

Joseph Woolley – Pioneer of British Naval Education; 1848-1873

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Abstract

For almost 25 years Joseph Woolley served the Admiralty as a teacher, inspector of schools and as the first Admiralty Director of Education. Despite the fact that Woolley held this post for a decade, that he was the sole occupant in the nineteenth century and that in this capacity he gave evidence to, or was a member of, every government committee to examine the subject of naval education over a 30 year period, his work is largely unknown.' In this paper Woolley's contribution to naval education is considered. His Admiralty employment coincided with the most momentous period of change in naval education in the nineteenth century and almost no part of this process was untouched by his contribution.

Bemoaning the state of education in the Royal Navy in 1902 the writer and historian Julian S. Corbett noted that while much effort had been applied to the subject over the previous half century, the system produced was unbalanced, fragmentary and unworthy of the greatest fleet in the world. Above all he identified a lack of policy direction and the absence of a dedicated authority within the Admiralty to coordinate the activity. The result, noted Corbett scathingly, was that from time to time relevant authorities were consulted, their advice was noted, lucid reports were written and then invariably some other course of action, often the exact opposite of what was recommended, was pursued. The outcome he claimed was a system which was 'the despair of the whole Service'.² Yet a survey of nineteenth century naval education shows that earlier activity in the field had been much more positive. In the space of just three decades from 1843, for example, innovations included the establishment of dockyard schools for apprentices, the founding of a school of naval architecture, the commissioning of the officer training ship HMS *Britannia*, the introduction of several harbour training vessels

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for boy seamen and the establishment of what was intended to become the navy's new university – the Royal Naval College, Greenwich. Those years also saw the first official enquiries into both the preliminary and higher education of naval officers and the creation of an Admiralty schools' inspectorate. It is also clear that, despite Corbett's criticism, for almost ten years, from 1864, supervision had been invested in a dedicated Admiralty Director of Education. Yet, on the retirement of the incumbent, Joseph Woolley, the decision was taken to abolish the post and it remained in abeyance for the following three decades. From this point the progress of nineteenth century naval education began to falter.

Joseph Woolley was born at Petersfield, Hampshire, on 27 June 1817, the third son of George Woolley, a local surgeon, and his wife Charlotte. Shortly after the birth the family moved to London where Dr Woolley had obtained a post at the Royal Humane Society. Joseph, together with elder brother John and younger brother Frederic, attended Brompton Grammar School. In 1835 Joseph entered St John's College, Cambridge, where he soon established himself as a talented mathematician in an era when St Johns and Trinity College dominated the subject within the university. He studied under the influential scholar and sometime vice chancellor James Wood and was a contemporary of James Joseph Sylvester one of the most brilliant mathematicians of his day and a founder of the Institute of Actuaries. Woolley graduated BA and third wrangler (third of those gaining a first class pass in mathematics) and in 1840 was elected to a fellowship. He undertook teaching duties for the next six years and was tutor to John Couch Adams, later a distinguished astronomer and discoverer of the planet 'Neptune'. In 1846 Woolley relinquished his post, married and became a country rector but continued to pursue his academic interests particularly in the mathematics applying to ship form and naval architecture.

The Admiralty School of Naval Construction.

In 1848 Woolley was appointed Principal of the newly founded Admiralty School of Naval Construction in Portsmouth Dockyard. The 'Central' or 'second' school, was the successor to an institution originally established in 1811, partly as an expression of concern about the poor educational standards of dockyard officials but also as a deliberate attempt to create a sort of officer class amongst Admiralty constructors and naval architects. From 1817 the school had its own

buildings and an academic staff drawn from the adjacent Royal Naval College, led by another St John's graduate and senior wrangler, James Inman, who drew heavily on his Cambridge connections and gathered around him a group of able mathematical instructors. While they taught to a very high standard, the establishment enjoyed only mixed fortunes not least because the superior quality of its students was greatly resented by senior, less qualified personnel. There was also some social antipathy particularly from naval officers who took exception to the humble backgrounds of its graduates.³ With a supportive First Lord of the Admiralty the establishment was able to continue for some years. But with the appointment of Sir James Graham in 1832, it fell victim both to his economizing zeal and his belief that there was 'too much of science and too little of practical knowledge creeping into the Navy'.⁴ In the midst of much bitterness and parliamentary hostility the school was closed

Thus by the time Woolley arrived at Portsmouth the training of dockyard officers had a history characterised not only by degrees of professional envy and social hostility but also by the notion that theory and practice in naval architecture were somehow incompatible. Nevertheless, he was determined to weave the activities of the school as closely into the working life of the dockyard as possible. Entry to the school was limited to the brightest pupils from the apprentice system and it was envisaged that the course would be strongly theoretical with the aim of producing a body of shipwrights distinguished from the rest of their class as educated and intelligent men. To that end an external inspector, Henry Moseley, formerly of King's College London and Her Majesty's Inspector for dockyard schools, was appointed to examine in a range of subjects including pure and applied mathematics, mechanics, hydrostatics and religion. The first eight pupils from the yards at Chatham, Devonport, Pembroke, Portsmouth and Sheerness were admitted to the Central School on 17 June 1848, for a three year course. The following year nine more were accepted with the aim of building up to 24 students studying at any one time.

Apart from some assistance with chemistry and technical drawing, Woolley undertook all the teaching himself and although the classes were small, they underwent more than 50 hours instruction per week. From the outset he strongly identified himself with the life of his pupils sharing their accommodation and their long working hours. Three days per week were devoted to academic studies with alternate days devoted to practical work in the dockyard. Woolley was also responsible for

religious instruction – a task he undertook so successfully that one of his pupils, John Harry, left the school to become a Wesleyan minister.⁴ Students rose at six am and worked for an hour before breakfast and a working day which lasted until ten at night. No books were available initially so Woolley set to work to produce manuscripts and work sheets and at Admiralty request produced a text book, *Descriptive Geometry*, which later became recognised as a standard work.⁵ Personal accounts of the school are rare but Sir Edward Reed, later Chief Constructor of the Navy and a member of the 1849 entry, noted Woolley's particular diligence and application 'he directed our minds to a number of collateral studies... and without the bestowal of great labour on that work, the pupils of the school would have suffered serious disadvantages'.⁶

It was clear, nevertheless, that suspicion directed towards the earlier institution had not disappeared and that, despite the fact that the second school had been conceived specifically for higher education, its students were unfairly dismissed as 'Euclid boys' deficient in the essential practical skills of shipbuilding.⁷ Moseley, the inspector, disagreed noting in his 1851 report that, on the contrary, students 'possessed the power of using mathematical integration in practical questions with certainty and precision'⁸ but he too was concerned that insufficient support was offered by the dockyard management. The situation was not improved by an Admiralty decision taken shortly after the school opened to reduce the number of senior dockyard positions by a quarter thereby substantially affecting the students' future prospects. As a result no new entrants were taken in 1850 and only four were accepted in the following year, with the Admiralty now deciding that 16 rather than 24 students should be the upper limit and that the course should be extended from three years to four. The entry was again suspended in 1852 and a change of government later that year sounded the death knell for the Central School. In a debate on reductions in the naval estimates the First Lord, again Sir James Graham, announced that like its predecessor the school would close on the grounds of 'not having been found to answer its purpose'.⁹ How this was evident and why an institution designed to produce senior staff should have been established virtually coincidentally with a reduction in the senior positions they would be expected to fill, remained unexplained.

