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13. SUPPLEMENTARY NOTES A paper submitted to the faculty of the NWC in partial satisfaction of the requirements of the curriculum. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.				
14. ABSTRACT Air Force Chief of Staff General Charles Brown charged leaders to "Accelerate Change or Lose." This article leverages the experiences of one squadron commander trying to cultivate an innovative environment. It lays out a flexible framework of seven recommendations to foster innovation and accelerate change: 1) Innovation starts at the top (with you), 2) Reallocate obstinance, 3) Reward the innovative process as much as successes, 4) Make it okay to fail forward with new ideas 5) Understand how to spend the money, 6) Be the enabler, not the roadblock, 7) Establish a deliberate process for innovation. The author provides real-world examples to reinforce the value of this framework, ranging from deployments to the Middle East, examples of failing forward, and options for dealing with challenging team members. This unique blend of hard-earned experience and academic research provides a framework for leaders who seek to build an innovative organization.				
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Fostering an Innovative Unit

“Uncertainty prevails, both about who governs technology and for whose benefit. No matter which way one looks, the frontiers of technology are seen to be at one and the same time, frontiers of politics. Settling these regions-making them at once technically tractable and socially habitable-requires the simultaneous activation of society’s cognitive, instrumental, and normative capacities in a complex dynamic of co-production.”¹

Implementing change is challenging in a large bureaucratic organization.² Processes become codified to restrict our actions within specific parameters, and friction exists at every level. Furthermore, people are naturally resistant to change. While this can be good at times to ensure enduring stability, it poses significant challenges when organizations reach an inflection point and must either pivot or become irrelevant. Recently, the Chief of Staff of the Air Force challenged Air Force leadership to *Accelerate Change or Lose*. He explained how the Air Force is progressing too slowly, and stated, “Our bureaucracy requires a ‘tune up’ to enable us to make decisions at the speed needed in the dynamic global environment.” Our Airmen, at all levels, must be informed and empowered to problem-solve and innovate.³ Our incremental rate of innovation and finding new ways to exploit technology will be insufficient to defeat a peer adversary such as China.⁴

How does one lead an organization whose natural stasis is the status quo? It takes more than standing in front of your 150 Airmen and telling them to “innovate harder.” It requires a deliberative process to establish an environment conducive to fostering innovation and creativity. The current standard Air Force squadron organization chart is not sufficient to facilitate this type of environment, and must be collaboratively modified at the squadron, group, and wing levels.

¹ Jasanoff, *The Oxford Handbook of Contextual Political Analysis*, ed. Robert E. Goodin and Charles Tilly, Oxford Handbooks of Political Science (Oxford: New York: Oxford University Press, 2006).

² Bureaucracies are inherently designed to resist change, promoting long term stability and standardization of processes. They are designed to maintain the status quo, having natural anti-bodies to disruption and rapid change.

³ Charles Q Brown, “CSAF Action Orders: To Accelerate Change Across the Air Force” (U.S. Air Force, n.d.), accessed September 4, 2021.

⁴ Brown.

Otherwise, the culture will not extend beyond a single command tour. Below, I lay out some leadership considerations that worked for my colleagues and me to create an organization that incorporated innovation and change into its daily battle rhythm. While assuredly not all-inclusive, these are some lessons to consider as one prepares to lead an organization in dire need of progressive change.

I was an Air Force squadron commander in charge of the men, women, and equipment of the 621st Contingency Response Support Squadron. The 621st mission is to open an airfield capable of landing giant aircraft just about anywhere in the world. Each mission was unique and required a collaborative team to succeed. The various contingency response squadrons across Air Mobility Command (AMC), Pacific Air Force (PACAF), and US Air Forces in Europe (USAFE) are charged with deploying an air base opening team within twelve hours of notification. They deploy anywhere in the world and open airfields in various conditions, ranging from dirt landing zones in uncertain environments to international airports damaged by a hurricane.⁵ Sometimes called a “base in a box” these teams must always be working to reduce their logistical footprint and improve their ability to operate with less people and increasingly challenging operating environments. A working airfield can mean the difference between life and death for people needing shelter, food, and water in disaster response.⁶ While the mission is straightforward, the operational conditions change for every mission. The country, terrain, climate, security threats, and airfield conditions are rarely the same.

