

**A BRIEF HISTORY  
OF THE  
HAMILTON SECTION OF THE IEEE**

**2008.08 21**

## **A Brief History of the Hamilton Section of the IEEE.**

### **Time Line**

- 1884 AIEE founded
- 1912 IRE founded
- 1929 The Great Depression starts
- 1936 Hamilton "Group" authorized as a sub-section of Toronto. Regular meetings held on a monthly basis. Most meetings include a technical presentation. Attendance between 50 and 100.
- 1939 World War II starts in Europe
- 1941 Japan attacks Pearl Harbor. USA enters World War II
- 1944 Hamilton "Group" is elevated to Sub-Section. Regular monthly meetings with large attendance continue. Most meetings include a technical presentation.
- 1945 World War II ends

1945 – 1953. Regular monthly meetings and technical presentations continue.

1954 - Section records cease abruptly. So far it has not been possible to establish why this should be, or what may have happened to the records, which previously had been so carefully maintained. After considerable digging among earlier section members and life members, the most probable hypothesis is as follows: It has been established that the section historian as of the early 1980's had been associated with the section in one form or another for many years. Possibly as long as 30. Thirty years from 1983 would put us back to 1955 or thereabouts. Older section members recall that towards the end of his tenure, the member apparently developed memory problems and retired<sup>1</sup>. In about 1983, the member's widow asked the Section Committee what she should do with a number of boxes labeled "IEEE". It would seem that a number of boxes were handed over to the Section. From then on, the sequence becomes unclear, except that there handed down through a sequence of custodians, until in 2005, when they were taken over by the author of these notes. In the interim, they seem to have suffered a variety of misfortunes, including extensive water damage. Also, given the number of different caretakers, it is not surprising that a number of boxes have gone missing. The author has taken considerable effort to track down some of the people concerned, including section chairs from the period, life members and even the daughter of the original section historian who is believed to have so carefully assembled the records in the first place. But to no avail. Twenty-five years is a long span, and it is now concluded that the

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<sup>1</sup> Names of some of the persons concerned are available with the author of these notes if required.

missing records have been irretrievably lost. In short, for the 63-year period between 1936 and 1999, definitive records only exist for 27 of those years (1936-1953, and 1988-1999).

1966 AIEE and IRE merge to form the IEEE.

1988 – 1999 Records resume, but not in the detail as previously. But it should be remembered, that by that time electronic data processing had become common, and fewer hard copies were kept.

2005 Three boxes of badly water-damaged files handed to D. Hepburn. A small group comprising J. Bradley, J. Kozlowski and Hepburn, went through these boxes. Most regrettably the majority of the material was (a) of zero historical use, comprising bundles of receipts for meals, postage stamps etc. and (b) were so badly water-damaged and blackened as to be unreadable. These were thrown out, with the result that the remaining records occupy less than one of the original 3 boxes.

Now read on .....

## **1 - Background**

The origins of the present-day IEEE date back to 1884, with the founding of the "American Institute of Electrical Engineers" (AIEE). This represents 124 years of continuous history. Subsequently, the "Institute of Radio Engineers" (IRE) was founded in 1912. Both continued to function as independent bodies until 1963, when they merged to form the "Institute of Electrical and Electronic Engineers".

The author of these notes was appointed Section Historian in the fall of 2005. He was presented with three large cardboard boxes containing an assortment of papers, books and brochures, most of which were in extremely bad condition. The origin of these boxes is obscure, but it was evident that at some time they had suffered extensive water damage, to the extent that many papers were blackened, stuck together, and completely unreadable. The boxes had also been home to many generations of mice<sup>2</sup>. In short, the task of preparing any sort of meaningful historical record from this disarray was uninviting to say the least. Furthermore, if the past was any indication of the future, there did not seem to be any great prospect for any sort of historical record being put to any constructive purpose. Some time in early 2006, two other members of the section committee, Janet Bradley and Jim Kozlowski, met in my house one Saturday morning. There we went through the entire contents of the three boxes and mutually agreed on what should be kept and what should be discarded. It was agreed that only material which was completely unreadable or manifestly worthless (such as receipts for postage stamps etc.) should be thrown out. It should be noted here that no minutes of meetings or correspondence of any sort was thrown out – even if they were in unreadable condition. The contents may be divided under two principal headings:-

- Documents relating directly to the IEEE, and,

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<sup>2</sup> One member of the team suffered a severe allergic reaction the following day.

