

THE
WORSHIPFUL COMPANY
OF
SCIENTIFIC INSTRUMENT MAKERS



A HISTORY

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Anniversary Lunch and Presentation

The photograph shows the presentation which took place at the Livery Hall on Wednesday, 30 November, 1988 to celebrate the 25th anniversary of the Grant of Livery. The Master, Mr. Douglas Read, handed over to the Livery an artistic work fashioned in gold and silver, designed by himself and executed by Signor Sergio Bressan, an Italian craftsman from Dino Marina. The piece (illustrated on page 3) consists of a representation of Faraday's Ring and the crystal which is the central feature of the Company's Badge and the Mace.

The ceremony was attended by the Right Hon Lord Mayor, Sir Christopher Collet, GCB, MA, accompanied by Mr Alderman and Sheriff Francis McWilliams and the Sword Bearer Colonel J.C.M. Ansell, who took lunch with the Court and several Founder Members. The guests were the Masters of the Tallow Chandlers, Spectacle Makers and Clockmakers Companies. Liverymen present were the Master (D.M. Read), Deputy Master (H.J. Kroch CBE), Senior Warden (C.G.R. Hall), Junior Warden (J.E. Herrin CBE); Senior Past Master J.E.C. Bailey CBE, Past Masters, G.C. Ottway JP, Dr. E.D. Barlow, D. Randolph, S.S. Carlisle, C.R. Jennings, G.G. Zahler OBE, R.J.F. Howard; Assistants Dr D.T. Hughes, W.J. Goldfinch, D.R. Coleman; Senior Stewards A.J. Harrison MBE, W.H. Medcalf, F.S.B. Murrells, E.R. Tobitt; Stewards B.G. Atherton, R.E. Chapman, M.T. Dixon, W. Lyons; Liverymen G.R. Rimmer, H.A. Mott (former Clerk), Maj-Gen E.J. Younson OBE (Clerk Emeritus); and the Clerk (F.G. Everard).

ACKNOWLEDGEMENTS

It has been my good fortune to be invested as Master of this Livery when it celebrates the 25th Anniversary of the Grant of Charter and also to coincide with the City of London's 800 years of Mayoralty.

I therefore consider it to be incumbent to commission a book recording the histiography of this Livery from its inception in October 1955 to the present date.

In the preparation of the Book I would especially wish to thank Major General Eric Younson, OBE, Clerk Emeritus to the Company, for his gratuitous efforts and untiring work dedicated to the collation of material and to Maureen Brosnan, David Saulnier and Geoffrey Charron - students of Worcester Polytechnic Institute, Massachusetts, who under the guidance of General Younson carried out research on the Liveries in the UK and Europe.

Finally my thanks and gratitude to Liveryman John Shearsmith whose efforts and resources have made this publication possible.

D.M. READ
Master

30 November 1988

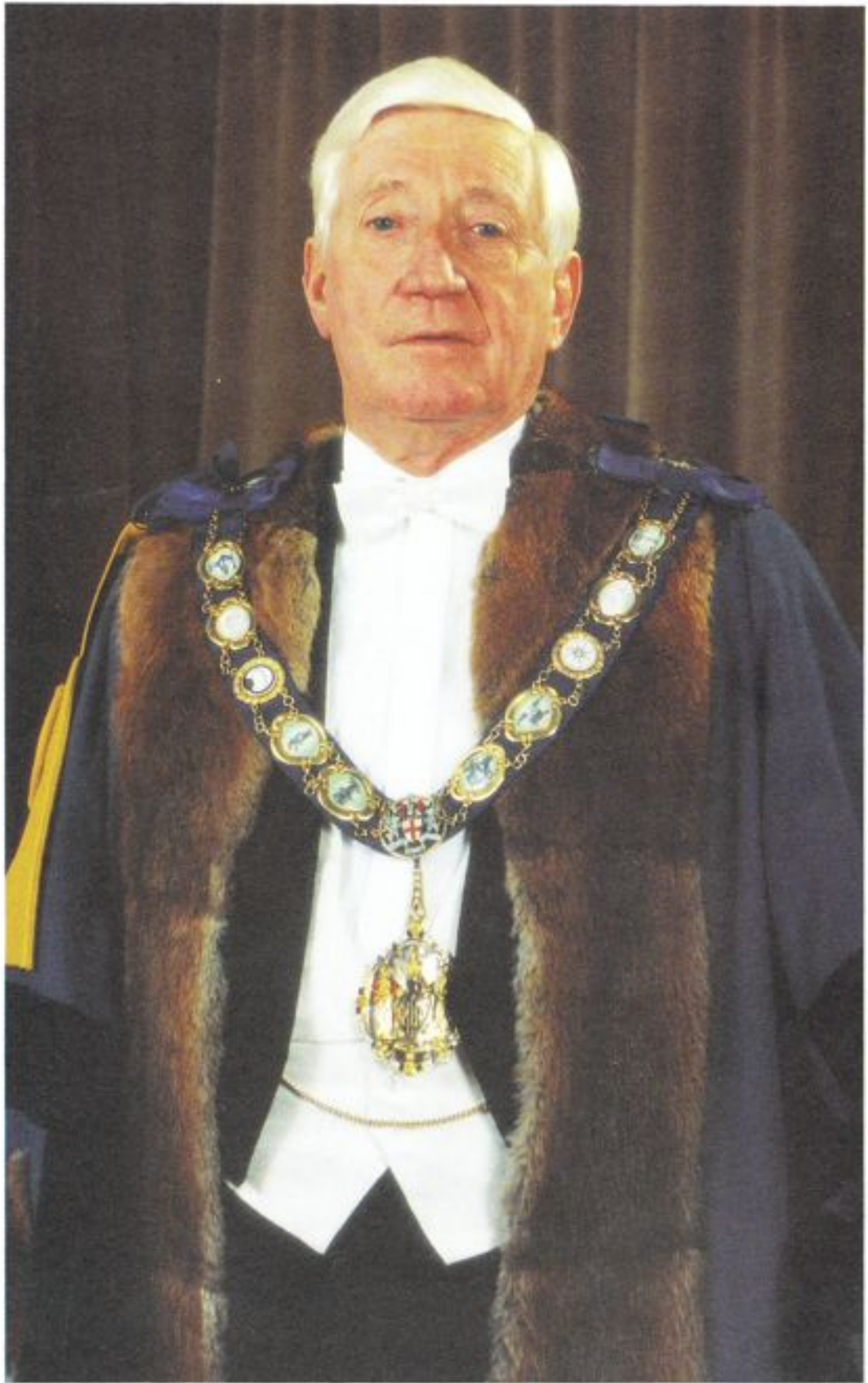
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The Master's Gift

The Master



Douglas Melville Read

DOUGLAS MELVILLE READ
C Eng, FRAeS, FRSA

MASTER

1988-89

Douglas Melville Read was born on 10 February 1917. He was educated at Dulwich College and first employed with Simmonds Aeroaccessories and Associated Companies. In 1935 he joined 601 Squadron of the Royal Auxiliary Air Force at Hendon and later served in the RAF as a Squadron Leader, joining the Royal Aeronautical Establishment at Farnborough in 1943 and the Ministry of Aircraft Production engaged in the instrumentation of the first Jet Propulsion Aircraft.

Mr. Read was a Founder-Director of Société de Fabrication d'Instruments de Mesure (GB) and of Electro-Mechanisms Ltd., which later became Schaevitz EM Limited. When Schaevitz became part of the Lucas Group, Mr. Read was retained as a Director and a Consultant.

Mr. Read served for many years on the Council of SIMA and as one of the Honorary Officers, also Chairman for 10 years of SIMA Small Firms Group. He was also responsible for the formation of the Transducer Group. He is Vice Chairman of Thames Training Limited, Wokingham; a member of Advanced Technology Training and Education Committee of the EEF; Industrial Member of the Standing Conference on Schools Science and Technology; Regional Contact for Manpower Services Commission Disablement Resettlement.

Mr. Read is a Life Member of the City Livery Club, Anglo Belgium Club and Institute of Directors; Liveryman of the Engineers Company.

Origin of Guilds

The first were probably Roman, being derived from the early 'collegia' or brotherhood of man. Some of the early guilds in Rome and other parts of Italy were the dyers, the goldsmiths and the innkeepers. There is also evidence that there were fullers guilds in early Rome and later in Flanders by the twelfth century. Guilds have always had strong religious ties: they associated with churches for several reasons. The most obvious was that most towns had a church which was centrally located and ideal for large gatherings; a second was that the people of that era were strongly religious and to meet in a church meant that they would have the blessings of God; finally, associations with the church lent a degree of security to their meetings. Rulers tended to be fearful of any large group which could threaten their rule, regardless of the group's intentions. Churches were generally approved of and thus provided a safe place to meet free of persecution. After the Reformation, the guilds' purpose for associating with the church became increasingly for charitable and social reasons than for religious or political reasons.

European Guilds

Although Guilds originated in Rome there became many throughout Europe. Other than England the highest concentration was in Austria and Germany, particularly active in the city of Dusseldorf where fifty two still exist today. Austria also has more than fifty guilds. There were guilds in France although these were abolished at the Revolution as being secret societies; and in Switzerland, Sweden, Denmark, Belgium and Scotland in all of which countries they still exist. In the Netherlands, Germany and the Baltic States the Hanseatic league flourished but without the aspects of apprenticeship and craft which distinguished the Guilds. In order to obtain freedom of the right to practise a trade in Scotland one had to purchase property and maintain ownership for a year and a day. The property could be real estate, precious metals or any other valuable asset. These unusual requirements made freedom difficult to obtain. Mediaeval rulers disliked freemen since this diminished their own income. This encouraged secrecy in the fulfilling of requirements to avoid interference.

Guilds in English Counties

Guilds played a more dominant role in the United Kingdom where London was by far their main location. However, all English counties had guilds at one time or another and many still have.

Kent had several interesting guilds, one of the earliest being a fraternity of parish clerks in Canterbury. An unusual guild was the Trinity House Guild formed in 1512. This was an association that was responsible for taking care of the light beacons along the coast of Kent. In addition they oversaw the operation of some of the seaports. In 1836 the King granted them a charter to carry on the operation of the lights and the ports as a business.

Lincolnshire was noted especially for its religious guilds. The first of these was the Guild of the Blessed Mary, est. 1393. In the city of Boston there were five other guilds which were of religious nature. Between 1550 and 1606 various craft guilds formed. There were also religious guilds formed in the city of Lincoln.

It is interesting to note the presence of three German guilds in Middlesex and that there was a religious guild in Staines.

Northumberland is located in the northernmost part of England, bordering Scotland. The ancient guilds of this county date to 1283-84. The records and charters of many guilds show signs of the border strife with Scotland. Most of the charters state penalties and fines for either apprenticing or doing business with a Scot. There are records of a very large and varied number of guilds in Northumberland, leading one to believe that there was a disproportionate number of guilds in Northumberland. However another possibility is that the records in Northumberland were simply better preserved. These guilds included bricklayers and plasterers, porters, ropemakers and cooks.

The Guilds of Oxfordshire were concentrated primarily in the City of Oxford. The early merchant guild in Oxford assumed control of the city. The merchant guilds' early control of the city subsequently led to their control of the other craft and trade guilds of the city. The founders of Oxford University formed their own guilds. Eventually they spread their influence to the city government and eclipsed the merchant guild in power.

Bristol is in the county of Somersetshire and was second only to London as a mercantile centre. It has a wide complement of guilds ranging from religious to merchant purposes. The Guild of Kalenderies, established in the 1200's was unique in that it comprised both men and women, who kept track of all events in the city. By the first half of the fifteenth century there were thirty trade guilds in Bristol.

In addition to these there were also guilds too numerous to recount in almost every major City in England, but one must mention the Cutlers in Sheffield, still a prestigious organisation, and the several known collectively as the Preston Guild.

Guilds of London

London, an old Roman city, had the highest concentration of guilds in the world. The first guild was the Weavers, established in 1130. In 1215 King Henry's son John drafted a charter granting the citizens of London the right to elect the Mayor of London. This is the first time that there was an elected Lord Mayor of London. Upon his election the Mayor was to present himself to the King or to the King's justices. This is how the traditional yearly mayoral procession began, which continues today. It should be noted that "citizens" of the City were actually only a small minority of the people. In 1319 Edward II granted the City a Charter which stated that only citizens could practice a trade or craft within the city.

A citizen or freeman was someone who met specific criteria. He must be born lawfully to a freeman father in the City, or apprenticed to a freeman for seven years, or in some cases freedom could be obtained by redemption. The Livery companies began to receive their charters after 1390. One of the privileges granted in the charter was the right to wear livery. During the 1300's most of the twelve great livery companies were founded. The Mercers, established in 1487, were merchants trading in small wares and later wool and cloth. The Grocers grew out of the Pepperers guild and dealt in goods and spices from the Mediterranean. The Drapers were established in 1364 and traded principally in cloth and drapery materials. The Fishmongers began in 1272 and had a monopoly on the fish market. The Goldsmiths received their first charter in 1327 which gave them control over the quality of precious metals. The Merchant Taylors, also in 1327, regulated all the trade concerned with linen and tailoring. The Skinners, again in 1327, traded fur. The Haberdashers, established in 1378, were originally part of the Mercers Guild. They dealt in coarse cloth, underwear and later outerwear. The Salters, first granted their license in 1394, dealt in salt, flax, hemp and logwood, and chemical preparations. The Ironmongers were granted their armorial bearings in 1455. The Vintners, chartered in 1364, traded wines and other related products. The last of the great twelve livery companies, the Clothworkers, were incorporated in 1508. They practised stretching cloth over a hooked frame and finished woven cloth. These twelve companies were far more powerful than the remaining ninety or so guilds recognized today. Livery companies were run by craftsmen and traders but were not trade unions - a later development to protect, originally, manual workers. During the time of colonization, the early 1600's, the Livery companies were called upon by the crown for large financial contributions, something in which they had very little choice because the King could always revoke their charter. In the 16th and 17th centuries, many schools were established within and without the City with the help of the guilds and The City of London. By the 17th century, the larger companies began to focus their attention on social matters more than philanthropic and trade matters but began to lose their influence due to the advent of the industrial revolution in the early 18th century. In 1694, the Bank of England was established to finance the growing industry. Guilds were not concerned with national needs, only individual ones. Their strict rules blocked progress because they did not allow competition, so hindering technological development. In September of 1666, the Great Fire of London destroyed four-fifths of London including the Guildhall and forty-four livery companies. Guild restrictions were lifted for seven years to allow reconstruction of the greatly damaged buildings and business ties on an individual level. London started to transform from a residential center to a business center because of the reduction in population caused by the Great Fire. Worse still, in 1682 James II rescinded the citizens' right, granted by King Henry's son John in 1215, to elect their own Lord Mayor and Sheriffs. In addition, the livery companies lost all the rights which had been granted them by their charters. During this period of great political upheaval the guilds reached their lowest level. It was not until King James had fled that things improved. By 1690, all the guilds' charters and rights had been restored by Act of Parliament.

The New Guilds

Guilds have survived to modern times due to tradition and the refusal of liverymen to let them die, but their role has been modified. They no longer draw large incomes from trade although properties accumulated by the older guilds have become very valuable and yield large incomes. This income is to ensure survival and to support charitable and philanthropic works which for many has become a prime role. There have been continuing questions about the role that the modern livery company should play, inevitably caught up with the role of the City of London itself. The founders of the original companies provided the means for care of the poor and aged members of the guild and their families. Thus the charitable aspect of the livery companies was created. After the middle of the 18th century, they began to devote much of the charitable earnings to relief of the London poor, to hospitals, and to religious and educational organizations and by the end of the 19th century were making charitable contributions to the general public.

Some older Liveries disappeared when their crafts diminished, but no new Liveries came into being from the beginning of the 18th century until the Master Mariners were chartered in 1929. During this time there were great social changes and considerable criticism was directed at the privilege of the City of London (extending to Southwark and large parts of Middlesex, control of the markets over a radius of seven miles and of large stretches of the River Thames) and at the wealth and secrecy associated with the Liveries. A Royal Commission recommended in 1854 that the Court of Aldermen and Common Hall should be abolished - but no Act of Parliament ever became statute. A later Royal Commission in 1884 vindicated the Livery companies, finding that their funds were well administered. In fact many had already adopted considerable social responsibilities and encouraged the new movement in the expansion of higher education. A group of companies subscribed to the formation of the City & Guilds of London Institute.

The number of Liverymen was about 8,000 in 1900, had doubled by the 1960s and is now over 20,000. The Master Mariners became the 78th company in 1929 and were followed by Solicitors, Farmers, Air Pilots & Navigators, Tobacco Pipe Makers (a revival of an older company without Livery), and Furniture Makers. We followed, as No. 84 in 1964, were for some time the youngest company, until a group of nine more were authorised within a period of six years. This came about through yet another enquiry into the City - the Wilson Committee - when feeling grew that some of the modern professions should have the opportunity to adhere to the older and cherished virtues of craft skills and personal excellence. There are now almost one hundred companies, with other aspirants waiting to demonstrate their suitability to be granted Livery Status.

Each company has its individual traditions and its own practices, but all share a common belief and heritage: Chaucer remarked on the occasions on which all the Liveries came together and so we still do - in Common Hall for the Elections of Lord Mayor and Sheriffs; at the United Guilds' Service in St Paul's Cathedral; and at the Lord Mayor's Show, when their elected choice presents himself to the Sovereign.

The Liveries of London 1988

1	Mercers	50	Musicians
2	Grocers	51	Turners
3	Drapers	52	Basketmakers
4	Fishmongers	53	Glaziers
5	Goldsmiths	54	Horners
6}	Merchant Taylors	55	Farriers
7}	Skinners	56	Paviors
8	Haberdashers	57	Loriners
9	Salters	58	Apothecaries
10	Ironmongers	59	Shipwrights
11	Vintners	60	Spectacle Makers
12	Clothworkers	61	Clock Makers
13	Dyers	62	Glovers
14	Brewers	63	Feltmakers
15	Leathersellers	64	Framework Knitters
16	Pewterers	65	Needlemakers
17	Barbers	66	Gardeners
18	Cutlers	67	Tin Plate Workers
19	Bakers	68	Wheelwrights
20	Wax Chandlers	69	Distillers
21	Tallow Chandlers	70	Pattenmakers
22	Armourers & Braziers	71	Glass Sellers
23	Girdlers	72	Coachmakers
24	Butchers	73	Gunmakers
25	Saddlers	74	Gold & Silver Wyre Drawers
26	Carpenters	75	Makers of Playing Cards
27	Cordwainers	76	Fanmakers
28	Painters	77	Carmen
29	Curriers	78	Master Mariners
30	Masons	79	Solicitors
31	Plumbers	80	Farmers
32	Innholders	81	Air Pilots & Navigators
33	Founders	82	Tobacco Pipe Makers
34	Poulters	83	Furniture Makers
35	Cooks	84	Scientific Instrument Makers
36	Coopers	85	Chartered Surveyors
37	Tylers & Bricklayers	86	Chartered Accountants
38	Bowyers	87	Chartered Secretaries
39	Fletchers	88	Builders' Merchants
40	Blacksmiths	89	Launderers
41	Joiners	90	Marketors
42	Weavers	91	Actuaries
43	Woolmen	92	Insurers
44	Scriveners	93	Arbitrators
45	Fruiterers	94	Engineers
46	Plaisterers	95	Fuellers
47	Stationers & Newspaper Makers	96	Lightmongers
48	Broderers	97	Environmental Cleaners
49	Upholders		

Past Masters

Founder Master

C.E.T. CRIDLAND

1955-57

Charles Elliot Tapscott Cridland, the Founder and First Master of the Company, was born in Gloucester in July 1900. He was educated at Trent College and Faraday Electrical Engineering College. Mr Cridland received his first experience in electrical work while serving in the RFC during the first World War. He also had a wide range of industrial interests. He was Chairman and Managing Director of Aldis Bros (which he purchased in 1946), Aero Heat Treatments (Vice Chairman), Hard Coating Ltd, Chrisholm Gray Co, Aero Tape Ltd, Broadstone Ball Valves Co Bendz Ltd, Quality Machined Parts, Kinsman Ltd, Hawkes & Snow (Curtain Craft), Portable Balers (Chairman), Automatic Changers, Eclair Door and Mercia Builders Merchants (a public company of which he was Vice Chairman). He was also Chairman of the Transport Users Consultative Committee, West Midland Region, from 1963 to 1969; a member of SIMA Council from 1945 to 1957 and President 1954-56. Mr Cridland was given a special Senior Master's Badge on 21 October 1964. Latterly he made his home in Spain.

Died 1983

Senior Past Master

J.E.C. BAILEY, CBE

1957-58

John Everett Creighton Bailey, a Founder Member of the Court, was born in November 1905. He was educated at Brentwood School and trained at Peat Marwick Mitchell & Co, 1925-1931. Later he became Chairman and Managing Director of the Baird & Tatlock Group, 1940-1969. He was President of SIMA from 1945 to 1950 and Chairman of the British Laboratory Ware Association from 1950 to 1952 and President 1974 to 1983. John Bailey was Chairman, 1952-1964, of the British Scientific Instrument Research Association; President, 1964-1971, in recognition of which he was appointed the first Companion of Sira. Other appointments include Special Member, Prices & Incomes Board 1955-1960 (an appointment made by the Queen); Admiralty Chemical Advisory Panel, 1940-1950; BOT Census of Production Advisory Committee, 1960-1968; member of the FBI Grand Council, 1945-58; and Master of the Needlemakers company. For many years John Bailey served as a Trustee and gave very valuable advice on the Company's investments.

See also the entry for 1973-1974

F.D. EDWARDS, CBE**1958-59**

Frederick David Edwards, a Founder Member of the Court, was born at Dulwich on 6 March 1889. He was educated in Dulwich and at the Northampton Polytechnic, later serving in the Physics Department there. He founded his own business in 1920 in laboratory and high vacuum equipment, which later developed into the Edwards High Vacuum International Group of which he was Director and President. Mr. Edwards established the Edwards Scholarship Trust to assist hardship cases in the undergraduate field leading to degrees or qualifications in Science and Technology. An Edwards Memorial Trust (of which Liveryman Murrells is a Trustee) has been established and arranges an annual lecture at the City University as a tribute to his work. Mr. Edwards gave enthusiastic support to all youth activities in the New Town of Crawley and was Founder and Chairman of the Crawley Sea Cadet Corps. He was also Founder Governor of the Crawley Technical College. His interest in public affairs extended over a wide field and included financial support in the erection of a Parish Hall for Horley Parochial Church Council.

*Died 1966***P.J. ELLIS, OBE****1959-60**

Philip John Ellis, a Founder Member of the Court, was born in Harlesden in November, 1900. He commenced his career in 1914 as an office boy with Joseph Baker & Sons Ltd, Bakery Engineers, (now Baker Perkins). In 1922 he joined S.G. Brown Ltd, (Scientific Instrument Makers) as Secretary to the Directors and was responsible also for Advertising. He was later appointed Chief Accountant to this Company. In 1932 R.B. Pullin was founded. They were Scientific Instrument Makers and Mr Ellis was appointed Secretary and Chief Accountant. He was appointed to their Board in 1936, becoming Managing Director in 1946, with the acquisition of subsidiary Companies, Group Managing Director and Chairman of Subsidiary Companies. He was a Liveryman of the Worshipful Company of Clockmakers, was Chairman of the Brentford and District Disablement Advisory Committee and on the Committee of the Upper Thames Motor-boat Club. He served as Trustee to the Company and gave valuable advice on investments of Company funds. He initiated the first handbook in 1960.

