



SIR RONALD GARRETT



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Ronald Thornbury Garrett was born in London on 5th November 1888. He was educated at Rugby School and in 1909 he was articled to his father, the late Samuel Garrett, the former President of the Law Society.

He gave up the Law in 1912 and entered the employment of Anderson, Anderson and Company, the joint managers of the Orient Steam Navigation Co., Ltd. On the outbreak of war in August 1914 he joined the Army and served until January 1919, retiring with the rank of Captain.

He returned to the Orient Line, becoming Secretary to Anderson, Green and Co., Ltd., and the Orient Steam Navigation Co., Ltd., on 1st January 1922. In 1924 he became a Director of Anderson, Green and Co., Ltd.

He was a member of the Port of London Authority from 1934 to 1947 and was Chairman of the London General Steam Shipowners Society in 1942/43.

Sir Ronald Garrett was knighted in 1944 in recognition of his services as Chairman of the National Dock Labour Corporation, whose first Chairman he became in the autumn of 1941.

He became an underwriting member of Lloyd's in 1952 and during 1956 he was Prime Warden of the Worshipful Company of Shipwrights. He is also a member of the Council of the Chamber of Shipping and an Associate Member of the Council of the Institution of Naval Architects.

Sir Ronald was Deputy Chairman and Treasurer of Lloyd's Register of Shipping from July 1943 to June 1946 and was elected Chairman in July 1946. He retired from this position at the end of June 1957.



# PRESIDENTIAL ADDRESS

of

SIR RONALD GARRETT

## “Lloyd’s Register and the Marine Engineer”

The newly elected President of this Institute usually makes his bow to the members and the Council at the Annual General Meeting at which he is installed in office. I, unfortunately, missed this occasion, owing to the fact that I was on the high seas at the time. So my first word this evening must be to repeat to you personally what I said in the message I sent through the retiring President—I am deeply conscious of the great compliment you have paid me in electing me to this eminent position, and I will do my best during my year to discharge the obligations and duties of my office.

The first duty, that of delivering a Presidential Address, is probably the most difficult of any. A President of an Institute such as this if, as is my case, he has no technical knowledge or qualifications, is faced with this dilemma. He must choose as the subject of his Address some matter which is likely to interest the members, but at the same time he must eschew (if he is wise) any matter of which his audience knows more than he.

I have chosen as the subject of my address, “Lloyd’s Register and the Marine Engineer”. Having recently retired after a period of many years as Chairman of Lloyd’s Register of Shipping I know something about that Society. At the same time, I am only too acutely aware that there are probably many Lloyd’s Surveyors in my audience whose knowledge of the Surveyor’s work is much more extensive than mine. So I shall have to walk circumspectly and shall confine myself to history and some general reflections, avoiding technicalities. I am encouraged to think that the subject may be of some interest to you because, not only is Lloyd’s Register probably one of the largest single employers of marine engineers in the country, but nearly all marine engineers in the course of their sea service are brought into contact with the activities of the Classification Society.

Lloyd’s Register is of a considerable age. It began nearly two hundred years ago—long before, that is to say, there were any such people as marine engineers. The original Surveyors were retired sea captains and it was only gradually that they came to be supplemented by men with some technical knowledge of ship construction. This happened when the Society began to classify ships during construction, and subsequently laid down rules for the guidance of shipbuilders—a proceeding which led to indignant protests from the builders. A more highly qualified Surveyor was obviously called for and shipwright Surveyors were appointed. But ships were still being built of wood and propelled by sails so that the Surveyors could in no sense be described as engineers.

No Engineer Surveyor was appointed till 1874, and that is surprising when we recollect that steam had been applied to ships since the early years of the century, that by 1837

