

The Worshipful Company of Engineers
(Incorporated by Royal Charter 2004)
The Swordsman Newsletter
Issue 32, May 2014



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COVER PHOTOGRAPHS

Top	The Master, John Baxter with his Wardens Air Vice-Marshal Pat O’Reilly, Isobel Pollock and Richard Groome with the Clerk Tony Willenbruch and the Chaplain, Revd Peter Hartley
Centre	The Master, Air Vice-Marshal Graham Skinner and the Wardens, The representative Lord Mayor and the Principal Guests at the Mansion House in October 2013
Bottom Left	The outgoing Master Air Vice-Marshal Graham Skinner and Margaret at the Mansion House (Centre and Bottom Left Photographs by Gerald Sharp)
Bottom Right	The incoming Master John Baxter and Margaret at the Installation in Mercers’ Hall

FUTURE EVENTS

21 st May 2014	Inter Livery Charity Clay Pigeon Shoot	Northwood
24 th June 2014	Election of Sheriffs	Guildhall
25 th June 2014	Warden’s Lecture and Luncheon	Wax Chandlers’ Hall
15 th July 2014	Court Meeting and Awards Dinner	Goldsmiths’ Hall
30 th July 2014	Golf Day	Mentmore Golf Club
15 th August 2014	Informal Midlands Dinner	Hampton in Arden
18 th to 21 st September 2014	Out of Town Visit	Glasgow
29 th September 2014	Election of Lord Mayor	Guildhall
7 th October 2014	Ladies’ Luncheon	Tallow Chandlers’ Hall
15 th October 2014	Annual Banquet	Mansion House
8 th November 2014	Lord Mayor’s Show	Wax Chandlers’ Hall
17 th December 2014	Carol Service and Dinner	Tower and Clothworkers’ Hall

VALEDICTORY EDITORIAL



I well remember the day in May 1983, when Sir Peter Gadsden invited me to join the embryonic Company of Engineers as Assistant Clerk. Peter was looking for an Engineer who was familiar with City traditions who would support Michael Leonard, the Secretary of the Fellowship of Engineering, who was to be Clerk to the Company. I was the ninth Engineer to become a member. The initial drive to form the Company was intense and forty one engineers petitioned the Court of Aldermen to approve the formation of an Engineers' Livery Company on 4th July 1983. This was one more than the minimum number required. The pace of progress was maintained and I organised the Grant of Livery Luncheon on 1st November just 17 weeks later. Almost certainly no other Company has ever achieved Livery status as quickly.

I am very proud to be associated with a Company which has developed so well in its 31 years existence. Many of the traditions started in those early days are still evident but have developed into the Engineers' Company style. The Company is very happy and inclusive with much involvement of Liverymen's partners, particularly since the grant of the Royal Charter which was the driver for a more open Company and a change in the management of the Charitable Trust. In 2002 when I became Master it was not normal for partners to be present at the Installation Dinner. How things have changed.

The Engineers' Trust goes from strength to strength and is building up into a worthwhile fund which is able to give substantial support to young engineers, our dedicated Charity RedR, the City, Mansion House and the Country's armed services. It is anticipated that the Trust's donations will substantially increase this year with the Leete Award and the major support of the Royal Academy's MacRobert Award starting. Success

breeds success but your support is needed to take the Trust forward.

In the early 1990s, before he was Master, Gerry Clerehugh produced the first single A4 newsletters recording some of the Company's events. It was not until the spring of 2000 that the first Swordsman magazine was produced by David Mitchell, who chose the name, a year after the end of his year as Master.

David produced eleven editions up to the autumn of 2003 gradually getting more reports of events into the magazine but he was becoming unwell and in a Court Meeting he said he would like to retire as Editor. I must have been feeling very relaxed just after completing my year as Master because I happened to be sitting next to him and in a moment of weakness, or was it madness, said that if he could not find any one better I would have a go.

My first edition was issue no 12 in the summer of 2004 and very much followed his style. I gradually changed the format and for the first five years the Swordsman was printed in the Company office. In August 2009 a step change was made when it was decided to have the magazine professionally printed as an A3 booklet which made the production and finish much better.

As Editor I have tried to make the Swordsman into as full a report of the Company's activities as possible. I believe that it is important that the many members who do not have time, live too far away or who cannot travel to events should feel a part of the Company and get some return for their quarterage. The Swordsman also provides an archive of the Company's activities.

I have always tried to get new Liverymen to write the reports so that they can become involved in the Company as soon as possible after they have joined. The reporters have almost invariably been very willing to help and have produced witty and interesting reports with very little chasing. I am most grateful to them all.

22 editions later it is now time for me to hand over to a new Editor with fresh ideas and I am very pleased this will be Past Master David Scahill. David has already enlisted an editorial team. There are precedencies here as he takes on the role a year after he finished being Master as I did and he is about the same age as I was when I started. However he does not think he is going to do 10 or 11 years as Editor! I wish David the very best of luck and look forward to seeing how he will develop the Swordsman in the future.

Thank you all for your support and happy reading

Raymond Cousins

ANNUAL LIVERY BANQUET THE MANSION HOUSE 18th October 2013

As a new member of the Company, having only been admitted as a Freeman in December 2012, I was, with my wife Diana, looking forward to this grand function and determined to observe the occasion in the appropriate style.

Our vision of arriving at the main entrance in Mansion House Street and ascending one of the two stairs to the imposing doorway was dashed when the taxi driver said the entrance was in Walbrook. Entering the tradesmen's entrance, only later did we discover that this was the Lord Mayor's private entrance dating back to 1845 and presumably made to allow him to come and go incognito, was a bit of an anti-climax.

Things started to look up when we walked up the rather mean staircase and saw the paintings from the Harold Samuel Collection of Dutch and Flemish Seventeenth Century Paintings, described as "*the finest collection of such works to be formed in Britain this century*" among them the Frans Hals painting of the Boy with the Lute.



The Master and Wardens before Dinner

After being greeted by the Master and Margaret Skinner and the other dignitaries we were able to enjoy the splendour of the Salon and meet up with some friends, learning that the Mansion House Banquet is a particular privilege for the Engineer's Company arising from our founder Master Peter Gadsden being a past Lord Mayor.

The Egyptian Hall with its white and gold Palladian decoration is stunning and the 214 place settings set off by impressive silver candelabra were immaculate thanks to the Mansion House staff. Seated with some

delightful engineers and guests, the conversation, food and wine were excellent. I felt rather sorry though for the band on the balcony who very good but rather over-shadowed by the chatter below despite making a valiant effort to compensate with some stirring aviation music.

The Civic Toast was proposed by The Master and he reminded the Company that British Engineers had developed Latin America in the early days and, even today, Britain is the third largest aero-space manufacturer behind US and Germany.

The Master gave us an update on the Beadle Stephen Grundy who was making good progress after his triple by-pass heart operation but wasn't yet fully recovered. Graham Skinner also reported on the various social and other events during the year and duly thanked those responsible for organising them and making them so enjoyable.

As the Lord Mayor was away with David Cameron and Justin Welby putting the world to rights, Alderman Sir David Wootton represented him on the top table and responded on behalf of the City.



Sir David Wootton, Representative Lord Mayor

The guests were welcomed by Isobel Pollock, the Junior Warden. These included The Sheriff, the Lord Mayor's Representative, and Masters of other livery companies notably John Chambers, the Master Wax Chandler, who received a round of applause as thanks for providing accommodation for the Engineers.

In response, the principal speaker, Sir Michael Marshall, introduced himself by reference to his family firm's history. It was started in 1909 by his grandfather, David Gregory Marshall, in a small lock-up garage in Brunswick Gardens, Cambridge. A chauffeur drive company has developed over the years into car dealerships, airports, pilot training and

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aerospace design and manufacture, notably the nose-cone for Concorde.

It was a fascinating story of entrepreneurship and belies the old saying: "Rags to rags in three generations". The company now turns over a billion pounds per annum and is still going strong as a family business.

Then it was all over and Tony Willenbruch had to remind us it was time to go home. A great occasion and one Diana and I will remember as a grand night out.

*Gardner Crawley
Banquet photographs by Gerald Sharp*

The Master's Speech

It is my great pleasure to welcome you all to Mansion House for our Annual Banquet. It is such a privilege to be here in these magnificent surroundings for the most important event in our Livery's year.



*The Master, Air Vice-Marshal Graham Skinner CBE,
RAF in the Mansion House before Dinner*

So far this evening has had a fabulous feeling about it and much credit is due to the excellent food and wines served impeccably by the Mansion House staff - when I was The Clerk this was the one venue that I could always guarantee would be first class. The musical entertainment from the Live Brass Quintet always adds to the ambience of the evening too and my thanks to them for such stirring 'aviation' music too as befitting my heritage.

I thank too our present gallant and learned clerk, Wing Commander Tony Willenbruch, who has contributed enormously to bringing us all together and especially so in the recent absence of our Beadle and Assistant Clerk, Mr Stephen Grundy, now on light duties after a very successful triple heart by-pass operation in

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August but unable to manage the ceremonial tonight for us. In his absence, I am most grateful to Mr Peter Thompson, The Beadle of The Worshipful Company of Plumbers, for standing in so ably tonight.



Mansion House is at the centre of the City of London and was built to present a focus for all things civic here. You may then have wondered why you entered the building from a side entrance at Walbrook which was originally designed as an eight-stall stable and coach house. This was because the City of London Corporation

asked in 1846 for a new entrance at the side of the House to be designed so that the Lord Mayor could come and go without being in full view of the general public. (I make no further comment). This Walbrook entrance remains in constant use and all guests are brought into its vaulted areas to make their way upstairs. Here the rooms are superb - we had our reception in the Drawing Rooms and the Salon with its stunning row of crystal chandeliers. However, so much goes on in those early minutes of an evening such as these when we catch up on the news with old friends and make new ones - if you missed the delights of these rooms, then have another look on the way out but, as The Clerk will remind you, don't linger too long.

We are now in the grand room, known as the Egyptian Hall. The interior of the room, with its giant columns supporting a narrow attic area, is based on designs of the classical Roman buildings in Egypt - some say it should be called the Roman Hall especially since there is nothing Egyptian about the decoration. However we can all agree this is an outstanding backdrop for our Banquet tonight and many great civic occasions.

Of course, I have been talking about the home of our Lord Mayor for his time in office. Unfortunately, the present incumbent - The Right Honourable The Lord Mayor, Alderman Roger Gifford, is unable to be with us this evening because of a conflicting external engagement prior to leaving tomorrow on an official visit to the Middle East.

However, we are delighted that a Representative Lord Mayor is here to fulfil his duties in absentia and to respond on his behalf to the civic toast. We welcome most heartily Alderman Sir David Wootton who was our 684th Lord Mayor from 2011 to 2012. You will all

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recall that this was an absolutely jam-packed year including the London Olympics and Queen's Jubilee which was celebrated in style by the City on the Thames. This spectacular pageant owed much to the pedigree of Sir David who had been an outstanding rower during his time at Cambridge University before going on to become a partner at Allen & Overy, the international law firm. Whilst in the City he developed a strong interest in its governance to be elected as Alderman for the Ward of Langborn, where he still serves, and he became a Sheriff in 2009. He has always found time to devote to charitable and community activities particularly the promotion of sport and education - with an special interest in music and, lately, ballet. Sir David is a keen supporter of many Livery Companies including being a Freeman of the Company of Watermen and Lightermen - this association matching well his Stewardship of Henley Royal Regatta and being a member of Leander and the London Rowing Club. Sir David makes a truly outstanding contribution to the well-being of The City and he has always been strongly supported in all these endeavours by his wife Elizabeth (Liz) - we welcome you both to our table.



Sir David Wootton presenting a Present from the Lord Mayor to the Master

Also most welcome tonight are my personal guests, Arabella, my daughter and Adam, my son with his guest, Dr Anne-Lise Goddings. Delving far back into my own past, which we call PMT (Pre-Margaret Times) are 4 personal guests from the days that I was at home in Twickenham as a school boy and we are still meeting up regularly as a group - these very good but not old friends are Terry and Annette Pearce and Richard and Maureen Hallows. Thank you for your continuing friendship and 'welcome' tonight.

There is one Master here present who will not be greeted by our Junior Warden later because he is one of our own Liverymen. Mr Windsor Coles was

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installed on Saturday evening as The Master of The Worshipful Livery Company of Wales. I was honoured to reply on behalf of the guests at this glittering occasion in Cardiff City Hall - where their liverymen included a Nobel prize winner and the Vice-Chancellor of Cambridge University, as a Cardiffian, was a guest too. We wish Windsor and Sue well as a very new Livery Master and Mistress on the circuit.

You will be glad to hear that I do not intend to talk 'aviation' now because we have another speaker later better qualified to do so. But I would wish to talk a little about our recent visit by 80 of The Engineers Company to Northern Ireland which many of our attendees described as 'eye-opening'. In Belfast we had an exclusive preview of Bombardier's new composite wing facility that was officially opened by the Prime Minister Mr David Cameron last Friday. We were hosted warmly by the Sinn Fein Lord Mayor of Belfast in the City Hall and in the newly-refurbished Guildhall in Derry - Londonderry by the SDLP Mayor there. This year is the 400th anniversary of the plantation of apprentices in Derry from the Livery Companies of London and the subsequent formation of The Honourable The Irish Society. We walked the walls of Derry - paid for by the City Livery Companies, saw their restored cannons on the battlements, and visited St Columb's Cathedral sited within the walls where the inscription says: *"If stones could speake then London's prayse should sound who built this church and cittie from the grounde"*.

