

Education and training in the Royal Navy 1756-1918 as an element of the impact of industrialisation on war and the military establishment

The effects of industrialisation on land warfare, increasingly during the latter half of the nineteenth century, can be viewed in terms of rapidly changing technology and scale. Weapons gained capabilities, both in firepower and range, unthinkable in previous ages. The telegraph brought a communications revolution, permitting a greater degree of control of generals in the field by home authorities. Railways not only enabled armies to deploy quickly over long distances and in a fresh condition, they could with judicious care, also facilitated the solving of constricting logistical problems: which allowed armies of far greater size to operate. Logically, all this led to higher requirements of organisation, whether for generals through their staffs, or, at the lowest of levels. And, this organisation meant the universal need of numeracy and literacy. Prussian military success in 1870 has been claimed as the wedding of technology and well-educated troops.

Can this general model of industrialisation and changing attitudes to education automatically be applied to naval warfare? In taking the case of the Royal Navy, a series of snapshots from the Seven Years War through to the end of the First World War gives an indication. Subsequent outlines of mercantile experience and the wider changes in education within Britain, in turn puts this into context: allowing for conclusions.

Education and Training in the Royal Navy

For the purpose of this paper, the initial situation report will deal with 1756 until 1815. While admittedly there were some social and organisational changes, the forms of education and training seem to have remained constant.

Even by the mid 18th century sailing-ships were highly sophisticated, with men-o-war the most complex of all machines then devised by mankind. Aboard, sea officers whether commissioned or warranted ran the ships and depending on their responsibilities were accountable to one of a number of shore-bound institutions: the Admiralty, Navy Board, Ordnance Board, or Sick and Hurt Board.

Already, R.N. lieutenants' commissions were gained by service (partly as midshipmen or masters' mates) and an oral examination in seamanship. The emphasis was on the practical skills of ship-handling. However, some degree of literacy must have been required, as well as the mathematics and scientific subjects needed for navigation.¹ Drawn from eclectic backgrounds, undoubtedly the navy had its share of aristocrats and the landed-gentry as commissioned officers, but by the Napoleonic Wars a sizeable proportion came from the professional classes, with far lesser numbers from the business and even the working classes.²

Warrant Officers (of ward-room rank) were specialists and department heads: more than necessary for the running and fighting of the ship. Already by this stage, the backgrounds of the commissioned officers notwithstanding and even with a real variance in backgrounds, there was a definite 'class' distinction made between those commissioned and those warranted: to the detriment of the latter. Certainly in the case of masters,³ as specialist navigators; pursers, gunners and boatswains, as holders of accounts; carpenters, as shipwrights; and surgeons; passable levels of education were required: if not always held.⁴ With a rank structure less formal by modern standards, some took gunners' posts as a stepping stone to the quarter-deck and some young gentlemen originally destined similarly, became masters instead, opting for short-term prospects and good pay.⁵ Additionally, some Inferior Officers (Warrant Officers rated as petty officers) may also have been literate and numerate: for instance surgeons' mates.

The remaining 'people' were generally illiterate, or at least probably only literate in the loosest of terms, possibly for those seamen rated as signalmen for example.⁶ During the Revolutionary and Napoleonic Wars, there was a genuine increase in literacy, but probably only through men taken by the 'quota system'. Far from advantageous in 'state' terms, it is clear that educated conscripts among them had at least some input in the Spithead and Nore mutinies of 1797. Nevertheless, whilst literacy greatly aided the dissemination of the 'peoples' petitions, in all likelihood I would opine that there would have been large scale mutinies anyway.⁷

As can be expected, largely training onboard was practical; whether for the young-gentlemen and older midshipmen to be commissioned; similar to be warranted; apprentices; or the people. Nevertheless, other training and education was carried out, to a largely unknown degree, by schoolmasters and chaplains.

