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FIVE SIMPLE STEPS TO A SAFER SMALL FLIGHT OPERATION

Compiled by the NBAA Domestic Operations Committee

FIVE SIMPLE STEPS TO A SAFER SMALL FLIGHT OPERATION

Safety is a core value to all business aviation operations. While small flight departments may lack the resources available to larger operations, there are small steps that all operators can take to improve their safety culture. NBAA's Small Flight Department Subcommittee has developed this list of steps to help small flight departments to better identify and mitigate risk.

Definition of a Safety Culture

Safety culture is a commitment to professionalism. It's about encouraging everyone to freely discuss safety, recognizing it as a spectrum that involves defining and minimizing risks. A good safety culture values learning from mistakes and embraces humility, accepts criticism and adapts for continuous improvement. This culture, starting from management, prioritizes safety as an ongoing journey of shared responsibility and growth. A key component of a safety culture is the individual embracing the responsibility for safety.

STEP 1: IMPLEMENT BRIEFINGS AND AN AVIATION SAFETY ACTION PROGRAM

Briefings

Implement pre-departure and post-flight crew briefings to discuss any issues pertaining to the flight such as weather, MEL items, fuel loading, etc. Briefings also provide opportunities to check on how each pilot is doing for that flight and whether there are any stressors that need to be discussed. Please see Appendix 1 below for an example.

Aviation Safety Action Program

Sign up for an Aviation Safety Action Program (ASAP) to protect yourself while sharing safety incidents. This will also begin the process of reporting safety issues and discussing solutions for events. .

STEP 2: IMPLEMENT FLIGHT RISK ASSESSMENTS

Flight risk assessments look at pre-departure factors, including weather, terrain, human factors, aircraft status, aircraft performance, experience and mission pressures, and assign a value to each item. A simple flight risk assessment tool (FRAT) is a great first step, but the more dynamic the assessment, the better. It is important to define thresholds that would require mitigation. The FRAT should be reviewed by a second pilot. Going through this process creates an environment for great pre-departure conversations regarding the flight.

STEP 3: ADOPT STANDARD OPERATING PROCEDURES AND DEVELOP AN EMERGENCY RESPONSE PLAN

Standard Operating Procedures

Begin by developing Standard Operating Procedures (SOP). SOPs can be developed through manufacturers manuals and checklists. Then, as you gain experience, create a personalized General Operations Manual (GOM) that outlines

general rules for your flight department and a Flight Operations Manual (FOM) that defines how you operate your aircraft.

Emergency Response Plan

Develop a simple Emergency Response Plan (ERP) that sets procedures and policies for your company, should an accident or incident occur with your aircraft. This could be as simple as a one-page checklist with important numbers or additional tasks to accomplish during a stressful time.

STEP 4: IMPLEMENT AT SAFETY MANAGEMENT PROCESS

Continue fostering your safety culture by developing a process that captures potential, or actual, safety issues for review and mitigation. It should be easy to use and allow for both internal and external reporting.

STEP 5: IMPLEMENT SAFETY AUDITS AND FLIGHT DATA MONITORING DEVICES

Safety Auditing

Once you have these tools in place, consider having an outside vendor, or other operator, audit your safety network. This can be done whether you plan to obtain any certifications or not, and will help identify any changes you might need to make to your safety culture. Yes

Flight Data Monitoring

Consider adding some form of Flight Data Monitoring (FDM) to your department. This will assist in evaluating how you operate your airplane, and, if you allow it, provide data to other operators to help identify operational safety issues. FDM takes parameters from some form of data recorder and allows vendors to look at the data for safety trends.

STEP 1: IMPLEMENT BRIEFINGS AND AN AVIATION SAFETY ACTION PROGRAM

BRIEFINGS

According to FAA AIM, Section 7-6-1, the number one contributing factor for general aviation Accidents is inadequate preflight preparation and planning. As professional flight crew members, a preflight briefing should be part of your procedures. It is the easiest and least costly step you can take to drastically increase the safety culture of your flight operation.

Briefings should not just be a rote regurgitation for each leg, but a conversation about the entire flight, a review of the departure, a conversation regarding the arrival and approach, and an honest evaluation of how the flight went upon arrival.

