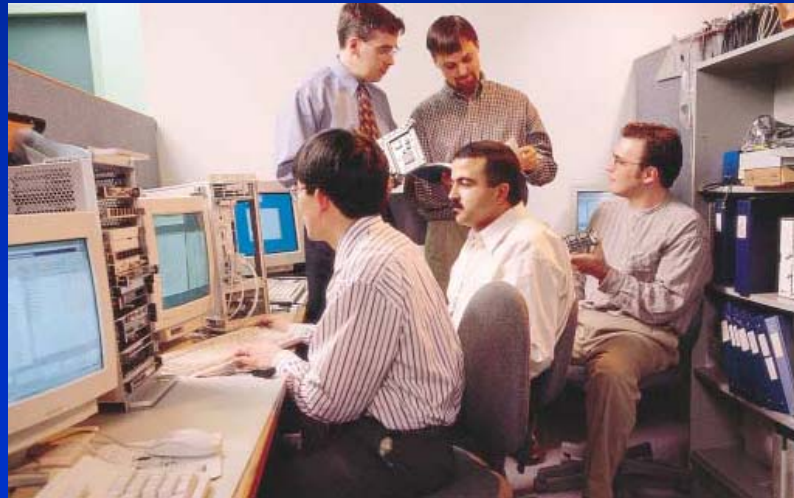


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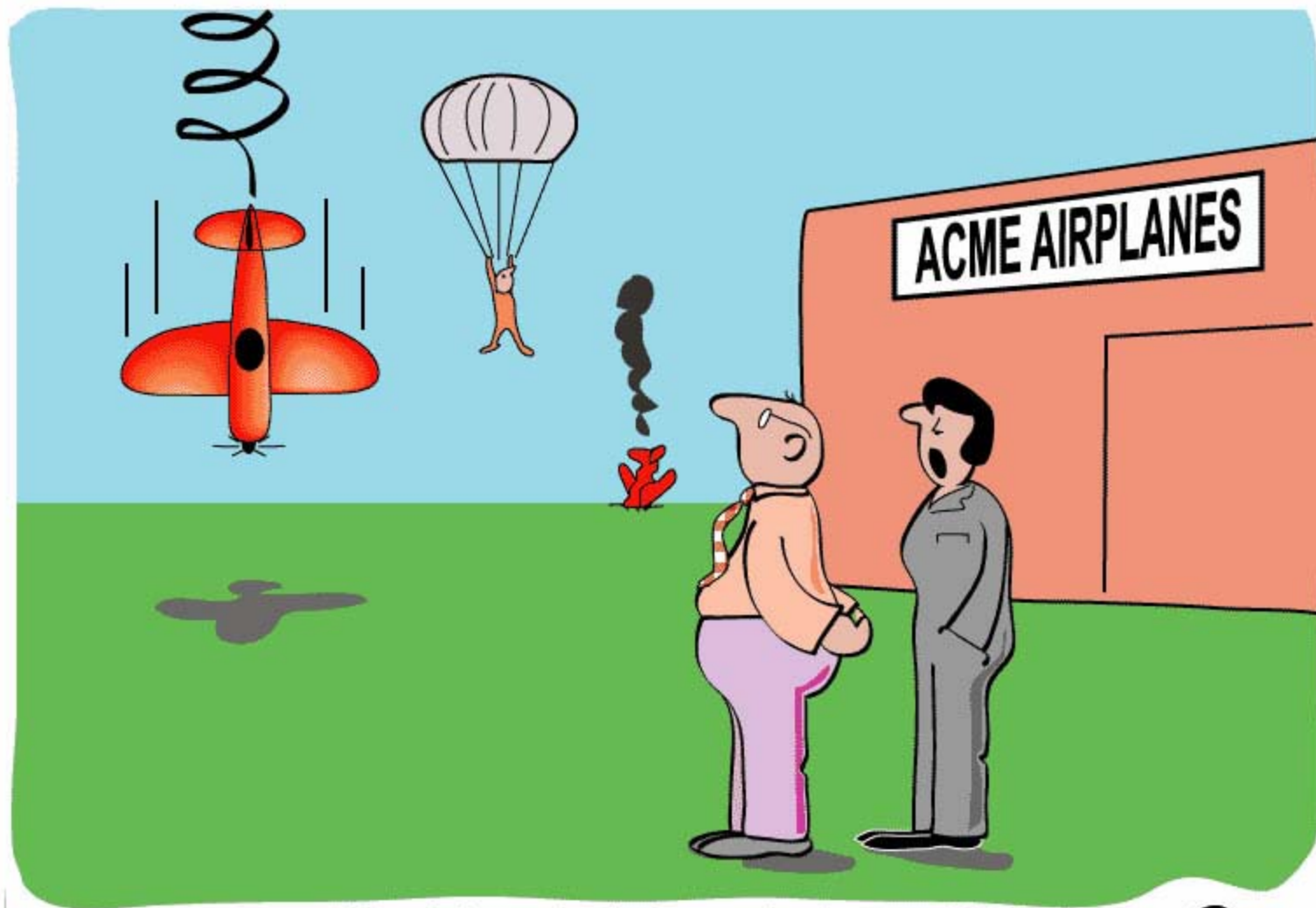
Engineers and Geoscientists: A History and the Professions