ships had crossed the Atlantic under steam, and that in 1840 Samuel Cunard got his contract for a mail service by steamship and the P. and O. Company started its steamer service to Egypt. So that it was clear by that time that steam had come to stay and was established as a method of ship propulsion. Why then was Lloyd’s Register so slow to equip itself to deal with this new and revolutionary development? In the limited time at my disposal I have done a little research to find the answer to this question. I have not been very successful. There are many references to steam in the Minutes of those days but the Minutes are most uninformative. They merely record that a letter was read and that something was resolved. The differing views unhappily are never recorded, so we are left to guess at the reasons which prompted the Committee’s attitude. They recognized as early as 1834 that some attention must be given to boilers and machinery. The rules of that year provide that steamships should be surveyed twice annually and that at each survey a certificate must be provided as to the condition of the boilers and machinery. Recognizing that their own Surveyors are not qualified to furnish this certificate they stipulate that “some competent Master Engineer” be employed for the purpose. This procedure apparently contented them for the next forty years—forty years during which steam propulsion was leaping ahead. The screw replaced the paddle wheel, steel replaced iron, and the steam engine passed through many phases—with which you are more familiar than I—leading to the introduction of the compound principle in 1854 and ultimately to the triple expansion engine in 1871. Meantime boiler pressures had increased from the 3½lb. per square inch, which was typical of an installation of 1834, to 60lb. per square inch by 1871. And the number of steamships on the Register had multiplied many times. Even in 1834 there had been more than one hundred of them. And all this time the Society was content with its certificate from “some competent Master Engineer”, even though in 1869 engines and boilers were included as part of a vessel’s equipment and classification was made conditional on a satisfactory report as to their safety and efficiency.

To our modern way of thinking it is not only surprising, it is even rather shocking, that the Society should so long have been content to accept, in a matter which in course of time they came to recognize as vital to the safety and efficiency of the vessel, a certificate from men not under their own control and whose only qualification was that they felt justified in calling themselves “competent Master Engineers”. In following this course the Committee seem to have taken their cue from the Government. For instance, as late as 1866 a certain Mr. Hine suggested the desirability of the machinery for steam vessels being inspected during construction by



officers to be appointed by the Society. The Minutes record that after some discussion it was ordered that information be obtained from the Board of Trade respecting the nature of the periodical examination of machinery required by the Board, and that meantime the further consideration of Mr. Hine's communication be postponed. And that's the last we hear of Mr. Hine and his proposal. How interesting it would be now to have some record of the discussion which led to such a sensible proposition being side-tracked in this way. The sensitiveness of the Society to the Government is further illustrated by an incident as early as 1840. In that year the Committee had before them a letter from the Chairman of the General Steam Navigation Company, on the subject of "contemplated legislative measures for regulating navigation by steam". The Committee apparently thought this prospect so alarming that they deputed their Chairman and two Deputy Chairmen to wait on the President of the Board of Trade. At the next meeting of the Committee the Chairman reported that the deputation had had an interview with the President, but he gives no account of what had transpired; and the only action taken by the Committee is embodied in a resolution which at this distance of time may strike us perhaps as a little inconsequent. It reads as follows: "Resolved that the Committee for managing the affairs of the Society do dine together in the first Thursday in the month of March, viz. the 5th March, at the Albion Tavern". And so far as "the regulation of navigation by steam" was concerned—that was the end of that. The subject does not crop up again until more than twenty-five years later, when in 1866 the unfortunate Mr. Hine made his suggestion and got his raspberry. But by that time the end of the struggle was near. Four years later Liverpool took up the cudgels and Liverpool was a very different antagonist from Mr. Hine. It not only had several representatives on the General Committee, it had a most influential and active local Committee; and then, as now, when Liverpool made up its mind wigs were likely to be on the green. In this instance the story opens in 1870 when Mr. Rathbone, the Chairman of the Liverpool Committee, invited "the sub-committee" in London to visit Liverpool "in respect of the steps to be taken to secure the co-operation of the large steamship owning interests with the Society". The visit duly took place, but history does not relate—or perhaps I should say I have not been able to discover—what was discussed. At the same time it is a safe guess that the question of appointing Engineer Surveyors must have figured prominently on the agenda. A report was made to the General Committee in London and, again, I can only infer that its tenor was unfavourable to the Liverpool views: for in October Mr. Rathbone is on the carpet before the General Committee for having circularized the Society's Surveyors with "a printed paper containing questions in respect to the desirability of the Committee requiring a modified survey of the engines of steamers". The Minute goes on "after some stringent remarks on the course taken by Mr. Rathbone in this instance it was agreed that the Chairman should write him in regard thereto"; but nonetheless the Surveyors were authorized to answer his questions. A few weeks later, no doubt as a result of this incident, Mr. Rathbone and Mr. Alfred Holt resigned their seats on the Liverpool Committee. But I suspect that Liverpool stuck to its guns, as you would expect Liverpool to do. And its guns must have been augmented at this moment by the case of the steamer *Demetrius*. This vessel's boiler was inspected by a Mr. Lace (no doubt one of these "competent Master Engineers") who reported that no repairs were required and that the boiler was in good working order. Liverpool was not satisfied with this report and after a good deal of pressure persuaded the London Committee to hold a further survey by another engineer. In the result the Liverpool action was completely justified, as the boiler was found to be not in a safe working condition.