Died 1986

Past Masters

1955 - 1957



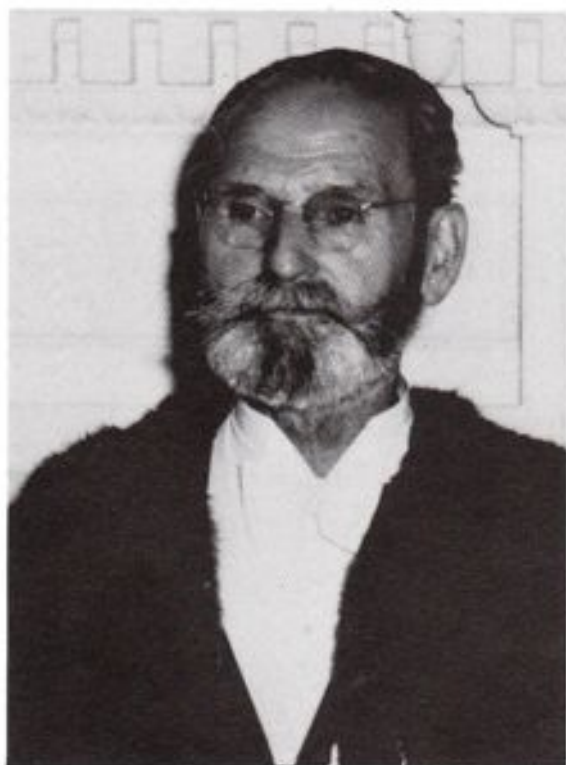
C.E.T. Cridland

1957 - 1958



J.E.C. Bailey
CBE

1958 - 1959



F.D. Edwards
CBE

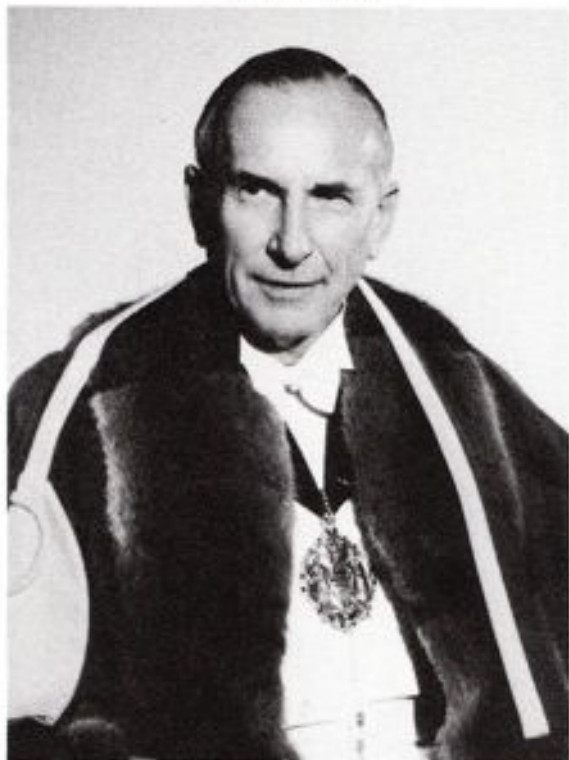
1959 - 1960



P.J. Ellis
OBE

Past Masters

1960 - 1961



G.A. Whipple
CBE

1961 - 1962



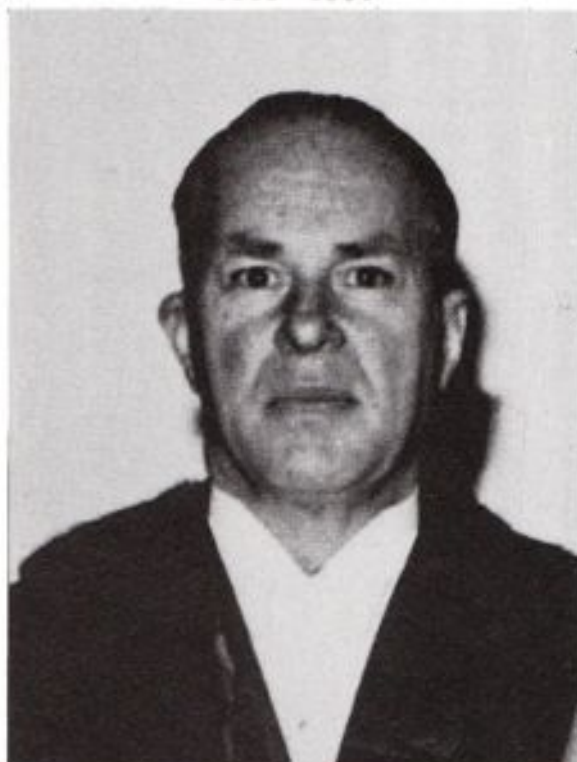
A.E. Evans
MBE, JP

1962 - 1963



P. Goudime
JP

1963 - 1964



F.W. Dawe

G.A. WHIPPLE, CBE**1960-61**

George Allan Whipple, a Founder Member of the Court, was born at Whittlesford, Cambs. on 9 December 1907. He was educated at Greshams School and Trinity College Cambridge. He gained an IEE Premium Prize (now in the Livery Library). Mr. Whipple worked as an instrument maker for E.R. Watts & Sons Ltd, and afterwards in research laboratories in Berlin. On his return to England he worked for the Cambridge Instrument Company. In 1939 Mr Whipple rejoined his old company E.R. Watts & Sons (later Hilger & Watts). He was Chairman and Managing Director of both companies. Mr. Whipple was a great believer in further education and craft training. As far back as 1942 workers at E.R. Watts were encouraged to read for degrees and attend classes in instrument making. Arising from this special interest, he was on the governing body of the Northampton Polytechnic for many years and until it became the City University. He served as President of SIMA, was Chairman of the Technical and Standards Committee, BSI and Chairman of the Instruments Committee.

*Died 1973***A.E.EVANS, MBE, JP****1961-62**

Arthur Edwin Evans, a Founder Member of the Court, was born in London in February 1904. His first job in 1919 was as office boy in a City export company's office. He worked his way up to director in 1934 and then started his own export company in 1938. This was followed in 1939 by Evans Electroselenium Ltd, a producer of photo-cells, which arose from his interest in early radio and tape recorders. With instruments naturally following, his company gave the world the first photo-electric colorimeter and flame photometer. Arthur Evans was a Council Member of SIMA & BSIRA, Chairman of Halstead Urban District Council, a JP, Governor of several schools, member of N.E. Essex planning committee and associations. He was a Founder Member of the SIMA Export Committee and initiated and organised their first post-war instrument exhibition in Moscow. He was awarded the MBE for his export contributions. During his year of office the first students were sponsored by the Charitable & Educational Trust.

Died 1984

P. GOUDIME, JP

1962-63

Paul Goudime, a Founder Member of the Court, was born in July 1910. He was educated at Eton and Cambridge where he obtained an Honours degree in Natural Sciences. While an undergraduate he designed a number of Air Navigation Calculators which were used in the war. He obtained a Private Pilot's licence in 1933 and later became an A.F.R.Ae.S. Mr Goudime joined Simmonds Aeroaccessories Ltd in 1937. He was Managing Director of Electronic Instruments which he founded in 1946. This company was acquired by Cambridge Instrument Co Ltd in 1965 and Mr. Goudime was appointed Technical Director to the Cambridge Group. After the merger with George Kent, he took charge of Minerva Detector Company, which had been founded by him in 1947. When E.M.I. bought Minerva in 1970, he became consultant to E.M.I. Electronics and was appointed Technical Director of E.M.I. Marine. On retiring in 1972 he set up Rigel Research Ltd and Rigel Instruments Ltd to work on medical and marine instrumentation. Mr. Goudime was also President of SIMA in 1957-58.

Honorary Assistant 1984

Died 1984

F.W. DAWE

1963-64

Frank Walter Dawe, a Founder Member of the Court, was born on 4 July 1905 in Plymouth. He was educated at Finsbury Technical College and became a Fellow of the IEE. He started work as Electrical Plant Engineer at Messrs. Edison & Swan, then in the Test Apparatus Division of the Gramophone Co. In 1932 he joined Messrs. E.K. Cole to set up the Test Gear Dept. which led to the formation of Ekco Instruments. This division joined with a Marconi Group to become Marconi-Ekco Instruments (later Marconi Instruments) of which Mr Dawe was Technical & Production Manager. In 1945, Mr. Dawe founded his own company, Dawe Instruments, from which he retired in 1966. He was Director of Teaching Walls Systems Ltd. and Chairman of Lightomation Ltd. Arising from an interest in model engineering, he formed a toy making company - Playcraft. Other responsibilities have included Managing Director of Martelli Designs Ltd, Director of R.J. Frost Engineering Ltd and member of the Council of SIMA. Mr Dawe initiated the Achievement Award and was responsible for the preparation of the yearly handbook from its inception in 1960 until 1977. In 1979 he retired from his business activities and moved to Bognor, where he has been able to continue his hobby interests in radio and model making.

Honorary Assistant 1984

G.C. OTTWAY, JP**1964-65**

Geoffrey Charles Ottway, a Founder Member of the Court, was born in Ealing in March 1913. He was educated at Berkhamstead School in Hertfordshire. In 1931, he joined the family firm W. Ottway & Co where he was appointed a Director in 1943 and became Chairman and Managing Director in 1954. The firm of W. Ottway & Co was founded in the City near the Royal Exchange in 1640, and although that building was destroyed in the Great Fire of 1666 and the records lost, the firm was until recently handed down from father to son in unbroken succession. Mr. Ottway was President of SIMA (1960/61). As Chairman of SIMA social committee, he organised the first SIMA Dinner Dance. He is a Justice of the Peace, a past chairman of Datchet Parish Council. Has been a member of the MCC for 30 years and was a keen cricketer in club cricket where he took 1100 wickets with an average of 14.0 and which included 101 wickets in one season (1953) at the age of 40.

L.B. LAMBERT**1965-66**

Leonard Budd Lambert, a Founder Member of the Court, was born at Wood Green, London on 2 January 1902, but spent the first part of his childhood in Canada. He first worked for Cambridge Instrument Co as Test Room Assistant. After gathering experience with various companies, he joined Negretti & Zambra - then a private partnership. Following the 1939-1945 war, he was mainly occupied in promoting the sale of British instruments overseas and travelled widely, fostering companies in Australia, Canada, Holland, India and South Africa as well as many agencies in other countries. He was later Managing Director of Instucon Ltd. He served on the council of SIMA and was Chairman of the Export Committee for some years. In 1945, he was intimately associated with the formation of the Society of Instrument Technology - now the Institute of Measurement & Control - and after nine years as Honorary Secretary was President 1962-1964 and later an Honorary Fellow.

*Honorary Assistant 1984**Died 1986*

Dr J.H. MITCHELL**1966-67**

John Henry Mitchell, a Founder Member of the Court, was born at Crewkerne on 18 June 1908. He was educated at Crewkerne Grammar School and Bristol University where he subsequently gained a Doctorate for researches into Gaseous Ionic Mobility. He continued research at the BTH Company on Discharge Lamps. He later joined the Scientific Civil Service working on radar (first detection of ships), VHF Communication, and then was in charge of Radio Aids to Navigation and Instrumentation. In 1947, he became Research Director of Ericsson Telephones Ltd., and subsequently Managing Director of Bendix Ericsson and Chairman of Associated Transistors. Later he became Engineering Director of Hoover Ltd., and finally moving to Bournemouth became Director of Astaron Bird Ltd. He finally became a Consultant Engineer and worked on Research into Engine Noise. For many years, he was on the Court and some of the Committees of Nottingham University and a Governor of Nottingham Technical College. He was a council member of the I.E.E. serving on the Electronics Division, Papers and other Committees, as Chairman of the Local Centre, and in 1953/54 gave the Children's Christmas Lectures.

*Honorary Assistant 1984***A.W. SMITH, OBE****1967-68**

Arthur William Smith, a Founder Member of the Company, was born in South London on 20 December 1890. He was educated at Askes School, Hatcham and the Royal College of Science. Arthur Smith joined Wray (Optical Works) Ltd. in 1924, became Director in 1928 and Managing Director in 1940. He was a Director of Dolland and Aitchison from 1954-62. After Wray was taken over by Rank Precision Industries in 1968, he became Director of that company and was a Consultant from 1970-71. He was awarded the OBE in 1971. Mr Smith held many wide ranging appointments, including President of SIMA - President BPMA - Vice Chairman BSIRA - Chairman City & Guilds Scientific Instrument Committee - Member Imperial College Optical Advisory Committee - Chairman Lewisham Old People Welfare Association (1948-73) - Chairman Lewisham Old People's Housing Association (1951-77) - Founder President of the Rotary Club of Catford. He initiated the idea of the Travelling Fellowship during correspondence with Dr. J.S. Fail of the City University. With a special interest in education, Mr Smith was a representative of the Company on the Governing Board of the City University.

*Honorary Assistant 1984**Died 1984*

Past Masters

1964 - 1965



G.C. Ottway
JP

1965 - 1966



L.B. Lambert

1966 - 1967



Dr J.H. Mitchell

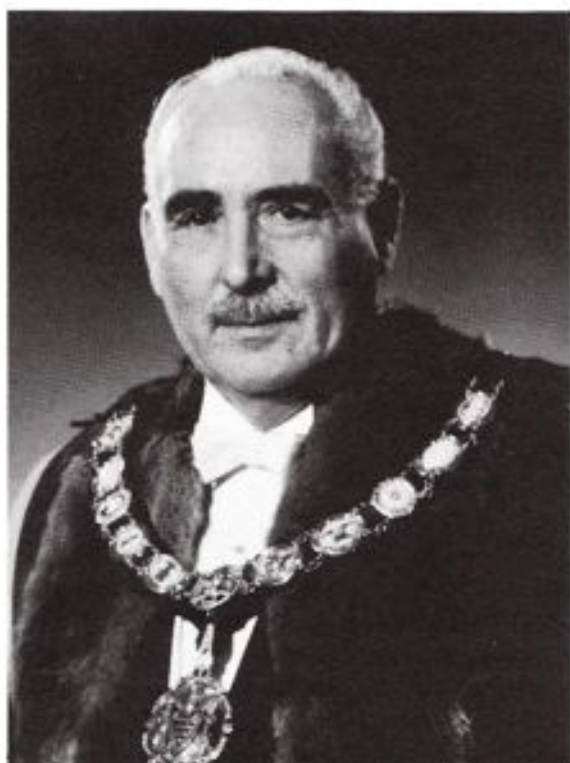
1967 - 1968



A.W. Smith
OBE

Past Masters

1968 - 1969



L.S. Yoxall
CBE

1969 - 1970



R.B. Brock
MBE

1970 - 1971



A.S.D. Barrett

1971 - 1972



C.C. Hanrott

L.S. YOXALL, CBE**1968-69**

Laurence Yoxall was born on 16 September 1901. Educated at Bedford School, he turned toward industry about the end of World War I working in the aircraft industry. After the war, he worked for George Kent on instruments and with an interest in sales joined Walker, Crossweller who held a U.K. agency for Foxboro products. In 1931, Mr Yoxall formed the British Gauge & Instrument Co and the Yoxall Instrument Co. A year later he took over the Foxboro agency and started the manufacture of Foxboro Instruments in the U.K., leading to the formation of Foxboro Yoxall in 1934 with Mr. Yoxall as Managing Director. He was later appointed to the Board of Directors of the Foxboro Company. Mr. Yoxall was a founder member of BIMCAM of which he was Chairman from 1951-70. He was Vice President at the time of his death. He was Honorary Fellow of the Institute of Measurement and Control and a member of the Board of Governors of the Battersea Polytechnic. In 1971, in recognition of his outstanding service to Britain's exports, Mr. Yoxall was appointed CBE.

*Died 1976***R.B. BROCK, MBE****1969-70**

Raymond Barrington Brock was born in London in August 1907. He was educated at Eastbourne College and University College, London, where he obtained an Honours degree in Chemistry. He started in business as a chemist at Imperial Dry Plate Co in 1927 and became Factory Manager. He left to join the Ilford Group where he worked on cinefilm, colour processing and X-Ray intensifiers. After a short period with Dufay Colour as Works Manager in 1938, he was appointed Managing Director of Townson and Mercer Ltd where he stayed until 1960. He left to set up his own colour printing firms and became Chairman of a group of companies specialising in this work. Mr. Barrington Brock is a past president of SIMA. During the early part of the war he was Head Warden for the City of London and was awarded the MBE for work on unexploded bombs. Mr. Barrington Brock has taken a great interest in the production of British wines and started the Viticultural Research Station at Oxted 1945-70. He was on the RHS Fruit Group Committee for many years and was awarded the Jones Bateman Cup for his researches.

Resigned from Court

A.S.D. BARRETT

1970-71

Arthur Stephen Dennis Barrett, a Founder Member of the Company, was born in London on 7 July 1907. He studied Engineering at Kings College with post graduate research in high speed oil engines, becoming for a period a research manager in this field. He later Joined ICI and subsequently obtained a Fellowship to study Chemical Engineering at Massachusetts Institute of Technology. This profound experience led him in later years to suggest the Travelling Fellowship, in the setting up of which with M.I.T. he was especially active. On the outbreak of war, he was recalled from America as a reserve RE Officer but later released for the Atomic Energy Project. He was invited at the end of the war to become Technical Director of Edwards High Vacuum and became actively interested in SIMA and Sira. On resigning from Edwards, he joined the boards of a number of companies including Chairmanships of Philips subsidiaries. He has been an enthusiastic supporter of Management Research Groups for many years and when Chairman of Council led the negotiations for the linking with the British Institute of Management. He later became a Consultant for Corporate Strategy and is currently Chairman of Chesham Amalgamations and Investments Ltd. He served on Educational and Social Committees and as Honorary Secretary of the Finance & General Purpose Committee.

C.C. HANROTT

1971-72

Charles Cory Hanrott, a Founder Member of the Company, was born in London on 10 June 1911. He was educated at Sherborne and Christ Church, Oxford (where he was one of the first to read Engineering). He served in the RAF and was closely concerned with the formation of Airborne Forces. As a Squadron Leader, he also served in France and Germany and was mentioned in despatches. From 1948-74 he was Chairman and Managing Director of A. West & Partners Ltd. He also operated a specialist screen printing company. From 1956 to 1958 Mr. Hanrott was President of the Drawing Office Material Manufacturers and Dealers Association and was Chairman of its Export Group for the first 14 years. In the years 1960-62, he was Chairman of the Instruments Electronics & Automation Exhibition Committee and was the first Chairman of the Institute of Reprographic Technology. His memberships have included the Grand Council of the FBI and several CBI regional committees. He later became Chairman of the British Overseas Trade Board Central London Export Club and received a Jubilee Medal in 1977 for his services to Export. He was the first chairman of the Livery Protocol Committee.

A.W. JONES

1972-73

Anthony William Jones, a Founder Member of the Company, who was born in 1914, was educated at University College School, Hampstead from 1925 to 1931. Subsequently he attended a day Engineering Course at Northampton Engineering College followed by a one year Student Course at Standard Telephones and Cables Ltd. Tony Jones started his career in the electronics industry and in 1933 joined Orr Radio (later Invicta Radio) as an inspector - progressing to technical manager. In 1938 he transferred to Pye Radio where he worked through the war period on the development of RDF and Radar equipment. After the war he was able to realise his ambition to start his own company, Fleming Radio (Developments) Ltd in Clerkenwell. By 1953 the company had grown to the stage where they were able to move to a new 20,000 sq. ft. factory in Stevenage. This has since expanded to 34,000 sq.ft. In view of product specialisation in instruments for telecommunication and the environment the company was re-named Fleming Instruments Ltd. Tony Jones was an active member of SIMA and after serving on the Council and also various committees, he was appointed President in 1961/62. During his year as Master, Allan Chambers was selected as the first recipient of the Travelling Fellowship involving a two years study at M.I.T. and the Sloan Business School.

Died 1975

Senior Past Master

J.E.C. BAILEY, CBE

1973-74

John Bailey was invited by the Court to serve a second term as Master of the Company because of conflicting commitments facing both the Senior and Junior Wardens. (He later had this unusual distinction also in his mother Company, the Needlemakers). After the death of our Founder Master he became the Senior Past Master and has continued to give the benefit of his experience and advice to the Company. He remains actively engaged in the affairs of Sira and of the British Laboratory Ware Association, travels extensively, is a member of the Atheneum and a Companion of the British Institute of Management.

See also the entry for 1957-58.

A.J. GARRETT, MBE

1974-75

Arthur John Garrett was born on 11 January 1916 at Aldershot. He was educated at University College, London, where he received an honours degree in Physics. During the Second World War, he carried out research on armaments, then spent three years as Staff Physicist of the Festival of Britain before becoming a Principal Scientific Officer at the National Physical Laboratory which he left in 1958 to devote his time to consultancy, broadcasting and writing. Among his many publications are: *Energy From Oil*, *The Penguin Science Surveys* and *The Penguin Technological Surveys*. He has appeared in over four hundred television programmes and was responsible for the sound radio coverage of the Apollo, Skylab and Soyuz/Apollo missions. He is a member of the Order of the British Empire, a Chartered Physicist, a Fellow of the Institute of Physics, the Royal Society of Arts, and the British Interplanetary Society. He is a Member of the British Academy of Film and Television Arts, the Association of British Science Writers and the London Association of Engineers (honorary Life Member). Other memberships include the City Livery Club, the National Liberal Club and MCC. He now has his home in the Dordogne.

W. LOGAN

1975-76

William Logan was born at Ayr on the 7 October 1912. He studied at the Royal Technical College and Glasgow University. He served in the Royal Electrical and Mechanical Engineers during the war in India and the UK, later taking a Short Service commission until 1952. His work was mainly in radar and telecommunications development and he was very much involved with the creation of the army calibration service. On entering industry he was Sales Director of Avo Ltd 1954-66 and Taylor Electrical Instruments Ltd 1964-66. From 1966-72, he was appointed Research and Marketing Director of the Baird and Tatlock Group of Companies and later became the Executive Director of Rikadenki Mitsui Electronics (U.K.) Ltd. He was also Chairman of Logan King Ltd and a Director of Environmental Resources Ltd, Precision Varionics Ltd and Radiofort Sentek Ltd. He became President of SIMA in 1964-65, President of the London Ayshire Society 1966-67 and was Chairman of the Instrument, Electronics and Automation Exhibition 1969-71. He was Chairman of Scientific Instrument Makers Hall Ltd and a member of the Board of Glaziers Hall Ltd.

Died 1979

Past Masters

1972 - 1973



A.W. Jones

1973 - 1974



J.E.C. Bailey
CBE

1974 - 1975



A.J. Garratt
MBE

1975 - 1976



W. Logan

Past Masters

1976 - 1977



Dr E.D. Barlow

1977 - 1978



D. Randolph

1978 - 1979



H.E. Drew
CB

1979 - 1980



J.R.M. McNally
MBE, JP

Dr E.D. BARLOW

1976-77

Erasmus Darwin Barlow was born in London on 15 April 1915. He is a great grandson of Charles Darwin. Dr. Barlow was educated at Marlborough, Trinity College, Cambridge, and qualified in medicine from University College Hospital Medical School, London. Dr. Barlow worked for the Medical Research Council during and after the 1939-45 war on effects of injury. He entered psychiatry in 1948 and spent 15 years at St. Thomas' Hospital, London, engaged in research, teaching and practice in psychological medicine. He joined the Board of Cambridge Instrument Company Limited in 1958, and became full time Chairman in 1966. Following the takeover of Cambridge by George Kent Ltd in 1968 he was appointed deputy Chairman of that Company until 1974. He then helped reconstitute the new The Cambridge Instrument Company and was deputy Chairman from 1975 until retirement in 1985. His memberships have included the Physiological Society, the Medical Research Society, the Royal Societies of Medicine and Psychiatrists, the Bath Institute of Medical Engineering (chairman), the Savile Club (chairman) and he has been Secretary of the Zoological Society of London. He joined the SIMA council in 1961 and was President in 1971-73.

Honorary Assistant 1984

D. RANDOLPH

1977-78

Denys Randolph was born in Ealing in February 1926. He was educated at St. Paul's School, Hammersmith and served in the Royal Engineers between 1944 and 1948, being demobilised as captain. From 1948 to 1952, he continued his studies at Queen's University, Belfast, graduating as a Mechanical Engineer, and then became a Post-Graduate apprentice with Short Brothers and Harland, where he became assistant to the General Manager. In 1955, he joined Wilkinson Sword as Production Engineer in the Gravinier Division (development, manufacture and sales of aircraft and industrial fire protection equipment) and progressively increased his responsibilities to become Chairman of Wilkinson Match in 1972. With the acquisition of British Match in 1973, he became Executive Deputy Chairman and in 1976 was appointed Chairman of Wilkinson Match. He ceased to be Chairman in 1979. Mr. Randolph is Chairman of Woodrush Investments Ltd and Director of several other companies. He is Vice-President and a member of Council of the Institute of Directors, of which he was Chairman 1976-79, a Companion of the British Institute of Management, Vice-President of the Institute of Industrial Managers, a Board member of Management Research Groups and a Governor of the Administrative Staff College, Henley. Denys Randolph has also been Master of the Cutlers Company.

