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The views and opinions expressed in this quarterly forum are those of the authors and do not necessarily reflect the official policy or position of the FAA, editor, or quarterly forum staff.

Upcoming Events

Do you know of an event that you would like us to share?
Send information to Janine King at janine.ctr.king@faa.gov.

Editor's Note: These events may have been cancelled or postponed due to the COVID-19 pandemic. Please consult the event website for confirmation before planning to attend these events.

MRO Americas

[Dallas, Texas \(September 1-3, 2020\)](#)

MRO Asia-Pacific

[Virtual Event \(September 22-24, 2020\)](#)

Aero-Engines Europe 2020

[Virtual Event \(September 16-17, 2020\)](#)



We're Taking Submissions

Want to share an article or experience in an issue of the FAA Aviation Mx HF Quarterly?

The Mx HF Quarterly is published every 3 months, beginning at the end of March. We welcome your articles related to aviation maintenance. Our great editorial team will review submissions to ensure that content and format meet the needs of our readers. Editorial feedback is subject to author approval prior to the publication.

Please include the following with your submission

- Short author biography (50-150 words)
- Photo of yourself for biography
- One-sentence summary of your article
- Images and/or graphics (with captions)
- Call-out quote(s)
- Takeaway message (what you hope the readers takeaway) from your article (not to exceed 100 words)

Send your submissions to Janine King at janine.ctr.king@faa.gov.

Author Appreciation

We, the editorial team, extend our gratitude to our readers and contributors for their continued support of this quarterly publication. Our contributors and authors are not primarily responsible for writing articles for this quarterly newsletter; however, their vast knowledge and understanding of issues impacting and relating to aviation maintenance substantially improve this publication.

If you are interested in providing suggestions or feedback concerning this publication, or would like to submit an article or notify us of an upcoming event, please email Janine King at janine.ctr.king@faa.gov or Dr. Bill Johnson at Bill-Dr.Johnson@faa.gov.

We look forward to not only new article submissions but to reviews and feedback from our readers.

We appreciate your input!

Six Guiding Principles for Sustaining an Effective Safety Culture During Economic Downturns

Dr. Marc Szezan

This article was originally published in Aircraft Maintenance Technology, November/December 2019 issue (pages 50-51) and is reprinted with permission of its editorial team. Access the article [here](#).

***“IF YOU THINK SAFETY IS
EXPENSIVE, TRY AN ACCIDENT.”***

Building and maintaining an effective safety culture is no easy feat in the best of times. Doing so during an economic downturn tends to be an even more challenging endeavor, even for the best-run businesses. This article suggests six guiding principles for sustaining an effective safety culture during tough economic times.

Clouds on the Horizon

Historically, the aviation industry has been characterized by boom-and-bust cycles. Fortunately, it is currently enjoying one of its longest growth phases. For example, the International Air Transport Association (IATA) forecasts that this year will be the

10th consecutive year of positive earnings for the airline industry. However, there are clouds on the horizon. In terms of global macro-economic performance, the International Monetary Fund (IMF) has warned of a synchronized slowdown across major economies of the world. Closer to home, there are a number of aviation industry-specific forward indicators, such as slowing demand and peaking aircraft orders that point to the risk of a looming downturn.

Sustaining an Effective Safety Culture

In light of these general macro-economic and industry-specific risks, aviation businesses would be well advised to prepare for a potential economic downturn. Leaders of aviation businesses need to ensure that the safety culture at the heart of any high caliber aviation operation will not fall victim to the realities of exacerbated financial and operational pressures that invariably come hand-in-hand with economic downturns. This article suggests six principles that can guide aviation leaders – and those of other safety-critical businesses for that matter – in their quest to protect an organization’s safety culture when having to make difficult trade-off and cost-management decisions.

Six Guiding Principles for Sustaining an Effective Safety Culture During Economic Downturns

1. Remember that safety is a foundational value!
2. Don’t be penny wise and pound foolish!
3. Not all “slack resources” are bad!
4. Do more with more, when appropriate!
5. Get signaling right!
6. Be alert to personal stress and duress!