This must have strengthened Liverpool's hand and I have no doubt they kept pegging away at the London Committee,

though I find no further reference to the subject for a period of nearly three years. The credit for the final and successful attack seems to belong to Sunderland. It was a letter which came to the Committee through Mr. Munro of that port which resulted in the proposal to appoint Engineer Surveyors being again up for consideration in January 1874. This time it was referred to the sub-committee for surveyors. The sub-committee's report was evidently in favour of the proposal. Nonetheless, at the General Committee meeting in January it was only "after considerable discussion" that the Chairman gave notice that he would bring the matter under special consideration at the next meeting of the Committee. That was the die-hards' last throw. At the meeting on 12th February 1874, the recommendation that "an engineer be appointed to survey the engines and boilers of steam vessels" was approved, and the long battle was over.

It had indeed been a long battle—the more's the pity. For it meant that during all these decades the Society played little or no part in the immense and rapid development of the steam engine. As evidence of the extent to which the Society was out of the picture, so far as machinery is concerned, we may take the case of the *Great Eastern*. This remarkable experiment, which marked an advance both in shipbuilding and machinery regarded as fantastic at the time and which aroused immense public interest not only in this country but throughout the world, was carried through without any reference to or co-operation from Lloyd's Register. Scott Russell, who was the naval architect concerned, was well disposed to the Society and frequently submitted to them plans for ships he was building. But not in the case of his largest ship. One can only assume that the fiery little genius, Brunel, rebelled at the thought of having his machinery designs vetted by "some competent Master Engineer". And small wonder. He was at the zenith of his reputation, had already successfully built the *Great Western* and *Great Britain*, and had every justification for thinking that neither Lloyd's Register nor anyone else was qualified to pass judgement on him.

The attitude of the Committee is the more surprising when one recalls that this same period saw iron replacing wood in shipbuilding, and that in this revolution in established practice the Society took a prominent, intelligent and enterprising part. The Chairman of the Society during the whole of this forty years was Mr. Thomas Chapman, and, as he remained in the Chair till 1881, I think we can fairly assume that he supported the introduction of Engineer Surveyors, just as we know he encouraged the development of iron ships. In spite of the fact that he was a distinguished antiquarian he seems to have been a man of liberal and progressive mind. For the appointment of Engineers was a momentous step. It meant the Society was entering an immense, new, totally different field, in which at the time they were unequipped to operate. No doubt that is why the more conservative elements on the Committee had fought so long and so stubbornly against the innovation. But it's a good thing they were beaten in the end; the Society could not long have survived in the age of steam if it had not taken the course it did.

So the decision of 1874 marks the opening of a new chapter in the history of Lloyd's Register. From that time on the Society has been closely concerned in all the major developments of marine machinery. And that is not to be wondered at. The appointment of Mr. Parker, the first Engineer Surveyor, and his two assistants in 1874 was the thin end of the wedge. In a very short time the wedge was driven right home. So great was the demand for Engineer Surveyors that within ten years they numbered more than one-third of the Society's technical staff, and before the end of the century they outnumbered the Ship Surveyors. Today, over 70 per cent of the Society's technical staff are Engineers. Including the Headquarters staff and the specialists in refrigeration, electricity, etc., there are more than seven hundred of them and they are scattered all over the world. Between them they survey the engines of many thousands of ships in the course



