

Quality Assurance

DIAMOND JUBILEE ISSUE



JOURNAL OF THE INSTITUTE OF QUALITY ASSURANCE

The historical development and future potential
of quality assurance as a national strategy
Quality through technology
A history of the Institute of Quality Assurance
The next sixty years

The Quality Engineer

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THE INSTITUTION OF ENGINEERING INSPECTION

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A history of the Institute of Quality Assurance



R. Caplen
The Hatfield Polytechnic

The history of the first 50 years of the Institute of Quality Assurance was published in the Golden Jubilee issue of 'The Quality Engineer' (March/April 1969) when the Institute's name was still 'Institution of Engineering Inspection'. Since many members of the Institute have joined since then it is now reprinted, with some modifications and omissions, and its author has kindly added the story of the last 10 years during which the Institute assumed its present name.

Part 1. The Technical Inspection Association

A profession in its own right

The story of the Institute of Quality Assurance is, as we should expect, closely associated with the development of inspection as a profession in its own right. The traditional craftsman of past centuries needed no inspection. He made his work to his own quality standards, to satisfy both himself and his customers. Everything was made to 'fit', and nobody thought of specifying tolerances.

The craftsman usually worked either in his own house or in that of his master. During the 18th and 19th centuries, however, the invention of machinery, and factors such as the need to be near water power, caused buildings to be set aside, solely for manufacturing, and so the factory system came into being.

Until the late 1890s a manufacturer or contractor usually made complete units, or at least complete sub-assemblies. These either worked and so were accepted, or did not work and so were rejected by the customer. But gradually two factors contributed to a change.

- 1 Advances in engineering demanded production to greater and greater dimensional accuracy.
- 2 The increasing tendency to manufacture components separately, and then assemble later in another department or even in another factory, led to the appointment of inspectors to check each stage of production. But without tolerances, nobody was certain what was acceptable and arguments were inevitable. Hence in the early years of the 20th century tolerances gradually came into use.

The impact of the First World War

The rate at which the professional inspector established himself was greatly accelerated by the World War from 1914 to 1918. In peace time the Woolwich Royal Arsenal's Inspection Department had consisted of only a few technical officers, attached to the regular Army, plus a small chemical department, but during the war it was rapidly augmented by civilian personnel. Some of these were 'fit, energetic and knowledgeable', but others, although willing, were, in the words of a report at that time, 'long past their physical prime'.

The Government established a Ministry of Munitions, in

order to co-ordinate the production of armaments. Mr G.C. Sanderson joined our Institution only three weeks after it was founded in 1919, and before he died in 1976 he described some of the difficulties to me. During the war he was an inspector for the Ministry of Munitions, and he said that gauges and other inspection equipment were in such short supply that it was often impossible to check components. On several occasions he remembers that, when shells were assembled, the fuses were found to be too large to go in, and so were left out! Presumably some German thought it was his lucky day when a shell fell near him and failed to explode.

Further difficulties arose because methods of inspection were not standardized, and varied from place to place. In an attempt to correct this a conference of all inspectors was called in Sheffield, and Mr Sanderson said this achieved considerable improvement.

Formation of the T.I.A.

Altogether some 1500 men, and a few women, were thus united as inspectors. When the war drew to an end they realized they would shortly be dispersed back to civilian jobs and, in an effort not to lose touch with each other, some of the staff of the Director of Inspection for Munition Areas (D.I.M.A.), at the instigation of Mr Ridley Makepeace, proposed the formation of an Old Boys' Association. They held a meeting in Manchester on 28th October 1918, and preliminary preparations for the Association were already in hand when, on 11th November, the Armistice was signed and the Controller suggested that it would be a pity to confine them to the D.I.M.A. division alone. His suggestions were therefore discussed at a Conference of the whole department, held in London on 13th January 1919. At this a provisional committee of 16 members was set up, and it in turn formed the Technical Inspection Association, which was to become the Institution of Engineering Inspection and later the Institute of Quality Assurance.

The objects of the Technical Inspection Association (T.I.A.) reflect the circumstances under which it was formed. They were briefly as follows:

to maintain good fellowship between members;

The Technical Inspection Association.

NOTICE IS HEREBY GIVEN that the first General Meeting of the Association will be held at The Royal Society of Arts, 18, John Street, Adelphi, W.C., on Tuesday, the 1st of April, at 2.30 o'clock, and your attendance thereat is requested.

The business to be transacted will *inter alia* be:—

- (1) To receive Report of the Provisional Committee, copy of which has already been sent to Members.
- (2) To confirm adoption of the Rules and Regulations already in possession of Members.
- (3) To receive Report of Scrutineers and to confirm the Election of the Council.
- (4) To appoint Auditors.

It is proposed to elect the first Council by free selection of all the Members from the whole body thereof. For this purpose a complete list of all who have joined and paid their subscription is enclosed herewith, and each Member is requested to place a stroke or dash in ink against the names selected by him. EIGHTEEN names only may be so marked, and the paper should be returned to me not later than Monday, the 24th of March, sealed in the envelope enclosed herewith. No signature or mark of identification should be put on the Balloting paper or envelope, and Members should be careful that not more than eighteen votes are cast, as any paper with more than this number of names marked will invalidate the vote of that Member. A less number than the full eighteen may, however, be voted for.

Members wishing to bring forward any question at the General Meeting should inform me thereof not later than Monday, the 24th of March, and should forward copy of Resolution they propose to move.

BY ORDER,

W. HAVNES SMITH,

*Honorary Secretary to the
Provisional Committee.*

28, NORTHUMBERLAND AVENUE,
LONDON, W.C. 2.

to help members to keep in touch with each other and to assist each other in obtaining appointments;
 to develop the progress and standardization of inspection in engineering, chemical, and allied industries;
 to conserve and use experience gained during the war;
 to prepare and keep a register of members, showing their careers and qualifications.

There were four grades of membership.

- 1 Original Members. Those who had served as officers in the Inspection Department of the Ministry of Munitions.
- 2 Members. Officers of a similar status in other departments.
- 3 Associates. Persons qualified to be original members, who only wished to retain a nominal connection.
- 4 Honorary Members. Persons of distinguished attainments, who were in a position to further the objects of the Association.

The annual subscription for Original Members and Members was one guinea, but Associates only paid five shillings.

The T.I.A. was controlled by a Council consisting of a President, two Vice-Presidents, and 15 other corporate members, including a Secretary and a Treasurer, all of whom were unpaid.

First meeting of the T.I.A.

On 1st April 1919 the provisional committee called the first general meeting, and this was held at the Royal Society of Arts, 18 John Street, London W.C. First they obtained approval for the constitution summarized above. Next they announced the result of the ballot for Council members, which had already been arranged by sending each member a complete list of all members' names, and asking them to vote for 18 of them. As we should expect, the first Council had almost exactly the same members as the provisional committee.

The chief officers were:

<i>President</i>	Mr A.H. Collinson, CBE, MICE
<i>Vice-Presidents</i>	Mr A.E. Hadley, CBE Lt-Gen. Sir Percy Lake, KCB, KCMG
<i>Joint Hon. Secretaries</i>	Mr W. Haynes Smith Lt-Col J.H.M. Greenly
<i>Hon. Treasurer</i>	Mr N.P.P. Sandberg

It was announced that the T.I.A. had already received £446 in subscriptions, of which £380 remained after initial expenses had been met.

The Inaugural Meeting

The Council decided to hold an Inaugural Meeting in Central Hall, Westminster, on 9th May 1919. It therefore appointed an entertainments sub-committee, with authority to spend up to £130, although the actual cost turned out to be only £94.12s.0d.

Invitations were sent to:

the editors of most of the daily newspapers;
 the principal technical institutions;
 the 14 distinguished people, including the Rt Hon. David Lloyd George and the Rt Hon. Winston S. Churchill, who had already been invited to become Honorary Members.

By the time it was held this meeting was being called a *conversazione*. It was essentially a social gathering but we have no details of what entertainment was provided; nor do we know how many of the distinguished people accepted their invitations. However, the Council was pleased with the result.

Headquarters and the Secretary

At the start the T.I.A. had no headquarters of its own. Its first official address was at the Hotel Metropole, Northumberland Avenue, London S.W.1, but this was really the headquarters of the Ministry of Munitions. However, both of the original joint secretaries resigned, one after the other, and when in July 1919 Mr C.J. Wharton took over as Hon. Secretary, the headquarters was moved to his personal office at 44 Bedford Row, W.C.1.

By now a lady typist had been engaged for three months at £2 per week, to type the list of members; in addition, the Council contributed £3 per week towards the cost of clerical assistance employed by Mr Wharton on the T.I.A.'s behalf.

The use of Mr Wharton's office was intended to be a temporary expedient and the Council kept a look-out for an office of its own, although it was afraid this might strain the slender financial resources. Fortunately, Mr Wharton did not press the matter and, as it turned out, the T.I.A. and its successor, the I.E.I. used Mr Wharton's office as its headquarters until 1933. In November 1921 Mr Wharton, and hence the T.I.A., moved to Palace Chambers, Westminster.

Development

The T.I.A. had started off with a terrific burst of enthusiasm with 500 members during the summer of 1919, but then it seems to have lost some of its steam. At the start Council meetings were held weekly, but there was no Council meeting at all between October 1919 and May 1920, and gradually finances became sufficiently low for the Council to accept eagerly any donations to its funds. By the first Annual General Meeting on 30th March 1920 cash in hand was only £23. Not surprisingly, members attending this A.G.M. were given a 'pep talk' on playing a more active part and urged to pay their subscriptions.

At the second A.G.M. on 18th March 1921 the Council



The Royal Society of Arts in John Adam Street, formerly John Street, where the first General Meeting was held

admitted a year of 'marking time'. It was, of course, a period of commercial depression, following the war. There were still nominally 485 members, but only 365 had paid their subscriptions. Various papers on inspection and allied subjects had been given at meetings, but these meetings had been only moderately well attended.

In June 1921 the Hon. Treasurer resigned and Mr Wharton became Treasurer as well as Secretary. His daughter, who had

given the T.I.A. valuable secretarial help, was forced 'by ill health to give up, and the Council therefore increased the clerical allowance to Mr Wharton from £3 to £4 per week.

Membership continued to fall and at the third A.G.M., on 31st March 1922, there were only 269 paid-up members, compared with 365 the year before. The Chairman therefore proposed a new constitution which would attract 'peacetime inspectors'.

Part 2. The Institution of Engineering Inspection

Formation of the I.E.I.

The proposal was that the T.I.A. should become the Institution of Engineering Inspection, that it should be open to industrial inspectors, as well as to inspectors employed by the Government, and that it should have a charter of incorporation. This meant that it was effectively to have the structure of a limited company, except that:

it was to be a non-profit-making association;
its financial liability would be limited to guarantees made by members, as provided for in the Companies (Consolidated) Act of 1908. These were not to exceed £1 per member.

The proposals were accepted at a Special General Meeting on 8th September 1922, and finally confirmed at another meeting on 22nd September. The actual date of incorporation was 10th November 1922, and so on that date the Institution of Engineering Inspection came into existence.

Some of its objects were as follows.

- 1 To promote and encourage the practice of inspection in engineering and allied industries.
- 2 To ensure that inspection was only undertaken by qualified persons.
- 3 To raise and uphold the status of practising inspectors.
- 4 To enable members to meet, exchange ideas, and take corporate action in their common engineering inspection interests. However, it could not act as a Trade Union.