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1. Remember that safety is a foundational value. In any organization, there are certain foundational values that define what the organization is all about. These defining values should be non-negotiable and should not be driven by financial cost-benefit calculations. For example, in the military, never leaving a buddy behind on the field of battle is a foundational value that is at the heart of the identity of any soldier and of unit cohesion. In aviation, the commitment to the safety of passengers, employees, suppliers and communities in which one operates is a defining value and part of the DNA of any

respectable aviation business and aviation professional. This foundational commitment to safety should not be subject to purported cost-benefit, return-on-investment or business case considerations, especially in the context of cost-cutting initiatives during economic downturns.

2. Don't be penny wise and pound foolish. As stated above, the commitment to safety should be part of the DNA of any aviation business. As a foundational value, it should be non-negotiable and not fall victim to considerations of financial optimization. At the same time, it is worthwhile to remember the old adage "If you think safety is expensive, try an accident". Often, investments into a positive safety culture and the corresponding technical, organizational and human resources are relatively minor. Usually, they are much lower than the direct and indirect costs – moral, reputational, financial and otherwise – of serious incidents, let alone accidents involving loss of human life that can result in the need to re-design products that had been brought to market prematurely without sufficient consideration of safety-relevant details.

3. Not all "slack resources" are bad. When assessing cost-cutting opportunities, aviation leaders ought to stay clear of "penny wise and pound foolish" traps and pursue sustainable cost-management strategies. One of the most straightforward and therefore most tempting approaches to cost-cutting is getting rid of "slack resources". However, before enthusiastically cutting the apparent excess of a particular resource, aviation businesses should keep in mind that appropriately calibrated "slack resources" can enhance organizational resilience and allow to buffer shocks. As much as one would not operate a flight without any alternate or contingency fuel, "slack resources" can provide the extra margin that allows an organization to get safely through a crisis or unforeseen circumstances. In the end, the merit of not minimizing fuel reserves to zero and not reducing resources to the point of incurring single failure modes should be obvious for any aviation professional.

4. Do more with more, when appropriate. In the context of navigating safety management challenges

during an economic downturn, protecting "slack resources" can be a necessary, but by no means sufficient, approach to cost management. Adding to one's cost basis during a downturn certainly seems counter intuitive. However, in the case of quality and safety management functions, adding rather than maintaining – let alone reducing – resources can be a recommended course of action. After all, tighter financial and operational constraints during a downturn can exacerbate organizational stresses. It should be no surprise that regulatory authorities often intensify their monitoring of aviation businesses exactly during these times. Doing adequate justice to internal organizational dynamics and stresses and to intensified regulatory supervision can generate significantly higher workloads in the areas of quality and safety management. Aviation businesses might be well-advised to increase resourcing of these critical functions during times of cost-cutting pressures.

5. Get signaling right. Credible commitment to a positive safety culture is as much a function of adequate resourcing as of effective signaling on the part of a business' leadership team, vis-à-vis its workforce. Getting this right in ordinary circumstances is not a trivial undertaking in the first place (see my article "Four Ways to Champion a Positive Safety and Quality Culture" in the *Aircraft Maintenance Technology* June/July 2018 issue). In tough economic circumstances characterized by difficult and often painful trade-off decisions, effective signaling becomes even more important. One of the easiest ways of negative signaling with respect to the importance of safety is an undifferentiated approach to cost management. Across-the-board cost-cutting such as a 10 percent reduction of all budget line items regardless of implications for safety above and beyond the direct budgets for quality and safety management functions fails to signal priorities such as protecting an organization's safety culture. It is likely to send the wrong message.

6. Be alert to personal stress and duress. In addition to the organizational stresses mentioned above, more often than not, economic downturns tend to generate significant personal stress and possibly

even duress. Even some of the best managed aviation businesses end up reducing their workforce during prolonged economic downturns. And even if a given aviation business successfully avoids workforce reductions, the spouses, partners or other family members of its employees might well be subject to occupational uncertainty and the associated stress at their own workplace. Aviation businesses would well be advised to watch out for early signs of workforce stress and duress and adjust their resource base and human factors programs accordingly.