- An assortment of what appear to be class notes and technical sales brochures dating from as early as 1918. There is absolutely no indication as to the origins of these documents. (They are described in a separate section at the end of these notes).

These were returned one of the boxes, where they languished for two more years.

In the spring of 2008, however, at the Annual General Meeting of Region 7 (IEEE Canada), a motion was passed to the effect that a concerted effort should be made to assemble a comprehensive Section history. This decision gave renewed impetus to the preparation of a modest history of the Hamilton Section, since there was now some prospect for the work to be put to some useful purpose.

These notes are the result of this decision.

## **2 - Initial Comments**

At the outset, it has to be said that result of all this work will be found to be "patchy". The earliest notes date back to November, 1936. At that time it was not even known as a Sub-Section, but as the "Hamilton Group of the Toronto AIEE". Duplicate sets of all minutes of meetings, correspondence and financial accounts were sent to Toronto, which in turn kept one set and forwarded the other to the AIEE Headquarters, which at that time was located at 33, West Thirty-ninth Street, New York. The "Group" was promoted to "Sub-Section" in 1944.

Those were difficult times. 1936 was in the depth of the Great Depression, and 1944 was in the midst of the Second World War. As these notes will show, money in the depression was short, and during the war food was rationed and (relatively) expensive. Even as late as the spring of 1947, two years after the war ended, Canadian engineers were not allowed to leave the country without first obtaining official permission. Nevertheless the Hamilton Group/Sub-Section seems to have proceeded vigorously. Membership was of the order 70 (Canada's population in 1939 was about 11 million). Ten or 11 meetings and/or site visits were held each year. Site visits as far as Thorold were attended by as many as 200 people (members and guests). Each meeting, was the occasion for the presentation of paper of some sort. Indeed some of the papers were cutting edge for the day, including hydrogen cooling of alternators in 1938, and Aircraft Radar in 1945. (The Lancaster and Mosquito aircraft were made in quantity in Toronto).

It is to be noted that practically all the meetings were held in the same place – the Canadian Westinghouse Auditorium. One wonders therefore if the subsequent slackening of interest may have been at least partially due the closure of this plant in the 1980's. Be that as it may, the records between the years 1936 and 1953 clearly show an active and vigorous group. Moreover, some of the names in those files subsequently became luminaries in the industry in the 1960's and 1970's. But from 1953 on, and with one exception, there are absolutely no written records of any sort until 1988, when there are incomplete and sporadic files up to 1998. From then on, again, all is silence. The single exception is a large, leather bound ledger (15" x 12" and water-stained) which contains a meticulously hand-written set of accounts for the Section. The cover says it is for the year 1978-79, but in fact appears to run up to May 1996...

### **3 - Earliest Extant Records**

The original documents as found, are contained in nine file folders. The dates I have assigned to each represent the earliest and the latest date in each folder. However it should be noted that there is some overlap between the dates assigned to the various folders. This is because some files were originally, for example, correspondence for one given year, say 1951, while other folders contain minutes of meetings for three, four or more years, for say, 1948 – 1953. The sequence number assigned to each folder is therefore somewhat arbitrary, and should not be taken to literally.

#### **FOLDER # 1. 1936 - 1939**

As mentioned above, the contents of the folder is not in a very methodical sequence. For example, one folder is labeled simply as "AIEE". But it contains some of the earliest records found to date, being meeting notes and correspondence dating back to November 12, 1936. Also in this same folder are other minutes dating from 1938 and 1939. Many are out of chronological sequence. However, papers of this age are very brittle, and for this reason no attempt has been made to rearrange them. Poster stickers have been put on the outside to briefly summarize the dates.