H.E. DREW, CB**1978-79**

Harry Edward Drew was born at Old Brompton, Kent on 18 January 1909. He received his technical training as an apprentice in the Royal Air Force and on joining the Civil Service was one of the team at Bawdsey Manor working on early radar transmitters. He was next Works Manager in charge of the Radio Production Unit and rose to be Director of Electronic Production in the Ministry of Supply, then Director of Technical Costs and Director General of Inspection. He was the first Director General of Quality Assurance in the Ministry of Defence and initiated the new Defence Quality Standards. Upon retirement he became an industrial consultant and Chairman of Robert Stuart (London), a Director of E.P.S.(R & D)Ltd and of Quality Audit and Advisory Services. His awards include CB (1970), George Bray Memorial Lecture (Institution of Production Engineering 1971) and (Honoris Causa) Insignia Award for Electronics, City & Guilds 1974. Harry Drew was a member of Charter Council, Institute of Electronic and Radio Engineers (and later President) and was President of the Institute of Industrial Managers. He was an Honorary Fellow of the Institution of Electronic and Radio Engineers and of the Institution of Industrial Managers (previously Institution of Works Managers). Latterly he was Chairman of Vision Broadcasting International.

*Died 1988***J.R.M. McNALLY, MBE, JP****1979-80**

Jack Reginald Moore McNally was born on 15 December 1916. After early employment at Dental Manufacturing and the Telephone Manufacturing Co, Sunvic Controls and Electrothermal Engineers Ltd, with many patents to his credit, he joined in 1963 Beckman Instruments Ltd, of which he was chairman from 1976-80. He is, or has been, Chairman of Kineticon Ltd, Triad Ltd and Scientific Documentation Ltd. He served as President of both SIMA and ECIF. He is a Fellow of the Royal Society of Arts and a member of the Institute of Directors. Throughout his lifetime he obtained experience in marketing, technical consultancy for research, medical laboratory process and analytical instrumentation. In public life he has been a member of the Glenrothes Development Corporation, various committees of the CBI, the NEDO Council and Fife Regional Health Board.

Honorary Assistant 1984

R.H. DAVIES

1980-81

Robert Harding Davies was born at Cheadle Hulme, Cheshire, on 20 November 1923. He was educated at Emmanuel College, Cambridge and the University of London. He did research on stable isotope separation and production at Metropolitan-Vickers, Trafford Park and later at AERE, Harwell. In 1956, he joined the Atomic Power Division at Whetstone of English Electric Co where he later became Chief Development Engineer. He broadened his business experience through senior appointments with AEI-Hotpoint and the Bowater Corporation. In 1968, he became the Technical and later Managing Director of the Cambridge Instrument Company. He then joined EMI Medical as Director and General Manager of the X-ray Body Scanner Division and later became Director and Chief Scientist. He headed the Systems Research Group and was Assistant Director at Thorn EMI Central Research Laboratories at Hayes, Middlesex. He is a Fellow of the Institute of Physics and the Institute of Mathematics and its Applications, and a past Council member of the IMA and of SIMA.

S.S. CARLISLE

1981-82

Samuel Skipton Carlisle was born on the 25 April 1919 at Londonderry. He was educated at Royal Belfast Academical Institution and then at Queen's University, Belfast, where he graduated with first Class Honours in Electrical Engineering in 1940, then proceeding to Master of Science in 1942. After working in the Royal Naval Scientific Service on Radar and Fire Control development, he joined the British Iron and Steel Research Association in 1946 initially as Head of the Instrument Section in the London laboratories. In 1953 he was appointed Head of the BISRA laboratory in Swansea. In 1958, he returned to London to become Head of the Physics Department and later Assistant Director of Research with special responsibility for Automation. He left BISRA in 1963 to become Director of the British Scientific Research Association, now Sira Institute, until his retirement from there in 1979. Mr. Carlisle is a Past President of the Institute of Measurement and Control and of the International Measurement Confederation (IMEKO). He is past Chairman of the Control and Instrumentation Board of the IEE and has served on the Council of the IEE.

C.R. JENNINGS

1982-83

b. 1918

**F.P.R.I., F.Inst.M.
Com.I.E.R.E.**

Liveryman of Company of Scientific Instrument Makers (1968) Junior Warden (1980) Senior Warden (1982) Deputy Master (1983)

Companies: British Electronic Company. Royal Engineers. De La Rue Group. Printed Circuits De La Rue Insulation. Thomas De La Rue Plastics Division. Formica Limited (Director 1965 -)

Founder Chairman, Electrical and Electronic Insulation Ass'n. (1970), Chairman Radio & Electronic Component Manufacturers Federation (1974/77) Member Radio Industry Council (1975/77). Council BEAMA (1970/78). Council CBI (1977/79)

Experience in manufacture of printed circuits and electrical insulation.

Member: Royal Society of Arts (Fellow). Royal Society of St George.

Clubs: City Livery. MCC. Royal Automobile. Radio Industry.

Sports & Hobbies: Cricket. Tennis. Gardening. Country Walking.

M.H.W. GALL

1983-84

Maurice Henry Willis Gall was born on 15 June 1926, the son of Douglas Crisp Gall, a Founder Member of the Livery. He was educated at the King's School, Canterbury and at Cheltenham College. After service in the RNVR, he graduated at Pembroke College, Cambridge. He joined H. Tinsley & Co. in 1951 and in 1952 opened a branch factory in Canada. In 1955 he returned to the UK as General Manager of H. Tinsley & Co, then Technical Director (1961-77). Since 1978, he has been a consultant and Managing Director of Precision Varionics of Cheltenham. Mr. Gall is a Fellow of the Institution of Electrical Engineers, the Institute of Physics and the Institution of Electronic and Radio Engineers. He served on the Sino-British Trade Council, is a member of the Naval Club, the Institute of Directors and the RNSA. He has been Master of the Worshipful Company of Girdlers and is a former Commodore of the RNVR Sailing Club.

Past Masters

1980 - 1981



R.H. Davies

1981 - 1982



S.S. Carlisle

1982 - 1983



C.R. Jennings

1983 - 1984



M.H.W. Gall

Past Masters

1984 - 1985



J.B.S. Savage
TD

1985 - 1986



G.G. Zahler
OBE

1986 - 1987



R.J.F. Howard

1987 - 1988



H.J. Kroch
CBE

J.B.S. SAVAGE, TD**1984-85**

John Buckingham Stafford Savage was born in 1916. He worked for British Instrument Co Ltd before war service in the Royal Engineers. He was General Manager and Director of Savage & Parsons Ltd, Chairman of Nuclear Equipment Ltd, Administrative President of Spur International SA, Belgium, Chairman of Savage Industries and Lecturer in Management Studies 1948-50 for Watford Technical College. Major Savage also served as a council member of BEAMA, was a member of the Industrial Advisory Committee, FBI from 1962 to 1965, Chairman Design Committee CBI and a former member of various CBI committees, Chairman of National Council of Quality & Reliability (1970-72), Member of London and Home Counties Technical Committee for Higher Technical Education, Industrial Design Committee, Member of Engineering Advisory Committee, Design Council and Governor of Hatfield Technical College. He is an Honorary Life Member of the St Moritz Tobogganing Club and a former Rear Commodore and Chairman of the Royal Thames Yacht Club. John Savage now resides alternately in Spain near Gibraltar and in the Turks and Caicos Islands.

G.G. ZAHLER, OBE**1985-86**

George Gunter Zahler was born on 12 June 1922. He received his early education in Lausanne in the French part of Switzerland and in Manchester in the UK. He attended Victoria University in Manchester and graduated with a B Sc Hons degree in Electrical Engineering in 1941. He served in the Royal Air Force during the War and after demobilisation completed his college apprenticeship at Metropolitan-Vickers. After spending some years with British Electricity Authority and Nelson Research Laboratories in Stafford, he spent a year in the United States. On his return to Europe, he became President of Perkin-Elmer AG in Switzerland, a holding company in the Perkin-Elmer Group. He returned to the UK in 1960 and became a Founder and the Chief Executive of Instron Limited. With this company, he held directorships in Britain, United States and Japan, as well as various European subsidiary companies. He is a committee member of the Thames Valley Branch of the Institute of Directors, and an Honorary Fellow and a Governor of Portsmouth Polytechnic. He was a Council Member of SIMA and has also served on the Advisory Council for Calibration and Measurement under the auspices of the Department of Trade and Industry. At present he is active as a Director in Thermal Scientific plc and other organisations.

R.J.F. HOWARD

1986-87

Ronald John Frederick Howard was born on 1 September 1921. He was educated at Whitgift Middle School and trained at Harries Thermionics Ltd. Subsequently he worked at Mullard and English Electric before becoming Chief Engineer of British Electronic Products in 1957. His experience there in marketing led to his appointment as Marketing Director of Lancashire Dynamo Electronic Products Ltd (later Metal Industries Ltd) and in 1965 he became Chairman of Brookhirst Igranic Ltd. In 1967 Mr Howard was appointed Deputy General Manager, Control and Machines Group of AEI Ltd. Following the acquisition by AEI he became Chairman and Group MD of Southern Instruments Holdings Ltd, subsequently acquired by Plantation Holdings Ltd. (later Phicom plc) where he was Chief Executive Director of a number of public companies. He is at present on the Boards of Cambridge Electronic Industries plc, Chiltern Radio plc, InfraRed Associates Inc and is Vice Chairman of Kratos Group plc, Chairman of Baird UK Holdings and of Commtel Consumer Electronics plc.

Deputy Master

H.J. KROCH, CBE

1987-88

Henry Justus Kroch was born in Germany on 28 October 1920, but grew up in Switzerland where he was at school in St Gallen and read Mechanical Engineering at Winterthur. He came to Britain in 1939 to take up a post in Manchester, but decided instead to become a trainee engineer with a licensee of a Swiss light engineering company in South Wales. Following engineering appointments in South Wales and Manchester, he joined AB Electronic Products Group plc in 1951, then a small family company with 100 people, which had just moved from Hounslow to Cynon Valley. He held various production appointments, becoming a Director in 1957, MD 1964, Chairman 1978 to 1986. During this time the company became public, was quoted on the London Stock Exchange and grew to employ 5,000 people in several factories, mainly in South Wales but also in SE England, Germany and Austria, with marketing subsidiaries in France and Sweden. In 1987 he became President in recognition of his services and a non-executive Director. At that time he became a Freeman of the Borough of Cynon Valley and was invited to become the first Chairman of the newly formed Institute for Welsh Affairs. He is a Director of Cardiff Business Technology Centre Ltd and the Welsh National Opera; an Honorary Fellow of University College Cardiff and also of the Polytechnic of Wales. He is a Past President (and now Honorary President) of the European Electronic Component Industry Federation. He was a member of the Welsh Council 1968-79 and was appointed OBE in 1968 and CBE in 1983. He also holds the Golden Order of Merit, State of Salzburg, Austria.

Formation of The Company

In 1955 Charles Cridland was President of SIMA. He had wide business interests and was also engaged in farming. Legend has it that he attended a City dinner and was incensed to discover that the Farmers had just become a Livery while Scientific Instrument Makers had not this privilege. He resolved to rectify this.

There had been earlier attempts to form a Livery. At one time the Blacksmiths were the manufacturers of clocks and fine mechanics until the Clockmakers established themselves as a Company in 1631, taking jurisdiction over watchmakers and mathematical instrument makers. As late as the beginning of the nineteenth century a certain Robert Bate, a maker of mathematical instruments in Poultry, refused to apply for Freedom of the Clockmakers Company and applied instead to the Spectacle Makers. The Clockmakers petitioned the Court of Alderman, which after some delay decided that Bate must apply to become free of both companies "or cease marketing those kind of mathematical instruments which are in their construction peculiarly or particularly belonging to Clock Making" and this appears to have led to the absence of Instrument Makers from the City Guilds. It is worth remarking that when in due course we sought our Grant of Livery we had - and are grateful for - the full support of both Clock Makers (largely through the persuasive powers of John Bailey) and Spectacle Makers.

So on 28 October 1955 Mr Cridland, as President of SIMA, called a meeting of representatives of the industry at Browns Hotel, where it was agreed to form a Guild to be known as the Company of Scientific Instrument Makers to foster scientific instrument making and to promote the craft. It was the hope of the founders that in due course application would be made for the grant of Livery and they determined to conduct themselves at all times and in all ways along the lines of a Livery. In particular, membership would be restricted to persons directly engaged in the craft, or science, and to those who had attained a degree of eminence in these fields.

At this stage it was not known how long it might take to obtain such a grant. The last had been the Farmers, who started in 1946 as the Company of Agriculturalists and were chartered in 1953. But there were in waiting the Air Pilots and Navigators, founded in 1929 and with the Queen as their Patron since 1947; the Tobacco Pipe Makers dating to 1619, but lapsed and revived in 1954; and the Furniture Makers formed in 1952.

Several of the Founder Members were already Liverymen of other companies; J.E.C. Bailey (Needlemaker), A.S.D. Barrett (Musician & Gardener), P.J. Ellis (Clock Maker) and the Zeals (Glaziers) while another (Ivor Bowen) was a member of the Court of Common Council. All were to prove helpful to the embryo Company with guidance on the conduct of Liveries and information on City matters.

The Waiting Years

In 1956 the Air Pilots and Navigators, in 1961 the Tobacco Pipe Makers and in 1963 the Furniture Makers all attained their Livery. Our Company had since 1955 been conducting itself in a manner appropriate to a Livery, electing a Court - although some of the early members were soon to retire for business or domestic reasons - setting up a Badges, Plate and Jewel Fund in 1957 to provide regalia, establishing a Charity in 1959, publishing a first Handbook in 1960, participating whenever possible in City events and forming social and working relationships with existing Liveries. The necessary steps were taken to secure the Grant of Arms and a Badge. The Company became connected with the church of St Margaret, Lothbury, holding an annual Church Service there; from 1962 this would be an evening service followed by an informal supper. During this time membership grew from some forty Founder Members to 91 by 1960 and 104 by 1962 (although it would decline, through deaths, to 93 in 1964), always mindful of the need to be selective in recruitment.

As early as 1957 consideration was given to how and when application should be made for the grant of Livery. The City Chamberlain had advised tactful delay and in 1958 the Master (J.E.C. Bailey) wrote

"...The Industry has its Trade Association and also its Research Association but many of us in the Industry have felt for some time that what this great Industry lacked was a Company of its own similar to the Livery Companies associated with other craftswith so much of the Industry in London, it was natural that we should turn to London in forming our Company turning to the members of the Court, you will find that they include representatives of the largest firms in the Industry and indeed I think it can truly be said that the Industry as a whole is very well represented in the present membership of the Company naturally our objective is to do all we can for the Industry and those engaged in it and indeed for those who wish to enter into it, but nevertheless it is our sincere hope that by so doing we may be permitted to add our little part to the glories and tradition of our great City of London."

Finally on 19 November 1963 a petition was read before the Court of Aldermen, who on 20 December 1963 approved a resolution that we be granted Livery. The actual Letters Patent were delivered on 6 March 1964.

A major part in this was played by Henry Mott, who had become Clerk in 1958 on the resignation of Ronald Warlow and this was recognised by the subsequent presentation to him by the Court of a gold watch engraved with the Arms of the Livery.

The Grant of Livery

The Grant of Livery was made at the Mansion House on 6 March 1964. The Lord Mayor, Sir James Harman, was also Master of the Clock Makers Company and in handing over the Letters Patent he referred to "the short-sightedness of the Clock Makers in the seventeenth century in not admitting scientific instrument makers to its Livery".

Past Master Whipple had arranged a display of instruments made over the preceding three centuries, including some which had been made in the vicinity of St Pauls churchyard.

At the ceremonial lunch which followed our Founder Master (C.E.T. Cridland), proposing a Toast to the Lord Mayor and Court of Aldermen, referred additionally to the many persons who had been helpful to the Company - particularly the Clock Makers, the Spectacle Makers and the Tallow Chandlers.

The Lord Mayor proposed the health of the new Company and in reply our own Master (Frank Dawe) pointed out the vast range of scientific instruments which now existed and their all-pervasive influence upon the modern world.

The Ordinances which were agreed are quoted later in this History (p. 58ff) and were based upon the custom of other Companies. A condition imposed by the Court of Aldermen was that the number of Livery be restricted to 200, and that present members of the Court must become Free of the City, within three months. Members of the Company at the time of the grant were allowed to become Liverymen by Redemption.

In the event most, although not all, of the Company proceeded to become Free of the City and in due course full members of the Livery, that is, Liverymen.

A special jewel was designed for the Founder Master, Charles Cridland, to be worn by him during his lifetime and thereafter by the Senior Past Master. The Lord Mayor, Sir James Harman, became our first Honorary Liveryman.

And so, within the short space of eight years the Livery had become a reality. There were still some problems ahead; the number of the Court had been set at twenty-seven (Master, Wardens and not less than ten nor more than twenty-four Assistants) but there was no provision for retirements and since the Court were all still in their prime, there was to come a time when the number of Past Masters still on the Court might begin to approach twenty-four, with no room for new Assistants; similarly Liverymen were rather tightly bunched in age and this could lead at some future date to a skew population; the Company had no Hall and very little capital resource. But these and other fears were for the future. The Livery had arrived.

Founder Members

(i.e. those attending the October 1955 inaugural meeting at Brown's Hotel or, although unable to attend, subscribing then to its aims)

J.E.C. Bailey, CBE	Chairman & MD, Baird & Tatlock (PP, SIMA)
L. Bagrit	MD, Elliott Brothers (London) Ltd
A.S.D. Barrett	Technical Director, Edwards High Vacuum Ltd
A.F. Bowman	Director, Rotheroe & Mitchell Ltd
R. Broadbent	Director, Sperry Gyroscope Company
C.E.T. Cridland	Chairman & MD, Aldis Bros Ltd (President, SIMA)
J.D. Carter	Instrument Manager, Ferranti Ltd
W.M. Cann	Asst GM, Smiths Industrial Instruments Ltd
N.R. Davis	MD, Sunvic Controls Ltd
F.W. Dawe	MD, Dawe Instruments Ltd (Past Council, SIMA)
B.T. Dyett	Director & Secretary, R.B. Pullin Ltd
F.D. Edwards	Governing Director, Edwards High Vacuum Ltd
P.J. Ellis, OBE	MD, R.B. Pullin Ltd
A.E. Evans	MD, Evans Electroselenium Ltd (Council, SIMA)
E.J. Evans	Director, Evans Electroselenium Ltd
R.H. Falconer	Gen Manager, Hendrey Relays Ltd
H.E. Fleetham	Manager (Elec Inst Div), Elliott Bros
P. Goudime	MD, Electronic Instruments Ltd (Hon Sec, SIMA)
R.A. Harker	Director, Tensometer Ltd
A.W. Jones	MD, Fleming Radio (Developments) Ltd
L.B. Lambert	Director, Negretti & Zambra Ltd
H.A. Luss	Director, Isotope Development Ltd
Dr J.H. Mitchell	Engineering Director, Hoover Ltd
W.C. Morgan	Gen Manager, EMI Electronics Ltd
C. Mourant	Partner, Percy Mason & Co
F.S.B. Murrells	Director & Secretary, Edwards High Vacuum Ltd
G.C. Ottway	Chairman & MD, W. Ottway & Co Ltd
J.H. Rawlings	Director, Automatic Coil Winder Co Ltd
J.W. Ridgeway, OBE	Commercial Director, Siemens Ediswan Ltd
C.R. Rimmer	Director, Rimmer Brothers
G.R. Rimmer	Director, Rimmer Brothers
C.N.L. Rocky	MD, General Radiological Ltd
J.R. Rotheroe	MD, Rotheroe & Mitchell Ltd
A.W.A. Rundle	MD, A. Gallenkamp & Co Ltd
D. Talbot	Gen Manager, Nash & Thompson Ltd (Council, SIMA)
M.H. Taylor	MD, Taylor Taylor & Hobson Ltd (PP, SIMA)
G.F. Thick	Director & Gen Manager, Isotope Developments Ltd
G.A.R. Tomes	MD, 20th Century Electronics Ltd
E.D.T. Vane	Director, Rotheroe & Mitchell Ltd
Dr G.A. Veszi	MD, Megatron Ltd
W.N. Wheat, MBE	Sales Manager, Chance Brothers Ltd (Council, SIMA)
G.A. Whipple	Chairman & MD, Hilger & Watts Ltd (VP, SIMA)
L.A. Woodhead	Director, Cossor Instruments Ltd (Council, SIMA)
H.H. Zeal	MD, G.H. Zeal Ltd (Past Council, SIMA)
R.O. Zeal	MD, G.H. Zeal Ltd

Members of the first Court (elected by ballot on 16 November 1955) are shown above in bold type. The first Court was held on 4 January 1956, when an additional election was made of **L.B. Lambert**.

SIMA

The Scientific Instrument Manufacturers Association of Great Britain began life in 1916 as the British Optical Instrument Manufacturers' Association Ltd., with small membership, and aims "to organise, promote and protect the various trade interests of Members". In 1953 it changed its name to The Scientific Instrument Manufacturers Association of Great Britain, Limited (a company limited by guarantee), resulting in an increase of membership and interest. By 1945 it had a position of strong and vigorous leadership in the industry and was able to make effective proposals for post-war reorganisation. This was an era of considerable growth in the export field and SIMA's participation was highly successful. Many of the founders of our Livery represented their companies in SIMA and several were council members or office holders.

SIMA also interested itself in the education of young mechanics employed in the trade and established a SIMA scholarship at Paddington Technical College. Attempts were made by Past Master Barlow when a member of SIMA Council to arrange a joint Apprenticeship scheme with the Livery, but this was unfortunately abortive.

In the late 1970s the nature of the industry was undergoing rapid changes, the influence of EEC Directives was becoming felt and national and international legislation were more and more affecting manufacturing industry. SIMA considered various possible changes to improve its services to members, particularly in the legal and standardisation fields, and concluded that some cooperation with other medium-sized trade associations was inevitable. A new group - GAMBICA - was formed with BIMCAM and CAMA, making use of the general services available at the British Electrical and Allied Manufacturers Association.

The Livery Company had as early as 1969 accepted responsibility for the Bowen Charitable Trust originally administered by SIMA, and on the demise of SIMA accepted responsibility for the safe keeping of the SIMA President's Chain of Office.

SIRA

The British Scientific Instrument Research Association was founded by the optical industry, its members being very largely drawn from SIMA. Initially it fell under the aegis of the Department of Scientific and Industrial Research but now is a self-supporting research, development and consulting agency of very high standing. Many liverymen are, or have been, associated with its work. SIRA gained the Livery Achievement Award in 1984.

Freedom of the City

Today few of the material advantages of mediaeval times remain but the freedom is still a mandatory preliminary qualification for anyone who wishes to hold civic office, such as Common Councilman, Sheriff, Alderman or Lord Mayor, or even to vote in the Shrieval or Mayoral Elections.

Originally the Freedom was essential to all who wished to pursue their trade or exercise their craft within the bounds of the City of London. There were, and remain, three methods of seeking the Freedom; known as Patrimony, Apprenticeship and Redemption. From the fourteenth century until 1835 it was also necessary to first become a Freeman of a guild, this being known as the 'intervention of a Company'.

Patrimony

This is Freedom by birth or inheritance. Any child, male or female, born after their father's own admission to the Freedom, is entitled on reaching the age of twenty-one years to be admitted by Patrimony. If the father was admitted through a Livery company, they must take up the Freedom of that company in order to claim the Freedom of the City. Presently their mother, when a freeman, cannot transmit her freedom - either of a company or of the City - in this way.

Apprenticeship

An Apprentice's Indentures are reproduced on page 42. The rules governing Freedom by Servitude are complex (and archaic) but the basic requirements are that an unmarried male or female who is over fourteen but under twenty-one and who is bound by indentures to a freeman, male or female, of the City becomes entitled at the expiry of his or her indentures and on proof of faithful service may be admitted to the Freedom of the City.

Redemption

If a person has no entitlement to Patrimony or to Apprenticeship, the Freedom may be gained by Redemption or payment. London is now the only English city or borough where purchase is possible, but the Court of Aldermen retains an absolute right to refuse admission by Redemption, whereas Freedom by Patrimony or Servitude cannot be denied.

Honorary Freedom

An additional category, wholly within the grant of the City, is the bestowal of Honorary Freedom of the City upon some distinguished person, British or foreign, since in this category the oath of loyalty to the crown is not required.

