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# FAA Aviation Mx

## HUMAN FACTORS Quarterly



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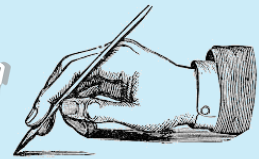


### INSIDE THIS ISSUE:

<b>Authors of this Newsletter</b>	<b>2</b>
<b>New Workforce Report Highlights Growing Mechanic Deficit, Proposes Action</b>	<b>3</b>
<b>The Tire</b>	<b>4</b>
<b>Five Leadership Attributes to Encourage Workforce Assertiveness in Safety-Critical Businesses</b>	<b>6</b>
<b>Changing the Culture of Following Procedures: Start Here</b>	<b>8</b>
<b>Bill Johnson Comments on FSF-Airbus Human Factors Award</b>	<b>11</b>
<b>Author Appreciation/Upcoming Events</b>	<b>12</b>



# Authors of this Newsletter



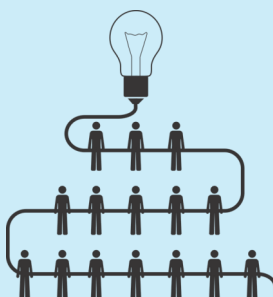
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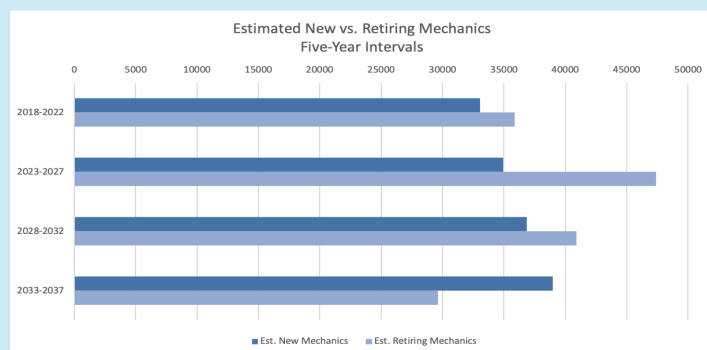


## New Workforce Report Highlights Growing Mechanic Deficit, Proposes Action

Crystal Maguire

Each year the Aviation Technician Education Council (ATEC) releases The Pipeline Report, a compilation of data gathered through a survey of aviation maintenance technician schools (AMTS) and FAA and Department of Education databases. The purpose of the report is to identify workforce trends and propose some solutions to help meet the growing workforce demand.

The 2018 report reinforced previous findings: mechanics are retiring faster than they are being replaced. ATEC's model projects that the mechanic population will decrease 5% in the next 15 years. New entrants make up 2% of the population annually, while 30% of the workforce is at or near retirement age. Meanwhile, forecasts by the U.S. government and Boeing project a need for thousands of additional mechanics in the next 10-20 years. ATEC estimates that AMTS will need to increase production by 30% in the next 20 years to meet the anticipated demand.



**Figure 1. Estimated New vs. Retiring Mechanics in Five-Year Intervals**

Schools have the capacity to help close the gap. Right now, only about 1 in 2 seats in technical schools are taken, meaning that today, an additional 17,000 students can be accommodated without any school expansion. While institutions are ramping up recruitment activities and expect enrollment to increase, there is significant opportunity for industry employers to help define career paths and attract more students into the pipeline.

The report identifies some of the top challenges for AMTS to increase enrollment. Survey respondents indicated that the number one barrier to increasing enrollments was the ability to hire and maintain qualified instructors. AMTS also report that the biggest hurdle for recruiting students into aviation programs is negative perceptions and a lack of awareness about careers in aviation maintenance.

There is also good news to report.

In 2017, the number of students choosing non-aviation jobs over their aviation counterpart dropped by nearly half over

the previous year. In addition, 70% of A&P students are taking the FAA mechanic exam upon graduation, a 10-point increase over the previous two years. ATEC attributes the improvements, at least in part, to a reported increase in education-industry partnerships.

Eighty-seven percent of participating schools said they expect enrollment to increase next year, by an average of 50%. The optimism has markedly increased since the 2015 survey, when only 55% of respondents shared that same expectation.

So, what can we do to help make those numbers a reality?

ATEC survey results support the common assertion that industry-education initiatives are one of the best recruitment tools for careers in maintenance. The trade association will therefore continue to support development of strategic partnerships.