This first item in the oldest folder, which has been labeled "AIEE 1936-39", is a letter dated November 6, 1936 from a Mr. Callender, of the Toronto Section AIEE, to a Mr. Miles VP and Manager of a Norman Slater Company in Hamilton, stating that ..."for some time past the Toronto Section had been considering setting up a "Hamilton Group". Note that this was a "Group" rather than a "Sub-Section".

Most of the activities took place in the Canadian Westinghouse auditorium. And were on a very active schedule. For example in the 1937-38 season, papers were given on the then very advanced topics of:-

- Hydrogen Cooling of large turbo-alternators. (That was cutting edge in 1937).
- Manufacture of HV insulated copper cables.

There were probably other papers, but they are not recorded.

In the 1938-39 season, 7 papers were presented, to an average attendance of 125 people. Papers included:-

- Automobile Development.
- High Voltage Porcelain Insulators.
- Testing facilities at Ontario Hydro. (By a Mr. Dobson, who's name is now on the Dobson Labs on Kipling Avenue).
- Design of Induction Motors.
- Switching Transients in HV systems.
- Nuclear Physics.
- Recent Trends in Steel Mill Electrification.

#### **FOLDER #2 1944 - 1948**

The next earliest records found to date are contained in a folder labeled "American Institute of Electrical Engineers, Hamilton Sub-Section Records, 1947-1948". (Printed on Canadian Westinghouse Stationery). The date of 1947, however, is in error, because the very first entry is a letter dated April 5, 1944, from the Toronto Section of the AIEE to the same Mr. D.W. Callender of Canadian Westinghouse, Hamilton, advising him of a decision to establish a Hamilton Sub-Section. The letter advises Mr. Callender that the Toronto Section had passed a resolution setting up a Hamilton Sub-Section, and is signed by a Mr. T.C.D. Churchill, Secretary-Treasurer of the Toronto Section of the American Institute of Electrical Engineers. Note that this pre-dates the merger of the AIEE and the IRE by two decades. **The date, of course, is the penultimate year of World War II.** A copy of this letter is included in the Appendix as reference 3. A close reading of the letter shows that at that time Hamilton was to be a Sub-Section of the Toronto group.

An early example of what today would be considered the dead hand of bureaucracy, was encountered in February of the following year (1946) when there was an exchange of correspondence between the AIEE HQ, then located in New York City, and the Canadian Department of National Revenue... It would appear that the AIEE was proposing to send up a quantity of membership lapel pins. National Revenue decreed that these were to be classified under the heading of watches, watch movements and cigarette lighters, on which a 30% import duty plus an 8% sales tax would be payable. As a concession, however, National Revenue agreed to not levy an additional 10% "War Tax". It will be recalled that World War II had ended in August 1945.

An additional social comment on those times is that this was well before the advent of photocopying machines, all these letters and regulations were laboriously retyped using multiple carbon copies, together with the occasional typing error.

For those interested, the folder contains two sets of Sub-Section By-Laws, the first undated, but presumably from April 5, 1944, plus a second, more elaborate, set dated September 8, 1947.

On a lighter note, it is evident that by 1947, with a return to peace-time conditions, plus no doubt relief from the harsh economic conditions of the "Dirty Thirties", people were beginning to let their hair down and enjoy themselves again. In that year there were a number of Technical/Social meetings, including a conference in Niagara Falls and another in Montreal. Golf and river cruises seem to have featured prominently on both occasions.

In those pre-TV days, when entertainment was still largely what you made yourself, attendance at events such as a monthly technical meeting had a much higher profile than they do today. Things were also much more formal. The Toronto Section, for example, had it's own printed letterhead, with the names of all the officers at the top. In 1947 the secretary was Harold Osborne, Subsequently Chief Engineer of Ferranti Transformers in Mount Dennis. But three years after it's 1944 founding, the Hamilton Section still did not have a letterhead, and all correspondence was typed on plain paper. And note also that the Toronto Section

still kept a eye on the Hamilton sub-section, and copies of all letters from Hamilton were forwarded to Toronto.