Having lasted less than five years and produced fewer than 20 students, some of whom died young or left the Service, the 'Central' could hardly be considered an immediate success. In the longer term,

however, its graduates exercised a remarkable influence on the navy and the short pass list was to include men at the forefront of design in the ironclad fleet. The two most prominent were Sir Edward Reed, who became Chief Constructor of the Navy at the age of 33 and later served as MP for Cardiff for almost 20 years, and Sir Nathaniel Barnaby, also Chief Constructor of the Navy and later Director of Naval Construction in a defining period in capital ship development. Other graduates promoted to senior positions were F. K. Barnes, Surveyor of Dockyards, W. J. Letty, Inspector of Shipwrights and Richard Abethell, Surveyor of Lloyds Register. The school also produced the first secretary and vice president of the Institution of Naval Architects and its syllabus laid the academic foundations for the Royal School of Naval Architecture and Marine Engineering, opened at South Kensington, in 1864.

Inspector of Admiralty Schools

Much of the success of the alumni was undoubtedly due to the superior mathematical skills and strong work ethic instilled by Joseph Woolley, and while Sir James Graham might have been muddled about the purpose of the school, he clearly recognised the organising and teaching qualities of its Principal. On 18 February 1853, he announced that, despite the closure, Woolley would continue in Admiralty employment as a dockyard school inspector and as adviser to the Surveyor of the Navy on mathematical problems in ship construction.¹⁰ Woolley's Service records in Admiralty papers suggest that he commenced these duties on 1 October 1853 but as his remaining pupils were allowed to complete their course and did not leave until the summer of 1855, he may have remained at the school up to that point.¹¹ This impression is supported by an analysis of records of Her Majesty's Inspectors which shows that Woolley's predecessor did not vacate his post until that year.¹²

Reports by Woolley were published periodically between 1857 and 1864 and covered the dockyard schools at Chatham, Deptford, Devonport, Pembroke, Portsmouth, Sheerness and Woolwich. From 1858 he was also required to inspect the schools established at Greenwich Hospital. Many of his comments were necessarily procedural and concerned with numbers of pupils, hours of attendance, the keeping of registers and examination results. He demonstrated a typically Victorian school inspector's concern about standards of discipline but despite reporting outbreaks of disorder in a number of schools, of which Chatham seems to have been the worst, he always favoured suspension

rather than corporal punishment.¹³ His other persistent concern was that the schools taught a common curriculum and that they conceived themselves as part of a system, rather than as individual entities. Woolley was at pains to stress that the dockyard schools were a component in a defined process of vocational training and that there were clear limits both to what they would teach and indeed to what pupils might learn. He concluded his 1857 report, for example, by reminding headmasters to impress on their pupils 'the bearing of the work of the school on that of the yard'¹⁴ and that while self improvement was to be encouraged, care should be taken to ensure that a pupil's 'intellectual progress must not operate as an incentive to the neglect of the proper business of his calling'.¹⁵ The task of the dockyard schools was, reported Woolley, to produce 'good and efficient workmen before all things'.¹⁶

While the judgement that dockyard schools should restrict themselves to relevant and useful knowledge must have been a consolation to the authorities, there was also a good deal in Woolley's reports that proved less comforting. As Gordon and Lawton have pointed out Victorian school inspectors seldom regarded themselves as mere functionaries and spent as much time dispensing wisdom, as recording numbers.¹⁷ Woolley was no exception and closer analysis of his reports reveal preoccupations evident throughout his Admiralty career and particularly in his later involvement with young officer training. Perhaps the most contentious issue and one that later brought him into conflict with senior officers was the principle of competition in both recruitment and advancement. He proved an implacable opponent of patronage and in his first report noted that at present it was difficult to accept that 'merit alone, and not favour, is the cause of promotion'¹⁸ within the dockyards and while he did not have the power to influence the broader system, he determined to tackle it in the schools. As a result of Woolley's recommendations from January 1860 the examination of candidates for apprenticeships was removed from individual dockyard headmasters and placed in the hands of the Civil Service. In April new regulations including strict age limits and medical conditions were imposed and from June that year the schools' examination papers were set and marked externally.

On 1 April 1858, Woolley was appointed Her Majesty's Inspector (HMI) with special responsibility for dockyard schools, It was in this role that he was seconded to the Newcastle Commission, the first government inquiry into elementary education in England. The

Commission, appointed to examine 'sound and cheap elementary instruction to all classes of peoples'¹⁹ in fact directed its principal efforts to the education of the 'independent poor', within which it included schools provided by the War Office and the Admiralty. Woolley and assistant commissioner Patrick Cumin investigated boys' schools established on board ships in harbour, specifically HM Ships *Victory*, *Excellent*, *Impregnable* and *Cambridge*, and more generally the educational facilities in warships at sea. The former were inspected and visited personally, the latter were examined by interview or correspondence with commanding officers. The task was conducted over a three year period and although the section of the Newcastle report dealing with naval education was relatively brief, it provided an excellent insight into the state of sailors education, made significant recommendations for improvement and provided ample evidence of Woolley's reforming spirit.

Woolley addressed himself primarily to the education of boy sailors. He found considerable variation in standard and practice, with some youngsters spending up to a year in a flagship school but others proceeding directly to vessels in reserve or to operational warships without dedicated facilities. The best of the schools was in HMS *Victory* where pupils spent five hours per week studying reading and writing and one afternoon with the ship's chaplain learning the catechism. Discipline he found admirable and 'maintained entirely, and I hear with little difficulty, by moral means'.²⁰ He noted in the ship's young pupils 'manifest proof of the great progress elementary education has made in this country in late years'²¹ and attributed this to the superior skills of the schoolmaster and the support of the naval staff. The *Victory*, however, was the exception. In other harbour vessels Woolley found evidence of uneven or low standards with attendance unrecorded, constant interruption to study and arrangements entirely dependent on individual commanding officers. Although at some point there had been an educational test for boys on entry, he noted that this had been abandoned and there was no common standard applied. As a general rule he argued there was 'an utter want of classification and intelligent system'²² in the schooling of young sailors, at the heart of which lay not only a shortage of trained teachers but the lack of any proper system for supplying them. Until this latter point was addressed, Woolley argued, it was useless to suggest minor improvements.