⁵ Chris Cox did research into the contingency response mission and tied his research to consistently meeting stochastic deadlines. Two works that describe his findings are Christopher Cox, *The Deadline Effect: How to Work like It's the Last Minute--before the Last Minute* (Avid Reader Press, 2021); Christopher Cox, “The Productivity Secrets of the Air Force’s Disaster Gurus,” GQ, July 8, 2021, <https://www.gq.com/story/the-deadline-effect-excerpt>.

⁶ Christopher Cox, “The Productivity Secrets of the Air Force’s Disaster Gurus,” GQ, July 8, 2021, <https://www.gq.com/story/the-deadline-effect-excerpt>.

Almost everyone in the unit had different experience levels. Some deployed and opened austere dirt landing strips in war-torn countries. We had Airmen who deployed to Haiti for the 2010 Earthquake and subsequent 2015 hurricane. Some deployed to Western Africa during the 2014 Ebola outbreak. Others deployed to Puerto Rico in 2017 following Hurricane Irma. Many opened and closed airfields in Iraq, Afghanistan, and Saudi Arabia since September 11, 2001.⁷ This vast array of experience was precious but difficult to harness and consolidate into reliable tactics, techniques, and procedures. With over 30 Air Force specialties, the Contingency Response Wing (CRW) is a perfect organization for a culture of learning to thrive and could be an ideal unit to scale out innovations to other parts of the Air Force. We needed reliable processes to learn from each unique mission. Still, we also needed people to be able to take these experiences, critically analyze them, and apply them to fielding new equipment, technology, and procedures for future mission success. We needed men and women comfortable with change and who possessed the drive to improve and innovate constantly.

Establishing an innovative culture is not something one can do on the fly. It is a deliberative process that flourishes in an environment that incentivizes and rewards both hard work and creativity. Below are some of the ingredients for creating this highly sought innovative culture:

- Innovation starts at the top (with you)
- Reallocate obstinance
- Reward the innovative process as much as the successes
- Make it okay to fail forward with new ideas
- Understand how to spend the money
- Be the enabler, not the roadblock
- Establish a deliberate process for innovation

⁷ The unit also deployed to close Bagram and Kabul International Airport following the final withdrawal of American troops from Afghanistan in 2021. However, I already moved on from the unit.

Innovation starts at the top (with you). An innovative culture must first and foremost have the top leadership's prioritization, endorsement, and participation.⁸ Where is the top? As a US Air Force squadron commander, I am tempted to claim the top of my organization is the Secretary of Defense or the Chief of Staff of the Air Force (CSAF). As a mobility pilot, I might claim the top is the Air Mobility Command (AMC) leadership team. I could also say my Wing Commander or Group Commander is at the top of my organization. These answers are all technically correct due to the hierarchical nature of the military. Having the support at each level makes it easier for leaders at the lower level to instill a culture of innovation and creativity. However, to focus on factors within our sphere of control (as opposed to factors within our sphere of influence and sphere of interest), I want to concentrate on the most critical level of leadership, *the one you are in.*⁹ Whether you are a squadron commander or lead a five-person section as a young officer or non-commissioned officers, *you* are the most critical person for enabling a desired culture or environment in your workplace.

As a leader of an organization, you initially possess tremendous influence in establishing the operating environment and even slowly changing the culture over your tenure. This requires more than just throwing a few creative thinking posters on the wall of people with clipart of a lightbulb over someone's head. It is also more than simply laying out your goals on an elegantly bulleted PowerPoint during your first commander's call. Establishing a culture of innovation requires consistent messaging throughout your entire time in command. It may sound highly

⁸ Leadership being the key enabler can be found in an abundance of different sources, but I liked the way it is laid out in Steven Collins, "Five Ingredients for a Culture of Innovation," 16:00 600, <https://matter.health/posts/five-ingredients-for-a-culture-of-innovation/>.

⁹ I like looking at objectives in three spheres. First, things are within our sphere of control should receive the most effort because it can result in near term positive results. Second, spheres of influence are things you can shape, but ultimately not control. Depending on your percentage of influence in this process, big improvements can be made. Finally, spheres of interest are areas where staying informed is important, but your daily actions will most likely not drastically change the course of these events in the short term.

