

On Second Thought – Episode 8

Psychological Notes

Twelve Habits That Keep Us Out of the Statistics

Aviation safety is often remembered through dramatic moments: the go-around, the rejected takeoff, the decision to stop a maintenance task, or the controller who intervenes before a conflict develops. Yet those visible decisions are usually supported by quieter behaviors established long before the pressure arrived.

Psychologically, people do not suddenly become more disciplined, attentive, or clear-thinking because a situation has become serious. Under stress, working memory becomes less reliable, attention narrows, and emotional urgency increases. The brain begins favoring speed, familiarity, and immediate relief over deliberate evaluation. In demanding conditions, we are therefore most likely to rely on the patterns we have already practiced.

This is why habits matter. A safety habit is more than something we intend to do. It is a response attached to a recognizable trigger and practiced often enough to remain accessible under pressure. The objective is not to remember twelve principles during an emergency. It is to make selected behaviors sufficiently automatic that they continue operating when attention and memory are strained.

From Intention to Action

Most aviation professionals do not lack concern for safety. The more common problem is the gap between intention and action. A person may genuinely intend to monitor fuel more carefully, speak up sooner, use the checklist every time, or stop when fatigue becomes unsafe. In the moment, however, that intention must compete with distraction, social discomfort, schedule pressure, fatigue, and commitment to the existing plan.

Psychologist Peter Gollwitzer's research on implementation intentions offers a practical bridge across this gap. Instead of relying on a general resolution, the person creates an explicit if-then plan: **If a specific situation occurs, then I will perform a specific action.** The decision is made while the person is calm and then linked to an observable trigger. This reduces the need for willpower or improvisation during a stressful event. The situation itself prompts the response.

From a psychotherapy perspective, this approach reflects honest self-knowledge. People frequently overestimate how much access they will have to their best judgment when they are tired, rushed, anxious, or emotionally invested in an outcome. Pre-deciding is not pessimistic. It is a way of supporting the future self whose cognitive resources may be temporarily reduced.

Safety as a Layered System

No single habit can protect against every threat. Each habit closes a different psychological or operational opening.

A written checklist protects against memory failure and complacency. Personal minimums protect against pressure and motivated reasoning. Threat briefings protect against incomplete awareness. Independent verification protects against assumption and confirmation bias. Speaking up protects against social inhibition. Debriefing prevents experience from passing without learning.

The difficulty is that skipped habits frequently appear harmless. A pilot may omit a checklist item and complete the flight safely. A technician may perform a familiar task from memory and find no error. A controller may delay requesting help and still resolve the traffic sequence.

When no immediate consequence follows, the brain may draw the wrong conclusion: “That shortcut worked.” More accurately, the shortcut did not produce a visible failure on that occasion. Repetition can then transform the shortcut into an accepted norm.

Safety habits matter because we cannot know when several small omissions, assumptions, and pressures will align. Consistency is not an admission that every operation is dangerous. It is recognition that the rare high-consequence day often looks ordinary at the beginning.

Checklists and Cognitive Offloading

Checklists move critical information outside the limits of working memory. Psychologists call this cognitive offloading. It is not evidence that a person lacks knowledge or experience. It is evidence that the person understands the limits of recall.

Memorized performance is particularly dangerous because it often feels complete even when an item has been omitted. Memory does not reliably announce that something is missing. A written list provides a stable external structure that does not become tired, distracted, hurried, or overly familiar with the task.

The experienced professional uses the checklist not because experience has failed, but because experience has revealed how quietly memory can fail.

Personal Minimums and Motivated Reasoning

Once people become invested in an outcome, they begin interpreting information in ways that support that outcome. This process is known as motivated reasoning. A pilot who wants to complete a trip may gradually redefine acceptable weather. A technician who wants to finish before the end of a shift may reinterpret what counts as adequate time, lighting, or verification. A controller who wants to maintain traffic flow may tolerate more complexity than originally intended. Written personal minimums allow the calm version of the person to establish boundaries for the pressured version. The purpose is not to eliminate judgment. It is to prevent desire, embarrassment, schedule pressure, or sunk cost from silently rewriting the criteria.

Threat Briefings and the Pre-Mortem

Naming threats in advance prepares attention to recognize them later. When weather, terrain, fatigue, equipment status, workload, or social pressure are identified aloud, those factors become more likely to enter awareness when they begin to change.

A threat briefing also moves the person from vague concern to prospective thinking: “What will I do if this develops?” This creates readiness without requiring fear.

The pre-mortem addresses a related psychological problem. Once people commit to a plan, confirmation bias begins protecting it. They notice evidence supporting continuation and discount evidence suggesting revision.

A pre-mortem interrupts this attachment by asking the person to imagine that the plan has already failed and then explain why. Instead of defending the plan, the person investigates it. Concerns that were inconvenient or easy to minimize become easier to name while options still exist.

