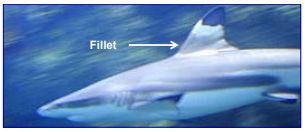
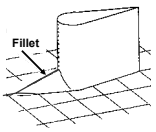
Rethinking the Design of Presentation Slides

Fillets reduce leading edge vortices in nature and in engineering

Fillet on dorsal fin of shark



Fillet on Seawolf submarine





[Devenport et al., 1991]

Virginia Tech

Michael Alley
College of Engineering
Virginia Tech

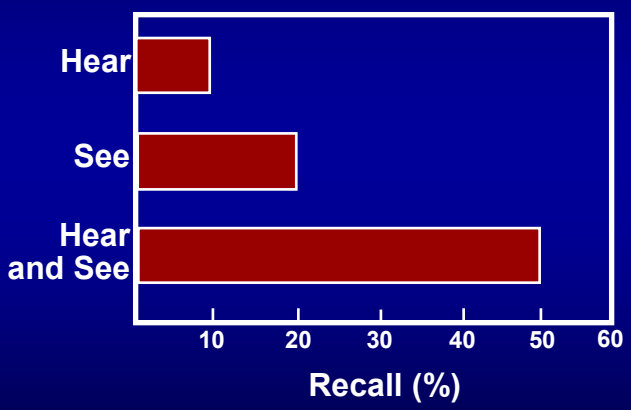


Source: Chapter 4 in *Craft of Scientific Presentations*

An advantage of using slides is that audiences remember more when the slides are well-designed

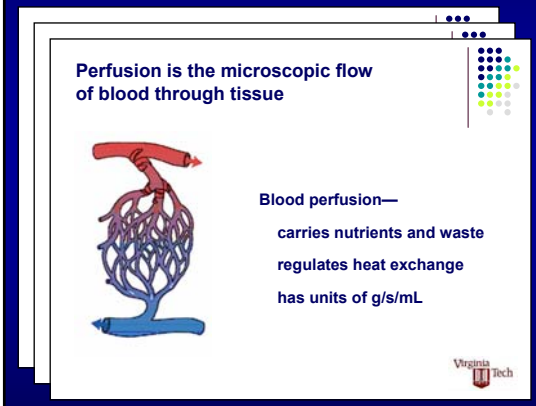








For a technical presentation, you should set high goals for the presentation slides



Slides should help the audience during the talk

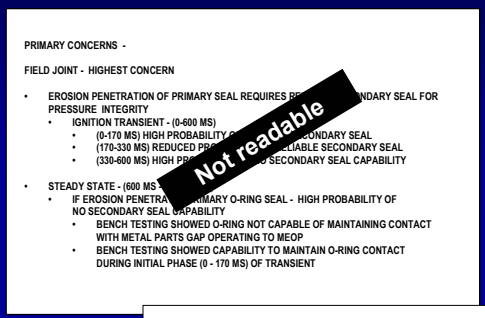
Slides should serve as notes for the audience after the talk

Slides should serve colleagues having to make the same talk

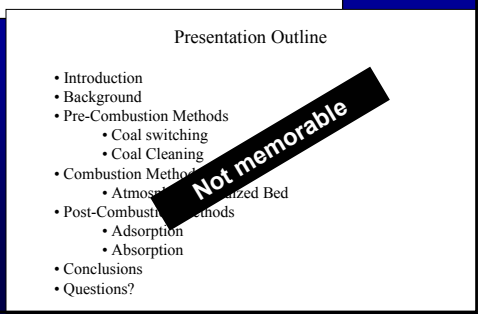


This presentation focuses on two common errors made in the design of slides

Creating slides that no one reads



Creating slides that no one remembers



One common error is having a slide format that dissuades the audience from reading

PRIMARY CONCERNS -

FIELD JOINT - HIGHEST CONCERN

- EROSION PENETRATION OF PRIMARY SEAL REQUIRES RELIABLE SEC… …R PRESSURE INTEGRITY
  - IGNITION TRANSIENT - (0-600 MS)
    - (0-170 MS) HIGH PROBABILITY OF RELIABLE SEC…
    - (170-330 MS) REDUCED PROBABILITY OF RE… …AL
    - (330-600 MS) HIGH PROBABILITY OF NO… …ABILITY
- STEADY STATE - (600 MS - 2 MINUTE…
  - IF EROSION PENETRATES P… …HIGH PROBABILITY OF NO SECONDARY SEA…
    - BENCH TESTI… …CAPABLE OF MAINTAINING CONTACT WITH ME… …NG TO MEOP
    - BENCH … …APABILITY TO MAINTAIN O-RING CONTACT DURING INITIA… …70 MS) OF TRANSIENT