In 2019, ATEC will hold its third employer expo in conjunction with the annual conference, newly dubbed the Employer Link (which for the first time will also include a student career fair). The purpose of the event is for recruiters and workforce development personnel to network with AMTS instructors and administrators and forge new relationships. The networking event supplements an annual conference agenda chock-full of best practices, tools, and resources to support industry-education partnerships.

Given the challenges facing AMTS' ability to recruit new aviators into the field, and the increased collaborations between educational and industry, ATEC believes the time is ripe for a national effort to support recruitment efforts.

ATEC is facilitating a new industry-led initiative, Choose Aerospace. The campaign is a partnership of aerospace stakeholders joined together to address one of the biggest threats to continued industry growth: the availability of a diverse, qualified technical workforce.

The initiative aims to unite companies, associations, labor unions, and educational institutions; to spur interest in aerospace careers; and to identify and implement solutions to the aerospace workforce shortage. Get involved by visiting [www.chooseaerospace.org](http://www.chooseaerospace.org).

To read the full 2018 Pipeline Report, visit [www.atec-amt.org/pipeline-report.html](http://www.atec-amt.org/pipeline-report.html).

**About ATEC:** ATEC is a partnership of aviation maintenance training schools and employers. The council is dedicated to promoting and supporting technician education through its communications, advocacy programs and networking events.



## The Tire

Svetlana Bunjevac

How often do you look back on your time and reflect on what you have done that has really made a difference, or that someone really appreciated? Perhaps there are specific instances that come to mind, and that others would remember too. In this article, **Svetlana (Ceca) Bunjevac** recalls one such event and asks whether we should take more time to reflect and discuss when a colleague on the ground or in the air has said, “thank you” and really meant it.

### KEY POINTS

1. Repetition of the training methods that are used to develop competencies will give similar results.
2. This is reliable to maintain the required competencies but not sufficient to grow expertise.
3. No amount of regulation will compensate for a lack of critical thinking.
4. The purpose of lifelong professional training for aviation staff is to cultivate critical and creative thinking.



It is early afternoon in the true South Balkan type of summer. A Boeing 737 is at the line up for RWY 16 ready to roll: “Cleared for take-off, wind calm”. And off it goes. A very long roll, fortunately still within the available runway length. But not all seems quite right.

I’m not sure if it’s the hot air dancing above the tarmac or a small part of the tire from one of the wheels that I saw flickering in that radiating heat. Was it anything at all? The crew is quiet; they seem content with their take off. Should I send the car to check the runway? Should I say something to the crew? What would you do?

Less patient back then, I spoke: “ABC123 it seems that a part of one of your gears got detached. Am unsure about this and am sending a car to check the runway for the debris. Will get back to you.” The car went for the check and found nothing. There were some skid marks on the

tarmac, but that’s not unusual in that type of heat.

There was no physical proof to support the transmission I just made. What would you say to the crew now? And what are the potential outcomes?

### Option 1:

*“We found nothing on the runway. Contact 123.4 and have a safe flight.”*

Potential Outcomes:

- The aircraft continued, it is missing a part of the tire, and crash-lands at the destination.
- The aircraft lands safely without incident.

### Option 2:

*“We found nothing on the runway, but the gear part could still be somewhere on the side.”*

*“Roger.”*

*“Contact 123.4 and have a safe flight.”*

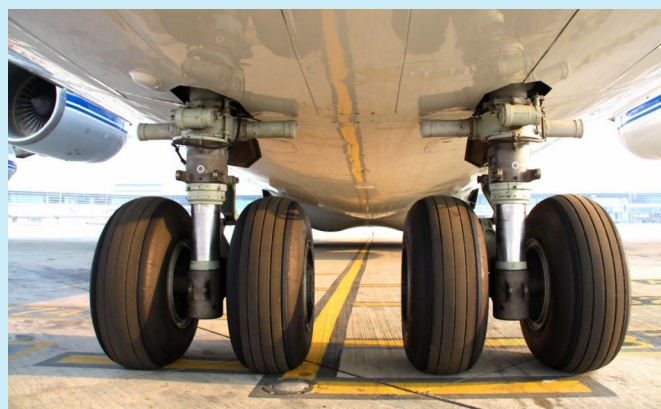
Potential Outcomes:

- The pilot declares and performs an emergency landing. The crew was ready to act— a hard but safe landing.
- The pilot does not declare an emergency landing. The aircraft crash-lands at the destination.