The Custom of our Company

The Livery is an exclusive club; anyone not qualified by Patrimony or Servitude must find a proposer and a seconder, both of whom know him well. Normally he should attend some Livery functions and have a chance for members of the Court to meet him. Next his application, with letters of recommendation from his supporters is considered by the Finance and General Purpose Committee who make a recommendation to the Court. If the Court approve, the candidate makes a formal Declaration at the Clerk's office and is provided with the documentation required to become Free of the City, should he not already be so. When Free, the candidate with his supporters will be invited to attend the Court, make the formal Declaration again and be admitted to the Livery.

The Declaration

I,
solemnly declare that I will be true and faithful to our Sovereign Lady the Queen and to her heirs and successors Kings and Queens of this Realm, and I will be obedient to the Master and Wardens of the Worshipful Company of Scientific Instrument Makers in all things lawful and honest and that I will obey the Ordinances and be mindful at all times of the good name and fame of the Company.

Liveryman's Obligations

KNOW ALL MEN, by these Presents, that I,
am held and firmly bound unto

Wardens of the Worshipful Company of Scientific Instrument Makers, London, in the sum of two Hundred pounds, of lawful money of Great Britain, to be paid to them, their Executors, Administrators, or Successors, Wardens of the said Company for the time being: to which Payment, well and truly to be made, I bind myself, my Heirs, Executors, or Administrators, firmly by these Presents; sealed my Seal, dated the day of in this year of our Lord One Thousand Nine Hundred and

THE CONDITION of the above written obligation is such, that if the above bound do and shall from henceforth well and truly pay or cause to be paid unto the Wardens of the Worshipful Company of Scientific Instrument Makers, London, for the time being the sum of annually for Quarterage, unless expressly released by the said Wardens from such payment, and conform and be obedient to all the lawful Ordinances made, or to be made, for the good Rule and Government of the said Company, then the above Obligation to be void and of non Effect, or else to be and remain in full Force and Virtue.

Sealed and Delivered
in the Presence of

Apprentice's indentures



This Indenture Witnesseth, That

Son of^(a)

(a.)
Insert Father's
name, address,
occupation, and
if deceased, an
estate.

(b.)
Insert name
of parent or
guardian, and
if the latter,
quote address,
etc.

(c.)
Fill in A, B, C,
D, or E, as the
case may be.

(d.)
The words
"not contract
marriage" may
if desired,
be here inserted.

(e.)
Here insert
premium and
how paid or
other considera-
tion.

(f.)
In case of in-
door appren-
ticeship the
words "binding
to his said ap-
prentice trade,
drink, apparel,
lodging, and all
other necessaries"
to be in-
serted.

(g.)
Here wages
to be paid
during the
term.

(h.)
Insert Father
or guardian.

by and with the consent of^(b)

doth put himself Apprentice to

Citizen and

of London, to learn his

Art of

and with him, after the Manner of an

Apprentice, to serve from the Day of the Date hereof, until the full End and Term of^(c) Years from thence

next following to be fully complete and ended. During which Term, the said Apprentice his said Master faithfully shall serve, his secrets keep, his lawful commands every where gladly do. He shall do no Damage to his said Master, nor see it to be done of others, but that he to the utmost of his power shall let or forthwith give warning to his said Master of the same. He shall not waste the Goods of his said Master, nor lend them unlawfully to any. He shall not commit

Fornication^(d) within the said Term. He shall not play at Cards, Dice, Tables, or any

other unlawful Games, whereby his said Master may have any Loss. With his own Goods or others during the said Term, without licence of his said Master, he shall neither buy nor sell. He shall not haunt Taverns nor Playhouses, nor absent himself from his said Master's Service Day or Night unlawfully; but in all things as a faithful Apprentice he shall behave himself towards his said Master and all his, during the said Term. And the said Master, in consideration of

(e)

(being the Money given with the said Apprentice), his said Apprentice, in the same Art of

which he useth, by the best Means that he can, shall Teach and Instruct, or cause to

be taught and instructed^(f)

according to the custom of the City of London, during the said Term, paying unto his said Apprentice the following

Wages, namely:—^(g) per week for the first year, per week for the second year,

per week for the third year, per week for the fourth year, per week for the fifth year,

per week for the sixth year, per week for the seventh year, per week for the

eighth year. And the said^(h) in Consideration of such payment

to the Apprentice shall and will find and provide for the said Apprentice during the said Term, Meat, Drink, Apparel, Lodging, and all other Necessaries, and shall and will keep the said Master indemnified from all claims and demands, costs and expenses, in respect thereof. And to the true Performance of all and every the said Covenants and Agreements each of the said several Parties binds himself unto the other and others jointly and severally by these presents. In Witness whereof, the Parties above-named to these Indentures have put their Hands and Seals the

Day of in the Year of the Reign of our Sovereign Lady

Elizabeth II of the United Kingdom of Great Britain and Northern Ireland and of her other Realms and Territories, Queen,

Ac., and in the Year of our Lord, One thousand Nine Hundred and

Signed, Sealed and delivered in the presence of

Clerk of the Worshipful Company of

L.S. Apprentice to sign here.

L.S. Father or guardian to sign here.

L.S. Master to sign here.

[This Indenture must be enrolled at the Chamberlain's Court within Twelve Months from the date of execution; and on the death or change of Master the Apprentice must be Turned Over at the Company's Office and also at the Chamberlain's Court, or he will lose his Freedom.]

The Arms of the Company

Past Masters Whipple and Goudime were largely responsible for the design of the Coat of Arms in collaboration with James Frere, then Chester Herald. The Grant of Arms is shown on pages 46 and 47. Much attention was paid in the design to the proper portrayal of the history and the mystery of the craft of scientific instrument making. The charge on the shield was chosen to be visually distinctive and representative of the craft: it is an arrangement of pyramidal cubes in the form of an optical illusion, which serves the additional purpose of introducing an heraldic pun. The crest is the head of Minerva, whose many qualities included wisdom and knowledge (see also page 68). The supporters are Faraday and Newton; Faraday is robed in the gown of a Doctor of Civil Law of the University of Oxford and holds an exact replica of his induction coil; Newton's figure is taken from the statue in the ante-chapel of Trinity College, Cambridge, in the robes of a Master of Arts of Cambridge University and holding a telescope. The motto "Sine Nobis Scientia Languet" (knowledge cannot flourish without us) reflects the fundamental role which the craft has played in the advancement of science over the past three centuries and will, it is hoped, continue to play in the years ahead.

The framed original of the Grant of Arms is displayed in the Library at the Livery Hall.

The principal representation of the Arms is the illuminated stained glass panel in the Livery Hall, commissioned by Past Master Denys Randolph from Alfred Fisher, Liveryman of the Glaziers Company (and now an Assistant of that company) as his Master's Gift. A smaller example in the Foyer was the joint gift of Past Masters Davies and Evans. A shield bearing the Company's Arms is held by the City Engineer for exhibition in the streets through which processions pass on civic occasions. A smaller shield was presented to the City Livery Club where it is displayed together with similar shields of other Liveries. In addition the arms are represented in stained glass windows, one presented by the Livery to the Tallow Chandlers Company, the other a gift of Past Master Goudime to the church of St Margaret, Lothbury. And, of course, on the Achievement Award, in the various jewels and insignia and on the Mace.

A smaller reproduction in the Livery colours (blue and gold) of the Coat of Arms is shown on the dust cover of this book.

Letters Patent

TO ALL and SINGULAR that shall hear or see these presents WE, CLEMENT JAMES HARMAN Lord Mayor and the Aldermen of the City of London send GREETING

BE IT KNOWN that on the nineteenth day of November in the twelfth year of the Reign of our Sovereign Lady Elizabeth the Second a PETITION of the good men of the Company of SCIENTIFIC INSTRUMENT MAKERS of the City of London was read in the Court of Mayor and Alderman before the said CLEMENT JAMES HARMAN Lord Mayor in the INNER CHAMBER of the GUILDHALL PRAYING that the said Lord Mayor and Aldermen might constitute their Company a Livery Company of the City of London in such manner as to the Lord Mayor and Alderman might seem fitting and that the said Court did refer the said petition to the Worshipful the COMMITTEE of the WHOLE COURT of ALDERMAN for GENERAL PURPOSES to consider with the Council of certain of its Officers the objects constitution and ordinances of the said Company AND FORASMUCH as the said Craft of Scientific Instrument Making may have been exercised aforetime under the oversight of other ancient Companies of this City and accord with the object of the Petition of the Company of Scientific Instrument Makers had been signified by the Worshipful Companies of Spectaclemakers and Clockmakers AND FORASMUCH as the good men of the said company did approve certain constitutions and ordinances for the future regulation of their Company as a LIVERY COMPANY in conformity with the Law and Custom of the City of London which constitutions and ordinances were considered approved and accepted by the Worshipful COMMITTEE of the WHOLE COURT for GENERAL PURPOSES on the first day of November in the year One thousand Nine Hundred and Sixty Three the said Committee on the twentieth day of December following did Report to the Court of Mayor and Aldermen and did recommend that the Prayer of the Petition be complied with on condition that the Fine for admission to the Livery should be 50 guineas and THAT no person should be admitted to the livery unless he first produced the copy of his Freedom of the City of London WHICH report was well liked and approved by the said Court of Mayor and Aldermen THEREUPON the Lord Mayor and Aldermen on the said twentieth day of December in the said year did GRANT CONFIRM and RATIFY unto the good men of the Company of Scientific Instrument Makers that they be a LIVERY COMPANY of the CITY OF LONDON by the name of the WORSHIPFUL COMPANY OF SCIENTIFIC INSTRUMENT MAKERS of the CITY of LONDON and subject to the aforesaid constitutions and ordinances and did order that the CHAMBERLAIN of LONDON admit their freemen to the Freedom of the City and enrol their apprentices in accordance with the custom of London that the Constitutions and Ordinances of the said Company be enrolled among the records of the Court and that the grant of Livery be embodied in Letters Patent under the Mayoralty Seal.

Given under the Seal of our Office of Mayoralty of the City aforesaid the sixth day of the month of March in the thirteenth year of the reign of our Sovereign Lady Queen Elizabeth the Second

Nichol

A.M. Myers
Clerk of the Seal

To All and Singular Greeting that shall hear or see these presents We Clement James Harman Lord Mayor and the Aldermen of the City of London Send **Be it known**

that on the nineteenth day of November in the twelfth year of the Reign of our Sovereign Lady Queen Elizabeth the Second a Petition of the good men of the Company of Scientific Instrument Makers of the City of London was read in the Court of Mayor and Aldermen before the said Clement James Harman Lord Mayor in the Inner Chamber of the Guildhall Praying that the said Lord Mayor and Aldermen might constitute their Company a Livery Company of the City of London in such manner as to the Lord Mayor and Aldermen might seem fitting And that the said Court did refer the said Petition to the Worshipful the Committee of the Whole Court of Aldermen for General Purposes to consider and report thereon Which Committee did consider with the counsel of certain of its Officers the objects constitution and ordinances of the said Company And Forasmuch as the said Craft of Scientific Instrument Making may have been exercised aforesaid under the oversight of other ancient Companies of this City and accord with the object of the Petition of the Company of Scientific Instrument Makers had been signified by the Worshipful Companies of Spectaclemakers and Clockmakers And Forasmuch as the good men of the said Company did approve certain constitutions and ordinances for the future regulation of their Company as a Livery Company in conformity with the Law and Custom of the City of London which constitutions and ordinances were considered approved and accepted by the Worshipful Committee of the Whole Court for General Purposes on the first day of November in the year One Thousand Nine Hundred and Sixty Three the said Committee on the twentieth day of December following did Report to the Court of Mayor and Aldermen and did recommend that the Prayer of the Petition be complied with on condition That the number of the Livery should not exceed 200 That the Fine for admission to the Livery should be 50 guineas and That no person should be admitted to the Livery unless he first produced the copy of his Freedom of the City of London Which report was well liked and approved by the said Court of Mayor and Aldermen Thereupon the Lord Mayor and Aldermen on the said twentieth day of December in the said year did Grant Confirm and Ratify unto the good men of the Company of Scientific Instrument Makers that they be a Livery Company of the City of London by the name of the Worshipful Company of Scientific Instrument Makers of the City of London and subject to the aforesaid constitutions and ordinances and did order that the Chamberlain of London admit their freemen to the Freedom of the City and enrol their apprentices in accordance with the custom of London that the Constitutions and Ordinances of the said Company be enrolled among the records of the Court and that the grant of Livery be embodied in Letters Patent under the Mayoralty Seal.

Given under the Seal of our Office of Mayoralty of the City aforesaid the sixth day of the month of March in the thirteenth year of the reign of our Sovereign Lady Queen Elizabeth the Second.

Nichols

R. H. Myers
Clerk of the Seal.





To All and Singular

[illegible]

H. Kellat [redacted] Garter. L. H. C. [redacted] [redacted] Health to W. M. [redacted] Henry [redacted]



Grant of Arms

TO ALL AND SINGULAR to whom these Presents shall come, The Honorable Sir George Rothe Bellew, Knight Commander of the Royal Victorian Order, Garter Principal King of Arms, Sir John Dunamace Heaton-Armstrong, Knight, Member of the Royal Victorian Order, Clarenceux King of Arms and Sir Gerald Woods Wollaston, Knight Commander of the Most Honourable Order of the Bath, Knight Commander of the Royal Victorian Order, Norroy and Ulster King of Arms, Send Greetings WHEREAS CHARLES ELLIOTT TAPSCOTT CRIDLAND of Aylesbury House, Hockley Heath in the County of Warwick, Gentleman, Master of the COMPANY OF SCIENTIFIC INSTRUMENT MAKERS hath represented unto the Most Noble Bernard Marmaduke, Duke of Norfolk, Knight of the Garter, Knight Grand Cross of the Royal Victorian Order, Earl Marshal and Hereditary Marshal of England and One of Her Majesty's Most Honourable Privy Council that the Company is an Association which has been formed for the advancement of the Scientific Instruments Trade and that it is desirous of having Armorial Ensigns duly assigned with lawful authority and he hath requested, on their behalf, the favour of His Grace's Warrant for Our granting and assigning such Arms and Crest and in the same Patent such Supporters as may be proper to be borne and used for the Company of Scientific Instrument Makers on Seals or otherwise according to the Laws of Arms and forasmuch as the said Earl Marshal did by Warrant under his hand and Seal bearing date the twentieth day of February last authorise and direct Us to grant and assign such Armorial Ensigns and such Supporters accordingly. KNOW YE THEREFORE that we the said Garter, Clarenceux and Norroy and Ulster in pursuance of His Grace's Warrant and by virtue of the Letters Patent of Our several Offices to each of Us respectively granted do by these Presents grant and assign the Arms following for the COMPANY OF SCIENTIFIC INSTRUMENT MAKERS that is to say: - Tierce in Pairle Azure Or and Argent ten Cubes conjoined in perspective four three two and one the tops also Or the dexter and sinister sides Sable and Azure respectively And for the Crest on a Wreath of the Colours An Antique Bronze Bust of Minerva proper the eyes Argent as the same are in the margin hereof more plainly depicted. And by the Authority aforesaid I the said Garter do by these Presents further grant and assign the Supporters following for the Company of Scientific Instrument Makers that is to say; - On the dexter side a figure representing Michael Faraday habited in a Festal Gown of a Doctor of Civil Law of the University of Oxford and holding in the Exterior hand a representation of his Coil proper and on the sinister side a figure representing Sir Isaac Newton habited in a Gown of a Master of Arts of the University of Cambridge and holding in the exterior hand his Telescope also proper as the same are also in the margin hereof more plainly depicted the whole to be borne and used for or otherwise according to the Laws of Arms IN WITNESS whereof We the said Garter, Clarenceux and Norroy and Ulster Kings of Arms have to these Presents subscribed Our names and affixed the seals of Our several Offices this Tenth day of December in the Fifth Year of the Reign of Our Sovereign Lady Elizabeth the Second by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith and in the year of Our Lord One thousand nine hundred and fifty-six.

G.R. Bellew
Garter

J.D. Heaton-Armstrong
Clarenceux

Gerald W. Wollaston
Norroy & Ulster

The First Twenty-Five Years

We have seen how the Company came to be formed and how in its early years the Founders consistently and conscientiously set out to establish it with the older Liveries as their paradigm. Many of the current patterns and practices were introduced during those early years and in writing a history there must be a choice of a chronological record (with the necessary repetitions from year to year) or a description of trends and changes during the period. The latter course has been followed, but separate acknowledgements are made to our Past Masters in the earlier biographical section and in the descriptions in a later section of property, silver and regalia given by them. What follows is an attempt to illuminate some of the major developments from 1964 to 1988. It is the hope of the Master and of the editor that a recapitulation of some of the thoughts behind our earlier decisions may minimise the erection of new tombstones where the obituaries or post-mortems have not been studied or understood. The biographies of Past Masters were all corrected by those still living and the members of the Court have had the opportunity to comment upon the remainder of the text. For any error of fact or date which has escaped their scrutiny the editor apologises.

Our Livery Hall

The acquisition of our own Hall, shared with others, has been one of the major changes during our first twenty-five years. How this came about is related in other chapters. There continued to be problems, mainly financial, but some organisational, for several years. One of the most difficult concerned the name: the Glaziers Company, as the first in possession and at first the major shareholder, thought it right that the name should be 'Glaziers Hall'; Past Master Evans sought for 'Glaziers and Scientific Instrument Makers Hall'; the Clerk suggested a compromise 'The Livery Hall', but it was agreed to accept 'Glaziers Hall' with the proviso that we should refer to it in our own use, especially for Livery functions, as 'Scientific Instrument Makers Hall'. It took time for the Glaziers to raise capital, even though they sold some of their silver, and the extensive bank borrowing at a time of high interest rates meant that Glaziers Hall Ltd, the operating company responsible for commercial lettings of the Hall, ran for several years at a deficit. Nor at first was our own company, Scientific Instrument Makers Hall Limited, any more fortunate. We had no need to borrow from the banks, but our formation expenses were high since we took great care to ensure that the money of the Livery itself was protected against collapse of the holding company. Occupation of the Hall entitled us to several 'free' days each year for our functions, the use of an office and storage space. Common services operated by Glaziers Hall Limited could be obtained on payment. Our holding fluctuated: we began with a commitment to subscribe to three out of twelve shares available, thus being a junior partner. Eventually we had seven shares out of fourteen, matching the Glaziers. At a later date we and the Glaziers each sold a share to the Worshipful Company of Launderers and then we sold two more shares at a premium to the Glaziers, retaining four out of fourteen. Each share gives the right to nominate a Director of Glaziers Hall Limited. Both SIM Hall Ltd and Glaziers Hall Ltd are now operating profitably and contribute greatly to the Liveries. Senior Steward Fred Murrells has served throughout as a Financial Director of Glaziers Hall, Liveryman Harold Mayer was for some years its Company Secretary and Celia Moss contributed greatly to the recent successes in marketing the Hall.

Age and Structure

The Liveryman is the most important resource available to any Livery. In an established Livery there is a reasonably even spread of ages (except for the very young) as the structure inclines more and more to that of the general population. However, with a newer Livery like ours the original membership was recruited from a relatively narrow age group and even when additional members joined they tended to be of like ages to their sponsors. Nor, apart from sons of members, were we particularly successful at recruiting younger members. This has led to a situation in which the average age of Liverymen has shifted steadily upward and this must be seen as a problem to be dealt with in the future. One possibility considered by the Court has been that of offering the Freedom to our Scholarship winners, with a reduced financial obligation until they enter into 'earning' years, at which point they would have an option to become Liverymen or to remain Freeman without any rights of attendance at Livery functions or other activities. No decision has yet been taken on this suggestion, but it seems to offer one path to recruitment of younger members.

Growth and The Number of The Livery

Despite the comments on age, there has been growth in the Livery. An organization such as ours requires a certain minimum of members to be economically viable, yet not become so large that members do not have the opportunity to know one another. Many older companies do not have any maximum number set but we were limited to two hundred by the Court of Aldermen when granted the Livery. At that time we had potentially one hundred and twenty Liverymen, but several never took the step from Freeman to Liveryman. In the 1970s there was a slow growth, with Admissions slightly more numerous than losses; in the early 1980s there was a considerable increase, to the extent that in 1981 the Court resolved to petition the Court of Alderman to increase our permitted number to 250. The petition was granted. Soon the number had grown to about two hundred and twenty, but recently mortality has begun to match admission and for the time being the Court has deferred measures which might have led to a waiting list.

Freemen and Liverymen

Mention has been made earlier of 'Freemen' and 'Liverymen'. A Freeman is someone who has been accepted by the Company and made a Declaration of loyalty, but may not yet be Free of the City. When he (or she) is Free of the City, the Livery has power to decide when admission shall take place to become a full Liveryman. In some companies there is a deliberate policy of enforcing a time lapse - in effect a waiting list is created. So far we have not done this but have allowed entry to the Livery as soon as an accepted candidate is Free. Re-examination of our policy may prove necessary if and when there is a body of Freeman through scholarship or apprentice entry. Freeman do not count against the permitted 250.

Apprentices

The traditional path for recruitment was by Patrimony or Servitude. By the 1800s there were few (but still some) Liveries offering apprenticeships and by the time we were formed there were very few. The indentures required were still written in archaic terms and even in the non-Livery world apprenticeships were in decline. During the consolidation phase of the Livery the Master, Dr. Barlow, and Assistant Read, both members of the SIMA Council, endeavoured to interest SIMA in a joint apprenticeship scheme, but this came to nothing.

However, later discussion at the Education committee revived interest, and a study undertaken by Liveryman Carl den Brinker resulted in proposals accepted by the Court. The first to take an apprentice was Carl den Brinker and he was followed by Liveryman Mrs Watkins. By the time that these two and any following are free of their indentures, it is hoped that the Court will have come to a decision about whether they also, on becoming Freeman, may be offered an easier path to the Livery.

Equal Opportunities

The instrument makers who attended Charles Cridland's inaugural meeting were all male. Whether this was fortuitous and reflected the nature of the industry at the time or deliberate omission of women, it is the case that few Liveries at that time admitted women. In some old (Spectacle Makers) and some new (Air Pilots and Navigators) there were such, but it was not until 1977 that we discussed it in our Livery. The Master, Dr Barlow, proposed Celia Moss, a sometime physicist at the Cambridge Instrument Company and then employed with McKinsey and Co, Inc as a Liveryman. The decision of the Court was that exactly the same criteria of professional ability and standing should be applied equally to both sexes in deciding upon membership and Celia Moss was admitted. Despite this agreement it was another seven years before a second lady was admitted, Mrs M.L. Watkins, a Senior Lecturer at City University with a number of instrument developments to her credit.

Many Liveries are now opening their doors to women, some are not. A related question is the attendance of ladies at Livery dinners. Obviously our own lady Liverymen can attend. But what of lady guests of professional or commercial standing? Our protocol working party is currently considering this question.

Badge and Tie

The Liveryman's Badge is illustrated at page 56. It was the inspiration of Past Master Stephen Barrett and since 1977 has been a mandatory item for all new Liverymen. The optional tie was devised by Past Master Harry Drew and bears the shield upon the blue background of the Livery colours.

The Court

The Court is the governing body of the Livery and its composition and powers are laid out in the Ordinances. Although there are committees, the Court is responsible for policy decisions and is the only body which can appoint Master, Wardens, Assistants, Stewards, Clerk and Assistant Clerk, Beadle; admit Liverymen; or authorise any expenditure of Livery funds. In 1983 changes to the Ordinances were authorised by the Court of Aldermen allowing Past Masters to become inactive but remain 'Honorary Assistants'; this alleviated a problem where there were too few vacancies for new Assistants to ensure a considered succession plan.

Quarterage

The first Quarterage payable was Ten Guineas a year. By the early 1970s this was raised (for new members) to £20 with provision for compounding and again in 1977 to £40 with an index to RPI: an appeal was made to those who had already compounded to make a voluntary addition and some additional capital was raised in this way. Recently substantial increases have again been made.

Committees

In the first years there were various committees, following changing needs. Each new Master probably will have his own ideas on structure, but in a small organisation such as ours there is a need for continuity and a committee structure such that recommendations are adequately recorded and reported to the Court. Hence the decision of the Master (C.R. Jennings) in 1983, following the meeting referred to in the next paragraph, to review the committees, which resulted in six bodies reporting to the Court:

Trustees of the Charity (specified in the legal Trust Deed as Master, Deputy Master, Wardens, Clerk - all *ex officio* - and two further Trustees appointed or re-appointed annually at the Election Court)

Finance and General Purposes committee (being the Trustees of the Livery) responsible for managing the finances and general aspects of the Livery as the Master may require from time to time, including interviewing applicants for membership. The Master, Deputy Master and Wardens are members *ex-officio*; two senior members of the Court, having financial experience, are appointed or re-appointed annually.

