



ACT Instructor Manual

Aircrew Cognitive Training
Curriculum, Facilitation & Governance Reference

PREPARED AND OWNED BY COGVATION

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August 2026

Table of Contents

This manual is organized in six parts, moving from what COGVATION is, to the ACT curriculum itself, to the governance body that keeps it current, to how instructors deliver it, how it is assessed, and the reference materials that support all of it.

PART 1 About COGVATION

3

1.1 Who We Are · 1.2 Our Model: Build, Train, Govern · 1.3 Organizational Structure · 1.4 The Client Relationship Model · 1.5 Our Philosophy: Why Cognition, Why Now

PART 2 The ACT Program

12

2.1 Program Overview · 2.2 Instructional Design Philosophy · 2.3 The Three Core Competencies at a Glance · 2.4 Competency One: Focus · 2.5 Competency Two: Direction · 2.6 Competency Three: Cognitive Cooperation · 2.7 Instructor Quick Reference

PART 3 The CCC

45

3.1 Charter & Purpose · 3.2 Composition & Roles · 3.3 Governance Function: Curriculum Standards · 3.4 Review Function: Event & Near-Miss Review · 3.5 Meeting Cadence, Agenda Template & Decision Process · 3.6 Escalation Pathway & Relationship to Client SMS

PART 4 Instructor Facilitation Guide

58

4.1 Facilitation Principles · 4.2 Classroom Setup & Materials Checklist · 4.3 Session Flow Template · 4.4 Engaging Pilots vs. Maintenance Audiences · 4.5 Handling Resistance & Difficult Moments · 4.6 Debrief Techniques

PART 5 Assessment & Certification

71

5.1 Assessment Philosophy · 5.2 Knowledge Check Bank — Focus · 5.3 Knowledge Check Bank — Direction · 5.4 Knowledge Check Bank — Cognitive Cooperation · 5.5 Certification Criteria & Recertification

PART 6 Appendices

81

6.1 Glossary of Terms · 6.2 Master Reference List · 6.3 Forms & Templates · 6.4 Quick-Reference Cards



PART 1

About COGVATION

Who COGVATION is, how the engagement model works, and why cognitive performance training exists now.

IN THIS PART

- Who We Are
- Our Delivery Model
- Organizational Structure
- The Client Relationship
- Our Philosophy

About COGVATION

PART 1 — COMPANY OVERVIEW

Before an instructor teaches a single ACT session, it helps to understand exactly who built the program, why it exists, and how COGVATION's relationship with a client airline actually works.

1.1

Who We Are

COGVATION is a founder-owned company that designs cognitive-performance training systems for aviation operators. It is not a division of any airline, and it is not a generic corporate training vendor with an aviation logo pasted on the cover. It is a standalone company, wholly owned by its founder, Khaled M. Alossi, built specifically around one problem: how flight crews and maintenance teams actually think, decide, and check each other under real operational pressure.

That focus comes from the founder's own seat in the industry. Khaled M. Alossi is an active Aircrew Program Designee on the Embraer 170, which means COGVATION's training is designed by someone who sits inside the certification and evaluation process it is meant to strengthen — not by an outside consultancy translating a general leadership curriculum into aviation vocabulary after the fact.

That distinction shapes everything else in this manual. Every scenario, every checklist habit, and every governance mechanism described in the ACT program is grounded in flight-deck and hangar-floor human factors research — the same body of evidence behind Crew Resource Management, Threat and Error Management, and the industry's documented human-error patterns — rather than in generic soft-skills content adapted for an aviation audience.

COGVATION was founded on a simple observation: most cognitive-skills training available to airlines was written for a general corporate audience and then relabeled for aviation, with flight-deck or hangar-floor terminology swapped in but the underlying scenarios, judgment calls, and failure modes left generic. Crews notice the difference immediately, and that gap in credibility undermines the training before it has a chance to change behavior. COGVATION's founding premise was to close that gap by building from the operating environment outward, rather than from a generic curriculum inward.

COGVATION exists to build cognitive-performance training the way the rest of aviation training is built: from operational evidence, evaluated by people who actually fly and maintain the aircraft.

What COGVATION Is Not

It is worth being explicit about what COGVATION is not, because instructors will sometimes be asked this directly by the crews they train. COGVATION is not a subsidiary of any airline it serves, and it is not owned or controlled by any client. It is not a certification authority, a regulator, or a substitute for any

airline's existing FAA-approved training program — ACT is a supplemental cognitive-performance layer that sits alongside required technical and procedural training, not a replacement for it. And it is not a one-time workshop vendor: COGVATION's engagement model is built around a continuing relationship, not a single delivered course.

Instructors should also understand what makes COGVATION's content credible in a room full of experienced aviation professionals. Because the founder holds an active Aircrew Program Designee role, the scenarios, language, and judgment calls embedded in ACT are pressure-tested against the same standards a Designee applies during real evaluations — not written by a training-content team working from a distance and handed off for aviation-specific editing afterward.

How This Manual Fits

This instructor manual is the operational counterpart to that credibility. Everything in the parts that follow — the ACT competency model, the scenario library, the assessment rubrics, and the CCC's event-review process — exists because COGVATION built it that way on purpose, not because a client asked for a training binder and COGVATION assembled generic material to fill it. Reading this Part first gives an instructor the company-level context that makes the rest of the manual make sense: who built this, why it looks the way it does, and what COGVATION expects an instructor to protect when they deliver it.

Key Takeaways

- COGVATION is a standalone company, 100% owned by founder Khaled M. Alossi — not a division of any airline.
- Its founder is an active E170 Aircrew Program Designee, which grounds ACT in real evaluation standards.
- ACT supplements, and never replaces, a client's required FAA-approved technical and procedural training.
- COGVATION's credibility rests on ACT working across every client it serves, not on any single client's budget.

1.2

Our Model: Build, Train, Govern

COGVATION does not embed staff inside a client airline to run its cognitive training program indefinitely. Instead, COGVATION delivers ACT as a contracted service built around three sequential commitments to each client, so the program becomes a durable capability the airline owns and operates — not a dependency on an outside vendor's continued presence.

Build

COGVATION designs the client's Aircrew Cognitive Training (ACT) curriculum from the ground up: the three core competencies of Focus, Direction, and Cognitive Cooperation, the scenario library that exercises them, and the assessment approach used to evaluate them. This curriculum is built specifically for the client's fleet, operating environment, and existing safety culture — it is not a shared, off-the-shelf template.

Train

COGVATION certifies the client's own instructors to deliver ACT directly to their own pilots and maintenance technicians. This is the core of the engagement: COGVATION does not stand at the front of the client's recurring training classes indefinitely. It trains and certifies the client's ACT Instructor Corps so the client's own people deliver the program, session after session, class after class.

Govern

COGVATION stands up a Cognitive Cooperation Council (CCC) for the client — a governance and event-review body that keeps the ACT curriculum current, reviews how it performs against real operational events, and continuously improves it. The CCC is where COGVATION and the client's own leadership meet on an ongoing basis, long after the initial curriculum build is complete.

Together, these three commitments describe a contracted service relationship, not an internal department of the client airline. COGVATION remains a separate company throughout the engagement; what transfers to the client is capability — a certified instructor corps and a functioning governance council — not COGVATION's own staff or ownership of the company.