Our welcome by everyone there was fulsome, unreserved and genuine. Mr Edward Montgomery who is the Secretary and Representative in Northern Ireland of The Irish Society asked that we encourage visits like ours by other Livery Companies to reinforce the historic links between the City of London and the Province.

Earlier, in July, in keeping with my 'aviation' theme for my year, 30 members of the Company visited Marshall Aerospace at Cambridge. This was organised for me by Liveryman Brian Phillipson, and we were greeted by Sir Michael Marshall, Chairman of the overarching company Marshall of Cambridge (Holdings). He is another of my principal guests this evening. Sir Michael has worked for the Company, his family's firm, for 58 years and seen it grow to one of the biggest privately owned firms in Britain.

Sir Michael grew up during the war years and was called-up for National Service in 1950. Having some flying experience with Tiger Moths at Cambridge, he was accepted for flying in the RAF. He was trained in Canada and won his wings, operational tours followed

on Meteors and Vampires which included a skilful crash landing after an inverted spin nearly ended his career. On discharge, Sir Michael went to Jesus College and made it into the University Boat Race crew and then on to represent Britain at the European Championships in Belgium in 1955. Clearly he is an accomplished man on both water and in the air, and an outstanding businessman with a track record in the motor and aerospace industry second to none.

He is also one who has many interests outside work and during his time these have included being The High Sheriff and Vice-Lord Lieutenant of Cambridgeshire, with the Cambridge Air Training Corps, the Air Cadet Council and President of the Air League. He was knighted in the New Year 2010 just prior to the centenary celebrations for Marshalls. Sir Michael is married to Sibyl who also has very wide charitable interests.

I worked for Marshall Aerospace as their Military Adviser on my retirement from the RAF and enjoyed every moment both being with the aircraft there and in a company with the highest engineering integrity and can-do attitude to support their customers. Sir Michael, it is a delight to have you here this evening with Sibyl and I greatly look forward to your speech later.

Before that point however I would like to return to our Representative Lord Mayor, Alderman Sir David Wootton and ask, Sir David, that you kindly accept this cheque from The Worshipful Company of Engineers as a contribution to the Lord Mayor's Appeal and to the Mansion House Scholarship Scheme.



The Master Presenting the Charitable Trust's Cheque to the Representative Lord Mayor

Please join me in the toast. "The Lord Mayor, The City of London Corporation and The Sheriffs"

Sir Michael Marshall's Speech

First, for all your guests, can I say how delighted and honoured we are to be with you tonight in your 30th year, and we thank you most warmly for your kind hospitality and for such a superb dinner in these magnificent surroundings.



Sir Michael Marshall

I confess that I may be here under false pretences, as my only engineering training was as an RAF pilot during my two years National Service. This was followed by three very happy years at Jesus College, Cambridge, where I was sent to read History as it was thought that it would be easier to get in that way! This has always been a deep regret, as engineering is close to my heart and it is of course the heartbeat of our company, which I joined in 1955, and is so vital for our nation. I have a deep respect for all you real engineers!

But, Jesus College was no bad place to be as we did well on the river, and your founder Master, the late Lord Mayor Sir Peter Gadsden was a distinguished Jesuan, as was your 2001 past Master, Andrew Jackson. The College has provided the City of London with 3 Lord Mayors over the last 33 years, starting with Sir Peter, followed by Sir Alan Traill and during the Diamond Jubilee Year by Alderman Sir David Wootton, who I am thrilled has stepped in as Lord Mayor tonight.

Your Coat of Arms has the winged Pegasus representing horsepower and flight, and I am delighted that in your 30th year you have, at last, elected as your Master an energetic aerospace engineer who was one of the most senior engineers in the Royal Air Force, and that his theme for his year is aviation. You have certainly chosen very wisely, as Air Vice-Marshal Graham Skinner has a great reputation in the Royal Air Force and within the Aerospace Industry where he has

worked widely since his retirement from the RAF, including giving invaluable advice to my company. We were delighted when in July he led some of you to visit our activities at Cambridge Airport.

My own involvement with the Livery, apart from being invited as a guest to many wonderful Dinners, has been as a Liveryman of the Coach Makers and Coach Harnessmakers and of the Guild of Air Pilots and Air Navigators, with which I am proud to be associated particularly because of my own company's links with cars and aeroplanes.

Well how did our business start. My grandfather, who incidentally was also not an engineer, came from a humble background, and was trained in the kitchens of Trinity College, Cambridge as an apprentice chef. He was then invited to manage the leading Cambridge University Dining Club where he achieved inspirational success and reputation. In 1909, with a loan from Barclays Bank, he bought 2 Metallurgique cars which he hired out with chauffeurs to the wealthy Dons and Undergraduates who he had met through the Dining Club. This success led him, in 1912, into the Retail Motor Industry. During the 1914/18 War he ran the catering at the Woolwich Arsenal canteens serving 56,000 meals a day. Back in Cambridge, in 1919 he gained the Austin Car Distributorship. This was our true foundation and it enabled our subsequent growth in the retail motor industry. We now have some 70 Dealerships throughout the UK for 27 leading motor manufacturers.

My father, on the other hand, did read engineering at Cambridge and then went to work in the Family Garage. But he also learned to fly, so, in 1929, my grandfather, with his entrepreneurial spirit, purchased the 45 acre field behind his house and they bought a Gipsy Moth with which my father started giving flying lessons. This was a great success and took us into the world of aviation. In 1936 we moved to our current airfield where we trained over 20,000 aircrew during the Second World War, including 700 for the Battle of Britain. This was achieved through my father's inspired idea of increasing the number of keen instructors by selecting the best from the newly trained pilots, a system which was, incidentally, later adopted by the RAF.

During the War we also modified and repaired 5,000 assorted aircraft. This gained us a great reputation in the industry and led to our post war work for most of the UK aircraft manufacturers and for the airlines BEA, BOAC, and BA, and now for Boeing and Lockheed-Martin and, of course, for the

RAF. Possibly some of our noteworthy achievements were the design and manufacture of the Concorde droop nose and visor, our involvements with space and, from 1966 onwards, our position as UK Design Authority for the Lockheed Hercules C-130 aircraft on which we do work throughout the world. We gained acclaim for rapidly designing and fitting an air to air refuelling capability on the C-130, so that 19 days after the MoD request they were able to take vital supplies to our Task Force in the Falkland Islands.

Our Engineering activities also cover the design and manufacture of hi-tech internal aircraft fuel tanks and expandable mobile Shelters which are sold throughout the world as Field Hospitals, Laboratories and CT Scanners, for which we recently received a Queen's Award.

Training and staff development are high priorities for us. We have run apprentice training continuously since 1920 when, incidentally, a good apprentice started at the princely sum of 2 shillings and sixpence (12½p) per week for a basic 50 hour week! Many apprentices have gone on to senior management and director positions within our Group including our current Engineering Director. The Marshall AeroAcademy, in conjunction with Kingston University, is gaining wide acclaim for its foundation degrees in aeronautical engineering.

Flying training continues at Cambridge and we are proud to support the 104 year old Air League which, through the generosity of its donors, enables it to give an average of 50 flying scholarships and 30 bursaries each year. Many of these are won by cadets from the really excellent Air Training Corps with which you kindly mentioned our involvement.

We are extremely proud of our contribution to the UK trade balance and its Aerospace Industry which today contributes over £24 billion to the economy, supporting 230,000 high class jobs with 75% of its manufacturing output going to export. The UK holds 17% of the world's aerospace market, second only to the USA, and is at the heart of Europe's aerospace industry. To maintain this, and to enable the UK to be able to feed itself and prosper in an increasingly competitive and overcrowded world, we must build on this lead through apprenticeships, training and national encouragement of enterprising aviation initiatives as recognised by the Government through its Defence Growth Partnership with which we are actively involved.

Finally, I come to controversial and dangerous territory! Inevitably, aviation has created the need for

airports which have created huge wealth for our Nation as international gateways for business and tourism. It is my strong belief that the UK delays national hub airport development at its peril, as competitive hubs are already growing fast in France, Holland, Germany and in the Middle East. We should stop dithering and urgently get on with the third runway at London Heathrow. This, in my view, is of vital and more immediate importance to the wealth of our Nation than HS2. At the same time, we must look over 30 years ahead, at the costs and practicalities of developing either a fourth runway at Heathrow or a new world class hub elsewhere in the South of England with all the necessary infrastructure and supporting high speed links. This is vital for the future prosperity of all who live in the UK.

You engineers, are the ones who we will depend on to make all of this happen and I am delighted to give you the toast:- The Worshipful Company of Engineers, may it flourish, root and branch, for ever.

THE LORD MAYOR'S SHOW 9th November 2013

This huge public event dates back to 1215, the year of Magna Carta, in which the new Lord Mayor must swear an oath of allegiance to the sovereign and "show" herself to the people.

This magnificent pageant is full of pomp and circumstance, from the Lord Mayor's golden coach to bright modern parade floats. A firework display in the evening adds a spectacular flourish to a great day out. After checking in at our hotel on the south bank we crossed the Millennium Bridge at 9am to see photographers gathering to get their first sight of the Flotilla moving downstream on the Queen's Row Barge "Gloriana".



The Flotilla Passing under Blackfriars Bridge with its new Station on Top (Photo Brian Nuttall)

From Westminster Boating Base Pimlico she passed under Lambeth Bridge, Westminster Bridge, Hungerford Foot Bridge, Waterloo Bridge and Blackfriars Bridge. I was at the ready to photograph the new Lord Mayor Fiona Woolf before she passed under the Millennium Bridge, London Bridge and Tower Bridges before disembarking at HMS President by the Tower of London to make her way to the Guildhall.



Lord Mayor Alderman Fiona Woolf and the Sheriffs on Board Gloriana (Photo Brian Nuttall)

At one time the procession was on foot and then it was changed to a procession on the Thames. This is how the term "Float" came about. In the 13th century they took the word "Show" literally. In those days the Lord Mayor had a duty to show themselves to the people when elected.

As the Lord Mayor made her way by car to the Guildhall, Ann and I made our way past St Paul's Cathedral grandstand where the blessing would take place. Fiona Woolf started her journey to be Lord Mayor when she was elected Sheriff at Common Hall in The Guildhall on Thursday 24th June 2010.

She worked on the Channel Tunnel and advised on the Water and Electricity privatisations notably on the creation of the National Grid Company PLC. She is an enthusiastic Plumber and Wax Chandler reflecting her keen interest in the Water and Electricity sectors. She attended our Annual Banquet at the Mansion House in 2010 as Sheriff. Given Fiona's background it was most appropriate that her theme is "The Energy of Life". We continued to Wax Chandlers' Hall which was to form our base from which to view the Lord Mayor's Show.

As we approached Wax Chandler's Hall the last drop of oil was being applied to a steam roller by the

“driver”. Having never driven a steam roller had the need arisen I could have done as my licence allows this. The Worshipful Company of Paviers float featured the “Pigs” that paviers cleared from the medieval city streets and was towed by the steam roller from the Amberley Museum.



And Pigs May Fly Outside St Paul’s Cathedral

The Wax Chandlers’ Hall ‘Engineers Company Show Day HQ’

On the steps of Wax Chandler’s Hall the Master, Graham was exchanging last minute thoughts with the Beadle, Stephen. On the other side of the road to Wax Chandler’s Hall two horses munched their way through a bale of straw for their breakfast oblivious that shortly they would be the centre of attention.



The Horses Hard at Work Later

We rendezvoused with our two guests from York and met Margaret who despite a busy day made us all feel welcome. The Hall was open from 10am and after we had enjoyed our coffee and biscuits we made our way to the Guildhall. At this time the weather was fine but very soon the rain arrived and by the time that the procession began to move forward it was pouring.

Procession from the Mansion House to St Pauls and the Royal Courts of Justice

Despite the rain 7,000 participants and 155 entrants shrugged off the gloom and were cheered and clapped by a vast crowd of spectators as the procession passed by. The Procession would now wend its way along the three mile route from Guildhall to St Pauls Cathedral and on to the Royal Courts of Justice to mark Fiona’s first full day in office as the 686th Lord Mayor. Fiona is only the second woman to be appointed to the role.

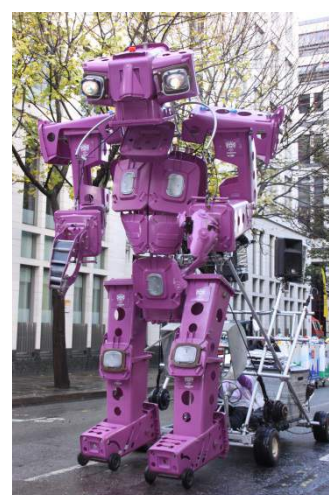
The military were well represented and their discipline and professionalism was well to the fore. The Bands competed for our attention as did the Household Cavalry mounted regiment and the Pikemen and Musketeers of the Honourable Artillery Company.



Floats included a ‘Welcome to Yorkshire’. The Tour de France Grand Depart is in Yorkshire in 2014. Their float displayed bicycles old and new and a vintage French 1902 Mors Limousine. Walkers from 26 Livery Companies were represented and we gave a special cheer when our Master Graham, Patrick O’Reilly and Chris Elston (*Left*)

passed by as part of the Modern Companies’ float.

“Elizabeth” The Whitby Steam Bus made her third appearance at the show. Her home is stables at Cross Butts, Whitby. The City of London Recycling team used a talking “Wheelie Bin” Robot (*Right*) with drumming street sweepers to promote recycling and encourage sustainable waste management practice.



Aston Martin Lagonda represented the Coachmakers reflecting its modern association with the motor industry. They presented a procession of Aston Martin motor cars through the century. The Worshipful

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Company of Joiners and Ceilers is an ancient Livery Company. It was granted its charter in 1571 by Queen Elizabeth I. It was represented by a large contingent of Members in traditional costumes and troops of horsemen.



