

sprightly in Latude's prison cell. A sound constitution, an active brain, and the faculty of being readily amused or interested, make their possessor almost independent of surrounding accidents. On the other hand, there are those who are as the death's-head at their own feasts, and who allow all the glories and gauds of the world to pass unheeded before their sated eyes. This princess seems to be crushed by the weight of her jewels and robes. Yonder great noble, with the revenues of a province at his command, is quite joyless. Such-and-such a victorious general is as incapable of smiling as of a blunder in strategy.

"I think, Albinia, if we had some ado to make both ends meet, you'd be happier," Mr. Churton had once said, in his bluff way, and perhaps he was right. There are women to whom ample means, and the consequent immunity from household cares, are a positive bane; just as there are youths who are miserable until they have squandered the last shilling of their pocket-money. But to two things the Rector's wife was constant, her love of music and her kindly patronage of May Gwynn. Other tastes she formed,

and abandoned after a week of enthusiasm; but to these she was faithful, when leather-cutting and wood-carving, painting on china, and illuminating books of devotion had been tired of and renounced.

The orphan girl had profited, with surprising quickness, by the instruction afforded her by her volunteer teacher. May was blessed by nature with a fine ear and an innate love of harmony, and with one more gift as well, which does not invariably turn out a blessing to its owner, but which is valued in proportion to its scarcity. It presently became clear to Mrs. Churton that May had a magnificent voice, the clear, sweet notes of which were distinctly audible amidst the feeble quavering of the meagre Capel choir, a voice such as needed but time and care for its development.

"I really think, my dear, you might make a living—in that way!" had been the half-careless comment of the Rector's wife one day, as her pupil closed the piano. The remark, later on, was to occur with redoubled force to May's memory.

END OF CHAPTER THE SIXTEENTH.

HOW TO BECOME AN ENGINEER IN THE ROYAL NAVY.

BY A NAVAL OFFICER.



HERE are two ways of joining the service and becoming a Navy Engineer. The first I shall do little more than mention. It is the older way certainly, and is only suited to those who are no longer boys, but young men; although when we go to

war again, and men are much wanted, many will join the service in this manner. If there are vacancies for second-class assistant engineers, candidates may apply—those who can produce certificates of having served in a factory (engine), or proof of acquaintance with engine-work, and capabilities as a practical mechanic, as well as testimonials of good conduct and character. The candidate must be able to keep accounts, make rough working sketches of engines and boilers, understand the general principle of the engine, the names of the several parts and their uses, and be willing and able to exert himself as a workman, under any contingency which may arise in the engine-room.

But it is much better to enter as a boy as an engineer student in one of Her Majesty's dockyards. The routine of the service, and everything connected therewith, are so much more easily mastered, and moreover the

Admiralty prefer this method, and would, if possible, have all their engineers from schools of this sort.

I will now suppose that it has been determined that a certain boy shall qualify for an engineer in the Royal Navy. The first thing to be thought about is his *age and state of health*. He must not be over fifteen years of age, nor under fourteen, on the first day of the examination. This examination is held in London, Chatham, Sheerness, Portsmouth, and Devonport, on the 1st of June every year. Proof of age is required by certificate of birth, or declaration before a magistrate. As to health, I do not advise any boy to think of entering the service, unless he is at least of average good health and comparatively strong for his years. Before he is examined at all he must pass before a Navy Doctor. This officer will not only examine every organ in his body, but even test his strength and suppleness, and also his eyesight, both for correctness of vision and knowledge of colours.

The boy himself can choose any of the four dockyards above-mentioned, both to be examined at and to study at, and his wishes will be met as far as practicable or possible. Boys naturally wish to be as near home as they can; but here, *entre nous*, a word in season. Plymouth, that is Devonport, is the most healthy, Chatham and Portsmouth next, but Sheerness has the reputation of being a less healthy place.

Before the 1st of May the boy's application must go in, neatly (this is my own private advice) written on a sheet of foolscap, having a broad margin folded down, addressed to the captain-superintendent of the (chosen) dockyard, and beginning—"Sir, I have the

honour to request," &c., and ending—"I am, Sir, your obedient Servant, So-and-so."

The gentleman so addressed will cause his clerk to supply you (I now suppose myself addressing the candidate, not the parent) with a form, on which you must supply evidence of *good character and respectability*. There is one little item which must not be forgotten: you must be *re-vaccinated*, and I advise you to have this done early in the year.