There were to be four grades of membership.

- 1 **Honorary Members** elected at a general meeting, because they had either rendered service to the Institution or were in a position to further its objects.
- 2 **Members** who were to be persons qualified by training and experience to take full responsibility for engineering inspection.
- 3 **Associate Members** who were to be persons trained in inspection but lacking experience.
- 4 **Associates** who would hold positions of technical or commercial responsibility connected with engineering.

Subscriptions were:

Members and Associates	£2 2s 0d.
Associate Members	£1 1s 0d.

Members were to be entitled to put M.I.E.I. after their name and Associate Members A.M.I.E.I. Various rules about professional conduct were introduced and, as we shall see, the Council had at times to caution members about breaking them.

Companies were invited to become affiliated members of the I.E.I.

1922-28

Initial progress

Immediately after incorporation the Council set about the job of obtaining a corporate seal and designing a crest. The seal was used in the preparation of the diploma which was sent to every member on joining. Since finances were somewhat shaky, Council members agreed to contribute to a 'Foundation Fund' to help meet the costs incurred in changing the T.I.A. into the I.E.I.

In April of the following year (1924) the Council decided

to introduce a new grade of membership, entitled Viewer Associate, which was to cater for people like foreman examiners. At the same meeting it made arrangements for bound copies of the proceedings to be available; cost of binding in cloth was 3s, including gilt lettering.

By now Mr Wharton's allowance for clerical assistance had been increased to £8 per week. Indeed, there is no doubt that Mr Wharton was one of the mainstays of the I.E.I. in its early days and the Council passed numerous votes of thanks to him. In the spring of 1924 he resigned as a Council member in order to make room for another member, since as Honorary Secretary and Honorary Treasurer he attended Council meetings anyway.

Finances

Early in 1923 the Council became concerned because 1922 had shown an excess of expenditure over income and in April 1925 the Hon. Treasurer expressed concern at the way the cost of running the Institution was rising, and pointed out that there was now very little in reserve. By September the position had further deteriorated and he forecast a loss on the year of around £125, even if some £130 still outstanding in subscriptions could be collected. The Council resolved:

- to try to collect the outstanding subscriptions;
- to have a drive for more members;
- not to purchase I.E.I. diaries for 1926. (The next diary was not issued until 1975.)

Nevertheless, it went ahead with preparations for the annual Reception which was to be held at the Hyde Park Hotel on 27th November, and for which tickets were 12s 6d 'with no reduction for quantity'. Unfortunately, Queen Alexandra died shortly before the Reception was to take place and it therefore had to be postponed until the end of Court mourning. The postponement resulted in an irrecoverable loss of £16 8s 0d.

As the financial situation became progressively more serious, Mr C.J. Wharton, the combined Hon. Secretary and Treasurer, came to the rescue and lent the I.E.I. £100. By February 1926, however, finances were reported to be 'not unfavourable in the circumstances' and the £100 was returned to Mr Wharton with thanks and 6 per cent interest, the maximum permitted by the constitution. This apparent change in fortune needs some explanation. The expenses of an Institution such as the I.E.I. are generally spread over the whole year but tend to be slightly higher in the winter months when most meetings are held. Income, on the other hand, comes almost entirely from subscriptions and therefore is received predominantly in January, February, and March. Hence in February 1926, with subscriptions for the new year coming in, the position looked much rosier than it had in the previous autumn, even though the improvement was largely illusory.

By June 1926 concern was again expressed about the financial situation, and this concern continued throughout the year. The drive for more members was intensified and an Affiliates Committee was set up to try to persuade more firms to become affiliated.

In spite of difficulties, the Council went ahead with preparations for the annual Reception that autumn at the Hyde Park Hotel. This perhaps is not surprising because the Reception was undoubtedly the highlight of the Institution's

year. This time they were more fortunate because they had a favourable balance of £15 12s 0d. This was said to be partly due to economy in running the Reception and partly to its being a very foggy night so that many ticket holders did not turn up!

In December 1926 a vacancy occurred on the Council and Mr C.J. Wharton filled it, thus becoming an ordinary Council member again. The year ended with only a slight excess of expenditure over income but this was not only illusory, it was also short-lived. Mr Wharton had again come to the rescue, this time by foregoing a payment of £130 which was due to him for office accommodation and clerical assistance. However, the auditors would not accept this, and insisted on the accounts showing a deficit of £150 18s 5d. over the year. Mr Wharton 'retaliated' by proposing to Council that his rent, etc. for the next year (1927) should be £288 instead of £416. This was accepted with many thanks and hence Mr Wharton achieved the donation he had intended.

Membership problems

Soon after the 1914-18 War a commercial depression set in, which lasted more or less until the mid 1930s. In particular, 1926 saw the largely unsuccessful general strike, and this explains why the Council had little success with its membership drives. It also perhaps helps to explain some of the other events of that period.

Thus in April 1925 the Council investigated a case in which it was alleged that a member had been improperly treated and succeeded in obtaining justice.

The Council was also asked to set suitable scales of remuneration for professional inspection work, but felt unable to do so. Indeed, this question has been raised at intervals throughout our history, the last time being in 1965 (see page 58), but no precise answer has ever been possible.

In an attempt to assist members to get employment in hard times, the Council started negotiations with the Board of Trade and set up a special committee to deal with employment.

A proposal was put forward in October 1927 that a pamphlet should be prepared, which should include as one of the objects of the I.E.I., 'to collaborate with manufacturers . . . with the object of maintaining and improving quality'. For some reason this proposal was not accepted by the Council members who thought that manufacturers might not like it. This is the first mention of 'quality' in the Council records, and an interest in 'quality control' was still some years away. The pamphlet was later sent out in modified form.

Technical Proceedings

In April 1928 the Council decided that the I.E.I. should hold the copyright of all papers published in the Proceedings, i.e. the Journal. Rules were drawn up for those submitting papers, and included was the statement that a paper might not be read at a meeting, or published in the Journal, until approved by a sub-committee of the Proceedings Committee.

Papers were not, in fact, very easy to come by and a suggestion was made — but not accepted by the Council — that every new member should have to contribute a paper.

1929-32

The missing years

The general situation

The whole of the Council records from the middle of 1929 until April 1932 have been lost. As a result we have only very sketchy information about this period, derived from members' notes in the Journal, and from a few isolated records which do survive.

Financial difficulties must have continued unabated; the records of 1932 show the situation to have been as bad as ever. The depression was ever present and the Institution dinner arranged for the spring of 1930 had to be abandoned for lack of support. Undaunted, the Council arranged a dinner dance at

the Connaught Rooms the following 5th November. An editorial in the Journal for October 1930 deplored the depression and declared that 'The British Empire is at stake'. It then stated that several branch railway lines and some 100 stations had been closed.

Up to this time the Proceedings, i.e. reports of papers and discussion presented at meetings, had been published quarterly, and there was, in addition, from time to time, a Gazette or Bulletin, giving notes and news of members. From January 1932 these were combined into one volume, under the cover title of *Inspection*.

The Branches

For some time, there had been three Branches:

- the Scottish Branch based on Glasgow;
- the Manchester Branch;
- the Ruhr Branch, based on Essen.

These were not, however, Branches as we know them today. They appear rather to have been areas where there was an accumulation of members, who had informal contact with each other.

In June 1929 the Membership Committee proposed that: local Honorary Secretaries should be appointed in engineering districts; a list should be compiled of practising engineers, especially including non-members.

Secretaries were duly appointed to the three Branches and, in April 1930 a fourth Branch was formed for the North East coast, based on Darlington. This had its own committee as well as Hon. Secretary and is, therefore, sometimes loosely called the first official Branch. It ceased to exist in 1950, but was re-established in 1974.

From 1931 the Branches received financial assistance from the Institution's headquarters.

1932-35

Crisis

Financial and other problems

By 1932 Mr C.J. Wharton's health was beginning to fail. He had been absent from Council meetings on a number of occasions during the past two years and now he was ill again. In July he resigned and Engr Rear-Adml W.G. Heppel became Hon. Secretary and Lt-Col King Hon. Treasurer.

Finance was still a cause for concern and again it was agreed that more members were necessary, but there were not to be 'mass admissions'. It was a sign of the times that no more visits to firms were to be made. Few members now could attend them in working hours.

Meanwhile Mr Wharton was trying to dispose of the lease of the office he used as a consulting engineer, part of which the I.E.I. was still using as its headquarters. The Council was obviously very indebted to Mr Wharton, not only for his work as Secretary but because he was still taking only £288 instead of £416 per annum for rent and clerical assistance. Furthermore, his office housed Miss Jardine, who had been a faithful clerical assistant to the Institution for many years. The Council therefore agreed that the Institution would continue to pay its rent/clerical assistance contribution until Mr Wharton disposed of his lease, or until the end of March 1933, provided that Miss Jardine remained in service.

In September 1932 Mr Wharton requested the Institution to pay £300 owing for rent, etc, but the financial position was such that Council regretted it could not authorize payment until the New Year when subscriptions would begin to come in again.

In April 1933 the Institution leased Room 58 at 17 Victoria Street, London S.W.1, at a rent of £65 per annum and its headquarters was moved there, thus freeing Mr Wharton's office. This was therefore the first headquarters of its own which the I.E.I. had. Previously it had always shared an office belonging to someone else.

At the Annual General Meeting that year, the Auditor, Mr Wild, who had audited the accounts for many years with-

out charge, said he regretted he could not continue unless he was paid £5 5s 0d per annum. The Council could not afford this, since there was no cash in hand and it was still only the spring. Another auditor who would act in an honorary capacity was therefore found.

The President, Lt-Col J.H.M. Greenly, came to the immediate rescue and guaranteed to make good if necessary, a bank overdraft of up to £100. The Council realized that, if it could not make the Institution solvent the Institution would have to be wound up, and at its meeting on 9th May 1933 it seriously considered this drastic step as a last resort. In June it set up a Committee to advise on means of making the I.E.I. solvent and, meanwhile, imposed further economies.

The engagement of a paid 'Organizer-Secretary'

On 5th December 1933 the special committee recommended that the Institution should engage a paid 'Organizer-Secretary' and, for this post, it proposed Mr Reginald Pugh B.A. The agreement with him is an interesting one. In effect, it put the secretary on a sort of 'payment by results' basis.

It was relatively complicated, but was roughly as follows.

- 1 Mr Pugh would receive £150 per annum for provision of an office and staff, and he would also receive expenses.
- 2 The office was to be at Terminal House, 52 Grosvenor Gardens, London S.W.1, and he would employ Miss Jardine there.
- 3 Mr Pugh was to receive £200 per year, but he was not to draw anything until the annual income of the Institution exceeded £430. Any income above £430, however, was to be available, as a first charge, to pay the £200. It would also be available to pay any arrears of the £200 payments due from previous years.
- 4 Later the agreement was modified so that, after earning his £200, the secretary also received 90 per cent of anything over, up to a maximum of £500.

Mr Pugh took over as both Secretary and Treasurer on 25th March 1934 and a small liaison committee was formed to act as a link between him and the Council.

At the A.G.M. in May 1935 Mr C.J. Wharton was elected an Honorary Member, an honour which he most richly deserved.