The Piliers Chablisiens Provided a Spiritual and Cultural Marketing Presence.

The Napoleonic Association supports people with a common interest in the period from the French Revolution to the Battle of Waterloo in 1815. Napoleon was a regular visitor to Saville Row in London. His military and business suits were supplied under Imperial Warrant by Henry Poole. Surprisingly Josephine's perfume was supplied by James Creed.



Napoleon with his French Guard of Honour

The Lord Mayor rode in the 18th century gold state coach drawn by six shire horses and preceded by Doggetts Coach and Badge men. Her personal standard and the standard of her mother livery company, The City of London Solicitors Company were carried by members of the Company of Pikemen and Musketeers of The Honourable Artillery Company.



The Lord Mayor Alderman Fiona Woolf on her way to the Royal Courts of Justice

Wax Chandlers' Hall and St Paul's

Very soon it was 12.15 and we walked back to the hall to enjoy a hot buffet and a glass of wine. Fortified we decided to take our after lunch coffee in the crypt of St Pauls followed by a walk around the Cathedral. The Carnival of the Animals was the recital of the day so we sat to enjoy the organ music and rested our feet to prepare for the walk back over the Millennium Bridge.

Gabriels Wharf, The Wharf Restaurant

The walk back over the Millennium Bridge was dry and it wasn't long after arriving at the restaurant that we ordered our starters and were watching the early evening Fireworks.



The Start of the Fireworks

The Firework display from a barge moored in the River Thames was spectacular and the following dinner of three courses with wine and coffee was excellent. We all thanked Barry Gasper for organising the evening event and after final goodbyes to Graham and Margaret we drifted away into the night.

Brian and Ann Nuttall

VISIT TO RAF BENSON 20th November 2013

Approximately 30 members and guests were met at the Officers Mess by Squadron Leader Mark Brady who was to be our escort officer for the day. We were then formally welcomed by Wing Commander Paul Rose MBE, Officer Commanding Engineering and Logistics Wing.

Wing Commander Rose outlined the present role of RAF Benson as a Support Helicopter Main Operating Base. Part of Joint Helicopter Command, the base was home to 4 operational flying squadrons, Force Headquarters and supporting wings. Other related aviation organisations based at RAF Benson, described as "Lodger Units" include a Squadron of the Royal Auxiliary Air Force, Oxford University Air Squadron, the National Police Air Service (South East) and the Thames Valley Air Ambulance Service.

Squadron Leader Russ Gleeson, Assistant Chief of Staff, then gave us an outline of current operations and an update of the changes taking place at the station. Here the Puma HC 2 with its attendant improvement in lift and load capacity over the earlier Puma HC 1 are being delivered. Preparations are taking place, with many Royal Naval personnel evident on site, to transfer the Merlin helicopters from RAF service to replace the RN Commando Sea King helicopters at the Naval Air Station Yeovilton. The Future Transition plan, which also includes the addition of Chinook helicopters at the base, will ensure the continued development of RAF Benson. As with any organization people are key and great attention is being paid to staff training, welfare and families. There are around 2000 Service and civilian personnel employed at the Base with approximately 2,500 dependents.

examples of support engineering equipment and skills in armament including small arms, photography and imagery collection, survival equipment and various ground support equipment. The specialised equipment employed by each was described and demonstrated with great enthusiasm and a very high degree of technical knowledge.



Land and Sea Survival Equipment Including an Invisibility Blanket

We then moved onto the CAE civilian run Flight Simulator Section where we were first shown the training classroom where helicopter pilots are able to learn much by simple computer simulation. Then we looked at the three of the simulators of individual helicopters including the most important Chinook simulator.



Chinook Simulators, The One Behind is Off Balance

The simulators cost some £25m to build but only £2000 per hour to run compared to £20,000 an hour to fly a helicopter. From the outside it was apparent from the gyrations of one of the Chinook simulators that the crew inside were having a challenging time. We then moved to the control room where instructors can control all the conditions which are visible in both the control room and the Simulator. The instructors can link the Facility's simulators together electronically to



Ground Support Equipment on Show

After the briefing the group was separated into two parties and our party first visited exhibits staffed by Support Engineering. We were able to talk individually to NCOs and Aircraftmen concerned with

produce a 'war' scenario with interactions between them and other simulation players such as attacking MiG fighters, friendly AWACS aircraft and Attack Helicopters to enhance the training value for all involved



In the Control Room Showing One of the Panels with a View of the Pilots inside the Simulator

For me, as a flight simulator enthusiast, this superb simulator facility was the highlight of our visit to RAF Benson.

We then returned to the Officers' Mess where we enjoyed an excellent light lunch whilst being hosted by several Engineering Officers from the base and were able to discuss their work with them individually.



Examining a Merlin Gear Box

After lunch we moved on to No 78 Squadron helicopter maintenance operation and we were able to observe the maintenance work being carried out on three Merlins. The opportunity to board and examine the controls and load carrying areas of these aircraft (or platforms in RAF speech) at close quarters was greatly appreciated. We were also able to examine a stripped down rotor head, engines and gear boxes and discuss the wear on many parts of the helicopter in the sandy and very hot conditions of the desert and the effect of altitude on the plane's performance. Training

of Royal Naval personnel and RAF aircrew in maintenance work was also taking place all around us.



Merlins Returning to Base After Flying Training

Our final visit was to the Puma helicopters hangar. The Puma 1 helicopter was taken out of service in December 2012 and we saw several stripped down Puma 1 helicopters in dilapidated condition. These helicopters had small engines giving limited lift and range. The intention is to carry out destructive testing on many parts of the air frame and fuselage to assess the fatigue aspects and wear. The future development plan is to refit the air frames of the old platforms with new engines and controls as Puma 2 which greatly enhanced the lifting capacity and range.



*Refurbishing a Puma 2 Instrument Panel (Above Upper)
Wing Commander Rose and The Master (Above)*

The Master thanked Commander Paul Rose for his excellent hospitality and very interesting visit. Wing Commander Rose then gave the Master a photographic record of the visit which had been produced whilst we were enjoying this very impressive and informative visit.
Norman Jones

ANNUAL CAROL SERVICE AND DINNER

**St Peter Ad Vincula and
Clothworkers' Hall
18th December 2013**

The evening of Wednesday 18 December was windy and wet, but that did not prevent the Chapel Royal of St Peter ad Vincula at the Tower of London being packed for the annual Carol Service. The last stragglers could only stand at the back as the Procession formed and made its way through the crowd, the power of the choristers' singing seeming to fill the great void of the roof.



Gathering Outside the Gate Before the Service

As the gusts of wind outside added to the level of noise the Chaplain, the Reverend Canon Roger Hall, offered a warm and light-hearted welcome. Describing the history of the Chapel and its links to the history which seemed so familiar from schooldays, he reminded us of the Queens of England buried under the floor through both words and emphatic actions - in case we had forgotten the manner of their ends.

The service started with the Bidding Prayer from our own Chaplain, Reverend Peter Hartley, backed by an enormous decorated Christmas tree that reached almost to the apex of the roof. The familiar sequence of carols - so familiar that looking round many of the congregation obviously had no need of the helpful reminders in the order of service - progressed smoothly through. Interspersed, readings from the Wardens, Clerk, Master, and Chaplain, and an especially eloquent reading from the Master's Lady, punctuated what seemed to be a vigorous competition between choristers and congregation for who could provide the most spirited rendition of each carol.

But the choir had a few opportunities to show their excellence alone in wonderful performances of Arise, Shine..., Iona, O Men from the fields, and finally

Sussex Carol. The final prayers and blessing were followed by the crescendo of Hark, The Herald Angels Sing as the recessional carol which brought the service to the right triumphal end.

Emerging back to the wind and rain, the walk to the gate past the glowing White Tower with an illuminated Tower Bridge behind was a spectacular vista, as we all worked out how to reach Clothworkers' Hall with minimal damage. All seemed to make it in good time, as the entrance hall rapidly filled with slightly damp engineers and partners, and lots of dripping umbrellas.



The Choir of Hampton School in Fine Voice

Dinner, in its informal style and random seating, was alive with talk and laughter between new and old acquaintances. The only silences were for a series of performances from the choir of Hampton School, the Master's alma mater, perched high in the gallery. Their impressive, and superbly delivered, repertoire struck a balance between seasonal influence, full choir, solos, and most unexpectedly a barber shop quintet! A definite bonus to the evening.



*A Very Happy Congregation After Dinner in Beautiful
Clothworkers' Hall*

With such a perfect start to the Christmas period, and filled with the excellent dinner, we left the Clothworkers fully primed for the season - and almost certainly all planning to return next December.

John Loughhead (Photos John Canning)

Bill is currently working on two new projects. The first is a simulation of the remarkable Augusta Westland Tiltrotor aircraft, which seeks to combine the best features of fixed wing aircraft and helicopters, including a 350knots cruising speed and VTOL capabilities. A little thought suggests that this aircraft could be a pilot's nightmare with all the controls of a fixed wing aircraft plus those of a helicopter and the ability to tilt the wings. How many arms will the pilot require? This must be a true two pilot aircraft. Perhaps flying it is a task best left to a computer. I am sure that Bill's guests will follow with interest Bill's challenging task of creating a simulator for this amazing machine. Bill's second project is to build a simulator for a Formula One racing car. This project is at an earlier stage, but we did see a steering wheel.

VISIT TO FLIGHT SIMULATORS AT WARFIELD 30th January 2014

On 30th January, the Master, a group of liverymen and their guests were hosted by Liveryman Professor Bill O'Riordan FREng and his wife, Val, at their home in Warfield. On approaching Bill's house it was immediately apparent where his priorities lay. His cars were parked outside and the large garage doors were firmly shut. We quickly discovered that a large part of his house was devoted to Bill's passion for flight simulators.



Bill (*left*) gave us a fascinating and wide ranging presentation on flight simulation and described the international network of flight simulator devotees that has evolved. He has a particular interest in simulated scenery and showed us some stunning examples of what can be achieved. Apparently the UK is the world leader in scenery generation. Bill

was supported by his two collaborators, John Panter and Ed Turner.



Formula 1 Steering Wheel for the Simulator

In due course we were taken into Bill's inner sanctum to be introduced to his existing creations. The first was an impressive simulator for a Beech B58 Baron with a full dual control cockpit. All the details had been carefully reproduced. Even the undercarriage selector was a proper lever, not a computer toggle button. It was in exactly the correct position. The one significant difference from a real Baron cockpit was that Bill had managed to squeeze in a glass display whilst retaining the full nine instrument panel, which the younger generation call steam gauges. I think he may have sacrificed a radio stack to have achieved this. For those not familiar with glass cockpits it provides an excellent means of transition. A quick glance at the steam gauges is reassuring for an old-timer.

Bill had set the Baron up to be a little more responsive than the real aircraft. I suspect that he breaches the limits in the flight manual and uses it for aerobatics when nobody is watching. The response proved to be something of a challenge for some of us, including a current fully instrument rated pilot. I am sure that with a little more time we would have hacked it and at least



The Tiltrotor Aircraft flying over Bill's Landscape in the Early Days of Preparing a Simulator

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one of us would have made a decent landing. A disappointment for Bill was that none of us was sufficiently competent to fly the aircraft safely at a few hundred feet and fully enjoy the fantastic scenery that Bill had created. Between flights we were able to enjoy the splendid lunch prepared for us by Val, to whom we extend our thanks.



The Baron Cockpit of the Simulator



The Robinson R22 Helicopter Simulator

Bill's second creation was a Robinson R22 helicopter. This proved very popular and many people made successful take-offs and landings and hovered close to the ground without disaster. The simulator captured the frugality of the Robinson and was clearly a safer thing to fly than the original. The base for the Robinson was RAF Shawbury and the marvellous Shropshire countryside was well represented.

We all had an interesting and enjoyable day and we are much indebted to Bill and Val for their hospitality.

Roger Dunn

THE 14th BRIDGE LECTURE THE CITY UNIVERSITY 12th February 2013

A Strategy for the Electromagnetic Spectrum Paul J De Lia, L-3 Communications

Undeterred by the "Red" weather warnings in place for high winds and torrential rain, nearly a hundred hardy souls gathered at City University for this 14th Bridge lecture. Inaugurated as a link between academia in the City and the Worshipful Company of Engineers, this biannual event again attracted a good mix of Masters, past, present and from other Companies, Liverymen, academics and students.

Two apparently intractable topics – strategy and the electromagnetic spectrum – were brought to life by the speaker's regular references to the capability of everyday equipment such as iPad, iPhones and the changing nature of warfare. This was emphasised because of the ever present opportunities and threats created by technology which is available to everyone, including "the bad guys".

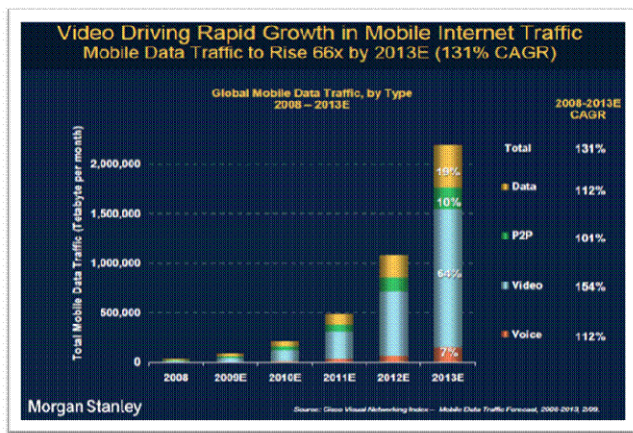


Paul J De Lia (*Left*) is the Corporate Vice President – Science & Technology of a business comprising 48000 people whose evolution started by supporting the US Department of Defence (DoD), grew to being one of its top five suppliers (on turnover) and has evolved to enable its customer to optimise the use of "Commercial off the shelf" (COTS)

applications. The opportunities and risks presented by licensed and unlicensed wavelengths were highlighted with the commercial and legal protection offered by the former. The fact that these developments are commercially available liberates the DoD from much research funding but means that the products being used are commercially available to all. "Why design a doorknob when all you have to do is learn to turn it?"

