

History Activities Coordinator

Anthony Davies

Goals

- 1) To continue to provide information on Technology History topics and a hope to interest more students and YPs in this subject, for their own good.
- 2) Recognition of important historical developments and inventions etc. (especially in Region 8).

Progress against goals since the last report

I have been very involved in a variety of IEEE-related activities, but COVID'19 effect has naturally prevented much normal activity and kept me at home in a 'locked down' status for most of the time.

History Activities participation in conferences, meetings or other events

- 1) Webinar on Career development for students and YPs for IEEE Industry Applications Society (modified from a previous presentation to add material related to COVID).
- 2) Appointed Virtual Round Table Moderator for IEEE Industry Applications Society - I had to 'moderate' (Chair) a group comprising one speaker each from China, USA, India, Colombia and Argentina. 10 minutes per person followed by 30 minutes Q&A. Seemed to go well, Costas Stasopoulos probably watched it all, and may be able to tell you his impressions.
- 3) Presented invited keynote paper at Applied Electronics 2020 - a virtual conference so the presentation (about WW2 V3 'supergun') was done sitting in my home !
- 4) Participating in Zoom meetings of UK&I LMAG committee.

History Activities activities/initiatives planned

- 1) Provisionally appointed 'UK&I Section Historian' because of the inability of Peter Hill to continue in this role - trying to find a willing apprentice to help and to take this over from me in due course.
- 2) Suggestions made (with no response at all so far) that the full HISTELCON 2019 papers (now all in IEEE Xplore) should be made free to access for all (since many people interested do not have access via employer or libraries).

History Activities activities/initiatives developed

Arranging for some of the Oral Histories of past R8 Directors (mostly done by me with Roland Saam) to be made more directly available to R8 members (rather than buried deeply in ETHW website where they are mixed up with many other oral histories). Moreover, only the text transcripts are there, the actual sound recordings are available only to people who visit the IEEE History Center and get permission to hear them. There seems no reason why with modern technology, those sound recordings could not be put on-line at the R8 website, so that they could be listened to by visitors to the website.

Proposals for improvements

Responses to suggestions made in this report.

Points of Concern

Obviously the main concern is the need to carry out all activities on line with no possibilities for safe visits for any activity.

Other Issues to report

- 1) Ongoing discussions about many possibilities for future History Milestones - limited by inability to make site visits). One is a joint Milestone involving the UK&I Section and Region 1 in USA.
- 2) Ongoing advice to organisers of HISTELCON 2021 (to be in Moscow).

History Activities Coordinator

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Goals

- 1) Encouraging proposals for IEEE History Milestones in all Sections of Region 8;
- 2) Encouraging students and early career professionals to take an interest in the history of technology (to enable them to make better inventions, developments etc. in the future);
- 3) Collaboration with IEEE History Center and History Committee in all relevant aspects;
- 4) Developing and observing the content of the ETHW Wiki, and trying to ensure that it gives good and accurate coverage of Region 8 aspects;
- 5) Encouraging oral histories and documents describing the lives and contributions of important people in Region 8 in IEEE-relevant subjects.

Progress against goals since the last report

A major activity not yet completed has been getting the HISTELCON2019 papers and other documents ready for submission to IEEE Xplore, which has involved much work especially by the Local Arrangements Chair, James Irvine. This is not yet complete but nearly so. A particular problem which was unforeseen is that the PDFs of the presented papers were in a version of PDF which IEEE does not accept, and a substantial conversion process was needed and has only recently been finished.

There are many plans for History Milestones suggested and in progress, and a few have been approved and dedication ceremonies are being arranged for them.

A list of the many suggested Milestones will be made in time for the R8 Committee meeting.

History Activities participation in conferences, meetings or other events

I attend the meetings of the UK&I Life Members AG, whose main activity is Milestone planning. I also attend 'history related' meetings of other organisations as far as possible (LEO Computers Society, British Society for the History of Mathematics, Computer Conservation Society, etc.). An 'audit' of existing Milestones in UK&I Section is being discussed, since there is uncertainty about the location of a few of them

History Activities activities/initiatives planned

Among other topics discussed is the idea of having cheap easily replaceable QR codes alongside existing History Milestone Plaques, to provide more information than is on the Citation.

History Activities activities/initiatives developed

Work towards the QR code idea described above (note that many people have QR code readers on their smart phones so this will reach many more visitors to Milestone locations.

Proposals for improvements

Continue to encourage IEEE members and others to take part in the History activities.

Points of Concern

Lack of volunteers willing to maintain an interest in these topics sufficient to do volunteer work on them over extended periods, and finding 'apprentices' to become involved and develop into the future leaders.

Other Issues to report

Need to discuss whether HISTELCON proceedings in IEEE Xplore should be made free to view since many of those interested do not have access to IEEE Xplore without high payment costs and this means that many cannot afford to view the papers.

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The same goals as before (e.g. supporting Technology History activities, Milestone proposals, and encouraging students and YPs to take an interest in the technical history of their area of work and interest). Another goal is to find a successor for my position in the R8 Committee.

Progress against goals since the last report

Mainly progress with Milestone proposals and the work done towards the delivery of HISTELCON2019 in Glasgow. One Milestone is approved for unveiling in Glasgow, and it is hoped that at least one other in UK will be approved at the September meeting of the History Committee and one in Budapest for the Metro.

History Activities participation in conferences, meetings or other events

For much of 2019 my main IEEE activity has been the detailed organisation of HISTELCON2019 to take place in Glasgow 18-19 Sept 2019. Linked with that activity has been working with Peter Grant on the organisation of a Milestone Unveiling I set up the Eventbrite registration site for the 17th September events.

I participate in the meetings of the UK&I Section LMAG activity group committee and the main activity includes work for and visits related to planned Milestone proposals. EasyChair was used for the HISTELCON2019 paper submission and reviewing, etc. and communications with authors, and it is not easy to imagine how this could have been done otherwise except by some other similar system.

History Activities activities/initiatives planned

Continuation of current activities. Probable (e-mail) involvement in the plans/decisions for the next HISTELCON: One bid has been received from Russia. Decision of course lies with the R8 Committee.

History Activities activities/initiatives developed

The success or otherwise of all the Glasgow events of the week starting 16 Sept 2019 will be known by the time of the R8 Committee meeting in Spain !

Proposals for improvements

R8 could allocate a larger budget to History Activities: in particular, HISTELCON is called a 'flagship conference' of R8, but does not get significant funding from R8, if any.

Points of Concern

It is the intention that the authors of papers presented at HISTELCON2019 may be able to have them included in IEEE Xplore: that will need a fair amount of work following HISTELCON2019, and the availability of someone to do that is not certain. There is the on-going conference risk that some authors submit but do not plan to attend, and therefore must NOT be allowed to get their papers into IEEE Xplore by this route.

Other Issues to report

Getting IEEE approval for HISTELCON2019 was unexpectedly complicated, because of the needs to learn how to get the Letter of Acquisition, the access process for authors to the on-line electronic copyright form (eCF), getting access to CrossCheck, the tool for checking plagiarism, etc. For small conferences with limited time and people to organise them, this process is a difficult overhead and takes a lot of time and effort (and the need to learn how to use it). A simplified process for small conferences would be helpful

History Activities Coordinator

Anthony Davies

Goals

General goals are unchanged: encourage interest in the History of Technology in fields of interest to IEEE, especially among students and early career professionals, who cannot 'invent the future' with no knowledge of the past. Also, to make known more generally technical achievements and the people who were responsible for them. Particularly to raise awareness of the many new ideas and inventions that originated in parts of IEEE Region 8.

Status

Key activities are encouraging IEEE History Milestone Proposals, of which several are 'in progress'. Giving occasional invited lectures on History of Technology topics. Support for relevant conferences, now particularly HISTELCON2019 to be held in Glasgow, Scotland, September 2019. Website is www.histelcon2019.org

Outlook

There are many History Milestone proposals 'in progress' and it is hoped that several will be approved and unveiled in 2019. The IEEE History Committee may hold a meeting in Glasgow in September 2019. Coordination with IEEE History Center staff is considered important and valuable

Points of Concern

Difficulty in finding champions for Milestone Proposals who have the stamina to see them through to completion (takes at least two years, normally). Delays in the 'advocate' process which assesses proposals prior to their presentation to the History Committee. Difficulty in getting sufficient financial support and sponsorship for events such as HISTELCON2019, which is needed to keep the cost of attendance low enough for those whose employers will not pay for them to attend by sponsoring meals, conference bags, USB sticks with conference proceedings on them and so on, and perhaps paying travel costs for some key speakers.