Turning the corner

By the end of 1933 the dreaded overdraft was £67 13s 8d, but bad as it was, this was considerably better than anyone had expected. Gradually the financial position improved and, from 1936 on, became satisfactory again. Mainly this seems to have resulted from the bold and imaginative agreement with Mr Pugh and the formation of new branches but, in the late 1930s, it was also in part due to the growth of the aircraft industry, which greatly increased the potential membership.

1936-39

Growth of the Branches

For two years the Council had devoted almost all its attention to the financial crisis and now at last it could turn its attention to the Branches. By 1936 the Ruhr Branch had ceased to exist, and the Manchester Branch had become inactive.

On 29th April 1936 a meeting was held in the Chamber of Commerce at Birmingham in order to found a Birmingham Branch. It was addressed by the President, Major H. Myers of the Air Ministry, and the result was the formation of a Midlands Branch. In the following December, the Council agreed that the local committee should see, and be allowed to comment upon, applications for membership from persons residing in the Midlands.

In the spring of 1937 the Midlands Branch nominated a candidate to stand for Council, and he was successfully elected.

The inaugural meeting of the Sheffield Branch took place at the Victoria Hotel in Sheffield on 10th March 1938. Some 75 people attended and the Branch was successfully launched.

By midsummer the North East Coast Branch was reported 'strong', Sheffield had 63 members, and the Midlands 93. So keen were the Midlands that, in October, they held

an inaugural meeting in Coventry Technical College and the 150 or so people present agreed to form a Coventry Branch.

Next came Manchester, where the Branch was revived at an inaugural meeting on 8th November 1938.

Enthusiasm then spread to India, where Mr Chakrabutty proposed the formation of a Branch. Regrettably the council turned this suggestion down because Indian members were so few and so widely scattered.

In Bristol, however, some 300 people attended an inaugural meeting in the Merchant Venturers' Technical College on 26th January 1939.

The growth of active Branches was thus most satisfactory but, at the same time, it created problems. Each Branch operated to its own rules and it became necessary to standardize these. There had also been complaints that the practice of allowing Branches to examine applications for membership in their own areas had resulted in unfairness. Some Branches, it was alleged, would recommend the Council to accept qualifications which another Branch would reject.

The Council therefore decided to call a meeting of the Chairmen and Secretaries of the Branches with the President and other Council members. Thus, on 31st March 1939, the very first 'All Branches Meeting' was held at the Cosmopolitan Club in Birmingham. The date had been carefully chosen to precede the A.G.M. in London on 22nd May, so that any business requiring it could be referred to the Annual Meeting.

On 3rd July the President planned to visit Glasgow, to consider a Branch there. As it turned out, he was prevented by the now imminent threat of war, but this fact is of interest because it shows that the Scottish Branch, which existed in 1929 must, at some time since then, have ceased to exist.

Activity at headquarters

As mentioned above, the measures taken by the Council in 1934 enabled the Institution to pull gradually out of its financial difficulties. Membership increased and with it, the gross income, as the following figures show:

Year	Income
1934	£529
1935	£747
1936	£798

For his work in 1935 the Secretary was paid £210 18s 3d, and by October 1936 the Council declared that the I.E.I. was now solvent.

By May 1938 the number of members had risen to 575 and the Secretary's payment for 1937 amounted to £421 16s 5d.

In July the Council spent some time considering qualifications for membership and it made the following interesting decisions.

- 1 Amongst Service personnel, full membership of the Institution would be reserved for 'Officer Classes' whilst the corresponding civilian qualification would be a University degree, or corporate membership of a Chartered Institution.
- 2 The possibility of the Institution's running its own examinations was discussed and deferred. Indeed, this question came up many times before examinations were finally introduced in 1960.
- 3 It was decided to prepare notes for the guidance of candidates, proposers, and seconders, primarily with the object of discouraging candidates from stretching the truth in the hope of getting a higher grade of membership!

There was still some difficulty in filling the Journal, which was by now called *Engineering Inspection* and it was therefore decided that each Branch should be allocated space, which it was expected to fill. More advertisements were still required, so the Council was very pleased when, in September 1938, the Coventry Gauge & Tool Co. Ltd, took a whole-page advertisement.

1939-46

The Second World War and its aftermath

Wartime activities and difficulties

On 3rd September 1939 war was declared with Germany and a

rigid black-out was immediately imposed. Heavy air raids were predicted and, since the headquarters at Terminal House had no adequate protection, the office and staff were evacuated to 5 Pierrepont Street, Bath, whilst all the Institution records went to Romsey for safe keeping. Social functions were suspended and generally, both in London and the Branches, meetings became very difficult. Members naturally wished to get home as quickly as possible so as not to be caught in either the black-out or, worse still, an air raid. Many, too, were working very long hours supporting the war effort.

The war affected people's nerves. At the end of 1939 the secretary in Sheffield resigned after a disagreement with the chairman, and a little later, there was also dissension at Coventry. By February 1940 both the Birmingham and North East Coast Branches had suspended activities because their members were scattered and working long hours. Shortly afterwards Manchester was reported to be inactive, partly because the chairman was ill, and partly because the secretary was working long hours. At the end of 1941 there was also disagreement in the North East Coast Branch and, in February 1942, the secretary at Bristol resigned, and was replaced, because his official duties left him insufficient time.

Supplies of paper for the Journal became difficult and, to economize, it was reduced in size and smaller type was used.

In contrast, on 23rd November 1942, an inaugural meeting was held to form a new Branch at Wolverhampton. Meanwhile Birmingham, Sheffield, and Coventry all reported little or no activity.

Wolverhampton continued to thrive and, in October 1943, reported attendances of 50 to 60 at meetings. Bristol appears to have just about kept going. At the end of 1943 the Council decided to attempt to revive the other Branches and, on 17th March 1944, Sheffield had a 'revival' meeting and was renamed the Yorkshire Branch. About the same time a small Branch was also formed in Oxford.

In the early part of 1945 both London and the North East Coast reported renewed activity and, on 20th November, an inaugural meeting was held to re-establish the Glasgow Branch. Some 200 people attended. Yorkshire held a successful meeting on 18th January 1946 in order to get itself back into activity but, although some 50 to 60 people attended, it seems to have struggled for some time.

Financial and membership problems

So many members moved their location on account of the war that keeping track of them was very difficult and attempts to issue a complete list of members were abandoned. The Council pondered whether to reduce subscriptions during the war, but decided that this was not practical because so many expenses would still be incurred. Where members were in the forces with a rank not above N.C.O., however, it agreed to 'freeze' the membership if requested, i.e. there would be no subscription or membership benefits for the duration but then membership could be resumed without application formalities. Attempts were also made to prevent the payment of Banker's Orders on behalf of members in enemy-occupied territory.

By December 1939 the Council felt strong enough financially to be able to release Col Greenly from the £100 guarantee he had entered into in 1933. It had not been necessary to use it for some five years. Indeed, by May 1940, the Council were able to pay the Secretary £145 owing to him from past years and, in addition, some £300 was invested in the Post Office Savings Bank. Thus finances were, in general no problem. Although members were constantly being lost through moving away, or getting called-up, expenses with such little activity were moderate and reserves gradually built up.

In February 1944 the total number of members reached 1200, including suspended members and also 10 honorary members and 17 affiliates.

The Silver Jubilee anniversary of the founding of the Institution occurred on 1st April 1944. With the pressure of wartime, however, it was later in the year before Council considered how to celebrate it and decided to hold a luncheon at which it would invite Mr Wilmot, Minister of Production, to be the chief guest. Unfortunately, Mr Wilmot had to go

abroad so the luncheon was not held until 29th November 1945, when some 100 members attended.

Quality control

The first mention of 'quality control' in the Council records occurs in March 1942 when Government-sponsored attempts were being made to introduce 'Statistical quality control'. The Council pointed out that the Institution had called attention to quality control as early as 1935 and the Journal corroborates this since there are several quality-control articles in the Journals of the 1930s.

At the end of 1942 the Coventry Branch co-operated with the 'Coventry Statistical Quality Control Discussion Group' and, in April 1943, Mr Rissik gave a lecture on quality control to I.E.I. members.

In March 1944, Air Commodore Sowrey expressed concern at the loose way in which the term 'quality control' was being used. He then went on to propose that the I.E.I. should be renamed 'The Institution of Quality Engineering', but this proposal met with opposition and was dropped.

1947-53

Problems and progress at headquarters

In 1947 the Council decided to terminate its contract with the Secretary and, after negotiation, it was agreed that he should leave on 31st December. Whatever the reason for this decision — and such matters are rightly confidential to the Council of the time, and not recorded in the minutes — it should be remembered that Mr Pugh had seen the I.E.I. from a state of financial desperation through a World War to a healthy financial and membership situation.

The Council set up a small committee to carry on the secretarial work and try to find new office accommodation.

In January 1948 Captain H.P. Middleton, who had recently retired from his post as Chief Inspector of Naval Ordnance, was appointed Honorary Secretary, using his own house as the office and receiving a fixed honorarium which the Income Tax authorities were later to declare a taxable salary. In 1949, an office was set up at 28 Victoria Street, London S.W.1.

With the assistance of Mr A. Vernon Watson, who was to become President in 1949, the first complete register of members was drawn up after all those believed to be members had been circularized, and a list of members, albeit incomplete, was issued. Mr Vernon Watson also undertook co-editorship of the Journal and responsibility for the appointments register.

By 1952, as a result of these efforts, the records of the membership had been put on a sound basis and it was established that the number had reached 1600.

The question of introducing examinations was again raised, and in June 1952 a committee, of which Major P.A. Cartwright was the mainspring, produced a *Handbook of Engineering Inspection* covering 376 pages in draft form. This was produced as a basis for the Institution's examination syllabus. However, in parallel with this, the City & Guilds of London Institute had been working on the same lines and introduced the Mechanical Engineering Inspection Course; the Council therefore adopted the C.G.L.I. Certificate in this subject as a qualification for Associate Membership, rather than introducing its own examination.

The Branches

By April 1947 the branches were spreading to such an extent that it was necessary to define their boundaries in order to avoid an overlap. Hence precise boundaries were set for every Branch, except Oxford, which had ceased to exist.

In 1948 the Yorkshire Branch reverted to being the Sheffield Branch and, on 22nd April, a meeting was held to revive the Manchester Branch, which was then renamed the North Western Branch. The way was now clear to form a Leeds Branch and this came into being about June.

At the end of 1948 the Scottish Branch became the West

of Scotland Branch and in the following year, the Bristol Branch became the South Western Branch.

By May 1950 the North East Coast Branch had ceased to exist and its unspent funds were transferred back to headquarters. During the same year a new Branch was formed in New South Wales, Australia.

The East of Scotland Branch was formed from the Dundee Branch in 1953.

In September 1948 the Council regularized the system of making grants to Branches, by devising a scale so that the payment was roughly proportional to the number of members in each Branch.

In June 1949 it brought the Branch rules up-to-date and arranged an All Branches Meeting in Birmingham on 29th October.

From 13th to 15th September 1951 the Institution held a Convention in Glasgow as their contribution to the Festival of Britain. Each morning was devoted to technical lectures, the afternoons to visits to engineering and shipbuilding companies. On the last day, which was a Saturday, there was a tour of some of the attractive scenery in the neighbourhood, including Stirling and Callender. On the Friday evening there was an Institution dinner.