Anne Garrett, P.Eng.
APEGBC Executive Director & Registrar



January 15, 2004





"So... Is it true that before coming here as chief design engineer, you developed operating systems for PCs?"

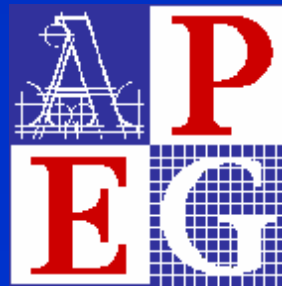
Browning

Agenda

- History of the Professions
- Canadian Specifics
- The Iron Ring
- Self-Governed Associations
- Professionalism

History

- Military → Civil
- Master Builder → Architect
- Evolution of the Disciplines
- Still Evolving
 - Aerospace
 - Software Engineering
 - Biotechnology
 - Nano-engineering



The Canadian Professional Engineer

- 1919 – Representatives from the Engineering Institute of Canada created Model for Provincial Legislation
- Engineering Failures Were The Impetus
- Focus: Protection of Public from “Quackery” & “Charlatans”



The BC Professional Engineer

- BNA Act defined Federal & Provincial jurisdictions
- 1920: APEBC created by Act of Legislature to Regulate The Practice of Engineering
 - Defined “Engineering”
 - Provided Exemptions
 - Registration (Licensing) Framework
 - Management by Council/Committee of Members



The BC Professional Engineer

- 1955: Welfare Of Members Added
- 1990: Geoscience Added – APEGBC
- 2004: Technologists and Technicians will be added

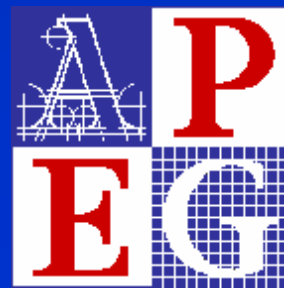




The Iron Ring



- 1923: E.I.C. Past - President
- Tangible Reminder: Ideals & Responsibilities of Engineers
- “Ritual of the Calling of an Engineer” – *Rudyard Kipling*
- Corporation Of The Seven Wardens





The Iron Ring



- Conferred at Graduation
- Does Not Confer Right To Practice as an Engineer
- P.Eng.
 - Responsibility to Profession
 - Granted On Completion Of Training Period
- Go The Distance → **P.Eng.**



Self-Governance & APEGBC

- APEGBC **IS** its Members
- Self-Regulating
- Governed by a Council
 - 13 elected members
 - One Faculty appointee if none elected
 - 4 lay members appointed by Lieutenant Governor



