FLIGHT SAFETY FOUNDATION

CASE STUDY

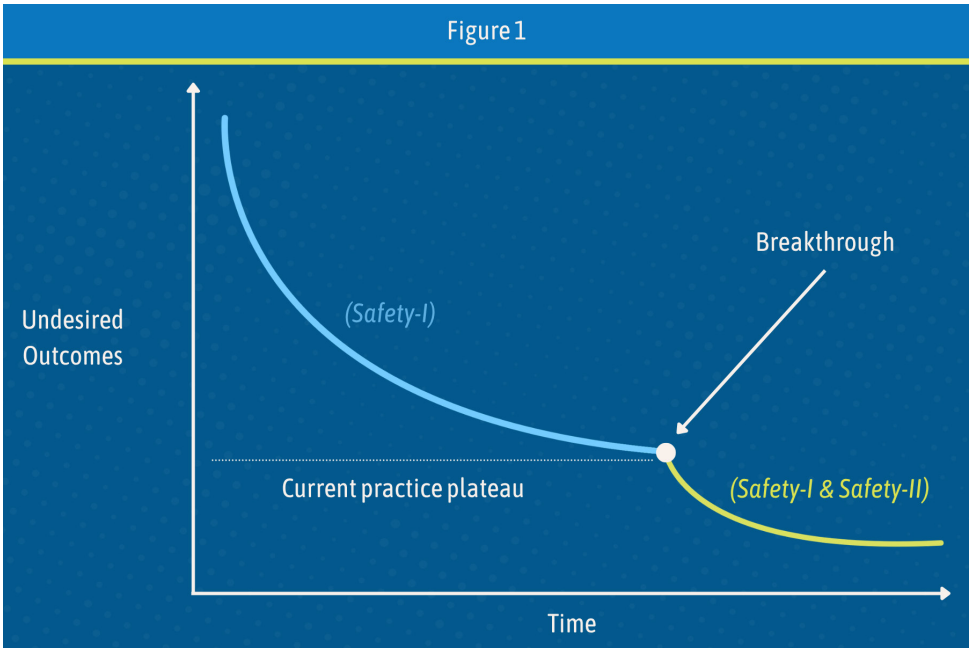
LEARNING REVIEWS

A Practical Approach to Learning From All Operations

SEPTEMBER 2026

Traditionally, *safety* has been defined as "the absence of undesired outcomes such as incidents or accidents" or "the freedom from unacceptable risk." (Hollnagel) As a result, safety research and management have focused on undesired outcomes (unsafe) rather than successful outcomes (safe). There is obvious importance to learning from "what went wrong and why." Aviation has become the safest mode of transportation by trying to fix what didn't work and addressing flaws in systems, engineering, policies, procedures, training, etc. Unfortunately, this approach is usually very reactive, meaning that an undesired outcome occurs before any learning takes place (Safety-I). While the rate of undesired outcomes has declined steadily over the past several decades, we are beginning to reach an asymptote — a line that flattens but never goes to zero. As an industry, we are approaching a limit on what we can do to reduce future unwanted events (Figure 1).

Figure 1

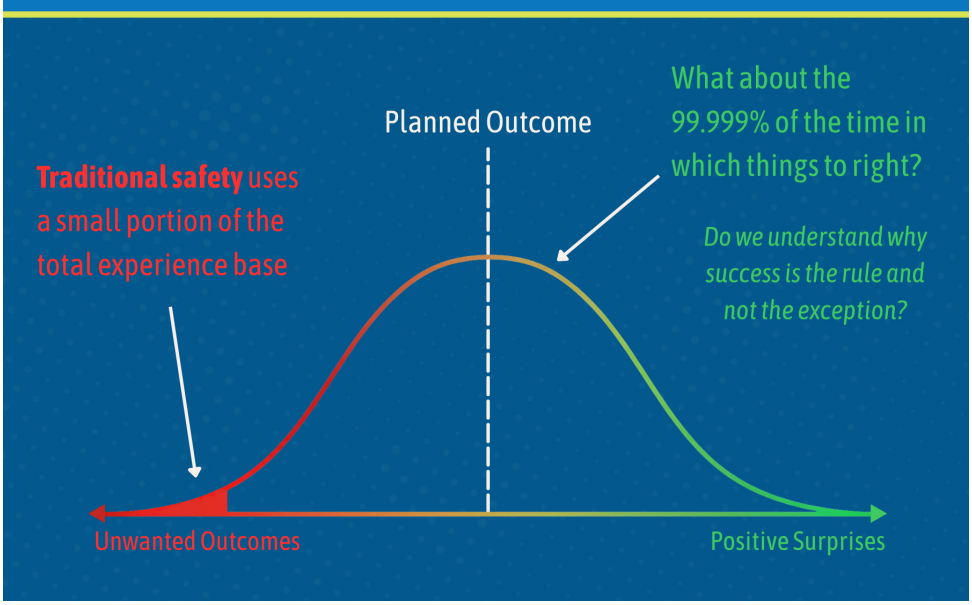


So how do we continue to enhance safety when we are already approaching the limit on what is possible with our current practices and strategies? One way is to redefine the term *safety*, ask ourselves different questions, and study an entirely different data stream that, to date, has been largely unexplored. This will increase opportunities to learn. Academics and leading-edge safety practitioners in many industries refer to this different way of thinking as "Safety-II." From a Safety-II viewpoint, safety is defined as "the ability to succeed under varying conditions." (Hollnagel)