## Presidential Address

of a year, and they are in all the major marine engineering works of the world. It is only natural, and it is certainly right and proper, that the designers and manufacturers of machinery should seek to avail themselves of the vast wealth of experience and practical knowledge which this organization can offer. I am glad to think they do. It is not the Society's function to pioneer, but it is its function to help and encourage pioneering. Some people seem to think that the Society should concern itself only with making rules. Rules can only come at a comparatively late stage. They must endeavour to be uncontroversial, and that means that they must wait till after the experimental stage has been passed and until sufficient experience has been gained to enable practice to be stabilized. Again and again in the history of the Society it has resisted pressure to introduce rules prematurely. For example, the first survey of an iron ship by the Society occurred in 1836, but sixteen years later we find the Committee recording its view that "Considering that iron shipbuilding is yet in its infancy and that there are no well-understood rules for building iron ships it is not desirable at present to frame a scheme compelling the adoption of a particular form or mode of construction". And again, composite ships first appear in the Register in 1851. Fifteen years later the Committee has "reason to believe that an opinion prevails that the time has scarcely yet arrived when it would be advantageous to promulgate rules for the construction of composite ships which builders and others. . . . might feel would in some degree fetter them in their action." These examples happen to relate to ship construction, but the same is true of developments in machinery. For example, as early as 1875, the year after he was appointed, Mr. Parker, the Chief Engineer Surveyor, suggested to the Committee that in the matter of boiler pressures and thickness of shell plates records should be kept "so that the exact practice of the various manufacturers may be correctly ascertained with a view to forming fixed rules". He goes on: "The Board of Trade have altered their rules so frequently, and manufacturers complain of being harassed by these alterations, that I respectfully submit for the Committee's consideration whether this will not be a more prudent course to adopt than to lay down fixed rules at present."

Note the interval which has elapsed between the first introduction of an innovation and the formulation of rules governing it. Taking steam propulsion itself, we should be fairly conservative if we took 1840 as the year of its first adoption on a practical and substantial scale, and, as we have seen, it was more than thirty years later that the first rules for the construction of steam engines were introduced. In the case of turbines, Sir Charles Parsons sent his *Turbinia* to the Naval Review in 1897. The first rules for steam turbines are dated 1917. The first refrigerated cargo was carried from the Argentine in 1877; the rules for refrigerating machinery did not appear till 1899. Oil was first used as fuel in 1870; the rules on the subject only came in 1902. An so on: instances might be multiplied. But this time lag does not mean that Lloyd's Register is not interested. On the contrary, it is only by close contact with innovations during the stages of development and by accumulating experience of their behaviour under working conditions, that the Society can qualify itself to formulate rules when the time comes. In the interim, the Society is almost invariably called on to advise and help in the early experimental stages. The development of the turbine affords a convenient example. When in 1903 the Cunard Company were considering the feasibility of applying turbines to large ocean steamers, they asked that the Society's Chief Engineer Surveyor should join the committee they set up to investigate the subject. The following year the Society was represented, again by its Chief Engineer Surveyor, on the Admiralty committee for considering machinery designs for His Majesty's ships.

So, today, when the application of atomic power seems likely to be the next revolutionary development in steam propulsion, the Society is very rightly and properly getting all the experience it can of the design, construction and operation

of atomic installations of all kinds; and it is represented on the Admiralty committee set up to investigate the application of atomic power for marine purposes. It is surprising that there are people—and people who should know better—who take the view that it is no part of the Society's function to participate in such pioneering investigations. I can only say that it will be an ill day for the Society—and for marine engineers and the shipping industry—if that pusillanimous view should ever prevail.

Now I should like to attempt an answer to the questions: "What can Lloyd's Register offer to the Marine Engineer and what does it ask of him?"

I don't know whether crankshafts and gear wheels arouse the same passionate devotion in the Marine Engineer as the "tall ship" used to elicit from the old time sailorman. But be that as it may, it must be an attraction to a man who has spent ten or fifteen years in the study and care of marine engines at sea to find a shore job which will enable him not only to use, but greatly to broaden, that experience. And it must be a comforting thought that he is still playing a vital part in the industry of his choice. I think I have already shown how valuable is the contribution of the Surveyor to the design and constructional problems of the builder, and to the operational problems of the shipowner. If we draw an analogy between the surveying service and the medical profession, the "Ship and Engineer" Surveyor is the General Practitioner of the service.