In larger ships schoolmasters were borne, but to what extent is not clear and seems to have been down to the whims of individual commanding-officers. Theoretically rated as midshipmen and were petty officers of sorts, but with no laid-down responsibilities and duties. Sources are at variance as what these actually were, but the consensus maintains that navigation was taught to the midshipmen and masters' mates: backed by a requirement of certification from the Trinity House: which at this time came under the control of the Admiralty.⁸ Teaching of reading and writing to the boys onboard is also mentioned, one source maintaining that a schoolmaster's duties 'were to instruct all young persons, whether future officers or not'.⁹ Elsewhere details are given of two types of schoolmaster, semi-literate petty officers and run-down landsmen-scholars: both of low quality.¹⁰

Of similarly confusing status, on a greater number of ships chaplains served. More has been recorded of these men and again they came from a variety of backgrounds. Some were most definitely of impressive intellect, literary men and scientists including Fellows of the Royal Society. Others were less so and perhaps unsurprisingly, there were a fair number of young clerics.¹¹ The sea was not, however, generally a popular option for men of the cloth. A mixed breed, some were definitely schoolmasters ashore and while it is known that some religious instruction of the young was required,¹² it is not unlikely bearing in mind their traditional role in society, that many could also have acted as ships' schoolmasters.

The invention of Nasmyth's steam hammer in 1840 allowed for iron-framed hulls, thereby enabling sturdy platforms for steam-propulsion.¹³ With experimentation by the R.N., the technologies were more widely proven in the mercantile field and within two decades had made great inroads within the armed-service. Other developments of this period, in shells, ordnance and armour brought increasing complexities to bear.¹⁴

Corresponding changes for manning came into play within the R.N. Engineers were first warranted in 1837 and commissioned ten years later. The people metamorphosized into ratings and continuous service was introduced as of 1853. This was an important step, the R.N. had traditionally recruited its seamen from the mercantile-service (theoretically 'by voyage'), whether voluntarily or pressed: experienced merchant sailors requiring little, if any, further training in seamanship.¹⁵ (Organised reserve forces also began to make their appearance, the Royal Naval Reserve in 1859 and the Royal Naval Artillery Volunteers in 1874. However, these were in the face of great opposition from the professional navy and therefore, cannot be regarded as an essential strand of educational growth.)¹⁶

Although there had been a Royal Naval College since 1806, it was not until 1857 that pre-sea and academic training was generally adopted for aspirant officers: on board hulks.¹⁷ Similarly, for the lower-deck boys' training began in 1854: in time aboard hulks in various dispersed locations.¹⁸ By the 1860s reading and writing was most definitely a requirement for entry to the R.N.,¹⁹ but reference to the records collectively known as the 'ticketing system' points to this already being the case by 1845 at least.²⁰

Schoolmasters' standing correspondingly rose; initially warranted (with wardroom status) in 1836; styled 'Naval Instructor' in 1842; and commissioned in 1861. It should be noted that the

private arrangement of chaplains acting as instructors was recognised officially: being drawn into the schoolmasters' system. For the lower-deck, as of 1837 noys were taught by petty officer schoolmasters: although in time they too were gentrified, first as W.O.s, then eventually commissioned.²¹

Technology developed evermore in its complexity and from the 1870s there had been realisation of faults in officer training: even although little had actually been done until Fisher's appointment as Second Naval Lord in 1902. Put through as the Selborne Scheme the following year, changes were revolutionary. One aim was to turn out R.N. and R.M. lieutenants all equally conversant with seamanship, navigation, engineering and soldiering: with the first four years in full-time training. The common entry idea had originated with Sir John Colomb, with many other sensible features from Herbert Richmond (then a lieutenant) through Sir Julian Corbett.²²

Additionally improved navigation training was instigated: also through Richmond and Commander Henry Oliver.²³ Judging from example midshipmen's journals, the new system was challenging, reflected the young gentlemen's actual knowledge, but often fell well short of excellence while onboard warships in their final spells before examination (and subsequent specialisation).²⁴

An important element of the Selborne Scheme was in building social cohesion: with the proposal of allowing engineers the same prospects, rank structure and insignia as executive officers. While this came about during the First World War; less workable aspects were dropped (Royal Marine training was cut away); and more esoteric ideas never implemented. Considerable opposition from senior naval officers was directed at Fisher's bid to have interchangeable officers (also originally Colomb's idea, but under very different circumstances).²⁵ Reflecting society as a whole, executive officers by the Edwardian era were generally drawn from the upper middle-classes and from the Southeast of England,²⁶ while engineers came from lower echelons and this distinction is often given for the opposition. However, while acknowledging this as an authentic attitude, this interchangeability (that included giving engineers commands) was fundamentally flawed; and possibly much of this opposition stemmed from reasoned thought.²⁷ Nevertheless, officer engineering training improved.²⁸