Other Issues to report

The pictures show: 1. Squinty Bridge and Crane (Glasgow) - the HISTELCON locatio. Photo (c) Alan Roberston 2. plaque unveiling in Germany 3. plaque unveiling in Dundee, Scotland.

Photos and figures





History Activities Coordinator

Anthony C Davies

Goals

No change: recognition of historical technology achievements and inventions by History Milestone proposals, encouraging retention of Section and Chapter historical records in accessible form, and lectures and meetings about Technology History are all encouraged

Status

Some Sections are successfully getting History Milestone approvals and some have good records of their Section and Chapter history, but MANY could do much more. An important project is HISTELCON 2019 to be in Glasgow, September 2019.

Outlook

Attempts for persuade Sections to prepare Milestone proposals and ensure availability of their IEEE records will continue

Points of Concern

Some Sections need to increase their efforts and should perhaps appoint a Section Historian' to oversee and enhance the situation. GDPR is making it more difficult to access people and information, and there is a risk that personal data (e.g. lists of past Section Officers, etc.) may be erased because of GDPR.

Other Issues to report

In most Sections which show an interest in history topics, this is linked to activities of life-members Encouraging Life Member Affinity Groups and retired members to become involved is therefore seen as a productive aim. HISTELCON 2019 planning is underway, but much needs to be done and the most urgent is appointment of a suitable Technical Programme Chair.

History Activities Coordinator

Anthony Davies

Goals

- 1) Encouraging and assisting the preparation of proposals for IEEE History Milestones
- 2) Encouraging Sections and Chapters and other OUs in R8 to conserve their historical records and achievements and to maintain their history on the IEEE section of the ETHW website appropriate for this
- 3) Encouraging the creation of Oral Histories by interviewing distinguished IEEE members and high-achieving engineers

Status

As reported before, there are many topics for IEEE History Milestone Plaques in the Sections of Region 8; the obstacle to progress is mainly the inability to find 'champions' who will see a proposal through from initial idea to final approval and installation, a process which takes a minimum of two years and often much more than that.

Section websites are very "variable" in the extent and style to which they record the Section's history, and some still provide almost nothing. This history can also often be included in the ETHW website, but this is not done in most cases. The quality and content of Section websites can be a major influence on the vitality of the Section as it is seen by members and non-members. A similar comment can be made about Chapter websites.

Some say that Students and Young Professionals do not need to be interested in Technology History, yet if it is believed that they are responsible for "inventing the future", they must be aware of past methods and achievements.

Outlook

Several proposals are underway for History Milestones, and one is approved for unveiling in Dundee, Scotland on 5th April 2018, to commemorate amorphous silicon thin-film transistors, which was an essential step in the feasibility of large flat screen displays. A number of History related conferences organised by various societies are planned for the next two years; IET weekend history conference on Programmable Logic Controllers will be in Birmingham, England, and of course it is hoped that HISTELCON 2019 will be feasible in Glasgow, Scotland. I expect to be giving a talk on some aspect of Technology History (not yet decided) in April at Glasgow Caledonian University. There is potential for better collaboration with other History of Technology related organisations (for example, in UK, the LEO Computers Society, the BCS Computer Conservation Society, and the Defence Electronics History Society)

Points of Concern

As mentioned often, it is not easy to find volunteers who maintain interest and who are also willing to devote adequate time to the various aspects of preservation and publicising technology history, and some policies of the IEEE History Committee appear to alter significantly from year to year.

Other Issues to report

To make a success of HISTELCON 2019, not only will more people be needed to provide actual volunteer help with the organisation (including reviewing papers), but financial support will be needed since History of Technology events need to have a very low cost of attendance and cannot be expected to create financial surpluses.



Fig. 1. Smart Car

History Activities Coordinator

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Goals

The two primary aims of the History Activities are unchanged: [1] to encourage IEEE units in R8 (Sections and Chapters) to retain and keep available their historical development and past achievements (the action of the Sweden Section, as described in the Region 8 Committee meeting in Stockholm, indicates what should be done by others) and [2] to encourage interest in historical achievements in Region 8 via History Milestone proposals and in other ways. Success can be judged by the Section and Chapter (and Society) histories which are readily available, the numbers of new Milestones, their locations if in Sections which have had few or none previously, and particularly by any signs of interest in technology history by students and young professionals

Status and Past Contributions

Together with the Life Members Activity Group, the development of History Milestone Proposals is one of my main volunteer activities. We hope that a milestone at Dundee, Scotland, about amorphous thin-film silicon transistors will be approved shortly - this was an essential step in the development of flat panel TV displays. See http://ieeemilestones.ethw.org/index.php/Milestone-Proposal:Amorphous_Silicon_TFT_Switches

Work is underway on proposals to recognise the development of superconducting magnets for medical applications by Oxford Instruments and for the LEO Computer (world's first computer for commercial data processing), and several others at lower priority. The Region 8 conference HISTELCON 2017 is taking place this year in Japan <http://www.ieee-jp.org/section/kansai/histelcon2017/> It will be the fifth.

A bid has been made to the R8 Conference Committee for HISTELCON 2019 to be held in the UK and Ireland Section in August or early September, probably at Strathclyde University in Glasgow, Scotland. Glasgow has good rail and transport links and many accessible places of tourist interest nearby. The active involvement of other organisations is being developed: the Computer Conservation Society <http://www.computerconservationsociety.org>, the LEO Computers Society <http://www.leo-computers.org.uk/> and various others including appropriate museums. In May, I gave an invited talk about the history of Surface to Air Guided Missiles to SREK (Society for Retired Engineers in Kent) which attracted a nice audience of about 50 people. I hope that such activities increase interest both in IEEE and in Technology History. Martin Bastiaans will 'represent' the R8 History Activities Committee at the Sections Congress in Sydney, because no other members of the Committee are able to attend.

Outlook

I see no reason to suggest a change in the general scope and direction: the challenge is to keep that going and preferably grow the amount of activity, while at the same time involving more people, especially stimulating the interests of students and young professionals. Additionally it would be good to find ways of encouraging 'managements' to financially and otherwise support those who take an interest in Technology History - since this provides some real protection against 'reinvention of the wheel' and assists in trying to make engineering and scientific progress. The next conference ICECS of the IEEE CAS Society is planned for December 2017 in Batumi, Georgia. As far as I know there are no plans for a Section in Georgia, nor any Chapters, so this should be a good opportunity for the Region 8 Committee to stimulate IEEE activity and membership there. However, I think that there is NO involvement by the organisers of ICECS 2017 with any of the R8 Committee - I have just pointed that out to the ICECS 2017 general co-chair and organiser.



Historical Plaque illustrating one of the many languages of Region 8



Label on restored steam locomotive now in Wales, once in South Africa - apparently showing a change in the Afrikaans language which would now be Spoorweg rather than Spoorweë.

This year is the 60th anniversary of the formation of the British Computer Society. Recently approved milestones in Region 8 include [1] Fermi's contribution to semiconductor statistics, Florence, Italy. [2] Dadda's multiplier, Milan, Italy. [3] Germany's first broadcast transmission, Koenigs Wuesterhausen, Germany. Several more are in progress, including one jointly with Poland and Germany: the Czochralski method of crystal growth, 1916, which it is proposed will be at Berlin, Warsaw and Kcynia (e.g. three plaques altogether for the same Milestone). The first History Milestone in Sweden (Gotland HVDC link, 1954) was installed in May 2017.

Points of concern

It will be a substantial challenge to get active volunteer support and the sponsorship needed for financial viability to proceed with the successful organization of HISTELCON 2019: History related activities have to be affordable because many participants have to pay their costs personally, so that a low registration fee is essential and sponsorship and volunteer support from collaborating organisations is essential.

