

Ethical Considerations for Today's Engineering Professional

SPE Mid-Continent Section

February 5, 2009

Ron Hinn – SPE

Outline

- Ethics vs. Morality
 - What is an Ethic? How is it determined?
- Engineering Ethics – “Foundations”
 - Registration Boards – Legal framework
 - Professional Societies – Professional framework
- Case Studies
 - “Gray Area” examples
- Your “Quiz”

Philosophy – Religion – Social Science
Reality

Ethics & Morals

Ethics vs. Morality – a brief discussion*

- Greek “ethos” – conveys permanence
- Greek “Mores” – varied societal behavior

Ethics – define what people “ought” to do

Morals – define what people “do”

* “Ethics and the Christian”, R.C. Sproul

Ethics & Morals

“A relationship does exist between our ethical theories and our moral behavior. In a real sense our beliefs dictate our behavior”

“...nothing manifests our value systems more sharply than our actions”

“Years to build, minutes to destroy”

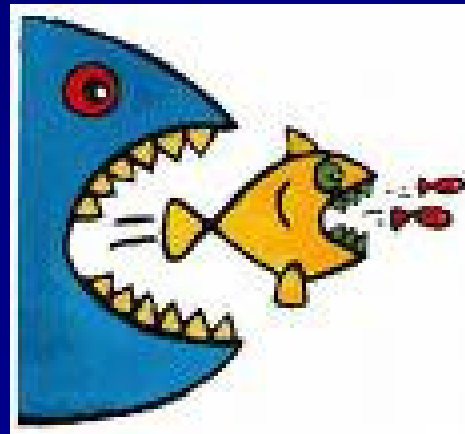
The Ethic Reality

The moral basis of ethics is found in natural law,
conscience and culture

A Slippery Slope

When “morality” (varied societal behavior) is blended into the discussion of “ethics” (behavioral foundation) --- the ‘status quo will reign – aka... “statistical morality”.

Morals



“The highest good is defined by the activity which is most authentically human”

Ethics

Blending Ethics & Morality

A “Timely” Example

Who’s In vs. Who’s Out....and Why?



Associated Press



Wall Street Journal



Getty Images

“Ultimately it's important for this administration to send a message that there aren't two sets of rules. You know, one for prominent people and one for ordinary folks who have to pay their taxes.”