1954-58

The impact of quality control

We have already mentioned quality control but in March 1954 the British Productivity Council (B.P.C.) proposed either the formation of a Society for Quality Control, or that Quality Control should be incorporated as a branch of an existing society. The Institution's Council agreed that the Institution would be prepared to incorporate Quality Control and would, if necessary, change its name. Several possible names, including the 'Institution of Quality Control Engineers', were suggested. In May the B.P.C. agreed that the I.E.I. should sponsor Quality Control.

During the summer, however, Council members seem to have had second thoughts because, in October, they voted by 11 to 2 against changing the name of the Institution. They would be pleased to co-operate with B.P.C., but would like to be quite clear what they were committing the Institution to. At its next meeting, in November, the Council decided against sponsoring a separate society for Quality Control but agreed that those interested in quality might be allowed to join the Institution, although not as corporate members. They might, for example, be given a title such as subscriber.

In January 1955 the Council agreed that the Journal might be called *Quality in Industry* but in March they decided to defer any such change. A meeting in the summer with B.P.C. seems not to have been very conclusive, but in October the Council did finally agree that, starting in January 1956, the Journal would be bi-monthly instead of quarterly, and that it would be called *The Inspection Engineer incorporating Quality Control*.

On 22nd December 1955 an Extraordinary General Meeting approved the changes to the constitution, so that it effectively admitted Quality Control as a partner with Engineering Inspection. The title remained 'The Institution of Engineering Inspection' but the objects included:

'To promote and encourage the practice of Engineering Inspection and Quality Control in Industry . . .'. At the same time, membership regulations were altered to provide for admission on account of Quality Control or Engineering Inspection qualifications. In July 1957 the Council decided to add Quality Control to the Institution's emblem.

The Branches

On 2nd February 1955 the inaugural meetings of the South Wales Branch was held in Cardiff. This was followed, on 13th September 1956, by a meeting at Fareham, which inaugurated the Southern Area Branch, catering for Portsmouth, the Isle of Wight, Southampton, Brighton, Winchester, and Bournemouth. A North West Coast Branch, looking after the area

west of a line from Preston to Lancaster was formed in November 1956.

Headquarters and membership developments

In October 1955 Mr Vernon Watson asked Council to relieve him of the burden of editing and compiling the Journal and a special committee was set up to make proposals. As a result, the Journal was published and edited from January 1956 under contract by Mr J.M. Bosley of Techniprint Ltd, and the Secretary was responsible for providing the material.

By 1957 the cost of running the I.E.I. was rising and Council therefore decided to reintroduce entrance fees, which had been suspended in 1934. Applicants for full Membership, Associate Membership, or Companionship were to pay two guineas, and associates one guinea.

The standing committees at this time were Membership, General Purposes, Finance, and Editorial. In December 1957 the Council had a very long discussion about ways of improving the status of the I.E.I. A number of proposals were considered, but by far the most important was its decision to introduce Institution examinations. Dr Merriman undertook to chair a working party to sort out syllabuses and other details.

In the middle of 1958 the Secretary asked to resign, and his place was taken by Commander J. Spencer O.B.E. R.N., who was the first secretary to be engaged at a fixed salary. Capt. Middleton was presented with a cheque in recognition of his services to the Institution. With it he bought a greenhouse 'to replace one flattened by gales the previous autumn'. He died in 1974.

1958-64

The introduction of the Institution examination

In May 1958 Dr Merriman made interim proposals for the Institution examination and a provisional committee was set up to consider them. By autumn 1960 this had been fully constituted as the Education Committee and it offered to Technical Colleges a lecture entitled 'the place and function of the inspector in engineering'. It also proposed to Council a list of qualifications which should exempt candidates from all or part of the Institution examination.

Examinations started in the summer of 1960 with nine candidates but this number increased to 21 in 1961, and by 1963, it had reached 106.

As the Institution's examinations progressed, and as general educational standards rose, it became clear to the Education Committee that some revision to the examination syllabuses would be necessary to achieve the academic level being set by the Council for corporate membership. It therefore completely revised the whole examination structure and by the end of 1964 it was ready to launch the new version at a Conference to be held at Chelsea College of Technology in April 1965. The theme was 'The educational requirements of professional inspectors and quality engineers'.

Organization and finance

The Council realized that the introduction of examinations would require both adequate funds and a full-time staff. Although membership had progressively increased since 1956, Council regretfully decided in March 1959 that subscriptions would have to be increased.

To improve the service given to members, however, the Journal was enlarged, the advertisement was eliminated from its front cover, and its title was changed to *The Quality Engineer*; under the guidance of Mr R.H.S. Lesser these changes started in January 1960.

For some time the Council had been looking for larger offices to accommodate the secretarial staff and, at the end of 1959, it agreed to take 616/618 Grand Buildings, Trafalgar Square, at a rent of £660 per year. It was occupied in February 1960.

In January 1960 Mr C.L. Acland was appointed Technical Officer to the Institution on a part-time basis and, by the end of 1960, the Institution of Production Engineers had formed a committee to advise on quality control. The B.P.C. was also active in this field and the Council decided to collaborate with other Institutions, etc for the general advancement of quality control.

In September 1961 the first conference was held at New College, Oxford, in collaboration with the Society of Non-Destructive Examination (S.O.N.D.E.). Some 185 delegates attended and the conference was such a success that it has been an annual event ever since.

By early in 1962 various changes to the secretarial staff, which had been going on for some time, were completed. As the Technical Officer had now left, the staff became:

Secretary	Cdr J. Spencer
Assistant	} Maj. P.J. Roe
Secretaries	
Registrar	Mrs D.M. Bright
Typist	

The last name is especially worthy of note. Mrs Bright is still with the Institute of Quality Assurance and it is hard to think of it without her.

In April 1964 Lt-Cdr T.A. Woolmer replaced Maj. A.J.M. Watt as Assistant Secretary.

The Institution tie was introduced in the autumn of 1963 and was sold for many years at its original price of 16s.

About this time a number of new publications were issued including two monographs, *An introduction to sampling inspection* by I.D. Hill and *Thermocouples, their instrumentation, selection and use* by B.F. Billing. A *Glossary of terms for quality control* was compiled by the Technical Survey Committee under the Chairmanship of Mr D.J. Hewitt. This was subsequently approved by the National Council for Quality and Reliability and was incorporated in the E.O.Q.C. Glossary which was eventually issued in five languages.

Branch activity

Central London meetings were no longer considered adequate for so large an urban area so, in the autumn of 1958, it was decided to set up a formal London Branch, divided into four areas.

Middlesex, Berkshire, Buckinghamshire.

Surrey and South London.

Essex, Hertfordshire, Bedfordshire, North and East London.

Kent, Sussex, and South East London.

On 21st November a meeting was held to try to revive a sagging North West Coast Branch but it was unsuccessful and in January 1959 the Branch was closed and its members were transferred to the North Western Branch based on Manchester.

Meanwhile the Council had agreed that Branch Hon. Secretaries should be sent a quarterly summary of Council meetings.

In the summer of 1959 an inaugural meeting was held in Luton to form a Group which was later promoted to Branch status. Similarly, in June 1961 the Crawley Group was given Branch Status; in July 1962 a Gloucester Group was approved. Later in 1962 a second Branch was formed in Australia, this time in Melbourne.

In November 1962 two new Groups were formed:

Essex and North East London, belonging to the London Branch;

North Herts., belonging to the Luton Branch.

About this time, groups were also formed at Bracknell and in the Medway towns.

On 1st January, 1964, Australia had three branches: New South Wales, Victoria, South Australia.

The efforts of the Education Committee to increase educational facilities for inspectors led to a renewal of interest in the North East and a very active Branch was established in 1964, based on Durham.

In September 1964 the London Branches became completely autonomous, like the other Branches.

Reorganization of Council

The Branches had grown steadily and were now a very important part of the Institution. Hence in 1965 the Council decided to include direct Branch representation within the Council itself, and this took effect from the A.G.M. of 1966. The arrangement was as follows.

The Branches were grouped into five Regions, each with its own Regional Advisory Committee. Each Region was represented on the Council by specially elected Council Members, one Member for every 250 members in the Region. Thus the South East Region, with almost 1000 members, had four Regional Members of Council, the Scottish and North East Region only one. The Council was now made up of 11-14 Regional Members and 10-12 National Members who did not represent any Region. The National Members were available for committee work, but the Regional Members were to concentrate on the problems in their own Regions.

The London Branches had the Greater London Area Committee which consisted of: two members appointed by Council; two appointed by each of the London Branches; one member appointed by each of the London Groups.

Until 1968 the President had always taken the chair at Council meetings, A.G.M.s, etc., but in November of that year Council decided to separate the roles of President and Chairman, and Col D.S. Squirrel was appointed to be first Chairman. The thinking behind this decision was that it might be desirable in future to invite someone important and influential to be President, and such a man might not always be able to attend Council meetings.

Branch activities

It had been felt for some time that, in addition to arranging meetings during the winter season, the Branches should be more generally involved in the work of the Institution. To this end the Technical Survey Committee suggested to various Branches that they should set up study groups to investigate particular aspects of Quality Control which might be of interest to the industries in their area. One of the first results of this scheme was an excellent paper written by a group of members of the Coventry Branch on the selection and training of inspectors. This paper aroused much interest and was widely used in industry.

In 1964, and again in October 1966, the South Western Branch held a very successful three-day exhibition and conference in Bristol. Not only did these stimulate interest in quality control in general and in the Institution; they were also successful financially. The following were among the studies undertaken by Branches.

Coventry. Improving the efficiency and output of inspectors. London: South West. Quality control for small batches. Wolverhampton. The training of apprentices for inspection. Gloucester. A survey of the use of quality sampling within the area.

Birmingham Branch directed the whole of their 1968-69 programme to a study of the quality car of the 70s.

By 1969 there were 25 Branches in this country and three in Australia.

Finances

It had been clear in 1964 that accounts for that year would show a substantial loss, and a 50 per cent increase in all members' subscriptions was made from January 1965, with the object of achieving a subscription income of £15,000 per year and a total income of about £16,400. This was to provide a surplus to offset the 1964 loss and also to allow for the acquisition in 1965 of further office accommodation at Grand Buildings, including a Committee Room. Membership was increasing by about 170 per year, and this it was calculated would increase the income by £600 per year.

Unfortunately the country was suffering from inflation so that, although the increase in income was achieved, it was largely swallowed up by increased costs. By 1967 the Council found that it would have to increase subscriptions again unless it reduced activity or made sufficient economies. It chose to make economies and its axe fell on the Journal, which in 1967 had cost a little under £3,600. Members argued that, by the sale of advertising space, it ought to be largely self-supporting.

In 1967 the Editorial Committee put its production out to tender; at the same time the office took over the distribution to some 500 subscribing non-members. By the end of 1968 a new contract for the printing and compiling had been made with John Morris (Publicity) Ltd, and W.H. Houldershaw Ltd. Under this contract the Institution became the publisher, and it was anticipated that the advertising would increase. The terms of the agreement were more favourable to the Institution, and the opportunity was taken to adopt the larger A4 size of page. During the year the number of outside subscribers increased and Council was able to balance the accounts for 1969.

Headquarters and membership developments

By early 1965 the number of members had reached 3000 and the Institution's activities had increased proportionately. Symposia, etc. continued, and the Oxford Conference was firmly established as an annual event.