The absorption of the IEEE's Global History Network (GHN) into the Engineering Technology History Wiki (ETHW) <http://ethw.org> has broadened the coverage but made finding IEEE-relevant material (especially the pages and procedures related to History Milestone Proposals) much more challenging. It is also notable that the eight other organisations in ETHW are mostly far more 'USA centred' than IEEE, half of them having "American" as part of their title. Their presence therefore makes ETHW look much more of a USA operation than was the case with the GHN. One bad consequence of the altered structure is that comments on Milestone proposals in process are hardly ever being provided, for the reason that it is far harder for members and non-members to find out how to do that. That risks undermining the rigour of the evaluation process for Milestones.

R8 History Activities Subcommittee

Chair: Tony Davies (UK and I Section), tonydavies@ieee.org.

Corresponding members:

- Martin Bastiaans (Benelux Section), M.J.Bastiaans@tue.nl
- Roland Saam (UK and I Section), r.saam@ieee.org

Immediate-past Corresponding members:

- Antonio Savini (Italy Section), antonio.savini@unipv.it
- Antonio Perez-Yuste (Spain Section), antonio.perez@upm.es

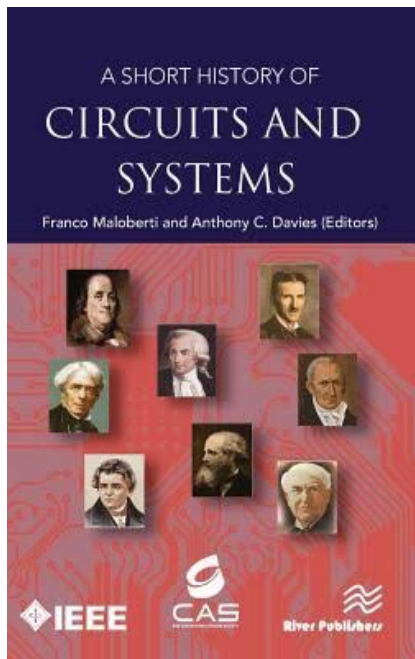
History Activities Coordinator

Anthony Davies

- **Primary mission:** to encourage recognition of achievements and inventions in science and engineering fields related to the scope of IEEE which took place in R8 and to promote awareness of them and their significance.
- **Secondary mission:** to persuade Sections and Chapters in R8 to preserve the history of their committee minutes and their events and maintain availability via web access..
- **Purposes:**
 - 1) Encouraging students and young professionals to take an interest in the historical development of science and engineering enables them to be better prepared for “inventing the future”, a central aspect of IEEE’s humanitarian mission.
 - 2) Documenting the historical record of matters relevant to IEEE R8.

Status

In early 2016, I co-edited with Franco Maloberti an IEEE book “A Short History of Circuits and Systems” which is now available in print for ~\$40 and free to all as an e-book.



A substantial task was planning and preparation for the unveiling on 26th January 2017 of a History Milestone in London to commemorate the world’s first public demonstration of television, by John Logie Baird, on 26th January 1926 (e.g. the 91st anniversary) and on 27th January 2017, a highly successful all day technical symposium “THE EVOLUTION OF TELEVISION FROM BAIRD TO THE DIGITAL AGE” was held in the Royal Institution of Great Britain, London. A grandson of John Logie Baird participated in these events. Photos and other details are on the UK and I Section website. A video recording of the unveiling is available. Several other proposals for History Milestones are under discussion in the UK and I Section Life Members Affinity Group.

In 2016, a Milestone for the Dadda Multiplier was unveiled in Milan, Italy. After a long delay, it is hoped that the unveiling of a Milestone in Kharkiv, Ukraine will take place in mid-2017 for “Zenit Parabolic Reflector L-band Pulsed Radar, 1938”. Also approved and awaiting unveiling are the Gotland 1954 HVDC link in Sweden and Otto Lehmann’s 1889 discovery of liquid crystals at Karlsruhe, Germany. Not yet finally approved but in process are one in Norway (Object oriented programming) and one in Benelux (The birth of Wi-Fi, 1987).

Outlook

The former GHN (Global History Network) website has now become a part of ETHW, which is no longer the sole responsibility of IEEE, with many other (mainly USA) organizations involved (ASME, ASCE, AICHE). Maintaining the IEEE contribution is important, as is liaison between R8 and the IEEE History Center and the IEEE History Committee. This is also important in presenting an international perspective which would otherwise seem limited in ETHW.

HISTELCON 2017 is taking place on 7-8 August 2017 at the University of Hyogo, Kobe Campus for Information Science, 7-1-28, Minatojima-minamimachi, Chuo-ku, Kobe, Japan. This is the 5th HISTELCON, and the first time it has been held outside R8, and so is an example of the international context in which R8 is able to operate.

Points of Concern

There are many topics deserving IEEE History Milestones in R8, but it is difficult to find ‘champions’ who will do the work to prepare proposals and see them through to approval by the IEEE History Committee. The R8 History Activities subcommittee has a responsibility to ensure that historical claims and proposals for Milestones are valid and accurate.

Some relevant contributions from me in 2016

- “Relic Hunting: TV Towers in Region 8” in IEEE History Center Newsletter, November 2016, pages 6-8.
- “Manpacks and Mobiles WW2 and after” – presented at Defence Electronics History Society (DEHS) Symposium at the Steam Museum, Swindon, 6th October 2016
- “The Interwar Years: A comparison of British Navy, Army and Air Force Telecommunications Developments” – presented at conference at IET, Savoy Place, London, 10th August 2016

Remember

A forgotten tool of the past (?) – from ~ 1960. At the Computer Museum in Swindon.



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Goals

Primary activity is directed towards recognition of technology achievements in Region 8 - of which History Milestones are a major part. These are a publicity opportunity for IEEE, and a way to fulfill obligations towards students and young professionals, who need to understand past achievements in order to "invent and develop" the future. Secondary activity is encouraging preservation and availability of IEEE historical records (e.g. of Sections, Chapters, etc.).

Recent activities

- 1) When the Public-Key Cryptography Milestone was installed at GCHQ, Cheltenham in 2010, it was planned that a duplicate would be installed in a museum in Cheltenham, which would enable public to see it (not the case for the one in GCHQ, which is a closed environment for obvious security reasons). At last, the duplicate plaque has just been installed in the museum.
- 2) A multiple-author book on the History of Circuits and Systems was published in May 2016, with Franco Maloberti (IEEE CAS Society President) and myself as the two co-editors. It covers the history of the IEEE CAS Society, the history of the subject area, and In Memoriam' tributes to many of the well-known contributors to the subject.
- 3) Progress is continuing with plans for a technical symposium on 27th January 2017 at the Royal Institution of Great Britain about the Television inventions of John Logie Baird, as a commemoration of the first public demonstration of Television nearby in Frith Street in January 1926 by Baird. It is hoped that an IEEE History Milestone for the event will be approved and ready for unveiling by then.
- 4) The existing IEEE History Plaques in Oban (TAT-1 cable) and Cornwall (Poldhu and Goonhilly) are currently no longer on display, and this is still an unresolved issue.
- 5) Now that the IET building at Savoy Place in London has reopened after over two years of major refurbishment, the replacement for their library provides access to Archives and History of Technology books to visitors, both members of IET and non-members. An extended version of what I wrote for the IEEE History Newsletter is being published in the IET's History Newsletter: Remembering and Understanding our Engineering History: What to see whilst Travelling" - about various non-IEEE History Plaques which can be seen around the UK.
- 6) Newly dedicated History Milestones include:
 - 6.1 Enrico Fermi's Major Contribution to Semiconductor Statistics, 1924-1926, Italy
 - 6.2 Germany's First Broadcast Transmission from the Radio Station Königs Wusterhausen, 1920
- 7) Proposals for History Milestones which are being actively pursued in the UK and Ireland Section include:
 - 7.1 Amorphous Silicon Switches for flat panel displays (Dundee University).
 - 7.2 LEO Computer
 - 7.3 EMI CAT Scanner.
- 8) Some other proposals in hand are:
 - 8.1 Otto Lehmann's work on liquid crystals at Karlsruhe: First Exploration and Proof of Liquid Crystals, 1889".
 - 8.2 Dadda's Multiplier, Italy
 - 8.3 Alexanderson alternator and multi-tuned antenna at Varberg Radio SAQ, Grimeton, Sweden
 - 8.4 Discovery of Superconductivity by Kammerlingh Onnes, 1911 (Univ. of Leiden, Netherlands)
 - 8.5 Development of the Erbium-Doped Optical Fiber Amplifier (Univ. of Southampton, UK)
 - 8.6 Gotland HVDC Link (Sweden)

Several plans for Milestones in Ukraine are under consideration and support funding was offered by the IEEE Foundation.
- 9) A conference on 'Telecommunications in the Aftermath of World War 1: Civilian and Military Perspectives' was held in London on 10th August 2016, at which I presented a paper entitled The Inter-war Years: A comparison of British Navy, Army and Air Force Telecommunications Developments'.
- 10) Various events are being held around the UK to commemorate the 150th anniversary of the Great Eastern steamship's successful cable laying from Valencia, Ireland, across the Atlantic, to Newfoundland, which established fast communication by telegraphy between the continents.