Your examination—due notice to attend which you will receive—will take place at your dockyard on the first Tuesday in June. It is not difficult. You will find the examiners very pleasant gentlemen indeed, so there is no need to be nervous.

The examination is divided into two parts. The first is the preliminary, which includes arithmetic up to vulgar and decimal fractions, square and cube roots—marks obtainable, 250; orthography, 100; and hand-writing, 100. Now, unless you can pass this preliminary with credit, you had better return home at once. If you do pass it, you are next examined competitively in grammar, 100 marks; English composition, 100; geography, 100; translating French into English, 150; Euclid (first six books), 300; and algebra, including quadratic equations, 300; total marks possible, 1,050; and if you obtain a total of 750 of these you are declared passed; you are classed in an order of merit, and are eligible for appointment as engineer student as soon as a vacancy occurs. And here let me advise you to study hard and earnestly before this examination, so as to get yourself well up in the order of merit. I would not give a bit of old rope-yarn for a boy who was content with merely passing. A little dash at first gives you a good name and encouragement to go on. The method of a boy's entrance generally gives a colouring, either dark or light, to his whole after-career in the service.

Having entered as engineer student, you have six years to serve in the dockyard, receiving instructions in factory work and in iron ship-building; also in drawing and making working sketches, and in the various branches of study pursued at the dockyard schools. You will also be taught the working of marine engines and boilers, and the repairing of the same, and the uses of the various instruments used in the engine-room of a sea-going ship. In a word, you will (if you attend to your studies) learn all the various duties of a Navy Engineer.

If you give your mind to it, and remember your future is in your own hands, you will not find your studies hard; but just by way of enlivening you a little, as it were, there is an annual examination, and a pretty stiff one it is, and here you will have to prove to the satisfaction of your examiners that you have not been idle.

When you leave the dockyard on the 1st of October, after having passed your final examination creditably, you will be sent to the Royal Naval College at Greenwich, as acting second-class assistant engineer, there to undergo for one term a course of still higher instruction.

But if you fail to pass your sixth examination you will be allowed one more year at the dockyard. You will then be re-examined, and if you fail again, then farewell to all your ambition as far as the Royal Navy is concerned. The grand secret of success is never to be idle or led into temptation by the other students, and never to let your work get *one day behindhand*.

But I wish you good luck, and will now suppose you to have passed with credit that terrible sixth. Before going to Greenwich you must once more pass the Surgeon, and also prove that *you have learned to swim*. The writer twice saved his life through his proficiency in this art, and once nearly lost it; still that was one to the good. Your term at Greenwich will be from October 1st to the following June, and at the end of the time you will be re-examined, and granted a certificate according to merit. If this be a first-class certificate it counts for one year's promotion; if a second, for only six months. You see there are many inducements to study, to do well, and get on in the service. Here is one in particular. From those students who take first-class certificates of merit at Greenwich, four are selected and allowed to go through a still higher course of instruction in the duties, &c., of their profession, and at the end of this course one or two of the best of these four will be allowed to remain a third term, after which they may have one year at sea, and then be held eligible to fill positions in Her Majesty's dockyards on shore.

Pay of Engineer Students.—Engineer students of the first year are allowed 8s. a week; if at the end of that time a favourable report is given of them, their pay will be increased 2s. a week year by year until the sixth, when they will receive 24s. a week.

When a student goes to the Naval College at Greenwich he receives as pay 3s. 6d. a day, has free quarters, and is allowed in addition 1s. 6d. a day towards his mess. If he is permitted to have a second or third term at Greenwich, he still receives the same amount of mess-money, and his daily pay is 6s.

Your studies are now ended, as far as shore life is concerned. Henceforth, for some years to come at least, your life will be on the "rolling deep." You will be appointed to a ship as second-class assistant engineer; and now I will tell you what promotion you may reasonably expect, and when you may expect it, that is in times of peace; promotion will be, of course, more rapid in war time. As second-class assistant engineer you must have served on board ship, on full pay, what we call sea-time—for three years—before you can go up for examination as first-class assistant. The examination is much the same as your last one, with this addition, you must prove your capability to take full charge of a watch in the engine-room, with the ship at sea, and the steam up.

After passing this examination you wait for your promotion to that rank.