### Which one is it?

The road to getting above the ‘thin red line’ of competence is detailed in various places, including:

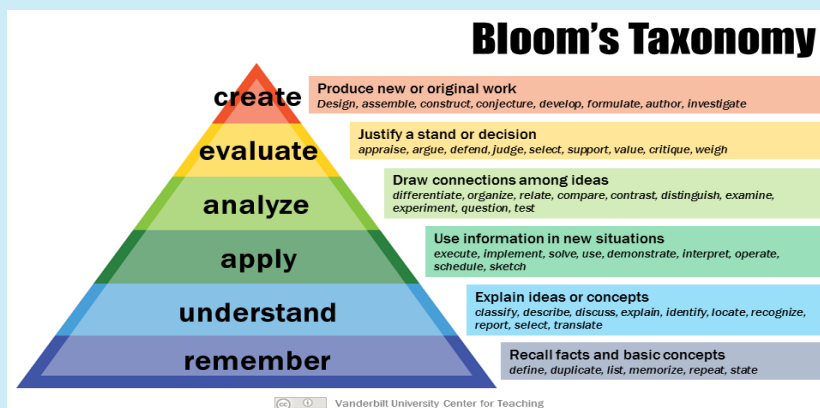
- Common Core Content document
- Unit Training Plan
- Unit Competence Scheme
- Operational Manual
- International Civil Aviation Organization (ICAO) 10 Competences





Continued from p. 4

It all starts with good recruitment and selection, and classroom- and objective-based training levels. Common Core Content Levels 0, 1, 2 and 3 (page 20, paragraph 6.5.2) take you through the theory and basic applications to the simulators. Objective levels 3, 4, and 5 take you through the job simulations to the on the job competencies. Research shows that the six levels of learning are arranged hierarchically by the level of mental complexity involved (Anderson et al., 2001, Bloom et al., 1956). Then ICAO's 10 competencies take over, providing a description of ATCO competencies (ICAO Doc 10056, Appendix B to Chapter 2).



**Figure 1. Bloom's (2001) revised taxonomy. (Vanderbilt University Center for Teaching CC BY 2.0)**

Once we get there, the aim is to remain competent – but how? The answer is by providing good classroom training, simulator refresher training, e-learning and assessments to fortify what we have and need, then repeat. By repeating the classroom-simulator-assessment cycle, the big five levels below are accounted for. However, the 'create' tier (see Figure 1) is missing. If we want to go higher we need a 'breakthrough' – a different approach and recognition of the developmental nature of competence.

No amount of regulation will compensate for a lack of critical thinking. The ultimate purpose of lifelong professional training for aviation staff is to cultivate critical and creative thinking, or the ability to evaluate that no procedure, rule, or regulation exists for that one situation, and create a safe yet new solution, on the spot. Competence is having ready-made solutions for clear-cut problems and emergencies. More so, it is about creating solutions when one is not readily available. Expertise involves recognising the danger of relying only on prescribed procedures.

Using facilitation in peer-to-peer learning events provides controllers with the opportunity to achieve the highest levels of mastery: analysis, evaluation, and most importantly, creation in the continuation training stage.

This is a very powerful way of unlocking capacity for creation and exchange of experience. Team Resource Management (TRM) introduced the method of facilitation into our learning structures many years ago, although through very small doors at times. But it is here. Our Spanish colleagues and ENAIRE have 150 facilitators today and are spreading this way of assisted learning and exchange throughout the 10 ATCO competencies. Of course, simulations and classrooms remain. The additional element is sharing and learning from the unwritten case studies that everyone carries with them.

What happened with my B737, though?

*"I think you lost a part of the wheel",* I said. While it felt uncomfortable, as a young controller, the heavy feeling didn't last long. I got a phone call about an hour after take-off. It was the captain, and I have kept these words in my head for the last 29 years:

*"One of our wheels was incomplete but we are all safe and the plane can be used again. Thank you."*

The pilot declared and performed an emergency landing. The crew was ready to act— a hard but safe landing.

In our work, significant events happen that do not always find their way to 'breaking news', but they can make their way into our continuation training content. Support for the growth of expertise requires more than presentations, e-learning, and simulations of known scenarios. It needs exposure to the unknown, and not solely while in the working position. One possibility might be to share with others our experiences with unknown situations. There ought to be more possibilities, though. Can we put our heads together to support the growth of expertise and critical and creative thinking, creating more engaging continuation training events? That is my wish.