Difficult to read



To avoid this error, an easily read typography and layout are needed

Choose legible type

Sans serif type

~~*SERIF TYPEFACE*~~

Choose a helpful layout





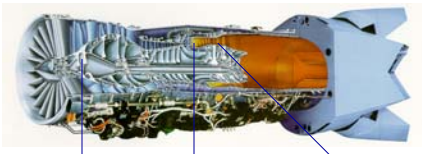
Much more effective than PowerPoint's default layout is a sentence headline supported by images

Sentence Headline

Support in Body

The sentence headline succinctly states the main assertion of the slide

Body supports with images



Body supports with needed words

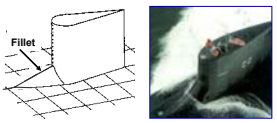
Three criteria are important in evaluating a layout design for presentation slides

Fillets reduce leading edge vortices in nature and in engineering

Fillet on dorsal fin of shark



Fillet on Seawolf submarine



[Devenport et al., 1991]

Virginia Tech

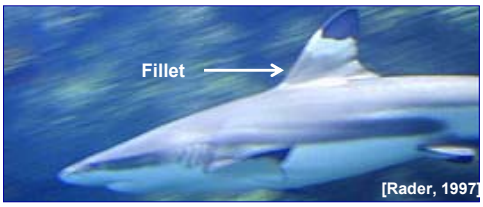
How memorable is the design?

How many slides does the design require?

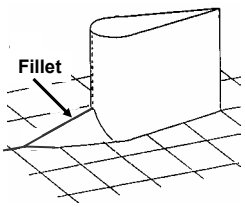
Does the design help the slides stand as notes?

Fillets reduce leading edge vortices in nature and in engineering

Fillet on dorsal fin of shark



Fillet on Seawolf submarine





[Devenport et al., 1991]

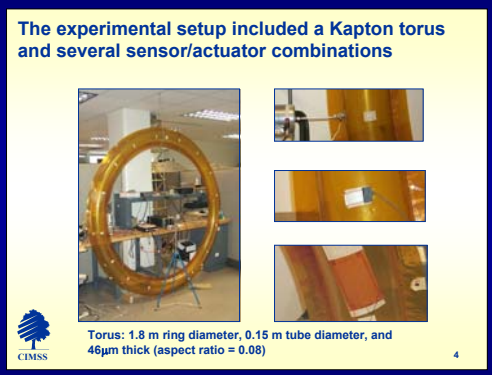
Virginia Tech

The sentence headline should state succinctly the purpose or assertion of the slide

A strong headline—

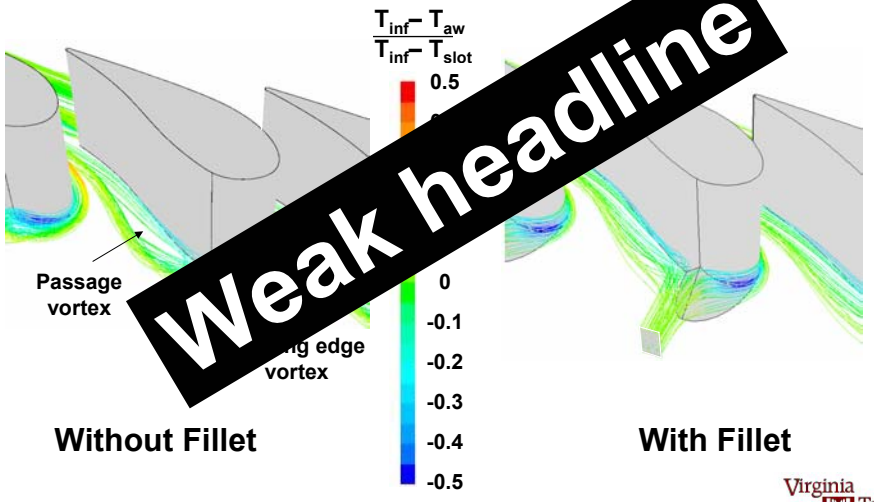
identifies the slide's purpose for the audience