[FAA Advisory Circular 91-92, Pilot's Guide to a Preflight Briefing](#) identifies three types of briefings: outlook, standard and abbreviated. The abbreviated briefing is designed to happen just before the flight and allows crewmembers to review the latest weather and risk factors.

Post-flight briefings are more important than preflight briefings. According to the European Union Aviation Safety Agency (EASA), debriefing is important to review:

- Things that went wrong during the flight – or not as planned
- Any issues or emergencies
- Planned and unplanned decisions
- Performance and competencies
- Things that went well and anything the flight crew is content with or proud of

The debrief can take place immediately upon arrival, when securing the plane, or at a meal later that day. The most important aspect is to be honest and open about the flight and not allow your ego to close off the discussion. Any unplanned decisions should be documented in the company SMS.

[Review EASA Post-Flight Debrief Guidance](#)

Examples of Preflight and Post-Flight Briefings

The following preflight briefing and post-flight debriefing formats are currently being used in the business aviation industry. You should review these examples and adapt them to make briefings useful to your department, and not just routine.

Pre-Brief – “Are you AWARE?”

We have reams of checklists in the cockpit that remind us what has to be discussed and when, but nothing for before we step onto the jet. Our division of duty usually has the SIC complete the aircraft exterior inspection while the PIC completes all flight planning. When the SIC returns from the jet, a good way to start things is: “A is for airplane, and it’s okay.”

A - Airplane

Discuss any discrepancies found, MEL items to consider, and general preparations made to the cabin or still needed.

W - Weather

Discuss the weather for the departure, arrival, alternates, and if needed any [equal time points](#) or [extended operations](#) airports. Also cover en route considerations.

A - Airports

Include airport runways, taxiways, NOTAMs and any risk analysis considerations.

R - Route

Discuss routing considerations to include navigation requirements, CPDLC and ADS-B or ADS-C, as well as international overflight considerations.

E - Environment

Discuss passenger needs (papers, ice, catering), flight attendant requirements, customs and immigration, or anything else not already covered.

Post-Brief - “What’s the DEAL?”

You are often too busy to include a post-brief but you have to log the flight time and any aircraft write-ups, the “L” in DEAL. Everything before that is a matter of education, learning how to do what you do better. Immediately after the flight, everything will still be fresh in your memory, so try not to end the day without saying to the other pilot, “What’s the DEAL?”

D – Departure

Discuss how the preflight, passenger arrival, engine start, taxi-out, takeoff and climb-out phases went.

E - En route

Discuss how the en route portion went, including any FMS, ATC or passenger issues.

A - Arrival

Discuss the let down, STAR, approach, landing, taxi-in, shutdown and passenger debarkation. Remember to cover stabilized approaches – and if not stable or “just barely” stable, dissect the approach to discover why.

L - Logbook

Discuss any airplane write-ups or items that needed to be noted.



Two Minute Debrief



By Tony Kern, Ed.D

Chief Executive Officer, Convergent Performance

What is the Two Minute Debrief and why should I care?

The two minute debrief was developed by Convergent Performance for the airline industry to restore the value and culture of the post mission debriefing. It is typically provided on a small 1"ID sized card that fits on a lanyard of back of an ID badge for ease of use. After significant research into why the airline cultures were not conducting debriefs even when required by their operational guidance, we discovered that aircrews did not debrief for three primary reasons.

1. The standards for the debrief were not clear
2. The requirements for the debrief tool too much time
3. Post flight debriefing was perceived as a "box ticking" requirement of management with little or no actual benefit

We took these concerns to heart and created a simple, easy to use tool with clear standards, minimum time investment and based upon mutual respect between aircrew rather than compliance with a management directive.

In a nutshell, the Two Minute Debrief requires answers to three questions (and an optional 4th) as a matter of mutual respect between crewmembers.

1. **Safety.** Were margins of safety eroded at any time during the flight? (As a matter of mutual respect, pilots owe it to each other and their families to be brutally honest in response to this question.)
2. **Standards.** Were any standards, policies, or procedures compromised? (As a matter of mutual respect, pilots owe it to each other to identify any areas that could cause them a future flight evaluation downgrade or FAA action.)
3. **Unresolved Questions.** What events prompted questions in our minds that were never adequately answered? (As a matter of mutual respect, pilots don't want to embarrass themselves in front of peers. Better to get questions answered now than repeat the event in front of others.)
4. **Opportunities for Improvement (optional).** Where might we have executed at a higher level? (Note this question is optional as it allows for, but does not require, discussion of items that are subjective. However, it does provide the opportunity for a good debrief to continue if the pilots desire it.)