While the harbour training ships were deemed unsatisfactory Woolley found conditions in the fleet even worse and again his criticism centred on the quality of instruction. Unlike harbour vessels which could recruit civilian teachers, a sea going warship had to find an instructor from amongst the members of the crew. Since 1837 an additional allowance had been payable for this duty²³ but no qualification beyond the ability to read and write had been required. Woolley found that the role of seaman's schoolmaster was often undertaken by senior ratings approaching retirement or by able seamen 'whose previous character will not bear inspection and who are fit for nothing else'.²⁴ While he found some evidence of good practice, for example, the commanding officer of HMS *Highflyer* employed a qualified teacher, and HMS *Royal William* operated an informal pupil teacher scheme, he concluded that the overall system was at fault and that if 'education in the navy is to be anything more than a mere name, the class of schoolmasters must be improved'.²⁵ Considering Woolley was still nominally in the pay of the Admiralty his criticisms were remarkably frank - even to the point of making unfavourable comparisons between the Royal Navy and the Army. These observations were undoubtedly reflected in the Commissioner's overall conclusion that while 'the necessity of education for the navy is acknowledged ... little earnestness is displayed in carrying it out'.²⁶

The Newcastle Report was issued in 1861 but Woolley was retained for the next three years as a member of Her Majesty's Inspectorate with special responsibility for both dockyard schools and sailors' education. During this time he had the satisfaction of seeing several of his recommendations implemented including the periodic inspection of ships' schools both at home and abroad, compulsorily attendance at day school for young boys and the establishment of evening classes for men. His principal achievement, however, was the overhaul of the sailors' schoolmaster system. An Admiralty Order of 16 April 1862, noted 'that sailors' education has not advanced in proportion to that given in schools generally under government inspection or in Your Majesty's land forces' and outlined new conditions for the employment of naval schoolmasters.²⁷ The old term 'seaman's schoolmaster' was to cease, as was the habit of finding volunteers from existing members of a ship's crew. From this point forward formal training was introduced at a normal school at Greenwich, from whence naval schoolmasters were to be despatched to dockyard schools, training ships and sea going vessels. A graduated career structure was established with schoolmasters divided into three classes equating to the ranks of chief petty officer,

master at arms and warrant officer. Promotion and pay were now based on seniority and a pension was paid after 21 years service. From 1864 all officer training and education was conducted by a commissioned naval instructor and the education of all ratings by the naval schoolmaster – a move that effectively established the system of shipboard education in the Royal Navy until the end of the century.

The Royal School of Naval Architecture

The implementation of his Newcastle recommendations must have provided Woolley with much satisfaction but the years immediately after the report were also busy in a separate but familiar area. The closure of the Central School in 1853 and Woolley's subsequent redeployment had left a vacuum in the formal training of naval architects. In the absence of any official action several concerned individuals, among them Woolley, together with John Scott Russell, Edward Reed and Nathaniel Barnaby formed a committee to promote an Institution of Naval Architects [INA], one of whose objectives was the improvement of training and education within the profession. The INA held its first meeting on 16 January 1860 under the presidency of Sir John Pakington and amongst those elected as vice presidents were Woolley and his old colleague from the Central School, Henry Moseley. Several years passed with no action on training and education but at a meeting on 13 April 1863, a sub committee consisting of Woolley, Scott Russell, Moseley, and Isaac Watts (designer of the first ironclad HMS *Warrior*) was formed to frame a scheme for a new school of naval architecture. They subsequently proposed a three year course divided equally between academic studies and practical work undertaken in the Royal Dockyards or similar commercial concerns. With an eye to the indifferent support for the earlier schools they suggested putting the new institution on a joint basis with funding shared between the Admiralty, the Science and Art Department and income from private and overseas students.

The matter was placed before Parliament by the MP for Portsmouth, Sir James Elphinstone, who on 28 April 1863, urged the appointment of a royal commission to consider both the training of naval architects and to investigate 'the best mode of construction and form of the iron clad ships which are to comprise the future Navy of England'.²⁸ In the debate that followed Lord Clarence Paget, Secretary to the Admiralty Board, noted that the former School of Architecture had been a most valuable

institution and that the Board would attentively consider any scheme for a successor institution. Two days later Sir John Pakington again raised the matter in the House asking whether the Board had considered the necessity of some revival of the School of Architecture and whether 'they would be disposed to extend to it encouragement and support?'²⁹ Again Paget confirmed the Board's interest in the matter and discussions between the Admiralty and the Science and Art Department continued until 17 March of the following year when it was announced that a Royal School of Naval Architecture and Marine Engineering would be established at South Kensington, under the direction of Joseph Woolley.³⁰

No history of the Royal School of Naval Architecture has been written but something of its conduct, its syllabus and students may be gleaned from Woolley's testimony to both the 1868 Report of the Select Committee on Scientific Instruction (*The Samuelson Committee*) and the 1872 Royal Commission on Scientific Instruction and the Advancement of Science (*The Devonshire Committee*). The school opened in November 1864 with an intake of 20 students, the bulk of whom were drawn from the dockyard school system. They embarked on a three year course, later extended to four, with the time divided, as originally envisaged, between the school and the various dockyards. Numbers grew steadily and by 1868 Woolley was informing Samuelson that the roll had risen to 42, of whom 18 were from commercial concerns at home and abroad.³¹ By 1870 student numbers had settled at around 40 and in that year there were four Russians, three Egyptians and a private student from Holland studying at the school.³² Students lived in local lodgings but Woolley imposed a rigorous routine that featured a six day working week, of which four were twelve hours long.³³

In contrast to the Central School where Woolley had been the sole instructor, its successor had a staff of seven who instructed in mathematics, chemistry, physics, materials, engineering, mechanics and design. While they included several Cambridge wranglers and taught to a high standard Woolley felt that the principal improvement arose from the establishment's situation in London where he could attract visiting lecturers of international repute.³⁴ He informed the Devonshire inquiry that almost a quarter of the school's budget was expended on visiting lecturers and that academic and economic benefit might be gained from the amalgamation of the Royal School with other institutions such as the School of Mines or the Royal College of Chemistry.³⁵