In the description of an industry which is seeing in excess of 350% annual growth in electronic data transfer, and measures data volume in Xerabytes (1×10^{18} or 1 with 18 "0"s after it) it would have been

easy to become detached in a sea of figures, not to mention the myriad of military acronyms.



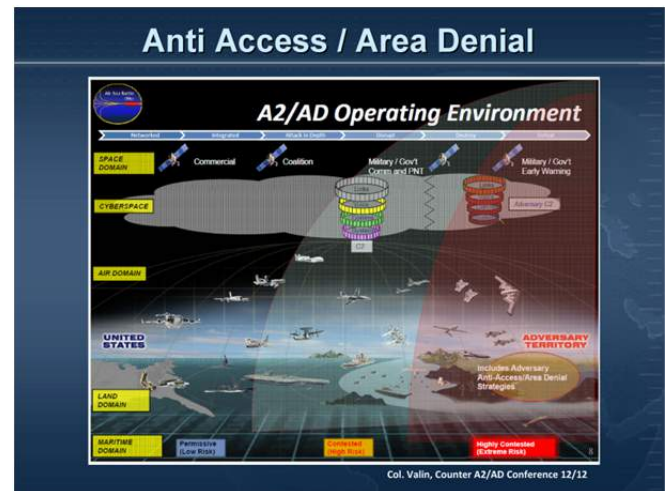
How Video Is Driving Rapid Growth

Paul entertained with interesting diagrams and the twin, reassuring mantras of “Technology has outpaced Policy making” and ‘Policy makers will say “No” whereas an Engineer will say “Yes, if...”’. The whirlwind tour covered technological developments and international virtual chess which, since the mid 1990’s, has seen the creation, growth and normalisation in society of video games, unmanned aerial vehicles, asymmetric warfare and IEDs (Improvised Explosive Devices). The underlying message was constant - controlling the electromagnetic spectrum is a battle that cannot afford to be lost.

The phenomenal growth in electronic data transfer during this period once appeared to threaten the capacity and ability of the electromagnetic range. It was reassuring to learn that this asset is neither finite nor depletable. Technology, especially processing speed, has advanced so rapidly that the “gaps” in any slow speed transmission curve can be “grabbed” and used by faster technology. My analogy is a fast car weaving between and overtaking slower cars on a motorway carriageway. Accordingly, the electromagnetic spectrum is immediately renewable, which is reassuring.

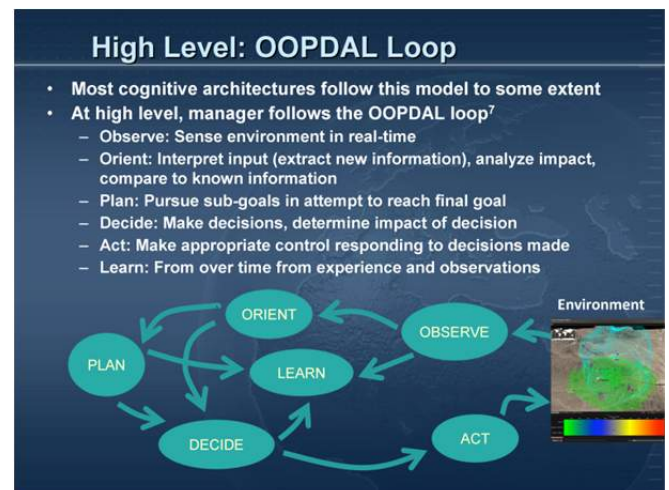
Paul identified that slow is not good because it may not be the good guys driving the fast car. Slow is perceived to be predictable, vulnerable and not resilient to attack. He outlined a current and future conflict zone where opposing sides endeavour to block routine use of systems and superimpose control on opponents’ management systems. The technological response is Dynamic Spectrum Analysis which uses “real-time adjustment of spectrum utilisation in response to changing circumstances”, Paul’s words not mine!

In future, controlling the high ground will be achieved through controlling the electromagnetic spectrum. Whether an operating paradigm of conflict in SE Asia or a spacewar is considered likely, denial of access to IT systems is considered key.



Access Allowed or Denied

The closing part of the presentation focussed on the growth of cybernetic thought processes and robotics. A quick summary of the world’s leading universities and the areas of focus for development identified Sussex and Salford aligned with MIT in America. The opportunity to be addressed concerns the speed of decision making which is required in this high tech future. Decisions and actions will be required to be taken before a human being can lift a finger to type an instruction. Cognitive architecture is the answer which is has its solutions based in problem solving and goal orientated decision making.



Observe, Orientate, Plan, Decide, Act, Learn

The lively question session which followed was mostly focussed on the leadership and ethical issues associated with these “Cognitive Agents“ and what control mechanisms can be installed. With the recent

financial meltdowns partly blamed on IT system processes, there was great interest in the move from an OODA (Observe, Orientate, Decide, Act) framework to the OOPDAL decision making model. OOPDAL (Observe, Orientate, Plan, Decide, Act, Learn) is highly dependent is positioning the Planning and Learning in the correct part of the cycle.

A demonstration of the rapidly emerging challenges of technology and the policy makers response times were highlighted by nomenclature confusion. Unmanned reconnaissance vehicles started life in the late 1990's as AI (Artificial Intelligence) which were regulated by the US Civil Aviation Authority. These quickly became drones and then Unmanned Aerial Vehicles (UAV). Currently the RotoUAV costs as little as \$900 and will be used by Amazon to deliver online shopping orders. Any control mechanism has been challenged, if not compromised, by mass availability and application.

More alarming was the presence of a remote control drone (*below*) in front of German Chancellor Angela Merkel as she prepared to address a multi-national conference. No-one owned up to controlling it and there was no malevolent cargo which could have had catastrophic consequences.



Paul's final subject area was the inspiration and education of young people to get involved in engineering and technology. He highlighted the need to stimulate the ability to create and implement practical solutions. He advocated the need to spark interest in the young and cited the life-long benefits arising from manual dexterity and an aptitude for experimentation.

The 14th Bridge lecture was most stimulating, worthy of the Bridge Lecture concept, engrossing all attendees throughout and in the post lecture hospitality. Conflict is always challenging and everyone has to be aware of the ethics involved and difficult decisions to be made.

Since the speaker suggested that the next conflict is going to be played out in cyberspace, we must strive to lead the "good guys".

Colin Newsome

VISIT TO WARWICK MANUFACTURING GROUP 26th February 2014

Through the good offices of Sir George Cox, Pro-Vice Chancellor and Chair of Council of the University of Warwick, and principal guest of our 2013 Awards Dinner, 27 liverymen and their guests accompanied Master Graham and wife Margaret on the visit to Warwick Manufacturing Group (WMG).



Part of the Warwick Manufacturing Group Campus

WMG is a centre within the university in which multi-disciplinary research teams work collaboratively with industry partners and service organisations in a wide variety of projects and activities ranging from local to international in scope.

In his introduction, Lord Kumar Bhattacharyya - Chairman of WMG – outlined the rapid growth in activities of the Group from its beginnings in 1980 to the present, and its ambitious plans for the future. In doing so he acknowledged the support received at the highest level for the ideas underlying WMG's expansion. He explained that in the first decade its work was confined to automotive and aerospace; in the second it widened to include construction, defence, pharmaceuticals and telecommunications; in the third it added healthcare, finance and rail to the scope of its activities.

WMG engages in research, training and implementation. Six hundred staff are employed on a £150m pa programme, 90% of which is earned from its numerous projects; £300m of externally created capital assets have been created in the course of its work. Two hundred staff are employed on automotive work, but increasingly service companies are asking

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for advice, and WMG now has contracts in Europe, the US, Cyprus, Turkey, China, Thailand, Singapore and India.



Before the Briefing by Lord Bhattacharyya (Centre)

WMG's applied research now ranges from advanced manufacturing to digital healthcare. Its manufacturing centre was completed in 2003, the digital laboratory in 2008, and the International Institute for Product and Service Innovation (IIPSI) in 2008. Nano-composites are a significant focus of IIPSI's future work. Terms have been agreed for establishing the National Automotive Innovation Campus (NAIC), an R&D facility to be jointly supported by University of Warwick, WMG and Jaguar Land Rover in a new £100m building, further details of which may be found on the WMG website.

WMG's educational focus is equally wide ranging. It has 715 full-time Masters students of which some 500 are drawn from 600 companies in China; the WMG Academy for Young Engineers (14-19 age group) has 640 students – it is supported by 12 core companies and is accommodated in a £20m government financed building. WMG also organises a Higher Apprenticeship programme with Jaguar Land Rover and Rolls-Royce, partaken by individuals at the workplace; other prospective employers are in discussion.

After the introduction the party split into two, the first port-of-call being the Vehicle Energy Facility at which Prof Paul Jennings described test equipment used for characterisation of hybrid power trains, components and control systems; it being purpose-built for the whole spectrum of vehicle types from passenger cars through to heavy duty applications. Prof Jennings followed this with a tour of the Energy Innovation Centre's facilities for scaling-up new battery chemistries from concept to fully proven traction batteries produced in sufficient quantities for detailed industrial evaluation. Equipment includes test-cells for establishing battery performance at temperatures ranging from -40 to + 80 degrees Celsius and test chambers for ageing, abuse and vibration evaluation.

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Finally, he described research being conducted into the appropriate noise characteristics and level that should be generated in electric and hybrid vehicle to render them safe from the public safety perspective. Co-funded by government (£9m) & industry (£4m) the centre is intended to capitalise on the growing electric and hybrid vehicle battery market estimated at £250m for the UK by 2020. It is part of the UK automotive sector's £400 commitment to supporting electric cars and other low carbon vehicles, and complements the large contribution that global manufacturers have committed to UK projects in this field over recent years.



WMG Experimental Electric Car

It cannot have escaped the attention of visitors that very serious attention is now being given to decarbonising road transport; this, if accompanied by electricity generated from renewable or nuclear sources of energy, will significantly reduce greenhouse gas emissions.

This was followed by a presentation by Gunwant Dhadyalla on "Labcar" – a vehicle electric platform for applied research and industrial training and also used by engineers in the design and validation of electrical systems. The presence of numerous electronic systems and devices in modern vehicles presents a challenge in terms of their effectiveness, interaction and reliability, involving diagnostics and test engineering. The need to get this aspect absolutely spot-on is vitally important when the prospect looms that our motorways may be plied by driverless computer-controlled vehicle vehicle-trains in the not too distant future!

Visitors were then served with a delicious lunch overlooking WMG's delightfully landscaped campus with water-features, green areas and wildlife under the blue sky of an early spring day.

The afternoon session began at the International Institute for Product and Service Innovation (IIPSI) where work on additive layer manufacturing (otherwise known as 3-D printing) and innovative polymer forming was explained. Examples of the application of nano-particle technology to manufactured products were then provided. A feature of nano-particles is the increase in surface area that accompanies the ever finer dividing of a substance to the atomic level. We were told that 1gm of graphine (an atomic-level graphite structure) has a surface area of 100 square metres. This property can be exploited in the manufacture of impervious packaging film for perishable goods.



The Master and Wardens Setting Off to Church



Past Master Chris Price Getting the Low Down on the 3D Simulation (Photo Michelle Tennison)

This was followed by a demonstration by (Liveryman) Prof Mark Williams of his hi-tech car visualisation and evaluation research facilities.

Jon Wonham

ELECTION COURT AND SERVICE

St Vedast Alias Foster and Wax Chandlers' Hall

11th March 2014

After the Election Court Meeting the Master and Wardens processed to St Vedast Church for the Annual Service and were joined by members of the Court, many other Liverymen and their guests and those who had visited the Cheapside Hoard Exhibition earlier in the afternoon. The Master and Clerk read the Lessons and the Chaplain Revd. Peter Hartley gave a stirring address. The large congregation was able to fill the Church with joyous noise singing the hymns with great gusto.

Returning to Wax Chandlers' Hall we enjoyed the usual welcoming reception and then drew random numbers from the Beadle as we proceeded upstairs, whereupon individual games of snap were played matching numbers to seating positions. This meant that we were all generally surrounded by members relatively new to each other, which ensured a lively stream of discussions over dinner. I was personally engaged with discussions as varied as the details of our nuclear industry, STEM education, home brewing and hand sizes. One aspect that was apparent in all conversations is the engineer's love of detail – after one layer of a topic was discussed all participants happily delved below into ever deeper aspects, making each subject a much richer tapestry to explore.



The primary purpose of the Election Court Dinner is, of course, to celebrate the election of our new Master, Wardens and Liverymen. Following an excellent dinner featuring Scottish Salmon, Quail and Dorset Apple Cake, the Master elect, John Baxter (*left*) was introduced. John was Chief Engineer of Powergen when he joined the Livery. John noted how his engineering career started with winning the prize for top trainee when he was a trainee nuclear officer on the land based submarine test reactor; he attributes this success to appendicitis, which curtailed his drinking activities with fellow students and led to him studying to relieve boredom instead. John also gave advice to all those with management experience, but no experience about organizing events, with regard to event planning – don't! After organising the trip to nuclear facilities in Cumbria for only 25 people (what could be easier?) he

realised that the level of project management, organization detail, handling changing requirements and diplomacy skills required far exceeded his initial understanding, and admirably demonstrates what the Clerk and the Beadle go through to organize the Election Court Dinner and our other activities. John completed an entertaining address, by noting that he will be a working Master as he retains his role at BP.