Outlook

A need remains for more volunteers from around Region 8 to assist with history activities, and particularly in those parts of the Region where there is a shortage of IEEE recognition for technology innovations which took place there. They need to be willing to spend actual time on progressing these activities (and not just report occasionally to a committee)

Concerns and Problems

It is not difficult to identify many of the very many achievements and inventions in IEEE fields which have taken place within Region 8 territory and to find well-informed persons who know of or can investigate the details. However, it is difficult to find 'champions' who will see proposals thorough the long stages from submission to final approval by IEEE and an actual unveiling ceremony. It is also essential to ensure sure that claims are valid, and that competing and sometimes concurrent claims are rigorously evaluated. Realizing that not just occasional attention must be paid to history activities, the Italy Section has been appointed a history committee which has already started to work on a Milestone proposal that may be soon submitted, i.e. "Pacinotti's ring armature of an early dynamo machine, 1863" and is planning the unveiling ceremony for the proposed "Dadda's multiplier " Milestone (mentioned above). It is also the intention of the Italy Section to revitalize activities for

Life Members by inviting them, in particular, to get involved in history activities. Similar initiatives by other Sections are recommended.

R8 History Activities Subcommittee

- Anthony C Davies (UK and Ireland Section)
- Antonio Perez-Yuste (Spain Section)
- Antonio Savini (Italy Section)

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Goals

Primary activity is directed towards recognition of technology achievements in Region 8 - of which History Milestones are a major part. These are also seen as a good publicity opportunity for IEEE, and a way to fulfill obligations towards students and young professionals, who need to understand past achievements in order to "invent and develop" the future. Secondary activity is encouraging preservation and availability of IEEE historical records (e.g. of Sections, Chapters, etc.).

Status and Past Contributions

- 1) The UK and Ireland Section has a large portfolio of History Milestone proposals in the pipeline, and no difficulty in finding additional ones. One of the difficulties is finding locations for the plaques, because often the best location for a plaque where the invention or achievement took place is no longer suitable because of organizations no longer existing and buildings having been demolished for re-development. One typical example of a Milestone which we hope is approaching the possibility of successful approval is the recognition of John Logie Baird's television inventions. He did relevant work in many places, most no longer exist. The TV transmitter site at Crystal Palace seemed very hopeful, and is also adjacent to the location of a laboratory where Baird worked, but then it turned out that automated operation of the transmitter has been established, so that it is unattended, and security considerations would have prevented public access. Now, there is high hope that the plaque, if approved, can be mounted in or on a building where Baird demonstrated television in January 1926. That building is now a coffee shop called Bar-Italia (not far from the former town residence of Ada, Countess of Lovelace (daughter of Lord Byron), considered as the world's first computer programmer, after whom the Ada programming language is named. A further problem is the care and monitoring of existing plaques: one to celebrate the landing point of the TAT-1 transatlantic cable, which made possible low-cost telephone conversations between North America and Britain, cannot now be located. It might have been stolen or may be in a derelict building with no access allowed.

		
<p>22 Frith Street, London</p>	<p>Coffee shop</p>	<p>St. James Square, London</p>

- 2) The IEEE CAS Society President has proposed a book on the history of the Society and of the major innovators in the field, and I have agreed to help as a co-editor. This is a large project with very many authors, the work to be done to a very short timescale. I have written a substantial amount of the Society history and origins, and also contributed to some other specific parts, such as 'In Memoriam' descriptions of some key people.
- 3) The November 2015 issue of the IEEE History Center Newsletter includes a report which I wrote entitled 'our technical history: things to see while travelling'. This describes historical plaques put up in the UK by various non-IEEE organizations. A more comprehensive paper based on similar material is due to be published in the IET History of Technology Newsletter later this year. Some examples are shown on the following page.
- 4) The UK and Ireland LMAG committee is primarily occupied in Milestone proposals and in plans for working with and mentoring students and young professionals. There is a link between such mentoring and technology history, since that is the area where LMAG members have interests and expertise. Getting new members of the LMAG committee is being given some emphasis.
- 5) The IET (former IEE) has made an expensive two and a half year refurbishment of its main building in Savoy Place, now re-opened, and as part of this, the IET Archives Department has improved premises and facilities, and attempts are made to work cooperatively with them. This is not always easy because of IET's 'rule-based' modes of operation, but

		
<p>Reminder of first British person in Space</p>	<p>First Cash Machine (replacement plaque: first was stolen)</p>	<p>Royal Aeronautical Society plaque at RAF Cosford</p>

at a personal level, the liaison is good, and they have excellent archival collections. Access by IEEE members seriously interested in such matters is welcomed.

- 6) I have had several invitations to attend and give presentations to Student Branch events, including an excellent inaugural meeting of a Student Branch of the IAS/PELS Societies in Glasgow. Strong financial support from the IAS Society made this a very effective event, and demonstrates clearly the value of good links being formed between Society and Regional sides - still unfortunately rather rare. My invited presentations are typically based around career advice and built upon what to the young listeners are more or less 'technology-history' related matters. Such material proves very popular. It is notable that the successful IEEE student branches are generally ones which have established strong encouragement from influential members of the faculty and have also shown themselves to be skilled at attracting finance from industrial sponsors for their activities. The branches are always 'at risk' as their leaders graduate and leave for employment in industry or elsewhere, and if there is no adequate leadership-succession plan.
- 7) A new milestone in Germany is due to be dedicated on 16th July 2016, and a date is awaited for a milestone dedication in Ukraine. Two proposals (one in Germany and one in Italy) are awaiting History Committee approval. One has been submitted from Sweden.

It will be apparent from the 'status' part of this report that there is no shortage of worthwhile things to be continued. It can be expected that some will successfully be brought to a good conclusion in future - some of which will need financial support and sponsorship to achieve a good outcome. If well organized, the benefits to IEEE in terms of publicity and recognition may be substantial. A good example is the Blumlein Stereo Inventions Milestone at Abbey Road, in the spring of 2015, which had substantial financial and organizational support from the Abbey Road senior management including free use of a studio which IEEE certainly would not have been wealthy enough to pay for. Although my report and activities have been primarily associated with the UK and Ireland Section, there have been worthwhile Milestone developments elsewhere in the Region, notably in Germany and Italy, and opportunities in Ukraine (unfortunately not helped by the turmoil and unresolved political situations).

Outlook

It would be helpful to recruit a few more volunteers from around Region 8 to assist with history activities, and particularly in those parts of the Region where there is a shortage of IEEE recognition for technology innovations which took place there. Generally these volunteers need to be both enthusiastic and sufficiently knowledgeable to move these ideas forward in collaboration with others, and need to be willing to spend time on these activities (and not just report twice per year to the R8 Committee while doing not much in between!)

Points of Concern

There are very many achievements and inventions in IEEE fields which have taken place within Region 8 territory. It is not difficult to identify many of these and to find well-informed persons who know of or can investigate the details. However, it is difficult to find 'champions' who will see proposals thorough the long stages from submission to final approval by IEEE and an actual unveiling ceremony. There is, of course, the also essential aspect of being sure that claims are valid, and that competing and sometimes concurrent claims are rigorously evaluated. Although not exactly connected with History Activities, the IEEE organizational changes being promoted by some at the top-levels of IEEE may put at risk the half century of acknowledged outstanding success of IEEE which has come about largely by devolving authority for decision making and action to the lowest levels (e.g. via Sections, Chapters, etc. and to new junior volunteers). Studies of history should help appreciation of the common failures of top-down managed systems.