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## Five Leadership Attributes to Encourage Workforce Assertiveness in Safety-Critical Businesses

Marc Szezan

An engaged and assertive workforce that is well positioned to identify and empowered to report safety risks is a foundational building block of any successful safety management system. The propensity to openly report safety risks upward along the chain of command, in turn, often is a function of the caliber of the leader to whom a rank-and-file employee would need to direct such report. Aviation and other safety-critical businesses are well advised to be very deliberate about selecting leaders with the right types of attributes that encourage free flow of safety-relevant information. This article discusses five attributes that leaders of safety-critical businesses should possess in order to encourage workforce assertiveness.

### Leadership Matters

A well-designed and effective operating system is a *sine qua non* for any aviation maintenance organization or for that matter for any other safety-critical business. However, even world class organizations are often characterized by significant performance differentials across different units. Often, this variance is particularly evident in the areas of quality and safety management. Whereas one organizational unit excels at learning from errors and putting in place appropriate corrective and preventive measures, another organizational unit falls short of even reporting that an error with potentially grave consequences has occurred in the first place. More often than not, it is differences in quality of leadership rather than technical or organizational deficiencies that account for these organizational performance differentials. In short, leadership matters greatly even in well-designed organizations! Hence, selection of the right type of leader who possesses the right type of leadership attributes that encourage identification and reporting of safety-relevant information is crucially important for any aviation business.

### The Five Cs

What then are leadership attributes that maximize the probability that rank-and-file employees of a safety-critical business would feel comfortable to approach a particular leader regarding safety risks? I suggest five attributes – the **Five Cs** – that such leader should possess:

Commitment, Compassion, Competence, Capacity, and Courage.

### Five Cs: Attributes for Leaders of Safety-Critical Businesses



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**Commitment:** A non-punitive culture should be at the core of the safety management system of any well-managed safety-critical business. This type of organizational culture, however, needs to be as much tangible operational reality as abstract philosophical principle. The core challenge then is to operationalize a non-punitive culture in daily words and especially deeds by the leadership team. Rank-and-file employees need to have the assurance that safety relevant issues, particularly those that causally involve themselves, can be reported without having to fear adverse personal consequences. Leaders who embody this commitment to a non-punitive culture are likely to find their teams to be much more assertive with regards to safety risks than leaders who fall short of this basic attribute. Ask yourself: Would you be more or less comfortable to report safety issues to a boss who has a track record of being committed to a non-punitive culture?

**Compassion:** Even in the best of non-punitive cultures in which the messenger of bad news does not get shot in terms of long-term career consequences, sometimes being the messenger can result in considerable on-the-spot public embarrassment. Freely reporting a work error that caused or has the potential to cause a safety issue usually is not easy for any employee, rank-and-file and executive alike. It is even harder when it involves actions





*Continued from p. 6*

taken by the reporting party. It is hardest when the reporting party gets publicly chewed out or ridiculed on the spot. Public embarrassment is an experience that is likely to have an adverse impact on employee assertiveness in almost any culture. It can have particularly detrimental effects in cultures that put a premium on saving face as commonly found in, for example, many Asian countries. Aviation leaders who respond to self-reporting “sinners” with compassion rather than public on-the-spot castigation are more likely to encourage reporting of safety issues. Ask yourself: After having honestly confessed a screw-up to your boss would you rather have a pat on the back for reporting the screw-up in the first place or a public dressing down?

**Competence:** More often than not, aviation safety involves informed judgment regarding highly complex technical issues. In general, a leader of a technical aviation business cannot fairly be expected to know every technical detail in greater depth than the domain experts on the hangar or shop floor or in the engineering office. Similarly, a (senior) leader of a technical aviation business does not necessarily need to boast a prior shop or hangar floor background or an advanced degree in an aviation-related engineering discipline. However, it is fair to expect that an aviation business leader has acquired technical competence and maintains currency at a level sufficient for understanding the technical causes and operational ramifications of a safety issue that is addressed by the rank-and-file workforce. In short, appropriate technical competence – and not only general management skills – is a key attribute of any credible aviation leader. Ask yourself: Would it be easier for a rank-and-file employee to flag a safety issue to a technically competent boss or to a card-carrying member of the club of aviation technology ignoramuses who just doesn’t get it?