repetitive to you and those in your closest circle. Still, it is crucial to continue repeating your most important priorities so everyone you lead hears it from your mouth consistently. This includes the new Airman who arrives a year into your command tour. They need to hear it when they first arrive and again in their own work environment once they get settled into a new job.¹⁰ I mentioned the cheesy lightbulb posters above. How often have you looked on the walls of a place and realized you have walked past a similar sign or banner too many times to count and never paid attention to what it says? Now let's go one step farther: how many times have you looked up at that same poster and thought to yourself, "Wow, that poster has been here a long time. No one talks like that around here." I encountered that very example during my squadron command. In the warehouse where we kept all our expeditionary equipment, three giant banners were hanging from an upper catwalk that we never used. It had the phrases "Safety First" and "Safety is Paramount." in prominent bold Nebula and Hanover fonts, resurfacing a nostalgic 1990s vibe. I later confirmed my suspicions that the posters were hung in 1998! The signs were covered in dirt, mold, and spider webs. Even worse, it advertised something outside my core message and created communication dissonance.¹¹ Over the weekend, my family and I went into the warehouse and discreetly (and safely of course) removed the banners and replaced them with updated banners that reinforced relevant messages consistent with the environment I wanted to establish.¹²

¹⁰ Kotter talks about under-communication in his article. This is also a great baseline article for implementing change in an organization. John P Kotter, "Leading Change: Why Transformation Efforts Fail," *Leading Change*, no. May-June (n.d.): 14.

¹¹ For the record, I do think safety is a priority in all operations we do. However, it is not our *top* priority. I would say it ranks in the 3rd or 4th range. National security and armed conflict are a dangerous business and if safety was truly the top priority we would simply avoid dangerous things and stay home playing video games instead of mitigating risk to make inherently dangerous and deadly activities safer enough to repeatedly accomplish.

¹² Culture is about behaviors and the lexicon people employ provide insight into what behaviors are practiced, permitted, and praised.

Reallocate obstinance.¹³ Suppose a team member is not aligned with your priority to innovate and actively contribute to your leadership priorities. In that case, it may be time to find another position suitable to their skill set elsewhere in the organization. Let me elaborate. Everyone has worked with teammates who have acquired a passion and unwavering skill to approach every new idea or problem with resistance and skepticism. They are excessively disagreeable and pessimistic about any proposal for change. While skepticism in a diverse thinking team is important, resistance and skepticism are only the first steps in a long process of identifying challenges and then continuing to identify ways to overcome these challenges. Recognizing the challenges is the easy part of the process (crucial but easy). As a leader, you must quickly decide

- 1) How much time and energy will be required to mentor this individual and develop a mindset that positively contributes to the team's problem-solving process?
- 2) If the required mentorship is too great and will significantly detract from team objectives, how can I reallocate this individual and replace them with someone more suitable for the task?

When I first arrived as a squadron commander, I read our climate assessment report. The open comments section at the back of the report is pure gold for an incoming commander and speaks to the environment a new commander is walking into. In this report, multiple negative comments were directed at one of my senior non-commissioned officers (SNCO). For this example, let's call him Bill Smith.¹⁴ There were negative comments that stretched across several areas of concern. However, the climate assessment report highlighted Bill's obstinance and

¹³ I know the phrase more directly as "Fire early and often." It is phrase used in the past but seems to carry too much negative baggage that detracts from the intent of a more I believe is a more thoughtful, nuanced conversation.

¹⁴ The identity of the member will remain anonymous.

resistance to new ideas. Airmen in my squadron provided specific examples, and their words seemed to jump out of the page lunging at me as more of a last-ditch plea for help. Upon taking command, I sat down with all the senior leaders in the squadron, including Bill. Through several conversations with him over the first few weeks in the squadron, I confirmed the previous comments from the climate assessment. Bill worked very hard to earn his current rank; unfortunately, he reached a twilight point in his career. What was once a burning desire to improve his surroundings and his team had over time reduced to the small embers you see in a campfire before the night turns completely dark. Therefore, I helped facilitate his transition to a different job outside the squadron.¹⁵

The recommendation to reallocate people may seem harsh. Remember, it is merely one of many tools at your disposal as a commander. I do not advocate quickly giving up on people and have several counter examples that directly conflict with my actions in the story above. Your “to do” list will always exceed your time and energy available as a leader. Mentorship should absolutely be a priority but knowing how to maximize your time and energy to mentor in a way that reaps the most benefits to your other Airmen and your organization is crucial.¹⁶ A fellow commander and friend once told me, “You don’t get to choose the people you have on the bus, but you can and should put them in the right seats!”¹⁷

Reward the Innovative Process. Rewarding the innovative *process* is essential, not solely focusing on the results. While a plethora of innovative process models exist, your team must step through problem sets methodically, enabling them to explain the problem they seek to

¹⁵ Bill soon realized it was time to retire, and is now successful in his post-military career

¹⁶ Admittedly, this is a utilitarian approach to time management and productivity. While I don’t advocate for a strictly utilitarian perspective with everything, I find myself falling back on this approach with mentorship and work productivity.

