THE RIGHTS AND RESPONSIBILITIES OF ENGINEERS
(Chapter 6)
Rights

A Justified claim on others

Rights pair with Responsibility

Not a Privilege
BART
BACKGROUND

Prime contractor was PBTB

Lucrative to Consultants

Enough work for everyone...
BACKGROUND

Hjortsvang and Blankenzee vs ATC

No systems engineering group to oversee development.

Systems Engineering originated at Bell Labs in the 1940s.

Hjortsvang and Blankenzee told “don’t make trouble”

Bruder’s report of sloppy work was ignored.
ACTING ON THIS INFORMATION

November 1971: the three brought their concerns to BART board member Daniel Helix.

Helix raised concerns with the board, who rejected the anonymous claims.

Engineers hire an outside consultant to review case.

Unsigned memo circulated within BART.
ACTING ON THIS INFORMATION

Hjortsvang denied sending the memo.

Engineers deny knowing or contacting consultant.

Three engineers identified and fired due to disloyalty.

Helix leaks information to the press.

Engineers sued BART, but settled out of court.
ANALYSIS

Primary obligation is to the public safety.

When judgment overruled, they alerted higher level management.

Engineers shall not attempt to maliciously injure the reputation of others.

Management must listen to concerns and act, or explain why they are not acting.

Engineers shall accept personal responsibility for their actions.
MUTUAL RESPONSIBILITIES

The Engineer

The Client or Employer

The Public
Engineers are required to keep certain information confidential.

Why?
Who is affected by disclosure?

How long must this confidentiality be maintained?
CONFIDENTIALITY

Not an absolute right.

Legal compulsion.
Higher ethical duties.
Disclosure by third party.

May be modified by NDAs and Non-compete agreements.
TRADE SECRETS

- Information with a commercial value
- Represents an economic investment
- Actively kept confidential by the owner
- Need not be patentable
- Violations covered by criminal law
- No legal recourse if independently discovered

(From Michael Loui, U of Illinois)
TYPICAL EXCLUSIONS

Prior Knowledge

Information Disclosed by Third Parties.

Prior Public Knowledge

Information Independently Created
RIGHTS OF ENGINEERS

The right to act in accordance with one’s conscience and to refuse to work on projects that violate their personal or professional codes.

The right to publically express one’s professional judgment.

The right to become a better engineer.

The right to express personal opinions, and participate in political activities.
RIGHTS OF ENGINEERS

The right not to suffer retaliation for ethical actions.

The right to personal privacy.

The right to recognition and fair remuneration.
WHISTLEBLOWING

The act by an employee of informing the public or higher management of unethical or illegal behavior by an employer or supervisor.

Should always be the last resort.

Engineers have a duty to protect the public safety.

Engineers have the right to be ethical.
TYPES OF WHISTLEBLOWING

Internal: an engineer reports within the company.

External: an engineer goes outside of the company.

Media, Law Enforcement, Regulators
WHEN IS IT APPROPRIATE?

Appropriate when the risk of harm is serious and considerable.

Should make concerns known to superiors.

Should exhaust all channels within the organization.
Two More Conditions

Must have documented evidence that would convince a reasonable, impartial observer that there is a danger.

Must be strong evidence that making the information public will prevent harm.
When are you obligated to act?

You *may* blow the whistle if the first three conditions are met.

You *must* blow the whistle if all five conditions are met.
DIFFICULTIES

What is harm?

Physical Financial Mental

Injustice Deception Waste

Historically not much success from whistleblowing
CASE: CHALLENGER

Boisjoly’s testimony to the Rogers Commission

No serious and substantial harm that testimony could prevent.

Even if such harm identified, no evidence that testimony would successfully prevent harm.
ED BRICKER

Worked at Hanford Nuclear Reservation in 1987.

Bricker noticed alarms in his work area had been disconnected because they were malfunctioning.

Observed leaks in containment facilities.

No updates in drawings for 30 years.
Ed Bricker

One day he found no plant operator at the controls.

Bricker took his concerns to management.

Then to the Seattle Times.

Bricker’s safety equipment was sabotaged.

Complaints about his mental health.
KAREN SILKWOOD

In the summer of 1974, testified to the AEC about safety issues at the Kerr-McGee nuclear plant.

Employees not trained for their tasks.

Improper handling of fuel rods.

In Nov 1974, she discovered she had been exposed to 400x the legal limit of plutonium.
The next day she again tested positive.

Her home was found to be contaminated with plutonium.

Security was lax at the plant.
When the Whistle Wasn’t Blown

Asbestos has been linked to lung disease since 1924, but first lawsuit in 1971.

1972, the Firestone 500 tire was found to fail at high speeds.

1986, Challenger accident.
PREVENTING WHISTLE-BLOWING

Organizations should minimize the need:

- Indicate a clear commitment to ethical behaviors
- Establish clear lines of communication
- Provide meaningful access to high-level managers
- Be willing to admit mistakes publicly.

Encourage whistle-blowing!