Engineers & Geoscientists Act

- Professionalism based on concept of:
 - Competence and Ethical Behavior
 - Adherence to Code of Ethics
- Act Charges Profession to
 - Ensure only qualified persons registered
 - Ensure competent and ethical practice



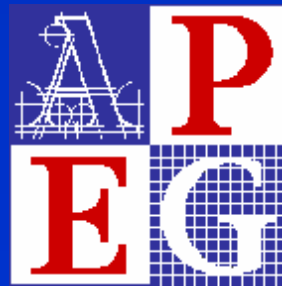
Engineering Profession

- What is a Profession?
 - Vocation (not a job)
 - Requires Specialized Knowledge
 - Long and Intensive Training
 - High Standards of Achievement and Conduct



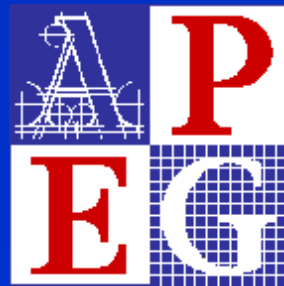
ENGINEERING PROFESSION

- What is a Professional?
 - Commitment to Continual Learning
 - Render Service to the Public
 - Place Public's Needs Ahead of Their Own



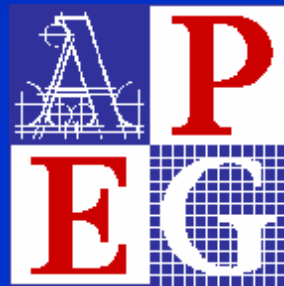
ENGINEERING PROFESSION

- What is a Professional Engineer?
 - In Canada, someone who has met knowledge and training requirements **AND**
 - Is licensed by a provincial or territorial Association of Professional Engineers
- You **MUST** be licensed to practice engineering



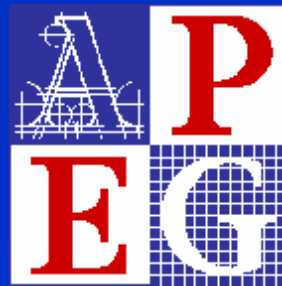
Engineers & Geoscientists Act

- Registration Qualifications
 - Canadian Citizen or Permanent Resident of Canada
 - Graduate from an accredited Engineering Program, or has passed assigned exams
 - Minimum of 4 years relevant work experience
 - Is of good character and repute



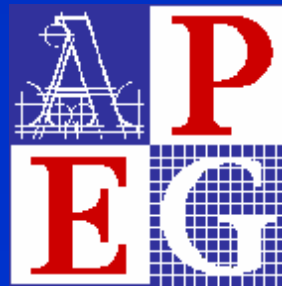
Engineers & Geoscientists Act

- Professional Practice Compliance
 - Quality Management
 - Retention of complete design files for 10 years
 - Concept reviews of structural designs
 - In-house design checks
 - Field reviews of projects during construction
 - Practice Reviews
 - General review of members practice
 - Technical review when a “product” is produced
 - Complaint Process
 - Investigation
 - Discipline



Engineers & Geoscientists Act

- Prohibition on Practice- Enforcement
 - Prohibits anyone **NOT** registered from
 - Engaging in the practice of professional engineering or geoscience
 - Assuming the title of professional engineer or professional geoscientist
 - Holding oneself out as an engineer or geoscientists if not registered
- Industrial Exemption
 - **NO** exemption for industry
 - All who practice must be registered



Canadian Council of Professional Engineers

CCPE

CEAB

Accredits University Programs

CEQB

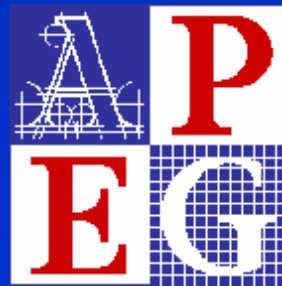
Sets Standards & Provincial
Agreements

CEIC

Negotiates International
Agreements

CERC

Researches the Profession



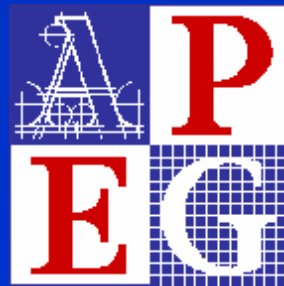
Canadian Engineering Accreditation Board