Protocol working party: an *ad hoc* body chaired by the Master and with another elected Past Master, having a "Watchdog" role to draw up procedures and codify procedural decisions of the Court.

Educational committee to recommend educational disbursements of Charity funds and Achievement Award recipients; interview SIM Scholarship candidates and promote meetings between the Livery and Scientists, Technologists and Industrialists.

Social committee to arrange the Summer outing, fund-raising and social activities and provide assistance to the Master, if required, in the organisation of Livery events.

Scientific Instrument Makers Hall Ltd: Board members are elected at the AGM as required by the Companies Act. The Court, as majority shareholders, makes nominations.

These new committees have been successful in giving consideration to matters of detail, allowing the Court to concentrate on matters of policy, have widened the participation of Liverymen in the affairs of the Company and have enabled the Wardens, who chair the Educational and Social committees, to gain experience of the administration of the Livery.

Liverymen

Sam Carlisle, when Master, was disturbed by the poor opportunities for Liverymen to play a wider part in the affairs of the company. He convened a meeting, which was attended by HRH Prince Michael, to hear the views of the Livery and as a consequence two 'participatory' committees, Social and Educational, referred to above were formed, fulfilling a useful role by allowing new ideas to be heard and involving Liverymen who might in time become Assistants.

Not every Liveryman can become Master, but all who are appointed to the Court must undertake to occupy the chair if so elected. The way to the Court is through frequent attendance at Livery functions, diligent work in the service of the Livery and its committees and above all possessing the personal qualities which will lead your fellow Liverymen to recognise in you a potential Master.

Even when your feet are upon the path there is much to be learned: the Declaration made by the Wardens charges them to have a care for the finances of the company and their chairmanship of Livery committees helps them to gain a picture of the work done there. Some of our Masters are well versed in City history and custom, some are not; but for those who are not the City runs an excellent 'City Managers Course' which could be attended with advantage by any Assistant just before or just after becoming a Warden. He (or she) will learn how the City is governed and meet his peers in other Liveries.

There has also been some change in the background of Liverymen. Mention was earlier made of SIMA and Sira, with which our origins were close. At the time of our foundation they reflected the background of Founder Members. Recently the emphasis of the industry has been more towards the microprocessor-based instruments, in which the components industry has had a large influence; the revived optical industry, in which lasers, infra-red devices and fibre optics are prominent; and the software engineers associated with some of the newer devices.

Livery Events

The events of the Livery year are shown in outline at page 92. But this is only a skeleton. Each year the incoming Master is asked to devise a programme, with the help of the committees and agreement of the Court.

Stewards

The Master and Wardens have personal Stewards, appointed from the Livery, who progress with them during their years of office. They relieve the officers of some of the protocol duties associated with Livery events. There are also Senior Stewards, appointed for good service to the Livery.

Visits

Most of our visits have had a social flavour as for instance the Ladies' lunches which in recent years have replaced the Spring Livery Dinner, usually at other Livery Halls, so to remember our earlier peripatetic forays. From time to time it has been possible to arrange some visit with an educational aspect, such as to the Non-Destructive Testing Facility of British Airways at London Airport, the British Aerospace Laboratories at Stevenage, the RAF Institute of Aviation Medicine and the RAE Farnborough, the National Physical Laboratory and University College, Cardiff. Mixed social and educational visits have included Trinity College, Cambridge with a visit to the Whipple Museum; Pembroke College, Oxford (arranged by Liveryman Nevill Ripley, a Fellow of the College) with visits to the Museum of the History of Science and the Clarendon Laboratory. Social visits have varied widely: on three occasions we have taken a trip on the Thames (one culminating in a visit to the Tower to see the ceremony of the keys) while further ranging visits have included the Royal Yacht Squadron at Cowes, arranged by Past Master Goudime and a short stay at St. Malo, arranged by Liveryman Eric Tobitt, with a visit to the Mari-Motrice.

The Livery Office

The first two Clerks used their own professional offices, at no cost to the Company other than for such services as postages and telephones, but when Henry Mott gave up his practice he worked from Plaisterers' Hall.

Mrs Mott gave him considerable assistance and the initial records of the Company were kept there, although Court meetings were normally held at either Tallow Chandlers Hall or Saddlers Hall. When he expressed a wish to retire efforts were made through the Fellowship of Clerks to find a replacement, without success. At this point the Master, William Logan, turned to an old friend who had recently been appointed as Deputy Director of SIMA. General Younson agreed to become Clerk but was unable to provide fulltime service and required additional help. It was agreed to appoint an Assistant Clerk who would work from home and also maintain there some confidential papers. When the Livery secured shares in Glaziers Hall Limited it was agreed in the Articles of Association that office and storage facilities would be made available to the then two participating Liveries. For some time the Clerk lived a dual existence, commuting between SIMA at Leicester House and the new Livery Hall; when he severed his connection with the trade association the Livery office began to run on a fulltime basis at the Livery Hall. Over the next few years facilities for meetings of Court, Trustees and committees were available at the Livery Hall, with records available on the premises instead of having to be carried to another location. A start was made toward computerisation, first of membership records, then of accounts.

Assistance to Other Liveries

A new Livery has had, by definition, to overcome certain problems associated with its formation. So members of the Court, Liverymen and the Clerk have all been called upon to give help and advice to other new Liveries. Past Master Ottway in particular gave help to the Company of Marketors, of which he is now an Honorary Liveryman. As our Livery was one of the first to computerise its records and has also seen changes in the application and extent of Quarterage since its foundation, there have been many requests for information from other Liveries, old and new.

Publicity

Publicity in a Livery is necessary for several reasons: to encourage pride by Liveryman in belonging to a particular Livery; to demonstrate to other Liveries that we are following in the mainstream of tradition (and occasionally leading it); to increase awareness among the general public about the role of Liveries in general and ours in particular. It informs Liverymen of the events and activities undertaken by their Livery and it makes a wider circle aware of such things as the Minerva Lecture (now to be sponsored industrially)— and the Achievement Award. We have made various attempts to publicise our activities and have had considerable assistance from the editor of 'The City Recorder' and the social editors of 'The Times' and 'The Daily Telegraph' but this is and will continue to be an ongoing need.

The City fathers are well aware of this need and an important step forward in collating available information was taken recently. All Liveries were invited to provide information for a 'Livery Profile' kept on a computer database by the Clothworkers Company. Within the limitations of the Data Protection Act are held details of those Liveries who have responded, as we did. Certain public details are generally available, certain confidential details may only be released on the authority of the Livery concerned. This sharing of information should allow all Liveries to benefit from the experience of others.

Grant of Badge

TO ALL AND SINGULAR to whom these Presents shall come, the Honourable Sir George Rothe Bellew, Knight Commander of the Royal Victorian Order, Garter Principal King of Arms, Sir John Dunamace Heaton-Armstrong, Knight, Member of the Royal Victorian Order, Clarenceux King of Arms and Aubrey John Toppin Esquire, Member of the Royal Victorian Order, Norroy and Ulster King of Arms, Send Greetings! WHEREAS George Allan Whipple Gentleman, Master of THE COMPANY OF SCIENTIFIC INSTRUMENT MAKERS hath represented unto The Most Noble Bernard Marmaduke, Duke of Norfolk, Knight of the Most Noble Order of the Garter, Knight Grand Cross of the Royal Victorian Order, Earl Marshal and Hereditary Marshal of England and One of Her Majesty's Most Honourable Privy Council that by Letters Patent bearing date the Tenth day of September 1956 The Company of Scientific Instrument Makers was duly granted and assigned Armorial Bearings and Supporters thereto. That the said company is now desirous of having a Device or a Badge duly assigned under lawful authority and he therefore, as Master and on behalf of the said Company, hath requested the favour of his Grace's Warrant for Our granting and assigning such Device or Badge as may be proper to be borne and used by the Company of Scientific Instrument Makers according to the Laws of Arms AND FORASMUCH as the said Earl Marshal did by Warrant under his hand and Seal bearing date the Thirtieth day of November last authorize and direct Us to grant and assign such Device or Badge accordingly. KNOW YE THEREFORE that We the said Garter, Clarenceux and Norroy and Ulster in pursuance of His Grace's Warrant and by virtue of the Letters Patent of Our several Offices to each of Us respectively granted do by these Presents grant and assign unto The Company of Scientific Instrument Makers the Device or Badge following that is to say:-

On a Roundle Azure a Quartz Crystal proper within a representation of Faraday's Ring Argent the Coil Or as the same is in the margin hereof more plainly depicted to be borne and used forever hereafter by the Company of Scientific Instrument Makers according to the laws of Arms.

IN WITNESS whereof We the said Garter, Clarenceux and Norroy and Ulster Kings of Arms have to these Presents subscribed Our names and affixed the Seals of Our Several Offices this Fifteenth day of December in the Ninth year of the Reign of Our Sovereign Lady Elizabeth the Second by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Her other Realms and Territories Queen Head of the Commonwealth Defender of the Faith and in the year of Our Lord One thousand nine hundred and sixty.

G.R. Bellew
Garter

J.D. Heaton-Armstrong
Clarenceux

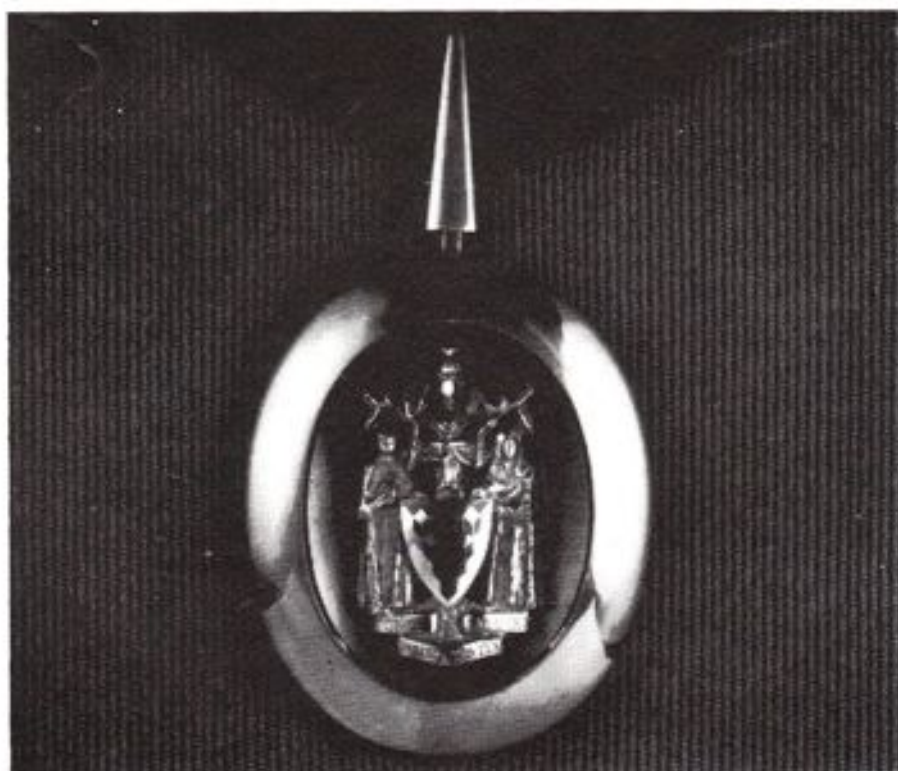
Aubrey J. Toppin
Norroy & Ulster

Grant of Badge



Master's Jewel

*Senior Past Master's Badge
(Originally the Founder Master's Badge)*



Badges



Past Masters' Badge



The Livery Badge



Liveryman's Badge



Clerk's Badge



Assistant Clerk's Badge

The Jewels and Badges

In addition to the authorised Badge, described on the preceding page, there are various jewels and badges worn by officers of the Livery and by Liverymen. A Badges, Jewels and Plate Fund was established by the Court in 1957, and from this were purchased the Master's Jewel, the Wardens' Badges and four Past Masters' Badges. Additional badges for subsequent Past Masters have since been provided with the aid of Court Fines from Assistants, Wardens and Masters.

The Master's Jewel was designed and made by Francis Cooper and first worn by F.D. Edwards in 1959. The Shield is in yellow gold, blue sapphire and white gold, with the charges, ten cubes drawn in isometric projection worked in gold, sapphires and onyx. The Crest is of 18 carat gold instead of bronze to satisfy Assay Office rules. The supporters are of chased gold, Faraday's robe in red enamel, Newton's in black enamel. Unlike the formal representation of the College of Arms, Newton is portrayed Wiggged. The Arms are mounted on a white gold background surrounded by a freestanding frame of diamonds, yellow sapphires and onyx, connected by eight oval pointed Montana sapphires. The Jewel hangs on a blue ribbon collarette connected by a hinged link which is also of gold mounted with small diamonds and sapphires.

The Senior Master's Badge was originally the Founder's Badge, which the Court presented to the founder Master, Charles Cridland, on the Grant of Livery. It is made in gold and enamel, the body in oval form with the Arms at the centre against a darkened background.

The Deputy Master's Badge is similar to the Master's Jewel, although not so richly decorated, and in addition to its primary role of distinguishing the Deputy Master is regarded as a replacement should the Master's Jewel ever suffer damage or loss.

The Senior Warden's Badge and the Junior Warden's Badge were designed by Francis Cooper and made by him at his Westerham Studio.

The Past Masters' Badge was also designed and made by Francis Cooper.

The Clerk's Badge was presented by Major Ronald Warlow, the first Clerk, and Mrs Warlow. It is similar in design to Past Masters' badges but bears the blazon Clerk and is on a blue ribbon.

The Assistant Clerk's Badge was created in 1988.

A Badge was presented to the Honorary Chaplain in 1988 by Past Master Jennings.

The Liverymens' Badge is largely due to the initiative of Past Master Stephen Barrett. Early badges were bronze, currently they are silver gilt; an oval bearing the head of Minerva and surrounded by the Company motto. The ribbon on which it is suspended is blue and gold, the Livery colours; Assistants wear their badge on a blue ribbon, Stewards on a red ribbon.

Ordinances

Italics indicate changes authorised in 1983

1. *Freedom of the Company*

- (a) The Court shall have power to elect and order the admission of Freedom of the Company.
- (b) The Freedom of the Company shall be obtainable by Patrimony, Servitude, or Redemption in accordance with the Custom of London and subject to the payment of such general fees as the Court may prescribe.
- (c) The names, addresses, and occupations of all candidates for the Freedom by Redemption and of all persons to be made free by Patrimony or Servitude shall be entered on the Summons convening the Court at which they are to be elected or ordered to be admitted.

2. *Admission of Freeman to Livery*

The Court shall and may subject to the Order of the Court of Mayor and Aldermen dated the 20th day of December 1964, and to such other Orders of the said Court of Mayor and Aldermen as may hereafter be made call, nominate, choose, elect, and admit into the Livery of the Company such and so many persons being Freemen of the City of London and of the Company as it shall think meet and able to be of the same Livery.

3. *Fines, Fees, and Quarterage*

Subject to the Order of the Court of Mayor and Aldermen dated the 20th day of December 1964, the Fines, Fees and Quarterage shall be such sums as the Court shall from time to time determine.

4. *Declarations*

The Master, Wardens, Assistants, Liverymen, and Freemen shall upon admission make and sign such Declarations as shall from time to time be prescribed.

5. *Governing Body*

- (a) The affairs of the Company shall be managed by a Court which shall consist of a Master, *a Deputy Master*, a Senior Warden, a Junior Warden, and not less than ten nor more than *twenty-three* Assistants, provided always that the majority of the members of the Court shall be persons engaged in the Scientific Instrument Making trade.
- (b) Upon the death, resignation or removal of any member of the Court or whensoever the Court shall decide to increase the number of Assistants within or up to the limit prescribed, the Court shall elect a fit and proper person or persons who shall be of the Livery of the Company and willing to serve the office of Assistant in the room and stead of the person or persons so dying, resigning or being removed, or to increase the number of Assistants as aforesaid.

- (c) Every member of the Court shall on election pay the Fine and satisfy the Court that he is prepared to serve the office of Warden and Master in due course.
- (d) The Court shall meet at least Quarterly and one of such meetings to be known as the Election Court, shall be held in the month of July every year.
- (e) The Master or in his absence the Senior Warden shall preside at Meetings of the Court. In the absence of both the Master and the Senior Warden, the Junior Warden shall preside.
- (f) Six members of the Court, of whom at least four shall be persons engaged in the Scientific Instrument Making Trade, shall constitute a Quorum but no Meeting shall be held unless the Master or a Warden be present.
- (g) The decision of the Chairman shall be conclusive on all points of order.
- (h) At elections, any two Members may demand a ballot and, in case of equality of voting, the Chairman shall exercise casting Vote.
- (i) *Upon any Past Master expressing the desire to retire from active participation in the governing of the Company, the Court may in its discretion appoint him to be an "Honorary Assistant" of the Court but without power to vote, nor counting against the complement of the Court.*

6. Election of Master and Wardens

The Master, the Senior Warden, and the Junior Warden shall be elected out of the Members of the Court at the Election Court held in July every year and shall be admitted to office at a Meeting of the Court to be held in the month of October every year.

7. Election of Clerk and Beadle

The Court shall, at the Election Court, elect one fit person to be its Clerk, and if it shall think meet one fit person or persons to be its Assistant Clerk or Clerks and one fit person or persons to be its Beadle or Beadles. The Clerk and Assistant Clerk or Clerks shall always be guaranteed with reputable insurers under a Fidelity Guarantee Bond for such sum as the Court may require, the Company paying the premiums.

8. Trustees

The Court shall from time to time appoint not less than four nor more than six Trustees, being Members of the Court, who shall have the custody of all Documents of Title and Securities of the Company. Upon any Trustee's ceasing to be a member of the Court, he shall forthwith vacate the office of Trustee.

9. Casual Vacancies

In the event of the death, retirement, or removal of a Master, Warden, Clerk or other Officer, the Court shall have power to make a temporary appointment for the remainder of the term of office of the person so dying, retiring, or being removed.

10. Activities

- (a) The Court may appoint such committees for general or special purposes as it shall deem expedient providing such committees shall not disburse any moneys belonging to the Company except by express sanction of the Court
- (b) The Court may, at its discretion, arrange an Annual Conference, an Annual Banquet, and such other meetings of the Liverymen or Freemen of the Company as it may deem expedient.

11. Duties of the Clerk

- (a) The Minutes of all Meetings and the Financial Accounts of the Company shall be kept by the Clerk.
- (b) The Clerk shall issue summonses to all Meetings subject to the Direction of the Master.

12. Audit of Accounts

The Court shall annually appoint one or more qualified Auditors, not being Members or Officers of the Company, to examine and report upon the Accounts.

13. Custody of Books etc.

The Books, Records, and other property excluding Documents of Title and Securities of the Company shall be in such custody as the Court shall from time to time determine.

14. Amendment of Ordinances

Notice of Motion to repeal or amend or add to these Ordinances shall be sent to the Clerk in writing twenty-one days before a meeting of the Court and must be included in the Summons convening that Court. Any motion to repeal, amend, or add to these Ordinances shall not be declared carried except by the votes of two-thirds of the members present and voting and, if declared carried, shall not come into force until the same shall have been approved by the Court of Mayor and Aldermen of the City of London as herein before provided.

The Charitable and Educational Trust

The Charity is governed by a Deed of Trust. -

THIS TRUST DEED is made the fifteenth day of September 1959 BETWEEN Frederick David Edwards of 'Windover', Balcombe Road, Horley in the County of Surrey (hereinafter called "The Master") of the one part and BARCLAYS BANK LIMITED whose registered office is at 54 Lombard Street in the City of London (hereinafter called "the Bank") of the other part.

WHEREAS the Master is the present Master of the Company of Scientific Instrument Makers which is at present an unincorporated body.

AND WHEREAS the members of the said Company are desirous of establishing a Charitable Trust and to this intent the Master has paid or is about to pay the sum of £1,000 to the Bank to the intent that the same shall be held upon the trusts hereinafter declared.

AND WHEREAS it is expected that further sums of money and other properties (both real and personal) may from time to time be paid or transferred by the said members their executors or administrators or some other person or persons to the Custodian Trustee for the time being of this Trust Deed by way of addition or accretion to the money hereby settled or to the income thereof or otherwise upon the trusts hereof.

NOW THIS TRUST DEED WITNESSETH and it is Hereby AGREED and DECLARED as follows:-

1. THIS Trust Deed is made in accordance with the aforesaid desire and determination of the Master and in consideration of the premises.

2. THE Charity hereby founded shall be called "the Charitable and Educational Trust of the Company of Scientific Instrument Makers" and is hereinafter called "the Charity".

3. IN this Deed the following expressions have the meaning following that is to say:-

"the Trust Property" means and includes

- (a) the said sum of £1,000
- (b) all moneys and properties (whether real or personal) at any time or times hereafter paid or transferred by way of capital as an addition or accretion to the said sum
- (c) the investments and property from time to time representing the said sum and the aforesaid moneys and properties or any of them or any part or parts thereof respectively

"the Company" means the guild known as the Company of Scientific Instrument Makers or such Company being incorporated by Charter or otherwise or having a Grant of Livery as may hereafter be formed to carry out the present objects of the said Company or such objects as shall for the time being be declared concerning the same

"the Custodian Trustee" means and includes

- (a) the Bank

- (b) if the Company is incorporated and is appointed to be the custodian trustee hereof then as from its appointment the Company and
- (c) any other body or body of persons which may hereafter be appointed to be appointed to be the custodian trustee hereof

"the Managing Trustees" means the managing trustees for the time being of this Trust Deed constituted in accordance with clause 6 hereof

4. (1) THE Custodian Trustee shall stand possessed of the Trust Property and the income thereon upon trust to pay or apply the income thereof and if and so far as the Managing Trustees think fit all or any part of the capital of the Trust Property to or for the benefit of any one or more of the following objects as the Managing Trustees shall in their discretion direct that is to say:
 - (a) The relief of any necessitous person who is or has been Liveryman or Freeman of the Company
 - (b) The relief of any necessitous person who is the widow orphan or dependant of any deceased Liveryman or Freeman of the Company
 - (c) The education of any necessitous child of a Liveryman or Freeman or deceased Liveryman or Freeman of the Company
 - (d) The education of persons connected with the Industry of making Scientific Instruments generally and in particular the establishment of Scholarships tenable at Universities or Technical Colleges the establishment of prizes to be awarded for scientific papers directed towards improvements in the design or construction of scientific instruments and the payment of fees to lecturers in subjects connected with the said Industry
 - (e) The making of grants donations or subscriptions to any charitable organisation having as its objects the promotion of education and training in the field of science and technology or to any fund established for educational or other charitable purposes in the City of London or elsewhere
 - (f) Any other charitable purpose

PROVIDED ALWAYS that notwithstanding the generality of the language in which any of the foregoing objects is expressed neither the Trust Property nor the income thereof shall in any circumstances be applicable for any object or purpose which is not legally charitable

- (2) The receipt of the person who professes to be the Treasurer or other proper officer for the time being of any institution or object to or for the benefit of which income or capital is paid or applied shall be sufficient discharge for such income or capital
5. (1) THE investments constituting the Trust Property shall stand in the name of the Custodian Trustee but the Trust Property and the income thereof shall be administered and managed by the Managing Trustees
 - (2) THE relations between the Custodian Trustee and the Managing Trustees shall be regulated by the provisions of sub-section (2) of Section 4 of the Public Trustees Act 1906 in like manner as if the Public Trustee had been appointed to be the custodian trustee hereof

6. THE Managing Trustees shall consist of not more than seven persons constituted in manner hereinafter provided that is to say:-
- (1) The following persons appointed in accordance with the Ordinances of the Company shall be ex officio Managing Trustees namely:-
 - (a) the Master for the time being of the Company
 - (b) the Immediate Past Master of the Company
 - (c) the Senior Warden for the time being of the Company
 - (d) the Junior Warden for the time being of the Company
 - (e) the Clerk for the time being of the Company
 - (2) Two further Managing Trustees shall be appointed by the duly constituted Court of the Company at its Election Court (as defined in the said Ordinances) to serve from the Court at which the new Master and Wardens are admitted into office in the following October until the corresponding Court held in October in the following year PROVIDED ALWAYS as follows:-
 - (a) the persons so appointed shall not be any of the ex officio Managing Trustees; and
 - (b) the persons so appointed shall be eligible for reappointment
7. THE Managing Trustees shall have the powers following namely:-
- (a) Power to collect donations (whether periodic or otherwise) as they may think fit and to issue appeals for donations
 - (b) Power to open and maintain in the names of the Managing Trustees or in such other names as they may think fit a banking account or banking accounts at such bank or banks as the Managing Trustees may from time to time decide and at any time to pay any moneys forming part of the Trust Property to the credit of such accounts or to place the same on deposit with any bank or bankers.
 - (c) Power to borrow money for the purposes of the Charity
 - (d) Power to apply to any Court or authority for any order or scheme
 - (e) Power subject to the provisions hereof to make or provide for the making of rules dealing with any matters whatsoever relating to the trusts hereof and in particular rules regulating:-
 - (i) the meeting of the Managing Trustees and the procedure to be followed at such meetings
 - (ii) the qualifications of persons benefiting from the Charity hereby founded and the mode terms and conditions on which benefits as to be provided
 - (f) Power to provide for the making of additions to and alterations and rescissions of any rule or rules from time to time in force
 - (g) Power to authorise the Custodian Trustee to retain any properties at any time or times hereafter transferred to the Custodian Trustee by way of capital or any of them or any part of parts thereof respectively in the actual state of investment thereof so long as the Managing Trustees may think fit
 - (h) Power at the discretion of the Managing Trustees to direct the sale calling in or conversion into money of the Trust Property of any part or parts thereof respectively

- (i) Power at such discretion as aforesaid to direct the investment of moneys produced by such sale calling in or conversion and any other capital moneys which may be received in respect of the Trust Property in the name of the Custodian Trustee in any manner hereinafter authorized and to vary or transpose any investments into or for any other or others of any nature hereinafter authorized and to vary the terms of or property comprised in any security.