Nevertheless the subsection seems to have progressed rapidly, and by 1947 there were 57 members, and cash in hand was \$134.14. Notwithstanding the lack of a letterhead, notices of the monthly meetings were mailed out via a printed post card. The card had a tear-off section which was to be returned, advising whether or not you would attend. Cost of each printing of 100 cards was \$2.00 plus 16 cents sales tax. Nevertheless, the dead hand of bureaucracy appeared again, when there was a tiff with the post office as to whether or not the original 3 cent postage, paid by the IEEE, included the 1 cent postage on the return section.

A further indication of the lively interest taken in such affairs is indicated by the fact that in the 1946-47 season, there were 12 meetings, each of which, in addition to a business meeting, included either a technical presentation or a site visit. Topics included a paper on the "Proposed TTC Rapid Transit System" (4-1/2 miles at a cost of \$29 million), the proposed change-over from 25 Hz to 60 Hz (cycles in those days), HV Insulated cables, a "search for additional domestic supplies of oil" (le plus ca change!!) and a "500-kV System". The latter is surprising because in 1946 even 345-kV was just barely the next big thing. There is no record of such a paper ever having been given, so it may have been a mis-print. There were also site visits to Westinghouse, and the Otis Elevator factories among others. The site visits were particularly well attended, with 160 going to the Westinghouse plant.

For those interested in such things, the 1947-48 folder also contains numerous lists of members and mailing addresses. One in particular, was of a Mr. F. L. Lawton, who at that time was Chief Engineer of Alcan at the time when they were rapidly expanding their hydroelectric capacity. This is a little surprising, because the head office of Alcan was in Montreal. Lawton was later a Vice President of Alcan. in the 1950's and 60's. Another name which appears then is a Mr. D. Culver, who was President of Alcan in the 1970's.

### **FOLDER #3 1945**

This folder contains only membership lists and letters of application for membership. There is also a sub-folder relating to the September 14, 1946 visit to Atlas Steels. But since this is a duplicate of the more detailed notes in Folder #4, I have not relocated it.

### **FOLDER #4 1944 - 1946**

This folder overlaps with Folder #3. It is largely made up with The AIEE printed forms used in those days to document technical and general meetings. A brief list of papers given includes:-

#### **Attendance**

- Oct 17 1944 Otto Holden. The DeCew Falls Project
- Nov 14 - The Engineer Plans for Better Recognition.
- Dec 1 - Centralized Control of Power Systems (Note 2 men in cloth caps sitting at plain wooden desks with telephones.
- Jan 16 1945 The nature of Speech and Music (Bell telephone) 31

- Feb 23 Burlington Hydro Station (OHEPC) 34
- March 20, Ladies Night, and a talk on "A war-time trip to England". 41
- Sep 14 Visit to Atlas Steels, Thorold. Power supply 110 kV, 25 cycles. Largest motor, 40,000 HP. Largest furnace 35,000 amp @ 250 v. (15 MVA). Employment in 1939 = 400. Employment in WWII = 3,500 54
- Sep 25. Paper on Atomic Hydrogen Welding 77
- Oct 9 The dollars and cents of [Industrial] air conditioning 81
- Nov 9 Recent Developments of Radio. (This included Radar in Toronto-made Mosquito and Lancaster aircraft)
- Dec 11 Industrial Electronics. 82
- Jan 1946 New Lighting Sources 92
- Feb 26 Industrial Process Control. Also a mention that Niagara Falls, Ontario, would be setting up a sub-section. Some preliminary discussion of boundaries. 34
- Mar 28 Ladies Night and talk on the use of colour 100

Synopses of these meetings were sent to Engineering New Record and the local papers. These synopses frequently included a photograph of the speaker.

Cash in hand \$57.78

It is interesting to note that in late 1945, beef was still rationed. On September 6 of that year there is an internal memorandum stating that because of beef rationing and "Meatless Fridays", the price of chicken had increased. As a result, the Royal Windsor Arms Hotel, where the meeting was to be held, had increased the price of the meal from \$1.30 to \$1.40.