As the would-be officers moved ashore around 1905, so too did the boys: centred on Shotley Barracks: otherwise known as *Ganges*. New entry rating training also changed fundamentally, concurrently with the Selborne Scheme; sail training was done away with; modern skills were taught, such as wire-splicing; gunnery was high on the agenda; and even an element of interchangeability was evident, with stoke-hold and engine-room experience required.²⁹ However, there was a contradictory aspect to this. Fisher also advocated only training specialist-gunners to a high degree, the remainder reduced to 'items': in effect seaborne labourers.³⁰ Additionally, training for boy-artificers (and 'Supernumerary' engine-room artificers) was also allowed for in 1903: although onboard hulks (with attendant disadvantages), rather than modern shore-establishments.³¹

This was the pattern of education and training that remained through to 1918. Substantial organisational changes were made within the Admiralty in the final two years of the Great War, with the rise of the 'Young Turks', but grave institutional shortcomings were apparent to Captain Richmond.³² Much of this was in regard to attitudes to strategy and tactics, but new-entry officer training was also seen as inherently faulty. Saliently, a wide education was lacking, with detailed technical training beginning too early. But midshipmen were still receiving education along with instruction at sea (creating the contradiction of officers *and* schoolboys) and examinations of such a nature that cramming was required. Even so, in seamanship at least, the training was lacking inasmuch that a genuine understanding of the practicalities involved was not held. Moreover, apart from specialist courses, having qualified for lieutenancy, officers generally carried education no further. The result was an officer-class bereft of reasoning capabilities.³³

Strategy and Tactics within the Royal Navy

Traditionally these concepts ('sublime' according to Kempenfelt)³⁴ were in the charge of (ships') commanders and flag-officers and by the Napoleonic Wars, were well ordered: whether in fighting singles or multiples of ships; blockading; guarding convoys; cruising; or in amphibious operations.³⁵ With stagnation post 1815, then technology making the old ways increasingly redundant as of the 1850s, but with specialisation and intense conservatism from the within the service, useable strategy and tactics withered.

John Colomb wrote on a need for Imperial Defence as early as 1867.³⁶ Others also saw a pressing need: such as William Henderson as a pupil of the R.N.C. in 1886-87.³⁷ With the new armoured fleets and to some degree publicity by Mahan, the emphasis was on fire-power, although there were those who saw matters in differing ways: such as Sir Julian Corbett. And, while there was *some* movement; through sub-committees of the Committee of Imperial Defence, the Naval War Staff, and the staff course; Fisher and Wilson's refusal to form a proper Naval General Staff put the R.N. at severe disadvantage through to the First World War.³⁸ Richmond and his compatriots, as well as their more senior allies (such as Beatty) had hammered away pre-war, making some headway with the young, if not many of the establishment.³⁹

War when it came brought failures, frustration and harsh lessons. However, even with the impressive changes forced on the Admiralty and the great leaps in staff-work during 1917 and 1918, in much of the naval establishment the old attitudes remained. Post-war strategy and tactics continued to be the realm of captains and above.⁴⁰

Education and Training in the Merchant Service

Although reaching back to the Middle Ages, 1696 saw the first, if transitory, register of merchant seamen agreeable to serve in the Royal Navy in wartime. The mid to late 18th century brought recognisable state bureaucracies, but it was not until 1835 that comprehensive efforts were made to register all merchant seamen: with the aim of pressuring required classed into armed-service in times of war.⁴¹

Prior to this, in 1823 legislation required all vessels of 80 tons or more (burthen) to maintain indentured apprentices.⁴² With continuing ocean-trade expansion and naval perceptions of dropping standards of those engaging in mercantile service, a whole raft of certification began for mercantile officers, as of 1845.⁴³ Initially these were voluntary for masters and mates on foreign-going vessels only, but from 1850 these increasingly became compulsory: with engineers as of 1862 and within the fishing industry from 1884.⁴⁴ However, in the early decades and under pressure from shipowners, requirements were set low and standards were patchy.⁴⁵ Nevertheless, in time standards of some excellence were achieved.