It would be convenient here, perhaps, to explain the term "Ship and Engineer" Surveyor. Originally all Engineer Surveyors were given that title, but of recent years it has been restricted to those Engineer Surveyors, who, in the course of their career with the Society, have acquired sufficient knowledge of ship structure and repair to enable them to deal with the less complicated hull surveys and repairs. They are fitted not only for service in a large port where Surveyors of all descriptions are readily available, but they are particularly suitable for service in the remoter ports of call about the world, where they may be alone or with two or three colleagues, and must be prepared to meet and deal with all the diverse maladies and infirmities which ships and their engines are prone to develop in the course of their voyages. And a point to remember is that the Ship Surveyor never becomes a Ship and Engineer Surveyor. It is possible for the marine engineer to acquire a working knowledge of naval architecture and ship repair; but the converse is apparently not true—it would be difficult for a naval architect, by work in the ports, to acquire sufficient knowledge of mechanical engineering to qualify him for the title. That, and certain statutory provisions, is why the Engineer has tended more and more to become the General Practitioner of the service, whilst the Ship Surveyor has tended more and more to become a specialist concerned with the design and construction of ships, and major problems of hull repair. His part may be likened to that of the surgeon—immensely important, indeed vital, for the community, but not primarily concerned with ordinary, everyday ailments.

At Headquarters we have our Harley Street pundits, most of whom have come up the hard way through service at the ports, but who include specialists in particular branches like refrigeration and electricity, and also investigation and research departments. To any of these the Ship and Engineer Surveyor who shows the necessary aptitudes can graduate. If he sticks to "general practice" he has the opportunity of service abroad, and in many countries this offers a way of life which is attractive, and a social and professional status which it would be difficult to find at home. If he ultimately rises to become Principal Surveyor in a large country he will find himself in a position, given the right qualities of character and professional knowledge, to exercise a considerable influence on the shipbuilding, engineering and shipowning industries of the country. Moreover, as the chief representative of the Society, and the head of a considerable organization, he will have to deal with administrative and even political problems which will



give ample scope to any gifts he may have in that direction. And, finally, the rapidly expanding Land Division of the Society gives a chance to the Surveyor who feels he's had enough of marine engines to find a niche for himself in a very wide sphere, which covers work in connexion with hydro-electric schemes, power stations, oil refineries, chemical works, atomic power stations and many other activities.

As to the demands which Lloyd's Register makes of its Engineer Surveyors, the first is, of course, technical efficiency. When the Committee finally decided to appoint an Engineer Surveyor, they rightly laid great emphasis on the importance of practical experience on ships at sea. That principle has been maintained ever since, and I hope always will be. It is satisfied nowadays by insisting that candidates should hold at least a First Class Certificate of the Ministry of Transport with, if possible, both steam and motor endorsements. The naval architect's training does not (unfortunately in my view) embrace any service at sea; so it is mainly through the Engineer Surveyor that the Society can maintain that essential element of actual constant contact with practical experience at sea which is its surest safeguard against a too academic approach to its function.

Next, a Lloyd's Surveyor must be prepared to work hard. I won't say that he need love hard work, but he must not be afraid of it. Nowadays, with the universal shortage of staff, it is practically certain that he will be worked very hard indeed. And, like his medical counterpart, he must be prepared to be called upon at any time of the day or night.

He must have a high sense of responsibility, for he may find himself working in isolation in a remote country, where there may be plenty of temptations to take life easily and no

watchdog but his own conscience to keep his nose to the grindstone.

Lastly, he must have a high degree of integrity. He may well find himself serving in a country with very different standards from our own, and he has to be man enough to resist alluring temptations. There is a case on record of a Surveyor (a Ship Surveyor I think) who took a shipowner who had offered him a bribe by the scruff of the neck and hurled him from the deck of his own ship into the dock. I wouldn't commend this somewhat crude method of registering displeasure to the modern Surveyor, but I do commend the underlying thought. The desire to throw a would-be briber into the sea is the natural and proper reaction of an honest man, but the wise Surveyor will control himself and will put the desire, as well as the bribe, behind him.

I have only touched on a few of the aspects of the close connexion between Lloyd's Register and your profession. I apologize for the many gaps and guesses in the historical part of my survey, and hope that without loss of time Lloyd's Register will select a qualified historian and let him loose among their records. I feel sure he would be able to unearth a story full of interest to shipbuilders and shipowners and marine engineers. And this should be done quickly before more records are lost.

In conclusion I hope that I have shown that Lloyd's Register offers a career of interest, usefulness and wide scope to the marine engineer. A body corporate is made up of many parts, all equally essential—hands, eyes, digestion, brains and so on. And it needs a good sound serviceable backbone. In that sense I think it is fair to describe the Ship and Engineer Surveyor of today as the backbone of the Society's service.