Why This Order Matters

Build, Train, and Govern are listed in that order because each step depends on the one before it, and skipping ahead undermines the whole model. A curriculum handed to instructors before it has been properly built produces inconsistent delivery from the first cohort onward. Instructor certification granted without a finished curriculum forces instructors to improvise content in the classroom. And governance introduced only after problems surface, rather than designed in from the start, turns the CCC into a damage-control exercise instead of the continuous-improvement function it is meant to be.

For an instructor, the practical implication is this: by the time you are certified to teach ACT, the curriculum you are delivering has already been through COGVATION's build process, and the CCC that will review your sessions and the events they surface is already standing. You are stepping into a system that was deliberately sequenced to be ready for you, not one you are expected to help assemble on the fly.

- Build defines what is taught — the curriculum, scenarios, and assessment criteria.
- Train defines who teaches it — the client's own certified ACT Instructor Corps.
- Govern defines how it stays current — the CCC's ongoing review of events and outcomes.

A Contracted Service, Not a Department

It is worth restating plainly: at no point in the Build, Train, Govern model does COGVATION become part of the client airline's own organization, and at no point does the client airline become part of COGVATION. COGVATION delivers ACT as a contracted service, governed by a license and an ongoing CCC relationship, in the same way an airline contracts with any specialized external provider for a capability it chooses not to build entirely from scratch in-house.

This matters for how instructors should describe the program to their own colleagues. An ACT instructor is a member of their own airline's staff, certified against an external, independently maintained standard — comparable in spirit to how a mechanic holds an FAA airframe and powerplant certificate that exists independently of any one employer. The certificate travels with the person and

the standard; the employer changes the context, not the standard itself.

1.3

Organizational Structure

COGVATION sits above every client engagement as the parent company. Two structures extend from COGVATION into each client relationship: the ACT program itself, and the CCC that governs it. Each client, in turn, connects into that structure through its own people — its certified instructors and its CCC seat representatives — rather than through COGVATION staff embedded on-site.

Entity	Role	Relationship
COGVATION	Parent company; owns and licenses the training system	100% founder-owned; contracts with airline operators as clients
ACT (Aircrew Cognitive Training)	The training program: Focus, Direction, Cognitive Cooperation	Built by COGVATION; licensed to and delivered by each client
CCC (Cognitive Cooperation Council)	Governance and event-review body for the ACT program	Stood up by COGVATION; staffed jointly with client-side seats
Client's ACT Instructor Corps	The client airline's own instructors, certified to deliver ACT	Client-side; trained and certified by COGVATION
Client's CCC Seat Representatives	The client airline's own leaders who sit on the CCC	Client-side; participate in ongoing governance and review

This structure is deliberately consistent across every client COGVATION works with: COGVATION at the top, the ACT program and CCC as the two structures it stands up for a client, and the client's own instructor corps and CCC seats as the two points where the client organization connects into that structure.

Reading the Chain of Ownership

It helps to read the table above as a chain rather than a flat list. COGVATION owns the training system at the top of the chain. ACT and the CCC are the two mechanisms COGVATION uses to deliver and sustain that system inside a specific client, ACT as the curriculum layer and the CCC as the governance layer that watches over it. The client's Instructor Corps and CCC seat representatives are where a real airline's own people connect into that chain: instructors deliver ACT day to day, and seat representatives bring operational reality back into the CCC's review process.

No client owns or controls COGVATION, the ACT curriculum design, or the CCC's governance authority. What a client owns is its own certified instructor corps and its seats at the CCC table, the operational half of the relationship. This separation is what allows COGVATION to serve multiple airline clients over time without any one client's internal politics or turnover disrupting the underlying training system.

Where Instructors Sit in This Structure

For the purposes of this manual, the most important row in the table above is the ACT Instructor Corps. As an instructor, you are a client-side employee, certified by COGVATION but employed and scheduled by your own airline — you are not a COGVATION contractor working inside someone else's operation. Your reporting line for day-to-day training duties runs through your own airline's training department, while your certification standard, curriculum content, and continuing-education requirements as an ACT instructor run through COGVATION.

This dual relationship is intentional, not a gap in the org chart. It keeps instructors embedded in the operation they are training — scheduled alongside the crews they teach, subject to the same reporting culture — while keeping the standard they teach to consistent and independently maintained by COGVATION across every client the company serves.

When a question arises about curriculum content, assessment standards, or how a specific scenario should be run, the answer comes from COGVATION's certification standard, not from local improvisation. When a question arises about scheduling, classroom logistics, or how ACT sessions fit into the broader training calendar, that answer comes from the client airline's own training department. Knowing which line a given question falls on is one of the simplest ways an instructor can tell whether they are operating inside the standard or inside local logistics.

1.4

The Client Relationship Model

Every COGVATION client engagement follows the same broad arc, moving from a licensed curriculum to a self-sufficient, client-run program with COGVATION remaining involved through ongoing governance. COGVATION's flagship client illustrates the model in practice.

It is worth noting why this manual leans on COGVATION's flagship client as the example throughout. As COGVATION's flagship client, this operator was the first to carry the ACT program from initial curriculum build through instructor certification and into ongoing CCC governance — which means this client's experience is the most complete, real-world illustration of how the full engagement model plays out over time. Future COGVATION clients will follow the same three phases, adapted to their own fleet and operating environment.

Phase One: Curriculum Licensing

The engagement begins with COGVATION building and licensing the ACT curriculum to the client. For COGVATION's flagship client, this meant a curriculum shaped around the client's own fleet operations and existing safety culture, delivered as a licensed program rather than a one-time consulting deliverable — ACT continues to belong to COGVATION as the licensor while the client operates it under license.

Licensing, rather than a one-time work-for-hire handoff, matters because it keeps COGVATION accountable for the curriculum's ongoing quality. If ACT were simply delivered once and handed over outright, there would be no structural reason for COGVATION to keep improving it, and no structural mechanism for the client to request changes as its own operation evolves. The license keeps both sides at the table.

Phase Two: Instructor Certification

COGVATION then certifies the client's own instructors to deliver the licensed curriculum. At this operator, this produced the ACT Instructor Corps referenced throughout this manual: the client's own instructors, certified by COGVATION, delivering ACT directly to its pilots and maintenance technicians.

Certification is not a one-time credential handed out and forgotten. Instructors are trained on the curriculum's content, on how to run and debrief the scenario-based exercises at the heart of ACT, and on how to recognize when a session has surfaced something worth escalating to the CCC rather than resolving quietly in the room. This last point is what separates an ACT instructor from a conventional classroom trainer: part of the role is feeding real signal back into governance, not just delivering content.

Phase Three: Ongoing CCC Participation

The relationship does not end once instructors are certified. COGVATION and the client continue to meet through the Cognitive Cooperation Council, where client-side seat representatives — at this operator, drawn from its own operational leadership — review real events, assess how the ACT curriculum is performing, and work with COGVATION to refine it over time.

These three phases repeat on a cycle, not just once at the start of the relationship. As the client's fleet, routes, or safety findings evolve, the CCC surfaces what needs updating, COGVATION revises the licensed curriculum, and the client's Instructor Corps is recertified against the updated material — the same three phases, run again, keeping the program current rather than letting it calcify after its initial launch.

COGVATION's flagship client — not COGVATION's owner and not an internal division of COGVATION. The relationship is a licensed, governed partnership between two separate companies, built to outlast any single training cycle.