Prior to what he promised would be a brief speech, the Master introduced the newly elected Senior Warden, AVM Patrick O'Reilly, Prof Isobel Pollock as Middle Warden and Richard Groome as Junior Warden (who unfortunately could not attend as he was battling the slopes in France which matches his Euro Engineer status).

The Master started his introduction by noting that the Election Court Dinner had followed a dinner the previous night, hosted by the Company for the 31 modern livery companies, it being our turn to host the Modern Companies Spring Dinner. This again highlighted the organizational efforts of the Clerk and Beadle in managing two back to back events. The Master also noted that the Chaplain, Revd. Peter Hartley, is looking for music for the Engineer's Hymn – anyone with any ideas? The Master said that it had been a huge pleasure and great honour to be in the chair of the Company, the year having rocketed past and he was looking forward to making the Master's report at the AGM in April, the draft of which the Clerk was already pressing him for.

Prior to the final toasts and the completion of an excellent evening, our two new Liverymen, Andrew Thompson and Tony Ginsberg introduced themselves. Their CVs are in the Company News section. Tony ended his speech by noting what an honour it is to be able to give something back and to be a Liveryman of the Worshipful Company of Engineers, which reflected the feelings of us all, before proposing the Toast to the Company.

Julian Ranger

VISIT TO THE CHEAPSIDE HOARD EXHIBITION 11th March 2014

Some 18 of us met at the Museum of London to see the Cheapside Hoard Exhibition.

The visit had been superbly arranged by Margaret Skinner and Ruth Cousins for partners of members attending the Election Court Meeting and Dinner.



Some of the 'Partners' Gathering Outside the Museum

The exhibition showed that in 1912 an extraordinary treasure of 16th and 17th Century jewels and gemstones was unearthed from under a cellar floor as buildings were being demolished in Cheapside. They had been hidden for 300 years and they soon came to be known as the Cheapside Hoard.



200 Times Scale Model of a Brooch from the Cheapside Hoard on the wall of the Museum

Now over a century later, the Hoard is displayed in its entirety for the first time since its discovery unveiling what has become the single most important source of our knowledge on early modern jewellery worldwide. With emeralds from Colombia, sapphires from Sri Lanka, diamonds from India, rubies from Burma, pearls from the Middle East and opals from Hungary, the priceless collection of nearly 500 pieces provides unparalleled information on London's role in the international gem trade in an age of golden conquest and exploration.

Through new research the exhibition shows the wealth of insights into Elizabethan and Jacobean London. It also explores the mysteries that still remain lost among the events of the mid 17th Century as to who owned the Hoard, when and why it was hidden and why it was never reclaimed.

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After the beautiful Election Court Service which was held at the Church of St Vedast Alias Foster, the group went almost next door to Rucoletta's Italian Restaurant for a delicious three course Italian meal.

It was a lovely afternoon and evening and was enjoyed by everyone. Thanks again to Margaret and Ruth for such a great day.

Mary Barton

VISIT TO BAES WARTON 27th to 28th March 2014

The Master and Margaret, together with a number of willing helpers organised a two day visit to Lancashire which included visits to two of BAE Systems sites, Samlesbury Hall and Blackpool with Dinner and overnight stay at the Grand Hotel Lytham St Annes.

This report is the result of contributions by a number of Liverymen and partners.

BAE Systems is a global company providing defence platforms and services for land, sea and air and has its origins in the many UK aircraft companies that existed following the Second World War. The Samlesbury and Warton sites, originally owned by English Electric, are where the Canberra Bomber and Lightning interceptor aircraft were built. Today BAE Systems employs 84,000 people globally, 33,000 in the UK and 31,500 in the USA with a turnover of £18.2bn. The primary products at the Samlesbury and Warton sites are the Typhoon, F35 Lightning 11 and Hawk aircraft.

David Scahill

BAES Systems Samlesbury

We toured the production lines for the sub-systems of the EuroFighter Typhoon (*below*) and the F35 Lightning II for which BAE Systems is responsible.



On the Typhoon BAE builds the canard foreplanes, the vertical tail surfaces, the inner elevons and the entire

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front fuselage for all of the aircraft needed by the partner nations (UK, Germany, Italy and Spain). The most complex build is the front fuselage which brings together all of the electronic and mechanical systems needed for this part of the aircraft, including the installation of the nose wheel undercarriage. All of these systems are rigorously tested in the completed front fuselage before despatch to Warton or one of the other partner nations for final assembly.

We then had a briefing on BAE's development work on 3D printing and additive manufacture. This is being used for the traditional application of 3D visualisation of design concepts but also for jigs and dies for manufacture, saving both time and cost. The longer term aim is to make both polymer and metal parts to fly in aircraft.



F35 Lightning II

The F35 Lightning II production facility has a state of the art moving assembly line designed to be capable of producing a batch of sub-assemblies a day at full rate. The current build rate is 42 a year ramping up to 100 a year in 2017. Further rate increases will depend on export sales of the aircraft and cost reduction will be essential to secure these. The air conditioned, fully digital environment in the factory is, therefore, aimed at reducing cost while maintaining extremely close tolerances. BAE build the vertical and horizontal tail surfaces and also the rear fuselage for each of the three variants of the aircraft (land based, carrier based and short take off/vertical landing). One interesting fact is that the assembly jigs for each variant are colour coded to allow easy identification as they all pass down the same assembly line. The idea for this came from the shop floor staff.

The two assembly lines provided an interesting contrast between European and International collaborative programmes, both of which produce world leading combat aircraft.

Mike Goulette

BAE Systems Warton

The drive from the Grand Hotel in Lytham St Annes to the Warton site follows the coastline with pleasant views across the Ribble estuary to Southport. On arrival we were given a short presentation on BAE Systems by Liveryman Simon Howison FREng after which we visited the area where unmanned aircraft are being developed.

Martin Rowe-Willcocks described the unmanned aircraft programme that started in circa 2000 when BAE Systems formed an industrial consortium to evaluate the opportunities offered by unmanned flight. The absence of systems to support the pilot make the aircraft lighter for the same duty and it can fly further as pilot fatigue is no longer the determining factor. To date the programme has comprised four demonstrator aircraft, the first being a small blended wing body aircraft developed jointly with Cranfield University and used to evaluate basic controls. The second aircraft was a converted single seater aircraft propelled by a pusher propeller with the cockpit full of electronic equipment.



The Taranis, Is it a Saucer or an Aeroplane?

Finally we visited the Typhoon production line in 302 Hangar where aircraft for the MoD and export are built, the other partners in Germany, Italy and Spain having their own final assembly lines. The hangar layout comprises a wide central aisle with nine bays. The workforce is organised into four teams each with a particular specialism. One team operates across the airfield where ground and flight acceptance testing takes place. The individual sections of the aircraft are supplied from Salmesbury (UK share) and from other partners in Germany, Italy and Spain.

The front, middle and rear sections of the fuselage are assembled first and then moved across the central aisle where the remainder of the assembly takes place. The aircraft are then sent for flight acceptance testing normally involving three flights, after which the aircraft is given a final coat of paint before being despatched to the customer.

This concluded a most enjoyable and interesting visit for which our thanks go to Simon Howison and the team at BAE Systems.

Phil Ruffles



The Mantis in Flight

This was followed by the first purpose designed aircraft, the MANTIS which was developed in 19 months from concept to flight, some two years faster than would be the case for a manpowered aircraft due to the lower safety requirements. The fourth aircraft was the TARANIS, a stealthy design, which first flew in August 2013. These programmes, which have been supported by the MoD, have given British Industry the capability to be able to collaborate in future programmes in Europe or the USA.

Our next visit was to the Flight Simulator, which was described by Mike Southworth and is used for test and evaluation purposes. Several Liverymen tried their hands at flying the 'Mach Loop' which is a low level training flight through North Wales.

Dinner at the Grand Hotel

At the evening dinner, Graham and Margaret Skinner's table included our guest Chris Allam, BAE Systems Engineering and Programme Management Director. Simon Howison, who had organised the Mini Out-of-Town opportunity with BAE Systems, was looking forward to his retirement at the end of the month, having handed over his responsibilities to Chris.

The conversation at the Master's table unsurprisingly had an aviation theme. Following the chicken brûlée starter, the roast shoulder of lamb with heritage carrot was accompanied by a discussion on heritage and display aircraft. During the sticky toffee pudding, conversation briefly touched on the sticky subject of politics as we noted that the Glasgow Out of Town Meeting starts on the day of the Scottish Referendum!

stained glass crests in the windows. Around 1860 this alcove would contain a grand piano where young ladies would play and sing to entertain dinner guests.



The Master and Simon Howison

My sources tell me that another table had more literary discussions, celebrating a well-known poem set in the vicinity of Lytham St Annes, and they were treated by Ken Hambleton to a rendition of Albert and the Lion:

*“There's a famous seaside place called Blackpool,
That's noted for fresh air and fun,
And Mr and Mrs Ramsbottom
Went there with young Albert, their son.....”*

An enjoyable evening was had by all with good company and excellent food and service at the Grand Hotel.

Jean Billingsley

Salmesbury Hall

On Thursday afternoon, the Partners visited Salmesbury Hall. This attractive Tudor house was owned by the Southworth family from 1497 to 1546 and they made many improvements to it. It has had many owners and in 20th century it was saved from demolition by local philanthropists putting it into a charitable trust.

As we drove in we were awestruck by the beautiful half-timbered structure. We began our tour upstairs viewing Titanic memorabilia, much of it relating to Wallace Hartley, the Band leader on the Titanic who with the band members continued playing as the ship went down. He was born not far away in Colne. Over 90 people from the area lost their lives in the sinking. We next visited the Chapel with a gallery and wooden panelling, now deconsecrated and used for civil weddings.

The entrance hall, with a beautiful fireplace, was used as a parlour for the family. The Great Hall has a vaulted ceiling with many original features and a particularly beautiful almost circular bay window with



At Salmesbury Hall

The kitchen is fitted in a Victorian style with original items on display. We continued upstairs through galleries selling paintings and antiques.

Dixie Bayly

Blackpool

*They didn't think much to the ocean
The waves, they was fiddlin' and small
There was no wrecks... nobody drowned
'Fact, nothing to laugh at, at all.*

Having been on the table with Ken Hambleton the previous evening, I wasn't sure what to expect as we caught the tram into the centre of Blackpool ready to begin our Heritage Tour.

Fortunately Margaret, the Master's Lady, (is that a halo or big wheel behind her head?) had chosen well.



On Blackpool Promenade



At the Heritage Plaza

First stop: the Comedy Carpet and yes it was cold! However, David our guide entertained us with information about the stars who had performed in Blackpool over the years and who were included on this memorial pavement (and Albert and the Lion were there too). The Tower is perhaps everyone's idea of Blackpool but we just admired it from outside before moving away from the Promenade, towards the Winter Gardens taking in the Grand Theatre on the way.

The entrance to the Winter Gardens did not reflect the amazing interior. It was easy to see the influence of the original Crystal Palace built for the Great Exhibition in 1851 but since the Winter Gardens beginnings in 1876 it has been changed several times. Now parts of it are being restored to its former glory in particular some beautiful Art Deco rooms.



The Winter Gardens

We were shown where party political conferences took place (and where all the real decisions were made), ballrooms, a theatre, themed rooms. Finally as a special treat we had a sneak preview of a new attraction about to open - Illuminasia an indoor

Illuminations experience. The official opening was only three weeks away but everyone was working madly to finish it on time.

We ended in the Opera House where Dixie Bayly sat where the Queen had sat on one of her visits. A fitting finale and not a 'orse's 'ead 'andle in sight!

Gill Scahill

(Photos courtesy of BAES, John Williams, Elizabeth Dawson and Janet Groome)

THE COMPANY'S SUPPORT FOR THE ARKWRIGHT SCHOLARSHIP SCHEME

The Company's Charitable Trust is a supporter of the Arkwright Engineering Scholarships. Each year, there are two ceremonies attended by 1400 guests at which the awards are presented, in London and Glasgow. In 2013, Jonathan Firth, Director of Operations & Projects at Virgin Galactic presented the London Awards which the Master attended. Court Assistant Gordon Masterton, Vice President of Jacobs Engineering, and Court Assistant, was guest speaker and presenter of the Glasgow Awards and has sent in this report.

I was delighted to accept an invitation from Dr Martin Thomas, CEO of the Arkwright Scholarship Trust to present its 2013 Awards in Glasgow, and have the opportunity to say a few words. Arkwright is doing an excellent job in raising the profile of engineering in schools through its programme of financial and in-kind support to its chosen Scholars. For me, the most compelling evidence of its value is that 92% of the Arkwright Scholars progress to higher education in engineering. It's got a track-record of success.



Gordon Masterton at the Engineering Hall of Fame Promoting the Arkwright Scholarship Scheme

The Award presentation was soon after I had announced the latest inductees to the Scottish Engineering Hall of Fame at the James Watt Dinner in Glasgow so I used the occasion to predict the inductees for 2028 – all of them Arkwright Scholars of course! (You have to imagine the introductory fanfares and envelope opening for yourself.)

