



Cognitive Cooperation

AIRCREW COGNITIVE TRAINING — CORE COMPETENCY THREE OF THREE

Focus and direction can both be executed well by one person and still be wrong — because a single mind, however skilled, checks itself imperfectly. Cognitive cooperation is the third thing this program asks of every 121 aircrew professional: the structured practice of letting other people check, question, and correct a decision before it becomes irreversible.

What Cognitive Cooperation Actually Is

This is not a new idea in aviation — it is the reason Crew Resource Management exists at all. CRM training traces back to a 1979 NASA and industry workshop convened after a string of accidents in which technically proficient crews failed to use every resource and every voice available to them (FAA, [The Evolution of CRM Training](#), NASA, [Resource Management on the Flight Deck](#), 1979). The Threat and Error Management model that grew out of that work is explicit: risk comes from both expected and unexpected threats, and the best defense is a crew that catches and traps each other's errors before they combine (Helmreich, [Models of Threat, Error, and CRM](#)).

Salas and Maurino's research across the industry reaches the same conclusion from a different angle: teams that structure how they check each other consistently outperform teams that simply try harder individually (Salas & Maurino, [Human Factors in Aviation](#)). Cognitive cooperation is that structure — not a hope that people will speak up, but a deliberate design that makes speaking up the expected behavior.

Why It Breaks Down

Authority gradients suppress it — a junior voice hesitates to challenge a senior one, even when the junior voice is right. So does the slow normalization of shortcuts, where a check that used to be independent quietly becomes a formality because it has caught nothing in a long time. Both patterns sit inside the industry's "Dirty Dozen" — complacency and lack of communication chief among them — and both erode the exact mechanism this competency depends on (SKYbrary).

In the Cockpit and On the Floor

Pilot-monitoring callouts, cross-verification between pilot flying and pilot monitoring, and a sterile-cockpit challenge-and-response are cognitive cooperation in its most practiced form. On the maintenance floor, the independent inspection and the second signature exist for the identical reason — no single mind should carry a return-to-service decision alone, no matter how confident that mind is.

Building the Habit



- Speak up early. A quiet doubt voiced before the door closes or the panel is buttoned up has prevented more events than any inspection stamp ever will.
- Cross-check as a discipline, not a formality. An independent check only has value if it's used to challenge the first read, not just confirm it.
- Brief the alternative, not just the plan. Naming the backup before you need it keeps the team from anchoring to a plan that has stopped making sense.
- Debrief honestly. Reviewing what nearly went wrong, in the moment rather than after the fact, is how a crew or a maintenance team actually gets better.

What This Program Asks

Every professional is asked for genuine cognitive cooperation between the people sharing a shift, a flight deck, or a task card — not politeness, and not deference, but the deliberate practice of letting someone else's judgment check your own before either one becomes the record.

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