ALWAYS! NEVER!
in scientific presentations
The Deadliest Powerpoint Presentation of All Time

Orbiter Assessment of STS-107 ET Bipod Insulation Ramp Impact

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January 23, 2003
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Review of Test Data Indicates Conservatism for Tile Penetration

- The existing SOFI on tile test data used to create Crater was reviewed along with STS-87 Southwest Research data
  - Crater overpredicted penetration of tile coating significantly
    - Initial penetration to described by normal velocity
      - Varies with volume/mass of projectile (e.g., 200ft/sec for 3cu. ln)
    - Significant energy is required for the softer SOFI particle to penetrate the relatively hard tile coating
      - Test results do show that it is possible at sufficient mass and velocity
    - Conversely, once tile is penetrated SOFI can cause significant damage
      - Minor variations in total energy (above penetration level) can cause significant tile damage
  - Flight condition is significantly outside of test database
    - Volume of ramp is 1920cu in vs 3 cu in for test
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The Greatest Speech of All Time
If the Gettysburg speech had been a PPT presentation

Review of Key Objectives & Critical Success Factors

- What makes nation unique
  - Conceived in Liberty
  - Men are equal
- Shared vision
  - New birth of freedom
  - Gov't of/for/by the people

Source: Peter Norvig
POOR PRESENTATION CAN BURY GREAT CONTENT
ALWAYS! NEVER!
in scientific presentations
ALWAYS!

Identify yourself

Your complete affiliation – lab, department, institution, student/postdoc, year in program
NEVER!

Assume that everyone likes the same kind of PowerPoint presentation that you do.
ALWAYS!

- Tell them what you are going to tell them, then
- Tell them, and then
- Tell them what you told them
ALWAYS!

Divide your talk into distinct sections

Titles – background, hypothesis, methods, results, discussion, conclusions

Apportion a reasonable amount of time to each section

The more results, generally the more time required to put them in context
ALWAYS!

Know your audience and their vocabulary
NEVER!

Show overly detailed schematics
(times, temperatures, tube sizes, homogenization technique, RCF, agitation speed, only if you want to call attention to these details)
NEVER!

Put more detail than can be assimilated in < 5 sec
ALWAYS!

Consider the room

Light-on-dark
Dark-on-light
Small vs large
NEVER!

Assume that fonts and apps will work in a presentation saved on a flash drive.

The need for special fonts & symbols may be better met by a pdf presentation rather than ppt.
NEVER!

Assume Mac vs PC,

HDMI macro v micro, VGA,

or internet access if you use a flash drive
ALWAYS!

Make a backup copy of your presentation accessible to you via internet
NEVER!

Forget your power supply
NEVER!

Read your slide text
ALWAYS!

Adapt to the microphone

Even if you are “wearing” a clip-on microphone, it may not pick up your voice when you turn your head.

This is a good reason to face your audience when you talk, not your slides.
ALWAYS!

Adapt to the microphone

Make sure that high frequencies are produced, de-emphasize low frequencies
(older people who tend to lose high frequency hearing)
ALWAYS!

Have intervals where slides are black and you face your audience.
NEVER!

Induce laser pointer vertigo,
Even better, never use a laser pointer

(it requires you to look at your slides, not your audience)
NEVER!

Assume that your audience is accustomed to looking at molecular models
NEVER!

Assume that your audience is accustomed to looking at moving molecular models.
NEVER!

UAA

(Use arcane abbreviations)
ALWAYS!

Use primary colors with contrast

Consider the possibility that people in your audience are color blind

The difference between red and green may not be appreciated X-lined recessive trait present in 8% of men
NEVER!

Use color for legends
Or, even better – never use legends
NEVER!

Use color for legends
Or, even better – never use legends
ALWAYS!

Include acknowledgement slide
People, funding, cores, materials – oftentimes appropriate during the talk, not only at the end

Include potential COI disclosures
(including those of your collaborators!!!)
ALWAYS!

Include references, and clearly (with labels) distinguish between your work and the work of someone else.
NEVER!

Use animations or transitions

“That presentation needed more animations”

... No one
NEVER!

Tell a more senior scientist:

“that’s a good question”
NEVER!

Put critically important material in the margins
NEVER!

Copy from a PPT to an editing program, then import into another PPT

Resolution loss!
ALWAYS!

Provide conclusions at the end that are truly conclusions, not summaries.
ALWAYS!

Turn off your phone, notifications
NEVER!

Expect anyone to remember what you told them 5 min ago unless you have repeated it multiple times for emphasis.

(Remember: Never UAA)
ALWAYS!

Label your graphs: title, axes, units of measure
Include a statement of the conclusion

Smoking Causes Lung Cancer
ALWAYS!

Help your audience with conceptual jumps

Your audience often cannot “synthesize” results on the fly that have required days-weeks-months for you to synthesize and construct conclusions

Reinforce verbal statements with written
The bigger the jump, or the more important, the more time should be spent on reinforcement
THIS IS REALLY IMPORTANT:

Reinforce verbal statements with visual statements

The bigger the jump, or the more important, the more time should be spent on reinforcement
ALWAYS!

Slow down when stating your main point and dwell on the most important terms

“The only compound that made any difference was the 7th one

because it worked by and so...
ALWAYS!

Ask questions of the audience

Can merely rhetorical questions help?
ALWAYS!

Repeat questions so that everyone can hear them
NEVER!

Go overtime

Better to leave them wanting more than less
ALWAYS ! NEVER !

Accept the challenge of communicating as you would accept the challenge of getting consistent results.

The result you want when communicating is **Clarity**

despite diverse ways of learning and assimilating information
ALWAYS!  NEVER!

The impression you want to give when communicating is Competence, Trustworthiness, and that You would be a good colleague
LOONEY TUNES

“THAT’S ALL FOLKS!”