1.5

Our Philosophy: Why Cognition, Why Now

COGVATION was not built in a vacuum. It was built in response to a broader shift already underway across commercial aviation training: a move away from rigid, maneuver-counting syllabi and toward training that is evidence-based and competency-based — designed around the actual skills crews need and the actual failure patterns the data shows, rather than a fixed checklist of exercises repeated by tradition.

The clearest regulatory expression of that shift is the European Union Aviation Safety Agency's Evidence Based Training (EBT) framework, which reorients recurrent pilot training around demonstrated competencies and real operational data rather than a fixed list of maneuvers ([EASA, Evidence Based Training \(EBT\)](#)). COGVATION reads this not as a niche regulatory update, but as a market signal: the industry itself has concluded that competency and evidence produce better-prepared crews than rote repetition.

EBT did not appear in isolation. It sits alongside a longer arc of aviation training reform that includes Crew Resource Management and Threat and Error Management — both born from the same underlying insight, that technical proficiency alone does not prevent every accident, and that how a

crew thinks, decides, and cross-checks under pressure is itself a trainable, evaluable skill set. EBT is best understood as that insight finally being written into a formal, competency-based training and evaluation framework rather than remaining an informal best practice passed down instructor to instructor.

ACT is built around that same signal, applied specifically to cognition. Just as EBT asks training providers to evaluate demonstrated competency rather than maneuver counts, ACT asks operators to treat focus, direction, and cognitive cooperation as trainable, assessable competencies in their own right — skills that can be built deliberately, evaluated honestly, and governed continuously through a body like the CCC, rather than assumed to exist simply because a crew member holds a valid certificate.

This is why COGVATION exists now, and why it exists as a separate, founder-led company rather than as an in-house training initiative at any single airline: the shift toward evidence-based, competency-based training is industry-wide, and the operators who move early gain a training system built for where the industry is going, not for where it has been.

Why a Standalone Company

A cognitive-performance training system built and owned inside a single airline tends to reflect that airline's internal politics, budget cycles, and turnover — it rises and falls with whoever happens to champion it internally. Building COGVATION as an independent company insulates the ACT curriculum and the CCC's governance standards from any one client's internal changes, and lets the evidence base behind ACT keep growing as COGVATION works with additional operators over time.

It also means COGVATION's incentives point in a specific direction: the company's credibility depends on ACT actually working, on real flight decks and hangar floors, for every client it serves — not on preserving a single internal program's budget line at one airline. That incentive alignment is part of why this manual treats governance through the CCC as a first-class feature of the program, rather than an afterthought bolted on to satisfy an audit.

The industry has already decided that evidence and competency beat rote repetition. COGVATION was built to bring that same standard to how aviation professionals think, decide, and check each other — not just to how they operate the aircraft.

What This Means for an Instructor

Concretely, this philosophy shows up in how ACT sessions are run and assessed. Instructors are not asked to confirm that a crew member completed a set number of exercises; they are asked to evaluate whether that crew member can actually demonstrate focus, direction, and cognitive cooperation under realistic scenario pressure, and to document that judgment honestly. That is the same evidence-based, competency-based standard EASA's EBT framework applies to flying skills, applied here to cognitive ones.

It also means the CCC's event-review function is not a bureaucratic add-on — it is the mechanism that keeps ACT evidence-based in practice, not just in name. Every real operational event the CCC reviews is a data point that can sharpen the curriculum, the same way real flight-data monitoring sharpens an EBT-based training program over time. An instructor's honest reporting into that process is what keeps

the whole system grounded in evidence rather than assumption.



PART 2

The ACT Program

The instructional design and complete instructor modules behind ACT's three core competencies: Focus, Direction, and Cognitive Cooperation.

IN THIS PART

- Program Overview
- Instructional Design Philosophy
- Competency Snapshot
- Focus Module
- Direction Module
- Cognitive Cooperation Module

PART 2

The ACT Program

How COGVATION designs, structures, and delivers Aircrew Cognitive Training — the instructional philosophy behind it, and a complete instructor module for each of the three core competencies.

2.1

Program Overview

Aircrew Cognitive Training — ACT — is COGVATION's core cognitive-performance training program, delivered under contract to airline clients. ACT is not a compliance module bolted onto an existing curriculum; it is a standalone program built specifically to address how attention, decision-making, and crew interaction break down under real operating conditions, and to give instructors a repeatable way to teach front-line professionals to catch those breakdowns before they matter.

ACT's audience spans both sides of the operation: flight crew (pilots) and maintenance technicians. The two groups face different tasks and different regulatory environments, but the underlying cognitive failure modes are the same — attention narrows under fatigue, decisions get rushed under pressure, and a single set of eyes checks itself imperfectly no matter how experienced those eyes are. ACT is written so the same core content plays in a cockpit classroom and on a hangar-floor training room with only the worked examples changing, not the underlying model.

This dual-audience design is a direct consequence of how COGVATION was built as a company. Rather than developing separate training products for flight operations and for maintenance and licensing each program under its own contract terms, COGVATION developed one cognitive-performance curriculum and validated it against both populations at once, so a single ACT contract with an airline client can cover its entire front-line workforce rather than only one department. The instructor modules in this Part reflect that design choice throughout — every worked example is offered in both a flight-deck and a hangar-floor version specifically so a single certified instructor corps can serve an entire client relationship.

The Three-Competency Structure

ACT is organized around three core competencies, delivered in a fixed order because each one depends on the one before it: Focus (directing and holding limited attention on what matters), Direction (turning that attention into a decision that gets made, documented, and evaluated), and Cognitive Cooperation (letting other people check, question, and correct that decision before it becomes irreversible). Focus without direction is just noticing. Direction without cognitive cooperation is a single mind checking itself. The three together are what the program is actually training toward.

What ACT Is Not

It is worth being explicit about what ACT does not attempt to do, since new instructors and new client training staff sometimes assume the program overlaps more with existing regulatory training than it

actually does. ACT is not a substitute for type-rating training, recurrent proficiency checks, or airframe-specific maintenance training — it does not teach anyone how to fly a specific aircraft or how to perform a specific maintenance task. It is also not a general wellness or stress-management program, even though fatigue and pressure both come up throughout the modules in this Part; ACT addresses fatigue and pressure only insofar as they affect the three competencies, not as topics in their own right. Keeping this boundary clear helps instructors answer a question that comes up in nearly every first session: “how is this different from the CRM training I already took?” ACT is built on the same research lineage as CRM (Section 2.2 and Section 2.6 both cite it directly) but is scoped narrower and delivered with a different instructional model — single-competency sessions with a heavier discussion and case-study weighting than most CRM refreshers use.

How Modules Are Delivered

Each competency is delivered as its own session — one competency per session, never combined — so that instructors can go deep on a single failure mode, its case studies, and its habits without diluting the hour across three unrelated topics. A typical ACT session runs 60 minutes and follows the same five-part shape regardless of which competency is being taught: a short hook, a core-concept segment, a case study or classroom activity, a facilitated discussion, and a debrief that closes the loop on what was learned. That consistency is deliberate — once an instructor and a class learn the rhythm of one ACT session, every subsequent session runs on the same rails, which is what allows COGVATION to certify instructors across multiple airline clients on a single delivery standard.