Conclusion

Building and maintaining an effective safety culture is a significant leadership endeavor in its own right in

the best of times. In light of current general macro-economic and aviation industry-specific risks, aviation businesses should prepare for a potential downturn. This article suggests six guiding principles for sustaining an effective safety culture during tough economic times and for navigating cost management challenges. These six guiding principles are intended to help aviation business leaders to cut costs where necessary and appropriate without cutting corners.

TAKEAWAY MESSAGE

Building and maintaining an effective safety culture is no easy undertaking in the best of times. Doing so during an economic downturn tends to be an even more challenging endeavor, even for the best-run businesses. However, there are some guiding principles that aviation and other safety-critical businesses would be well advised to keep in mind in order to sustain an effective safety culture while facing cost management pressures.

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Competing Priorities and Their Effect on Timeline Management in the USAF

MSgt George Dunseath

When we hear bosses loosely toss the term “priority” around in staff meetings or public lectures, I sometimes envision an intense conversation between actor Adam West as the hard-charging detective Batman and his counterpart Commissioner Gordon. Most noticeably throughout the intense scene is none other than the infamous red Bat Phone, to be used only for the most drastic of circumstances. On the priority scale of 1-10, calls transmitted to this device would only merit a resounding “the sky is falling” 10.

Although not as dramatic as the iconic 1960’s Detective Comics Caped Crusader, information communicated amongst senior leaders of the United States Air Force (USAF) to lower-level Airmen sometimes misrepresents the level of urgency of the task. Make no mistake about it, when a commander gives his/her order (especially in a closed/small setting) and prefaces it with “make this a priority”, mountains will move to meet the order, regardless of their rationale. Short of acting through injustice or misconduct, military members serve to ensure those orders are carried out to the end, most times dropping their current focus to meet the boss’s intent. That being said, what happens when a plethora of orders (sometimes from different bosses) warrants a Bat Phone call? What happens when everything is the priority, and what are trickle effects of previous priorities going on the backburner? An example of this would be departing a weekly leadership meeting where the distribution of competing priorities from multiple levels with the organizational structure of the USAF complicates what should be given immediate attention for fix-action.

To make the end state of such meetings more attainable, I sought out a newsletter authored by New York Times bestseller James Clear from jamesclear.com. Here, he quotes former President Dwight D. Eisenhower when he stated, “What is important is seldom urgent and what is urgent seldom is important”. Initially, this notion can seem

over-simplistic. However, maybe this type of approach is exactly what is needed when task completion in the most expeditious of manners is the ultimate goal.

In the USAF, there is a well-known metaphor that you should take care of the alligator that is closest to the boat first, before contemplating fix-actions of perhaps “bigger” alligators that are sure to demand more interest and attention later, not in the immediate moment. This demonstrates the importance of effective time management -- keeping your focus on what has potential to doom your immediate existence, while at the same time remaining conscious of future threats. What would happen if attention was not appropriately distributed, but rather every office task was given maximum attention? What would happen if leaders deemed everything a high priority? What, then, becomes the true priority?

To help with the above instances, we turn to the Eisenhower Box (jamesclear.com/eisenhower-box), a two-dimensional visual that guides users towards prioritization tactics to better manage time and task allocation (see Figure 1).

Use of the Eisenhower Box helps identify what our priorities are and keeps us “time on target” with deadlines. An example of this would be when a new “shiny object” task is revealed, leaders can use this model to plan for the new task and to gain member buy-in without letting current tasks fall to the wayside. This is important because once members understand “the why”, the more prone they are to distribute concerted effort within the tasks. This also prevents acting on impulse and promotes organized management techniques. This sounds and looks great, but does it work? Although it may seem simplistic in nature and application, it absolutely works!

THE EISENHOWER BOX

	URGENT	NOT URGENT
IMPORTANT	DO <i>Do it now.</i> Write article for today.	DECIDE <i>Schedule a time to do it.</i> Exercising. Calling family and friends. Researching articles. Long-term biz strategy.
NOT IMPORTANT	DELEGATE <i>Who can do it for you?</i> Scheduling interviews. Booking flights. Approving comments. Answering certain emails. Sharing articles.	DELETE <i>Eliminate it.</i> Watching television. Checking social media. Sorting through junk mail.