### **FOLDER #5 1946-47**

		<b>Attendance</b>
Sep 13 1946	Factory visit. Smith & Stone, Georgetown	110
Oct 4	Centralized Traffic Control, CN railway.	80
Nov 1	The Future of Television. General Electric.	108
Dec 13	History and Development of the Westinghouse Aviation Turbine.	131
Jan 17, 1947	Recent Developments in the Electrical Discharge Lamps. Westinghouse.	85
Feb 11	Use of Plastics in Modern Communications. CIL Montreal.	45
Feb 14	Factory Visit. Firestone Tire. Hamilton	200
March 7	Ladies' Night, and Paper on "Hydro in the North"..	N/A
March 28	Factory Visit. Square D	N/A
April 11	Joint AGM with Toronto	N/A
April 17	Electrical Instrumentation. Canadian Westinghouse	N/A

April 24, 1947. Mr. Moorehouse of Hamilton Sub Section sends to Mr. Osborne, Secretary of Toronto Section, two copies of minutes of AGM and the visit to Square D. One copy of each to be retained in Toronto, and second copies to be sent to New York.

Cash in hand \$39.96



On March 29, 1947, the Niagara Falls, Ontario, Sub-Section heard a paper by a Dr. S.G. Ellis, Department of Physics, U of T, on the Electron Microscope<sup>3</sup>.

**FOLDER #6 1947**

Membership lists only. (Several duplicate lists for this year only).

**FOLDER # 7 1948-1949**

	<b>Attendance</b>
April 22 1948 Testing 10,000,000 Kva circuit breakers at Grand Coulee.	240
Sept 17 Visit to Dominion Foundries	150
Nov 12 Modern Industrial Power Metering	45
Dec 5 Functions of a Research Lab	250
Jan 7 1949 Application of Rotocol Rotating Regulators	55
Feb 4 Cables as Part of an Electrical System	23
Feb 18 tour of Bell Telephone Building, Hamilton	132
Mar 4 Demonstration of Westinghouse Domestic Equipment	150
Mar 19 Film Night. 4 films shown	41

**FOLDER # 8 1949 - 1953**

	<b>Attendance</b>
Nov 4 1949 Future Developments of Nuclear Energy. "Nuclear energy not likely for twenty years". "A Nuclear Reactor would cost \$50 million which would be prohibitive"	30
Dec 8 Industrial Electronic Equipment	60
Jan 6 1950 Silicones and their application	26
Jan 27 Film Night	28
Feb 6 The Practice of Illuminating Engineering.	150
Mar 3 Film about Consolidated Mining and Smelting	75
Oct 6 Diesel Electric locomotives	51
Nov 3 The Engineer Organizes	31
Dec 8 The Engineer's place in Society	31
Jan 5 1951 Electric Equipment for Streetcars	41
Jan 25 Film Night	110
Feb 2, 1951 Single Pole reclosing with HV Circuit Breakers.	30
Mar 29 Visit to Canadian Porcelaine Co, Hamilton.	70
May 3 Visit to Dominion Glass Co.	107

1953 An AIEE manual on the revised membership grades.

It would seem that as late as March 1947, certain war restrictions were still in place. Specifically correspondence in the files indicate that it was not possible for a Canadian engineer to leave the country without first obtaining official permission.

Some members from Hamilton also attended various meetings of Toronto Section.

<sup>3</sup> In 2008, thought was being given to the possibility of applying for an Historical Marker for this project.

Seems to have been active liaison with EIC. NRC, the Illuminating Engineering Society, the Canadian Council of Professional Engineers and Scientists.

Cash in hand \$150.00

### **BEYOND 1953**

Regrettably, 1953 onwards, with the exception of a listing of membership grades, there are no other records until 1988. And even then, there are only two (water stained) records of meeting for that year. Most certainly by 1988 there are absolutely no other files of correspondence or meeting notes whatsoever. But of course, it should be remembered that by that time electronic word processing had become common, this reducing the need to keep hard copy records.

### **FOLDER #9. 1988 - 1997**

This is the last folder and offers very meager information.

#### **Year 1988**

Two pages (only) summarizing the years' activity. These pages were submitted by a Mr. S.C Swing.