With rapid expansion of mercantile activity and technological complexities also evolving in shipping, through the 19th century there were a great many calls for pre-sea training for merchant mariners. Boys' training (principally for the R.N.) had already been in existence since 1756 onboard hulks, through the Marine Society and this proved the model of 19th activity. Through parsimony from both the Admiralty and shipowners the training ships that evolved, from 1859, were the results of charitable societies.⁴⁶

However, long before certification was required, navigation (necessary to *efficient* ocean trading) had been taught on charitable and commercial lines: since the early 17th century. And, these not only centred on city institutions such as Christ's Hospital London, but also in smaller ports.⁴⁷ In the wake of the 19th century legislation, tiny navigation schools are also known to have sprung up even in the smallest of coastal villages. (Intriguingly, in Wales two well-known teachers of navigation were women.)⁴⁸ Ships' Articles and Crew Lists give indications of levels of mid 19th century literacy among merchant mariners: sometimes surprisingly high.⁴⁹ Even so, the ability to sign one's own name does not necessarily indicate a genuine literacy. That said,

‘Application Forms for Examination for Certificates’ frequently show sailors returning to school, navigation or otherwise, between voyages.⁵⁰

Trends in Civilian Education

Of necessity, only the briefest of outlines can be given here. Saliently, until the closing decades of the 19th century British education was a complete hotchpotch. Improvements, such as they were; were wrapped up with philosophical, religious, political and economic movements; with bitter struggles by those seeking broad advance (or narrow advantage); and equally acerbic defence from the privileged.

Middle-class proponents figured strongly. Of the scientific-based, political-economist utilitarians vilified by the establishment during the French Revolutionary period; the new radicals post 1815, demanding their share of power (and using education), succeeding in their own personal aims through the Reform Act of 1832; the mass movements from the seething 1830s, with the rise of the Chartists and their subsequent suppression after 1848; the beginning of the free-trade era and economic recovery; with further radical activity and Victorian industrialists finally seeing elementary education as an economic necessity: partially resulting in the Education Act of 1870.

Additionally, there were repeated working-class efforts to gain education (with and without middle-class aid). Of individuals using the scrag end of schools to learn the merest basics; of the Corresponding Societies of the 1790s, their dissemination of radical literature and members convicted of ‘*treason*’; post 1815 of the next generation forming Co-operative Societies, New Mechanical Institutes and the like; with the pioneering essays of men like Richard Carlile; and endeavours of the fledgling Trade Union movement.

There were other struggles too; such as religious groups defending their independence; socialists seeking secular teaching; with mercantilists and professionals demanding relevant and modern training. And, Scotland with its totally separate traditions, complete with parish schools and forward-looking, dissenting universities only complicated matters further: as did Irish education, split along class and religious lines.⁵¹

The Forster Act of 1870, while a start was far from revolutionary. Numerous Royal Commissions subsequently reported Great Britain failing to educate its people in comparison to its industrial competitors on mainland Europe. The barest minimum of education for the masses, even when enforced and there is ample evidence to show that it was *not*, simply was not good enough. Secondary education was a long time coming and left to local authorities. Even although local communities were often conscientious, the results were piecemeal. Even at the opposite end, the ‘liberal’ education of Britain’s public schools can hardly be regarded as beneficial to an advanced technological society. Education, at all levels, was seen overwhelmingly by its overseers, in terms of inculcating ‘morality’ rather than anything else. By the end of the subject period, British education was still far from excellent.⁵²

Conclusions

Even before the more recognisable forms of modern industry (such as steam-power) were adapted for naval use, men-o-war required a high percentage of skilled operators, with a relatively educated system of command and administration. The considerable practical ship-handling expertise was either recruited from the Merchant Service, or taught in-house. However, it seems that literacy and numeracy were becoming increasingly necessary for some petty officer rates: even by the mid 18th century. Plus, the carrying of chaplains and to a far lesser degree, schoolmasters, points to a partial realisation of a need for formal education.

The levels of literacy and numeracy of this purely sail period can only be speculated on. Obviously dependent on upbringing, the young gentlemen could have been educated in a number

of ways; by private tutors, through private, public and grammar schools, or even universities (although they tended to go to sea young). Warrant Officers may similarly have received an education through these avenues. Literacy and numeracy were not unknown for the determined among the people either; whether acquired onboard from a chaplain or schoolmaster; or ashore from Sunday, 'Dame' or Charity schools.