Is it working?

Yes. Evidence from multiple settings has conclusively demonstrated aircrew acceptance and improvements in both the quantity and quality of post flight debriefings.

Download the card in PDF format. It may be printed and used by permission received from Convergent Performance.



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Two Minute Debrief

Answer each with where, when and why.

1. **Safety.** Were safety margins eroded at any time?
2. **Standards.** Were any flight standards compromised?
3. **Unresolved Questions.** What events (automation, ATC, etc.) prompted questions in our minds that were never adequately answered?
4. **Opportunities for Improvement (optional).** Where might we have executed at a higher level?

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AVIATION SAFETY ACTION PROGRAM (ASAP)

The goal of the Aviation Safety Action Program (ASAP) is to enhance aviation safety through the prevention of accidents and incidents. Its focus is to encourage voluntary reporting of safety issues and events that come to the attention of employees of certain certificate holders. To encourage an employee to voluntarily report safety issues even though they may involve an alleged violation of Title 14 of the Code of Federal Regulations (14 CFR), enforcement-related incentives have been designed into the program. An ASAP is based on a safety partnership that includes the FAA, operators, and employees. Review FAA's ASAP information at <https://www.faa.gov/about/initiatives/asap>.

Some operators develop their own ASAP with their local FAA FSDO. There is no cost for this option, but it does require a bit more leg work.

Vendors for ASAP already have relationships with the FAA and provide an easy pathway for the program. They also provide an ease of reporting with applications that allow for filing reports anywhere with a connection and have the infrastructure to manage the data, the meetings, and final reports.

There are many vendors providing every size flight operation. The NBAA Buyers Guide: [Safety Auditing Services](#) and [SMS Consultants](#) categories list many vendors that can help with this process.

STEP 2: IMPLEMENT FLIGHT RISK ASSESSMENTS

Because every flight has some level of risk, it is critical that pilots are able to differentiate, in advance, between a low risk flight and a high risk flight, and then establish a review process and develop risk mitigation strategies. A simple flight risk assessment tool (FRAT) enables proactive hazard identification, is easy to use, and can visually depict risk. It is an invaluable tool in helping pilots make better go/no-go decisions and should be a part of every flight.

The FAA provides resources for developing your own FRAT, but critics point out that using one for a while could promote complacency, with users completing the form by rote and not truly using it as a decision-making tool.

Using the FRAT as part of your preflight briefing will bring validity and usefulness.

Review FAA FRAT information at <https://www.faa.gov/newsroom/safety-briefing/flight-risk-assessment-tools>.

As technology advances, vendors are coming to market with flight risk tools driven by artificial intelligence (AI). These programs have the ability to look at every factor that would affect your flight, in real time, continuously. Your airplane performance and flight crew rest information is included, providing a real-time, accurate, usable assessment of your proposed flight. Review the NBAA Buyers Guide: [Information Technology \(IT\)](#) category for software vendors.

STEP 3: ADOPT STANDARD OPERATING PROCEDURES AND DEVELOP AN EMERGENCY RESPONSE PLAN

STANDARD OPERATING PROCEDURES

According to [AC120-71A](#), standard operating procedures (SOPs) are universally recognized as basic to safe aviation operations. Effective crew coordination and crew performance – two central concepts of crew resource management (CRM) – depend upon the crew’s having a shared mental model of each task. That mental model is founded on SOPs.

Airline and fractional aircraft operators safety records are enviable due in large part to their use of accepted SOPs. Even if you do not currently have an customized SOP manual with your logo embossed, you are using standard operating procedures provided by your training provider or Original Equipment Manufacturer (OEM). Developing an SOP will help you decide how you want to manage your operation, set the standards you feel are important, and communicate to your principal the professional atmosphere you desire. An SOP will aid in decision-making when facing challenges and clearly set expectations.

The [NBAA Management Guide](#) is a great starting place to develop your own SOP manual. <https://nbaa.org/mgmtguide>

Many vendors provide SOP products for flight operations of every size.

Review the NBAA Buyers Guide: [Flight Operations Manuals](#) category for such service providers.