#### **Attendance**

Feb 15, 1988	Advances in Low Voltage Fuses.	12
Apr 18	Advances in Medium Voltage Technology	14
May 2	Technical Education for Women in Kenya	9
May 16	Tour of Ontario Hydro Plasma and High Current Labs	42
July 14	AGM, Ladies Night and cruise on Grand River	41
Oct 17	Intelligent Telecommunications	13
Dec 7	Tour of Hamilton Airport and Warplane Museum	21

#### **Year 1991**

This is the first time there is evidence of a word-processing and a spreadsheet being used.

March 5, 1991. Minutes of an executive meeting. Mr. Swing is still there. Niagara, Mohawk and McMaster students sections seem to have been active. There seems to have been three GIC's each of \$5,000 in the accounts.

#### **Year 1993**

In November 1993 there seems to have been some sort of tempest in a tea-pot about a proposed merger between Region 7 of the IEEE and the CSECE (Canadian Society of Electrical and Computer Engineers). Things seem to have been quite heated at one time with phrases such as "hidden agenda", and "The Toronto Section Executive demands ..." being used. Quite large sums of money are also bandied about, namely \$20,000, \$40,000 and even \$60,000. Unfortunately, there is no record of what became of all this. Embedded in the text is the interesting

statement that Region 7 had to pay GST on its transactions, whereas the CSECE is not-for-profit.

### **Year 1994**

The only item for 1994 is a list of members.

### **Year 1995**

A statement of accounts submitted by a Mr. Kot. We seemed to have had a positive balance of about \$12,000.

#### **Attendance**

March 6, 1995.	Minutes of meeting. There seems to have been only one technical talk planned (subject not specified) and two visits – one to ABB and the other to Andres Wines.	5
March 20	No details.	7
April 3	No details	10
April 24	“The Hamilton-Wentworth FreeNet”	40
May 1	No details	6
May 15	ABB Plant visit	25
June 5	No details	6
Sept 6	No details (Billy Kot, Chair).	3
Oct 2	No details	5
Nov 6	No details	4
Dec 8	No details	10

Things were beginning to unwind. The only minutes of meeting (March 6) were highly informal, with attendance registered as – Steve, Mike, Nancy, etc. No indication as to who they were. Also meeting attendance was down to single digits.

The first indication of a “Hamilton Newsletter” appears. But only one issue.

### **Year 1996**

February 16, 1966. Application for grade of Fellow for Dr. M. Wong, with an 11-page CV.

February 16. Application for grade of Fellow for Dr. J. Litca, with a 22-page CV.

Two papers suggested:- “Solving Power Quality Problems”, and “Harmonics and their Mitigation in Commercial Building Power Systems”. But no record of them having been presented.

### **Year 1997**

The Section was still using the Royal Hamilton Military Institute (RHMI) for its’ meetings. Various invoices from them for services, coffee, donuts etc.

February 24, 1997, Renewed applications for grade of Fellow for Dr. Wong, with a CV now 14 pages, and Dr. Litca, with a CV now 29 pages long.

October 21, 1997. Letter from IEEE Piscataway advising that the Hamilton Section was "Delinquent" for the years 1994 and 1995. It would seem that this delinquency was based on the grounds of (a) not having at least 10 members on record in each year, and (b) not holding at least 2 technical meetings. No details of the outcome of this matter are available. Other than a few miscellaneous invoices from the RHMI, there is no further activity that year.

## **Year 1999**

Letter dated December 20, 1999 from Elizabeth Seymour of McMaster, to the Section reminding it that it had undertaken to pay \$200 annually for an award to a student of the University. The files end here.