- Focus — session one. Prerequisite for everything downstream.
- Direction — session two. Assumes attention is already under control.
- Cognitive Cooperation — session three. Assumes a decision has already been made and now needs a second check.

Why Single-Competency Sessions, Not a Combined Workshop

COGVATION has deliberately resisted client requests to compress ACT into a single half-day “cognitive skills” workshop covering all three competencies at once. The one-competency-per-session design is not a scheduling convenience; it is a direct consequence of the instructional philosophy in Section 2.2. A single 60-minute session has room for exactly one case study worked in real depth, one facilitated discussion long enough to surface real experience from the room, and one debrief that closes the loop. Splitting that hour three ways to cover Focus, Direction, and Cognitive Cooperation in the same session leaves each competency with a shallow, lecture-style pass that undermines the andragogical basis for the program described in the next section.

This also means ACT scales across a client relationship as a sequence, not a single event. A new client typically receives Focus first for its initial pilot or maintenance cohort, then Direction once Focus has had time to become habitual, then Cognitive Cooperation. Recurrent training cycles back through all three on a rotation the client and COGVATION agree on during contracting, rather than re-running a single combined session year after year.

Audience Adaptation Without Changing the Model

Because ACT serves both flight crew and maintenance technicians under the same contract, every module in this Part is written with two parallel worked examples — one drawn from the flight deck, one drawn from the hangar floor — so an instructor teaching a mixed cohort, or a cohort exclusively on one side of the operation, can select the example that lands. The underlying competency definition, learning objectives, and knowledge check do not change between audiences; only the case study and talking-point examples are audience-specific. This is a direct application of ADDIE's Analysis phase (Section 2.2): the failure mode being taught is identical across both audiences even though the surface-level task looks different.

In practice, this means an instructor certified on ACT can walk into a room of first officers on Monday and a room of A&P mechanics on Wednesday and deliver the same Focus module with genuine credibility in both rooms, because the module was written from the failure mode outward rather than from a single occupation's procedures outward. It also means COGVATION can add a new client occupation — dispatch, ramp, cabin crew — to an existing module by writing one new worked example rather than building a new module from scratch, which keeps the three-competency structure stable as the client base grows.

Program Duration and Sequencing at a Glance

For instructors and client training coordinators planning a first rollout, the timeline below summarizes how the three ACT sessions typically sequence across a new cohort's onboarding into the program, from initial scheduling through the first recurrent-training cycle.

Stage	What Happens	Typical Timing
Initial scheduling	COGVATION and client training staff confirm cohort size, audience mix (flight crew, maintenance, or mixed), and session dates.	4–6 weeks before first session
Session 1 — Focus	Delivered to the full cohort as the prerequisite session for everything that follows.	Week 1
Session 2 — Direction	Delivered once Focus has had time to become habitual, typically with a short gap rather than back-to-back with Session 1.	Week 2–4
Session 3 — Cognitive Cooperation	Closes the initial rollout; assumes both prior competencies are already in active use.	Week 4–6
Recurrent cycle	All three sessions repeat on a rotation agreed with the client, folding in de-identified operating experience as case-study material.	Annually or semi-annually

The Two Audiences, Side by Side

The table below is a working reference for instructors moving between a pilot cohort and a maintenance cohort in the same week, summarizing where the two audiences' operating vocabulary diverges even though the underlying competency does not.

Element	Flight Crew	Maintenance Technicians
Critical-phase discipline	Sterile cockpit rule below 10,000 feet	Task card discipline; one system verified at a time
Direction touchpoint	Go-around call, diversion decision, hold-short	MEL deferral, non-routine finding writeup, borescope pull
Cross-check mechanism	Pilot-monitoring callouts, challenge-and-response	Independent inspection, second signature
Typical session framing	Case study drawn from a flight-deck scenario	Case study drawn from a hangar-floor scenario

Delivery Format and Environment

ACT sessions are delivered in person wherever a client's operating environment allows it, in a classroom or briefing room set up for small-group work rather than theater-style seating — the case-study and discussion segments described in Sections 2.4 through 2.6 depend on participants being able to see and talk to each other easily. Where a client's geography makes in-person delivery impractical for a given cohort, COGVATION can deliver a video-conference version of the same session, though the lesson plan timing is adjusted to account for the slower pace of breakout discussion in a remote setting. In either format, the underlying module — objectives, lesson plan shape, case study, and knowledge check — stays identical; only the room mechanics change.

Instructor Certification and Session Cadence

ACT is delivered exclusively by instructors certified on the program's delivery standard — certification confirms an instructor can run the five-part session shape from Section 2.1 faithfully, ask the discussion questions in a way that actually opens up the room instead of shutting it down, and recognize the difference between a productive struggle in a case study and a group that has genuinely gotten lost. A typical client engagement runs each of the three competency sessions once per cohort in the initial rollout, then folds all three into a recurring annual or semi-annual cadence once the baseline rollout is complete. Session sizes are kept small — COGVATION recommends no more than roughly 12 to 16 participants per session — because the discussion and case-study segments described in Sections 2.4 through 2.6 lose their value once the room is too large for every voice to reasonably be heard within the 60-minute window.

2.2

Instructional Design Philosophy

ACT's instructional design rests on three established frameworks, not on house intuition about what makes training memorable. Each framework does a different job: one shapes how the program itself gets built, one shapes how a single learning objective gets worded, and one shapes why the classroom looks the way it does.

ADDIE — The Design Process

Every ACT module — including the three built out in this Part — is produced through the [ADDIE model](#): Analysis, Design, Development, Implementation, and Evaluation. Analysis identifies the specific failure mode a module needs to address (for Focus: attention narrowing under fatigue and interruption).

Design sets the learning objectives and lesson-plan shape before a single slide is written.

Development produces the talking points, case studies, and knowledge checks. Implementation is the live delivery by a certified instructor. Evaluation closes the loop — knowledge-check results and instructor debrief notes feed back into the next revision of the module. ACT modules are treated as living documents that move through this cycle again each time a client's operating experience surfaces a new case study or a knowledge-check question stops discriminating.

In practice, the Analysis phase is where COGVATION spends the most time with a new client before a single module is delivered. Analysis for the Focus module, for example, involved reviewing which of the three attacking patterns — fatigue, complacency, interruption — showed up most often in a client's own safety reporting, so the module's case study could be weighted toward the pattern most relevant to that operating environment rather than treating all three as equally likely in every context. This is also why the modules in Sections 2.4 through 2.6 are written with swappable case studies rather than a single fixed scenario — the Development phase deliberately left room for a new client's Analysis findings to change which worked example gets used without requiring the whole module to be rebuilt.

Bloom's Taxonomy — How Objectives Are Worded

Every ACT learning objective is phrased using an action verb drawn from [Bloom's Taxonomy](#), not a vague aspiration. "Understand focus" is not a learning objective an instructor can assess; "identify the point in a task where attention narrowed" is. COGVATION's objective-writing standard, following [Yale's guidance on writing learning objectives](#), favors verbs at the identify / apply / evaluate tier over lower-tier verbs like "list" or "know," because the ACT knowledge check has to be able to measure whether the objective was actually met. If an objective can't be assessed with a question that has a right answer, it gets rewritten before the module ships.