**Capacity:** Most aviation businesses operate in a highly dynamic environment that moves at high clock speed during normal operations and at frantic speed during operational disruptions. This highly demanding operational tempo demands much of aviation leaders and rank-and-file employees in the best of times and requires tremendous bandwidth during crunch time. Good aviation leaders distinguish themselves by virtue of the ability to

manage multiple complex issues in parallel and to maintain spare capacity for handling possible safety issues that, in accordance with Murphy’s law, tend to come up during the most inopportune of times. They have the capacity to listen to and take serious concerns flagged by their team even when their bandwidth is stretched already. Ask yourself: Are you more likely to report a safety issue to a boss who can walk, chew gum, and juggle at the same time or to a boss who has problems tracking more than one target at a time on her/his radar screen?

**Courage:** Thorough investigation and correction of safety issues often entails considerable operational disruption in the short-term and additional expense of financial and human resources in the long-term. Cancelling a flight or delaying entry-into-market of a new component due to safety concerns usually is not the best way of winning a popularity contest with stakeholders such as passengers, operators or investors. Aviation leaders need to have the courage to persist even against strong headwinds in the interest of safety considerations. Ask yourself: Would you be more or less willing to report safety issues to a boss in whom you have the confidence that she/he would do the right thing and who would fight for the resources needed to fix safety issues even when doing so is politically difficult?

Engaged and assertive employees are the cornerstone of any safety-critical business. Achieving and sustaining aviation safety without engaged and assertive employees who openly report safety issues upward along the chain of command is a very tall order. After things have gone wrong, how often have you heard leaders say “If only my team had reported this problem to me”? Sometimes, larger organizational realities are indeed the cause for a lack of rank-and-file assertiveness. Often, however, the cause is leadership itself. As important as voluntary reporting systems are, those are a complement to and cannot be a substitute for good leadership. Of course, no leader is expected to be perfect. Still, aviation and other safety-critical businesses would be well advised to select leaders with the types of attributes that encourage free flow of safety-relevant information. The **Five Cs** – Commitment, Compassion, Competence, Capacity, and Courage – are a possible check list for key attributes that leaders of safety-critical businesses should possess.

## Changing the Culture of Following Procedures: Start Here

Bill Johnson

*Note: The article expands on one published in the 2018 Nov-Dec Aviation Maintenance Technology Magazine. Since writing that initial article over 1,000 aviators have taken the new FAA training at [www.FollowProcedures.com](http://www.FollowProcedures.com). In addition, the author has spoken about the topic at a number of conferences and has received feedback and ideas for changing the culture of following procedures.*

### Introduction

On October 1, 2018, FAA posted the “*The Buck Stops Here*.” We knew that a training system, alone, would hardly impact the # 1 challenge in aviation maintenance, which is the design and adherence to technical procedures. Many call that challenge “failure to follow procedures (FFP). In less than 3 months and with minimal promotion of the new product, nearly 1,000 have completed the training and another nearly 400 were in progress at the time of this writing.

***There is a high demand for new ways to lower the risk associated with procedural non-compliance.***

Now, the industry must use this training as a part of a larger campaign to address the culture of procedural non-compliance. This article describes the training. More importantly, it offers steps to take the training to a higher level of organizational and individual cultural enlightenment and motivation to follow procedures - 100% of the time.

### Background

For the past few years, the FAA Maintenance Human Factors research team, mostly at the FAA Oklahoma City Civil Aerospace Medical Institute, has been revisiting the challenges associated procedural compliance in aircraft maintenance. It’s not a new topic. It is a continuing challenge. It affects every aspect of aviation. The issues/questions seem straightforward. Why is it so difficult to follow procedures? Why does procedural non-compliance remain as a significant contributing factor in negative maintenance-related events? What actions can alleviate the challenge?

In the January/February 2018 *AMT Magazine* Johnson described some of the empirical work that was the basis for the new Follow Procedures training. The team conducted about 175 ninety-minute interviews with AMTs, Supervisors, and those who wrote maintenance procedures. The interview topics were based on an extensive review of NTSB accident reports and on hundreds of voluntary submissions from the NASA Aviation Safety Reporting System. The interviewers asked mechanics to tell stories about negative events where

procedures were not followed. A combination of the accident documents, the voluntary reports, and interview stories helped define the training. The important finding was that procedural non-compliance was not from a lack of knowledge but from an industry culture of completing perceived safe and quality work as quickly as possible. Thus, the research team surmised that the best way to address the procedural non-compliance was to address the culture. The rest of this article talks about the training and what individuals and organizations can do to address the challenge.