History Activities Coordinator

Anthony Davies

Goals

I believe that it is valuable to try to increase the interest in the many historical achievements of our profession particularly among early-career professionals, who are often poorly informed and bored by such history yet to "invent the future" they need to know the past. Reactions to IEEE Historic Milestone dedications is one success measure, and promoting these has been a substantial part of my recent activities.

Status and Past Contributions

Most of my activities have been related to the encouragement of History Milestone proposals, primarily in the UK and Ireland Section. The greatest achievement was the dedication on 1st April for a milestone to Blumleins stereo sound recording and reproduction inventions of the early 1930s at Abbey Road Studios. This had the strong and generous support of the Abbey Road Studios management, with an attendance of some 100 people, including many of the real experts, and included lectures and a very effective technical seminar. It must have created very good publicity for IEEE [1,2]. A number of other proposals are in various stages of progress. Now that the GHN has been, in effect, merged to become ETHW.org, there is access to the historical awards of ASME and ASCE which are primarily in USA - so I have been collecting information on other historical-plaque schemes (primarily in UK), and my information is likely to be published in the November IEEE History Newsletter. I presented a paper on the first hydro-electric system to be used for domestic lighting in the Southern Hemisphere (Reefton, New Zealand) at a history conference at Newcastle-upon-Tyne [3], and have continued in giving several invited talks for IET on technology-history topics (mainly military-related).

Outlook

Most of my activity is in conjunction with the UK and Ireland Life Members Affinity Group. I also do what I can to encourage collaboration with the History of Technology people in IET and the staff in IET Archives.

Points of concern

I plan to continue to encourage History Milestones in Region 8 - many possibilities have been identified and there must be many more a major difficulty is finding champions locally with the stamina to see the proposals through to completion. Another shortcoming is that many of the Section Histories on the GHN (and now ETHW) website are very short and lack important information, and there is a continuing need to encourage Sections to provide this information before it is lost for ever. I have been assisting the Sweden Section Chair with that. Recently it was discovered that two of the existing History Plaques (one in England and one in Scotland) appear to have "disappeared" this clearly goes against the concept that the plaques should be in places where IEEE members and others can visit and see them. We are trying to solve this mystery, but it highlights the ongoing responsibility of Sections to try to ensure the continued availability of their existing Milestones.

- 1) A.C. Davies, "Stereo Sound Recording and Reproduction - Remembering the History", IEEE Signal Processing Magazine, Sept 2015, Vol 32, no 5, pp 14-16 (DOI:10.1109/MSP.2015.2440191)
- 2) Turk at http://motherboard.vice.com/en_uk/read/the-man-who-invented-stereo
- 3) A.C. Davies, "A Southern Hemisphere comparison with Craggside", IET History of Technology Conference, Newcastle-upon-Tyne, England, 6th June 2015

History Activities Coordinator

Anthony Davies

The Past

A milestone dedicated for the Heinrich Hertz demonstration of electromagnetic waves has been unveiled at Karlsruhe on 5th December 2014. In the past, there was an IEEE award named after Hertz, but it is now discontinued, no awards having been made after 2001. Funds for this award were from Region 8, and it seems that discontinuation was because company financial support became difficult to obtain.

Outlook

- Arrangements are underway for the dedication of a milestone at Abbey Road Studios in London to recognize the stereo sound recording and reproduction inventions of Alan Dower Blumlein in the early 1930s. A major event is being planned for 1st April 2015.
- A milestone has been approved for the L-band 3D pulsed radar developed in Kharkiv, Ukraine in 1938. Progress with installation is uncertain because of the military activities in Ukraine. Several other prospective milestones in Ukraine are in the proposal development stages.
- Enrico Fermi's major contribution to semiconductor statistics, Florence, Italy, 1926 is awaiting a decision by the IEEE History Committee.
- Several Milestone proposal plans are well under way in the UK and Ireland Section.
- The HISTELCON 2015 Conference will be held in Israel August 16-21, and the significance of this event is recognized by the IEEE History Committee with plans to change HISTELCON to a worldwide conference, rather than just a Region 8 event.

Best Practices

There is no shortage of good suggestions for History Milestones in various locations in Region 8, but in many cases, champions to carry them through from idea to accepted proposal cannot be found. The IEEE History Center and the IEEE History Committee is keen to see more successful proposals from Region 8 and can offer advice and help.

Points of concern / Topics for future discussion

- Changes in the IEEE Global History Network (GHN): IEEE is collaborating with six other engineering Societies in the new Engineering and Technology History Wiki (ETHW). These include the American Society of Civil Engineers (ASCE) and the American Society of Mechanical Engineers (ASME) as well as the Society of Women Engineers. Clearly there is an overlap in interests between IEEE and all of these. Collaboration with the IET (former IEE) has been proposed and various suggestions made, but no progress has occurred so far. The IET Archives are now re-housed in a more special environment and in the process of becoming available to visitors who make reservations in advance.
- ASME and ASCE both have Landmarks which correspond to the IEEE Milestones and the IEEE Milestones data has been moved to the ETHW website. For the time being, there is automatic re-direction from the GHN website, but it is recommended that the ETHW site be used from now onwards. The ASME website lists 275 landmarks generally these are preserved objects such as engines, etc. The ASCE landmarks are civil engineering projects: bridges, viaducts, etc. For example, Brunels Thames Tunnel in London, completed 1843 and still in continuous use, is one of them. It was the first shield-driven tunnel and the first underwater railway tunnel. ASCE has some 260 landmarks. Compare with about 150 for IEEE.
- The ETHW website (www.ethw.org) has an innovation map which shows the locations of all the milestones and landmarks: 222 are shown for the eastern USA area, and 49 for the Western Europe area, which illustrates the unbalanced recognition of technology progress, and the need for more milestones in Region 8.
- The ASME and ASCE landmarks may be found at the following locations: www.asme.org/about-asme/who-e-are/engineering-history/landmarks and <http://www.asce.org/Landmark-Program>
- Since some in IEEE are not much interested in History of Technology and might wish to reduce the financial support for it, it may be that in due course, the GHN could be phased out and replaced completely by having all the material in ETHW. Although IEEE seems to be the strongest partner in ETHW, such a change might not be favorable for IEEE, so a careful watch on these plans is recommended!

IEEE History Activities Coordinator Report, August 2014

Tony Davies

Highlights from the past

- The UK and Ireland LMAG continues to have much of its activity related to the encouragement and preparation of History Milestone Proposals.
 - The Milestone for the 1975 invention of Public-Key Cryptography was dedicated in 2010, but the duplicate Plaque, to be installed in a location accessible to the public, is still in storage, pending the completion of a refurbishment and re-opening of a museum in Cheltenham.
 - I have continued to give some invited talks on Technology History topics, including, recently, a talk about Surface to Air Guided Missiles, at Imperial College for IET and at the University of Newcastle-upon-Tyne. This appears to be a popular topic.
 - The name of the United Kingdom and Republic of Ireland Section (commonly abbreviated to UKRI) is being changed to United Kingdom and Ireland. There are no other implied changes (e.g. it will continue to include Northern Ireland, since that is both part of the United Kingdom and part of Ireland), and will involve one area with pound sterling currency and one area with Euro currency). The Section language is English but there are also three Celtic Language (Welsh, Gaelic and Irish) which have some official support and varying amounts of actual usage. Since it seems that various misunderstandings can still arise about the relationships between the various parts of the Section, I provided an overview and explanation on the History Activities Page of the R8 Webpage, which you are invited to read.

(see <http://www.ieeer8.org/category/member-activities/history-activities/>).

Note that 'Éire' and 'Poblacht na h-Éireann' are the translations into Irish of 'Ireland' (e.g the whole island), and 'Republic of Ireland' (the part excluding Northern Ireland). 'Cymru' is the translation into Welsh of 'Wales', and 'Alba' is the translation into Gaelic of 'Scotland'.



