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## “How to Maximize Your Chances of Being a Top Gun”



# DWC at a glance

- Student FTE: 940 (116 MBA)
- Full-time faculty: 39
- Student/faculty ratio: 13-to-1



- Student FTE: 411 (57 MBA-AP)
- Full-time faculty: 11
- Flight instructors: 37
- Aircraft: 27
- Flight training devices: 4



# Aviation education

- Three principal undergraduate degrees
  - BS Aviation Flight Operations (49%)
  - BS Aviation Management (19%)
  - BS Aviation/Air Traffic Management (32%)
  - Accredited through Aviation Accreditation Board International
- One graduate degree
  - MBA for Aviation Professionals (online)

- Air Traffic Management and Aviation Flight Operations majors take the same class
- Provides a perspective on each other's work
- Example question: When do you think that controllers and pilots are the most busy and the least busy?

# Educational emphasis

- What are the risk factors that may impact your performance and medical certification as a pilot or controller?
- Focus on function: How can visual processing fail?
- Emphasis on prevention: Hearing

# Human Factors

- Physiology: Review of the core systems of the body with an emphasis on modifiable risk factors
- Use of “personal assessment” tools for evaluating individual status



# Personal Assessment

- Twenty-four hour nutrition log
- Tied to study of cardiovascular system
- Includes calculation of BMI and tools for weight management

# Personal Assessment

- Twelve Minute Walk Test: An assessment of aerobic fitness
- Strategies for improving fitness
- Why it matters

# Human Factors

- Psychosocial factors impacting human performance: stress and fatigue
- Assessment tools designed for college students to assess stress and fatigue
- NTSB data base and case studies to illustrate the impacts

# Human Factors

- Cognitive process and decision making models
- Based largely on the Recognition Prime Decision Making Model

# Medical Evaluation

- How to fill out the form
- Potential problems

# Selected topics

- Impact of alcohol and pharmaceuticals
- Self medicating

# Sample of presentation

- Emphasis on understanding the importance of the factor to maximizing performance
- Always related to the latest data and accident statistics

# Stress

- Stress can have benefits: Helps people stay alert, focused, and interested in the world around them.



# The Wrong Stuff

- 2000 study found that the captain's personality type influences the amount of stress on the flight deck.
- 24 flight crews in the 737 were tested for perceived stress. The most errors were committed by crews that reported the highest levels of stress.

# Effects of stress

- More than 40 percent of adults experience adverse health effects associated with stress.
- More than 75 percent of visits to physicians' offices are for stress related problems.

# Effects of stress

- Release of adrenaline and other hormones increases the amount of cholesterol manufactured by the body.
- One study found that cholesterol levels of medical students increased by 25% during final exams.

# Effects of stress

- Blood platelets get “stickier” (to speed up blood clotting), but can lead to increased risk of a heart attack.
- Affects on immune system: The hormone cortisol is elevated, and this hormone stops infection fighting response.

- Human factors
  - Human-machine interactions in the flight deck environment
  - Application of CRM methods in emergency medical services
  - Impact of fatigue on helicopter emergency medical services

# Questions?



# Suggestions?