President Obama 2/3/09

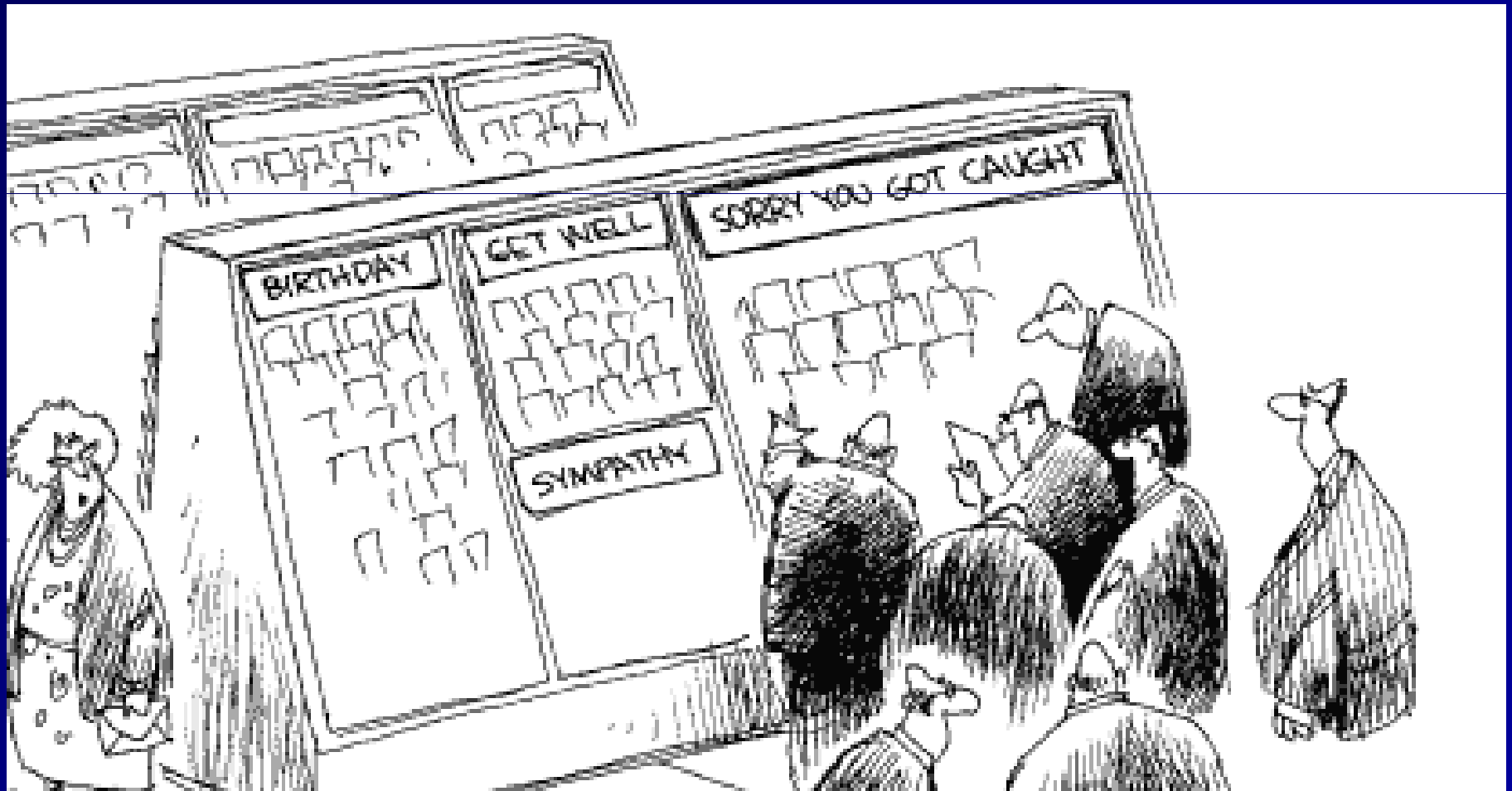
L to R

Tom Daschle, Timothy Geithner, Nancy Killefer

“Numerous studies have shown that taxpayers are less likely to comply with the law if they believe other taxpayers are cheating”

Jason Mazzone , Associate Professor of Law, Brooklyn Law School. USA Today 2/5/09

The IRS estimates that \$300 Billion in taxes owed goes uncollected every year –
USA Today 2/5/09



Employee Conduct – Agree?

Generally, employees will transgress company policy in proportion to the likelihood of getting caught. The extent and severity of such transgressions can be significantly amplified if the employee feels mistreated, exploited, or treated unfairly by the corporation.

What's Wrong with Us?

- Although we “know” what is right, we don't always do what is right –
- Solution –
 - written codes to remind us of our ethical responsibilities
 - disciplinary committees to enforce the codes

Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors

- In order to safeguard life, health and property, and to promote the public welfare, the practice of engineering and the practice of land surveying in this state are hereby declared to be subject to regulation in the public interest.....
- The practice of engineering or land surveying shall be deemed a privilege granted by the state through the State Board of Licensure for Professional Engineers and Land Surveyors.

Sect. 475 - 1



The State Boards play a key role in providing a “legal basis” for ethical practice.

- Acknowledge responsibility to the public
- Set Standards
- Confers privileges (right to practice within the state)

Advantages of Licensing

- Licensing provides the right to practice
- In Licensing, the State represents that the engineer has attained a minimum level of competence and ethical practice
- Licensing provides legal protections from recrimination when ethical choices are made

Professional Standards

NSPE – Code of Ethics

SPE – Guide for Professional Conduct

■ Engineers...

- Expected to exhibit the highest standards of honesty and integrity...impartiality, fairness and equity
- Work only in area of competence
- Act for each employer or client as a “faithful” agent or trustee
- In all of the above....adherence to this code/guide will serve to enhance the honor, reputation and usefulness of the profession.

Ethics Decision Framework

■ Ask yourself:

- Would the resulting action be legal?
- Would stakeholders see the action as responsible stewardship?
- Would I mind having information regarding the decision publicized?
- Have I consulted with peers/others regarding the perceived action and possible ramifications?
- Would the public view the perceived act as a responsible professional action?

Three Rules for Decision

- Ends-based: What is the greatest good for the greatest number?
- Rule-based: How would I want this situation to be handled every time?
- Care-based: Put myself in the other's shoes

The Challenger Disaster

- January 27, 1986
- 26 °F ambient temperature
- O-ring seals tested to 53 °F
- Morton Thiokol engineers recommend no launch
- Sr. VP to VP Engineering: “Take off your engineering hat and put on your management hat.”

The Challenger Disaster (cont.)

- Management reverses engineering's recommendation
- Chief o-ring engineer vigorously protests management's decision
- Challenger explodes 73 seconds into the launch, killing seven astronauts

Issues

- Engineering vs. management decision
- Health of the company
- Public Safety
- Adherence to engineering principles

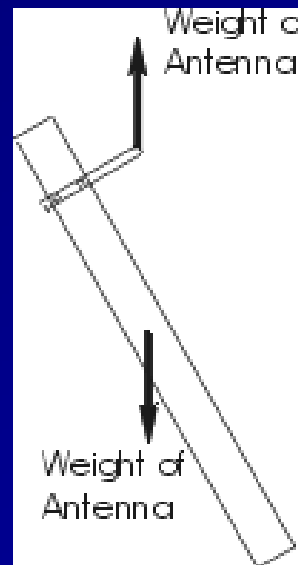
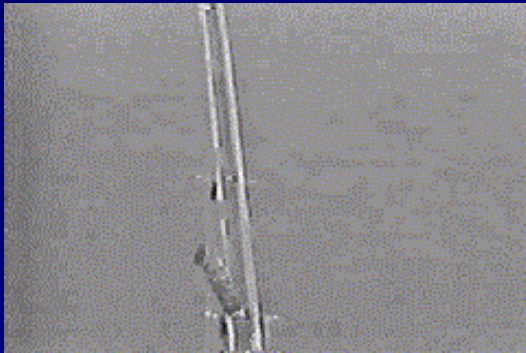


The Senior Road Tower

- Missouri City, Texas, 1982
- KTXH-TV 1000 foot broadcast tower
- Microwave baskets interfered with lift of final section
- Design firm would not give permission to remove baskets before lift
- Riggers designed a temporary extension arm and asked the design company to review, approve and witness the lift
- Design company refused

The Senior Road Tower (cont.)