The school at South Kensington lasted until 1873 when, as Woolley had predicted, it was incorporated into a larger institution, in this case the newly founded Royal Naval College, Greenwich. The somewhat decrepit building was sold and the facilities shifted to the palatial surroundings of the new college on the banks of the Thames. It had lasted less than ten years but had finally placed the academic study of naval architecture on a proper foundation. Like the first and second schools the principal testament to the efficiency of the Royal School was the later success of its pupils, several of whom achieved very senior positions. These included the distinguished naval architect Sir William White and Sir Philip Watts, the driving force behind the revolutionary battleship HMS *Dreadnought*. Among the Royal Navy's engineer officers to study at South Kensington were Richard Sennett and Sir John Durston, both Engineers in Chief of the Navy, whose combined terms of office lasted from 1887 until 1914 and transcended one of the most challenging periods in ship design and propulsion. The school also produced several graduates who gained distinction in commercial life including W. J. Pratten, founder of the engineering division of shipbuilders Harland and Wolff, and S. J. Thearle, Chief Surveyor of Lloyds Register.³⁶ Much of the credit for the Royal School may be directly attributed to the efforts of Joseph Woolley, who in the wake of the closure of the previous institution never abandoned the struggle for a successor. In helping to found the Institution of Naval Architects, as one of those drawing up the scheme for the new school and eventually acting as its Inspector General, Woolley played a major role in the quest for proper recognition of the study of naval architecture. He was also instrumental in the incorporation of the South Kensington School into the Royal Naval College – a move that not only ensured the survival of the discipline but also played an important part in promoting respect and co-operation between the executive, engineering and construction branches of the Service.³⁷

Admiralty Director of Education

Woolley's achievements at South Kensington were all the more remarkable given that during his service there he was also appointed to the new position of Director of Education for the Admiralty. This post was established on 28 July 1864³⁸ and seems to have been designed to reflect Woolley's existing duties rather than to initiate new tasks. His principal activities were the inspection of educational establishments in dockyards, in ships in home ports and at the divisions of Royal Marines,

the examination of candidates for the Royal School of Naval Architecture and the periodic examination of engineers and engineer students. A fourth area of responsibility 'to further advise us upon questions of education which we may from time to time see fit to refer to him'³⁹ gave some expectation of an expanding role and, indeed, by 1868 he was involved for the first time with young officer education. This arose in connection with the training ship HMS *Britannia*, and in particular with concerns about the lack of external validation in examination procedure – an enduring issue for Woolley. The issue had surfaced intermittently in the Service press for some years – in 1862 the *Army and Navy Gazette* expressed surprise that cadets should be examined by their own teachers⁴⁰ and the matter arose again in 1867 when complaints were raised within the Admiralty that 'examiners know too much about cadets...they know more of them personally than is consistent with their position as examiners'.⁴¹ Although there was no direct accusation of complicity the possibility was suggested that 'boys were passed out of the *Britannia* before by masters in accordance with what they knew of the boys rather than by actual acquirements'.⁴² Woolley was duly despatched to Dartmouth as the external examiner with responsibility for validation, prizes and awards of seniority – a role he undertook for the next five years.

The move was a modest venture into officer education but it was significant because it coincided with a broader package of reform introduced by the incoming Liberal administration of December 1868 and, in particular, by the new First Lord of the Admiralty, H. C. E. Childers. While Childers' principal professional expertise was in finance and merchant banking and his initial work at the Admiralty was directed to driving down expenditure at every level, he also had a long-standing interest in education, having spent some years as a school inspector in New South Wales, Australia.⁴³ His attention was soon drawn to officer education and in his first year new regulations were introduced designed to monitor more closely the numbers and quality of naval cadets. From August 1869 it was decided that the number of cadets allowed to sit the entrance examination would be equal to twice the figure required – a system that simultaneously regulated numbers and ensured that only the top fifty per cent of all nominations would be successful.⁴⁴ The advent of so-called 'limited competition' was accompanied by a more rigorous entrance examination and a review of the existing syllabus. The latter he placed in the hands of Joseph Woolley who, with typical integrity, wrote to the First Naval Lord agreeing to undertake the task but stressing that any revision 'should

not be drawn up by any one person' and that 'counsel should be taken with someone not directly in Admiralty service'.⁴⁵ It was agreed that a committee be formed and Childers wrote to his son's headmaster H. M. Butler of Harrow School ⁴⁶ inviting him to join a group consisting of Alfred Barry, a past headmaster of Cheltenham College, Richard A. Powell, a former commanding officer of HMS *Britannia*, and Thomas J. Main, Professor at the Royal Naval College, Portsmouth.

The Committee's recommendations, published on 6 January 1870,⁴⁷ were supportive of the new entry regulations which would bring the *Britannia* course 'as much as possible in accord with teaching in public schools and other good schools preparatory to them'.⁴⁸ To this end they recommended the reintroduction of Latin to the syllabus and although the bias towards mathematics was maintained, modest amounts of English, history and geography were retained and the study of religion increased. Another important recommendation was that time devoted to seamanship, particularly the evolution of sailing vessels, should be reduced and that in future it should be seen as an antidote to academic study and as 'a wholesome relief from purely academic work'⁴⁹ rather than a subject in its own right. The most radical of the Committee's findings was their vigorous support for the system of limited competition and the modification of nomination procedures that had previously allowed senior officers to place boys in the Service without any objective assessment of their ability. From a modern perspective the notion that a navy grappling with the challenges of the machine age could continue to select its officers by a process of informal arrangement appears absurd. Yet it was equally clear that many officers, while having difficulty articulating a defence, saw this patronage system as entirely natural, not only as a perk but also as a means by which the 'superior' nature of naval society was defined. For Woolley, whose instincts for competition had been established during his term as a school inspector, these social considerations had to be subjugated to method and efficiency.

The findings of the Woolley Committee, while politically acceptable to Childers who implemented them in full, were widely resented by many senior officers and the policy of both limited competition and changes to the *Britannia* syllabus continued to irritate a sensitive nerve in the Royal Navy of the early 1870s. In March 1871, for example, Captain James Goodenough told the Royal United Services Institution that the new regulations would produce boys 'sharper and better taught as midshipmen' but 'inferior as Lieutenants, Commanders and

Captains'.⁵⁰ Some months later Rear Admiral Alfred Ryder warned the same forum of the perils of 'indiscriminate admission by competition' among boys of only 13 years old, chosen from all sections of the community...a move that would be most mischievous'.⁵¹ What was required argued Ryder was not more competition but less and that dedicated naval streams should be established in public schools to produce the sort of candidate the Service required.⁵² Down at Dartmouth the Woolley findings were not so much contested as ignored and little attempt was made by *Britannia's* commanding officer, Captain the Hon F. A. C. Foley, to impose the new curriculum. Woolley later complained that the departure from the course laid down was considerable, particularly in English where he claimed 'the objections were so great that we confined activities to the simple grammar which is in use in National schools'.⁵³ Foley, seemingly unconcerned that the cadets' curriculum was no more advanced than that of the nation's elementary schools, petitioned the Admiralty on a number of occasions between 1871 and 1874 to have the Woolley recommendations overturned and in particular to have seamanship teaching reinstated.⁵⁴

By January 1870 Woolley's responsibilities as Admiralty Director of Education had expanded considerably. Apart from his duties at Dartmouth, he was the Inspector General of the Royal School of Naval Architecture and responsible for examining all engineers and apprentices in dockyards at home and abroad. He inspected the five boy seamen training ships and oversaw the conduct of Greenwich Hospital School. The whole of the dockyard school system, the examination of pupil teachers both in school and at training college and the inspection of infant, industrial and adult schools in the Marine division were also within his remit. He was further required to oversee the Admiralty laboratories at Torquay and to advise the Controller of the Navy on various scientific questions.⁵⁵ Further work in the field of officer education came his way on 28 January 1870 with an appointment to the Committee on the Higher Education of Naval Officers, under the direction of Rear Admiral Charles Shadwell.