### The Follow Procedures Training Described

The 45-minute web-based training program runs from the FFAST website ([www.FAASafety.gov](http://www.FAASafety.gov), free registration required). When you take the FFAST training it keeps a record, offers and end-of-course exam and, issues a certificate of completion. From that site you can also download the entire text of the course and other materials described below. Comments from the initial users have been overwhelmingly positive.

The training is a multimedia mix with animations and short quizzes along the way. There is audio for selected portions of the training. To keep things moving at the user’s pace, some of the materials require reading. Figure 1 shows a screen from the training that presents key attributes Safety Champion. The training reinforces these champion attributes.



**Figure 1. Attributes of a Safety Champion.**

At the end of the training learners are strongly encouraged to download and use the before and after checklists. There are different sets specifically designed for mechanics, managers, or procedure writers. Figure 2 shows the job cards for Managers. We strongly encourage organizations to print these cards as plastic coated job reminders. They should be sized to accompany employee credential, on the typical badge lanyard. The training ends by asking users to sign a “Safety Pledge,” shown in Figure 3, to be a champion of an improved workplace culture of procedure following.





Continued from p. 8

**AFTER** the task  
**PROCEDURE FOLLOWING**

**Manager/Supervisor's Commitment Checklist:**

- ☐ I supported organizational adherence to following procedures.
- ☐ I ensured that current procedures are readily available.
- ☐ I acknowledged that it takes time to use procedures.
- ☐ We took fast action to fix unsuitable procedures.
- ☐ I minimized worker distractions.
- ☐ I ensured required double inspection.
- ☐ I minimized worker stress – both physical and psychological.
- ☐ I nurtured a culture of procedure following.

**BEFORE** the task  
**PROCEDURE FOLLOWING**

**Manager/Supervisor's Commitment Checklist:**

- ☐ I will support organizational adherence to following procedures.
- ☐ I will ensure that current procedures are readily available.
- ☐ I acknowledge that it takes time to use procedures.
- ☐ We will take fast action to fix unsuitable procedures.
- ☐ I will minimize worker distractions.
- ☐ I will ensure required double inspection.
- ☐ I will minimize worker stress – both physical and psychological.
- ☐ I will nurture a culture of procedure following.

followprocedures.com

**Figure 2. Example Before and After Procedural Compliance Work Cards (Manager/Supervisor).**

**FFP SAFETY CHAMP**

I, \_\_\_\_\_, pledge to champion an improved culture of procedure following at my workplace. I will not "pass the buck" on FFP to co-workers or other entities. I will keep FFP safety champion skills – such as accountability, communication, leadership, and problem solving – at the forefront of my daily attitude. Through my words and actions, I will demonstrate my dedication to detecting and addressing FFP risk. By honoring this pledge, I will be doing my part to eliminate FFP risk for good.

**Figure 3. The Procedural Compliance Safety Pledge**

Again, the training is a start but it must be only one part of the campaign to change the culture of procedural compliance. What should you do now?

### **Actions for Government, Organizations, and Individuals**

#### **FAA Action**

Government scientists/engineers/psychologists are great at collecting data. They usually validate the data by talking to workers/citizens, and then write detailed

research technical reports. In many cases the research results in development of guidance materials and/or software tools. The FAA Maintenance Human Factors website ([www.humanfactorsinfo.com](http://www.humanfactorsinfo.com)) contains many such reports, advisory documents, software, media, and training support materials.

Government, because of funding design and the regulatory mission priority, often drops the ball when it comes to fielding and supporting of the research projects. In the commercial world that includes marketing, sales, product support, and customer service. These activities are seldom the forte of government. This article and promotion by the FAA Safety Team, are example steps in product promotion and support direction. The new web-based follow procedures training must be supported by government!

The timing is right for the FAA to provide customer support of this training. It Such support can demonstrate the evolving FAA "Compliance Philosophy". FAA oversight, over the past few years, has changed from a policy of strict administrative enforcement to one of applying cooperative measures to achieve increased safety and regulatory compliance. If individuals or organizations must respond to an FAA discovery of procedural non-compliance, then this training, with supporting activity, can be an ideal way to help achieve compliance. FAA Inspectors should suggest this training as an excellent means to achieve compliance. FAA inspectors have "walked the walk" of being mechanics. They can offer other ways to help increase procedural compliance.