identifies the slide's purpose for the speaker





Results



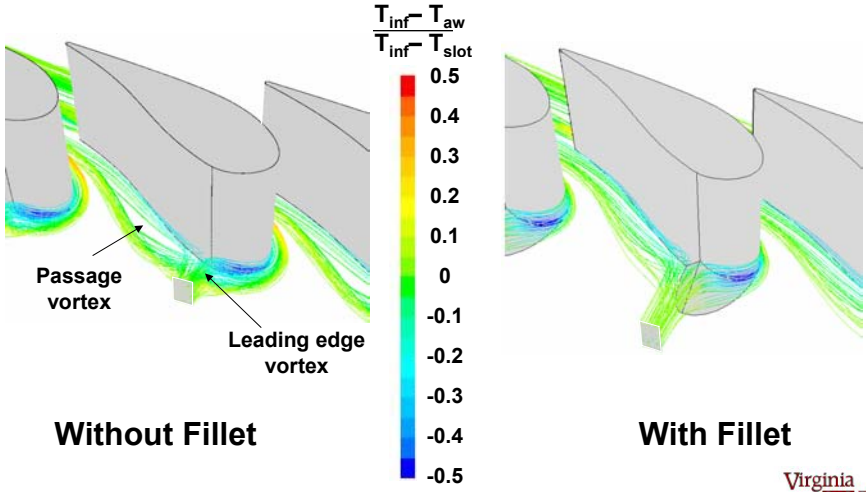
Weak headline

Without Fillet

With Fillet

Virginia Tech

Computations show that the fillet prevents the leading edge vortex and delays the passage vortex



Without Fillet

With Fillet

Virginia Tech

The body of a slide should support the headline primarily with images and with words where needed

Primarily supports with images



Supports with necessary words

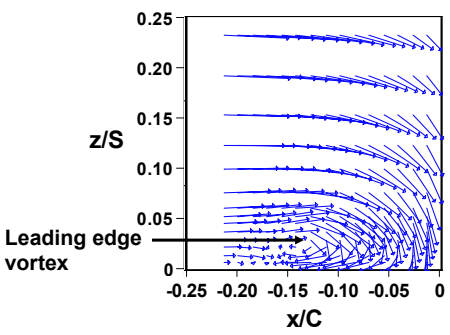
clear

familiar

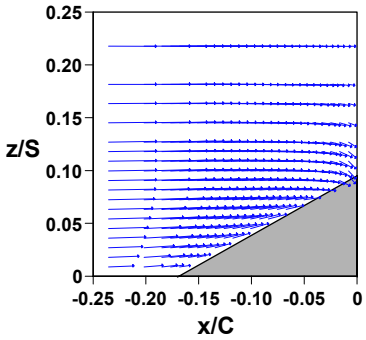
concise



Measurements show that the fillet prevents formation of the leading edge vortex



Velocity profile: vane without fillet



Velocity profile: vane with fillet

Virginia Tech

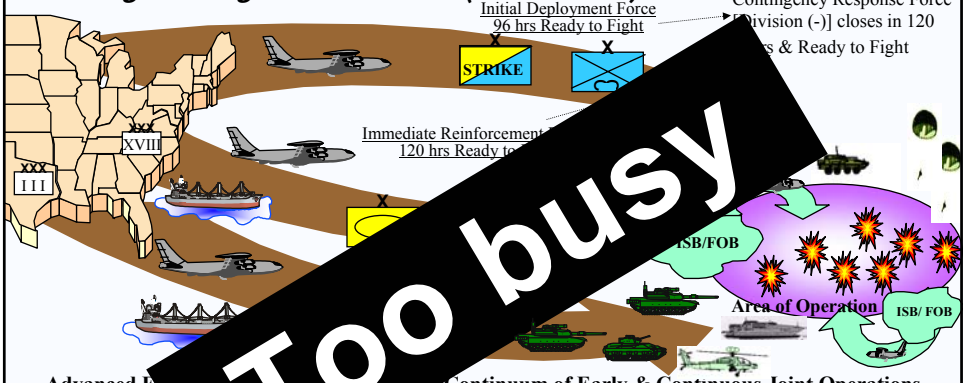
Literature Review

- Hefner developed a dynamic el… temperature-dependent IGB… rature-dependent IGBT elect… in terms of the insta… instantaneou… model and det… of the silicon chip… e *SABER* circuit simul…
- Adam… eractions between the heat sources, s… by the thermal conductance of the walls and s… ining which physical effects and level of detail are nec… ct thermal behavior of discretely heated enclosures.
- Chen, Wu and … are modeling of thermal and electrical behavior using several commercial … ftwares (I-DEAS, Maxwell, Flotherm and Saber) and 3-D, transient approaches.