The Shadwell Committee, which had a shared civilian and uniformed membership, was directed to frame a scheme of higher education for naval officers derived from existing courses at the Royal Naval College, Portsmouth. Additionally they were asked to investigate a possible future site for a new college and in particular to consider whether the buildings of the old Greenwich hospital might be suitable.⁵⁶ The work of Shadwell has been discussed in detail elsewhere and it has been noted

that their recommendations differed little in syllabus content or numbers involved from existing arrangements at Portsmouth.⁵⁷ Where their views diverged was on the question of a site for the new establishment. Woolley and his academic colleagues supported the Greenwich case whereas the uniformed members backed the retention of the existing college in Portsmouth dockyard. This was more than a simple disagreement over geographical location because it represented a split over the future purposes of higher education. The naval members favoured an establishment that would represent an extension of vocational training, rooted in practicality and dependent on contact with the working environment of a dockyard. The civilians on the Committee stressed the advantages of a location in the capital city adjacent to a scientific and literary community and thus able to attract a distinguished, high quality teaching staff. It was not difficult to detect Woolley's voice in the conduct of this argument – indeed the establishment of an academic community with opportunities for interdisciplinary study with other teaching institutions, commerce and industry were all points that featured in his testimony to the 1868 Samuelson enquiry. He had also stressed the advantages of amalgamation and now saw in the vast range of unused buildings at Greenwich, potential to incorporate his Royal School of Naval Architecture, within a new, specifically naval establishment.

The arguments about location remained unresolved for some years and when a decision in favour of Greenwich was reached it was based not on a strict consideration of its merits as an academic location but rather on the political interests of the Prime Minister, who was one of the MPs for that constituency.⁵⁸ Nevertheless, by the time the new establishment, the Royal Naval College Greenwich, opened on 1 February 1873, Woolley had cause for considerable satisfaction. The political imperative to come to Greenwich had allowed further development of the original Shadwell proposals and both the syllabus and the number of students and staff had greatly expanded. The South Kensington establishment was now an integral part of the new structure, indeed its students provided the bulk of the college population. Given both his pioneering efforts at the Central School in Portsmouth more than two decades earlier and his work in establishing both the Institution of Naval Architects and subsequently the Royal School, Woolley was well pleased to see the study of the subject to which he had devoted so much effort, placed on a sound footing. Almost all of his contributions to the Shadwell Committee had borne fruit. Indeed, the words of the College's founding orders which promised to

'bring together in one establishment... the highest possible scientific instruction'⁵⁹ and to provide a college that would be a 'nucleus of mathematical and mechanical science'⁶⁰ were both aims that Woolley had sought to achieve for much of his working life.

Success, however, came at a price, and Woolley's activities, for all that they had promoted increased efficiency in young officer education and contributed to an expanded vision of the purposes of higher study, now put him at variance with the views of many senior officers. An examination of the Shadwell evidence, for example, revealed the extent to which he had flown in the face of broader naval opinion. Of the 16 uniformed witnesses questioned only two supported the Greenwich case, and of the 56 written submissions only five were in favour and a number actively hostile to any move from Portsmouth.⁶¹ When this sort of feeling was grafted on to a lingering resentment towards both the advent of limited competition and changes to the *Britannia* syllabus espoused in his 1869 report, it was clear that Woolley was now out of step with much mainstream naval thinking. While Childers remained in the First Lord's office some high level support was forthcoming but by the time the Greenwich decision was made he had resigned – effectively driven out in the wake of the loss of the experimental battleship HMS *Captain*.⁶² Now lacking friends in high places and tainted by his association with an almost universally disliked political colleague, Woolley struggled to impose his policies. Although his workload had expanded considerably and his inspectoral duties involved extensive travel he still lacked substantial executive authority and his involvement with officer education, for which no additional administrative or clerical support had been provided, imposed an additional burden.

The Director's Post Abolished

In the winter of 1872 Woolley's health broke down and after a long illness he wrote to the Admiralty stating his willingness to return to work but also stressing that his duties would need to be modified.⁶³ Whether they were or not is unclear but within a year Woolley was again ill and papers were drawn up to allow him to retire on grounds of ill health. While this process was in train, a decision was made to abolish his post and to reorganise the oversight of naval education within the Admiralty.⁶⁴ Ironically, it was the new naval college so close to Woolley's heart that provided the impetus for change. It was felt that an institution headed by an Admiral President should not be subject to

direction by an Admiralty civil servant and that officer education more generally should be placed firmly under uniformed control. Matters pertaining to officers would now be the business of the officers of the college – in effect an additional duty for the Admiral President. All other aspects of naval education would fall to the newly created position of Admiralty Inspector of Schools.⁶⁵ In a memorandum to other Board members the Earl of Camperdown felt these actions would both bring the Royal Navy into line with the Army and promote harmony and organisation within higher education by producing a system ‘simple and likely to prove efficient’.⁶⁶ George Goschen, a First Lord who shared his predecessor’s taste for economy, if not for educational reform, merely noted that ‘the saving effected by the proposed arrangement would be considerable’.⁶⁷

While it was easy to understand how the new arrangement might have saved money, it was more difficult to see how increased harmony would be produced by creating two positions, where previously there had been one. Furthermore, while the duties of the Admiralty Inspector of Schools were carefully identified and promulgated, the Admiral President’s direction of officer education was left curiously ill defined under the term ‘general supervision’.⁶⁸ Within months it became clear that important activities were falling into the gap between the two. It became apparent, for example, that the President of the College could not undertake the role of examiner for junior officers at Greenwich and that J. B. Harbord, the newly appointed Inspector of Schools, would have to undertake the task.⁶⁹ More than six months after Woolley’s departure the Board had to remind the Admiral President that, despite his claim ‘not to be acquainted with the details of the work’, the examinations in HMS *Britannia* were now his responsibility.⁷⁰ Again this duty was given to Harbord. In fact most procedural difficulties were eventually overcome by ceding duties to the Director of Schools, or the Director of Studies at Greenwich, or more remarkably by paying existing teaching staff additional sums of money to supervise examinations. It was, of course, shortcomings in the latter process that had led to Woolley’s involvement in officer education in the first place. It soon became clear that a measure that had been designed to distinguish between the education of ratings and officers had now become an *ad hoc* arrangement that confused both.