*"What is important is seldom urgent and what is urgent is seldom important."
 -Dwight Eisenhower, 34th President of the United States*

Figure 1. The Eisenhower Box, James Clear.

The world as we know it can be unforgiving at times, leaving leaders with uncertainty and gray areas when it comes to making decisions and re-allocating tasks. To keep time on target, USAF leaders constantly re-gauge tasks in an effort to prioritize and meet deadlines. This ability to be flexible (flexibility is the key to airpower!) and not act impulsively is a character trait our leaders exhibit innately. Overall, no matter the circumstance or how pertinent a task may grow to become, perhaps the most important thing is to communicate the immediate challenges along with clear expectations and maximize recognition of moments when priorities are dialed in via Bat Phone. After all, priorities, like people, are as important as leaders make them.

TAKEAWAY MESSAGE

Priorities, like people, are as important as leaders make them.

MSgt George "Jorge" Dunseath has been serving as a Master Sergeant in the United States Air Force stationed at Tinker Air Force Base in Oklahoma City, Oklahoma. There, he assists within the 552 Air Control Wing's Inspector General Office. He has 19 years of proud service.



Doing More with Less

MSgt Steven Fleming

MSgt Steven Fleming manages the US Air Force Wings self-assessment program for over four thousand personnel. His primary responsibilities include working with commanders to show them how to honestly self-assess their units, document their results, and use those results to gain additional resources.

Since I can remember joining the Air Force, I have heard the saying “do more with less”. What exactly does this mean? I will start by describing some of the benefits (in my opinion) of doing more with less, how to identify the point of diminishing return, and how to recover once that point has been passed.

Benefit of Doing More With Less

Organizations and leaders have priorities. A common issue facing employees is not knowing where each employee falls in the priority chain for leadership. Organizational tasks which are higher on the priority list will normally receive resources ahead of lower priority tasks. However, all employees still have a job to do, regardless of how many (or how few) resources are available. Not only do paychecks depend on work being completed, but the lives of other employees are also at risk.

Subject matter experts are considered such for many reasons, one key reason being to pass developed skillsets onto other employees. When leaders are placed in charge of a flight, work center, or even themselves, it is critical to think about training the person that will eventually take over leadership responsibilities. However, as more time is spent developing others, individual performance suffers due to the lack of being able to personally complete tasks. Therefore, expert leaders must identify the right balance of training new employees while still producing equal quality work without receiving additional resources to help.

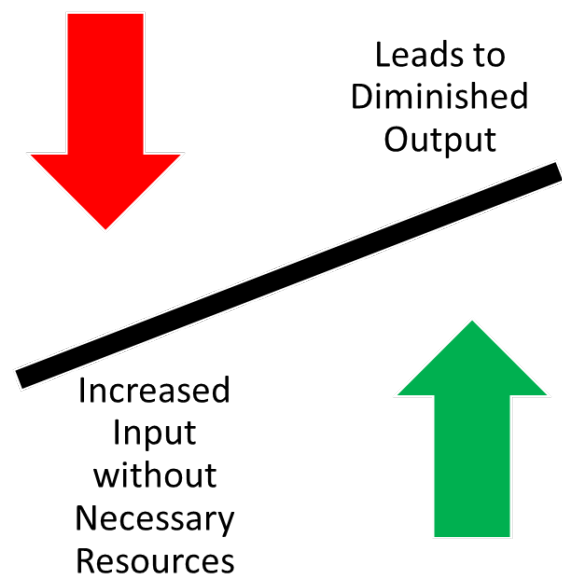
At least once in our career, we will experience being tasked to do more with less. When that happens, we

need to avoid the pitfalls associated with the law of diminishing returns.

Law of Diminishing Return

According to [Britannica.com](https://www.britannica.com), the law of diminishing return is an “economic law stating that if one input in the production of a commodity is increased while all other inputs are held fixed, a point will eventually be reached at which additions of the input yield progressively smaller, or diminishing, increases in output”. In other words, we can continue to work harder, but if we do not receive more resources, eventually our output or quality of work will decrease.