By the 1840s, with iron-hulls and steam-power making inroads, basic literacy had seemingly become a R.N. entry requirement: although state provision was still almost thirty years away. Similarly, mercantile certification (along with other aspects, such as a growth of credit) brought higher requirements for education to merchant officers. While the choice remained for aspiring executive officers, engineers may have gone through the new Propriety schools, or Mechanics Institutes. Commonly in the Merchant Service, those wishing to better themselves learned to read and write 'before the mast', but this may not have been the case for R.N. ratings. It is not unlikely, therefore, in addition to the earlier described schools English and Welshmen may have been to the secular Sunday schools, or the Co-operative Communities' schools. Additionally, it is known that efforts were made to encourage Scottish boys to join: possibly partly due to their parish school education.⁵³ I am unaware of the levels of Irish recruitment by this time, but traditionally, through permanent high levels of unemployment Irish Catholics had made up a relatively high proportion of the lower deck.

So, by 1756 standards of education including mathematics and science were already requisite for executive officers; with other disciplines for those warranted; and practical skills for the people. With the introduced technologies of the first half of the 19th century, new skills needed to be mastered, older ones metamorphosized and literacy became a basic requirement. But, society was seriously changing: with new sophistication in many spheres. And, while the middle-classes were generally appeased with legislation, such as the First Reform Act of 1832, the working-classes were forced to further action: the Forster Act of 1870 merely allowed the right to the most elementary of education.

The R.N., therefore, can be seen as the beneficiary of people's aspirations to better themselves: rather than a motivator for broader education. Even the petty officer schoolmasters echoed pupil-teachers in civil society. In fact, in Great Britain the armed-forces seem to have had little educational input at a Parliamentary level.

As regards the growth of the 'general staff' as a concept in prosecuting war, this trend in land forces was not reflected in the R.N. As already stated the Naval War Staff, still in its infancy at the beginning of the Great War, did not perform to any genuine degree as a general staff. However, wartime necessity forced improved staff-work, with proper re-organisations near the end of the war. Even then, this was reactionary rather than proactive, as the testimonies of officers such as Richmond eloquently show.

I conclude with a piece of speculative thought. The tactics of the sail-navy, by the Napoleonic Wars, were detailed and practised. Considering these were the concerns of commanders and flag-officers; the tender age some officers received commands; and patronage; is it not possible that individual admirals formed their own tactics and these were conveyed to their followers, not only through the practical, but also taught by chaplains and schoolmasters?

Bibliography

Correlli Barnett: *The Audit of War: The Illusion and Reality of Britain as a Great Nation* (London: Pan Books, 2001)

Frank C. Bowen: *History of the Royal Naval Reserve* (London: The Corporation of Lloyd's, 1926)

Michael Duffy, Stephen Fisher, Basil Greenhill, David J Starkey and Joyce Youngs (Editors): *The New Maritime History of Devon* volume II (London: Conway Maritime Press, 1994)

Aled Eames, Lewis Lloyd, Bryn Parry & M.K. Stammers (Editors): *Cymru A'r Mor/Maritime Wales* Number 15 (Caernarfon, Gwynedd Archives Service, 1992)

Malcom Falkus: *Britain Transformed: An Economic and Social History 1700-1914* (Ormskirk, Causeway Books, 1987)

Harry Hearder: *Europe in the Nineteenth Century 1830-1880* (London: Longman, Second Edition 1988)

Michael Howard: *War in European History* (Oxford: O.U.P., 1976)

Barry D. Hunt: *Sailor-Scholar: Admiral Sir Herbert Richmond 1871-1946* (Waterloo, Ontario: Wilfred Laurier University Press, 1982)

Archibald Hurd: *The Merchant Navy* (London: John Murray, 1921) volume I

Captain Barrie Kent R.N.: *Signal! A History of Signalling in the Royal Navy* (Clanfield: Hyden House, 1993)

J. Lennox Kerr & Wilfred Granville: *The R.N.V.R.: A Record of Achievement* (London: George Harrap, 1957)

Andrew Lambert (Consultant Editor): *Steam, Steel and Shellfire: The Steam Warship 1815-1905* (London: Conway Maritime Press, 1992)

Brian Lavery: *Nelson's Navy: The Ships, Men and Organisation 1793-1815* (London: Conway Maritime Press, 1990)

Michael Lewis: *A Social History of the Navy 1793-1815* (London: George Allen & Unwin, 1960)

Michael Lewis: *England's Sea Officers: The Story of the Naval Profession* (Woking, Allen & Unwin, 1939)