This standard also shapes how instructors are trained to open each session. Rather than telling a class "today we're going to understand focus," an ACT instructor states the session's actual objectives at the identify / apply / evaluate tier before the core-concept segment begins, so participants know from the first minute what they will be asked to do by the end of the hour. This is a small change in wording with a real effect on the room: an objective a participant can picture themselves being tested on changes how they listen to everything that follows it.

Andragogy — Why ACT Sessions Are Discussion-Led

ACT deliberately avoids a lecture format. That choice is grounded in [andragogy](#), Malcolm Knowles's framework for how adults learn differently from children. Knowles's principles — adults need to know why they are learning something before they will invest in it, adults are self-directed and resist being talked at, adults bring a working reservoir of real experience the instructor should draw on rather than override, and adults learn best when material is problem-centered rather than subject-centered (see [Knowles, "Andragogy: Adult Learning And Education At Its Best?"](#)) — are the reason every ACT session is built around a case study and a facilitated discussion instead of a slide deck read aloud. A pilot or technician in the room has already lived some version of the failure mode being taught; the instructor's job is to surface that experience, not talk over it.

"Adults come to a learning event with a lifetime of experience and knowledge that includes values, beliefs, and opinions. This prior experience needs to be acknowledged and used as a resource for learning — not treated as a blank slate to be filled."

— adapted from Knowles's andragogical principles, the working definition COGVATION instructors are trained against.

Instructors new to ACT sometimes default to a lecture format out of habit, particularly when a session feels rushed and a lecture seems faster than a discussion. COGVATION's certification process treats this as the single most common delivery drift to correct, because it undoes the andragogical basis for the entire program: a 60-minute lecture on focus, direction, or cognitive cooperation produces participants who can recite the content but have not connected it to their own experience, and a competency that isn't connected to lived experience rarely survives contact with a real shift. The lesson plans in Sections 2.4 through 2.6 allocate more combined time to the case study and discussion segments than to the core-concept segment for exactly this reason.

The practical result of the three frameworks together: ADDIE governs how a module gets built and revised, Bloom's governs how each objective inside that module is worded and assessed, and andragogy governs why the 60 minutes in the room are spent on a case study and a discussion rather than a lecture. An instructor who understands all three can adapt an ACT module to a new client's specific operating context without breaking the underlying design.

A Fourth Influence: Evidence-Based Training

ACT's design also borrows from Evidence Based Training, the approach to competency-based flight training formalized by [EASA's EBT framework](#). EBT's core insight — that training should target the competencies most predictive of real operational performance, and that instructors should assess demonstrated competencies rather than rote procedure recall — is why ACT is organized around Focus, Direction, and Cognitive Cooperation as competencies rather than around a list of regulations or procedures to memorize. The knowledge checks in Sections 2.4 through 2.6 are written to test whether a participant can apply a competency to a new scenario, not whether they can recite a definition.

How the Four Frameworks Divide Labor

Instructors sometimes ask which framework “wins” when two seem to point in different directions — for example, when a client wants a shorter session than andragogy's discussion-first model comfortably allows. The table below is the quick-reference instructors use to keep the frameworks straight and to know which one governs which decision.

Framework	Governs	Shows Up As
ADDIE	How a module is built and revised over time	The Analysis-Design-Development-Implementation-Evaluation cycle behind every module in this Part
Bloom's Taxonomy	How a single learning objective is worded	Action verbs — identify, apply, evaluate — in every objectives list below
Andragogy (Knowles)	Why the classroom is discussion-led	Case studies and facilitated discussion instead of lecture
Evidence Based Training	What gets assessed and why	Competency-based knowledge checks instead of procedure recall

2.3

The Three Core Competencies at a Glance

The table below is the reference summary instructors return to when sequencing a multi-session ACT rollout or when a class asks how the three competencies relate to one another. Full instructor modules for each row follow in Sections 2.4 through 2.6.

Competency	What It Is	Breaks Down When	Instructor Focus
Focus	The deliberate act of directing a finite pool of attention at what matters most, and holding it there against everything competing for it.	Fatigue narrows attention before it's noticed; complacency lets a familiar task run on autopilot; an interruption during a critical step costs the mental thread holding the task together.	Teach attention as a limited, manageable resource, not a matter of effort or willpower.
Direction	The complete decision loop that turns attention into action — detecting a change, weighing it, choosing, and evaluating the outcome.	High workload or a rushed turn cuts the slower steps of the decision loop first — identifying real alternatives, evaluating the result — leaving a decision that was reacted to but never finished.	Teach the full decision loop as a discipline to run on purpose, not a reflex to trust.
Cognitive Cooperation	The structured practice of letting other people check, question, and correct a decision before it becomes irreversible.	Authority gradients suppress a second voice; shortcuts normalize until an independent check becomes a formality instead of a real one.	Teach cross-checking as a built discipline with its own habits — not as a courtesy extended when convenient.

How the Three Competencies Interlock

The table above summarizes each competency on its own terms, but the three are not independent modules that happen to share a program name — each one is a precondition for the next, and a failure at one level often masquerades as a failure at another. A crew that misses a callout might look, on the surface, like a Cognitive Cooperation failure (the monitoring pilot didn't catch it), when the actual root cause was a Focus failure (the monitoring pilot's attention had already drifted before there was anything to catch). Instructors delivering any single competency session should be ready to name this chain explicitly when a class's discussion surfaces an example that actually spans more than one competency.

This interlocking structure is also why COGVATION recommends clients deliver the three sessions in order for a first-time cohort rather than picking whichever competency feels most urgent in the moment. A cohort that receives Cognitive Cooperation training before Focus training is being taught to catch errors without yet having the vocabulary or habits to explain why those errors happened in the

first place — the session becomes about compliance (“speak up more”) rather than about understanding (“here is specifically what a second set of eyes is checking for, and why the first set missed it”).

A Quick Diagnostic for Instructors

When a debrief surfaces an incident that does not cleanly map to the competency being taught that day, the following question order helps instructors triage which competency actually failed: first, was the relevant information ever noticed at all (a Focus question)? If yes, was a decision actually made, chosen among alternatives, and documented (a Direction question)? If yes, did anyone else have the opportunity to check that decision before it became irreversible, and did they take it (a Cognitive Cooperation question)? Working through this order in front of a class is often more instructive than any single case study, because it demonstrates the three competencies functioning as a single system rather than as three unrelated topics.

This diagnostic order also has a practical use outside the classroom. COGVATION recommends the same three-question sequence to client safety and training staff reviewing a real incident report, because it separates “what competency failed” from “who is at fault,” consistent with the [Just Culture](#) principle that a system-level root cause and individual accountability are two different questions that should not be collapsed into one. An incident that traces back to a Focus failure calls for a different corrective response than one that traces back to a Cognitive Cooperation failure, even if the surface-level outcome looked identical.

2.4

Competency One: Focus

Of the three things this program asks of every aircrew and maintenance professional, focus comes first — not because it is hardest to master, but because everything else depends on it. Direction has nothing to direct without focus. Cognitive cooperation has nothing to cross-check without focus.