At Southwest Airlines, safety is by far our No. 1 priority. As a result, we began investing in a new safety program within the Flight Operations department in 2022 that took this Safety-II viewpoint and began studying flight operations through a different lens. This program is called the Safety and Learning Advancement Team, or "SLAT." From its inception, SLAT set out to discover "what goes well and why" to inspire data-informed enhancements to system safety and foster a culture of learning. The team's focus is to support pilots by collecting and analyzing data to better understand what makes them successful in everyday work. Pilots are masters of everyday work, so we simply want to leverage their knowledge and experience to make our flight operations safer and more efficient. Our goal is to learn from them about what works and what doesn't, and more importantly, to understand the behaviors, skills, and techniques they employ to keep our airline safe and efficient.

By peering through this vastly different lens of safety, we can increase resilient performance by studying and sharing insights on positive outcomes and how they are produced (Figure 2). If something that goes wrong has a cause, then something that goes well must have one too, right? This is where the concept of learning reviews is put into practice.

Figure 2, by Kelvin Genn (Dekker)



Learning reviews (among other data collection methods, including flight deck observations, shop talks, and surveys) are voluntary, de-identified, and non-punitive interviews with pilots involved in certain Aviation Safety Action Program events or irregularity reports (IR) forwarded to SLAT by the event review committee or flight operations leaders (in the case of IRs). The reports that we follow up on feature a challenging event that was handled exceptionally well by the operating crew, leading to a successful (desired/safe) outcome. Learning reviews utilize questions from a Safety-II perspective to learn about successes and challenges from an individual and systems view for a particular event. Here are some questions we try to answer to learn more about the event and what led the crew's success:

1. What training or past experiences did you rely on to navigate the event?
2. What existing policies or procedures helped you navigate the event?
3. What surprised you the most about the event? What adaptations did you have to make to successfully navigate to a desired outcome?
4. Were there any gaps in our policies, procedures, training, or systems that could have set you up for failure? If so, what were they? What actions did you take to overcome the gaps?
5. Would you change anything about our policies/procedures for this event? If so, what specifically? Why?
6. Can you describe in detail how you applied the Risk and Resource Management model during the event? Overall, do you think it was a helpful aid for effective decision-making?
7. What additive conditions, threats, or external pressures did you have to manage to maintain adequate safety margins?

8. What was the most challenging aspect of the event?
9. Is there anything you or the other pilot did outside of standard operating procedures (SOPs) that enhanced safety? Please explain.
10. What specific decisions and/or actions by you and/or the other pilot helped lead to a successful outcome?
11. What techniques did you use to help ease the workload for you and the other pilot?
12. Looking back on the event, what did you learn that you can apply to future flights and/or share with fellow pilots?
13. If you were faced with a similar situation in the future, is there anything you would do differently? Why? (Or what specifically would you change?)
14. What is your biggest takeaway from this event?

As you can see, these questions are framed from a mindset of "how/why did things go well?" and "what can we learn that can be shared with others to ensure future success?" Normally, not all these questions are asked (or need to be asked) during the learning review. Cognitive interviewing techniques are used to allow pilots to talk freely, and they will often answer many of these questions without prompting. Some basic skills you will want to master before conducting learning reviews include:

- Establish rapport;
- Listen actively (holistic listening);
- Ask the interviewee to actively generate info and not wait passively for the interviewer to ask questions (think out loud);
- Ask open-ended questions (like the ones above);
- Pause before asking the next question;
- Do not interrupt;
- Adopt the interviewee's perspective;
- Ask compatible questions (follow-on); and,
- Identify and reduce your own biases.

It is critically important to share the learnings and takeaways with applicable parties (departments, teams, leaders, frontline workers) through formal communication channels so that your organization can build on what's strong and make the necessary improvements to weak areas. You will also build trust and engagement with the pilot group by sharing ways the data is being used and how it's making a positive impact. When pilots see results, they are more inclined to participate and share their experiences, knowledge, and opinions. This buy-in and feedback loop helps build resilience in the operation and increases the chances of future success.

If you'd like to learn more about conducting learning reviews or implementing Safety-II concepts (including other data collection methods) in airline operations, feel free to reach out directly to SLAT@wnco.com.

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