¹⁷ Nathan Bump, Conversations with Nate, April 24, 2022.

solve, and how their innovative solution can achieve the desired results. Establishing a rewards system is essential to incentivize a continuous culture of innovation. For example, capturing your team's work in their performance report reinforces the importance. While the military cannot legally (under most conditions) award cash prizes, a unit can create awards focused on innovation. My squadron presented a monthly award for the best ideas. My wing also presented a quarterly innovation award. Furthermore, take the time to know what incentivizes your most creative Airmen. A bullet on a performance report or an award may not do the trick for some. Others prefer a day off or other quality of life incentives. Some are satisfied by recognition from their peers. There is no "one size fits all" solution to incentives. However, it is important to recognize both successful ideas that were eventually adopted and ideas that did not pan out.

It must be okay to fail forward with new ideas. I love the JK Rowling quote about the importance of failure, "It is impossible to live without failing at something unless you live so cautiously that you might as well not have lived at all – in which case, you fail by default." It was failed ideas that produced penicillin, the Dyson vacuum cleaner, the X-ray, Edison's light bulb, and Lincoln's political career. All are now everyday items we take for granted, but they spawned from multiple failed attempts along the way.¹⁸ Failure is a crucial part of the innovative process. It must be identified, learned from, and improved upon. Learning to fail and learning from mistakes early in one's career is a critical developmental step.¹⁹

I have an example of a spectacular failure I experienced as a new operations officer. In my unit, we used to track training and readiness requirements through a labor-intensive process that required manual data consolidation pulling from more than 20 different databases. These

¹⁸ Brandon Gaille, "Famous Failed Inventions That Lead to Success," *BrandonGaille.Com* (blog), April 16, 2013, <https://brandongaille.com/famousfailed-inventions-that-lead-to-success/>.

¹⁹ It is also important to establish the guidelines for failure. Failing forward with innovative new ideas is acceptable, but your team must also understand when operational failure is not encouraged.

databases were managed through variously awarded contracts over the years, and the data was proprietary and could not legally flow across systems.²⁰ A few of my Airmen came to me with an idea, explaining a new software app that could consolidate these items and be accessible on everyone's personal smartphone. I encouraged them to run with the idea, and they mapped out the entire problem, worked with the software developer to create a solution, and developed an implementation plan. We convinced my boss to use Wing money and pay \$28,000 to purchase this app and obtained the full support of the software development team to modify the app into what our unit needed. It proved to be a disaster! We could not merge the data, the user experience was poor, Airmen did not like it, and it made tracking our unit's training more complicated than our previous labor-intensive process. After a few months of pouring lots of sweat and time into working with the developers to modify the app into something to improve our tracking of training and readiness, we realized it was a futile effort. Our small beta test in the squadron resulted in nothing but critical feedback. It took more time than previous processes and showed little promise of improving. Therefore, we killed the project and chalked it up as a loss. Did we burn \$28,000 on a bad idea? Absolutely not. No one was injured and our team learned a lot.

A few months later, my Vice Wing Commander asked how the project was going. I explained that the project stalled out. Quickly bolting off to another meeting, before leaving, she asked me to follow up with an email providing more specifics to the project (and I perceived a disapproving annoyance with our failure). I felt a rush of dread, having to explain our epic failure. I eventually responded, explaining how the project failed. However, I completed the email with a list of all the valuable lessons we learned using the wing's money. She quickly

²⁰ I am definitely giving you the short version here so you don't fall asleep

responded, showing support and encouraging us to continue innovating and trying new ideas.

Two years later, our failure contributed to our Wing now being the lead test unit for an Air Force enterprise-wide project to fuse training and readiness data across multiple software platforms and developers.²¹ Several members who worked so hard on our first failed attempt were part of the team that is now changing how the Air Force looks at data management across programs.