What It Actually Is

Attention is not unlimited. Human factors research describes it as a finite pool of cognitive resources allocated across competing demands — and once that pool is exhausted, performance degrades even in tasks a person is otherwise fully qualified to perform ([Flight-Crew Human Factors Handbook](#)). Focus is the deliberate act of directing that limited resource at what matters most in the moment, and holding it there against everything competing for it. That makes focus different from vigilance or effort. A technician can work hard and still be unfocused if attention is split across a conversation, a phone, and the panel in front of them. A pilot can be fully alert and still miss a callout if attention has drifted to a non-flying task at the wrong moment. Instructors should draw out this distinction early: focus is not about trying harder, it is about resource allocation, and resource allocation can be trained.

It is worth spending a few extra minutes in every delivery on why this competency is taught first. Direction, covered in Section 2.5, assumes that the person making the decision actually detected the change that triggered it — but detection is itself an act of focus. Cognitive Cooperation, covered in Section 2.6, assumes a colleague is watching closely enough to catch an error — but a distracted cross-check catches nothing. Every downstream competency in this Part quietly assumes focus was present. When a class asks why the program starts here, that dependency is the answer.

Why It Breaks Down

Focus degrades quietly. Fatigue narrows attention before a person notices it happening. Complacency lets a familiar task run on autopilot past the point where it should have been re-checked. Interruptions during a critical step cost the mental thread that was holding the task together. These are three of the “[Dirty Dozen](#)” failure patterns, and all three attack focus specifically. Instructors should note that none of these three requires a bad actor or a rule violation — fatigue, complacency, and interruption all happen to competent, careful people, which is exactly why the competency has to be trained rather than assumed.

The three patterns also compound. A technician nearing the end of a long shift is already working with a narrowed attention pool from fatigue; an interruption at that point costs more of the remaining pool than the same interruption would earlier in the shift; and a task that has become familiar enough to trigger complacency is precisely the task where a person is least likely to notice the narrowing happening at all. Instructors should be explicit that ACT is not asking participants to eliminate fatigue, interruption, or familiarity — all three are permanent features of real operations — but to build habits that catch focus loss when those conditions are present.

In the Cockpit and On the Floor

The sterile cockpit rule below 10,000 feet exists to remove competing demands during the phases of flight where focus matters most. On the hangar floor, task card discipline drives the same principle — one system verified at a time, one torque value confirmed before moving to the next fastener. Both are structural solutions to the same problem: they reduce the number of things competing for a finite attention budget at the moment it matters most.

Instructors should point out that neither rule works by making the phase of flight or the maintenance task itself easier — the approach is exactly as demanding with the sterile cockpit rule in place as without it, and the fastener still needs the same torque value regardless of task card discipline. What changes is the number of unrelated demands competing for attention at the same moment. That reframing — the rule protects the attention budget, not the task itself — is often the single most useful sentence an instructor can deliver in this module.

Learning Objectives

- Identify the point in a real or simulated task where attention narrowed or drifted.
- Explain why focus is a finite, allocable resource rather than a matter of effort or willpower.
- Apply at least one attention-anchoring technique (brief, checklist-as-anchor, sterile-phase discipline) to a task under simulated interruption.
- Evaluate a short scenario to determine which “Dirty Dozen” failure pattern — fatigue, complacency, or interruption — best explains a described attention lapse.

Lesson Plan

Time	Segment	What Happens
0–10 min	Hook	Instructor opens with a short, non-technical story of a moment attention slipped in an everyday setting (driving, texting) to establish that focus lapses happen to everyone before narrowing to the operational stakes.
10–25 min	Core Concept	Present focus as a finite resource pool; introduce the three attacking failure patterns — fatigue, complacency, interruption — and the sterile cockpit / task card discipline as structural countermeasures.
25–40 min	Case Study / Activity	Small groups work the case study below and identify where the attention lapse occurred and which countermeasure would have caught it.
40–50 min	Discussion	Facilitated discussion using the discussion questions; instructor draws connections to the class's own operating environment.

Time	Segment	What Happens
50–60 min	Debrief / Close	Instructor summarizes the habit-building bullets, assigns the knowledge check, and previews that Direction (Session 2) assumes focus is already under control.

Signs of Mastery vs. Signs of Struggle

Instructors use the contrast below during the debrief and during any follow-on observation to gauge whether the competency is actually taking hold, rather than relying on the knowledge check alone.

Signal	Mastery Looks Like	Struggle Looks Like
Self-catch	Participant notices and names their own attention drift without prompting ("I lost the thread when...").	Attention drift is only identified after an instructor or peer points it out.
Checklist use	Checklist is used as a deliberate attention anchor at pre-identified critical points.	Checklist is treated as paperwork to complete after the task, not during it.
Language	Describes lapses in resource-allocation terms ("I split my attention").	Describes lapses in character terms ("I wasn't careful enough").

Facilitator Talking Points

The lines below are written to be said aloud, not read verbatim — instructors should adapt phrasing to the room while keeping the substance.

- "Focus isn't about trying harder — it's about where you put a limited resource, on purpose, and how long you can hold it there."
- "You can be fully alert and still miss something, because alertness and focus aren't the same thing."
- "A checklist isn't there to help you remember — it's there to anchor your attention at the moment it matters."
- "None of the three ways focus breaks down — fatigue, complacency, interruption — require you to be careless. That's exactly why we train for them."

Sample Opening Script

The excerpt below is a fuller worked example of how an instructor might open the core-concept segment, provided as a model rather than a script to memorize.

"I want to start with something that has nothing to do with flying or wrenches. Think of a time you were driving somewhere familiar and suddenly realized you couldn't remember the last two minutes of the drive. You weren't asleep. You weren't reckless. Your attention was just... somewhere else. That's focus breaking down, and it happens to careful, competent people every single day. The only difference between that and what we're here to talk about is the stakes. Today we're going to talk about why that happens, and what we can actually do about it — not by trying harder, but by understanding attention as something we manage on purpose."

Discussion Questions

Instructors should let each question run long enough for at least two or three participants to answer before moving on — per the andragogical basis in Section 2.2, the discussion is where the competency actually gets internalized, not the core-concept segment that precedes it.

- Describe a moment — in the operation or outside it — when you noticed your own attention had drifted from a task. What brought it back?
- Why might a fully alert, well-rested person still miss a critical callout or step?
- How does the sterile cockpit rule (or task card discipline on the floor) function as a structural fix rather than a personal-discipline fix?
- What is one attention anchor you already use, even if you didn't have a name for it before this session?
- Of the three "Dirty Dozen" patterns discussed today — fatigue, complacency, interruption — which shows up most often in your specific role, and why do you think that is?

Case Study / Classroom Activity

Present the class with a short, de-identified scenario: a technician midway through a multi-step panel inspection is interrupted by a colleague's question about an unrelated aircraft; on returning to the task, the technician resumes at what they believe is the correct step but has actually skipped one. Working in pairs, participants identify (a) which failure pattern is at work, (b) the exact point the mental thread was lost, and (c) which structural countermeasure — a written task-card hold point, a verbal re-brief on return — would have caught the skipped step before sign-off. Instructors should be ready to substitute a flight-deck version of the same scenario (an interrupted approach briefing) for pilot-only cohorts.

After each pair reports back, the instructor should press on one follow-up regardless of which countermeasure the pair identified: would the countermeasure have worked if the interruption had come from someone senior to the technician, rather than a peer? This second layer of the activity previews the authority-gradient theme that resurfaces in Cognitive Cooperation (Section 2.6) without requiring the instructor to teach that competency early.

