanging free from the wound, to be removed when it had healed. The red hot cautery technique had been discontinued following criticism by James Yonge (1646-1721) in his Currus Triumphalis, published in I679, but the ligature method had the unfortunate consequence of allowing infection easy access to the wound. Many men who survived amputation succumbed later to bacterial infections. Surgery was rudimentary, and few effective medicines were available. Until 1804, surgeons were expected to provide their own drugs and equipment.

Most surgeons took pride in the speed with which they could perform an amputation. Amputation was then the only treatment considered for limbs smashed by splinters or cannon balls.

In the midst of a battle, the loblolly men as the surgeons' assistants (not the surgeons' mates, who were more skilled) were called, could easily fill a tub with severed limbs. Complicated surgical procedures on abdominal wounds were impossible, even on shore, in the eighteenth century. Infections were almost inevitable. And these sorts of wound were often fatal.

Conclusions

Watching the newest ship of the fleet HMS Queen Elisabeth sail past HMS Victory into Portsmouth harbour, it is not difficult to imagine the contrasts between life in the navy now and in the time of

Nelson. The combination of an improved diet, better working conditions and medical intervention have helped to decrease the number of deaths in the navy caused by diseases, which allow our service personnel to fulfil their duties.

Stephen Mortlock is Pathology Manager at Nuffield Health Guildford Hospital. He would like to thank Dr Erica Charters for a fascinating talk on welfare in the 18th century Royal Navy, and the pathology staff at the Guildford Hospital for their professionalism, dedication and support.