“Ladies and gentlemen the first inductee for 2028 is:
Arkwright Scholar 1: The engineer and inventor of the wonder-material caledonite, which regenerates itself after damage. Arkwright 1 couldn't be here tonight but he sends his best wishes from his new island he's just bought off the north-west coast of Scotland –Iceland.

Our second inductee is:
Arkwright Scholar 2: The engineer, businesswoman and philanthropist who patented the world's first efficient means of storing electricity without batteries.

Our third inductee is:
Arkwright Scholar 3: The engineer and researcher who made the breakthrough in safe generation of power using nuclear fusion, solving the energy crisis at a stroke.

And our final inductee:
Arkwright Scholar 4: The engineer who invented the portable water conversion process that made the deserts fertile again”.



Gordon Masterton

The message I left with them was that the world needs engineers like it never has before. We need solutions to really big problems – energy, climate change, water for the world, food for the world, and they'll not be solved by accountants, or even doctors or lawyers – fine professions though they are – they'll be solved by engineers applying their talents for innovation and creativity. The future is going to be a hugely exciting time to be an engineer.

Arkwright operates as an independent charity with an aim to identify, inspire and nurture future leaders in engineering. It awards Scholarships to outstanding engineering-minded school students. Candidates must pass a selection process comprising: a detailed application, a two hour aptitude exam and an interview hosted at a top university. Candidates apply during year 11 (England and Wales); S4 (Scotland); year 12 (Northern Ireland) and the two-year Scholarships support the two years of their A level or equivalent studies.

The Scholars benefit from:

- £600 to each Scholar to purchase text books, project materials and enrichment experiences to benefit the Scholar's academic studies and wider experience of engineering and related areas of design.
- £400 to the Scholars' school to be spent on equipment, materials or teacher training for Engineering, Sciences, Design and Technology, ICT and related subjects, thereby benefitting successive year groups.
- Free CREOTM CAD software and training in its use;
- Engineering Experience Days hosted by industry, university taster courses, mentoring by graduate engineers & designers, free trade magazine subscriptions, exclusive Undergraduate Scholarships.

Since 1991 the Arkwright Trust has awarded over 3,300 Scholarships, and it's growing. Last year 371 Engineering Scholarships were awarded, the largest number ever.

On average, 25% of the Scholars are female and 15% are Black and Minority Ethnic – still not high enough on either count but the Awards are a positive influence on closing the gap. There are over 960 affiliated schools and colleges across the UK in the scheme, 71% of which are from the state sector.

Every Scholarship that is awarded has a sponsoring organisation. Funding each two-year Scholarship requires an investment from sponsors of £1000 p.a. for two years. 87% of the Scholarship fee goes to benefit the Scholar and their school; 9% supports fundraising; and 4% goes to cover Arkwright's core costs.

Sponsors are actively encouraged to nurture their Scholars through mentoring, industry visits and other means. Arkwright collaborates closely with other organisations that reach out to schools such as

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STEMNET, The Smallpeice Trust and Primary Engineer. The Arkwright ethos is that a strong future for the UK economy depends as much on the quality of young people who choose to pursue engineering and related design careers as on the quantity.



The Master Presenting a Certificate to The Company's most Recent Arkwright Scholar Laminn McLay

Livery companies are excellent supporters of Arkwright. Last year's list included:

- Principal Sponsor: The Mercer's Company;
- Major Sponsors: The Ironmonger's Company, The Merchant Taylors' Company, The Scientific Instrument Makers' Company ;
- Contributing Sponsors: The Founders' Company, The Haberdashers' Company, The Worshipful Company of Engineers, The Worshipful Company of Fuellers, The Worshipful Company of Paviers, The Worshipful Company of Salters.

The Worshipful Company of Engineers', through the Engineers' Trust, has supported six Arkwright scholars since 2009. One of our original scholars, James Routley of St. Paul's School, is due to graduate from his Engineering Science course at Oxford University in 2015.

Our most recent scholar is Laminn McLay of Mill Hill School and her ambition is to read Aeronautical Engineering at Cambridge and then join the Royal Air Force. Group Captain Mark Hunt is our nominated mentor for Laminn. He has confirmed that Laminn is responding positively to the encouragement and support she is receiving through the Arkwright scheme. Mark has afforded this year's scholar the opportunity to test and explore her understanding of aerospace disciplines and their application. At a recent visit to Royal Air Force Waddington, Laminn realised

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both the potential opportunity and reward from a career as an Engineer Officer and she remains enthused by the challenge.

Gordon Masterton

COMMON HALL AND INSTALLATION COURT DINNER, MERCERS' HALL 29th April 2014

I took the Chunnel over on the Eurostar, built, I suspect, by Alstom, which speeds up to a tad short of 300 kph. Magnificent engineering! I mused over some great British engineering names linked to Alstom, which have come and gone, such as AEI, GEC, later, Marconi, and wondered, now, how long Alstom would last, after its boss put the energy division up for sale, and found himself eyeball to eyeball with French government phobia of foreign employers in France.

I have almost gone native after living almost 40 years in Paris. To some extent, the London Tube strike came as a comfort, as I got no snide remarks from the cabbie this time about strikes in *France*. I had thought that 30 minutes from my club in St James's would be enough to get to the City, but I disregarded the strike at my peril. Someone looking like a ticket collector on the double decker ahead helped a Japanese tourist off the bus, and I realised I was back in London, and relaxed, but ended up nonetheless in anguish, 20 minutes late at Mercers' Hall for our AGM.



The Mercers' Hall Chapel

The traffic had been so thick that I had jumped the cab on Cheapside; the Mercers have amassed half a billion in assets since Whittington's time and have planted their hall off, would you believe, yes, *Cheapside*! Where I live, we are genuinely admired for our art of understatement. As our new Master, John Baxter, was

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to tell us, the Mercers' Company was established in 1394, 589 years before our own! In 1395, a *wealthy* Dick Whittington was its master; the Mercers elected their first woman liveryman in 1428, and the Company boasts Thomas More and Winston Churchill among its liverymen.

The Mercers' Hall is the only one to have its own chapel, which was already in use for our AGM when I clambered over the pews to get to a seat. All the ladies were inexplicably sitting in the pews on the right of the chapel, and the gents on the left, a bit like in Swiss village churches. Facing us, behind the ceremonial sword, seated under a lovely cross and a golden rendering of the Lord's prayer, both looking decidedly un-"post Christian," and under a maiden's head on a field of gules, being the Mercers' coat of arms, I saw our soon-to-be-immediate-past Master, AVM Graham Skinner, concluding his presidential address. Before relinquishing his robe, he proudly announced the honour made to our Company of the Princess Royal joining our livery, with the clothing due to occur at the Mansion House banquet.



The New Master John Baxter Being Invested with the Badge of Office. (He does look happy)

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The transfer of office to the new Master and Wardens was accomplished in a symphony of unclothings and of clothings; of oaths of office and of badges and colourful robes and decorations, out of which our clerk and our beadle skilfully, smoothly, almost miraculously produced our new Master, John Baxter, complete with wardens; not quite like a rabbit out of a hat, but close!

There followed our exodus from the chapel towards the awaiting drinks. For some twenty minutes, I heard conversations on nuclear power here, and on wind farms there, much as I suppose the Mercers discuss bits of cloth and the Grocers, the price of carrots. And then we took the steps up to the livery hall, where dinner was to be served in an atmosphere of friendship and elegance; what the French might call "bonhommie," which would mean, I suppose, "goodmanship," were the term to exist.

A brass band was playing the James Bond theme from a vast cupboard half way up one wall; tables were beautifully set and served with white gloved, military precision. At the opposing wall was displayed a king's fortune in silverware; colourful, armorial, stained glass windows lined the rest, and, from ceiling, in the form of an inverted boat, hung massive chandeliers, reaching down almost to the level of the rich wood panelling around the room.

At Past Master, Tony Roche's table, I sat between his charming spouse on one side and another charming woman on the other, both of whom laughed me through the ordeal of the loving cup. I have fine memories of Tony launching our French branch at the Embassy in Paris during his presidency of the IMechE in 2000.



Drinks in Mercers' Hall Reception Room

We were served a cannon of lamb, which my mother, bless her, would have been proud of, all on the finest crockery, sporting the Mercers' maiden, and coffee in

little red cups, but, wonder of wonders, when I asked for a decaf, it came in a green cup, which was truly colossal in my scale of class!

Our beadle stood doughtily behind the speakers all the way through, stepping forward to bash the table from time to time to get some attention. They spoke of the celebration of friendship, of tradition and identity, and most of all, of the charitable values of our worshipful company. John Baxter claimed that, as father and son, both are reputedly the first such pair to have become freemen of the city on the same day; then, he pointed out that it was Margaret Skinner's birthday, leading the hall in a handsome rendering of "Happy Birthday." To his guest and to his predecessor, as a "guid" Scot, he gave models of the Stirling engine. John was followed by Rolls Royce guest speaker, Colin Smith, who spoke of the discretion and quiet triumph of engineering, from safe flight, to medical imaging.

Never would I have thought of not finding a taxi on Cheapside, but the night streets were lined with frustrated taxi hailers; during the strike, not one was to be found. In panic, I boarded a bus to Oxford Circus, and walked back to St James's. At the club entrance, I passed two persons waiting for a taxi, and mused, as I got into bed, that I felt proud to have been a part of such a wonderful evening, and only regretted that my lovely wife had been unable share it with me.

Bob Gillespie of Blackhall

The Outgoing Master, Air Vice-Marshal Graham Skinner's Report on His Year

The formal Company and its Trust Fund Report for the calendar year are now very succinct and readable. They cover the 2013 events of my Master's year more than adequately. It is therefore not necessary to dwell on these but to update them for the 2014 timeframe and to add some personal context from Margaret and me to our time in office.

In my whole year, one of the most important and pleasing achievements for the long term well-being of the Company, has been to obtain the gracious agreement of Her Royal Highness The Princess Royal, who is a Royal Fellow of the Royal Academy of Engineering, to become a liveryman of the Engineers' Company. Plans are in-hand now to admit her to our Livery at a major event later this year and to encourage Her Royal Highness to participate as fully in the life of our Company as she finds herself able. This is a great honour for the Company after 30 years and we should all feel justifiably proud that we have the opportunity of an active Royal presence for the foreseeable future.



*The Immediate Past Master in Reflective Mood after a
Very Successful Year*

In my Installation Speech I promised an 'aerospace' theme to my year befitting my personal heritage and I am pleased that my plans all came together - hopefully, with the added benefit of raising awareness of this important and exciting sector to the our members and beyond.

Activities for my theme in the new year included a day with Liveryman Professor Bill O'Riordan's home flight simulators as a fund raiser for the Engineers' Trust. Additionally there was a well-attended visit to Warwick Management Group at Warwick University where members were generously and productively hosted by its founder, Professor Lord Bhattacharyya, and his multi-disciplinary teams. The Company also produced its 14th Bridge Lecture in conjunction with City University. This was given by Mr Paul J. De Lia, Corporate Vice President, L-3 Communications who came from New York to deliver a stimulating and forward-thinking analysis on the need to manage the electromagnetic spectrum as a precious but vulnerable natural resource for the benefit of both military and civilian users.

I was particularly pleased we ended my programme with the mini Out-of-Town meeting visiting BAE Systems at Samlesbury and Warton with an overnight stay in The Grand Hotel at Lytham St Annes with Margaret organising a heritage tour of Blackpool for partners while the restricted technical briefings took place. This complemented strongly the full Out-of-Town visit to Northern Ireland in Belfast, which included my own company Bombardier Aerospace (Shorts), and a visit to Derry Londonderry in the 400th anniversary of the plantation in Londonderry. Overall, I was really pleased that this whole weekend went so well with many attendees remarking that it was an 'eye-opener' on the progress made in the Province.

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Reports on the various visits and lectures are in the last and this edition of the Swordsman.

As well as her Ladies Lunch in October, Margaret weaved a very successful partners' programme around the Election Court day on 11th March 2014 with a visit to the Museum of London to see the Cheapside Hoard in the afternoon and, after joining the congregation at our Election Court Service, the partners then dined at the Italian Restaurant next door to the Church of St Vedast alias Foster. This added another dimension and level of involvement to this traditional and important event in our Court calendar.



Margaret Skinner Hosting in Cambridge

Without any doubt, there have been wonderful events to attend both in the presence of this Livery and also as the guest of others in the City and beyond. I was pleased to be awarded a 'Proud to be an Engineer' medallion from my Institution of Mechanical Engineers. There was an especially busy time in late Summer 2013 when I had the honour to speak as the principal guest in three of the capital cities of the United Kingdom - Belfast, Cardiff and London - over a short period. Uniquely, I also was the Chairman for the Spring Dinner of the 31 Modern Livery Companies when it was our turn to organise and host the dinner at Wax Chandlers' Hall on 10th March 2014.

My report would not be complete without acknowledging all the unstinting help we have received during the year. Those who organised some of the visits, those who came to support them, and those, including my Wardens, Chaplain and the Chairman of The Charitable Trust Fund, who gave me encouragement to sustain the pace during the year. The Immediate Past Master, David Scahill, and Gillian, have been great supporters too. I would also particularly wish to mention Past Master Raymond Cousins, for his unflinching guidance and help to me

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throughout my time as The Clerk to my present appointment. Raymond is this Company's senior surviving liveryman with a membership number of 9, and he has given a steadfast and unwavering commitment and energy throughout the whole of this Company's existence. Now after 10 years he hands on the duty of Editor of the Swordsman after faithfully reporting on the events in our Livery and turning what was once a home-printed newsletter into a multi-page glossy magazine of lively quality.