Instructors should close the activity by asking each group to name one attention anchor from their own environment — not from the case study — that they will use in the next 30 days. This transfer step is

what separates a session that produces a good discussion from one that produces a lasting habit.

Sample Debrief Notes

The skipped step is almost always the re-brief on return from an interruption — groups correctly identify the interruption itself quickly, but many initially miss that the specific failure was resuming without confirming which step came next, rather than the interruption alone. If a group lands only on “don't get interrupted” as their answer, redirect them: interruptions are often unavoidable, so the more useful fix is a structural habit for resuming safely afterward. On the authority-gradient follow-up question, most groups initially answer that the countermeasure would still work regardless of who caused the interruption; press for specifics on how a task-card hold point would actually get enforced if the interrupting party were the technician's supervisor — this is where the discussion tends to get genuinely productive.

Common Instructor Pitfalls

- Treating focus lapses as a character or effort problem (“they should have been more careful”) instead of a resource-allocation problem — this shuts down honest discussion fast.
- Letting the case study become a blame exercise rather than a diagnostic one; the goal is identifying the mechanism, not assigning fault.
- Skipping the tie-back to structural countermeasures (sterile cockpit, task card discipline) and leaving the class with only “pay more attention” as the takeaway.
- Running short on time and cutting the debrief — the debrief is where the habit-building bullets get anchored to the class's own operating environment.
- Presenting fatigue, complacency, and interruption as three equally likely causes in every scenario, rather than helping the class reason about which one actually fits the specific facts in front of them.

Knowledge Check

Administer after the debrief. Questions are written at the identify / apply / evaluate tier of Bloom's Taxonomy (Section 2.2) so a correct answer requires applying the competency to a new scenario, not recalling a definition.

1. Which of the following best describes why a fully alert person can still miss a critical callout? (a) Alertness and focus are the same thing, so this shouldn't happen. (b) Attention is a finite, allocable resource, and it can be directed elsewhere even when the person is alert. (c) It can only happen to fatigued personnel.

Correct answer: (b)

2. A technician's attention is split across a conversation, a phone, and the panel in front of them. Which "Dirty Dozen" pattern is most directly illustrated? (a) Complacency (b) Lack of resources (c) Interruption / divided attention

Correct answer: (c)

3. What is the primary purpose of a checklist under the attention-anchor model taught in this session? (a) To serve as a memory aid for steps that are hard to recall. (b) To anchor attention deliberately at the moment it matters, not primarily to aid memory. (c) To satisfy a regulatory paperwork requirement.

Correct answer: (b)

Instructor Prep Checklist

Complete before walking into the room. This module runs poorly if any of the following is skipped.

- Confirm whether the cohort is flight-crew, maintenance, or mixed, and select the matching version of the case study (approach briefing interruption vs. panel inspection interruption).
- Have at least one de-identified, real (or realistic composite) example of a focus lapse from the client's own operating environment ready for the hook — generic examples land less well than operationally specific ones.
- Review the three "Dirty Dozen" patterns — fatigue, complacency, interruption — well enough to field questions about how they differ from each other.
- Time-check the case study segment in advance; groups consistently need the full 15 minutes and instructors who compress it lose the debrief's depth.

Materials Needed

- Printed or projected case-study handout (panel-inspection and approach-briefing versions)
- Whiteboard or flip chart for capturing each pair's identified failure pattern and countermeasure
- Timer visible to the room for the case-study segment
- Knowledge-check answer sheets (one per participant)

Extending the Module

For cohorts returning to Focus in a recurrent-training cycle, instructors may replace the standard case study with a de-identified example drawn from the client's own recent operating experience, provided the learning objectives and knowledge check remain unchanged — per the ADDIE Evaluation step described in Section 2.2, this is how the module improves over successive deliveries without drifting from its design.

2.5

Competency Two: Direction

Focus without direction is just noticing — attention pointed at the right thing with nowhere to go. Direction is what turns attention into action.

What It Actually Is

The FAA's DECIDE model formalizes decision-making: Detect a change, Estimate its significance, Choose a safe outcome, Identify options, Do something, and Evaluate the result (FAA-H-8083-25, Ch. 16). Under high workload, fatigue, or a rushed turn, it's the step people skip — they detect and react without ever cleanly choosing or documenting the decision. Direction, in ACT's usage, is not the same as a decision itself; it is the discipline of running the whole loop on purpose, every time, instead of letting the first available action stand in for a considered one.

This is also the point in the program where instructors explicitly connect back to Focus. The DECIDE loop's first step — Detect — is entirely dependent on the attention discipline built in the previous session; a change that never gets noticed can't be evaluated, chosen against, or documented no matter how good the rest of a person's decision-making is. Direction, in other words, is what focus is for.

Why It Breaks Down

Ambiguous information makes direction hard. Pressure to decide fast cuts the DECIDE loop's slower steps first — identifying real alternatives, evaluating the outcome. The result is a decision that was never finished, documented, or communicated. Instructors should emphasize that a rushed decision can still turn out fine — the failure is in the process, not necessarily the outcome, and a process failure that happens to produce a good outcome once will eventually produce a bad one.

There is a related failure mode worth naming explicitly: decision fatigue. A crew member or technician who has already run the DECIDE loop several times in a shift has less capacity left to run it well the next time, even if nothing about the individual decision itself is harder than the ones before it. Instructors should watch for participants describing a pattern of "just going with my gut" late in a shift and use it as a live example of decision fatigue rather than treating it as an isolated lapse.

In the Cockpit and On the Floor

A go-around call, a diversion decision, a hold-short — direction in its purest form. On the maintenance floor: an MEL deferral, a non-routine finding writeup, the call to pull a borescope and look closer. In every one of these examples the decision itself is less important to train than the loop that produced it — ACT is teaching the process that should precede the call, not the specific call to make in any given scenario.

This is a deliberate design choice instructors should be ready to defend if a participant pushes back with "just tell me the right answer." ACT does not — and cannot — supply a universal answer for whether a specific finding warrants a deferral or an escalation, because the right answer depends on

facts the module cannot anticipate. What the module can teach, and what it holds participants accountable for, is whether the loop that produced whatever answer they reach was run completely.

Learning Objectives

- Identify each of the six steps of the DECIDE model (Detect, Estimate, Choose, Identify, Do, Evaluate) in a worked example.
- Explain why time pressure disproportionately cuts the slower steps of the decision loop — identifying alternatives and evaluating the outcome — rather than the faster ones.
- Apply the DECIDE loop to a scenario under simulated time pressure and produce a documented decision.
- Evaluate a completed decision after the fact against what was known at the time it was made.

Lesson Plan

Time	Segment	What Happens
0–10 min	Hook	Instructor presents a fast-moving, low-stakes decision scenario (a delayed connection, a schedule conflict) and asks the class to call out their gut decision before any framework is introduced.
10–25 min	Core Concept	Walk the DECIDE model step by step against the hook scenario, showing which step the class's gut-call decision skipped.
25–40 min	Case Study / Activity	Groups work the operational case study below and produce a documented decision that runs the full loop.
40–50 min	Discussion	Facilitated discussion on when time pressure is real versus perceived, and how to preserve the loop's slower steps under real pressure.
50–60 min	Debrief / Close	Instructor summarizes the habit-building bullets and previews that Cognitive Cooperation (Session 3) is the check on a decision after it's made.

