The Ritual of The Calling of an Engineer

Warden Greg Evans, P.Eng.
January 2011

Prepared by Camp One
Agenda

- What is the Ritual and who runs it?
- What is the context for the ceremony? (Engineering accomplishments and challenges)
- What are the History and Principles behind The Ritual?
- What should one Expect at The Ritual?
- What is the Obligation?
- Myths, guidelines, and rules for the Ritual
- Administration at UofT
- Engineering Alumni Association
- Q&A
The Ritual – What is it?

- It is an event called “The Ceremony of the Ritual of the Calling of an Engineer”

- It is a formal ceremony in March of graduation year, conducted by a group of experienced engineers

- It is a ritual during which you will:
  - take an Obligation to practice engineering by ethical and professional standards
  - Receive a ring that is intended to symbolize that obligation
Who Runs The Ritual?

- 25 groups of volunteers across Canada (called “Camps”) facilitate the Ritual for graduating engineers and foreign trained engineers within their respective regions.

- All Camps are governed by an organization in Montreal called the Corporation of Seven Wardens.

- Camps have no formal connection to the Universities, but appreciate their strong support.

- Camp 1 is the organization that facilitates The Ritual for engineers in the GTA.
Who is Camp 1?

- Camp 1, the first of the 25 camps founded in Canada in 1925, is based in Toronto
- Camp 1 is responsible for Iron Ring Ceremonies at
  - Ryerson University
  - University of Ontario Institute of Technology (UOIT)
  - University of Toronto
  - York University
- The Camp has over 60 wardens
- Wardens are volunteer engineers/experienced practitioners of long standing in the Profession
- *Wardens help young engineers transition from academic studies to careers*
The Ritual

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January 2011
To give some context for the Ritual . . .

- We will review some of Canada’s 20th century engineering accomplishments and will also touch briefly on a couple of engineering failures.

- This brief review is designed to:
  - remind us that we are all part of an important engineering community, continuing to build on Canada’s success in engineering innovation.
  - remind us that success doesn’t come without risks and, sometimes, failures as well.
  - reinforce why we believe in taking an obligation to maintain ethical standards in our work.
Many Canadian Engineering Accomplishments

- CP Rail’s High Level Bridge in Lethbridge Alberta -- 1905

- Polymer Corporation’s synthetic rubber plant in Sarnia, Ontario -- 1943

- Bell Canada’s Trans Canada Micro Wave Relay System – 1950s

- The cardiac Pacemaker -- 1951
CP Rail High Level Bridge
Lethbridge, Alberta

- Built in 1905
- Longest railway bridge of its type at 1.6 km
- All previous bridges in the west had been of wooden timbers.
- This bridge is a steel viaduct

http://railways-atlas.tapor.ualberta.ca/cocoon/atlas/Chapters-7-4/
Polymer Corporation's Synthetic-Rubber Plant
Sarnia, Ontario

- Within 90 days of Pearl Harbour in 1941, Allied Nations cut off from all major sources of natural rubber.
- Polymer Corporation Limited erected plant in Sarnia termed a "miracle of engineering", due to its complexity and the speed with which it was built and placed in operation.
- Plant’s first production of rubber occurred on September 29, 1943 - only 19 months after the creation of the Company.
Trans-Canada Microwave Radio Relay System

- Micro Wave System built in the 1950s to carry telephone and TV from the East coast to the West coast of Canada
- Over 139 transmission towers spanning over 6275 kilometres
- Cost = $50 million ($336 million in 2003 dollars).
- It took just 1/50 of a second for a microwave signal to travel from one coast to the other.
- The longest microwave transmission network in the world in 1958 placing Canada at the forefront of communications technology.

http://en.wikipedia.org/wiki/Microwave
Heart Pacemaker

- **John Alexander "Jack" Hopps** - pioneer of the artificial pacemaker
- “Father of Canadian Biomedical Engineering”
- B.Sc.Eng. (Electrical Engineering), U Manitoba, 1941
- Worked with doctors at the Banting Institute at U of T and developed the first external pacemaker in 1951
- In 1986, he was made an Officer of the Order of Canada

http://en.wikipedia.org/wiki/Artificial_pacemaker
Canada continues to contribute to Engineering on a Global level

- Canadarm – Remote Manipulator for Space Shuttle -- 1981

- Blackberry – Line of Wireless devices by Research In Motion (RIM), Waterloo -- 1999

- IMAX – Motion picture format by single projector for large scale theatres -- launched Expo 70 in Japan

- Confederation Bridge – multi span bridge from PEI to New Brunswick over ice-covered water and shipping lanes -- 1997
Reasons to remain humble and vigilant...

- Sinking of the Ocean Ranger Oil Rig, Newfoundland, February, 1982
- The explosion of the Challenger Space Shuttle, January, 1986
- The collapse of the De La Concorde Bridge Overpass, Quebec, September, 2006
Therefore as engineers, we must always be aware of our professional responsibilities and personal ethics in our work.

The Ritual of the Calling of an Engineer provides such a reminder.
What is the Origin of the Ritual?

- Ritual was initiated in 1922 by UofT Mining Engineering Professor Haultain at annual meeting of the Engineering Institute of Canada.

- The objective was to establish a code of behaviour and statement of ethics for Canadian engineers in their work.

- Ritual was written by Rudyard Kipling, famous poet.
Who was Rudyard Kipling (1865 – 1936)?