The New Master Presenting the Immediate Past Master with his Certificate of Service

In the Engineers' Office, Stephen Grundy, our Beadle and Assistant Clerk, had a serious health issue to manage during the summer months with a need to convalesce properly thereafter - his presence was sorely missed in some of the vital behind-the-scene tasks to keep everything running smoothly. This in turn meant considerable extra work load fell on to our Clerk, Tony Willenbruch, who with the volume of the Master's programme also stretching resources, had to cover this lengthy period almost single-handedly until Stephen's welcome return. My especial thanks to Tony for keeping it all on track but I knew his light blue provenance would see us through.

Without any doubt, the closest and most valuable support for me came from Margaret who was always available to give me the right steer on what should have priority. She most capably ran her own ladies' and partners' programmes and was a perfect hostess in every circumstance. I give my heartfelt thanks for her love and encouragement.

Throughout my year it has been an immense honour to have served this Company and to continue to see it flourish - thank you all for the opportunity to have been your Master. For the future, I look forward to supporting the incoming Master in the coming year and I trust that he and Margaret will enjoy it all as much as we have.

Acceptance Speech by the New Master John Baxter

Thank you for your generous acclamation and welcome as the new Master for our Company. It is a



huge privilege to be elected as the Master and I am grateful to the many Liverymen who have helped me over the years. As I said at my Election Court Past Master John Grove, sadly no longer with us, was one of my naval CO's, Past Master Fred Crawford kindly nominated me for the Livery and Past Master Brian Gibson taught me materials and

metallurgy long before he inducted me as a Freeman. Those are only a few of the many Liverymen who have helped me over the years and to all the Livery, thank you.

Both Margaret and I are looking forward to the year ahead – and we hope that you do too.

I will continue with the universal object of 'friendship and fraternity' and also some technical events, although as a working Master my year will be more focused in London. My background is 'energy' and that will feature in some of the events including the OOT to Glasgow in September. That weekend has a very varied programme and starts off on the day of the Independence Referendum, so I am sure the weekend will be interesting if not slightly unpredictable!

My theme for the year will be the 'charitable role of the Livery'. As I am an Honorary Vice President of RedR and I am also currently leading the BP patronage of RedR you might have expected me to focus purely on RedR – that is certainly important to me – but more important is how we develop the Engineers' Trust and leverage the funds to really make a difference. The report on the Engineers' Trust covered what it is doing. As Master I look forward to becoming a Trustee and working with the other Trustees on the long term strategy.

You will hear that as part of the BP patronage of RedR Margaret and I, along with a BP team and others, are climbing Mount Kilimanjaro as a charity challenge in June. To be precise - departing in 44 days' time. In the past many of our Liverymen and others have been

extremely generous in sponsoring my last RedR charity challenge in 2010. I would not want to discourage any charitable giving but would prefer to see any proposed donations to me going through the charitable trust fund – albeit they can be named for specific causes. The aim will be to give a cheque to Princess Anne when she attends one of our events later in the year in her capacity as the President of RedR. The more money that is routed through the Engineers' Trust the more we can enhance its standing.



The New Master Presenting a Past Master's Goblet to the Immediate Past Master so he can Enjoy Dinner

As my first official act it is with great pleasure that I turn to my predecessor, Graham Skinner. Firstly, to thank him personally for installing me in accordance with your wishes and, secondly, to thank him on your behalf, for the massive personal contributions that he and Margaret have made in the last year to the well-being of the Company. His aim was to show the Livery 'excellence' through his theme of Aerospace and in doing so he has taken us to new heights, in a variety of ways. I am sure that replacing the Master's Badge of Office with that of a Past Master's one can be considered as a sign of a hugely successful and enjoyable year – and recognition of a job well-done.

The Master's Speech After Dinner

Welcome to Mercers' Hall. I am delighted that we have been able to have the Court meeting and Installation and the Dinner here this evening as I have a family link to the Mercers' and also there is a link to my theme for the year as Master.

The histories of the Mercers' Company and of Mercers' Hall are too long and detailed for me to go into tonight. However a few key facts help to set the context of where we are this evening.

1304 is the first written reference to Mercers' acting as a corporate body.

1394 was their first royal charter – over 600 years before our own!

1395 saw Richard Whittington elected as the Master Mercer and subsequently he became Lord Mayor of London. Later folklore transformed him into Dick Whittington the poor country lad who came to London with his cat to seek his fortune. Whittington was in fact very wealthy before he came to London and was one of the first Mercer philanthropists funding public water works, hospitals, libraries, colleges, schools - a tradition which the Mercers' maintain to this day.

1428 saw the first woman Liveryman and so the history flows on with William Caxton, Thomas More and many other significant historical figures.



The Mercers' Hall Dining Room Just Before Dinner



1524 was the first Livery Hall on Cheapside, followed by the purchase of the site of the Hospital of St Thomas Acon including a chapel – the land we are on this evening. A second Livery Hall was built here after the Great Fire of London destroyed the first, and a third was built after an incendiary bomb in WW 11.

Winston Churchill was clothed as a Liveryman in the ruins of the Mercers' hall in 1945.

I hope that like me you have enjoyed the subtle elegance of this very grand Livery Hall and the various rooms and open areas we have been able to use.

Being clothed as the Master in the Mercers' Chapel is a privilege I will remember forever.

The Mercers' Livery Company is very selective when they hire out the Livery Hall for use by third parties and it is at the discretion of the Court to decide. I am therefore very grateful for their agreement to be here this evening. I will touch on that later.

Before then, please can I reiterate what I said at Common Hall and give our thanks to the Immediate Past Master, Graham Skinner, and his wife Margaret for their year's contribution. Graham certainly delivered what he set out to do in terms of continuing incorporating 'friendship and fraternity' and he led a comprehensive programme of 'aerospace engineering' events. His OOT to Belfast was a fascinating combination of engineering – Bombardier and the Titanic museum – and social culture – again the Titanic museum, the Westside of Belfast, Londonderry and much more.

We have also reviewed our Royal connection. HRH The Princess Royal has strong Livery contacts and also strong engineering contacts. In her capacity as the President of RedR she has been exposed to the engineering challenges of disaster relief and more recently she has been elected a Royal Fellow of the Royal Academy of Engineering – making her eligible to be a Liveryman of the Engineers' Company. With agreement of the Court, Graham invited her to consider our proposal to become a Liveryman, which she graciously accepted, and at the Court meeting today the first stage of that process was completed when Her Royal Highness's admission to the Freedom of the Engineers' Company was approved. I hope that we will be able to approve her admission to the Livery at the July Court and symbolically clothe her as a Liveryman later in the year at one of our formal dinners – Royal diaries permitting.

Both you and Margaret clearly enjoyed the whole year, and you leave the Company in good shape and good heart in our 31st year and 10th anniversary of our Royal Charter.

I would like to give you a personal gift that reflects my energy background. This Stirling engine to some extent represents my engineering career – energy transformation – and my nationality – Scottish, as it was the Reverend Robert Stirling a Minister in the Church of Scotland who invented the energy cycle named after him. During my year we will have a number of energy related events and also the OOT is in Glasgow, the city of my birth.

I would like to congratulate all the newly elected officers, the Wardens and Court Assistants and our new Liverymen clothed this evening and once again thank Tony our Clerk, Steve the Assistant Clerk and Beadle, and Jon our Assistant Beadle for all they do in service to our Company. I would also like to thank

publicly our Chaplain Peter Hartley for the quiet support he provides in the background.



The Immediate Past Master with his Stirling Engine

I would now like to turn to our guests for this evening and on behalf of our Livery to welcome them all. We greet from other Liveries the Masters of the Plumbers, Tin Plate Workers, Coachmakers, Scientific Instrument Makers, Chartered Architects, Constructors, and Firefighters together with the Prime Warden of the Blacksmiths. You and your Clerks are all most welcome

We are also joined by a number of other official guests The Dean of Engineering from City University, the CEO and Fundraising Director of RedR, the CEO of the IChemE and from the financial sector our Auditor and our Financial advisor.

This now brings me to my theme for the year and why we are in Mercers' Hall this evening.

Mercers' Hall exemplifies the success of the Mercers' Company through their trade in merchandise, more specifically, luxury fabrics and wisdom in financial management.

The Livery is a continuum which extends from the 12th Century with the Mercers' number one in the order of precedence.

The Livery Companies were established to regulate trade by setting standards for the competence of the craftsmen and quality of the products. Livery Companies also provided 'friendship and fraternity'

and support to those in need of assistance through charitable giving. Mercers' Hall is based on the success of the Mercers' trade. With only a few exceptions such as the Goldsmiths, in the modern world, other bodies have taken over the Livery Company role of regulation of trade.

Certainly for engineering there are almost too many bodies representing our profession. And so what does the average person know or think about the Engineers' – very little! What about the Mercers' and other longstanding Livery Companies? For them it is their charitable works that give wider recognition. Examples are the Mercers', Haberdashers', Merchant Taylors' schools and other charitable activities that continue centuries long after the original role of the Livery Companies existed.

And so my theme for the year will be 'the charitable role of the Livery'. Working with the Engineers' Trust I do want us to focus on our charitable role and our long term vision for philanthropy. When a future Master acknowledges the 331 years rather than the current 31 years we have existed what will be the evidence of our thinking.

Dick Whittington was one of the first charitable Mercers and today their asset base is almost £0.5bn allowing almost £10m per annum to be dispersed. Mercers' schools are a beacon of that charitable tradition of which I know a little.

It is a huge pleasure to have my eldest son Geoff here tonight, welcome. He and his brother Don both went to a Mercers' school – Abingdon Boys School. The Mercers maintain links with former pupils of Abingdon and will support them to take Freedom of the City of London through the Guild of Freemen. Geoff pursued this option and as he was heading for Guildhall with the Mercers I was on the same path with the Engineers.

This resulted in both of us taking Freedom of the City of London on the same day – reputedly the first father and son in history to do so. The Clerk of the Chamberlain's Court was insistent that we are the first father and son in history but as he declined to go back through the manual records which stretch to the 1300's, I still use the word 'reputedly'. I must have been exposed to too many lawyers in recent years.

It is now my pleasure to introduce our Principal Guest this evening Colin Smith. Colin joined Rolls-Royce as an undergraduate apprentice and has held a number of senior positions with the group before being appointed Director – Engineering & Technology, and joining the Rolls-Royce main board in 2005.

LADIES' BROOCH LUNCHEON WAX CHANDLERS' HALL 30th April 2014



Colin (Left) is a Fellow of the Royal Academy of Engineering, The Royal Aeronautical Society and The Institution of Mechanical Engineers and was a Royal Academy Silver Medal winner in 2002. He has made a huge contribution both as a deep professional engineer and as an inspiring business leader.

Rolls-Royce had had a consistent policy of recruiting apprentices and graduates for over 20 years – which Colin champions within the company. They are also sponsoring “Bloodhound” for the next land speed record challenge.

Colin exemplifies outstanding achievement and I am delighted to have him as our Principal Guest this evening. I now invite Members of the Worshipful Company of Engineers to stand and join me in a toast to welcome all of our guests.

In his speech Colin Smith highlighted the lack of knowledge and understanding of engineering by the general public and also by politicians. An example was of passengers on a modern aircraft who have little concept of the environment they are being protected from - the menu choice, video picture and clarity of sound in their headphones are their priority. He said that China had built 11,000km of high speed rail in 10 years whilst we debate it for longer than that. Most people in the developed world cannot conceive of life without the basic utilities whilst many suffer deprivation. He highlighted that as the population grows to 8 billion and more climate change is happening and we won't stop it so we must adapt.

Concluding John Baxter thanked Colin Smith and reminded everybody:-

“that today is the 29th April and if you go into Wikipedia you can find a great deal of information of what happened on that date. What you may not know is that today is the birthday of the IPM's Lady, Margaret Skinner and while I present her with flowers, please can you all sing ‘Happy Birthday’ to her!”

Following the installation of the new Master the previous evening 16 Past Masters' Ladies arrived at Wax Chandlers' Hall for the enjoyable occasion of passing on the brooch from the past to the present Master's Lady. This was hosted by the outgoing Master's Lady Margaret Skinner.

Margaret welcomed us and thanked us for battling the tube strike. She gave apologies from those who were unable to be with us. She said how privileged she had felt to represent the Company for the last year and thanked us for supporting her.



Margaret Skinner Transferring the Badge to Margaret Baxter

Margaret particularly wanted to thank Ruth Cousins for inspiring the Partners' visit to the Cheapside Hoard on the Election Court Day and for the many years that Ruth had used her camera to good effect at this luncheon and the Ladies' Luncheons in October each year. This had been much appreciated by everyone present. Sincere thanks were also given to Margaret's predecessor Gillian Scahill for her unstinting support all year and particularly for her support at Blackpool.



The Two Margarets and Cynthia Hammersley

The Swordsman

Thanks were also given to Tony and Stephen for all their work in the office. It was good to see Stephen looking so much better following his major heart operation.

Cynthia Hammersley was able to be present and Margaret reminded us that it was Cynthia and Peter who had gifted the beautiful brooch to the Company which now being passed on to the new Master's Lady, Margaret Baxter.



A Very Happy Group of Ladies

Margaret Baxter said how quickly the years had passed since she was the wife of the Junior Warden and how proud she would be to wear the brooch as the Master's Lady. She then presented the Immediate Past Master's Lady Margaret Skinner with her replica brooch. A delicious meal was then enjoyed by all.

The Master John and Margaret are planning to climb Mount Kilimanjaro on June 12th as a fund raising effort for Redr through the Engineers' Trust. We all wished them the best of luck with their training schedule and the climb.

