The Ritual of
The Calling of an Engineer

Student Information Session

Camp One

Greater Toronto Area

Today's Briefing

- What is it and who runs it?
- Context, origins and principles
- What to expect
- Landmarks
- The obligation
- Myths, Rules and guidelines
- Administration at UofT
- Engineering Alumni Association
- Summary
- Q&A

The Ritual – What is it?

- Formal name is "The Ritual of the Calling of an Engineer"
- It is a ceremony in March of graduation year, conducted by a group of experienced engineers
- You will:
  - Take an Obligation to practice engineering by ethical and professional standards
  - Receive a ring that is intended to remind you of that obligation

Who Runs The Ritual?

- Governed by the Corporation of Seven Wardens
- Organized into "Camps"
- Run by volunteer engineers known as "Wardens"
- Camp 1 is the organization that facilitates the Ritual for engineers in the GTA
- Camps have no formal connection to the universities, but appreciate their strong support
- Camps have no affiliation with the professional licensing bodies

What is Camp One?

- Camp 1 was founded in in 1925, is based in Toronto
- Camp 1 is responsible for the Ritual at
  - Ryerson University
  - University of Ontario Institute of Technology (UOIT)
  - University of Toronto
  - York University
- The Camp has over 70 Wardens
- Wardens are experienced practitioners of long standing in the profession
- Role is to help you transition from studies to careers

Context for the Ritual

- Examples of Canada's 20th century engineering accomplishments
- Examples of engineering failures
- This brief review is designed to:
  - Remind us that we are all part of an engineering community
  - Remind us that success requires risk and sometimes failure
  - Reinforce the rationale for an obligation

Canadian Accomplishments

- CP Rail High Level Bridge
- Polymer Corporation's synthetic rubber plant
- Bell Canada's Trans-Canada Microwave Relay System
- The cardiac pacemaker

CP Rail High Level Bridge

- Lethbridge, Alberta – 1905
- Longest railway bridge of its type at 1.6 km
- All previous bridges in Canada's west had been constructed of wooden timbers
- This bridge is a steel viaduct

http://railways-atlas.tapor.ualberta.ca/cocoon/atlas/Chapters-7-4/

Synthetic Rubber Plant

- Allied Nations cut off from all major sources of natural rubber within 90 days of Pearl Harbour in 1941.
- Polymer Corporation Limited erected a 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 formation of the company.

Microwave Radio Relay System

- Built in the 1950s to carry telephone and TV across Canada
- Over 139 transmission towers spanning over 6,275 km
- Cost $50 million ($336 million in 2003 dollars)
- Took 1/50 of a second for a microwave signal to travel from one coast to the other.
- 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

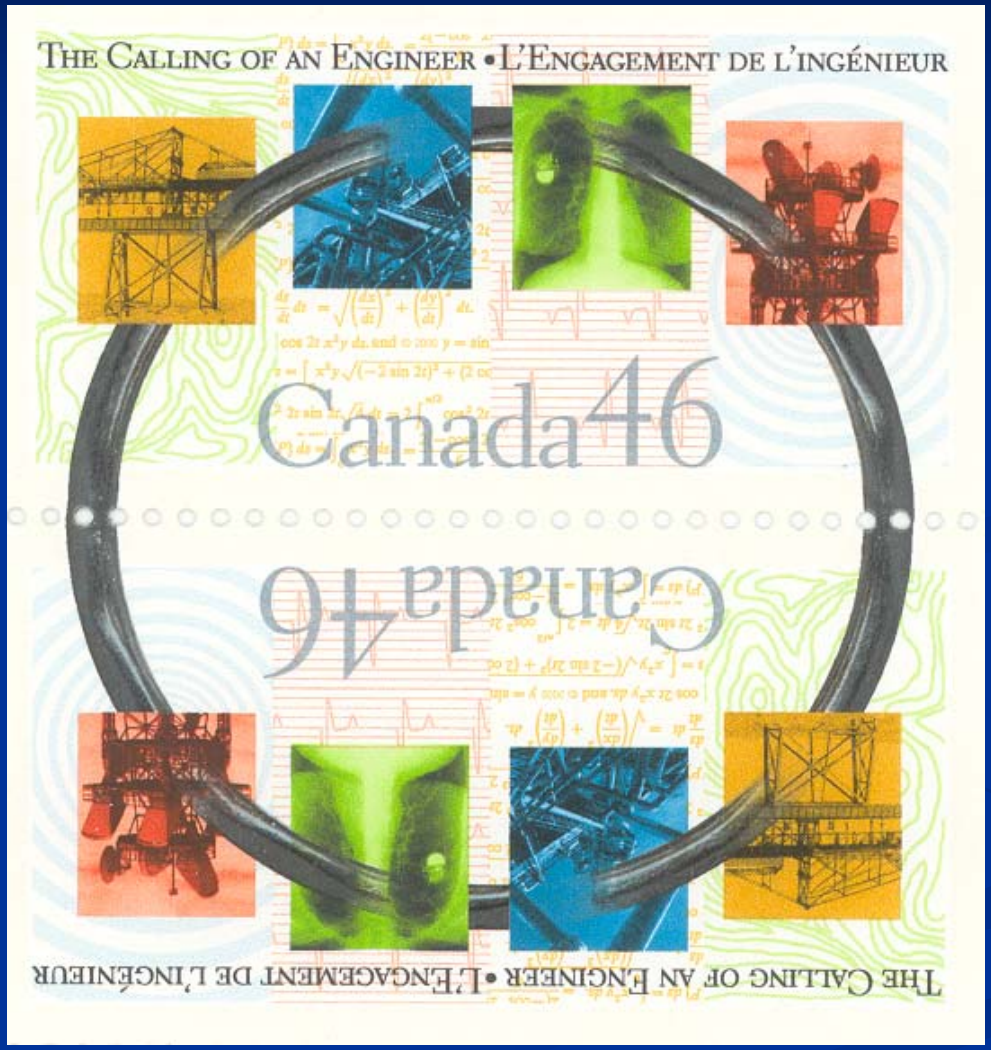
http://en.wikipedia.org/wiki/Artificial_pacemaker