The key questions now are: how to identify when that is happening, and is there anything to do about it.



What To Look For

There are many ways to identify when we are being tasked to do more with less. Sometimes leadership will say it clearly and directly, while other times we have to look at measurable data. One easily identifiable data point to look for is a decline in successful workplace evaluations. If we notice a

decline in the results of those evaluations, we could be facing diminished return on our inputs. In lieu of workplace evaluations, a good supervisor should be able to identify shortfalls through personnel evaluations. Be honest with yourself and decide if you really can raise that productivity. And if you cannot, be honest with your leadership and explain the entire situation.

Employees should not only look within themselves to identify negative trends; sometimes information is shared within peer groups or other informal means. If a supervisor were to sit around enough smoke pits or hang around enough vending machines, it would be obvious to hear what trends individuals are discussing. In my experience as a wing self-assessment program manager, there is a difference between complaining and genuinely having a problem that needs to be solved. To detect what's genuine, it's important to pay attention to the discussions, find repeated themes, and try to understand the bigger picture. Once negative trends have been identified, there is a good chance that work production is approaching diminishing returns.

What To Do About It

After diminishing returns have been identified, it should be addressed expediently. Employees need to be honest and ask ourselves a few questions like:

1. **Is there a constant struggle to maintain the current output of work?** Or, are employees simply tired and upset they are not being helped? When simply tired, a tactical nap would be beneficial. Sometimes, just five minutes of quiet will do wonders for a person's mindset and help reset themselves. If more resources are needed, document requirements and immediately notify the leadership chain.
2. **Has feedback been asked for?** If asked for, has it been given? Excellent leadership should share constant feedback with employees, but not all leaders are excellent. Employees are also responsible for requesting feedback. Send an email, a text message, or leave a voice message to request a 30 minute session with a supervisor or other leadership figure to explain concerns.

3. **Has the team tried to be creative and innovative already?** Have they looked into processes that could reduce our workload? If not, ask if the company has a Six Sigma representative, or some other sort of continuous process improvement manager. If there is not a manager already, research how to gain your own certifications and create a process improvement event.
4. **Is something else missing?**

As a final effort, all employees must honestly self-assess their situation and share accurate and documented evidence with leadership the barriers to excelling to the next level of production without attaining additional resources.

***"IF USED APPROPRIATELY, DOING
MORE WITH LESS CAN BE
EXTREMELY BENEFICIAL."***

Whether additional resources are attainable or not, all employees need to self-assess and determine improvement processes to keep productivity high. You may be wondering how to do that. One popular method used to improve processes is made from Six Sigma tools. According to 6sigma.us, "Six Sigma aims to... increase the profits by getting rid of the variability, defects, and the waste...." Later, it also says, "advantages of Lean Six Sigma is that it will give customer satisfaction with speed and quality, improve processes...." With this process, you are the customer and you need to improve processes by identifying and correcting gaps. Try to be creative and innovative with your solutions as you go through the process; remember that you may not get any extra resources. Utilizing the tools identified with Six Sigma can help identify and implement ways to reduce waste.

It should be noted that if used appropriately, doing more with less can be extremely beneficial. We can use it to drive ourselves to step back and look at the entire picture, and sometimes force individuals to get creative with key processes, ultimately boosting

morale. As my good friend Jorge Dunseath always says, “High morale in the unit means high productivity.”

For information on improving processes within your work environment, please search for benefits of Six

Sigma, how those processes can benefit your organization, and how to gain individual certifications <https://www.6sigma.us/>.

TAKEAWAY MESSAGE

Doing more with less is highly beneficial if used appropriately. For the best results, organizations should encourage employee honesty and creativity to improve productivity, and ultimately boost morale.

MSgt Steven Fleming has been serving the United States Air Force for almost 17 years. Currently, he is assigned to the Wing Inspector General Inspections Office at Tinker Air Force Base in Oklahoma. Throughout his career, he has been to multiple locations across the world and has been certified to lead maintenance efforts on C-130's, F-16's, KC-135's and AWACS aircraft.