Too many words

Joint Force Projection Concept/Requirement -- AXXI

Enabling Strategic Maneuver - (Circa 2010)



Too busy

Advanced F… Continuum of Early & Continuous Joint Operations

CONTI… …RATIONS — EXTENDED OPERATIONS

Missions: •Stra… •Preve… •Shape … …ecisive Ops

Missions: •Sustained, decisive ground operations •Conflict Termination on US dictated terms

Deployment Require… …ilestones:

C+ 96 hrs	C+ 120 hrs	C+30 days	C+60 days
Initial Deployment Contingency Response Force (Air)--Ready to fight in 96 hours • Two Brigade Task Force (Division minus) • Mission tailored • Subordinate to JTF • "In-stride" coordination & team building	**Immediate Reinforcement Force (Air)-- Ready to Fight in 120 hours** • Armor/Mech Brigade TF w/support & Strike Force • Mission tailored • "Plugs" into Initial Deployment Force HQs • Joint Force support	**Campaign Forces: Corps w/ 3 Divisions (+) (Sea/Air)--Ready to fight by C + 30** • Mech/Armor/Inf Division mix • Capable of conducting sustained, decisive operations as part of Joint Force •Follow-on Forces (E - Bdes & an additional divisions as required)	

A second common error is showing slides that the audience reads, but does not remember

Presentation Outline

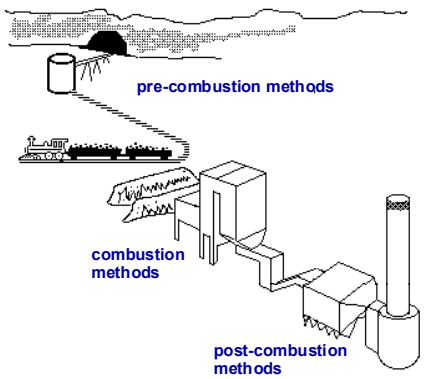
- Introduction
- Background
- Pre-Combustion Methods
  - –coal switching
  - –coal cleaning
- Combustion Me
  - –atmos ed bed
- Po Methods
  - –a ion
  - –absorption
- Conclusions
- Questions?

Not memorable

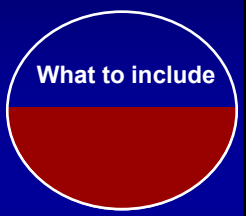


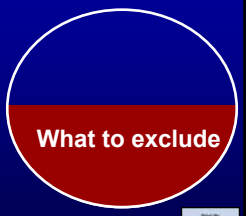
To make slides memorable, you have to consider what to include and what to exclude

This presentation compares several methods for reducing emissions of sulfur dioxide