PROVIDED ALWAYS that none of the powers of the Managing Trustees hereinbefore contained shall confer a power to do any act or thing which will cause the trust hereby created to cease to be a valid charitable trust

8. ANY moneys at any time subject to the trusts of this Deed and requiring investment may be invested in or upon any stocks funds or securities in or upon which trust funds may be authorised by law to be invested or in or upon the public stocks or funds or Government securities of the United Kingdom or any British Colony (which expression includes any State Dependency Dominion or Commonwealth or any Province or constituent part of such Colony) or any foreign country or in or upon the bonds debentures or securities or guaranteed or preference or ordinary stock of any Company incorporated in Great Britain by special Act of Parliament or Charter or by virtue of the provisions of the Companies Act or Acts for the time being in force not being a private company or in or upon freehold or leasehold securities in any part of the world (such leaseholds having at least sixty years to run at the time of investment)

9. THE Managing Trustees may at any time and from time to time appoint any other body or body of persons (including the Company after it has been incorporated) to be the Custodian Trustee hereof in place of the Bank or other Custodian Trustee for the time being and for the purpose of exercising this power may by deed remove from office the body or body of persons which is for the time being the Custodian Trustee

10. THE Banks general terms and conditions upon which it acts as trustee last published before the date hereof shall apply and be incorporated herein and the Bank or other the Custodian Trustee for the time being shall be entitled to remuneration by fees or otherwise as may from time to time be agreed between it and the Managing Trustees

IN WITNESS whereof the Master has hereunto set his hand and seal and the Bank has caused its Common Seal to be hereunto affixed the day and year above first written

SIGNED SEALED and DELIVERED by
the said FREDERICK DAVID EDWARDS

Fredk D. Edwards

Achievement Award

In 1965 the company instituted an Achievement Award to bring added recognition and prestige to the British scientific instrument industry. It may be given for contributions to research, design, development, or new applications or techniques or any meritorious efforts in the field of scientific instrumentation. On occasion it has been made to recognise the career of an individual. Originally no monetary award was given, but since 1983 an award of £500 has been made in addition to the trophy (designed and presented by Past Master Frank Dawe) bearing the names of all recipients and held for one year. The Award winner also receives a suitably inscribed miniature head of Minerva to retain permanently.

ULTRASONIC BLIND AID

1965

Dr L. Kay

Leslie Kay was born in the UK, worked as a mining engineer, served in the RAF and at the time of the award was Professor of Electrical Engineering at the University of Canterbury, New Zealand. The aid is a transistorised ultrasonic transmitter/receiver in 'torch' form, able to indicate distance by varied pitch of returned signal.

SCANNING ELECTRON MICROSCOPE

1966

Professor C.W. Oatley

Professor (now Sir) Charles Oatley lectured in Physics at KCL before becoming engaged in radar research at RSRE. Returning to Cambridge in 1945 as the Reader in Electrical Engineering he applied sophisticated Television techniques to conventional electron microscopy to reveal surface detail smaller than one millionth of an inch and with a depth of focus as much as 300 times greater than an optical microscope.

TALY--- RANGE

1967

R.E. Reason, OBE

Mr Reason studied at the Royal College of Science, then joined Taylor, Taylor and Hobson. His researches on surface topography while designing special instruments for lens manufacture and testing led to the TALYROND, TALYSURF and TALYLIN range of instruments.

HOLOGRAPHY

1968

Professor Emeritus D. Gabor, FRS

Dennis Gabor received his basic education in Budapest and later in Berlin. After work at Siemens on the discharge lamps he came to work at BTH, Rugby. He had many other developments to his credit, and is now regarded as the father of successful holography with coherent light.

IMAGE TUBES

Professor J.D. McGee, OBE, FRS

Professor McGee was born in Australia and came to England on an 1851 Exhibition scholarship to work under Rutherford at the Cavendish. In 1932 he went to EMI and in 1954 became Professor of Applied Physics at Imperial College. His award was for achievement in the image tube field, particularly the cascade type of image tube.

MASS SPECTROMETRY**1969***Dr J.D. Waldron*

Dr Waldron joined the AEI Research Laboratory in Manchester after graduating from the University of Leeds. He has developed two forms of double focussing mass spectrometer; one spark initiated by pulsed RF between two rods of the sample material; the second by electron bombardment of vaporised organic material. This work gained him the Queen's Award for technological innovation in 1968.

MEKOMETER**1970***Dr K.D. Froome and R.H. Bradsell*

Dr Froome and Mr Bradsell work at the National Physical Laboratory, where they have developed this electro-optical exceptionally high resolution long distance measuring instrument for civil and mechanical engineering or general survey work.

ELECTRON OPTIC INSTRUMENTATION**1971***Dr V.E. Coslett*

Dr Coslett after Bristol researched at Berlin, UCL and Birkbeck. Since 1946 he has been at the Cavendish. His X-ray projection microscope employs a magnetic lens to focus an electron beam to a micrometre spot for the first scanning electron probe analyser.

GAS CHROMATOGRAPHY**1972***Professor A.J.P. Martin, OBE, FRS*

Professor Martin, a Nobel Prize winner, after working in the Nutritional Laboratory at Cambridge moved to the National Institute for Medical Research, Mill Hill where he developed a gas chromatograph capable of working with nanogramme quantities

RADIATION DOSIMETRY**1973***Dr L.A.W.E. Kemp*

While teaching at Bradford Grammar School Dr Kemp studied radiation dosimetry at Bradford Infirmary and eventually became a hospital physicist at The London Hospital. His ionisation current comparator enables precise clinical X-ray measurements to be made very quickly: this led to accurate dosimetry and the development of new primary standards of absorbed X-ray dose.

LASER MEASUREMENTS**1974***Dr J.G. Edwards*

Dr Edwards working at the NPL has developed instruments for accurate measurement of power and energy output of pulsed lasers.

EMI SCANNER**1975***W. Ingham and G. Hounsfield*

Mr Hounsfield and Mr Ingham led a team at EMI to develop Hounsfield's work on a computerised axial system for examination of body organs, capable of whole body tomography: has been acclaimed world wide as a major advance in medical diagnosis.

X-RAY SPECTROGRAPH**1976***D. Turner and Dr R.J. Speer*

At Imperial College Mr Turner and Dr Speer developed a grazing incidence spectrograph using spherical concave diffraction gratings of large diameter. The optical components are pre-focussed locked modules hence the complete absence of focussing adjustment.

SPECTRUM ANALYSER**1977***J. Middleton*

Mr Middleton left school at fifteen and was first employed as a "printer's devil". He joined the Ferguson Radio Corporation after National Service (RAF), studied for ONC and HNC and became a Project Leader at EMI where he has developed a Spectrum Analyser using a digital storage technique to replace storage CRTs and enable detailed comparisons of stored images with currently refreshed images.

MALVERN CORRELATOR**1978***RSRE & Malvern Instruments*

The award was made jointly to Dr E.R. Pike, Dr E. Jakeman, Dr C.J. Oliver and Mr R. Jones of RSRE and Mr S. Trudgill of Malvern Instruments for an instrument using lasers and photomultipliers to count photons originating from a random source to examine the behaviour of particles in a gaseous or liquid flow in a non-intrusive manner.

HEAVY ION ACCELERATOR**1979***Dr J.H. Freeman*

Dr Freeman developed, at AERE, Hartwell, ion sources and accelerators for isotope separation and ion implantation. The commercial implementation has been taken up by Lintott Engineering Ltd, with world wide sales.

CONTRIBUTIONS TO SCIENCE & TECHNOLOGY**1980***L.H. Bedford, CBE, FEng*

Leslie Bedford studied at the City and Guilds Engineering College and later read mathematics at Cambridge. He has made numerous contributions to the development of high power valves, high definition television, radar systems, electronics and guided weapons, successively at Cossor, Marconi, English Electric and the British Aircraft Corporation.

No award was made in 1981

1981**FIBRE OPTICS****1982***Dr W.J. Stewart*

Accepted by Dr W.J. Stewart on behalf of the Allen Clark Research Centre of the Plessey Company for methods and equipment using optical profiling (known as the refracted near field method) to measure the performance of optical fibres, now widely used in telecommunications.

SUPERCONDUCTING MAGNET**1983***Oxford Instruments*

Barrie Marson (who is now a Liveryman) received the award on behalf of Oxford Instruments for development of a high homogeneity superconducting magnet which forms the basis of the NMR whole-body scanner marketed by Oxford Instruments Group and widely used in clinical medicine.

SPATE**1984***Sira*

SPATE is the acronym for Stress Pattern Analysis by Thermal Emission and relies on the thermoelastic effect when a solid material is subjected to stress, which is then measured by a scanning infra-red camera. Ometron, a spin-off from Sira, has carried out the commercial exploitation.

METAL VAPOUR LASER**1985***Oxford Lasers*

Two types of metal vapour lasers (Copper and Gold) which have a wide range of application, including photocoagulation of port-wine blemishes, tumour and retinal surgery, and high-resolution and brightness large TV display screens.

CONTRIBUTIONS TO SCIENCE & TECHNOLOGY**1986***Sir Ieuan Maddock, CB, OBE, FEng, FRS*

Ieuan Maddock read Physics at Swansea and entered government service, at Fort Halsted and Aldermaston, where he was Head of Field Experiments (and set off the first British Bomb), became Chief Scientist at the Department of Industry, Secretary to the British Association, Principal of St. Edmund Hall and Chairman of Sira: for his many contributions to science and technology. He was Liveryman of the company

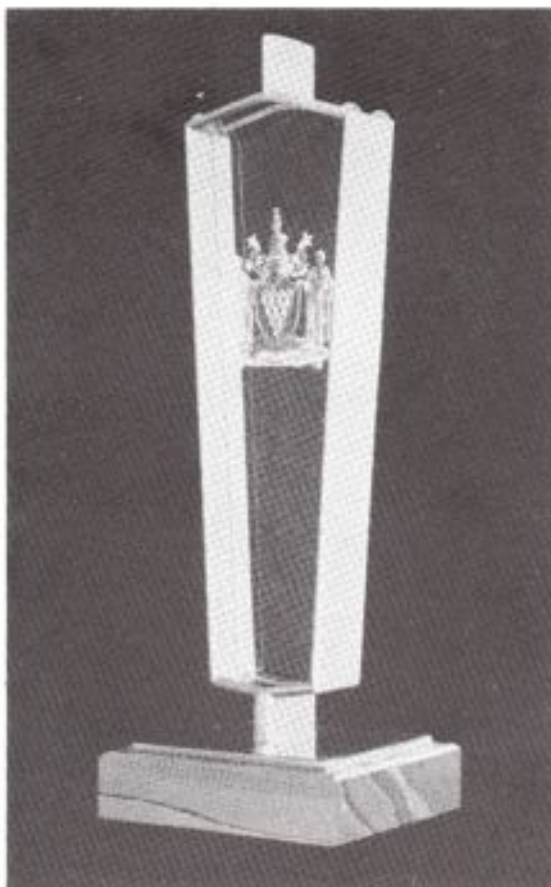
CYTOSCAN**1987***Image Recognition Systems Ltd.*

Automatic chromosome location at metaphase in karyotype format. A Fast Interval Processor combines a high resolution linear array of over 1,000 sensors with automatic transverse motion of a microscope stage and a patented autofocus device, allowing a continuous motion two-dimensional imaging system with which the fast analysis system keeps pace. Cytoscan was developed by a team from Image Recognition Systems, Shandon Group, Warrington following research at MRC, Edinburgh.

MINERVA

Minerva, the Greek Pallas Athene, was said to have been produced fully grown and armed direct from Jupiter's brain without need for a mother and immediately admitted into the assembly of the Gods. Her power was great; she could hurl the thunders of Jupiter, prolong the life of men and bestow the gift of prophecy. The reproduction used in our crest was copied from a bust in the British Museum found near Rome and dated first or second century AD. The miniature replica presented to Achievement Award winners is copied from the same bust.

Minerva



Achievement Award

The Mace



The Mace

The Mace was presented by Assistant Herbert Zeal and Mr Raymond Zeal at a meeting of the Court in January 1959.

The design is derived from the Coat of Arms. At the head of the Mace is a silver bust of Minerva, cast in its original size by the lost-wax process from a head in the British Museum. The original was found near Rome and is attributed to the first or second century A.D. According to the Museum, Minerva's hair is waved on each side and gathered back and tied at the neck with three tresses falling over the aegis. Immediately below is the torse in silver gilt on blue lapis lazuli from Afghanistan. The torse is in the form of traditional twisted scarves. Further below is the symbolic expression of the instrument makers' craft, exemplifying the pioneer work of Faraday, one of the supporters of our Coat of Arms, an induction ring - the forerunner of the electrical transformer. The replica of Faraday's ring is identical in dimensions and details of the Windings to the original at the Royal Institution. It holds a glass tablet, cut by a young apprentice to emulate a crystal of natural quartz, thus symbolising Newton, our other supporter, whose discoveries in the field of optics and the nature of light laid the foundation for so much of the optical industry.

Below these devices is a ring on which the names of Herbert and Raymond Zeal are engraved, while at the head of the staff is the optical cube design which forms the charge on the shield of our Coat of Arms. This is in blue lazuli, black onyx and silver gilt.

The staff itself is of oak and covered in shagreen. This is the skin of a small shark found in the China Seas. The skin has been smoothed, polished and waxed to show its fine structure. Shagreen was traditionally used for ornamenting optical instruments, particularly telescopes and microscopes, which had an outer shagreen tube, covering an inner vellum tubing. A further similarity is given by the ferrules, chased in silver, which have been faithfully reproduced from the design on a telescope dating back more than four hundred years.

The design and master craftsmanship were due to the late Mr Francis Cooper, under the very helpful direction of Past Master George Whipple.

At Court meetings the Mace lies on the table in front of the Master, and on ceremonial occasions it is carried by the Beadle in procession before the Master and Wardens.

The Regalia and Property

There are separate pages dealing descriptively with

The Badges	57	The Achievement Award	65
The Mace	71	The Master's Chain	80

The pages which follow deal with as many as possible of the items of regalia purchased by or presented to the Company with appropriate references to illustrations where appropriate. As already recorded on page 57 a Badges, Jewels and Plate Fund was established early in the life of the Company, through the generosity of early members of the Court, and there were also handsome gifts from many of them, in some cases to mark their year of office as Master, but additionally to help to provide the necessary regalia and accoutrements needed for the ceremonial of the Company, public and private. The account is not strictly chronological, since in some cases there have been separate gifts of like objects which it is more convenient to treat jointly.

Reference has already been made to the Mace, which was presented at a Court meeting in January 1959 by Assistant Herbert Zeal and his brother, Liveryman Raymond Zeal. This is carried by the Beadle before the Master on ceremonial occasions and lies on the table before him at meetings of the Court. The stave with a surmounting Minerva head borne by the Master's Steward was a gift of Past Master William Logan in 1975. The two matching staves borne by the Warden's Stewards were the gift of Past Master Jack McNally, while the bronze and silver heads of Faraday and Newton which surmount them were provided by Past Master George Zahler.

The Company owns five silver loving cups, four of which are illustrated on page 75. The first three are dated to the reign of King George III; one was presented by the original members of the Court in May 1956; a second was the joint gift of Assistant Frank Dawe and Freeman A. Durham Wells in July 1958; the third was the gift of Assistant and Mrs R. Barrington Brock in July 1959. A modern loving cup, specially designed and raised from a sheet of silver, was presented by Past Master Philip Ellis in 1960. The fifth cup, presented by Assistant and Mrs Percy Allaway has an interesting history, being the Godfrey Cup awarded to D.H. Musgrove-Davidson for first exceeding a speed of one hundred miles an hour on a motorcycle at Brooklands. The use of loving cups containing "Sack", passed round at the conclusion of Livery dinners after the sung grace, is familiar to all Liverymen and described in detail on dinner menus.

Another gift from Past Master Philip Ellis was a gold fountain pen in 1964 and this is customarily used by new Liverymen when signing their Declaration and Bond on Admission to the Livery.

There are four candelabra, two of which are illustrated on page 88. One pair, designed and made by Wakely and Wheeler Ltd to a traditional theme, were the gift of Past Master Ottway in 1965. The second pair, in a modern design, were the gift of Past Master Arthur Evans and designed and made by Mr R.F. Stone of the Goldsmiths' Company.

A silver cigar box, engraved with the Arms of the Company, was given by Past Master L.B. Lambert in 1966.

The lectern which is illustrated on page 76 was designed by Past Master Frank Dawe and presented by him. It is in silver and bears the enamelled crest of the Company.

Past Master Jack Mitchell had a silver maul and a block carved from wood designed and made by Mr F.C. Bush of Wakely and Wheeler in 1967. This maul is used by the Master at meetings of the Court and at Livery dinners.

The Master's chain, presented by Past Master Arthur Smith in 1967 is described separately on page 80 and illustrated on page 81.

There are two Rosewater Bowls; one given by Past Master Yoxall in 1969 is of traditional shape and bears the Arms and Motto of the Company; the second was specially commissioned by Past Master Barrington Brock and designed and executed by Francis Cooper in 1970. It is unusual in being a 'scientific' design to minimise spilling. The Company also owns a silver flower bowl presented by Assistant Percy Allaway on his retirement from the Court in 1985.

The silver claret cups which appear before members of the Court at Livery dinners are part of a set of twenty presented by Past Master Stephen Barrett in 1971. There is also a fine set of eight glass decanters, the gift of Past Master Hanrott in the following year, which are used for such functions as the Election Court Lunch. The two limited edition silver-gilt goblets used by the Wardens were the gift of Past Master George Zahler. The claret cups and the decanters bear the arms and each set is securely housed in transport boxes. To accompany these items at table Past Master Tony Jones gave a silver salver and a cruet set in 1973.

The silver cup for golf (page 87) was the gift of Past Master L.S. Yoxall, himself a keen player. Unfortunately the Company has not been able in recent years to arouse sufficient support for the golf tournament.

One very impressive ornament is the ramshead snuff mull illustrated on page 88. This was the gift of Past Master George Whipple in 1961.

The record of meetings of the Court and of the Trustees of the Charity is kept in leather bound and tooled book, bearing the Arms, which was presented by Past Master Arthur Garratt.

The bronze statue of Mercury, the messenger of the Gods, standing at the half-way landing was one of the gifts of Past Master John Savage during his year as Master. Although bought in Italy it is believed to be Belgian in origin. The electrical illumination associated with the statue was renovated on the initiative of Assistant Carl den Brinker.

The robes worn by the Master, the Wardens, the Clerk and the Beadle were among early purchases by the Court. In 1978 Mrs Randolph, the wife of the then Master, presented five black gowns to be worn by Liverymen at the Admission ceremony, "to be clothed in the Livery". The following year Harry Drew gave, as Master's gift, four dark blue gowns for the use of Stewards, to distinguish them when carrying out their duties at Livery functions. In 1986 the incoming Master, Ronald Howard, presented a gown for the use of the Deputy Master. In 1988 the Senior Warden, Douglas Read, arranged sleeve badges representing the arms to be affixed to the robes of Master, Wardens, Clerk, Assistant Clerk and Beadle. Further robes will be required so a Gown Fund has now been started with a generous contribution from Mr Henry Kroch.

Some gifts have been of great value in helping to provide various fittings for the Livery Hall. In addition to his very considerable financial contribution to our equity, referred to on page 83, Past Master Arthur Evans paid for the library fittings holding books and instruments owned by the company; for the coat of arms in the foyer facing the main entrance (the installation of this was undertaken by Past Master Robert Davies in 1981); and made a major contribution to the cost of the oak panelling in the Court Room, the remainder being contributed by Liverymen as a memorial to Past Master William Logan. This panelling now bears, through the beneficence of the Directors of Scientific Instrument Makers Hall Limited, the names of our Past Masters. One of the new chandeliers lately installed in the foyer was bought from a donation given by Past Master Robert Jennings. The large colour photograph in the Masters' Room showing Past Master Evans welcoming Prince and Princess Michael of Kent was given by Assistant Douglas Morrell.

The main Coat of Arms in the Dining Hall was commissioned by Past Master Denys Randolph during his year of office, and executed by Mr Alfred Fisher (now an Assistant of the Glaziers Company). It matches the glass design of the Glaziers' crest, which was already in place, and the same treatment has been adopted by the Launderers' Company. Also in the main Hall is a banner, jointly provided by the then Assistant Henry Kroch and Warden George Zahler.

The Glass lantern bearing the Company's badge which stands in the foyer was bought by the Livery to match a similar lantern already owned by the Glaziers' Company.

The tide clock in the River Room was made by Rigel Instruments, a company of Past Master Goudime, and presented by him to the Livery to commemorate the admission of His Royal Highness Prince Michael of Kent as a Liveryman and then as an Assistant of the Court, while the etching of the Livery Hall outside the Clerk's office was given by Assistant Percy Allaway.

Finally mention must be made here of Past Master Barlow's gift: each year since 1960 a slim volume (within the limited resources of the Company) has been produced to recount the events of the year. In 1964 a more comprehensive volume was required to mark the grant of Livery. Dr Erasmus Barlow when Master provided funds for a similar comprehensive account, updated to 1977; the present volume is due to the generosity of the current Master, Douglas Read.

The Loving Cups



The Lectern



Decanters

Other Gifts to the Livery

In addition to the gifts of silver, regalia and property by Past Masters, early members of the Court and Founder members of the Company described at pages 72 to 74, there have been many other ways in which members of the Company have contributed to its wellbeing.

Financial

One of the problems facing a new Company is lack of capital resources. The early Court was sufficiently farseeing to arrange that Admission Fines were treated as such a capital resource, while Quarterage was used for the day to day financing of the Company. Before long it became apparent that both capital and income must be augmented and appeals by successive Masters have met with some success. In the early 1970s insufficient charges were raised for Livery dinners; this led to a deficit in the Income and Expenditure Fund which was only slowly recovered in the following ten years, and finally extinguished with a substantial donation from Past Master Savage, who also generously pays for the presence at the Banquet each year of four visiting Masters and their ladies.

The major benefactor of the Company was the late Past Master Arthur Evans. During the difficult period when we were acquiring our shares in Glaziers Hall Limited, he made three separate gifts of £25,000 for this purpose and he and his brother, Mr E.J. Evans, surrendered their personal holdings of shares in 1981. Assistant Douglas Morrell, who resigned from the Court in 1981 when he went to live in Munich, gave a gift of £1,000 to the Livery (although the Court allowed part of this to be diverted to Glaziers Hall Limited). Mr Langham Thompson also surrendered his shares to the Company. A substantial gift was made by Liveryman Dalziel. Some Past Masters have assisted with money gifts to the Quarterage Fund after recent appeals and the present Senior Past Master, John Bailey, gave a holding of British Transport shares as his Master's gift in 1975. As a result of such gifts the capital fund of the Company is now quite healthy, and we derive a reasonable investment income; but it should not be forgotten that while the charity can tailor its disbursements to match its income, the Livery has fixed outgoings in term of salaries and administration, and any expansion of activities requires additional income.