Understand the money. In my opinion, the process for spending money within the Department of Defense does not incentivize fiscal responsibility or facilitate the most effective use of taxpayer dollars. I learned this hard lesson during the first month of command. My squadron returned a few hundred thousand dollars. We were well under our spending plan, and there was not enough time to process the larger contracts our squadron needed. I also could not justify spending the money, \$9,999 at a time on various minor things that could end up in the corner of a warehouse, never to be used.²² Instead of spending the money on big-screen TVs, office furniture, or any of the myriad of items DoD has been publicly ridiculed for in the past, I naively thought I would return the money and give it back to the taxpayers. That year, the money my squadron returned never made it to the taxpayers. It was used to purchase office furniture for another unit. It was used to purchase a fully robotic CPR trainer for dogs. As previously mentioned above, the process for spending money within government pressures commanders at every level to spend their allotted amount of funding. If a commander does not spend their money and chooses to give it back, the next leadership level will face the same pressure to spend their entire budget (including anything you may have returned). The system creates so much

²¹ I am not a computer scientist and probably misspoke of some of this. Feel free to lambast me in the comments. While I am sure this little project did not result in the Department of Defense changing how it does software contracts on a massive scale, the department is now drafting contracts to ensure we own the data and can migrate it across platforms.

²² Purchases under \$10,000 require a lot less paperwork and lead-time to process.

pressure to spend the money that it is unlikely to funnel back up to the top. Instead, someone will take your money and spend it on their pet projects, most likely projects that were lower priorities for other commanders. I was lucky to learn some valuable lessons early in command.

- Understand the budget process
- Start spending immediately due to long lead times for big contracts
- Have a plan to spend other unit's money if they fail to spend it
- Teach your Airmen how the process works early in their careers.
- Apply for money outside your normal budget to fund big innovation projects such as Small Business Innovation Research (SBIR) projects.
- Volunteer for beta programs through Air Force and DoD large-scale projects like AFWERX or Defense with Industry (DIUX).

Be an enabler, not a roadblock. This sounds intuitive, right? How does one know if they are facilitating the innovative process or merely espousing it in name only? I believe there is one effective litmus test. Do the people you lead approach you with ideas? If so, what do those ideas look like when your Airmen leave the office? Are they more inspired to improve their idea, or deflated because of the institutional obstacles you presented?

I recently visited the New York Fire Department (FDNY) headquarters with my war college class of 53 senior officers from various ally and partner nations around the globe. The FDNY's Chief of Training explained the difficulties his department was dealing with and how his department was unable to change and innovate to meet the city's existing and emerging needs. He explained that most organizations experience change through one of two ways: 1) a traumatic event that forces immediate change (such as the terrorist attacks on September 11, 2001) or 2) generational change through personnel replacement over time. He solicited my class to propose strategies or tactics that worked in our respective countries, desperately looking for some magic key that could work in his department. My classmates offered up several ideas. One by one, the fireman hopelessly rebutted and explained why each proposed strategy would be ineffective for the FDNY due to internal politics, economic pressure, the stubbornness of "other"

senior leadership, etc. I talked to him after his presentation, and his demeanor remained the same. He was spring-loaded with every reason in the book why something would NOT work. At that point, I realized the man had given up and was now guilty of being an enabler for change in name only. I circled back to his own acknowledged tools to implement change, traumatic events or generational change. Maybe it was time to speed up generational change, and open some senior leadership positions with people who were not jaded by experience and spring-loaded to say no?

Establish a process for innovation. Creative thinking is a process. It is not the same process for everyone, but there is a structure that helps facilitate taking a good idea, developing it, testing it, incorporating new technology into other processes, and then scaling it. If your unit has ample resources and personnel, consider carving out a dedicated section for innovation. Give them the training to help your entire unit develop new ideas. Alternatively, units with fewer personnel could assign the task as an additional duty to a couple of people passionate about innovation, with those duties falling under the direct supervision of unit leadership. A leader must ensure adequate time is allocated for focusing on innovation projects. Most wings in the Air Force now have an innovation lab and can help establish a process in your unit that aligns with your personnel numbers, resources, and priorities.

Disruption and innovation are a process—it doesn't happen overnight.²³ By equipping your team members with the tools and resources needed to explore and develop their innovative ideas, you can help your squadron or organization stay ahead of the curve and thrive in an environment where rapid change is necessary to meet current threats and defeat future adversaries.

²³ Matt Gavin, "How to Foster Innovation in the Workplace | HBS Online," Business Insights Blog, May 30, 2019, <https://online.hbs.edu/blog/post/how-to-foster-innovation-in-the-workplace>.