***Remember, industry should not expect the government to be the change agent for the corporate safety culture. Organizations must take action!***

#### **Organizational Action**

Organizational action is critical when it comes to affecting culture change. Everyone must buy- in to change. Top executives must demonstrate the commitment to procedural compliance in words and in action. They must recognize that 100% compliance may take a bit more time to complete a task. The trade-off is that 100% compliance will also reduce delays from rework. It will reduce expensive errors. It will reduce worker injury. It can raise moral. Leaders will soon learn that there is a high return on the investment in 100% procedural compliance. Leaders must convince middle managers that increased procedural compliance is a renewed top



*Continued from p. 9*

priority. Selected organizational performance measures must be cognizant of all issues associated with 100% procedural compliance. Higher procedural compliance must have similar value to high on-time departure and other key performance indicators. It can renew the commitment to the corporate fiduciary responsibility to provide highest flight safety to customer, 100% of the time.

Strong words from the top can set the general tone but actions from middle management have greater impact on the daily maintenance work. Continuing safety and low error rates must not be a unconscious justification for past procedural non-compliance ("past sins"). Workers must be encouraged, every day, that 100% procedural compliance is the goal. Procedures that are unnecessary, complicated, incorrect, incomplete, or unavailable it must be documented and addressed, prior to continued work. This action will help correct or eliminate poor procedures, thus raising compliance.

Think about this. Each time that a procedure is not followed, and there is not a negative result, then that becomes positive reinforcement to not follow all procedures. Do not let that happen!

***The process of 100% procedural compliance must be as critical as the product 100% flight safety. The two must be mutually inclusive.***



#### **Immediate Organizational Actions to Accompany the Training**

1. Written statement from top management that the organization is recommitting to 100% procedural compliance. Management recognizes that this is team effort.
2. Written statement of commitment from labor leaders, in support of management letter.
3. Written statement from Engineering Department committing to rapid response to mechanic recommendations regarding problematic procedures and/or procedure use issues.
4. Statement from local FAA inspection team that they will assist/cooperate with renewed commitment to 100% procedural compliance.
5. Personal individual commitment from every person in the organization to champion the culture of 100% procedural adherence.
6. Use shift meetings to launch and reinforce the Follow Procedures training.
7. Continue the culture change theme. Stay on theme!
8. Pay an incentive to every worker that submits a training completion certificate from the FAA website.
9. Print and distribute the Before and After Procedure Following job cards (Available from training program or FAAST representative)

#### **Individual Commitment and Action**

Workers must commit to become champions of the procedural compliance culture. That means that workers must be not only introspective of their own behavior but also apply appropriate peer pressure.

***To achieve 100% procedural the individual should not expect the company to do it any more than the company should expect the government to do it. It is a shared effort.***

Remember that every time a procedure is not followed, and there is no immediate safety consequence, it is positive reinforcement to not follow the procedures.



Workers should engage with the Follow Procedures training in a serious way. Use the 45 minutes of training to question your own work behaviors and to recommit to 100% procedural compliance. Such behavior is beneficial



to the aircraft, the passengers and crew members, the organization, and to their own worker health and safety. Full Procedural Compliance will be achieved only when workers take individual personal and professional satisfaction with the knowledge that they followed procedures 100%.

### Immediate Worker Action

1. Commit to being a champion for following procedures 100%
2. Set proper example
3. Coach your peers
4. Document poor procedures and expect reasonable response time
5. No procedure available, then immediately consult management and expect/demand action
6. Decide if the company is forcing you to work in non-compliant situation. Make it a company choice or non-compliance becomes your choice/responsibility.
7. Take high professional pride in following procedures

### The Bottom Line

The very start of the training uses the graphic in figure 4. It explains that:

***“Everyone is part of the procedural compliance challenge. Therefore, everyone is part of the solution.”***

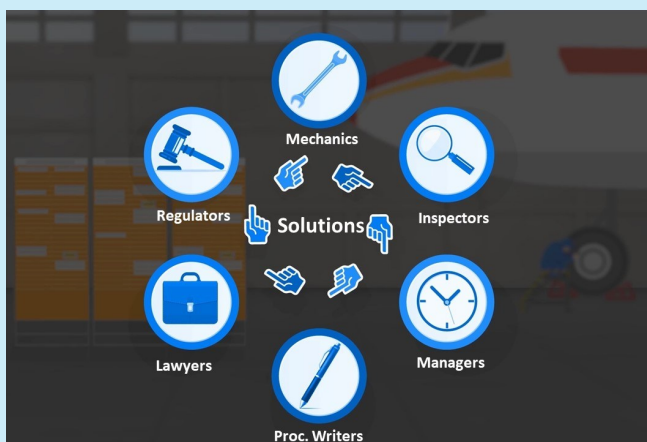


Figure 4. Who can Champion Procedural Compliance



**Enough said, Champion.**

## Comments on FSF-Airbus Human Factors Award

Bill Johnson

I have known of the FSF-Airbus Human Factors Award since it's inception in 1999. I recall that Captain Daniel Maurino was the first awardee. Through his work at ICAO, he generated significant attention to human factors in all aspects of aviation. On a bi-annual basis, the FSF and Airbus have given this award to such names as James Reason, Robert Helmreich, Christopher Wickens, William Rankin, and many others who have impacted aviation safety with attention to human factors. I am humbled to join that list of recipients.

The award prompted a bit of introspection. I asked why me? How did this happen? The answer was immediate and obvious. For my entire aviation maintenance human factors career, starting in the late 70's, I have been surrounded by excellent professional colleagues and mentors. The individuals and teams with whom I have worked recognized that our efforts contribute to safe aviation work and to flight safety. I have had great employers where I have learned a lot. I have had the pleasure of teaching hundreds of classes, speaking and a lot of conferences worldwide, collecting data in a variety of industrial environments, writing technical reports and articles for popular aviation magazines, creating training and video programs, and many other activities. I did this because with great colleagues, with funding from great organizations, in cooperation with critical industry partners. When I look at the FSF-Airbus award I see my name. That name is one who is fortunate enough to have worked and continues to work with extraordinary people, in extraordinary organizations, in an extraordinary critical industry. The award is for them.



On a lighter note, I received the award in early November. Now, four weeks later, it remains “missing in transit” from Seattle to Atlanta. I’m guessing it is human error.



## Author Appreciation

We would like to extend our gratitude to the readers and authors for their continued support of this newsletter. We enjoy your reviews and look forward to future article submissions, keep up the good work! Our contributors are not primarily responsible for writing articles for this newsletter, however, the vast majority are experts in their fields when it comes to issues related to aviation maintenance. Most importantly, we value their input and reviews that bring interest and value to readers of this quarterly forum.

## Our Request and Promise to You

Every submission will receive prompt feedback from our great editors! With your approval, we will go beyond the Microsoft grammar and spellcheck, followed by an author sign-off prior to the publish date. Newsletters come out every 3 months, yes quarterly, starting at the end of March. If you get something to us by the middle of the quarter, then we can usually make the deadline.

If you would like to discuss your idea prior to the writing phase, please E-Mail Dr. Bill Johnson at [bill-dr.johnson@faa.gov](mailto:bill-dr.johnson@faa.gov) for guidance or recommendations. Send your submissions to Janine King at [janine.ctr.king@faa.gov](mailto:janine.ctr.king@faa.gov). If you have any interesting maintenance safety images, please include in your submission with an image caption. We appreciate your input!

## Upcoming Events

- AERO-ENGINES AMERICAS: Fairmont Dallas, TX; January 29-30, 2019  
<https://aeroenginesusa.com/aea19/Public/Enter.aspx>
- Singapore Aviation Safety Seminar: Singapore; March 5-7, 2019  
<https://flightsafety.org/summit-seminar/5th-annual-singapore-aviation-safety-seminar/>
- MRO Americas: Atlanta, GA; April 9-11, 2019  
<https://mroamericas.aviationweek.com/en/conference/about-the-conference.html>
- ICAMET Conference: Venice, Italy; April 11-12, 2019  
<https://waset.org/conference/2019/03/miami/ICAMET>
- Avionics Maintenance Conference (AMC) Prague, Czech Republic April 29-02, 2019  
<https://www.aviation-ia.com/conferences/avionics-maintenance-conference-amc>
- 64th Business Aviation Safety Summit: Denver, Colorado; May 2-3, 2019  
<https://flightsafety.org/summit-seminar/bass2019/>
- NBAA Conference: Fort Worth, TX; May 7-9, 2019  
<https://nbaa.org/events/2019-maintenance-conference/>