The Technical Survey Committee considered the knotty problem of professional charges for inspection. This question had been first raised nearly 50 years before, and had come up at intervals ever since, but no complete answer had ever been found. Nor has it been found to this day.

National Quality and Reliability Year started on 20th October 1966, and was staunchly supported by the Institution, not only from its headquarters but throughout the Branches.

During 1966 the Council formed a Forward Planning Group consisting of the Institution's office holders and the chairmen of the main committees. This Group was responsible for looking ahead and submitting long-term proposals to the Council. Thus much of its work is behind the developments recorded in later sections.

Unfortunately, at the end of December 1969 the Secretary, Cdr. John Spencer, found it necessary to resign following personal bereavement. The position was advertised in the Journal, but a suitable replacement was not immediately forthcoming; in the interim the affairs of the Institution were very capably looked after by the Deputy and Assistant Secretaries. As this history shows, if we neglect various odd weeks when there were 'caretaker' secretaries, we find that in 50 years the Institution had only four secretaries. This is quite an achievement and shows great loyalty on their part.

By 1st January 1969 there were 3675 members of whom 2221 were Associate Members.

The professional status of the Institution

As mentioned above, the Education Committee launched the new examination structure at the beginning of 1965. In a profession in which the majority had, in the past, acquired their knowledge and skill by experience on the job, it had taken some years to raise the examination to the academic standards then set by the Institution. It also required much effort to make our examination system entirely compatible with a rapidly developing national examination structure. Indeed, by the time these changes had been made the 13 Chartered Institutions in the engineering field had, with Government support, decided to form what is now the Council of Engineering Institutions (C.E.I.), holding a Royal Charter. The level set by the C.E.I. for the academic qualifications of a chartered engineer is that of a University degree.

At the same time it was realized that the engineering profession relies greatly on technologists and technicians who have not attained degree level. Hence in 1967 the C.E.I. began to consider the creation of a technologist and technician grade. It consulted some 40 interested bodies, including the I.E.I.,

and in 1968 prepared to set up a National Council of Engineering Technologists. Legally this would be a company limited by guarantee, and persons admitted to it would be Registered Engineering Technologists. The minimum educational requirements would be a full Technological Certificate awarded by the City and Guilds of London Institute, or its equivalent.

The name of the Institution

The name of the Institution had been discussed on a number of previous occasions and, in 1965 the Council decided that a change was desirable. It therefore set up a committee to consider all the implications, since not only the name itself was involved. There was the possibility that we might amalgamate with another society working in a similar field, and changes to the name would involve consequential changes to the constitution, and possibly changes in the examination structure. This was because an Institution concerned, according to its name, mainly with inspection had a much narrower role than one which professed to be concerned with the much wider spectrum of Quality Assurance. The new name and objectives must be consistent with, and as far as possible open a path towards, our ultimate objective of obtaining a Royal Charter.

In January 1967 the committee reported back. It had considered something like 50 alternative names, and finally recommended that the Institution of Engineering Inspection should become the Institution of Quality Technology. Many people in the quality field were not engineers and the Institution, it was agreed, should cater for them. After seeking the opinion of the Branches, the Council gave its approval by 17 votes to 0 with 2 abstentions, but the Board of Trade was unable to accept this proposal.

The Golden Jubilee

In 1969 The Institution celebrated 50 years of successful existence, and both nationally and regionally events were arranged to mark the occasion.

On 1st April, the actual anniversary of the founding of the Technical Inspection Association on 1st April 1919, a reception was held at the Hanover Grand Hotel in London. Primarily it consisted of an address by Professor John Loxham and a buffet supper.

On 27th April there was a visit to Old Warden Airfield and Museum near Bedford. A special issue of the Journal was produced to which H.R.H. The Duke of Edinburgh contributed a foreword. This contained articles reviewing 50 years of progress in the fields of inspection, quality control and quality assurance, a series of reminiscences written by Past Presidents, and the first two parts of this history.

The Ninth National Inspection Conference at Oxford, held from 22nd to 25th September, took for its theme 'Effective quality management'.

The Midland Region offered prizes of £15, £10, and £5 for the best three original unpublished papers of up to 2500 words on 'The role of the quality engineer in the future'. Entries were restricted to members living within the Region; the winners were E. Horton, M. Withers, and R. Thwaites respectively. So successful was this competition that the Midland Region repeated it in subsequent years.

1969-72

Location of headquarters; association with the Institution of Production Engineers

A considerable part of the cost of running the Institution was incurred at the headquarters itself, being primarily the cost of renting or leasing accommodation and paying the staff. It was therefore suggested that considerable economies could be achieved by sharing both offices and staff with another similarly placed institution. A number of organizations were considered, and informal contacts made with some of them, but it was with the Institution of Production Engineers that

serious negotiations began. Indeed in some areas the interests of the Production Engineers were so similar to our own that a much closer association than mere sharing of offices was considered, and in June 1969 a joint working party was set up to investigate possibilities which might be of mutual benefit to both Institutions.

Negotiations were inevitably protracted and delayed, partly because we had no permanent secretary until Mr R. Miskin was appointed in September 1969, and partly because this Institution was changing its name at the same time, and each development in one had to be fully compatible with the other. However, by March 1970 an agreement with the Institution of Production Engineers had been worked out, and Council gave its approval. The agreement was briefly as follows.

- 1 The staff of the Institution of Engineering Inspection would move into the headquarters of the Institution of Production Engineers at 10 Chesterfield Street, Mayfair, London W.1, where they would occupy part of the building as tenants.
- 2 Within six months of the move, the administrative staff of both Institutions would be integrated.
- 3 The Institution of Engineering Inspection would be free to pursue its change of name, but would keep the Institution of Production Engineers informed.
- 4 A liaison group between the two Institutions would be set up in the quality and reliability area. (The late Mr J.L. Baron and Mr N.T. Burgess were eventually appointed to represent the I.E.I. on this.)

The move to Chesterfield Street took place on 7th November 1970 and integration of the staff became effective as from 1st September 1971. It was achieved as follows.

Major Peter Roe joined the staff of the Institution of Production Engineers as Registrar.

Lt Cdr Tom Woolmer joined the staff of I.Prod.E., but continued as editor of *The Quality Engineer*. He also became assistant editor of *The Production Engineer*; conversely, the editor of *The Production Engineer* became assistant editor of *The Quality Engineer*.

Mrs Dorothy Bright joined the staff of I.Prod.E. but continued to look after I.E.I. finances.

The Secretary, Mr R.J. Miskin, remained on the staff of the I.E.I. but assisted with the Quality and Reliability Division of I.Prod.E. The I.Prod.E. housed the staff and paid the salaries of those it acquired, whilst the I.E.I. undertook to reimburse the I.Prod.E. for the staff hours it used, plus the overheads so attracted. As we shall see, this part of the agreement had consequences which I suspect were not foreseen when it was made.

Our Institution undoubtedly benefited financially and in other ways from this collaboration with our professional colleagues in the Institution of Production Engineers. As with friends sharing a house, however, there were inevitably some irritations on both sides; for example, our members who rang up heard the girl on the switchboard answer 'Institution of Production Engineers' and they expressed fears that our Institution would lose its identity. Again the accommodation was said to be 'not ideal'.

Our hosts then found it necessary to move and to put 10 Chesterfield Street up for sale by auction on 19th October 1971. They purchased 146 Cromwell Road, London S.W.7, and early in 1972 they and we moved into it. As this building had a 25-year lease, renewable every 5 years, the move appeared at that time to be fairly permanent.

Registration of Technicians and Technician Engineers

Work to establish the Register of Technicians (see above), proceeded steadily, and it was decided that there should be a 'swallow' period, during which all Fellows and Members of the I.E.I. who were not chartered engineers would be eligible. Registration would cost £1 per annum.

Early in 1971 the C.E.I. obtained the approval of the Privy Council for its plans, and the July issue of the Journal contained an article by Major Roe explaining them. Our Institution contributed £100 towards the cost of setting up

the Register, and paid the registration fees of its members. The Register finally opened at the beginning of 1972, and all Fellows and Members who were eligible were given until 31st December 1973 to register.

Membership and entrance examinations

Applications for membership inevitably take some time to process. After perusal by each member of the Membership Committee, they must await approval at the next full meeting of the Committee; if approved they must be ratified at the next meeting of the Council. In May 1969 it was agreed that, in order to speed up this operation, applications for Student and Graduate membership would be perused by the secretariat; if satisfactory they would be passed straight to the Council for ratification. Later in 1969 the Board of Trade ruled that Council members could not be paid for professional services they rendered to the Institution. This effectively prevented them from acting as either examiners or assessors for the Institution's examinations.

On 1st January 1970 some changes were made to the membership rules. Thus the ages of admission to some of the upper grades were modified, non-corporate members were no longer to be allowed to use designatory letters after their names, and people receiving Membership Certificates would be charged £2 each.

In June 1971, after lengthy consideration, the Education Committee proposed a new examination structure as follows.

Compulsory subjects

Principles of measurement and statistical method
Management and organisation of quality assurance

Two subjects selected from the following:

Engineering dimensional metrology
Statistical analysis and process control
Engineering materials testing
Electronic and electrical engineering inspection
Instrumentation and control
Reliability engineering

In September of that year it was agreed that entry requirements for a Member should not be lower than those required by the C.E.I. for a Technician Engineer. It was therefore decided to reintroduce the grade of Associate Member for applicants who were not so qualified, although no existing Members would be down graded. Difficulties followed this decision because, although the C.E.I. and our own Institution regarded Associate Members as non-corporate, the Department of Trade and Industry insisted that any title containing the word Member signified corporate grade. After lengthy negotiations the proposal to recreate the grade of Associate Member was abandoned.

The Journal

In July 1969 a certain Mr McRobb, a Scotsman living in self-imposed exile far from his native land, offered to write a review for inclusion in each issue of *The Quality Engineer*, and his articles entitled 'Around the Journals' have been a regular feature ever since.

From July 1971, in an attempt to increase its use to members, the Journal was published monthly instead of every other month. The Council hoped that this would also make it more attractive to advertisers, so that the additional revenue from advertisements would largely offset the increased costs. In a further effort to increase advertising revenue, responsibility for advertising was transferred to a specialist firm. Generally the financial changes worked well and by June 1972 advertising paid almost half the cost of producing the Journal, leaving a net cost to the Institution of £600 per issue.

Finances

Compared with the position some years before, the finances in 1969 were comparatively healthy. Because of inflation, however, costs continued to rise, and it became apparent that, if

serious cuts in the services offered to members were to be avoided, subscriptions must be increased. They were increased for 1970, Fellows having to pay £6 10s 0d and Members £5, but inflation continued and by the end of 1971 the Treasurer was again expressing concern. Branch and Journal expenses had increased and in addition there was the cost of moving headquarters to 10 Chesterfield Street and the cost of participation in the C.E.I. Register of Technicians. A deficit of £7,500 by the end of 1972 was forecast so, with much regret, the Council increased all subscriptions, except those of students, by £1 from 1st January 1973. A modest increase was also made, at about the same time, to the Institution examination fees to offset the increased cost of handling them.

The National Council for Quality and Reliability

During this period (1969-72) the Institution had considerable

contact and discussion with the National Council for Quality and Reliability (N.C.Q.R.), which was part of the activities of the British Productivity Council. In 1971 Government financial support for B.P.C. ceased, and it seemed probable that N.C.Q.R. would be forced to close. Both the Institution of Engineering Inspection and the Quality and Reliability Division of the Institution of Production Engineers offered to help with, and if need be to take over, all or part of the work of the National Council for Quality and Reliability, rather than let it come to an end.