Ruddock F Mackay: *Fisher of Kilverstone* (Oxford: Clarendon, 1973)

Arthur J. Marder: *From the Dreadnought to Scapa Flow* volume I (London: O.U.P., 1952)

Arthur J. Marder: *From the Dreadnought to Scapa Flow* volume V (London: O.U.P., 1970)

John Masefield: *Sea Life in Nelson's Time* (London: Conway Maritime Press, 1971)

W. McNeill: *The Pursuit of Power* (Oxford: Blackwell, 1983)

Susan C. Passmore: *Farmers and Figureheads: The Port of New Quay and its Hinterland* (Carmarthen: Dyfed County Council, 1992)

M. Pearton: *The Knowledgeable State: Diplomacy, War and Technology Since 1830* (London: Burnett, 1982)

N.A.M. Rodger: *Naval Records for Genealogists* (Kew: P.R.O. Publications, 1998)

N.A.M. Rodger: *The Wooden World* (London: Fontana Press, 1988)

Brian Simon: *The Two Nations and the Educational Structure 1780-1870* (London: Lawrence & Wishart, 1960)

D.M. Shurman: *The Education of a Navy: The development of British naval strategic thought, 1867-1914* (London: Cassel, 1965)

Kelvin Smith, Christopher T. Watts and Michael J. Watts: *Records of Merchant Seamen* (Kew: P.R.O. Publications, 1998)

Dava Sobel: *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time* (London: Fourth Estate, 1995)

Hew Strachan: *European Armies and the Conduct of War* (London: Routledge, 1993)

Instructor Lt. D.L. Summers R.N.: *HMS GANGES: Boys Training for the Royal Navy* (Crown copyright revised, 1972)

Gordon Taylor: *The Sea Chaplains: A History of the Chaplains of the Royal Navy* (Oxford: O.U.P., 1978)

Paul Thompson: *The Edwardians: The Remaking of British Society* (London: Routledge second edition 1992)

Christopher T. and Michael J. Watts: *My Ancestor was a Merchant Seaman* (London: The Society of Genealogists, 1986)