Republic of Ireland and United Kingdom Flags

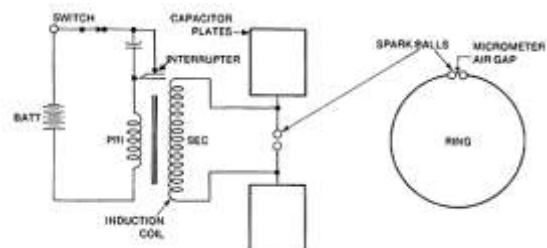


Future activities

1. Two History Milestones have been approved in the Germany Section - the first ones in that Section.



Heinrich Hertz and his experiment



Rheinfelden (Swiss-German border)

One is to recognise contributions of Heinrich Hertz at Karlsruhe and the other is for the Rheinfelden Hydroelectric Power Plant, 1898 - 2010. It was the decision by Heinrich Hertz to move from Kiel University to Karlsruhe (a Technische Hochschule, with its better facilities for experimental work, responsible for the production of engineers rather than research-doctorates) which led to his electromagnetic-wave discoveries.

The date of the dedication ceremony for Hertz has not yet been decided, for Rheinfelden it is expected to be 25th September 2014, hosted by the power plant operator and owner Energiedienst.

LP record using Blumlein stereo recording method

2. It is hoped that the IEEE History Committee will shortly recommend the approval by the Board of Directors of a History Milestone to recognise the achievements by Alan Blumlein in the areas of Stereo Sound Recording and Reproduction (which include the first pressing of a stereophonic disc with two channels in one groove and invention of the dual 45-degree cutting in a single groove, adopted worldwide for stereo recording on LP discs and many other inventions related to stereo sound - see GHN website for details of the proposal). If possible the dedication ceremony will be in 2014.



3. A Milestone in Poland to recognise the breaking of the Enigma code is due to be dedicated in August 2014, and proposals to recognise a 3D radar system (Zenit) and a sub-millimetre waveguide have been submitted from Ukraine.



Transmit antenna of Zenit L-band 3D pulsed radar (1938-1943)

4. Other Region 8 Proposals in progress include:
 Enrico Fermi's 1926 contribution to Semiconductor statistics at Firenze (Florence) and Luigi Dadda's installation in 1954 of an imported computer CRC102A to Politecnico di Milano, one of the first to be operated in Continental Europe.

Computer CRC102A in laboratory in Milan:



Best practices

- The importance of Technology History in the education and formation of future engineers is often insufficiently recognised. Engineers are supposed to 'invent the future' which they can hardly do without some awareness and understanding of past achievements. It should therefore become a common practice to include a compulsory history of technology module in university undergraduate programs, of a style that is likely to be interesting for the students.
- Evaluation and Challenging of History Milestones: Anyone may contribute to the discussion of a proposed Milestone during the evaluation stage and it is important for the integrity of the process for as many as possible to do so. Once dedicated, a Milestone could be challenged on the basis of a serious belief that it had been approved because of an incorrect or insufficient evaluation, but that would be an unwelcome process, comparable to an accusation of plagiarism. Everyone is therefore encouraged to study the Milestone proposals in process, and to contribute to the discussion if they have expertise or knowledge to offer.

Points of concern / Topics for future discussion

Plans were approved to provide some financial support to the Ukraine Section for a large number of possible History Milestones, some to be proposed from the Kiev area and some from the Kharkiv area. The unfortunate and in some cases tragic events in Ukraine make it likely that there will be little progress with these plans. Only two have been submitted so far (see 'Future Activities, para. 3 above)

There are many opportunities for History Milestone Proposals to be developed in many of the Sections of Region 8; very few seem to be at a significant stage of development. Progress is often very slow because of the difficulties in finding 'champions' with the knowledge and continuing enthusiasm to see

the proposals through to completion. A disproportionate number of the History Milestones are in the USA.

There have been many requests to the Section Chairs of Region 8 to ensure that the history of their Sections is properly recorded - either on their own website or the Global History Network (GHN) website, etc. Some Sections have very limited historical entries or even nothing at all! Assistance and advice is available on request. It is recommended that each Section should appoint or elect a suitable volunteer to promote historical aspects of the Section (this includes both the history of the Section and Technical achievements which took place in the Section territory)

Miscellaneous

- The move of the IEEE History Center to Stevens Institute of Technology, Hoboken, NJ has now taken place. The Center will work closely with Stevens' College of Arts and Letters (CAL), an academic unit dedicated to teaching and research at the intersection of science, technology, the humanities, and the arts. Stevens is a private university founded in 1870.
- Plans for cooperation between IEEE and IET in the areas of History of Technology and Archives, etc. have been more or less 'on-hold' because of the upheaval in the IET arising from the £30m refurbishment of their Savoy Place building, scheduled to re-open in late 2015. A number of suggestions for cooperation-experiments have unfortunately not yet led to any action at all. It is my intention to try to get this matter moving again in September 2014. A basic difficulty is that although IET has a large amount of important historical and archive material, the aspects that are described on their website are primarily under the control of IET staff responsible for the website, whereas in IEEE, the GHN website is 'wiki' based and any registered user can submit material.
- Cooperation between some learned societies in USA has been started, with plans for an "Engineering and Technology History Wiki" (ETHW) - to be a website dedicated to the history of all engineering. In March 2014, AIChE, AIME, ASCE, IEEE, SPE and SWE signed an agreement to jointly oversee the design and operation of the new site and to help fund the costs of running the site. It is expected that IEEE will take the lead role in this. Notably IET has not been involved in this initiative in any way, and nor have other non-USA National Engineering Societies.



The IEEE History Center's new home: the campus of Stevens Institute of Technology overlooking the Hudson River. Image by Jeffery Stock Photography. Creative Commons Attribution-Share Alike 3.0

History Activities Coordinator**Tony Davies****Highlights from the past**

- The UKRI Section is continuing with plans for several History Milestone Proposals. Good progress is being made with one for stereo sound reproduction, based on the inventions of Alan Blumlein.
- In January, I presented an invited paper on British Army and Air Force wavemeters at a conference at Oxford University on "Making Telecommunications in the First World War". This and much other relevant information is being assembled on a website, associated with University of Leeds, where the School of Philosophy, Religion and History of Science has research funding for a large ongoing project on this subject. See
 - <http://blogs.mhs.ox.ac.uk/innovatingincombat/> and particularly
 - <http://blogs.mhs.ox.ac.uk/innovatingincombat/events/#20140124>
- I have been encouraging and trying to help other R8 Sections in preparing proposals for History Milestones - a simplified guide to the process is now on the R8 website on the Member Activities pages.
- A proposal for recognition of Heinrich Hertz' experiments had been completed and is awaiting a decision. If favourable, it will be the first IEEE History Milestone of the Germany Section.
- The Ukraine Section has received funding from the IEEE Foundation to prepare and submit eleven Milestone proposals - a few of these are nearly ready, although the events in the Crimea, etc. may result in delays in progress with these Milestone plans.
- Several topics for Milestone proposals have been identified for the Hungary Section.

Future activities

- Although I am no longer a member of the IEEE History Committee, I do receive all the documentation and keep in touch with their activities (acting as a 'corresponding member'). The Committee has its first (of two) face-to-face meetings on 8-9th March 2014 and so by the time of the R8 Committee meeting in April, there may be interesting matters to report from that meeting.

Points of concern / Topics for future discussion

- An IEEE Milestone at Bletchley Park commemorates World War Two code-breaking and the Colossus computer built to assist with this. There is an ongoing problem at Bletchley Park where a large fence has been erected between the part where visitors pay and enter, and the area rented by the National Museum of Computing, who operate the re-built Colossus computer and show some other aspects of code-breaking. As a result, many visitors will not see Colossus, and those who want to will have to pay an added entry fee.
- Several organisations and historic collections have been ejected from the Bletchley Park Site (the Vintage Military and Amateur Radio Society will no longer be allowed to hold events there, and a large collection of Winston Churchill material has also been sent away from the site. This, and many other changes, has resulted in a substantial dispute and adverse publicity. If the outcome is not favourable, it might be appropriate for IEEE to reconsider the location of this Milestone Plaque. I am keeping the IEEE History Center informed of this matter.
- Plans for cooperation between IET Archives and the IEEE History Center and the GHN website have been under discussion for over a year: no tangible progress can be reported, but a number of suggestions have been made. IET is involved in a two-year refurbishment of its building in London (Savoy Place) and this has led to some uncertainties over plans for the IET archives and library - many items having to be placed in storage for the time being.
- There were some discussions underway about an MOU for cooperation between IEEE and IET, which were, in effect, discontinued some time ago: it is hoped that it will be possible to re-start these discussions soon. From the IEEE viewpoint, this does NOT fit the framework of a National Society Agreement because the formal position of IET is that it is not a "National", but a "Worldwide" Society.