In the event the worst never happened, because N.C.Q.R. made important revisions to its structure and carried on. It created a new Board of Management which had 12 members, six from industry and six from professional institutions. There were also a chairman, a vice-chairman, and a treasurer. Our own secretary, Mr R.J. Miskin, was appointed to be the first vice-chairman.

Part 3. The Institute of Quality Assurance

Negotiating a new name

After rejection of its proposal that the new title of the Institution should be Institution of Quality Technology, the Council reviewed alternatives. The new name required the approval of the Board of Trade, and this was unlikely to be forthcoming if there were serious objections from other organizations. Thus the title Institution of Quality Engineers was abandoned when opposition was voiced on the grounds that most of our members are not chartered engineers. The Board of Trade also insisted on a precise distinction between the word Institute, which refers to the discipline, and Institution which refers to individual members.

It was not until March 1971 that the Council was able to get general agreement for the title Institute of Quality Assurance, and this choice was reinforced by a *Glossary of terms*, newly issued by the British Standards Institution, which defined Quality Assurance as 'all activities and functions concerned with the attainment of quality'. There were still a few objections to overcome, but by September 1971 the Department of Trade and Industry, successor to the Board of Trade, had given its approval, and the agreement of the members was obtained at an Extraordinary General Meeting on 15th May 1972.

Much legal and other work had to be done. The Institution was, and the Institute still is in law, a limited liability company, and appropriate changes had to be made to its Memorandum and Articles of Association before the Registrar of Companies could issue the new certificate of incorporation.

1972-75

The change of name

So after many sometimes frustrating years, and much work by many people, the legal and other ramifications were finally sorted out, and on 20th June 1972 the Institution of Engineering Inspection ceased to exist and became The Institute of Quality Assurance. In a sense, however, the task of conversion was only just beginning. Just as in industry it is pointless for the Chief Inspector to be renamed Quality Manager unless at the same time old-fashioned inspection is replaced by a modern system of quality assurance, so the birth of the Institute implied much more than a change of name. Of course, many of the changes had been proceeding gradually for a long time, but now it was necessary to bring them to fruition and publicize them. Thus the possibility of a publicity feature in *The Financial Times* was investigated, but abandoned when it was found that all space in the near future was already allocated.

Leaflets publicizing the Institute were prepared and by March 1974 were ready for distribution. There were 2000 designed for Colleges and Polytechnics and another 2000

designed for industry. Letters were sent to some 200 firms, and each was followed up by the appropriate Regional Committee chairman.

Location of headquarters

Since early in 1972 the headquarters had been at 146 Cromwell Road, London S.W.7, which we shared with the Institution of Production Engineers. The Institute's policy was to retain, and to enlarge where expedient, its links with the I.Prod.E. By March 1973 its annual payment for the services of people who were now I.Prod.E. staff, amounted to £16,000. Our Technical Committee (renamed from the old Technical Survey Committee) merged with the Quality Assurance Division Board Technical Sub-committee of I.Prod.E. and the joint committee held its first meeting on 5th June 1973. Complete integration of the two organizations was not, however, considered to be practicable. Only about 400 of the Institute's members also belonged to I.Prod.E., and around three quarters of these did not qualify as chartered engineers.

Various accommodation problems remained. The irritants to which we referred earlier were still present, and there was difficulty in deciding what payment the Institute ought to make it to the I.Prod.E. In December 1973 the Institute's Secretary, Mr Ray Miskin, resigned in order to accept the post of deputy secretary of the I.Prod.E. (He is now the Secretary and is to be congratulated on his achievement.) The Hon. Treasurer took over as temporary secretary until in June 1974 the present Secretary, Mr R. Knowles, was appointed. Meanwhile, in February 1974, Lt Cdr Tom Woolmer finished as editor of *The Quality Engineer*.

None of these problems was insurmountable, and they in no way reflect on the I.Prod.E. whose staff were always most understanding and helpful. However at the end of 1973 the I.Prod.E. informed the Institute that it proposed to leave Cromwell Road and was looking for other suitable accommodation. It was in no hurry, however, and it might be two years before the move took place. This left the Institute's Council with a serious decision to make. Broadly there were three options open to the Institute.

1 It could move with the I.Prod.E. to their new home and continue the existing association with them. This was conditional on there being enough room in the new premises.

2 It could find its own accommodation and revert to being independent,

3 It could negotiate a similar arrangement with some other institution.

At that time the Production Engineers were considering Lourdes Mount, Northfields; if they took it, there would be insufficient room for all of the Institute's needs so that space would have to be found elsewhere. The Council therefore

considered carefully whether finances would permit the Institute to become independent again. The advantages were obvious. The Institute would have its own address and its own telephone. Links with the I.Prod.E. could remain wherever the needs of both organizations were identical.

Much depended on whether suitable premises could be obtained. By March 1975 some 300 square feet of office space had been located in part of the building occupied by the Welding Institute at 54 Princes Gate, Exhibition Road, London S.W.7. This could be rented for £900 per annum, plus a further £150 for storage space. Suitable rooms could be hired for Committee and Council meetings. The Council decided to accept, having calculated that the total cost of operating from these premises would actually be about £1,400 per annum less than it was paying at Cromwell Road. It agreed to take possession about mid-April 1975.

Now, however, as we foresaw, the Council had to face the consequences of staff integration with I.Prod.E. All the former staff of the Institute now belonged to the I.Prod.E. Even Mr Miskin had recently transferred himself. His place had been taken by Mr R. Knowles and at the beginning of April he was joined by Mr H. Cooke who soon became editor of the Institute's periodicals. When the Institute moved to Princes Gate Mrs Bright moved with it, leaving the I.Prod.E. and rejoining the Institute's staff. Major Roe, however, stayed behind and moved to Northfields soon afterwards. Thus three people, Mr Knowles, Mrs Bright, and Mr Cooke, actually made the move to the stately home in South Kensington which had been bought by the Welding Institute from Lord Grantchester a few years before. They received a warm welcome and ever since the relations of the two Institutes have been of the friendliest. At first they occupied two rooms on the second

floor overlooking Princes Gardens, where two trees were covered in blossom, but soon a third room in the basement, which had once been the kitchen, was ready, and Mr Cooke moved into it. All these rooms had to be furnished and equipped since the only furniture brought from Cromwell Road consisted of a mahogany table, four chairs, and a bookcase, together with Mrs Bright's safe and a number of filing cabinets. The equipment was one typewriter. In almost no time at all Mrs Bright and Mr Cooke had been out shopping, carpets were being laid and desks delivered. Work could begin!

Mr Cooke had already been in touch with the Post Office and arranged for the installation of a telephone but the Post Office did not share the Institute's sense of urgency (see 'The story of our telephone' in the September 1975 issue of *Quality Assurance News*) and long weeks elapsed before the Institute at last had its own telephone and number. In the meantime the dauntless trio had to use the Welding Institute's telephone and were grateful for their ready co-operation.

Another problem was mailing the periodicals to members. At the I.Prod.E. the Institute had shared a computer but the demand now was for complete independence; so a second-hand Addressograph machine and a Graphotype embossing machine were purchased and our mailing list was transferred to metal plates. This change, too, was not without its humorous incidents. The Editor recalls: 'We had intended, rather unwisely, to install the Addressograph in a store room, still known as "the bathroom" for such it had once been, and the representative of the selling firm came and assured us this would be possible. Accordingly one day four men delivered the large and heavy machine and with great difficulty carried it up the stairs. Imagine their feelings, and ours, when they found that the representative had wrongly measured and the machine would not go through the door! It had to be carried down to the basement where it still resides in my room.' For nearly four years it did yeoman service but has now been superseded by a more sophisticated but, alas, less endearing machine from another manufacturer.

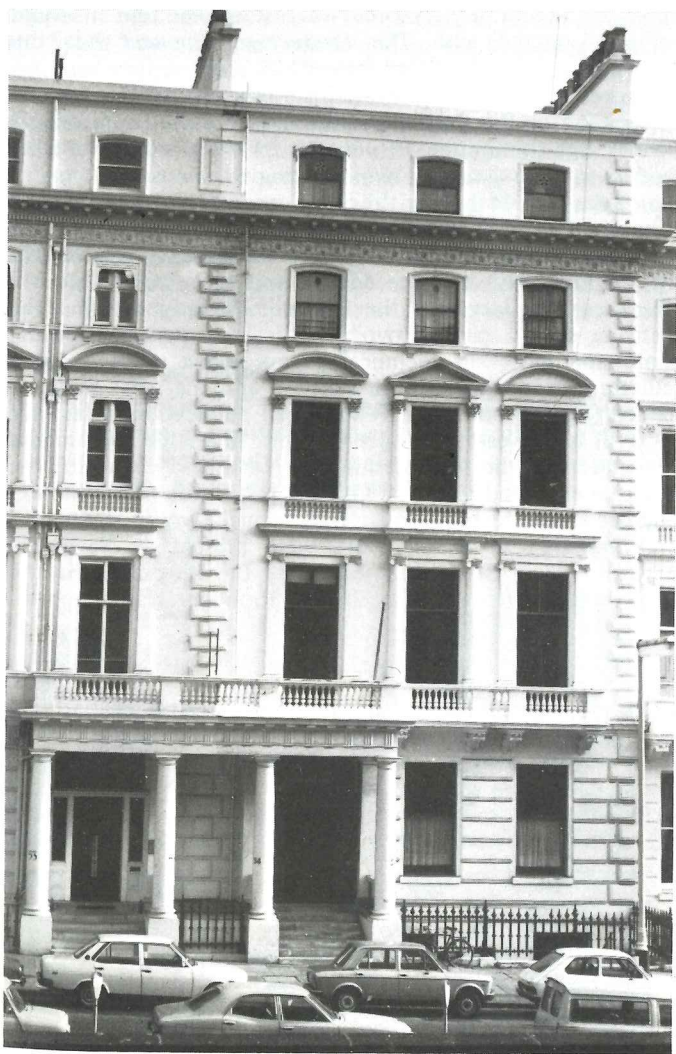
In July 1975 the three pioneers were joined by Mrs M. O'Neill who had recently resigned from the staff of the I.Prod.E. She became responsible for Membership and Education. Now there were four members of staff but no one whose first duty was typing; so in October Miss C. Hewins was appointed clerk/typist and at last the Institute's staff was complete. All five of them are still at Princes Gate and no one else was appointed for more than two years.

Miscellaneous activities

During all the changes recorded in the last section, the day-to-day running of the Institute continued as normally as possible. By the time this period started, the Forward Planning Group was in abeyance, it being impossible to plan ahead while so many uncertainties remained about the location of headquarters and the extent of our association with the Production Engineers.

The Institute had never possessed a library as such, although for years there had been a bookcase at headquarters containing a few technical books. At the end of 1972 an approach was made to the I.Prod.E. to see whether it would be possible for our members to use the Hazleton Library. This proved impracticable, partly because the cost to the Institute would have been too great, and partly because the Hazleton Library spans the whole field of production engineering and contains only a minority of books on quality assurance. The Institute, however, continued to subscribe to ASLIB (formerly the Association of Special Libraries and Information Bureaux).