It now became difficult to guarantee the future direction of education policy. Within the Admiralty this was the business of the Second Naval Lord but from 1868 it had rested for its formulation, if not its

implementation, with the Director of Education. With the arrival of Childers it had been advanced largely on the First Lord's initiative, with Woolley acting as his executive. Now, with Childers gone and the post of Admiralty Director of Education abolished, policy formulation entered a *lacuna*. The problem was not simply that responsibilities for officer education were ill defined but also that they were vested in the Admiral President of the college - a position subject to regular reappointment. Between 1873 and 1902, for example, the post was filled by eleven different officers who typically served two or three years in the post. Not surprisingly few had any established interest or expertise in naval education and several, including the first appointee, Sir Astley Cooper Key, only accepted the post unwillingly. The situation was further exacerbated by the fact that many appointees were already on record before the Shadwell Committee as opponents of both the location of the college and the philosophy adopted towards higher education in general. Not until 1891, with the appointment of Sir Richard Vesey Hamilton, was the college led by an Admiral who had originally supported its establishment. While a succession of Admiral's Presidents undoubtedly undertook their task with diligence and application a series of two year appointments, often served between extended periods afloat or abroad, was hardly a substitute for a permanent professional post.

How far the conduct of naval education lost its way in the years immediately following Woolley's departure was graphically illustrated by the findings of an 1875 Committee which inquired into the training of cadets in HMS *Britannia* under the chairmanship of Rear Admiral Edward B. Rice. Given the dismay felt in the Service following the endorsement of limited competition by the 1869 Woolley Committee, it was perhaps not surprising that the Rice inquiry moved swiftly and without preamble to express its utter disapproval of that system.⁷¹ The Committee was of the view that competition led to 'superficial habits of study' and more obscurely to the 'masking of defects not discoverable in any educational test'.⁷² Far from providing some measurement of objective merit it was claimed that competition was liable to be indiscriminate and 'unlikely to make an efficient naval officer'.⁷³ Nor did the Committee have any sympathy for the Woolley syllabus which was claimed to contain too many subjects to allow true competence in any. It was also intimated that the study of history and geography was merely a process that 'taxed memory rather than reason'.⁷⁴ What was required in the Committee's view was a reduction in the number of subjects taught and an even greater concentration on mathematics. It was claimed that these observations were based on the testimony of educationalists but

the evidence shows that it was the views of senior Service officers that held sway.⁷⁵ Some like Admiral Alfred Ryder and Captain Thomas Brandreth were happy to restrict nominations to the eight most prominent public schools⁷⁶ but most saw no relevance in any educational test and were content that entry to the Service should simply be a matter between an applicant's parents and the First Lord of the day.

In retrospect it seems difficult to see these findings as anything other than an attempt to unravel the Woolley/Childers reforms of four years previously. In this regard the Rice Committee was successful, at least for a while. New regulations published in February 1875⁷⁷ abandoned competition and returned officer selection to the special pleading and lobbying that had characterised the process for generations. Similarly, in the wake of the Rice report, the syllabus reverted to the pre 1870 pattern and again featured substantial portions of seamanship much of which was irrelevant to the new mechanised navy and which in the fleet was undertaken by sailors anyway.⁷⁸ The 1877 *Britannia Regulations* indicated that almost no time was now allocated to English or history and that the syllabus was narrower than at any time in the previous decade.⁷⁹ This might have suited the conceit of senior officers but it hardly represented a solid educational foundation for a navy in the midst of a technological revolution. Within ten years another major enquiry would again recommend wholesale changes to the *Britannia* curriculum. For Woolley and the supporters of competition some vindication arrived in January 1881, when it was announced that 'absolute' nomination would be abandoned, that the naval entrance examination would in future be administered by the Civil Service, and that only the top one third of all candidates would be successful.⁸⁰

Meanwhile, at the new Royal Naval College, Greenwich, the effects of the abolition of the post of Director of Education were also evident. In part, this was because there was no longer a senior person to champion the broader conception of higher education originally advocated by Woolley and his colleagues on the Shadwell Committee. Unsympathetic naval leadership resulted in many of its recommendations failing to materialise and the original intention to found a naval 'university' and to employ staff teaching naval history, political geography and military tactics was not realised.⁸¹ Another area where Woolley's absence was notable was in the failure to co-ordinate the *Britannia Regulations* and the curriculum followed at the Royal Naval College to ensure that work conducted in each was appropriate and

complimentary. Again this seems to have been overlooked in the decision to dispense with the post of Director of Education, because the first committee to examine the progress of the new college concluded that examination papers for the rank of sub lieutenant were identical to those taken five years previously in the training ship.⁸² Perhaps most damning was the fact that the Admiral President, despite the fact that he now had supervisory responsibility for all officer education, was not only unaware of this shortcoming, but on being informed seemed oblivious to the fact that it lay within his power to rectify the problem.⁸³

Joseph Woolley seems to have taken the abolition of the post of director and his enforced retirement with equanimity. When the matter arose he initially informed the Board that he would be ready to go if it was advantageous 'to consolidate in the hands of a naval officer all the various departments more effectively than those of a civilian' but that he was happy 'to go or stay as may be wished'.⁸⁴ On one point he remained resolute noting that 'the office I now hold has grown vastly in importance' and that if it was to continue it required both additional staff and above all to be placed 'on an equality with the other Principal Officers'.⁸⁵ Woolley would have liked to have seen an autonomous department within the Admiralty rather like that headed by the Medical Director General, which had the power to report on and initiate policy. This did not happen and while there were no guarantees that a properly constituted education department, whether under civilian or Service leadership, would have ensured a sounder or more coherent approach to the subject of naval education, it is hard not to consider this an opportunity lost. This was certainly the view of the 1886 Committee on the Education of Naval Executive Officers. It noted the absence of an officer charged with 'directing and harmonising the various branches which comprise the whole educational system',⁸⁶ and suggested that an education office be set up within the Admiralty. Again no action ensued and it was not until 1902, with the appointment of Dr James A. Ewing, then the Director of Studies at Greenwich, that the post was finally revived.

Conclusion

A comparison between the state of naval education at the start of Joseph Woolley's admiralty career in 1848 and his final departure at the end of 1877 reveals remarkable progress. Indeed, it was in these years that most of the educational institutions serving the Royal Navy for the nineteenth and much of the twentieth century were established. It is

obvious that whether the purpose was to educate boy sailors, dockyard apprentices, naval cadets, warship constructors or senior executive officers, Woolley's influence, whether it be as instigator, investigator or administrator was seldom far from the process. While he was much respected - the Admiralty Board noted in its valedictory comments Woolley's 'great energy and mental attainments' and the 'many extra and special services undertaken to the advantage of the country'⁸⁷ - given the length of his career and the breadth of his activities it is remarkable that his achievements have remained largely unrecognised. The abolition of the post of Director of Education was certainly an inappropriate and misleading epitaph for one who had achieved so much. In this sense Woolley's career was a reminder that every educational reform, no matter how modest, involved considerable administrative and organisational effort and skill, and that behind bland phrases such as 'the Lord Commissioners of the Admiralty have decided' stood individuals whose diligence was often indifferently rewarded or only fleetingly recognised.