Tony Davies

1st March 2014

IEEE History Activities Coordinator Report October 2013

Prof. Tony Davies

Activities from the past

- After the R8 Committee Meeting in Madrid, I visited the Telecommunications Museum of the Polytechnic University of Madrid (UPM) – it has a good collection, used to support a compulsory history course for the students in the Escuela Universitaria de Ingenieria Tecnica de Telecomunicacion. Having such a course seems to me to be a good practice which could be adopted more widely.



Receiver made by Marconi Española SA

- I have a paper in IEEE Technology and Society Magazine about the history of the former IEEE sanctions against the Section and its members ("IEEE in a Persian Market", Vol.32, Summer 2013, pp 66-73).
- Two more Oral Histories of former R8 Directors were done during the Madrid R8 Committee meeting (Kurt Richter and Peer Martin Larsen) and the text transcripts are being finalised, after which they should be available on the GHN website.

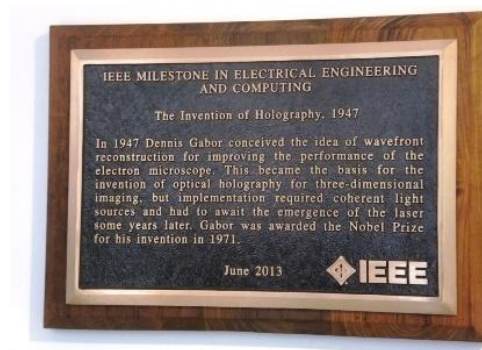


Photos taken at the time of the Oral History Interviews in Madrid

- A History Milestone for the invention of Holography by Dennis Gabor was dedicated on 12th June 2013 at Imperial College London. The unveiling was done by the IEEE President, and the occasion included a technical seminar and a memorial lecture to Dennis Gabor given by prof Laszlo Solymar. It was a pleasure to welcome several representatives from Hungary at this event.
- Another Milestone in Region 8 was dedicated in Croatia on 5th July 2013, for the Krka-Šibenik Hydro Power System. The construction work for this system started in 1884 at Jaruga, generating 3kV, two phase a.c.. The first power was delivered to Šibenik for street lighting in 1885, two days after the first supply from the Niagara Falls plant. By 1906, a change was made to a three-phase system.
- I attended the unveiling of a plaque to Sir Francis Ronalds on 26th August 2013 at Highbury Terrace in Islington, London. This was not connected with IEEE, although it could have been. It was mounted on the house where he spend some of his childhood and where he did his first experiments with an electric telegraphy system, now not very well known, but which preceded the telegraph of Wheatstone and Cooke. He received his knighthood for his electrical telegraph invention, which he demonstrated to the British Admiralty, who decided that there was no need for such an invention, semaphore being perfectly adequate for all their needs.



Holography Milestone, London, 12 June 2013



Plaque for Sir Francis Ronalds after unveiling, and a 'duplicate' with the oldest local resident

I attended an international conference on the History of Computers organised in London at the Science Museum by working group WG9.7 of IFIP. The conference had generous sponsorship by Google. Collaboration between this IFIP group and IEEE is recommended.



Photo shown at History of Computers Conference
Russian computer Ural-1 – Restored to working condition. © Marina Smolevitskaya
Polytechnic Museum, Moscow

Future activities

- I continue as a Corresponding Member of the IEEE History Committee, and have been appointed by its Chair to investigate possible cooperation between IEEE and IET (former IEE) in the History of Technology area. At present, the IET building in London (Savoy Place) is closed for a two year refurbishment, and as a result library and archives services are severely restricted (and also face a somewhat uncertain future). Direct access from the GHN website to historical material in the IET website might be provided, balanced by easy log-in access to the GHN website by IET members, but arranging this may not be easy.
- There are many opportunities for more IEEE History Milestones in Region 8, and I recommend that particularly those Sections which have few or no Milestones might investigate possibilities, taking into account that the time from initial proposal to approval by the IEEE Board of Directors typically takes at least two years. Do not forget that the Milestones are not an award or recognition of a person, but are to recognise an achievement or invention (which must have been at least 25 years ago). Milestone proposals underway or about to be started include
 1. Heinrich Hertz demonstration in 1886 of electromagnetic waves (Karlsruhe University, Germany) (this provided practical confirmation of Maxwell's theoretical work)
 2. Metro line M1, the földalatti, oldest electric underground railway in continental Europe (Budapest, Hungary), still in operation since 1896. London had an earlier system, initially steam traction, then electric traction, which became necessary when deep tunnelling was adopted; previously the cut-and-cover method was used, both for the London and Budapest metros.
 3. (a) BESM (Большая Электронно-Счётная Машина) computer developed at Kharkov in Ukraine
(b) 'Zenit' L-band three-coordinate radar, also developed at Kharkov in Ukraine
(A milestone proposal was submitted for Zenit in 2003, but not followed up)

Also being discussed:

Geothermal Energy in Iceland,

Invention of multi-phase power transformer by Zipernowsky at Ganz company in Hungary,

PCM invention by Alec Reeves in Paris,

Leo Computer in UK (first use of a digital computer for commercial data processing at Lyons Company, Cadby House, West London, for the catering business).

John Logie Baird's TV inventions in UK (large-screen TV, 3D TV, etc.).

Alan D. Blumlein's inventions at EMI for stereo recording in UK

and several others.

- IEEE Spectrum will be 50 years old next year (2014). To celebrate, the Editor is planning a series of items describing major achievements which have taken place in IEEE's fields of interest in the last 50 years. A request has been made for suggestions from Region 8, and I have supplied several. It is expected that Spectrum will send a reporter to interview appropriate people for those chosen, and use this as the basis for whatever is published in Spectrum.

Best practices

- There is a close connection in the UKRI Section between the Life Members Activity Group and History topics (both History of IEEE and History of Technology). This seems a 'natural' connection, and is recommended to other Sections to consider. A connection between these activities, student activities and the Social Implications of Technology Chapters seems also very appropriate. The Section has appointed a Section Historian (currently Peter Hill).

Points of concern / Topics for future discussion

- Piscataway policy is now that e-mails and many electronic documents more than three years old are automatically deleted unless steps are taken to preserve them. That places greater responsibility on Sections and Chapters to retain their own records for historical purposes. In future, Piscataway may not be able to provide historic documents of the kinds which were valuable in the R8 Jubilee investigations.
- There is much scope for interesting History of Technology conferences, of which the R8 initiated HISTELCONs are a good example (Paris 2008, Madrid 2010, Pavia 2012). However, for most IEEE members, attendance has to be paid from their personal funds, because employers and research contracts are usually not appropriate to pay the travel and registration fees. This makes them too expensive for many of those who would be interested in them, and also typically results in a small

attendance. This restriction does not apply to technical museum curators and professional historians, who may have funding to attend such events. However, IEEE has not been very successful in marketing its events to this kind of participant, who are typically not IEEE members and see no reason to join.

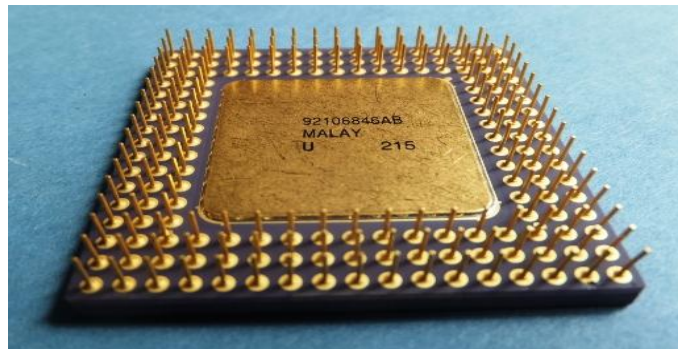
- As part of last year's Jubilee activities, all Sections in R8 were encouraged to write their Section Histories and make them available on the GHN website. Some have done this very thoroughly, but in a number of cases, there is not much information provided. These Sections are encouraged to review what they have done, and consider an improved entry. I would be glad to try to assist any who ask for help.
- The IEEE History Center is expected to have a presence at the Sections Congress in Amsterdam next August. Suggestions are being made to have a Life Members session at the Congress, which might include a history-related theme. It is not yet known if the Congress organisers favour such an idea, and the Life Members and the Life Member Activity Group Chairs may, in most cases, have no financial support to attend the Congress, and many may be retired with limited incomes.
- Assessment of Milestone proposals is mostly done openly on the GHN website: all IEEE members can obtain login access, and are encouraged to contribute to this process. It is important that proposals are reviewed by as many people as possible, to ensure that correct and appropriate claims are made. The IEEE History Committee, which makes the decisions whether to approve them, benefits from such advice.