The Charles Taylor Master Mechanic Award: An Example of Positive Feedback

Dr. Bill Johnson

FAA Taylor Award

Earlier this year (reported in the [March Issue](#) of the FAA Aviation Mx Human Factors Quarterly), I was named an FAA Charles Taylor “Master Mechanic.” I gratefully acknowledged the honor. It is an accolade that is complementary to the International Federation of Airworthiness (IFA) Sir Francis Whittle Safety Award (<https://ifairworthy.com/awards/>), which I received in 2011. Since I have always been more interested in powerplants than airframes, I am appreciative and proud to have these reminders of two powerplant heroes. Charles Taylor helped the Wright brothers to fly the first aircraft with power. Sir Francis Whittle, with the first jet engine, helped make the aircraft fly faster, higher, farther, and more reliably. Both accomplishments impacted the world.

I received the Taylor Award at the FAA 24th Annual South Western Regional Maintenance Safety Symposium. Mr. Jay Hiles, the Southwest FAA Flight Standards Office Manager, presented the award. Mr. Hiles said, “Typically, the Taylor award goes to outstanding certificated mechanics who have been maintaining aircraft for 50 plus years. However, on this occasion the award is being presented to a certificated mechanic who has been maintaining mechanics, with training services and products, for 50 years. That counts!” Coincidentally, I had just delivered the conference keynote address where I

summarized five decades of significant accidents and incidents involving attention to maintenance and/or human factors.

Importance of Positive Feedback

Accolades like the FAA Charles Taylor Master Mechanic Award or the IFA Whittle Safety Award are excellent examples of significant positive feedback for aviation mechanics/engineers. Awards like these help aviation mechanics appreciate their roots, their technical heritage, and the importance of their dutiful, safety-minded work. No one works in aviation maintenance to seek accolades or awards. They do it because they like the work and find personal and professional satisfaction in the critical responsibility of being part of aviation safety. Self-satisfaction and pride in work is important. However, external positive acknowledgement of good, conscientious work goes a long way in boosting morale and maintaining focus. Such feedback is important to all ranks of the organization. Everyone thrives on positive feedback - from new mechanics who just completed the FAA practical exam to senior guys, like me.

Our self-quarantining during the COVID-19 pandemic has prompted a national conversation about taking advantage of opportunities to share heartfelt words with family, friends, and colleagues. Don’t wait for a



Figure 1. Photo of Dr. Bill Johnson (left). Dr. Johnson accepting the Taylor Award (right).

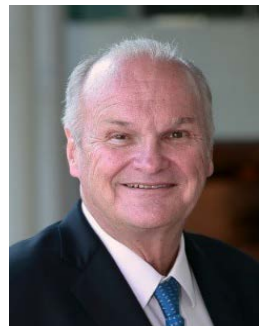
life-saving event to extend positive feedback. Don't wait for a mechanic to change an engine in record time before commending great, conscientious, safety-minded work. Our work is full of daily, safety-critical activities that surely benefit from an occasional "job well done." So take a moment to give positive feedback to a dutiful colleague doing excellent work to promote aviation safety. Congratulation to you, when you do that!

Finally, help to recognize long-term commitment to aviation safety by contacting a regional FAA Aviation Safety Inspector to start the process of acknowledgement of pilots or mechanics who have held their certificates for 50 years.

TAKEAWAY MESSAGE

Positive acknowledgement of good work, whether through formal accolades or the occasional "job well done," boosts morale. Don't wait for the big events to commend great, conscientious work. Our work is full of daily, safety-critical activities that deserve recognition – so give positive feedback to dutiful colleagues and recognize them for doing excellent, safe work.

Dr. Bill Johnson, a frequent contributor to this newsletter, is the FAA Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems. His comments are based on nearly 50 years of combined experience as a pilot, mechanic, airline engineering and MRO consultant, a professor, and an FAA scientific executive.



Other HF Resources and Links

Click the icon for more information

Follow Procedures: The Buck Stops with Me



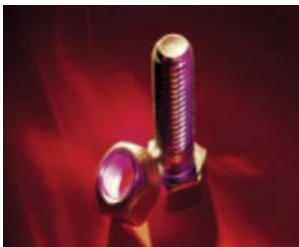
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