Woolley was clearly much more than a dutiful civil servant and his work at every level demonstrated the hallmark of the genuine reformer. This was perhaps most evident in his contribution to the education of engineers and naval architects where his superior academic ability and inspired teaching produced some of the leading naval architects in the world. The fact that he undertook this work against a background of confused and often contradictory government policy towards training was testament to his commitment and he never abandoned his mission for a dedicated teaching institution. The opening of the Royal School at South Kensington might seem to have been sufficient reward but for Woolley it was only an intermediate step in co-locating the training of engineers and naval architects with that of military officers - a quest finally achieved at the Royal Naval College Greenwich. In a newly mechanised navy that required constructors and engineers to be increasingly integrated into the fighting functions of the ship co-location of training was a vital advance. It did not produce unity of sentiment immediately between the various armed services but it was, nevertheless, an indispensable contribution to the evolution of a modern officer corps.

Woolley's reforming spirit was equally evident at a more humble level where his inspectoral reports on dockyard schools and the education of boy sailors provided ample evidence of a critical and independent approach. The introduction of competitive recruitment and

advancement and his requirement for external validation in all examinations helped the dockyard schools achieve prominence as the nation's first, free, compulsory part time schools. Similarly his deeply critical comments about standards in ships' schools and particularly the poor qualifications and inadequate personal qualities of naval schoolmasters provoked the Admiralty into swift and constructive action. His espousal of the pupil teacher system, and particularly his recommendation to establish a dedicated naval teacher training facility at Greenwich, were important contributions to modern naval education. Indeed, it was almost entirely due to Woolley that the naval schoolmaster ceased to be a *faute de mieux* occupation and that the broader national trend towards certification and inspection of teachers was incorporated into the Royal Navy.

As the navy's concern for education increased Woolley seemed the obvious choice in 1868 to examine the education of the officer class but, as this paper has shown, the sort of reforms warmly received for apprentices and sailors were less welcome when applied higher up the social scale. Indeed, Woolley's work from this point until his retirement reveals the underlying nineteenth century social attitudes of the officer corps and how it should be recruited, trained and educated. This was largely a private world where the selection of future officers was thought to be an internal matter. Many senior officers were openly irritated by the measures advocated by Woolley that looked towards more objective means of identifying merit. Some could not understand how training young naval officers was anyone else's business but theirs and it was certainly not that of a middle ranking civil servant with the title of Director of Education. As a consequence the issues of patronage, competition and external validation, so successfully confronted in the dockyard schools, met with only limited success when applied to officers. Woolley's reforms of young officer education may have had relatively little impact in the short term, but he could take comfort from the fact that many of his recommendations relating to the recruitment and selection of naval cadets would eventually be adopted or at least find endorsement in later inquiries.

His advocacy of the Royal Naval College at Greenwich was, likewise, only partially successful while his vision of a broader higher education institution reaping the advantages offered by its proximity to London was shared by few senior officers. As highlighted in this paper, it was the issue of the management and direction of higher education, in particular the notion that the education of officers should be solely

officers' business, which eventually led to the abolition of the post of Director of Education. Woolley's departure from the Admiralty signalled the start of a period of inconsistency and confusion in both the formulation and execution of naval education policy which lasted for two decades, and of which Julian Corbett would later complain. It is thus difficult not to reflect on the short-sightedness of the decision to abolish the post of director of education or to judge it an opportunity lost. With the benefit of hindsight it is clear that in the latter half of the nineteenth century the Royal Navy had to cope with both a rapid expansion in numbers and a series of technological challenges that had profound implications for the training and education of both officers and other ranks. Clearly there was an urgent need for central control and oversight of education policy and equally clearly in the person of Joseph Woolley, the Admiralty had an individual with the talent and energy to undertake that task. The irony was that over the next two decades an immense amount of money and energy would be expended in educating officers of the greatest navy of modern times but without an appropriate central directing and policy making authority, much of this activity would remain unwieldy, disparate and confused.

NOTES

- 1 For example, no mention of the post of Director of Education appears in W. L. Clowes official seven volume official history of the Royal Navy or in Woolley's short entry in the *Dictionary of National Biography*. Christopher Lloyd, one of the few modern commentators on naval education, persistently refers to 'the Director of Education and Doctor Woolley' - when in fact they were one and the same. C. Lloyd, 'The Royal Naval Colleges at Portsmouth and Greenwich', *Mariners Mirror*, vol. 52, (1966), p. 149.
- 2 J. S. Corbett, 'Education in the Navy', *Monthly Review*, (April 1902), p. 43. Whether the picture was quite as bleak as Corbett suggested is debateable. At the time of writing Admiral Sir John Fisher was in the process of formulating the system of education later known as 'the Selbourne Scheme' which was announced in December 1902. Corbett, an associate and friend of Fisher, may have been preparing the ground for what would prove to be one of Fisher's most contentious reforms.
- 3 Several personal attacks were published in the *United Services Journal* and in letters to the *Morning Post* where the views of the novelist Captain Marriot were particularly offensive. See - D K Brown, *Before the Ironclad: Development of Ship Design, Propulsion and Armament in the Royal Navy, 1815-1860*, London: Conway Maritime Press, (1990), p. 24.
- 4 N. Macleod, 'Shipwright Officers of the Royal Dockyards', *Mariners Mirror*, vol. 11, (1925), p. 363.

- 5 J. Woolley, *The Elements of Descriptive Geometry*, London: John W. Parker, (1850).
- 6 E. J. Reed, *A Treatise on the Stability of Ships*, London: Charles Griffin, (1885). The work was dedicated to Joseph Woolley.
- 7 *Report of the Royal Commission on Scientific Instruction and the Advancement of Science*, (1872-1875), (The Devonshire Report) p. 55.
- 8 'Minutes of the Committee of Council on Education 1851' ('Minutes') ED 17/15 p.429. National Archives [Hereafter NA]
- 9 Hansard, *Parliamentary Debates*, 3rd Series, vol. CXXIV, (1853), col. 317
- 10 *Ibid.*
- 11 ADM 1/ 6330, NA.
- 12 J. E. Dunford, 'Biographical Details of Her Majesty's Inspectors of Schools Appointed Before 1870', *History of Education Society Bulletin*, vol. 28, (1981), p. 17.
- 13 'Minutes' ED 17/25, p. 501, NA.
- 14 'Minutes' ED 17/23, p. 828, NA.
- 15 *Ibid.*
- 16 *Ibid*, p. 827.
- 17 D. Lawton and P. Gordon, *HMI*, London: Routledge and Kegan Paul, (1987), p. 9.
- 18 'Minutes', ED 17/23, p. 825, NA.
- 19 *The State of Popular Education in England: Report of the Commissioners*. (The Newcastle Report) London: HMSO, (1861). 'Instructions to Assistant Commissioners', vol. 2, p. 7.
- 20 'Newcastle Report', vol. 1, p. 434.
- 21 *Ibid.*
- 22 *Ibid*, p. 435.
- 23 *Navy List*, (corrected to 20 June 1837), p. 150
- 24 'Newcastle Report', vol. 1, p. 430.
- 25 *Ibid*, p. 431.
- 26 *Ibid*, p. 428.
- 27 ADM 1/5795, NA.
- 28 Hansard, *Parliamentary Debates*, 3rd Series, vol. CLXX, (1863), col. 905.
- 29 *Ibid*, col. 990.
- 30 ADM 1/6330. NA, Woolley's official title in the letter of 17 March 1864 was listed as 'Inspector General'.
- 31 *Report of the Select Committee on Scientific Instruction*, (The Samuelson Report) p. 167.
- 32 Devonshire Report, op. cit., p. 59.
- 33 Samuelson Report, op. cit., p. 168.
- 34 *Ibid*, p. 167.
- 35 Devonshire Report, op. cit., p. 57.
- 36 The careers of Woolley's students are discussed in D. K. Brown, *A Century of Ship Construction: The History of the Royal Corps of Naval Constructors 1883-1983*, London: Conway Maritime Press, (1983).
- 37 Some of the impetus towards mutual understanding between the various branches was lost by the decision to maintain separate messes within the new establishment. Not until 1887 did engineers and executive officers mess