As first-class assistant engineer you must serve at least two years—sea-time—before you will be allowed to present yourself for examination as Engineer—full-blown Engineer. The examination may be con-

ducted either ashore or afloat, and you must prove yourself *perfectly* competent in every way to do duty as a Chief Engineer, in the absence of that officer, and be able to adjust all the various parts of the machinery, as well as make good defects, and repair the boilers even at sea.

As Engineer you must serve for a period of three years before you go up for your highest examination of all—namely, that for Chief Engineer. By this time you will probably find a few grey hairs about your temples; but even as Chief Engineer, ward-room officer and all, as you are, you must not be above throwing off your gold-laced coat and exerting yourself as a mechanic or workman if the occasion should demand it. Many a gallant Chief have I seen working, black and grimy, as a galley slave in the engine-room; and glad to wipe the sweat from his brow with a morsel of greasy rope-yarn—"take a rounder," as Dickens hath it—ay, and thought all the more of the officer for doing so.

Although an Engineer passes for the *rank* of Chief, he will not receive his *commission* as Chief until he obtains a certificate from the Inspector of Schools, or a dispensing order from the Admiralty.

Even as Chief Engineer you have not yet reached the top of the pole, and ten to one never will; there are grades above you even now—viz., Inspectors of Machinery and Chief Inspectors of Machinery. Still there is no reason why you should not aspire to even that rank. Oh! there is nothing like ambition. Ambition and aspiration are the floats that carry a man safely over many a difficulty in this world of toil and trouble.

Now I have told you how to get into the service, and how to get on in the service, and I shall deem myself but a poor writer if I have not succeeded in making you curious to know a little more of an engineer's life at sea. Well, then, as to *uniform*. This is often a serious consideration to a young man. Before you join your ship you must have a good outfit; and I think about fifty pounds ready money will get you all you require as assistant engineer. You have no gold lace as the senior branches have, and you have no sword, not being entitled to "lash yourself to a cheese-knife," as it is facetiously termed, until you obtain the rank of Engineer. A word of warning anent uniform: never order it anywhere except at a proper naval outfitter's shop in a dockyard town; and do not, if you can avoid it, have your uniform on credit. There is no difficulty in obtaining this credit, but I have known many a promising young man spoiled by the system.

Pay.—On first joining your ship as second-class

assistant engineer you are entitled to full pay, at the rate of 6s. a day, two months of which you can draw in advance, in order to provide yourself with necessities before proceeding to sea. Or if employed at a dockyard your pay will be the same.

On being promoted to the rank of first-class assistant, your pay will be 7s. 6d. a day. The pay of an Engineer in the Royal Navy is 9s. a day, and after five years' service in that rank his full pay is increased to 10s. per diem. To Engineers in charge of ships in commission, an additional daily pay is granted of from 1s. up to 4s., according to the horse-power of the ship in which they are employed. This is called "charge pay."

The pay of a Chief is 16s. a day, and after seventeen years of sea-service it is 17s.; and I for one think it ought to be 20s. If you should be lucky enough to reach the rank of Inspector of Machinery, your full pay will be £1 5s. a day, or £456 a year, and you will be entitled to retire on 16s. a day. This, I dare say, most people will consider a decent competency; still, both sides of the question are to be considered, and we must not forget that the value of money is on the decrease, and such a thing as increase of half-pay or retired pay is never dreamt of.

Expenses of Mess.—These are not very great. The Engineers and assistants have a mess-place of their own, and I believe it is 1s. 6d. a day they have to pay. Government supplies all mess-traps, with the exception of spoons and forks. There is also an allowance of rum and a little table-money. This, of course, does not include your wine bill, which the smaller you make the happier you will be.

The Chief Engineer is a ward-room officer, and therefore his expenses are rather greater; and he has band-money to pay, and several other items tend to increase his bill. One of your own officers performs the duties of mess-caterer, and another that of wine-caterer, keeps all accounts, and receives the amount of his bill from each officer at the month's end.

Accommodation.—Your mess-place is usually very comfortable, and if it is not you soon get up to it. You must rough it a little, you know, and after a few years, instead of swinging in a hammock, you will have a cabin of your own, with a swing cot, pictures on the bulk-heads, a chest of drawers, a cupboard, and no end of little comforts.

Time a Ship is in Commission.—This varies according to circumstances; on a foreign station the time is usually from three to five years, but after being six months out the time does not seem long, and you hardly think you have been out a year when you are homeward-bound again, and by-and-by, "Old England's on the lee, brave boys!"