Speaking Up and Psychological Safety

People often notice problems before they voice them. The delay is frequently social rather than technical.

Humans are strongly motivated to appear competent and cooperative. We may hesitate because we do not want to seem uncertain, inexperienced, difficult, or overly cautious. These concerns are normal, but they can become dangerous in hierarchical environments.

Speaking up becomes more effective when concern is translated into specific, observable information. “I am uncomfortable” may be dismissed as a feeling. “We are three hundred feet low and one mile from the fix” requires a response. This does not mean emotion should be ignored. Discomfort may be the earliest signal that attention has detected a mismatch. The goal is to convert that signal into language the operational system can use.

Psychological safety is therefore an aviation defense. People make better decisions when uncertainty can be acknowledged, questions are welcomed, and disagreement is treated as information rather than disloyalty.

Independent Verification

The person who performs a task carries an internal model of what they intended to do. That model influences what they see when they inspect their own work. People can look directly at an error and mentally complete the scene according to expectation.

Independent verification adds more than another pair of eyes. It introduces a different attentional history and fewer assumptions. The second person does not share the exact mental path that produced the original action.

This principle applies beyond maintenance. Pilots benefit from confirming critical information through more than one source. Controllers must listen for accurate readbacks and then observe whether the aircraft actually complies. Verification is not distrust. It is a team-based defense against predictable perceptual limits.

Fatigue and Impaired Self-Assessment

Fatigue reduces vigilance, working memory, reaction quality, and cognitive flexibility. It also interferes with the person's ability to judge the extent of that impairment.

This creates a difficult psychological loop: the system being asked to assess fatigue is itself fatigued. A tired person may feel functional because self-monitoring has degraded along with performance.

External structure helps. Speaking an IMSAFE assessment aloud, involving another person, honoring predetermined rest limits, and using position relief or task handoffs introduce accountability when private judgment may be unreliable. Fatigue should not be framed as a character weakness. It is a physiological condition requiring operational management.

Debriefing and Examined Experience

Experience alone does not ensure improvement. Repetition can strengthen good habits, but it can also reinforce shortcuts, faulty assumptions, and unsafe norms. Debriefing creates the pause that converts experience into learning. It allows the person to distinguish a sound process from a fortunate result. A smooth operation may conceal weak decisions because circumstances were forgiving. Conversely, a difficult outcome does not automatically mean the process was poor.

Reflection asks what worked, what nearly failed, what was assumed, and what should change next time. It prevents the brain from using outcome alone as proof that the preceding decisions were sound.

This is especially important after near misses and routine operations. Near misses provide inexpensive feedback. Routine success is where unnoticed drift often becomes normalized.

One Habit at a Time

Attempting to install all twelve habits simultaneously is psychologically unrealistic. Large behavior-change plans depend heavily on motivation, attention, and working memory. These resources fluctuate and are often least available when the day becomes difficult.

Sustainable change is narrower. One high-value behavior is selected, linked to a clear trigger, and practiced during ordinary operations until it requires less conscious effort. Only then is another habit added.

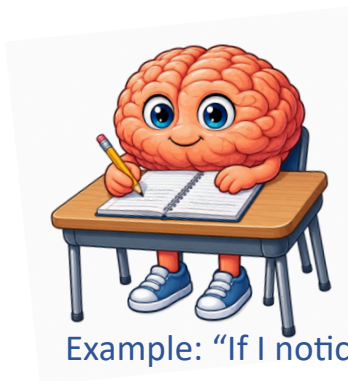
This approach may feel modest, but that is its strength. The purpose is not to create temporary enthusiasm. It is to change what the person reliably does.

Final Reflection

The twelve habits in this episode are not heroic. They require neither unusual courage nor exceptional talent. Their power comes from being specific, repeatable, and available before conditions deteriorate.

Aviation safety is often preserved by ordinary actions performed consistently: opening the written checklist, naming the threat, honoring the minimum, asking for another set of eyes, going around, stopping the task, taking the break, or voicing the concern while it can still change the outcome.

We do not need perfect cognition. We need habits and systems that support human cognition as it actually works. One fully installed habit is more protective than twelve ideas we merely understand.



Practical Take-Away to try this week

1. Write one personal if-then rule.

Choose a situation where you tend to get rushed, tired, emotional, or overly confident. Write a specific response in advance:

“If _____ happens, then I will _____.”

Example: “If I notice I am rushing, then I will stop for 30 seconds before continuing.”

2. Use a one-minute pre-mortem before an important decision.

Ask: **“Imagine this goes badly. What is the most likely reason?”**

Then identify one action you can take now to reduce that risk. This works for travel, finances, work decisions, difficult conversations, and family plans.

. End the day with one win and one change.

Before bed, name one thing you handled well and one thing you would do differently next time. This turns daily experience into examined experience and helps good habits become more deliberate.