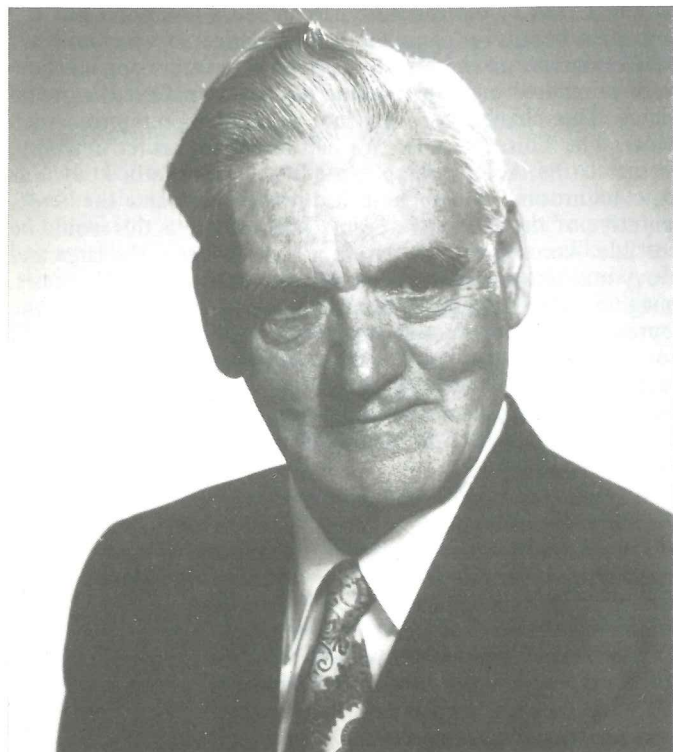
The Council decided to revive the Annual Dinner, and the first was arranged at the Inn on the Park on 22nd October 1973 in association with the Inspec Exhibition which was being held at the Royal Horticultural Society's Halls in Westminster. This was a prestige event and some 125 people attended, but only a few members were among them. They were mainly guests, people from Inspec, and press representatives of trade journals. (There was no one from the national dailies.) Financially the Institute lost over £100. The low



54 Princes Gate, South Kensington. A photograph taken across Exhibition Road in December 1978.

attendance of members was said to be due partly to the cost, and partly to the requirement for evening dress. The Council decided that in 1974 the 'annual dinner' should take the form of a luncheon at the Café Royal, and should be linked with the Motor Show. It had to be postponed, however, and finally became a dinner linked with the Inspex Conference and Exhibition at Granby Hall, Leicester, in April 1975.

In March 1974 Council members commissioned and personally paid for a photographic portrait of Professor John Loxham, who had been the first president of the new Institute of Quality Assurance. The photograph was made in such a way that it resembled a portrait in oils and Council members and others declared it to be superb. It now hangs in the Editor's room at headquarters. The Council also inaugurated an annual John Loxham Lecture, and invited Professor Loxham himself to give the first. He called it 'The broad spectrum of quality assurance' and gave it at Leicester in April 1975 on the day of the Annual Dinner.



Portrait of Professor John Loxham CBE

In March 1975 the Council decided to revive the Past Presidents' Award which had not been made since 1965. It was now to be made biannually for the best paper published or submitted for consideration during the previous two years. Papers would be judged on their originality, the extent to which they advanced the technology of quality assurance, and on their general treatment of the subject. All members, except Companions, would be eligible and papers would be judged by a committee of Past Presidents.

Membership and entrance examinations

As the new Institute of Quality Assurance came into being in 1972 the Council asked the Education Committee to set out minimum qualifications in other disciplines than engineer, which would be regarded as equivalent to those of a quality engineer. The requirements for membership could then be appropriately reworded, and the examination syllabuses broadened. With an even wider horizon in mind, the Committee tried to find out what other countries who were members of the European Organization for Quality Control demanded. At this time some 200 candidates a year qualified for Institute membership, but only about 40 did so by taking the Institute's own examinations. Mostly they took College courses with examinations approved and assessed by the Institute.

The Regions and Branches

A number of Groups and Branches were inaugurated during this period. At the end of 1972 an Edinburgh Group was formed and 50 people attended its first meeting on the 'Quality assurance of wines'. In June 1974 the Derby/Notts. Group became a full Branch. At the end of the year a Group was formed in the Preston area, and a year later this was upgraded to become the Lancashire Branch, based on Preston. The North East Branch was split into Teesside and Tyne & Wear Branches as from 1st July 1975.

The Council at various times considered how it could better keep in touch with the Regions. A Regional Newsletter in each issue of the Journal was considered, but the idea was not pursued. In mid 1974 grants to the Branches were increased by 25 per cent.

Considerable difficulty was experienced during this period in keeping in touch with the Australian Branches. Primarily the trouble seemed to be the vastness of Australia. Members there are separated by huge distances, and compact Branches on the British pattern do not and indeed cannot exist.

The Journal

By mid 1974 *The Quality Engineer* was in trouble. The year began with the miners' strike and a three-day working week. Hardly had the printing industry begun to recover from the effects of this than it was disrupted by a nationwide go-slow ordered by the National Graphical Association. Monthly publication had been begun in July 1971 but it seems there was insufficient material of the right sort to fill so many issues in a year and the Editorial Committee began reluctantly to consider whether *The Quality Engineer* should not again be published bi-monthly. Another suggestion was that it should be amalgamated with *The Production Engineer* but this was turned down. Finances were shaky and the firm handling the advertising was tottering on the brink of bankruptcy. At its meeting on 9th July the Editorial Committee appointed a Tender Sub-Committee to consider printing and advertising tenders for *The Quality Engineer*, soon to be renamed *Quality Assurance*. On 16th July the Sub-Committee met and agreed to recommend to the General Purposes and Finance Committee that Sydney Jary Ltd be appointed publishing consultant to the Institute. This recommendation was accepted and shortly afterwards Mr Jary met the Council. He proposed that the Institute should publish two periodicals, a quarterly journal containing most the technical papers and a monthly news bulletin. His proposals were adopted and the news bulletin, named *Quality Assurance News*, began publication in January 1975. It is interesting to note that this first issue contained a description of the new premises at Northfields to which the Institute expected to move with the Institution of Production Engineers. The technical quarterly, named *Quality Assurance*, first appeared in March. Both were printed by Newnorth Artwork Ltd of Bedford. Sydney Jary Ltd took charge of the advertising. Little by little the situation began to improve.

Finances

As inflation continued nationally, so progressive increases in subscriptions became inevitable and as from 1st January 1973 they were all increased by £1.50. By the end of that year, however, finances were still strained, and it was agreed that a further increase would soon be necessary. The Treasurer, Mr J.L. Baron, estimated that expenditure could be divided roughly as follows.

Secretarial and administrative services	60
Journal costs	25
Committees and Branches	10
Subscriptions to other bodies	5

From 1st January 1975 fees were again raised and now a Fellow paid £12.50 and a Member £9.75. Till this date the entrance fee of a successful candidate had been deducted from his first year's subscription, but this practice now ceased.

Certificate of Competence in Quality Assurance

In the early 1970s the Ministry of Defence introduced Defence Standards 05-21 to 05-29. These raised the standard required for a company to become an approved Ministry contractor, and most engineering companies were affected to a greater or less extent. Outside engineering, however, the impact was small. Some large companies, e.g. the car manufacturers, introduced their own methods of assessing suppliers, and this meant that a supplying company could be assessed by a number of quality assurance teams, each with differing requirements.

In September 1972 the Council's attention was drawn to this situation, and it decided to investigate the possibility of establishing a common approval system and giving Certificates of Competence to successful companies. Such a system could only come into being if the help and co-operation of all interested parties were forthcoming.

Early in 1973 a number of companies were asked to provide copies of their Quality Manuals, each of which set out all the quality arrangements of the company issuing it which had been approved by the Ministry of Defence or other assessor. The idea was to write a guide to the preparation of a Quality Manual and the work was eventually undertaken by Mr 'Red' Arkinstall, a dedicated member of the South Western Branch. He had made substantial progress when, in 1975, he suddenly died and the documents he had prepared were scattered.

1975-79

Headquarters accommodation

By the end of 1975 the Institute was firmly established in its present headquarters at 54 Princes Gate in South Kensington. Space however was limited and in the following year it took over the Committee Room of the Institute of Welding and turned it into an office for the secretary, Mr Knowles. In the autumn of 1977 Miss B. Headley joined the staff as junior clerk/typist and in 1978 the Institute acquired another room in the basement and two store rooms across the yard from the Editor's room which were formally opened in December by Miss Hewins and Miss Headley. At last the Institute has adequate storage space and a sense of clutter has been removed. The most recent addition to the staff (February 1979) is Mrs A. Brown who is helping to run courses and conferences.

Headquarters activities

On 22nd September 1975 the Council approved some revisions to the standing committees, which were to be as follows.

- General Purposes and Finance (Organization and finance)
- Membership (Applications for membership)



Miss Charmaine Hewins (left) and Miss Beryl Headley opening the store rooms while Professor Loxham looks on benignly from his portrait



Mrs Dorothy Bright wearing her Silver Jubilee medal

- Education (Institute examinations)
- Editorial (Journal and other publications)
- Professional Activities
- Conference

The Professional Activities Committee deserves some explanation. It succeeded the Materials Evaluation Committee whose activity had come to include far more than its title suggested. The new Committee was charged with stimulating and developing activity in all fields of quality assurance found in British industry and for this purpose it was empowered to form and dissolve Technical Groups whose Chairmen would report to and serve on the Committee.

1977 was the year of the Queen's Silver Jubilee, and to mark the occasion our Institute sponsored The Queen Elizabeth II Silver Jubilee Award. Entry was restricted to British subjects under 35 years of age, and the award, which consisted of a Silver Trophy plus technical books up to £30 in value, was presented for the most outstanding contribution to the advancement of Quality Assurance during the previous five years. Entries could take the form of a paper, application of a new technique or a novel application of an old one, or evidence of inspiring others to greater achievements in Quality Assurance. The Award was made to David Murray, Member.

Our Registrar, Mrs Dorothy Bright, was awarded a Silver Jubilee medal by H.M. The Queen for her long and devoted services to the Institute. She joined the staff in April 1961 and had given unstinting service ever since, so well deserved the congratulations which Members of Council and other members heaped upon her.

Numerous conferences, seminars etc. were held during this period. Of particular note are the five-day courses held by Dr J.M. Juran, the eminent American consultant, sometimes called 'the father of Quality Assurance', in London and Birmingham during 1978, and the Second National Reliability Conference at the Metropole Hotel, Birmingham, in March 1979.

For some time a committee had been working on a presentation entitled, 'Quality IS Profit' with which it was hoped to persuade Government Departments and British Industry in general of the need for a national campaign to improve quality

assurance generally. (A whole issue of *Quality Assurance* had been devoted to this theme in June 1976.) Early in 1978 the first presentation was successfully given, and several influential organizations agreed to co-operate.

It became necessary to specify named people as Trustees of the Institute and, on 8th March 1978, the Council decided that these should be the immediate Past President, the Chairman and Vice-Chairman of the Council, and the Secretary of the Institute.

Negotiations had been going on with the American Society for Quality Control, in order to establish stronger links, and in November 1978 an agreement was announced. It was printed on the front page of the November issue of *Quality Assurance News*.