-
- ¹ N.A.M. Rodger: *The Wooden World* (London: Fontana Press, 1988) pp.262-263
- ² Michael Lewis: *A Social History of the Navy 1793-1815* (London: George Allen & Unwin, 1960) chapter 1, especially table I p.31
- ³ Not to be confused with the rank of Master & Commander
- ⁴ There are boatswains known not to have been able to sign their names, which seems to have been unusual and is commented on in Rodger: *Wooden World* p.23
- ⁵ Ibid. p.22; and Brian Lavery: *Nelson's Navy: The Ships, Men and Organisation 1793-1815* (London: Conway Maritime Press, 1990) p.101
- ⁶ Rodger: *Wooden World* pp.45-46. What level of literacy Weymouth's ship's company held is, of course, unknown. Re Signalmen see Lewis: *Social History* pp.255-256
- ⁷ This is dealt with in great detail in James Dugan: *The Great Mutiny* (London: Mayflower Paperbacks, 1970). Also see Lewis: *Social History* pp.121-127
- ⁸ Lavery: *Nelson's Navy* p.104
- ⁹ N.A.M. Rodger: *Naval Records for Genealogists* (Richmond, Surrey: P.R.O. Publications, 1998) p.29
- ¹⁰ Lewis: *Social History* pp.258-259
- ¹¹ Gordon Taylor: *The Sea Chaplains: A History of the Chaplains of the Royal Navy* (Oxford: OUP, 1978) pp.165-166 and p.190
- ¹² John Masefield: *Sea Life in Nelson's Time* (London: Conway Maritime Press, 1971) p.43
- ¹³ Malcolm Falkus: *Britain Transformed: An Economic and Social History 1700-1914* (Ormskirk: Causeway Books, 1987) p.119
N.B. An Open University television programme I viewed some years ago claimed that Nasymth actually invented it at least twenty years before and one was surreptitiously built in France (by someone stealing his idea) in 1819. (Unfortunately I have not yet been able to substantiate this claim.)
- ¹⁴ Andrew Lambert (Consultant Editor): *Steam, Steel and Shellfire: The Steam Warship 1815-1905* (London: Conway Maritime Press, 1992) pp.158-160
- ¹⁵ For an excellent understanding of pressing see Rodger: *Wooden World* p.104, p.122, p.128, pp.139-140, pp.143-147, pp.150-151, pp.160-161, pp.163-182, pp.187-189 and p.204. Regarding other circumstances behind the introduction of continuous service, see Archibald Hurd: *The Merchant Navy* (London: John Murray, 1921) volume I pp.97-104
- ¹⁶ For detail see Frank L Bowen: *History of the Royal Naval Reserve* (London: The Corporation of London, 1926) and J Lennox Kerr & Wilfred Granville: *The R.N.V.R.: A Record of Achievement* (London: George Harrap, 1957)
- ¹⁷ Michael Duffy, Stephen Fisher, Basil Greenhill, David J Starkey and Joyce Youings (Editors): *The New Maritime History of Devon* (London: Conway Maritime Press, 1994) pp.191-193
- ¹⁸ Instructor Lieut. D.L. Summers: R.N.: *HMS GANGES: Boys Training for the Royal Navy* (Crown copyright revised 1972) pp.25-29. (N.B. This was sold at *Ganges* to trainees)
- ¹⁹ Ibid. p.26
- ²⁰ Kelvin Smith, Christopher T Watts and Michael J Watts: *Records of Merchant Seamen* (Richmond, Surrey: P.R.O. Publications, 1998) p.23
- ²¹ Rodger: *Naval Records* p.29
- ²² Ruddock F. Mackay: *Fisher of Kilverstone* (London: O.U.P., 1973) pp.273-279
- ²³ Ibid. pp.281-281. Also Barry D. Hunt: *Sailor-Scholar: Admiral Sir Herbert Richmond 1871-1946* (Waterloo, Ontario: Wilfred Laurier University Press, 1982) pp.10-11
- ²⁴ An excellent account, giving the strengths and weaknesses of this system can be found in the memoirs of R/Adm. O.W. Philips R.N.: IWM PP/MCR/153. There is a particularly interesting aspect in this. Having got seconds in seamanship, navigation and torpedo, but a third in engineering he opted for and became an engineer. Not only a reflection on the shortage of engineers (and the social stigma), his instructors realised his worth, even though he did not perform well in these particular examinations.
See also those of Cdr. F.J. Chambers R.N.: IWM: (unreferenced); Capt. C.H. Ringrose-Wharton R.N.: IWM: 75/15/1-4 (N.B. The I.W.M. holds at least twenty other officers' accounts of training around this period and warrants detailed research.)
- ²⁵ D.M. Shurman: *The Education of a Navy: the Development of British Naval Strategic Thought, 1867-1914* (London: Cassel, 1965) p.24
- ²⁶ The bias towards middle and upper class young officers from SE England was drawn from in-depth analysis by Dr. Mary Jones, of Exeter University. This was given in a paper for the International Commission for Maritime History, at King's College London, on 18th January 2001.
- ²⁷ Arthur J. Marder: *From the Dreadnought to Scapa Flow* (London: O.U.P., 1952) volume I pp.46-50: and Mackay: *Fisher* pp.275-278
After the First World War engineers were removed from the executive branch, becoming their own men again and regaining distinctive features in badges of rank: a purple back to their rings.
- ²⁸ Duffy, Fisher, Greenhill, Starkey & Youings: *New Maritime History of Devon* pp.193-195
- ²⁹ Summers: *GANGES* pp.51-60