## **SUPPLEMENTARY PAPERS**

1. A large water-stained ledger containing meticulously hand-written statements of accounts. The first page of this book states that it is for the year 1978-1979. But in fact the records continue uninterrupted right up the year 1996. There are, in fact, two sets of accounts here. In the front of the book are records of disbursements, while at the back of the book, and proceeding "backwards", are full records of the cash receipts. These records tend to indicate that the Section was relatively active in the period 1995 and 1996, which is at variance with the tone of the October 21, 1997 letter from Piscataway mentioned above, which claimed the Section was "Delinquent". They also confirm the purchase of three separate GIC's, each for \$5,000 mentioned above.
2. A very tattered and partially unbound book entitled "Geometrical Drawing". Actual date of printing is not known but the references mention dates of 1893, 1894 and 1897. No indication as to the original owner.
3. A small (36 page) booklet on the life of George Westinghouse. (This looks like a children's book).
4. A 1944 brochure by Westinghouse on "The Electronic Demonstrator"
5. A 1935 bulletin by the Ontario Research Foundation.
6. A large white envelope containing an assortment of Service Manuals for Canadian Westinghouse Radios. Dated February 1930, July 1931, August 1934, July 1937, November 1940, August 1941, October 1941
7. Brochure on Ignitron Mercury Arc Rectifiers, 1941
8. A black folder containing a very neat drawing in pencil, of "Coventry Chain Coupling" Signed P H Brown 2/26/30
9. An assortment of minutes for the Toronto Section for the year 1947. No particular connection with Hamilton.
10. Advanced proof of two papers - "Protective Relaying for Leaside Transformer Station", and "The 28,500 Kva Generators for Paugan Falls" Both dated 1929.
11. Westinghouse brochure "Diagrams and panels for Industrial Control" No date.
12. Westinghouse brochure "OSISOS" (a recording oscilloscope). No date.
13. Westinghouse brochure - Supplement to the above. Typewritten. No date.
14. Westinghouse brochure - "Supervisory Control Equipment". Circa 1927.
15. Thick brown folder on "Symmetrical Components, Class Notes". 1931

- (Westinghouse were leaders in this field).
- 16 Three sets of handwritten notes – possibly relating to the above. No date, no author
  - 17 Small folder containing AIEE paper “Reactance of Synchronous Machines”, by Doherty and Shirley. April 1918. **The oldest artifact in this set.**
  - 18 “Symmetrical Components”, by Wagner & Evans. 1931
  - 19 AIEE paper, “Ionization of Thyratrons” by Harrison. April 1939

Notes prepared by:-  
D.E.Hepburn  
May –August, 2008

## **EPILOGUE.**

At a section meeting held on August 20, three motions were agreed:

1. That D. Hepburn should contact Mr. Wally Read with the objective of asking him what if any, decisions had been made with regard to a uniform format for these section histories,
2. That the few documents relating to the Niagara Falls “International” Section should be included here, and,
3. That when complete, all the documents reviewed above, should be transferred to Queen’s University, where the IEEE has archival privileges.

## [Annex A](#)

Letter dated November 6, 1936 from D.W. Callendar of AIEE Toronto, to W.G. Milne, advising that the Toronto Section had decided to form a "Hamilton Group".

## [Annex B](#)

Letter dated April 5, 1944, from T.C. D. Churchill to D. W. Callendar, that the Toronto Section had voted to form a "Hamilton Sub-Section".

## [Annex C](#)

Letter dated May 1, 1944, from F. C. Barnes (Chair Toronto Section) to J. N. Somerville, advising that on March 10, 1944, the Toronto Section had voted to "Promote" the Hamilton Group to Hamilton Sub-Section. [This seems to overlap with the letter of April 5. DEH]

## [Annex D](#)

Draft set of By-laws. No date but presumably about May 1944

## [Annex E](#)

Letter dated October 30, 1946 from Hamilton Post Office concerning 2 cents postage on return half of meeting notices.

## [Annex F](#)

Annual Report of the Papers Committee 1946 - 1947

## [Annex G](#)

Letter October 21, 1947 from W.R. Harmer, Treasurer, Toronto Section to C. E. Moorehouse with cheque for \$75.00. Presumably at that date Hamilton was still not independent w.r.t funding.

## [Annex H](#)

January 23, 1948. Sample notification of meeting, showing how formal things were in those times.

## [Annex I](#)

Letter dated 21 October, 1997 from Carol Coffey, Manager Section Support, Piscataway, to Billy Kot, appearing to indicate that the Hamilton Section is "Delinquent" with regard to minimum membership and minimum number of technical meetings.

## [Annex J](#)

Listing of Section Chairs