Negotiations with the College of Arms, which had been begun in 1972, were resumed and by June 1977 it was possible to make a formal application for a Grant of Armorial Ensigns. Final proposals were ready by February 1978, and the agreed design was finally registered in October. It was reproduced in black and white on the front of *Quality Assurance News* for December 1978 and in full colour on an insert in *Quality Assurance*.

Entrance examinations

For some time the syllabus for a new examination subject 'B7 Standardization', had been in preparation. By September 1976 it was ready to be offered for the 1977-78 College year.

During 1977 two pamphlets were prepared and printed, each dealing with careers in quality assurance. There was a short pithy one for students, and a more comprehensive one for Technical Colleges and Careers Officers. By October these were ready to be issued.

In June 1977 the Council approved the expenditure of £1,500 to sponsor the production of a audio-visual quality-assurance training package. This was completed about October and a number of orders for it were received. Those who saw it pronounced it satisfactory as a simple introduction, although it would probably need a follow-up later to deal with more advanced aspects. Financially it was expected at least to recover its production costs.

At the end of 1977 and in the early part of 1978 the Education Committee began the preparation of a number of quality-assurance modules. These were to be suitable for inclusion in the new courses of the Technical Education Council, but could also be included in other college courses. In addition the Committee decided to review the whole of the Institute's examination policy with a view to bringing it up to date. The preparation of a syllabus dealing with quality assurance in process industries was put in hand, and consideration was given to the possibility of producing one dealing with the quality-assurance aspects of management and cost accounting.

The Regions and Branches

At the end of 1975 the membership, as divided into Regions, was as in Table 1.

Table 1

Region	Number of members	Branches	Council Members
South East	1350	10	4
South West	700	4	2
Midland	1100	7	3
North	700	5	2
Scottish and North East	400	4	2
Total in the U.K.	4250	30	13

Thus the average number of members in a Branch was 142, and the average number represented by Regional Member of Council 327.

In the spring of 1976 the Luton Branch, which had been inactive for some time, was formally disbanded and its members were transferred to either the Letchworth or the London: North West Branch. In October 1977 the North Western Branch was renamed the Greater Manchester Branch.

At the end of the year the Colchester Branch faded away and efforts were being made to resuscitate the ailing South Wales Branch. These were unsuccessful and in March 1978 it was closed and its members were transferred to the South Western Branch. By the summer, however, the South Western Branch had succeeded in restarting a Group in South Wales.

Towards the end of 1977 the London: South West Branch launched the 'Alf Barrett Memorial Award' to be presented to the best student in quality assurance at Slough College, and similarly the London: South East Branch launched the 'John Loxham Award' for the best student at Woolwich College.

In September 1978 a new Eastern Region was formed by merging together the London: North East, London: North West, Chelmsford and Letchworth Branches but the London: North East Branch hastily withdrew and returned to the South East Region.

Finances

Inflation still continued, and as costs rose the Council sought to make economies. One of these was to use *Quality Assurance News* as the main channel of communication to members, thus avoiding the high postal charges involved in sending individual notices. In spite of these economies, however, fees were increased on 1st January 1976. Fellows now had to pay £15 and Members £12 each.

Unfortunately, with ever increasing costs, even these rates lasted only for two years, and on 1st January 1978 the annual fees were raised to their present level. Fellows now pay £17 and Members £14 each.

The marginal cost of printing and posting *Quality Assurance* and *Quality Assurance News* was, at this time, estimated to be £4.80 per member.

In June 1977 the Council decided to set up an 'Institute Salary Panel' to look after our permanent staff and ensure that their salaries were kept in line with inflation.

On 22nd December 1978 Mr John Baron, who had been Hon. Treasurer of the Institute since 1969, died suddenly. This was a great loss to the Institute for not only had he watched over its finances for nearly 10 years; he had also contributed much to the success of the conferences held at Oxford.

Certificate of Competence in Quality Assurance

In 1976 the following requirements were set out for any quality assessment and certification system. It must be:

- voluntary;
- supported by British industry;
- provide different forms of assessment to meet differing needs;
- be financially self-supporting.

Early in 1976 some 80 letters were sent to various government ministries, trade associations, etc.; 61 replies were received as follows:

- 48 welcomed the initiative;
- 10 expressed interest;
- 3 declined.

On 22nd April 1976 the Professional Activities Committee arranged an open forum at Princes Gate, to discuss the problems of multiple quality assessment. This considered whether a third party such as the Institute could help, particularly whether it would help to establish a national standard for training and registering quality assurance assessors. Those who attended were asked to complete a questionnaire, analysis of which confirmed the need for more formal and systematic training of assessors. Meanwhile seminars, in both London and Manchester, on the Ministry of Defence system of quality-assurance assessment were well attended. In 1977 a series of successful one-day seminars entitled 'Assuring the quality of sub-contracted products and services' was held in Birmingham, Edinburgh, and Bristol.

A panel was set up to concentrate initially on the training of quality-assurance assessors. Various bodies and organizations assisted, and by October 1977 draft proposals were ready. In March 1978 the reaction to these was reported to be

encouraging, although inevitably many differing points of view were expressed. In December 1978, the Department of Prices and Consumer Protection issued a consultative document entitled *A national strategy for quality*. This surveyed possibilities and tentatively suggested that a British Quality Board, or something like it, might be set up to deal both with quality standards and assessment of companies. Such proposals, if adopted, would interlock with the work of the Institute. After close scrutiny of the document our Institute submitted its own suggestions and comments before the closing date of 31st March 1979.

In 1978 the work begun by Mr Arkinstall was resumed by a Group appointed by the Professional Activities Committee and it is hoped that the 'guide' will appear during 1979.

The Diamond Jubilee

So we come to the last section of our history and find preparations for the Diamond Jubilee well in hand. For 60 years members of the Institute have faced many problems. Mostly the action taken to solve them has been wise and successful, but in a few cases it is now possible to see, with the advantage of hindsight, that the decisions were not of the best. Our story does not of course end in 1979. The Diamond Jubilee is merely a milestone in the passage of time; this last section is incomplete, and soon further events must be added to it.

At the time of writing (April 1979) the following events have already taken place.

28-30th March 1979	National Reliability Conference in Birmingham
4th April	Fifth John Loxham Lecture and Institute Dinner in Birmingham

The following have still to be held.

5th June	Service of Dedication at Holy Trinity Brompton, followed by a Reception and Buffet Lunch and the Annual General Meeting
28-29th September	Diamond Jubilee Convention and Midland Region Conference and Exhibition
10-11th October	Diamond Jubilee World Conference in London.

Acknowledgements

My sincere thanks are due to the secretariat for their help in preparing this history, and especially to Major Peter Roe in 1969 and Mr H. Cooke in 1979.

Rowland Caplen spent 25 years with Westinghouse Brake & Signal Company, beginning as assistant production engineer and finishing as Quality Manager. For the past 12 years he has been senior lecturer in Quality and Reliability at The Hatfield Polytechnic. He joined the Institution of Engineering Inspection in 1960, and at various times has been Council Member, Chairman of the Industrial Education Panel, examiner in Reliability Engineering, and assessor in Organization and Management of Quality Assurance. He is the author of three books and numerous articles in the field of Quality Assurance, and is currently chief examiner for the City & Guilds Certificate in Quality Control course 743.

Appendixes

1 Presidents

Technical Inspection Association
1919-21 A.H. Collinson
1921-22 A.E. Hadley

Institution of Engineering Inspection

1922-23 N.P.P. Sandberg
1923-24 Col F.L. Galloway
1924-25 F.R. Wade
1925-26 Lt Col P.R. Embury
1926-27 R.P.C. Wilson
1927-28 H.V. Davey
1928-29 A.H. Foyster
1929-31 Hal. Gutteridge
1931-33 Lt Col John H.M. Greenly
1933-34 T.W. Ellis
1934-35 C. Strachey Hawdon
1935-36 Major H. Myers
1936-37 Damer Dawson
1937-38 S.E. Coymour
1938-39 Lt Col H.W.S. Outram
1939-41 H.V. Senior
1941-43 G.O. Watson
1943-44 Maj. Gen. A.W. Sproull
1944-45 Dr H. Wheeler
1945-46 Maj. Gen. A.W. Sproull
1946-47 Dr E. Gregory
1947-48 Air Cdre J. Sowrey
1948-49 Lt Cdr R.B. Fairthorne
1949-52 A. Vernon Watson
1952-53 Brig. H.R. Howard
1953-55 Maj. Gen. J. Scott Crawford
1955-57 Maj. Gen. W.S. Tope
1957-61 Lt Gen. Sir Frederick Wrisberg
1961-63 Sir Thomas Barnard
1963-64 F.E. McGinnety
1964-66 Maj. Gen. B.G. Ralfs
1966-69 I.R. Smith
1969-71 C.C. Gegg
1971-72 Professor John Loxham

Institute of Quality Assurance

1972-73 Professor J. Loxham
1973-76 The Rt Hon. the Viscount Hanworth
1976-78 E.S. Allwright
1978- Dr G.B.R. Feilden

2 Chairmen of Council

1969-73 Col D.S. Squirrel
1973-77 N.T. Burgess
1977- Dr W.R.B. Thoday

3 Secretaries

1919-32 J.H. Wharton
1932-33 W.G. Heppel
1934-48 R. Pugh
1949-58 H.P. Middleton
1958-69 J. Spencer
1970-74 R. Miskin
1974 J. Baron (Acting)
1974- R. Knowles

4 Winners of the Past Presidents' Award

1941-42 E.A. Farthing
1942-43 Dr E. Gregory
1944-45 D.P. Muirhead
1945-46 No award made
1946-48 No record
1948-49 A.H.L. Trapnell
1949-50 No record
1950-51 J.R. Cornelius
1951-52 Dr E. Gregory
1952-53 Major P.A. Cartwright
1953-54 No record
1954-55 A.J. Abbott
1955-56 J. Rockley
1956-57 H.L. Boutflower
1957-58 H.A. Simmons
1958-59 R.H.S. Lesser
1960 L.W.D. Pittendrigh
1961 K.L. Smith
1962 L.W.D. Pittendrigh
1963 R.H.S. Lesser
1964 Syndicate from Coventry Branch
1965 A.J. Miller
1966 No award made
1967-72 No awards made
1973-74 L.G. Knightson
1975-76 R.J. Winter and J.J. Crabtree

5 John Loxham Lecturers

1975 Professor John Loxham
1976 Dr J.M. Juran
1977 Dr J. Grocock
1978 Dr G.B.R. Feilden
1979 Professor P.A. McKeown

6 Addresses of the Institute

1919 Hotel Metropole, Northumberland Avenue S.W.1
1919 44 Bedford Row W.C.1
1921 Palace Chambers, Westminster S.W.1
1933 17 Victoria Street S.W.1
1933 52 Grosvenor Gardens S.W.1
1936 British Industries House, Marble Arch W.2
1937 52 Grosvenor Gardens S.W.1
1939 5 Pierrepont Street, Bath, Somerset
1943 2 Caxton Street, Westminster S.W.1
1948 Woking, Surrey
1954 (ca) 28 Victoria Street S.W.1
1960 616-8 Grand Buildings, Trafalgar Square S.W.1
1970 10 Chesterfield Street W1X 8DE
1972 146 Cromwell Road SW7 4EF
1975 54 Princes Gate, Exhibition Road SW7 2PG