Help in Kind

Many Liverymen have, over the years, given assistance by providing services which have reduced the need for direct expenditure by the Livery. One example is the professional help given by Senior Stewards Fred Murrells and Frank Cornelius in the auditing of Charity and Company accounts. Past Master Zahler and Assistant Zeal have provided place cards and stationery. Liveryman John Hornsby has provided envelopes and computer printout paper. Liveryman Cliff Harris provided computer typesetting facilities for one of our earlier Yearbooks. Senior Steward Alf Harrison and the Clerk Emeritus provided a colour monitor for the office computer. The present Master provided a Cannon photocopier and Past Master Howard a typewriter from Technology Management Services. Mrs Phyllis Evans provided some office equipment. Professor Embrey gave a large projection screen. The book matches provided at Livery Dinners were the gift of Past Master Ellis while the lead glass ashtrays bearing the Coat of Arms were from Assistant Raymond Zeal on his retirement from the Court.

Assistants den Brinker and Morrell and Past Master Logan provided photographic support for many Livery functions. All these things enabled the limited funds of the livery to be spent on other requirements.

Instruments

The Livery was not in being when Robert Whipple bequeathed his collection of instruments to the University of Cambridge. And it is probably better that his collection should be in an academic environment, where serious scholars can have access to it. Nevertheless the Livery has been offered various instruments from time to time and it has been the policy to accept all such offers, even though only a limited number can be displayed in the single showcase in the Library at any one time. Fortunately there is some space available in the basement of 9 Montague Close and a number of exhibits are stored there pending the ability to display them more effectively. A start has been made on the initiative of Douglas Read to improve the display facilities in the Library where some exhibits are due to the initiative of Emeritus Professor Walter Miller; many items are on loan from himself and from the City University; others are gifts from Past Masters Charles Hanrott, Maurice Gall, John Savage and George Zahler; Assistants Carl den Brinker and Gordon Hall; Liverymen Gordon Eadie, Sir Ray Brown, and Ron Woodage.

Books

The Charity subscribes to the London Record Society and holds in the Library the twenty or so volumes already published, dealing with London life from mediaeval times onward. There are also some histories of older Liveries donated by Past Master Evans, and some reprints of original seminal works of science donated by Past Master Dawe. Liveryman G.M.E. Williams, CC has given a World War I textbook on Artillery instruments and the Clerk Emeritus as given a historical work initiated by the Munitions Inventions Department in 1922 and also an IEE Premium Prize volume 'awarded to G.A. Whipple' recovered from a secondhand book stall. Needless to say any other works related to our craft would be warmly received.

Hologram

A Hologram was presented at the Admission Court 1988 by the Institute of Electronic and Radio Engineers, on the initiative of Liveryman Frank Chorley, CBE, their President. We have an increasing proportion of members both inside and outside the Institute who are now associated with the science and industry of electronics.

What Can a Liveryman Do?

As already noted the Livery and the Charity will both welcome gifts. A number of Liverymen have made arrangements for their holding in Scientific Instrument Makers Hall Limited to be gifted to the Livery on their death. Some have made other bequests which the Livery will receive in due course. Or it may be that your family firm or some other organisation with which you are connected intends to dispose of old records or redundant instruments, in which case the Livery may be able to suggest a suitable home, either at 9 Montague Close or elsewhere.

The Whipple Museum

Robert Stewart Whipple, the son of George Whipple, Superintendent of Kew Observatory, joined The Cambridge Scientific Instrument Company in 1898, as personal assistant to Horace Darwin. He had an enormous influence upon the growth and success of the company, both as a scientist and as a manager. During his working life he wrote many papers on instruments and played an important role in the formation of the Scientific Instrument Manufacturers Association - of which he was later twice President. Over the years he collected many antiquarian scientific instruments and books, which in 1945 he gave to the University of Cambridge, together with a sum of money, to establish a Museum of the History of Science.

The Whipple Museum is housed in the old Free School. Since the original bequest there have been additions by generous loans from Colleges, by transfers of material from the scientific departments of the University and by gifts, including a major collection of apparatus manufactured by the Cambridge Instrument Company Ltd. presented in 1974 by George Kent and Company.

Robert Whipple died in 1953, before the Livery was founded, but his son, George Allan Whipple, was a Founder Member and Master in 1960-61 and organised an appeal to supplement the museum collection. He died in 1973 but the family link with the Livery is maintained by his son, Allan Robert William Whipple. A collection from the Whipple Museum was on loan at the Livery Hall following the gift of an exhibition case by the late Past Master Arthur Evans in 1979, and the Library contains an I.E.E. Premium Prize awarded to G.A. Whipple as a student (a gift in 1987 of the Clerk Emeritus). In 1977 a Livery visit was made to the museum after the Spring Ladies Lunch held at Trinity College. Dr Erasmus Barlow, of whom Horace Darwin had been the maternal grandfather, was at that time the Master of the Livery and had himself been (from 1963 to 1972) the Chairman of the Cambridge Instrument Company.

In 1978 the Trustees of the Charitable and Educational Trust made a grant toward the publication of a guide 'Selected Exhibits in the Whipple Museum of the History of Science' and in 1984 they gave similar assistance to M.J.G. Cattermole and A.F. Wolfe toward the research of 'Horace Darwin's Shop' - a history of the Cambridge Scientific Instrument Company where Robert Whipple had played so important a role.

Other Museums

Important collections of Scientific Instruments may also be seen at the Museum of the History of Science, Oxford; the Science Museum; and the London Centre under the aegis of the Wellcome Foundation. The Livery has an embryo collection, part of which is exhibited in the showcase in the Library.

The Master's Chain

The Master's Chain was presented by Past Master Arthur Smith. It is a linked series of eighteen enamelled panels lying on a background of blue velvet, with an enamelled badge bearing the arms of the City of London at the lowest point. Beneath this is a clasp on which may be suspended the Master's Jewel. The chain is intended for full ceremonial occasions: at other times the Master's Jewel may be worn on a blue riband as a collar badge.

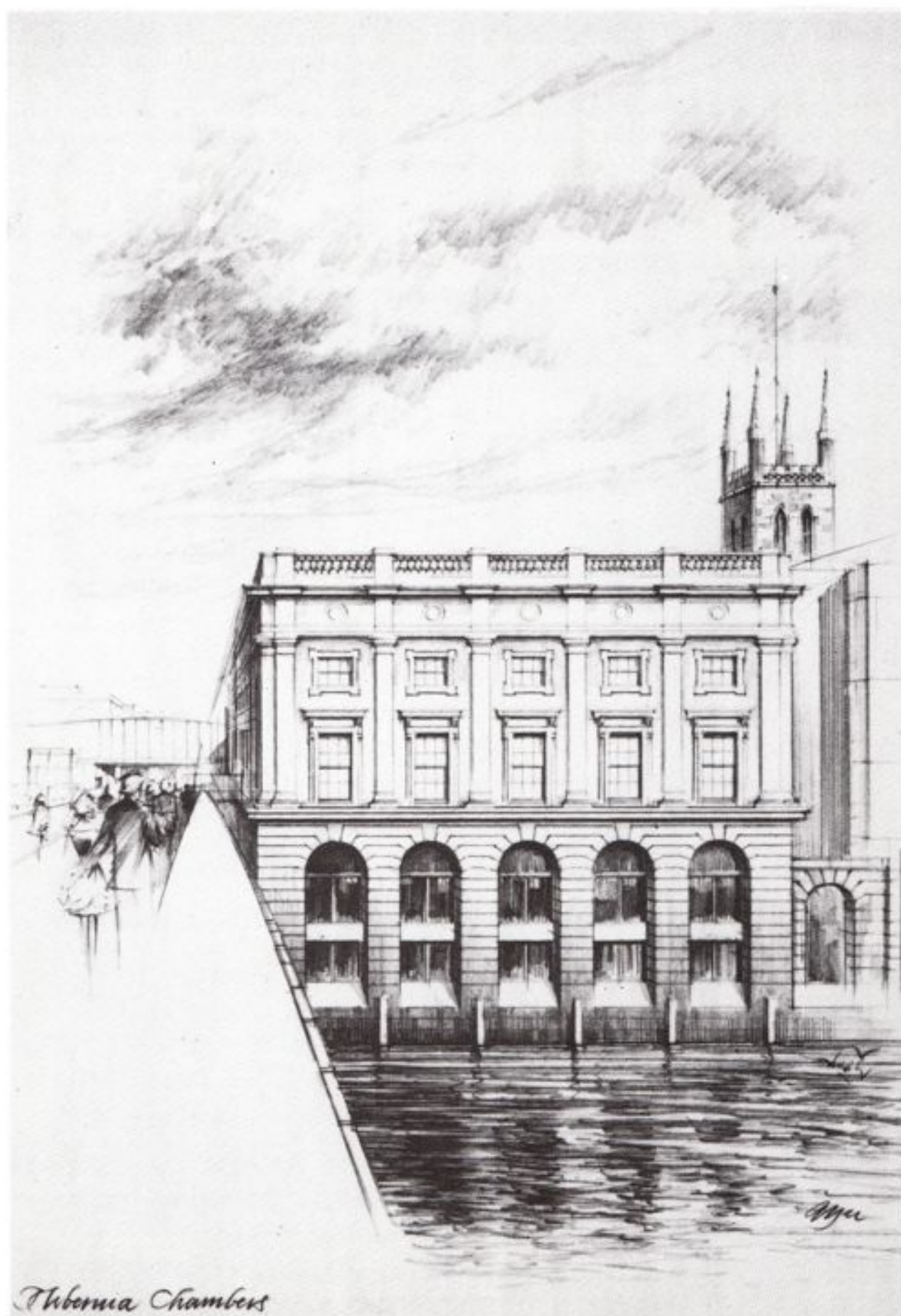
Each of the enamelled panels represents some aspect of our craft. Going clockwise from the City arms the representations are:

- A Surveyor's Theodolite
- An Optical Microscope
- An Electrical Meter
- A Graticule
- A Level Table
- A Compound Lens
- A Discharge Tube
- A stepped Bore Gauge
- A 'folded' Torricellian Manometer
- A Wheatstone Bridge
- An X-Ray Tube
- An Immersion Hydrometer
- A Printed Circuit Board
- A Precision Balance
- Perforated instruction tape
- A Mariner's Compass
- A Spectroscope
- A Sextant

The Master's Chain



The Livery Hall



Thermia Chambers

The Livery Hall

Traditionally a Livery Company's Hall is the centre of Livery activities, so it may be surprising to learn that only about one third of the companies have their own Hall. In part this is because many are new companies, without the means to acquire premises; some older companies lost their Hall in the war; some even lost them in "The Fire" and have not yet found a new home.

Our company, together with many others, was allowed the use of Tallow Chandlers Hall for our early meetings, and we recognised their kindness by presenting a stained glass window bearing our arms. In 1966 we also began to use the Saddlers Hall and they were gracious enough to allow us to store our silver there. Both of these Halls were beautiful and suitable, but the feeling grew that we should have our own Hall.

The possibility of buying St Michael Paternoster Royal was examined and discarded, as was a proposal from the Clockmakers to have a Livery Hall shared by four companies. Eventually in the Mid-1970s a group of six or seven minor companies were actively seeking deconsecrated churches and redundant schools. It was at this point that the Master, William Logan, encountered the Master of the Glaziers Company, David Graham-Wood. The Glaziers had, by somewhat fortunate circumstance, negotiated a 150 year lease of new premises in Montague Close, but sought a junior partner to take three shares of £25,000 in the total equity of 12. Our Court were enthusiastic about the proposal, knew that we had not the capital resources, but equally knew that this was an opportunity unlikely to recur. It was agreed to approach Liverymen for funds; the Clerk advised that Livery funds should be protected by "buffering" and so a limited company, Scientific Instrument Makers Hall Ltd, was formed to manage our investment. Liverymen were invited to buy £100 shares; later this became obligatory for new Liverymen. By 1977 sufficient funds had been raised to allow two of the three shares offered in Glaziers Hall to be bought. By 1979 another two shares were bought, one through a generous gift of £25,000 from Past Master Evans, the other with the assistance of a £15,000 loan from Past Master Denys Randolph. Past Master Evans gave a further £25,000 for a fifth share in 1979 and in 1980 two further shares (making seven in all out of a new total of 14) were acquired.

In 1983 both we and the Glaziers Company sold a share to the Launderers Company and later two more to the Glaziers Company, reverting to a holding of four. All three companies are now represented on the Board of Directors of Glaziers Hall which is responsible for common services such as heating, lighting and cleaning and the commercial exploitation of the premises. Each Livery company maintains its own office and is responsible for its own domestic administration.

Scientific Instrument Makers Hall Ltd is duly constituted under the Companies Act, has a Board of Directors, publishes annual accounts and holds an AGM. The initial formation expenses were high and at first the company ran at a deficit. Currently the company is operating at a profit. Directors have made contributions to the furnishing of the Hall, in particular the record of our Past Masters in the Court Room on the oak panelling which was the gift of Past Master Arthur Evans, to whom we owe our very presence in the Hall today.

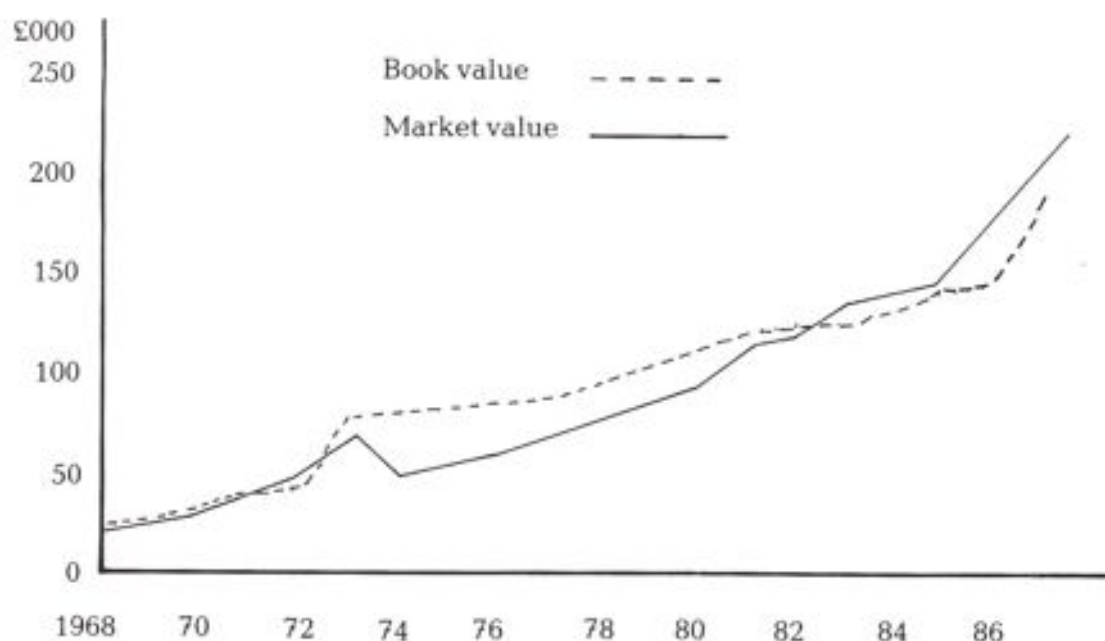
The Growth of the Fund

The Trust Deed (p.61) shows how the Charity began with a contribution of £1,000 from the Master, F.D. Edwards. Contributions were solicited from members: many gave generously under Deeds of Covenant, enabling tax to be reclaimed from the Inland Revenue. Today the Trustees still invite new Liverymen to make similar covenants and there continues to be a generous response, mostly on a personal level but some from firms and organisations with which member are associated. The covenanted income in 1987 amounted to £2,850 including reclaim of tax.

There have also been capital gifts to the Fund, many for specific purposes; such as funding (by Past Master Zahler) of the Minerva heads given to recipients of the Achievement Award and support for the "Who's Who" publication; resources in perpetuity (from AB Electronic Products Group plc through Mr Henry Kroch) initially for a SIM Scholarship; a substantial gift, through the kindness of Past Master Barlow, as residual beneficiary of the Cambridge Instrument Company Social Fund, in the form of stock and cash. There have been several members of the Livery who have left bequests to the Charity in their wills, particularly Liveryman Reggie Beloe. Lastly, the Charity holds a number of shares in Scientific Instrument Makers Hall at the specific request of donors to the fund (including the Edwards Trust) who wished their gifts to be used in this way. The Kroch Foundation also intends to donate £2,500 to commemorate Mr Henry Kroch's year of office as Master.

In accordance with the terms of the Trust Deed, the Trustees have been diligent in investing the Fund in a manner which provides an optimum utilisation of the resources available. Regular reviews are carried out to balance the requirements of income to meet incurred long-term obligations and the need to safeguard future activities against the erosion which inflation might bring about. Specialist advice is sought from a broker and the annual report of the Trustees is studied with care by the Court.

Beginning with the initial capital of £1,000 in 1959 the growth of the Fund has, through judicious investment and new money, been



The Activities of the Fund

Even before the establishment of a Fund, the Company responded to the Lord Mayor's Appeal in 1956 for the restoration of Bow Bells. Since the Fund was established there have been extensive educational and charitable grants, starting with those in 1962 to students at Faraday House, Northampton Polytechnic and Exeter University. These generic grants are described later, but it is also possible to highlight some of the major activities undertaken by the Trustees.

MIT Travelling Fellowship

Stephen Barrett was a postgraduate student at the Massachusetts Institute of Technology and proposed that the company should set up a Travelling Fellowship there, one good award being better than a number of small ones. Past Master Yoxall worked out some details on a visit to the USA and in 1970 a committee was formed to review possible candidates. Three applications were reviewed in 1971, but none of the candidates were thought suitable. In early 1973 Allan Chambers was chosen to be the first Travelling Fellow: he studied at MIT for two years, gaining a Master's degree and also studied at the Sloan School of Management. On his return he became a Liveryman.

Unfortunately attempts to find suitable candidates in successive years met with little success and by 1976 it became apparent that the requirements, in terms of age and experience, should be re-examined. In that year Neil Watson enquired about the possibility of a grant to study microsurgery in Melbourne and it was decided to use funds earmarked for the Travelling Fellowship to support his studies. The Travelling Fellowship has not been abandoned, but it is agreed that the requirements for selection (although retaining the incentive of being accompanied by family) may need review.

SIM Scholarships

The difficulties with the Travelling Fellowship led the Education Committee to examine the most fruitful areas for educational grants. Opinion was divided between school leavers and an approach to the very young to inculcate the advantages and interest of a career in engineering. It was decided to establish four scholarships for school leavers, tenable up to four years and valued initially at £500 a year. This has been a successful scheme, with some candidates of very high calibre, but not in the numbers expected. After the scheme was established there were proposals to have a separate scholarship in the conservancy of scientific instruments, tenable at the Greenwich Maritime Museum. In the event a separate scheme was discarded, but one of the normal scholarships is regarded as available for this purpose should a suitable candidate present himself.

A considerable grant was made by AB Electronic Products Group plc in 1985 through the interest of Henry Kroch, then one of the Wardens. The income from this was originally available for one of the SIMA scholarships, having attached to it the name of the donors, but is now available for a wider range of disbursements.

Achievement Award

The Achievement Award, with its recipients, is described in more detail at pages 65-68. At the beginning it was funded by the Company then it was realised that the objects of the Charitable Trust would permit the cost of the award, and eventually a financial award, to be made from charitable and educational funds. The present financial award is £500.

City University Prizes

The prizes to City University students are awarded on the recommendation of the University, after an assessment carried out at the end of the first term. The successful students have an award of £100 a year, renewable on successful report, and an award of £200 in the final year. The intention is to provide something for the cost of books.

Girton Teaching Fellowship

The Girton Teaching Fellowship arose from a conversation between the Clerk and Lady Platt, an old student of Girton and later the Chairman of the Equal Opportunities Commission. The Master at this time was Dr Barlow and he and the Clerk visited Girton to see the Mistress, Professor Brenda Ryman. The proposal for a Teaching Fellowship (later also supported by Rolls Royce) appeared to match the intentions of the Court to encourage entry to the instrument industry, particularly of girls, and funds were made available for five years, after which the authorities of the University of Cambridge took over responsibility for further funding.

SIM Lecture

While the Charity makes considerable disbursements, it is also allowed under the Deed of Trust to promote lectures. The Education committee recommended in 1985 that a Scientific Instrument Lecture should be established open to Liverymen and their friends, the Industry and the Press. The first two lectures were arranged by Douglas Read; in 1986 by Sir Kenneth Corfield (now a Liveryman) on "My Kind of Instrument" and in 1987 by Sir Geoffrey Chandler on Industry Year, of particular significance to a technological Livery. The 1988 lecture by Professor Dr Ing H.K. Meier of Carl Zeiss was on Progression through Management by Innovation and Leadership. Future lectures will, at the suggestion of the present Master, be known as the Minerva Lecture and be sponsored by industry.

The Bowen Trust and the City & Guilds of London Institute

The Bowen Trust was originally held by SIMA under a Deed of Trust dated 12 December 1950, to provide educational assistance to students. In 1969 the Council of SIMA signed an agreement which made the Livery the managing trustee of this fund. The Deed of Variation was so arranged that the Bowen Trust could be managed in the same way as the Livery's own Charitable and Educational Trust, with the proviso that the Bowen Trust remained a separate entity and not be subsumed in the Charitable and Educational Trust. The Bowen Trust has been used as the source of funds for the awards to the City and Guilds of London Institute and has a fixed investment; so far no provision has been made for inflation.

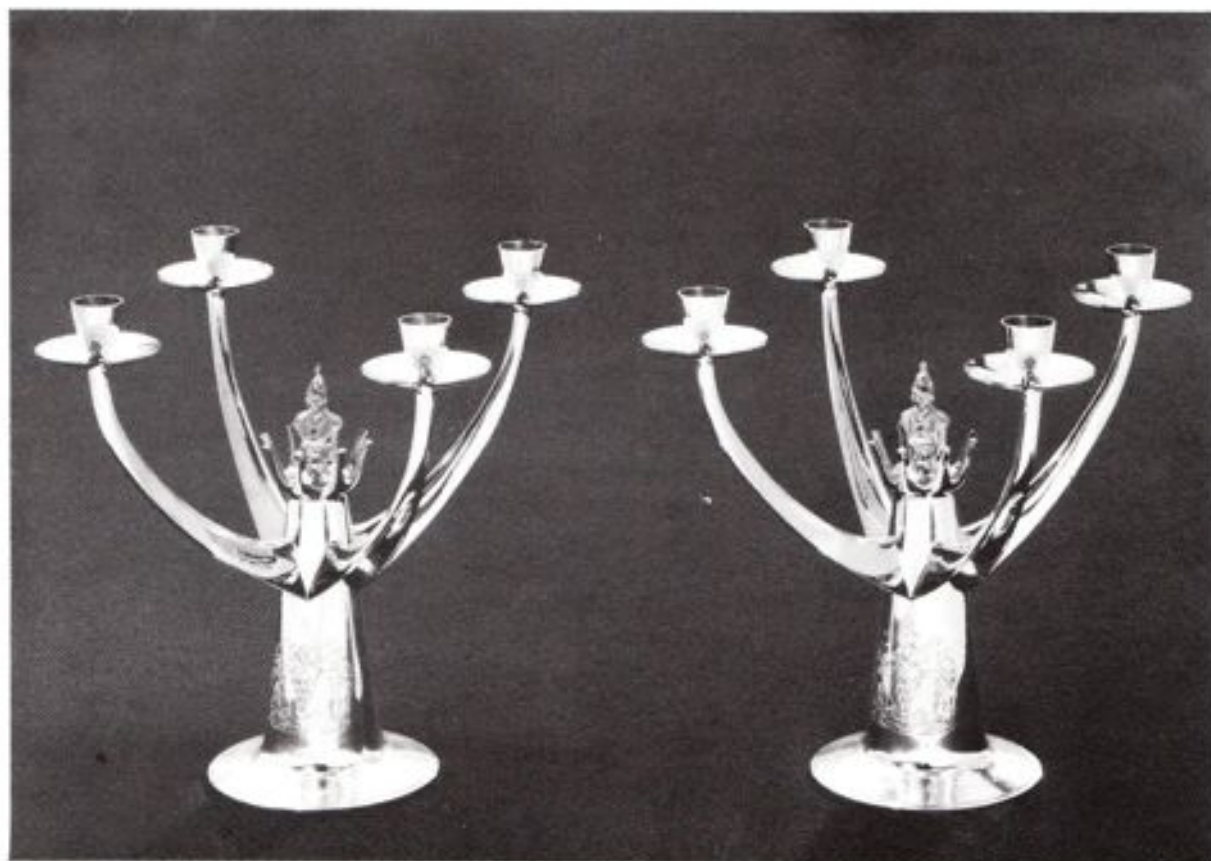
Golf Trophy



Ramshead Snuff Mull



Candelabra



Charitable Grants Educational Awards & Other Activities

The preceding pages have dealt with many of the structured awards of the company. In addition the Trustees deal at each of their meetings with upwards of a dozen appeals for assistance. It is obvious that the continuing awards of the company must have first call upon its resources, nevertheless the Trustees are always willing to consider 'one-off' appeals. By this it is meant that while responsive to a single request at a particular time, the Trustees do not wish to create the impression that annual appeals from that source will automatically be granted. The priorities recognised by the Trustees are educational needs particularly allied to our industry and charities associated with the City of London. They believe that a charity should not, without good cause, be making grants to other charities since this only encourages the circulation of money from some donor before ending as a diminished gift.