- together. C. M. Dawson, *The Story of Greenwich*, London: Privately published, (1977), p. 93.
- 38 ADM 1/5913, NA.
- 39 *Ibid.*
- 40 *Army and Navy Gazette*, 8 February 1862, p. 89.
- 41 *Report of the Committee on the System of Training Cadets in HMS Britannia*, (The Rice Report), c 1154, 1875, para, 2186.
- 42 *Ibid*, para 2191.
- 43 H. C. E. Childers was also instrumental in the establishment of the University of Melbourne and became the first Vice Chancellor. In this endeavour he was guided by John Woolley, elder brother of Joseph, who was the founder and first Vice Chancellor of the University of Sydney. Childers contributions to education in Australia are discussed in E. Sweetman, *The Educational Activities in Victoria of the Rt. Hon H C E Childers*, Edinburgh: Melbourne University Press in association with Oxford University Press, (1940).
- 44 ADM 1/6156, NA.
- 45 Joseph Woolley to Sir Sydney Dacres, 15 October 1869, ADM 1/6121, NA.
- 46 Hugh Childers to H M Butler, 18 October 1869, ADM 1/6121, NA.
- 47 Circular 3 C of 6 January 1870, ADM 1/6110, NA.
- 48 *Committee on the Education of Cadets in the Royal Navy*, (The Woolley Report), ADM 1/6124, p. 4, NA.
- 49 *Ibid*, p. 6.
- 50 J. G. Goodenough, 'The Preliminary Education of Naval Officers', *Journal of the Royal United Services Institution*, vol. 15, (1871), p. 353.
- 51 A. P. Ryder, 'The Higher Education of Naval Officers', *Journal of the Royal United Services Institution*, vol. 15, (1871), p. 739.
- 52 *Ibid*, p. 740.
- 53 Rice Report, op. cit., para. 2160.
- 54 *Ibid*, para 724.
- 55 ADM 1/6330, NA.
- 56 *Committee on the Higher Education of Naval Officers*, (The Shadwell Report), ADM 116/9/185 (x), NA.
- 57 H. W. Dickinson, 'The Origins and Foundation of the Royal Naval College, Greenwich' *Historical Research*, vol. 72, no 177, (February 1999), pp 92-111
- 58 *Ibid*, pp 102-104.
- 59 ADM 1/6236, NA.
- 60 ADM 7/893, NA.
- 61 Dickinson, op. cit., p. 99.
- 62 HMS *Captain*, an experimental ironclad battleship of 6,950 tons capsized and sank with the loss of 473 lives in the Bay of Biscay on 6 September 1870. The ship's controversial design which left it overmasted and top heavy had received the enthusiastic endorsement and support of the First Lord.
- 63 Joseph Woolley to the Earl of Camperdown, 4 June 1872, ADM 1/6330, NA
- 64 The decision seems to have been taken quite suddenly. Woolley's superannuation papers show his cause of retirement to be 'ill health' but this has been crossed out and the words 'abolition of the post' inserted. Similar amendments were made in the subsequent application to the Treasury for an enhanced pension. ADM 1/6330, NA

- 65 ADM 1/6309. NA
- 66 *Ibid.*
- 67 *Ibid.* At the point of abolition Woolley's salary was £1100 *per annum* compared to the £700 paid to the Inspector of Schools.
- 68 ADM 1/ 6324. NA
- 69 *Ibid.*
- 70 Rice Report, *op. cit.*, para. 401.
- 71 *Ibid.*, p. xiii.
- 72 *Ibid.*, p. viii.
- 73 *Ibid.*, p. xiii.
- 74 *Ibid.*, p. viii.
- 75 For example, all the witnesses called on the grounds of some educational expertise, with the exception of the Chief Instructor of HMS *Britannia*, were in favour of competition. These included the Headmaster of the City of London School, the Head of Mathematics at Christ's Hospital and the Admiralty Inspector of Schools. Joseph Woolley, recalled from retirement, spoke resolutely in favour of competition - a system which he claimed 'gave the Service the best pick of the boys'.
- 76 Ryder was content to hand the selection process to the schools that would be required to provide each year '70 of the best boys England can produce'. Rice Report, *op. cit.*, para. 1705.
- 77 *Navy List* correct to 20 December 1875 p. 381.
- 78 K.G.B. Dewar, *The Navy From Within*, London: Victor Gollancz, (1939).
- 79 *Regulations for Her Majesty's Ship Britannia*, (1877), p. 65.
- 80 Thus naval cadets were finally brought into line with their Army counterparts at Woolwich and with entrants for the Home and Indian Civil Service. Examination for the latter was more competitive than for the Royal Navy - in 1881 some 200 candidates competed for 40 places. See W. J. Reader, *Professional Men*, London: Wiederfeld and Nicolson, (1966), p. 96.
- 81 Naval history, for example, was taught as an additional subject by one of the mathematics staff, J K Laughton, who was restricted to giving specimen lectures. ADM 203/1. NA
- 82 *Report of the Committee appointed to inquire into the establishment of the Royal Naval College Greenwich* (The Gordon Report) c. 1733, (1877), p. vi.
- 83 *Ibid.*, p. vii.
- 84 Joseph Woolley to the Earl of Camperdown, 4 June 1872, ADM 1/6330. NA
- 85 *Ibid.*
- 86 *Report of the Committee appointed to inquire and report on the Education of Naval Executive Officers*, (The Luard Report) c. 4885, (1886), p. xxvi.
- 87 ADM 1/6330. NA