- Extension arm bolts broke and section fell, shearing guy lines
- Tower fell in 17 seconds, killing seven people
- The disaster was filmed by the TV station



Issues (cont.)

- Was the design company free of responsibility when the rigging company implemented the lift design?
- Was the design company correct in its refusal to re-evaluate and witness?
- What were its alternatives?
- Did the rigging company err in designing the new extensions?

Issues (cont.)

- Who had the responsibility to make the call at the design company – managers or engineers?

Quiz

Some Realistic Situations

Question 1

- I was told that I could hire a consultant to take care of getting all the permits we need from a foreign government. He requested a \$40,000 retainer and said that he would use the money to ‘help move the process along.’ Since we don’t really know where the money is going, do we have to worry about it?

Some Realistic Situations

Answer 1

- Yes. You should know enough to find out if your consultant is getting an unfair advantage on the competition. Is it customary for conducting business in this foreign government or a one-time deal to get special favors? One must balance ethical considerations with the realities of doing business in many foreign marketplaces. Acceptable behavior in one part of the world may be very different from your normal operating practices at home.

Some Realistic Situations

Question 2

- I have just received an invitation to attend a hearing of a governmental/local authority committee as an expert industry witness. How should I respond?

Some Realistic Situations

Answer 2

- You should use your best judgment as per the expertise required to testify. By definition, an expert is one that has achieved a high degree of skill or knowledge as a result of their experience and training. Will the testimony be in your area of expertise? Do you have sufficient education and a long track record of industry experience in this area? Does your company and/or peers recognize you as an expert?

Some Realistic Situations

Question 3

- Every week we are required to test chemical discharges that are produced when we make a particular product. The tests always come out the same, so sometimes when work is very busy we skip the tests and do them a day or two later if we can. Then, when we do the missing tests, we just back date the results. Since this helps manage our work-flow, is this really wrong?

Some Realistic Situations

Answer 3

- Definitely wrong. Would you want to live next to a plant that followed this behavior? Probably not. Back-dating quality-control measurements is unacceptable in any situation and few things “always” stay the same. Measurements are recorded to ensure safe, legal operation of your business. No answer at all is better than a back-dated entry. Don't do this.

Some Realistic Situations

Question 4

- I have a large grass-mower at home which I'm lending to a friend. Is it OK if I borrow a Company A truck at the weekend to take it to my friend's house and then use it again in two weeks to bring it back?

Some Realistic Situations

Answer 4

- Since this is a work truck, you should follow company A's policies on the personal use of company vehicles. There are many liability issues to consider. You certainly should not be using the truck to generate additional income outside of work. However, if it is a simple, one-time non-commercial request then you should fully disclose your request and ask for permission from the proper authority at company A.

Some Realistic Situations

Question 5

- I have just joined Company A as a new employee. My prior employer is one of Company A's largest competitors. Can I share some important confidential marketing information that I developed while working for this competitor?

Some Realistic Situations

Answer 5

- You must follow your conscience as what is acceptable knowledge transfer. Your intellectual property is yours to keep and may be transferred. However, proprietary information that you know is confidential should not be shared with out permission. You also have potential legal implications if confidential information is shared, especially if you signed a confidentiality clause with your former employer.

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A Positive Note.....

Wall Street Journal Online – 2/4/09

Chesley Sullenberger has a problem. He borrowed a book from the Danville Library (Pasadena CA)--and it's overdue. To complicate matters, the book was an interlibrary loan from Fresno State. Sullenberger contacted librarians and asked for an extension on the loan and a waiver on the overdue fine. The reason?

The book is in the cargo hold of the US Airways plane that made an emergency landing last month in New York's Hudson River. Sullenberger is the pilot who made that landing. No one was seriously injured. Fresno State library officials were impressed with Sullenberger's sense of responsibility . . . and waived all fines and fees, even the one for losing the book.

The library's going one step further: when the replacement book goes up on the shelf, it will have a special template in front, dedicating it to Chesley "Sully" Sullenberger.

Oh, by the way. The topic of that book?**Professional ethics.**

Presentation Source Material

Society of Petroleum Engineers
SPE Engineering & Professionalism Committee
Ethics Sub-Committee Presentation
www.spe.org

“Ethics for Engineers”, Larry Brown
Presentation for the SPE Gulf Coast Section, 11/8/05

Business Ethics – quickstudy.com, Barcharts Inc.

Engineering Ethics – TV Antenna Tower Collapse, Texas A&M University, June 1992
<http://ethics.tamu.edu/ethics/tvtower/tv3.htm#guidelines>