Own Your Career

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Webinar
Purpose of presentation

• Share my career path

• Share lessons learned from different phases of my career

• Share some of our current work in Operations Engineering

• Communicate the need to lead and take responsibility for your professional development
My Background

Airborne Laser Program

2004-2008 (Lt – Captain)
Lessons Learned – College/Early Career

• Change offers opportunity for growth

• Always do your best (eliminates regret & opens doors you didn’t know were there)
Operations Engineering

Primary Role: To facilitate the transition between research in the lab to research on an aircraft

Responsibility: Airworthiness & Mission Success

We help develop research/experiments, integrate them onto aircraft, and conduct flight missions to gather data.
Team Integration

Leader

Problem Solver

Communicator

Team Player

Influencer

Research Eng/Scientist

Project Manager

Operations Eng

Technical Reqts

Funding/Schedule

Ops Resources

Project Schedule
Airborne Science
(DC-8, C-20, ER-2, Global Hawk, King Air)

Purpose: further science and advance the use of satellite data
• Satellite Calibration and Validation
• Support New Sensor Development
• Process Studies
• Develop the Next-Generation of Scientists and Engineers
**UAS Integration in the NAS Focus Areas**

**Research Need**: global transport system to allow access of unmanned aircraft systems (UASs) in the national airspace

Aim to reduce technical barriers related to the safety and operational challenges

Completed Flight Test Series – 4 in July 2016

- Challenged encounter geometries with 2 or more live aircraft
- Determined state data uncertainties
X-57 “Maxwell”
Distributed Electric Propulsion Research

Research Need: Achieve significant reductions in energy consumption, carbon emissions and noise

• Deliverables:
  • Analytical proof of scaling to commercial aircraft
  • Feasibility assessment of improving propulsive efficiency while reducing noise and emissions
  • Economic benefits study
Quiet Supersonic Transport (QueSST)

Possible Low Boom Flight X-plane design
Sonic Boom Basics

- Primary boom carpet travels in 3-Dimensions at speed of sound
- At the intersection with the ground, “sonic boom” is heard
- Boom is created over the entire length of the supersonic flight
Sonic Boom Basics: N Wave Sonic Boom

A typical pressure distribution

They begin to coalesce

Later completely coalesce into an “N wave” …

… resulting in a loud Sonic Boom at the ground
What if we change the shape...

Very little coalescing

Signature retains general shape

... resulting in a much quieter Boom at the ground
OE Career Profile Videos

These videos highlight several roles and responsibilities of an operations engineer. Check us out!

- Aeronautics Research (~8min) – Brian Griffin  
  https://www.youtube.com/watch?v=MM33ORifH84

- Airborne Science (~8min) – Matt Berry  
  https://www.youtube.com/watch?v=QWMmO7E99dM

- Unmanned Aerial Vehicles (UAVs) (~9 mins) – Robert Rivera  
  https://www.youtube.com/watch?v=SG9lk7zcIU4

- Subscale UAS Engineer/Pilot (~10 mins) – Red Jensen  
  https://www.youtube.com/watch?v=H7Olxa8NQrg

- Aero-Mechanical Design Team – Jason Hanson  
  https://youtu.be/mbnDLUkYtQI

- Draftsman & Configuration Management/Drawing Control – Kelvin Sui  
  https://youtu.be/TkhIJL-Ub-E
F-18/F-15 Operations Engineer
2008-2012

- Adaptive Control & Supersonic Research
Career Development – Early Career

• Engage in activities that develop “soft skills”
• Don’t be the first thing in your own way
• Plan your career in pencil
• Any expert was once a beginner – learn!
• Do the whole job to your best ability
• Be a good employee
  • Contribute to the pack
  • Go where you are needed
  • Avoid the rumor mill
  • Make up your own mind about others
  • Learn to manage conflict, not avoid it
  • Keep your boss informed
Deputy/Chief – Operations Engineering
2012-present

I enjoy in this job....

• challenge of a new role
• learning more from more people
• bigger perspective of the Center’s work
• helping others develop/mentoring
• removing roadblocks
• learning more about myself
Career Development - Ongoing

• Being “in the right place at the right time” is key...
  ...but to take advantage of it you need the “right skills”

• Work on your weaknesses but focus on your strengths

• Continue to find ways to learn

• Work/Life balance is essential
Consider the Benefits of Professional Orgs

• **Job Listings**: online or in print available only to their members

• **Build a better resume**: tips on resume building; listing an organization membership shows commitment to your field

• **Make a new friend in a new place**: go to a local meeting and meet new co-workers or future friends

• **Scholarships**: many offer scholarships to the new members studying to enter the field

• **Broaden your knowledge**: Professional organizations sometimes offer courses, seminars and/or lectures, workshops, publications, and handbooks

• **Enhance your network**: sometimes solving a problem is knowing who else to consult

• **Give back to the community**: org-hosted outreach initiatives

• **Be a Leader**: officer positions

• **Networking**: annual conferences, social events, LinkedIn, etc.

• **Stay Energized**: share successes and participate in new technology reviews with others in your field that don’t do the same work you do
Purpose of presentation (recap)

- Share my career path

- Share lessons learned from different phases of my career
  - *Which one resonated with you?*

- Share some of our current work in Operations Engineering

- Communicate the need to lead and take responsibility for your professional development
Questions?
Feel free to reach me at:
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