- 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

Global Contributions in Engineering

- IMAX
  - Motion picture format for large scale theatres – Expo 1970
- Canadarm
  - Remote Manipulator for Space Shuttle – 1981
- Confederation Bridge
  - Multi-span bridge from PEI to New Brunswick over ice-covered water and shipping lanes – 1997
- Blackberry
  - Line of wireless devices by Research In Motion – 1999

Commemorating 75 Years



Reasons to be 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?

- Initiated by Professor H.E.T. Haultain
- Code of behaviour
- A voluntary privilege for graduating engineers
- Written by Rudyard Kipling
- First Ritual held in 1925

Rudyard Kipling (1865 – 1936)

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

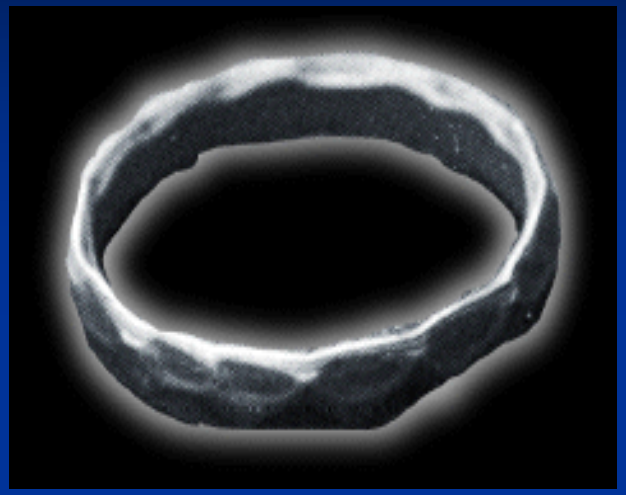
http://www.online-literature.com/kipling/

What are the Principles?

- Consciousness of their profession
- The engineer's role within the profession
- Integrity and ethics
- Concepts
  - Spirit of engineering
  - Responsibility to others
  - Cold iron
  - The ring as a reminder

Landmarks for the Ritual

From Camp 13 Hamilton Documents



What to Expect

- Formal and old-fashioned language
- Anglo-Christian morals
- No religious or political agenda
- No changes except to include women
- Remember the key messages
  - Ethical and behavioural standards
  - Professional responsibility
- What it means to you, within your own code of beliefs

Fundamentals of The Obligation

- An undertaking by you
- Binding upon you
- Key fundamentals
  - Eliminate faulty workmanship
  - Strive generously towards perfection
  - Be honourable and fair
  - Admit and deal with your mistakes
  - Respect and support your colleagues

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.

Common *Myths* about The Ritual

- It is mandatory
  - No, it is a personal decision
  - However you need to graduate and you must register
- All engineers must wear the ring
  - No, it is unrelated to professional qualification
- The ring is more important than the obligation
  - That's backwards, the ring is a reminder of your obligation
- The ritual and the obligation are secret
  - No, it is private and personal, so please don't discuss the details
- The rings originally came from a bridge that collapsed in Quebec
  - Interesting idea, but not true

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: Saturday March 3

11:00 a.m	2:00 p.m.
Electrical and Computer	Mechanical& Industrial
Materials	Chemical
EngSci	Civil & Mineral

- Arrive early at the time on your invitation, with your invitation
- 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/ironring2012 before **February 3rd at 5 p.m.**
- 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

Ring Selection Guidelines

- The ring is worn on the little finger of your working hand
- You can choose between a stainless steel or an iron ring
- Your fingers tend to swell later in the day. It is best to measure your ring size later in the day, with your hands at room temperature.
- The ring must fit over the knuckle and sit comfortably at the base of the finger. The correct size will require you to twist once or twice to get it off the knuckle; otherwise, your ring will fall off when your hands are wet or cold.
- If the ring slips easily over your knuckle when removing it, try a half size smaller.
- If you are not used to wearing a ring, the proper size may feel a bit uncomfortable at first. Please allow two weeks before requesting an alternate size.

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 9th**

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

- **Acting University Coordinator:**
  Professor W.L. Cleghorn
  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