-
- N.B. I checked as many of the standard works as possible, but I am not entirely sure whether this rating training was actually part of the Selborne Scheme, but because of the Committee set up in 1902, I suspect not.
- ³⁰ Mackay: *Fisher* p.287
- ³¹ Duffy, Fisher, Greenhill, Starkey & Youings: *New Maritime History of Devon* p.198
- ³² Promoted to Rear Admiral 1st November 1919
- ³³ Arthur J. Marder: *From the Dreadnought to Scapa Flow* (London: O.U.P., 1970) volume I pp.316-319
- ³⁴ Hunt: *Sailor-Scholar* pp.32-33
- ³⁵ Lavery: *Nelson's Navy* pp.295-324
- ³⁶ Shurman: *Education of a Navy* pp.1-5, p.13 and pp.18-29
- ³⁷ Hunt: *Sailor-Scholar* p.33
- ³⁸ Much of this is well known, but for detail *ibid.* pp.9-24
- ³⁹ IWM: PP/MCR/153 pp.18-19. Owen Philips stated the following in his memoirs:-
'It is sobering to realise that, until a staff system was, literally, forced upon the Admiralty just before WW1, planning and study of strategy was considered to be the province of only senior officers. The forward-looking 'youngsters' who had been teaching themselves, and urging that such study should begin at a much earlier age if a real-grip of these subjects was to be obtained, were as often as not discouraged and frowned upon. Many mistakes, errors, and the lack of a trained body of informed opinion could have been avoided. We were taught European as well as British and naval history, which was good. Some of us read the works of Captain Mahan USN and Corbett, but no junior officer then had the benefit of the thinking of men like Richmond, Drax, the Dewars, Jellicoe, Prince Louis of Battenberg or Custance, all of our own service. There were of course, others....'
- ⁴⁰ For the analysis of Richmond and others of the 'Young Turks' (such as Drax), see Marder: *Dreadnought to Scapa Flow* volume V pp.316-332
- ⁴¹ Smith, Watts & Watts: *Records of Merchant Seamen* p.xv. Also Christopher T and Michael J Watts: *My Ancestor was a Merchant Seaman* (London: The Society of Genealogists, 1986) p.13. For detailed background see Hurd: *The Merchant Navy* volume I pp.97-108
- ⁴² Smith, Watts & Watts: *Records of Merchant Seamen* pp.16-17
- ⁴³ Hurd: *The Merchant Navy* volume I pp.100-104
- ⁴⁴ Smith, Watts & Watts: *Records of Merchant Seamen* pp.47-60 and pp.67-68
- ⁴⁵ Duffy, Fisher, Greenhill, Starkey & Youings: *New Maritime History of Devon* p.146
- ⁴⁶ *Ibid.* pp.147-149. Also Bowen: *Royal Naval Reserve* chapter 3 for detailed arguments from the Admiralty and shipowners over paying for pre-sea training, which was an additional complication regarding reserve forces.
- ⁴⁷ Duffy, Fisher, Greenhill, Starkey & Youings: *New Maritime History of Devon* pp.145-148
- ⁴⁸ Aled Eames, Lewis Lloyd, Bryn Parry & M.K. Stammers (Editors): *Cymru A'r Mor/Maritime Wales* Number 15 (Caernarfon: Gwynedd Archives Service, 1992) pp.78-80; and Susan C. Passmore: *Farmers and Figureheads: The Port of New Quay and its Hinterland* (Carmarthen: Dyfed County Council, 1992) p.77
There is other, if scanty, evidence of more navigation schools around the New Quay area. The mentioned one was in the village of Llangrannog. There was definitely another in New Quay itself, one more above Aberaeron at Henfynyw and yet one more in Aberaeron itself: the furthest distance between these being seven miles. (The one in New Quay is presently a 'tea-shop'.)
- ⁴⁹ From samples of crew-lists and agreements it is evident that the Scottish system of parish schools was significantly successful. A far higher percentage of Scottish mariners could read and write than others within the U.K. This is particularly evident in Liverpool based foreign-going vessels. For two examples *John Matthie* see PRO: BT 98/1692 (for voyages beginning 1847 and 1848), BT 98/1978 (for 1849), BT 98/2225 and BT 98/2639 (for 1850); and for *Balmoral* see PRO: BT 98/2816 (for 1852). This followed the voyages of one Scottish able seaman, who subsequently deserted in Melbourne to go gold prospecting.
- ⁵⁰ A large number of these have been retained for posterity, this time at the National Maritime Museum, Greenwich. These are filed by certificate number and I have viewed approximately four hundred (of men from a handful of Welsh villages) plus others. I would submit that viewing any block of certificates would bring about similar conclusions. Some background of the circumstances in these Welsh villages can be gleaned from Passmore: *Farmers and Figureheads* pp.55-68
- ⁵¹ This is a synopsis from Brian Simon: *The Two Nations and the Educational Structure 1780-1870* (London: Lawrence & Wishart, 1960)
- ⁵² This is drawn from a whole raft of sources, only some of which are from published works. An erudite appraisal of Britain's failure in education can be found in Correlli Barnett: *The Audit of War: The Illusion and Reality of Britain as a Great Nation* (London: Pan Books, 2001) pp.201-233. See also Paul Thompson: *The Edwardian: The Remaking of British Society* (London: Routledge, 1992) for many passing references.
- ⁵³ Summers: *GANGES* p.26