- A poet and author who respected and admired the work of engineers
- A recipient of the Nobel Prize for Literature 1907
- A recipient of offers of knighthood and becoming Poet Laureate of Britain (although he turned both offers down)
- Author of the Ritual

http://www.online-literature.com/kipling/
What are the Principles of the Obligation?

- Sincerity and dignity
- Strength of purpose (the symbol of cold iron)
- The ethic of having a privilege, not a right, for graduating Engineers to become obligated
- Core tenets of the Obligation for which a ring given as a reminder (circle, edges, hammered)

The Main Message:

- Integrity and ethics above all
What to Expect at The Ritual?

- From a 2010 view, it may seem formal and somewhat old-fashioned (written 1923)
- The language has been changed somewhat to reflect contribution of women to engineering
- In part The Ritual still reflects the Anglo-Christian morals and tradition of 1920s, but Camp objective is secular
- You must listen and recite obligation within your own code of beliefs (goal is integrity and ethics, *not* any specific religious or political agenda)
Ceremony Landmarks

• An Iron Ring is given as a reminder and a symbol

• Other “landmarks” also used during the ceremony
What are the Fundamentals of The Obligation?

It is undertaken by you and is binding upon you to:

– Eliminate faulty workmanship
– Strive generously towards perfection
– Be honourable and fair
– Admit and deal with your mistakes
– Respect and support your colleagues
What is The Obligation?

I, ____________, in the presence of these my betters and my equals in my Calling, bind myself upon my Honour and Cold Iron, that, to the best of my knowledge and power, I will not henceforward suffer or pass, or be privy to the passing of, Bad Workmanship or Faulty Material in aught that concerns my works before mankind as an Engineer, or in my dealings with my own Soul before my Maker.
My time I will not refuse; my Thought I will not grudge; my Care I will not deny towards the honour, use, stability and perfection of any works to which I may be called to set my hand.

My fair wages for that work I will openly take. My Reputation in my Calling I will honourably guard; but, I will in no way go about to compass or wrest judgment or gratification from any one with whom I may deal.
And further, I will early and warily strive my uttermost against professional jealousy or the belittling of my working colleagues, in any field of their labour.

For my assured failures and derelictions, I ask pardon beforehand, of my betters and my equals in my Calling here assembled; praying, that in the hour of my temptations, weakness and weariness, the memory of this my Obligation and of the company before whom it was entered into, may return to me to aid, comfort, and restrain.
Closing Remarks

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What are the *Myths* about The Ritual?

- **That it is mandatory** *(no, but you need to graduate, and you must register)*
- **That all engineers must wear the ring** *(no, unrelated to professional qualification – it is your personal decision)*
- **That the Ring is more important than the Obligation** *(that’s backwards, the Ring is a reminder of your personal Obligation)*
- **That the Obligation is a secret** *(no, it is private and personal, so please don’t discuss the details)*
- **That the rings originally came from a bridge that collapsed in Quebec** *(Myth)*
Rules/Guidelines for Ritual

- You must be eligible to graduate
- You must register in advance to get an invitation
- In Camp 1 you can choose between a stainless steel or an iron ring
- You must be on time (or no admittance)
- You must bring your Invite Card (or no admittance)
Rules/Guidelines for Ritual (Con’t)

- You should dress as for an interview or business meeting
- You may not bring cell phones, pagers, PDA’s, cameras into the ceremony, etc.
- Only an obligated engineer with at least 4 years work experience may attend to present your ring
- You wear your ring on the little finger of your working hand
### UofT: Ceremonies

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<tr>
<th>Wed March 2</th>
<th>Thur March 3</th>
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<tbody>
<tr>
<td>3-4 Electrical</td>
<td>Mechanical</td>
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<tr>
<td>4-5 Computer</td>
<td>Chemical, Industrial</td>
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<tr>
<td>5-6 EngSci</td>
<td>Civil, Mineral, MSE</td>
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- Arrive 30 min early with your invitation
- Pre-Ceremony followed by Ceremony
- No space for coats and bags
- Don’t loose your ring (no replacements until June 1!)
UofT: Registering for Ceremony

- Sign-up is on-line: http://alumni.utoronto.ca/ironring2011 before February 4th
- You will need to know your ring size before going online to sign up. Class reps have ringsizers
- Your name will be checked against the Eligible to Graduate List and you will be contacted if you are not eligible to participate
- Collect your invitation from your undergraduate office mid-late February
UofT: Invited Presenters

- Must be an obligated engineer who has been practicing for at least 4 years
- No professors can be invited presenters (unless he/she is a relative)
- Each student may invite only one presenter. Exceptions (e.g. parent and grandparent) can be requested in writing through Megan Murphy. All Invited Presenters must be eligible

- Invited Presenter Application Forms are downloadable from the web site. The completed form must be handed in at the Iron Ring Office by February 8th
UofT: Ceremony Invitations

NO INVITE = NO ADMITTANCE TO CEREMONY

NO CEREMONY = NO RING

You must attend the Obligation Ceremony to get an Iron Ring
UofT Iron Ring Administration

- **Admin Support:**
  Megan Murphy
  Office of Advancement
  Galbraith 116

- **University Coordinator:**
  Professor G.J. Evans
  Warden Camp One
Summary

- **You** decide whether to participate in the Ritual

- The Obligation you make, is to **yourself** and your colleagues as a professional

- The Ring is a symbol to remind you of your Obligation
Engineering Alumni Association
Questions ?