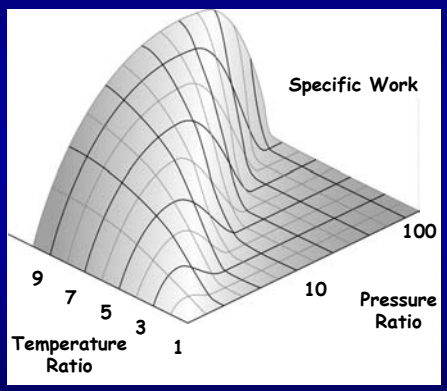




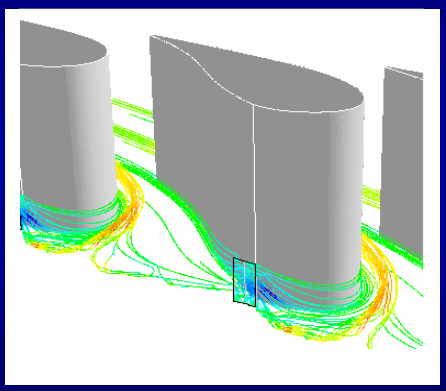


Slides should include key results and images

Results

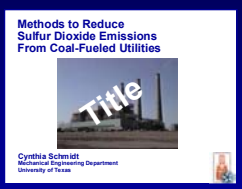


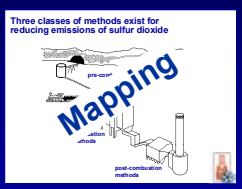
Images



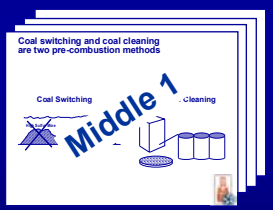
Slides should also include signals for the presentation's organization

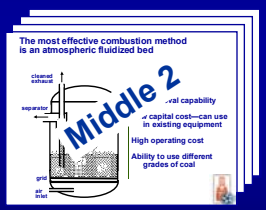
Beginning



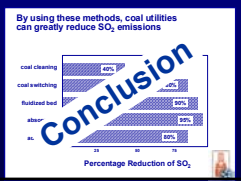


Middle





Ending



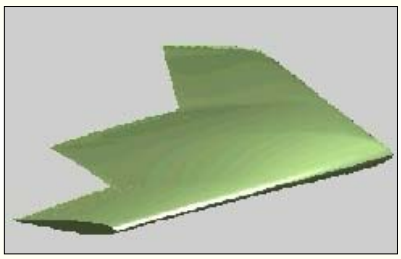
Computational Analysis of the Aerodynamic Ener Required of Morphin

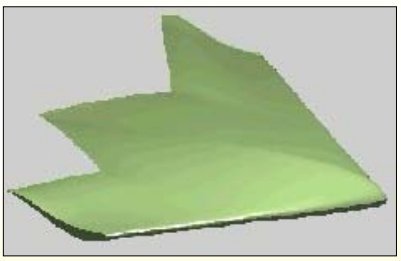
Needs image to orient

Greg P J. Inman
Center for tructures
Air Force O 49620-99-1-0294)

CIMSS

Computational Analysis of the Aerodynamic Energy Required of Morphing Wings





Greg Pettit, Harry Robertshaw, and Daniel J. Inman
Center for Intelligent Materials, Systems and Structures
Air Force Office of Scientific Research (F49620-99-1-0294)

CIMSS

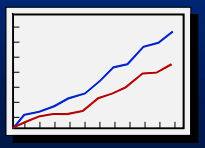
This presentation evaluates composite materials for the bipolar plates of fuel cells



Role of bipolar plates in fuel cells



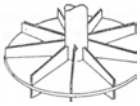
Comparison of bipolar plate materials



Evaluation of bipolar plate performance

Virginia Tech

An arresting system shortens the landing distance without sacrificing aircraft performance





arresting system

Arresting system for aircraft carrier

Virginia Tech

In summary, the phantom for blood perfusion has many useful applications

The phantom can—

- produce reasonable and reproducible perfusion
- allow for simple and inexpensive construction
- be modified for future experiments



Questions?



Review of Test Data Indicates Conservatism for Penetration

- The existing SOFI on tile test data used to create Crater was reviewed along with STS-87 S… Research data
  - Crater overpredicted penetration… significantly
    - Initial penetration to de…
      - Varies with vol… …sec for 3cu.in)
    - Significant… …ter SOFI particle to pe… …coating
      - …s possible at sufficient mass
    - Co… …is penetrated SOFI can cause sign… …ge
  - Flight co… …n is significantly outside of test database
    - Volume of ramp is 1920cu in vs 3 cu in for test

Too many levels of detail

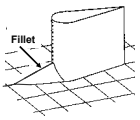
In summary, the slide design given here is much stronger than PowerPoint's default design

Fillets reduce leading edge vortices in nature and in engineering

Fillet on dorsal fin of shark



Fillet on Seawolf submarine





[Devenport et al., 1991]

Virginia Tech

The design is more memorable for audience

The design requires fewer slides (thus better pacing)

The design produces notes that stand alone

The design creates a more compelling argument

Summary: page 116 in *Craft of Scientific Presentations*
Templates: http://writing.eng.vt.edu/csp.html