Other proposals considered by the Trustees from time to time have included

the establishment of a Chair in the History of Scientific Instruments; various locations, such as City University and Imperial College, have been considered, but the financial resources required have so far put this out of the company's reach.

an Essay competition; this would be an attempt to interest young people in engineering and science.

a "Who's Who" of the Livery to allow Liverymen to know something more of the background of other members, their abilities and interests. Such a volume was made possible by George Zahler, then one of the Wardens, who collated the information and arranged the printing of this useful guide.

young Persons; a recurrent theme in the Education committee has been how to encourage school children to launch themselves upon a career in engineering. One proposal seriously considered was the engagement of an Education Officer to tour schools and to provide reference material and visual aids, possibly a video presentation. This proposal also proved beyond the resources of the Company, although an associated proposal was taken up by the Midland area of AMMO at the instance of John Savage in his Master's year.

Covenants to The Charity

Although the initial invitation to Liverymen is to make a covenant of at least four years to the Charity, any renewal after this time is most welcome, and now allows considerable tax advantages both to the donor and to the Livery. The Clerk can provide additional information.

The Royal Institution

Faraday was the resident Professor, following Sir Humphrey Davy, and was a natural choice as one of the supporters of our Coat of Arms. There were other connections - one of geography for our inaugural meeting was held at Browns Hotel, just across Albemarle Street from the Royal Institution. The Institution was founded in 1799 by Count Rumford for the promotion of science and the diffusion and extension of useful knowledge. Much of his original experimental equipment is preserved by the Institution and we had the privilege of exhibiting some items when the Rumford Society held its annual dinner at our Livery Hall in 1986.

The Royal Institution maintains an interesting Library with many original papers of Davy and Faraday, and a reconstruction of Faraday's laboratory and many contemporary exhibits.

The Royal Institution is renowned for its Evening Discourses dealing with a variety of scientific topics, the Christmas Lectures for school children and Discussion Groups on various subjects. The Master in 1987-88 was invited to speak about our Livery and its connection with Faraday and the Royal Institution; as he was unable to do so the talk was given by the Clerk Emeritus and is printed in the 1988 Proceedings of the Royal Institution.

The City Livery Club

The Club was founded in 1914 to provide a centre where Liverymen could meet together socially; membership is restricted to Liverymen. The Club is situated at Sion College on the Victoria Embankment, which houses an extensive Library on City and Theological subjects. For those aged under 36 there is a Society of Young Liverymen.

The City & Guilds of London Institute

The City and Guilds of London Institute was established by the Guilds of the City of London and the Corporation in 1878 as part of the new wave in higher education. The Livery decided in 1972 to give prizes for craft studies (funded from the Bowen Trust) details of which are on page 86. Some reorganisation of courses and studies has recently taken place, causing the suspension of the original awards. In 1986 the Livery was invited to become a 'Founding Member' of the Institute and hopes to be able to resume its sponsorship of some award.

The City University

In 1965 the Past Master of the Skinners Company proposed to the Lord Mayor that the Northampton College of Advanced Technology should become a University, to be known as the University of the City of London. A draft Charter was sent to the Privy Council and agreed and in 1965 the Livery, with many others having technical interests, was invited to join the Court of the new University of which the Lord Mayor was to be Vice-Chancellor. The Master, Mr L.B. Lambert, was appointed to serve for five years, since when others have followed, although usually now for a term of three years. The Livery has other connections with City University and its predecessor: one of the Founder members of the Court, Mr F.D. Edwards served in the Physics Department of the former Northampton Polytechnic; several of the present academic staff are Liverymen and the Livery makes awards annually to educational awards. These prizes were awarded on the initiative of Liveryman Walter Miller, now a Professor Emeritus of the University and Past Master William Logan; it is now the custom for these money prizes to be presented annually alternately at the Livery Hall and at the City University.

Mention has been made of Past Master Edwards and his connection with City University. At his death a Trust was established with Senior Steward Fred Murrells, a former Director and Secretary of Edwards High Vacuum, as one of its Trustees. The Trust, in addition to making awards of its own to students, arranges annually an Edwards Memorial Lecture at the City University, at which the Livery is normally well represented.

A number of recipients of SIM Scholarships have attended City University and it is particularly pleasant to be able to record in this anniversary book the success of two in the present year - P.R. Oram and S.J. Flower - who were both awarded First Class Honours degrees. In addition to being S.I.M. scholars they were both industrially sponsored by Schaevitz EM.

The Livery Year

In addition to the domestic affairs of the Livery, which necessitate attendance at meetings of the Court, Trustees, Glaziers Hall Board and Scientific Instrument Makers Hall Board and various committees, the Master or his representative have many external appearances. Some of these are social, such as hospitality from other Liveries, some are formal City functions. The table gives some indication of the events of the Livery Year. Those in italics are 'City' events open to all. An event shown * is open for general attendance of Liverymen.

Month	Event
October	* Admission Court
Oct/Nov	Lady Mayoress's "At Home"
January	* Achievement Award presentation
February	Court Ladies' Dinner
March	* Livery Ladies' Lunch City University student presentations
Mar/Apr	Lord Mayor's Dinner for Masters
April	* <i>United Guilds Service at St Paul's</i>
May	* Scientific Instrument Makers Lecture Sons of Clergy Service at St Paul's
June	* Annual Banquet * <i>Common Hall - Election of Sheriffs</i>
July	Election Court Royal Garden Parties
September	* <i>Common Hall - Election of Lord Mayor</i> * Church Service - St Margaret, Lothbury

Worcester Polytechnic Institute

WPI is an American Technical University in Massachusetts. For some years the Livery has enjoyed a close relationship with the University, since Liveryman Professor Maria Watkins (formerly of City University) is its UK representative. Each year a number of undergraduate students in their second or third year of degree studies come to Europe for one term, undertaking an 'Interactive Qualifying Project' counting toward their degree credits. We have accepted three such groups to study at the Livery under the supervision of the Clerk Emeritus, and their projects have been

1986 Diane Desrosieres and Jill Richardson

A Computerised information retrieval system, based upon the British Library system, for the Court and Charity records of the Worshipful Company of Scientific Instrument Makers.

1987 Paul Mancini, Jodi-Ann Medeiros and William Noel

The establishment of a methodology for future awards of the Achievement Award of the Worshipful Company of Scientific Instrument Makers and recommendations for the 1987 award.

1988 Maureen Brosnan, Geoffrey Charron and Dave Saulnier

Collection and collation of historical source material for future use; drafting of texts for a twentyfive year interim history of the Worshipful Company of Scientific Instrument Makers. This work should allow some of the original records of the Company to be deposited at the Guildhall Library.

In 1987 and 1988 presentations of the students work were made to the Education Committee. Proposals were also made for a project in 1989 to review the educational awards made by the Company.

Other groups have worked at the Institution of Electrical Engineers, the Patent Office, Lloyds and in British industry.

The Livery hosted the inauguration, attended by Dean William Grogan with various faculty members and many alumni resident in Europe, of these European studies in 1986 when Baroness Platt of Writtle gave the opening address. Baroness Platt is a graduate of Girton and was also closely associated with the foundation of the teaching Fellowship which the Livery helped to establish there.

Deceased Members

Sir Leon Bagrit	J.B. Lightbown
H.E. Barnett	W. Logan
M.L. Bateman	H.A. Luss
R.G. Beloe, TD	Sir Ieuan Maddox, CB, OBE,
I. Bowen, CMG	FRS, FEng
R. Broadbent	A.M.A. Majendie
R.E. Burnett, OBE, JP	W.T. Marchment
W.M. Cann	W.E. Mason
A.H.C. Campbell	C. Mourant
E. Chapman	Major F.D. Outridge, OBE
C.B. Chartres	Colonel I.W. Peck
J.S. Clark	F.M. Peters
J.H. Condy	J. Powell
E.A. Corbett	W.F. Randall
C.E.T. Cridland	K.A.G. Raybould
L.S. Crutch	W.W. Riber
N.Ryland Davis	T.W. Roberts
H.E. Drew, CB	F.C. Robinson, MBE
G.H. Edgar	C.N.L. Rocky
F.D. Edwards CBE	Dr L.L. Ross
P.J. Ellis, OBE	E.H.T. Rourke
A.E. Evans, MBE, JP	E.W. Semmens
E.J. Evans	Dr V.A. Sheridan
H.E. Fleetham	A.W. Smith, OBE
A.G. Freeborn	M.E. Sowter
A.G. Freeman	G.S. Spraggon
D.C. Gall	H.A. Stevenson
E.W. Golding	W.H. Storey
H.H. Goldstaub	E.W.T. Stow
S. Goodman	G.S. Sturrock
I.H. Gordon	D. Talbot
P. Goudime, JP	M.H. Taylor
R.A. Harker	Dr G.A. Veszi
Sir James Harman, GBE	E.G. Wakeling
J.E. Harris	F.V. Waller
R.J. Hendrey	S.W.J. Wallis
H.L. Holmes	A. Durham Wells
A.W. Jones	G.A. Whipple, CBE
Dr F.E. Jones, MBE, FRS	H.R. White
H.R.A. de Jonge	S.L. Whitby
Sir Bernard Keen, FRS	G. Wikkenhauser, MBE
A.G.L. King, MBE	L.A. Woodhead
H.B. Laine	P.M. Wright
L.B. Lambert	L.S. Yoxall, CBE
E.M. Lee	H.H. Zeal
Colonel H.A. Lewis, MBE, TD	R.O. Zeal

Those shown in **bold type** were sometime members of the Court

Clerks

Major R.E. Warlow, TD, FCA

1955-1958

The first Clerk was Major Ronald Edward Warlow, who was responsible for negotiating the Arms of the Company and arranging the use of Tallow Chandlers Hall. He and Mrs Warlow presented the Clerk's Badge on his retirement.

H. Mott

1958-1976

Henry Mott was educated at Marlborough and had already qualified as a Chartered Accountant when he decided in 1937 to become a Solicitor and join the family firm. His articles were interrupted by six years war service in the Royal Artillery with the Honourable Artillery Company; on qualifying he practised until 1975. He had been a Liveryman of the Plaisterers Company since 1926, Master in 1945-1946 and Clerk in 1948, following his father and grandfather to build up an unbroken succession of well over 100 years. When he became our Clerk he brought a wealth of knowledge and experience and it was largely due to his guidance that we obtained our Grant of Livery in 1964, recognised by the presentation to him of a gold wrist-watch in 1965. He was admitted to the Freedom of the Company in 1970 and retired in 1976.

Maj-Gen E.J. Younson, OBE, BSc, CEng

1976-1987

Eric John Younson graduated at the University of Durham, as BSc(Hons Chem) and enlisted as a gunner in the Royal Artillery; commissioned in 1940 he returned to OCTU as an Instructor in 1942. After service in AA Defence he passed the Advanced Class at the Royal Military College of Science and served in NW Europe with a mention in despatches for experimental work on radar. Seconded to the Ministry of Supply he received an OBE in 1952 for work on radar and computers, and then returned to the Royal Military College of Science as a member of the Directing Staff concerned with Guided Weapons and Electronics. He was seconded to AWRE and then represented the Chief Scientific Adviser implementing the US-UK Nuclear Weapons agreement in Washington. On his return to the UK he was employed on nuclear matters in the old Ministry of Defence before returning to the Army Department as Deputy Director of Artillery; then Ministries of Aviation and Technology as Director of Guided Weapons Trials; VP and President Ordnance Board. On retirement he joined the Central Bureau for Educational Visits and Exchanges, with responsibility for further education, before becoming Deputy Director (and Acting Director) of SIMA. He became Clerk in 1976 and on retirement was made an Honorary Liveryman and Clerk Emeritus.

Group Captain R.L. Smith, Bsc(Eng)

1987-1988

Group Captain Robert Louis Smith was educated at South Shields Grammar School and the University of Newcastle, where he graduated as BSc(Eng); Group Captain Smith served in the Engineering Branch of the Royal Air Force and on retirement became Clerk in July 1987. He resigned in April 1988 to take up a post in the Ministry of Defence.

Frank George Everard was born in 1930, educated at Stowe School and Trinity College, Cambridge. His previous career has been in engineering industry (when he was Vice-President of the Abrasive Industries Association), with firms such as Loctite, Norton Abrasives and Cooper Roller Bearings. He became Acting Clerk in August 1988 and was appointed Clerk on 21 October 1988.

Assistant Clerks

Mrs P.V. Pratley

Mrs Pat Pratley was Assistant Clerk from 1976 until the reorganisation of the Livery office in 1987. She had previously been a Civil Servant in the Ministry of Defence, then DHSS and the Inland Revenue. During her time as Assistant Clerk she had overall responsibility for records of Charity covenants and Quarterage in addition to bookings for Livery functions; as she worked from home she was able to provide an out-of-hours response to Liverymen. She became Free of the City in 1983.

G.M.E. Williams, CC and M.T. Dixon

Early in 1987, before the appointment of Group Captain Smith as Clerk, Liverymen Williams and Dixon were invited to act as Assistant Clerks; in the event their work was limited to making proposals (not accepted by the Court) for the re-organisation of the Livery office and these appointments were then terminated.

Mrs E.S. Sore

Mrs Elizabeth Sore, who had previously been at the London HQ of the British Shipbuilders Corporation, was appointed Administrative Assistant in September 1987 and became Assistant Clerk in January 1988. When Group Captain Smith retired the post was temporarily filled by Wing Commander Henry Skinner; on his departure Mrs Sore became Acting Clerk until her own retirement in September 1988. During this time she had some assistance from Mrs Pauline Halliday, a former Clerk of the Fruiterers Company and from the Master's Steward, Eric Tobitt.

Beadles

The first Beadle was Mr J.W. Houghton, from 1955 until his retirement through failing health in 1973. His whole life had been associated with the City of London, where he had been Head Porter at the City of London School.

He was succeeded by Mr W.H. Jones, who also acted as Beadle to the Needlemakers Company, until his death in 1986.

Mr A. Rogers from the Guildhall became Beadle in 1986 until leaving London in 1987.

Since then Senior Steward W.H. Medcalf has been kind enough to act as Beadle on ceremonial occasions.

Clerks

1958 - 1976



H. Mott

1976 - 1987



Maj-Gen E.J. Younson OBE

Assistant Clerks

1976 - 1987



Mrs P.V. Pratley

1987 - 1988



Mrs E.S. Sore

Chaplains

1958 - 1973



*The Reverend
A.J. Drewett
MA BSc*

1973 - 1983



*The Reverend
H.J. Smith
MA*

1983 -



*The Reverend
Chandos Morgan
CB MA RN*



*Window in
St. Margaret
Lothbury*

Honorary Chaplains

The Reverend

A.J. Drewett, MA, BSc

1958-1973

Alfred Drewett was the first Chaplain to the Company, from July 1958 until his death in 1973. He studied at Bristol University, reading geology. In the early years of his ministry he served as a curate at Bermondsey and in Lombard Street. During the war he was Vicar of St John's, Sheffield, and while there he read for his MA at Sheffield University, specialising in Education on which he wrote several books and pamphlets. In 1954 he was appointed Rector of St Margaret, Lothbury where in addition to his pastoral duties he took a prominent part in preparations for the 1958 Lambeth Conference. In 1957-1958 he was Sheriffs' Chaplain; in 1961 President of Sion College; and in 1963-1964 Chairman of Coleman Street Ward Club.

Died 1973

The Reverend

H.J. Smith, MA

1973-1983

Harold John Smith trained for the ministry at Ridley Hall, Cambridge. After serving as Curate of Loughborough Parish Church he was appointed as Vicar of Knotty Ash, Liverpool. For over thirty years he was concerned with relating the resources of the Christian Faith to the many and varied emotional problems of life and personal growth. He pioneered the development of Church Counselling Centres in the 1950's and was throughout his ministry responsible for the training of many clergy, church-workers and social workers in the problems of boundaries between psychiatry and theology. He came to London in 1963 at the invitation of the Church Army and opened counselling centres in Marylebone and Manchester. In 1973 he was appointed Rector of St Margaret, Lothbury, where in addition to his parish duties he started a Counselling Service for Commuters. He is a founder member of the Clinical Theology Service Association for Pastoral Care and Counselling.

The Reverend

C.C.H.M. Morgan, CB, MA, RN

1983

Chandos Clifford Hastings Mansel Morgan came to St Margaret, Lothbury from Dean Close School, Cheltenham. Before that he was Chaplain of the Fleet and Archdeacon of the Royal Navy, where he saw service in the Far East. He was educated at Stowe and at Jesus College, Cambridge, then at Ridley Hall. He became Curate of Holy Trinity, Tunbridge Wells, and then joined the staff of the Childrens' Special Service Mission. From 1972 to 1975 he was a Queens Honorary Chaplain. Currently he is Chaplain to the Lord Mayor.

St Margaret, Lothbury

It is a tradition of City Guilds to be associated with particular City churches. Our Company is privileged to use St Margaret, Lothbury, as are the Armourers and Brasiers; the Chartered Accountants, the Founders; the Glovers; the Tin Plate Workers (alias the Wire Workers) and the Tylers and Bricklayers. In older times there were around four hundred churches, where now because of the Great Fire and World War II only some forty survive. The present church of St Margaret was built around 1185, as the list of Rectors bears witness. It was rebuilt in 1440, destroyed in the Great Fire and rebuilt by Wren in 1686-1695. An extensive restoration was begun in 1973 because the North Wall was sinking and was completed in 1978. The Livery has made a number of contributions to the Church for the fabric; towards the organ restoration fund; to an altar rug and offertory bags. Past Master Paul Goudime presented a stained glass window bearing the Coat of Arms of the Company in 1962.

The beautiful screen which spans the church was removed from All-Hallows-the-Great in 1894 where it had been the gift of Theodore Jacobsen, one of the merchants of the Steelyard who are commemorated by the carved eagle of the Hanseatic towns in the centre.

The font (of Wren's period) has figure subjects carved on the bowls - the Fall of Man, Noah's Ark, The Baptism of Christ, and the Eunuch.

Liverymen have from time to time availed themselves of the privilege of having their children married at the Livery church.

Since 1961 the Livery has held an annual service at St. Margaret, usually on the second last Wednesday of September, an event open to all Liverymen, their families and friends, followed by an informal supper at the Livery Hall.

The illustration opposite is taken from Maitland's "History of London" and shows the church as it was in 1756.

The Company Prayer

Eternal God, who through thy Holy Spirit art everywhere present, calling us though we hear Thee not, and abiding with us though we know Thee not; we praise Thee for the wonders of Thy Universe. We thank Thee for the wisdom of scientists, the imagination of inventors, the skill of craftsmen, whereby its secret forces become servants of the spirit of man. Bless we beseech Thee our Fellowship of Scientific Instrument Makers, that together with all those who use and direct these forces of nature, they may do so in Thy service. May we all be guarded from the misuse of Thy gifts and so led into the way of truth, beauty and love that we find our fulfilment in Thee, through Jesus Christ our Lord.

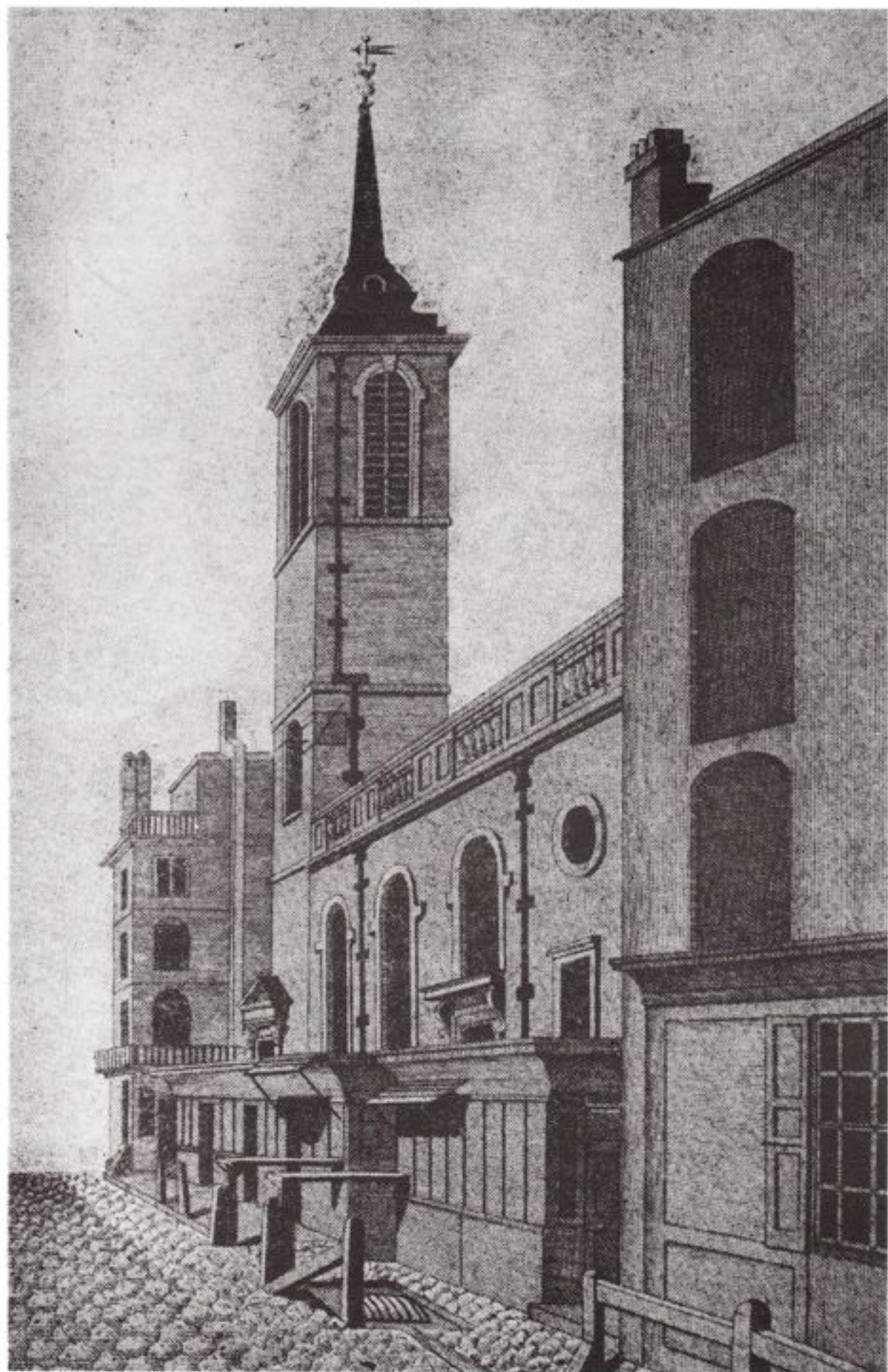
Amen

The Company Grace

God is great and God is good. We thank Him for the wisdom of scientists, the imagination of inventors, the skill of craftsmen. And especially now for this food and our fellowship.

Amen

St Margaret, Lothbury



Editorial matter © 1988
Douglas Read & Eric Younson

Typeset and printed by Swiftprint, Buckingham

Type set in Candida

British Library Cataloguing in Publication Data

YOUNSON, Eric

Scientific Instrument Makers, Worshipful Company: A History

1. Liveries - History - 1988

I. Title

ISBN No. 0 9514365 0 3