Doreen Robinson

COMPANY NEWS **October Court Meeting**

Welcome to three New Liverymen Invested at the Court Meeting on 29th October 2013

Eur Ing Jane Victoria Atkinson
FREng, BEng, CEng, Hon DBA,
FICHEM.E.

Jane is a Senior Vice President at Sembcorp Utilities UK, (a subsidiary of Singapore-based Sembcorp Industries) a leading industrial energy, utilities and

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services provider on Teesside, which provides steam and electricity to the major manufacturers on the Wilton International site. She is responsible for the day-to-day operations and maintenance of the Utilities business on Wilton International including the UK's first Biomass Power Plant which was opened in 2007 and creates more than 30 MW of green electricity from a renewable fuel source – wood.

She began her career in 1990 with British Steel as a sponsored engineering student. On completion of her degree, Jane worked in various roles and most notably as Operational Manager of the cast house at the Teesside Blast Furnace. During her time at British Steel she has managed all of the major production units including an iron-making plant and a steel casting plant in Alabama, USA.

In 2007 Jane won the CBI First Woman Award in Manufacturing as she frequently has been at the forefront of women in engineering and industry. Following on from this prestigious award Jane has been voted one of the 500 most influential people in the North East by The Journal every year since 2008. In 2011 she won the prestigious Stephenson's Award from The Worshipful Company of Engineers for inspiring young people in science and engineering.

Jane is the Chairman of the University of Teesside Science and Technology Advisory Board as well as on the Advisory Board of the National Science Museum in London. Jane is also a UK Board Member for the Institution of Chemical Engineers.

In 2011 Jane received an Honorary Doctorate in Business Administration from Teesside University.

Air Vice-Marshal Peter Liddell
CB, BSc, CEng, FIET, FRAeS

Peter was sponsored by the Royal Air Force through Manchester University, graduating in 1969 with an honours degree in Electronic and Electrical Engineering. From 1970 to 1992 he had a wide variety of appointments working on different

aircraft types including Harrier, Nimrod, Canberra, Nimrod AEW, Victor, Tornado and VC10. He commanded the Engineering Wing at RAF Brize Norton, was the Chief Instructor for officers' aerosystems training at RAF Cranwell and subsequently commanded the RAF's avionic repair facility at RAF Sealand.



In 1993 Peter attended the Royal College of Defence Studies and at the end of the course he moved into the communications field. From 1994 to 1998 he was responsible for the RAF's Strategic Comms and IS and then for the Tactical capabilities. Promoted to AVM in 1999 he became the RAF's Head of

Communications and IS. He moved back into the aircraft world in 2000 when he became the Head of the Air Pillar within the Defence Logistics Organisation with responsibility for the support of all military aircraft and associated equipment. He also became the logistics member on the Air Force Board. He was appointed a Companion of the Bath in 2002 and retired from the RAF in 2003. Since 2003 he has run a consultancy business specialising in the aerospace and Defence fields but including, for a year, the interim role of Engineering Director Chiltern Railways.

Peter is married to Jennifer and has 2 sons, Matthew and Simon, and a daughter Alice. He enjoys golf, walking, reading and the theatre."

Brian Back BEng, CEng, FIET

Brian started his career as an apprentice with Hawker Siddeley, completing an HND in Power Engineering in 1983. This was followed by a part-time Degree in Electrical Engineering Design and Production, graduating with 1st Class Honours in 1987. In late 1987 Brian moved into the control and instrumentation industry with SCADA Systems Limited as a Technical Executive. His remit when joining that company was to turnaround the loss making venture which was suffering from serious technical, quality, management and morale issues. Key to the success of the business was the expansion of the company's product range into the areas of Radio Telemetry exploiting the newly de-

regulated Low Power Radio bands. Within two years the company was back on its feet and sold as a profitable entity to Bristol Babcock Limited, part of the FKI Group where he became Head of Engineering in the newly formed RF Systems Division.



In 1993 Brian founded Radio-Tech Limited a company specialising in smart sensors, micro-control, micro-power and integrated Low Power Radio wireless communications to a new extreme of integration, miniaturisation, ruggedness and power efficiency. With Radio-Tech Brian established a number

of strategic ventures for the supply of real time telemetry systems for the UK's Fire & Rescue services, remote refrigeration monitoring, medical storage monitoring and pest monitoring.

In 2003, Brian conceived a new concept for remote rail temperature monitoring called the RTM which is in use 24/7 throughout the UK. The system is also used on the Cross Channel High Speed Rail Link and the London Underground and won the UK Railway Industries Innovation Award in 2006.

In the water industry Brian conceived and promoted new ideas for meter reading and leakage data combining real time dynamic network performance analysis and revenue protection.

The success of Radio-Tech resulted in the trade acquisition of the company by Halma Plc in August 2005.

In 2009 following a venture capital investment he became the Chairman of Environmental Innovations Limited and in 2010 Brian founded Radio Data Networks Limited. This business continued the applications of radio telemetry, focussing initially on pollution monitoring and real time mitigation to complement Environmental Innovations. Brian conceived a radical new design for a bulk dielectric transducer, called the BDT. This was applied to sewer monitoring and flood detection across 5 Water Utilities and in 2012 the BDT won the SBWWI innovation award, followed by another 3 awards in 2013.

The Swordsman

In parallel to the development of the BDT Brian also worked with Ofcom to setup a National private data network which covers the whole of the UK. The networks currently deliver over 80-million messages a year and offer a unique level of data security to our utility clients.

In 2011 Brian developed a new accelerometer based flow detection technology for monitoring spills from combined sewer overflows. This device, called the FDT, has recently won the Institute of Water innovation award.

Brian is an Executive Director & elected Council Member of the Low Power Radio Association, the Brussels based trade association representing the interests of the SRD (short range device) wireless community, that includes everything from RFID through to RF medical implants.

Brian is also chairman of Innovarail Ltd a company involved in promoting new innovation, consultancy and support services within the rail industry and of Business Synergies Ltd, a public relations business publishing three e-magazines including Containment News, Flood News and the LPRA e-News.

March Court Meeting

Welcome to two New Liverymen Invested at the Court Meeting on 11th March 2014

Andrew Thompson CEng, FIET, FCIBSE, FCIQB



Andrew had a full electrical apprenticeship and worked on numerous projects including: Hull ice arena, Castle Hill Hospital and Humberside Fire Brigade HQ.

He has worked in the UK and overseas in both as a consultant and as a contractor. For 8 years Andrew worked at Heathrow on Terminal 5 and

more recently on Terminal 2B with Balfour Beatty. He is currently overseeing a number of London regeneration projects in Mayfair and Elephant & Castle with Laing O'Rourke.

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In his leadership role he recognizes the benefits to building high performing teams and improving the utilization of resources, through to a safe successful delivery. Andrew is a Lean Six Sigma Black Belt, with over 28 years experience in the construction industry.

He is results driven and a strategic and tactical thinker, enjoying the challenge of problem solving of engineering and production problems, and implementing innovative solutions.

Andrew has developed many safety initiatives and processes and won several Gold ROSPA awards, Client Safety Awards and a Considerate Constructor National Gold Award.

Andrew is married with two young boys, currently residing in Uxbridge, West London and is a keen golfer. Noting that he is only 45 years old, Andrew looks forward to many years serving the Company.

Eur Ing Anthony David Ginsberg BSc(Eng), CEng, CSci, CEnv, FICHEM, FIGEM, MEI



After graduation, Tony worked for British Gas (North Thames) (BG) for 29 years, initially as a chemical engineer in the R&D Department which helped to develop and commission naphtha reforming plants. Later, he

mathematically modelled daily gas demand, helped computerise the model and wrote various

other computer programs for the Region's engineers.

Tony was seconded to Central London's Distribution department for 2 years, where he managed the planning and budget section. Later, he wrote papers seeking financial authority for the automation of gas holder stations and managed the team that sought authority for the various essential schemes needed to reinforce the gas network to keep London's 2.2 million customers north of the Thames in gas in severe winter conditions. With the dissolution of BG in the mid 90's, Tony took voluntary redundancy and a job with Metropolitan Police as a civilian team manager, from which he retired at the age of 63.

For the last seven years Tony has worked voluntarily mainly encouraging children at a large primary school to develop a lasting interest in science and maths and visiting secondary schools, where he gives talks promoting chemical engineering as a career; efforts for which the IChemE awarded him their Ambassador of the Year Award for 2011. Recently an 8 year old asked how old Tony was and, asked to guess, came up with 12 and a half – an unusually precise answer. When asked why, Tony was told he was too old to be 12 and too young to be 13; clearly a lad with a logical and engineering precise predisposition.

April Court Meeting

Welcome to one New Liverymen Invested at the Court Meeting on 29th April 2014

Brian Reid BEng (Hons), CEng, FICE



Brian has 20 years' experience in the design and management of infrastructure projects, in the petrochemical and pharmaceutical industries and in nuclear facilities in the UK and overseas. Brian has completed lead roles on all phases of the project cycle from feasibility studies to construction.

Previously chief civil and structural engineer for Bechtel's Oil, Gas & Chemicals group, he is now Programme Engineering Manager for Crossrail – Surface.

Brian's particular interests are in structural design and seismic engineering of modular structures and the design management of multi-discipline projects.

Common Hall April 2014

At Common Hall Air Vice-Marshal Pat O'Reilly and Professor Isobel Pollock moved up to Senior and Middle Wardens respectively and Richard Groome was Installed as Junior Warden. Two Assistants, Peter Blair-Fish and Professor David Johnson were re-elected to the Court for a second seven year term and Raymond Joyce was elected to the Court for a first seven years

Junior Warden Eur Ing Richard Groome FICChemE, FRSH



New Assistant Raymond Joyce BSc, MSc, LLB, DIC, CEng, FICE



Re-Elected Assistant Dr Peter Blair-Fish MA, PhD, CEng, FICE



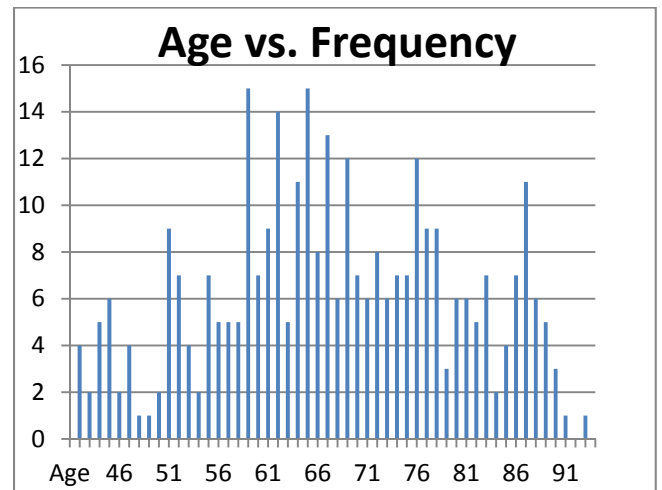
Re-Elected Assistant Professor David Johnson BSc, PhD, DIC, CEng, FICE



The Company's Age Profile

12 months have passed – but we've stayed the same age!

Have you ever thought what the mean age of the Company might be? This was a question that the Membership Committee have been considering particularly as we have had a strategy to consciously recruit younger members over the last few years and wanted to know if it was making a significant difference in any way.



The good news is that over the last year, the mean age has stayed the same – but we have personally all got a year older, so that shows that recruiting younger liverymen has helped the Company stay the same age. The age of the youngest and oldest liverymen has also stayed the same.

We know that it is rare to get liverymen in our Company below the age of 40, partly due to where they are in their career and also due to the requirement to be a Fellow of an Engineering Institution. Anecdotally, the majority of new members join the Livery around the time they start thinking of reducing their workload, with a view to becoming fully active when they retire. Hence we see a significant peak of members aged between 58 and the mean age for the whole company of 68.

All in all the recruiting strategy is working well and the Company is as lively, vibrant and active as ever and that is down to all liverymen, regardless of age!

Penny Taylor

MEMBERS' NEWS

Honorary Doctorate



Malcolm Vincent received an honorary degree of Doctor of Engineering from Southampton Solent University on the 18th November 2013 in recognition of his outstanding contribution to maritime technology and the shipping

industry.

Following Alternative Training Cadetship and seagoing appointments with Shaw Savill and Cunard, Malcolm Vincent joined P&O Technical Services Division.

He undertook various engineering and business development appointments leading to Managing Director of Three Quays Marine Services Ltd, overseeing 200 new ship design and construction activities in China, Japan, South Korea, India, Europe and UK. Projects encompassed a wide range of ship types including tankers, bulk carriers, ro-ro vessels, gas and chemical carriers, RN amphibious ships, super yachts and sail training vessels.

Malcolm's other career highlights include Chief Executive of a ship repair company and responsibility at British Telecommunications Global Services for commercial development and contract negotiations for international telecommunication network solutions.

As a Trustee of the RNLI, Council Member and Chairman of the Technical Committee he is responsible for the design, build and maintenance of lifeboat stations, all weather and inshore lifeboat fleets and the manufacturing facilities at Poole, Lymington and Cowes.

Royal Academy of Engineering

With the growing collaboration between the Company, through The Engineers' Trust, and the

Royal Academy of Engineering particularly in the sponsorship of the MacRobert Award we congratulate Liveryman Professor Dame Ann Dowling on being due to be Installed as President of the Royal Academy of Engineering later this year.

Golden Wedding

Having congratulated many members of the Company on celebrating their Golden Wedding Anniversaries I thought I ought to record that Ruth and I celebrated ours in December 2013



December 1963



Raymond and Ruth at the Mercers' Hall in April

Obituaries

We are sad to report the death of Liveryman Mike Cottell who was the President of the Institution of Civil Engineers in 1992-93. Mike retired as County Surveyor of Kent in 1991