EMERGENCY RESPONSE PLAN

Aircraft accidents are complex and unfortunate events that require a deft personal and corporate response. A company’s first and highest responsibility is to the families of those involved in the accident. In the event an accident does occur, company management should have procedures in place to help them respond to the crisis quickly and effectively.

Developing and practicing an emergency response plan (ERP) specific to your operation is vital preparation for when the unthinkable occurs. An ERP does not have to be complicated and should be customized to your operation. Small companies with limited resources may need outside advisors for support in legal, public relations, counseling, and possibly aviation, if the flight department is lost. Once the plan is in place it is vitally important to run practice drills to ensure every base is covered.

NBAA’s Emergency Response resource is a good starting point for this process. <https://nbaa.org/erp>

Many vendors provide resources for developing an ERP. The NBAA Buyers Guide: [Safety Auditing Services](#) and [SMS Consultants](#) categories list many vendors that can help with this process.

STEP 4: IMPLEMENT AT SAFETY MANAGEMENT PROCESS

This is a way to report, record and process safety data to help identify safety trends and mitigate safety issues within your operation. It does not need to be complicated – even a simple Excel spreadsheet can be used for tracking. To make this process effective, it must be easily accessible for everyone to report, simple to complete and process, and provide feedback to everyone.

The simple idea is that when someone identifies something that could be a safety risk, they can easily report it with the knowledge that they will not be admonished and someone will address the issue. This tool will not work unless there already exists an open safety culture, from senior management on down.

As data is gathered, it can be analyzed for trends or focus areas, and create a picture of the overall safety culture. The importance of having a reporting system is to provide an opportunity for everyone in the organization to actively participate.

The NBAA Safety Committee has resources to help in the creation of this process, as well as outside vendors that are able to create, and manage, the entire safety management process. It is important that you make this fit your operation and not just an “off the shelf” manual that collects dust.

<https://nbaa.org/sms>

STEP 5: IMPLEMENT SAFETY AUDITS AND FLIGHT DATA MONITORING

AUDITING

Once you have completed steps 1 through 4, you should consider having your safety processes audited by someone outside your operation. This will help identify any deficiencies you may have, or find things that don't work right for your particular operation. Having another set of eyes to look over everything brings a fresh perspective to what you have created and will help identify changes that may need to be made.

Auditing can be as simple as asking another operator to “come take a look,” up to hiring an internationally recognized auditing firm that will do an in-depth analysis of your safety culture.

While auditing may seem like a daunting task, it truly helps to have someone else take a look to see if something is missing, not functional, or not necessary.

Review the NBAA Business Aviation Insider article “[Third-Party Audits Validate Safety Processes](#)” to learn why independent assessments are needed to confirm the effectiveness of any safety system.

The NBAA Buyers Guide: [Safety Auditing Services](#) category lists vendors than can provide various levels of service. You can also contact NBAA's Operations Service group at ops@nbaa.org for references of fellow NBAA members, including members of the NBAA Safety Committee, who would be willing to help.

FLIGHT DATA MONITORING

The last step to a safer small flight operation is the addition of flight data monitoring (FDM) to your operation. As technology advances, the ability to have monitoring is becoming easier and cost effective. Many new aircraft come equipped with the ability to have monitoring and even older aircraft can be modified or equipped with an external device used to provide data.

The importance of monitoring is to help identify flight trends within your operation that may need attention. Additionally, sharing the data with the industry helps identify airports and procedures that need to be addressed. The data can also be used to create training scenarios for problem areas helping alleviate possible safety issues.

[NBAA's Safety Data Collection, Analysis and Sharing resource](#) provides an overview of FDM and guidance for getting started with safety data collection and sharing.

For questions about FDM, email NBAA's Operations Service group at ops@nbaa.org



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ABOUT NBAA

Founded in 1947 and based in Washington, DC, the National Business Aviation Association (NBAA) is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. Contact NBAA at 800-FYI-NBAA or info@nbaa.org. Not a member? Join today by visiting nbaa.org/join.

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This resource was developed by the Small Flight Department Subcommittee of NBAA's Domestic Operations Committee (DOC) and includes some content reprinted courtesy of Convergent Performance.

This resource is general in nature and is not intended as legal advice with respect to any particular flight operation.