- Accreditation of all engineering/applied science programs
 - Over 200 programs
 - More than 30 schools
- Monitors accreditation foreign countries to facilitate mobility
- Guidance to the countries in establishing accreditation systems



Canadian Engineering Qualifications Board

- Establishes national guidelines for
 - Professional engineering qualifications
 - Standards of practice, ethics, continuing competence
- National mobility agreement
- Examination syllabus for listed and non-listed institutions



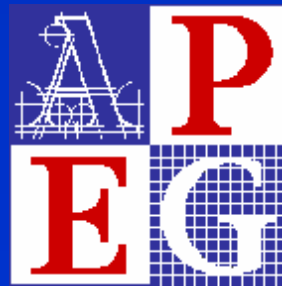
Canadian Engineering Resources Committee

- Horizon watcher for profession
- Surveys, analyzes and publishes info on
 - Employment
 - Skill sets
 - Continuing competence
- Gender and diversity issues



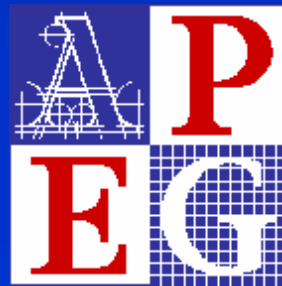
Canadian Engineering International Committee

- Evaluates international accreditation programs to facilitate mobility
- Negotiates international mobility/recognition agreements
- Current agreements
 - Washington Accord - US, Can, GB, IR, NZ, AUS, SA, HK
 - France
 - Costa Rica, Austria (by program)



Canadian Engineers Mobility

- Within Canada
 - June 1999 mobility agreement signed by all 12 associations
 - Recognizes equivalency of academic training and experience across Canada
- Within US
 - Associations are working bi-lateral agreements with adjacent States
 - NAFTA does not address this issue
- Rest of The World
 - CEIC negotiations and agreements



APEGBC

Beyond the Regulations

- Primary Role – Regulation and Governance of the Professions
- Secondary Role – Member Value and Benefits
 - Public/Government Relations
 - Member Services
 - Continuing Professional Development
 - Student Programs
 - Affinity Programs



APEGBC

Beyond the Regulations

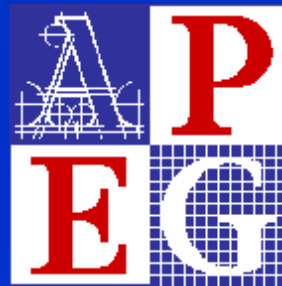
- Public/Government Relations
 - Increase Industry, Government and Public Awareness of the Value of the Professions
 - Encourage Use of P.Engs. and P.Geos. By Industry
 - Encourage Students to Consider Careers in Engineering and Geoscience



APEGBC

Beyond the Regulations

- Continuing Professional Development (CPD)
 - Encourage Lifelong Learning
 - Assist Members to Access Affordable and Relevant Continuing Education
 - Provide Reporting Systems for Members to Log CPD Activity
 - Annual Conference



APEGBC

Beyond the Regulations

- Other Member Services
 - *Innovation* Magazine/Newsletters
 - Increased Commitment to Electronic Communication (E-mail, web site)
 - Branch/Division Networks
 - Employment Assistance/Mentoring
 - Affinity Programs to Generate Financial Savings for Members and Additional APEGBC Revenue



Part 1 - Summary

- P.Eng. - Your Pathway to Success
 - Choices Made
 - Choices to Come
 - Go the Distance – Professional status awaits you