The list of milestones proposals currently in progress can be found at

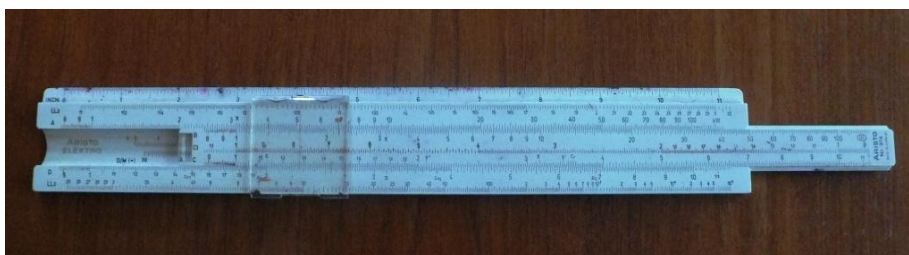
<http://www.ieeeghn.org/wiki/index.php/Special:MilestoneProposals>

A large proportion are in USA, which reinforces the importance of contributions from Region 8 in the assessment process, to ensure that fair claims are being made, and for increasing the number which recognise the many pioneering historical achievements in Region 8.

A proposal is currently under review for the CRC102-A computer, installed at Politecnico di Milano, Italy, in 1955. This computer was designed and built in California and brought to Italy, where it is believed to be the first to be installed there. Another proposal under review from Italy is for Marconi's first wireless experiments.



Progress and change in electronic components, from pentode valve to i486DX CPU



Progress and change in electronics engineer's tools, from slide rule to calculator in smart phone

I

Prof Tony Davies, R8 History Activities Coordinator

Activity Report

IEEE History Committee: I was a member for 2012, and attended the two face-to-face meetings, one in Newark airport, New Jersey, USA and one near Milan, Italy. I also participated in their teleconferences and visited the IEEE History Center in New Brunswick, New Jersey, USA, on the Rutgers University campus.



The IEEE History Center building, Rutgers University

The contract between IEEE and Rutgers University is due for renewal, and there has been some discussion about moving the Center to another university.

I also chaired an ad-hoc subcommittee of the History Committee with the task of making recommendations for improvements to the ease of use and effectiveness of the IEEE Global History Network (GHN). The ease of searching has been dramatically improved and the Milestone approval process streamlined to make it easier, but there is more to be done to improve ease of use and to attract more users. An idea that the Milestone Plaques could also have, nearby, a QR code, which would give immediate access to more information or even to a recorded MP3 audio commentary has been mentioned, but for now is no more than an idea.

I retain my connections with the IEEE History Committee as a Corresponding Member. I have also been involved with UKRI Section history activities through the UKRI Life Members Activity Group.

Oral Histories of Past R8 Directors: Audio recordings of the interviews are made, and digitally edited and enhanced, with the interviewee having the opportunity to make corrections. A typed transcript is then made and after approval by all involved is put on the GHN website:

Those of Reginald Russell, Rolf Remshardt, Baldomir Zajc, Basil Osborne and Jean Lebel have been completed, with typed transcripts now on the GHN website.

See

I

http://www.ieeeeghn.org/wiki/index.php/Oral-History:Jean_Lebel

http://www.ieeeeghn.org/wiki/index.php/Oral-History:Reginald_Russell

http://www.ieeeeghn.org/wiki/index.php/Oral-History:Basil_Osborne

http://www.ieeeeghn.org/wiki/index.php/Oral-History:Rolf_Remshardt

http://www.ieeeeghn.org/wiki/index.php/Oral-History:Baldomir_Zajc

The audio recordings are available on request. Plans for some more interviews are in hand.



Photos taken at the time of Oral History Interviews
with Reg Russell and Jean Lebel

HISTELCON 2012 took place in Pavia, Italy, in September. I presented two papers, one related to the History of Region 8.

It was an excellent conference in nice surrounding at the University of Pavia, where Alessandro Volta was a professor. Most sessions were in the impressive Aula Magna, and one day was held at the Museum of Electrical Technology of the University of Pavia. The papers will be in IEEE Xplore. Unfortunately, attendance numbers were rather low. It seems that IEEE may not be very successful in publicizing such conferences among the professional historians working in science and technology, and of course many mid-career engineers cannot get employer-support to attend conferences about history.



IEEE Historic Milestone plaques: Several for locations in Region 8 have been approved recently and others are 'in progress'. One for the invention of holography by Dennis Gabor is to be unveiled at Imperial College London on 12th June 2013, and some others in the UKRI Section are going through the proposal development stages. A Milestone in Croatia is expected to be approved shortly.

There are many opportunities for Milestones in the Sections of R8, and Section Chairs are asked to encourage volunteers in their Section to take an interest in preparing proposals. Typically, it takes about two years from start to final approval and installation. It is notable that even some large Sections in R8 have no or very few milestones, and considering the many inventions and achievements in the scope of IEEE that took place in the territory of R8, the creation of many more Milestones would be very appropriate.

Cooperation between IEEE History Center and the IET Archives: I am chairing an informal subcommittee to advise on the development of mutually beneficial cooperation and to make some constructive proposals. Links between the historical material on the IET website and the GHN are being discussed. In the IET archives there are valuable collections of historic documents, whereas the GHN is entirely an on-line system with no collection of actual items. Independently of this, there are plans in both IET and IEEE to develop collaborative links with the history-activities of other engineering societies. It is important to ensure that all these initiatives are not seen as ways of spending less money rather than achieving more. IET is about to embark on a two-year 30 million pound construction project to upgrade its building in London. During and after this, accessibility to the library collections and archives is subject to considerable uncertainties.

Section Histories: The R8 Jubilee celebrations provide a focus for the production of histories of the Sections (including their Chapters). A number have already done this, but many are not yet completed or are very limited. The best destination for such histories is the GHN, and a link to and from Section web pages can then be provided. Links to two examples are given below:

[http://www.ieeeghn.org/wiki/index.php/IEEE United Kingdom and Republic of Ireland Section History](http://www.ieeeghn.org/wiki/index.php/IEEE_United_Kingdom_and_Republic_of_Ireland_Section_History)

[http://www.ieeeghn.org/wiki/index.php/IEEE Russia %28Northwest%29 Section History](http://www.ieeeghn.org/wiki/index.php/IEEE_Russia_%28Northwest%29_Section_History)

I will be glad to try to advise or help any Sections who feel a need for it in order to create such histories.

Society and Chapter histories are also to be found on the GHN, and links for two examples for which I am mainly responsible are below:

[http://www.ieeeghn.org/wiki/index.php/IEEE Circuits and Systems Society History](http://www.ieeeghn.org/wiki/index.php/IEEE_Circuits_and_Systems_Society_History)

[http://www.ieeeghn.org/wiki/index.php/IEEE UKRI Circuits and Systems Chapter History](http://www.ieeeghn.org/wiki/index.php/IEEE_UKRI_Circuits_and_Systems_Chapter_History)

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By means of 'First-Hand Histories' the GHN also provides an on-line repository for individual engineers to preserve their personal achievements, memoirs and experiences from past times. For example, to test out this process, I was persuaded to add some of my 'memories' as a past Region Director:

http://www.ieeeghn.org/wiki/index.php/First-Hand:Recollections_of_a_Region_8_Director

There is also the opportunity to include in the GHN short life histories of well known past IEEE members, and once there, these can be linked to other entries where the same person is referred to. Among senior Section volunteers, there are often some who have detailed memories of important past members from their Section, and who could take part in the preservation of information about such members.

Tony Davies



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