Signs of Mastery vs. Signs of Struggle

Instructors use the contrast below during the debrief and during any follow-on observation to gauge whether the competency is actually taking hold, rather than relying on the knowledge check alone.

Signal	Mastery Looks Like	Struggle Looks Like
Documentation	Decision is written down or stated aloud, including what was considered and rejected.	Decision is acted on but never documented or communicated.

Signal	Mastery Looks Like	Struggle Looks Like
Under pressure	Loop compresses in speed but not in steps — all six DECIDE steps still happen, just faster.	Loop skips steps under pressure — typically Identify and Evaluate disappear first.
After the fact	Evaluates the decision against what was known at the time it was made, regardless of outcome.	Judges the decision only by whether the outcome was good or bad.

Facilitator Talking Points

The lines below are written to be said aloud, not read verbatim — instructors should adapt phrasing to the room while keeping the substance.

- “A decision that was never written down or said out loud is very hard to evaluate later — including by the person who made it.”
- “Under pressure, we don’t skip the decision — we skip the two slowest steps of it: naming the alternatives, and checking the result afterward.”
- “A good outcome doesn’t prove a good process. Run the loop anyway.”
- “Briefing the alternative before you need it means the decision is half-made before the pressure ever shows up.”

Sample Opening Script

The excerpt below is a fuller worked example of how an instructor might open the core-concept segment, provided as a model rather than a script to memorize.

“Quick exercise before we get into any models or frameworks. I’m going to describe a situation, and I want your honest, immediate gut call — not the right answer, just what you’d actually do. [Instructor presents the hook scenario.] Okay — who’s willing to share what they’d do? [Take two or three answers.] Notice something: every one of those answers skipped straight to an action. Nobody said ‘here’s what I’d rule out first’ or ‘here’s how I’d check that afterward.’ That’s not a knock on anyone in this room — it’s what happens under time pressure, and it’s exactly what we’re here to fix today.”

Discussion Questions

Instructors should let each question run long enough for at least two or three participants to answer before moving on — per the andragogical basis in Section 2.2, the discussion is where the competency actually gets internalized, not the core-concept segment that precedes it.

- Walk through a recent decision you made under time pressure using the six DECIDE steps. Which step, if any, got compressed or skipped?
- What’s the difference between time pressure that’s real (a genuine operational deadline) and time pressure that’s perceived (a self-imposed urgency)?

- Why does documenting a decision matter even when the outcome was good?
- How can briefing an alternative in advance protect the DECIDE loop when pressure shows up later?
- Have you ever noticed decision fatigue in yourself or a colleague late in a shift? What did it look like?

Case Study / Classroom Activity

Present a scenario in which a maintenance team lead discovers a borderline finding late in a shift, close to a scheduled departure. Working in small groups, participants run the full DECIDE loop against the scenario: detect the finding's significance, estimate whether it affects airworthiness, choose among the available outcomes (defer under MEL, escalate for further inspection, sign off), identify what alternative was considered and rejected, commit to and document the decision, and define how the decision will be evaluated afterward. Instructors should be ready to substitute a flight-deck version (a marginal weather call approaching minimums) for pilot-only cohorts.

A useful variant, time permitting, is to re-run the same scenario twice with two different groups — once with a stated 10-minute deadline and once with no stated deadline — and compare which steps of the loop each group compressed or skipped. The contrast almost always demonstrates the session's core claim more convincingly than any lecture could: time pressure doesn't make people decide differently so much as it makes people stop running the full loop.

Instructors should close the activity by asking each group to identify one recurring decision in their own role — a deferral call, a go/no-go, a diversion — where they will consciously run the full loop and document it in the next 30 days.

Sample Debrief Notes

In the 10-minute-deadline variant, groups reliably skip the Identify step first — they choose an outcome without naming or discussing a real alternative — and skip Evaluate second, since it happens after the pressure has already passed and feels optional in the moment. In the no-deadline variant, most groups run the full loop unprompted, which is itself worth pointing out explicitly: nothing about the scenario's facts changed between the two runs, only the perceived time available. If a group insists their gut-call answer in the hook was already the product of a full DECIDE loop run subconsciously, ask them to reconstruct out loud what the specific rejected alternative was — this is usually where the gap becomes visible even to the group itself.

Common Instructor Pitfalls

- Letting the class treat DECIDE as a linear script that must be narrated aloud step-by-step in real operations, rather than a mental discipline that can run in seconds once trained.
- Focusing the discussion on whether the case study's final call was "right" instead of whether the loop was run completely.
- Failing to distinguish real time pressure from perceived time pressure — this is often where the richest discussion lives and it's easy to skip past.

- Not requiring the case study group to actually document their decision — the documentation step is part of the objective, not an optional add-on.
- Allowing the class to conclude that documentation is only necessary for major decisions — the habit is meant to generalize to routine calls as well, before pressure makes it harder to apply consistently.

Knowledge Check

Administer after the debrief. Questions are written at the identify / apply / evaluate tier of Bloom's Taxonomy (Section 2.2) so a correct answer requires applying the competency to a new scenario, not recalling a definition.

1. In the DECIDE model, which two steps are most commonly cut first under time pressure? (a) Detect and Estimate (b) Identify alternatives and Evaluate the result (c) Choose and Do

Correct answer: (b)

2. A decision produced a good outcome but skipped the Identify and Evaluate steps. Under ACT's framework, was the decision-making process sound? (a) Yes, because the outcome was good. (b) No — a good outcome does not validate an incomplete process. (c) There is not enough information to say.

Correct answer: (b)

3. What does it mean to “brief the alternative before you need it”? (a) Wait until the decision point to consider other options. (b) Discuss and pre-commit to a fallback option in advance, before pressure makes that harder to do well. (c) Always choose the alternative over the primary plan.

Correct answer: (b)

Instructor Prep Checklist

Complete before walking into the room. This module runs poorly if any of the following is skipped.

- Confirm whether the cohort is flight-crew, maintenance, or mixed, and select the matching version of the case study (marginal weather approach vs. late-shift borderline finding).
- Walk through all six DECIDE steps against the hook scenario before class so the compression point — which step the gut-call skipped — is ready to point to precisely.
- Prepare at least one example where a rushed decision produced a good outcome anyway, since this is the point participants resist most and needs the clearest illustration.
- Bring a simple documentation template (even a blank index card) so the case-study group's “documented decision” output is a concrete artifact, not just a verbal summary.

Materials Needed

- Printed DECIDE-model reference card (one per participant)
- Case-study handout (borderline-finding and weather-call versions)
- Blank documentation template or index cards for the case-study group's written decision
- Timer visible to the room, especially for the optional 10-minute-deadline variant

Extending the Module

For recurrent cohorts, instructors may swap in a live operational near-miss (de-identified) as the case study once the client relationship has matured enough to share that material, while keeping the

objectives and knowledge check fixed — consistent with the ADDIE Evaluation step in Section 2.2.

2.6

Competency Three: Cognitive Cooperation

Focus and direction can both be executed well by one person and still be wrong — a single mind checks itself imperfectly. Cognitive cooperation is the structured practice of letting other people check, question, and correct a decision before it becomes irreversible.

What It Actually Is

CRM training traces back to a 1979 NASA/industry workshop convened after a string of accidents in which technically proficient crews failed to use every resource and voice available (FAA, [Evolution of CRM Training](#); NASA, [Resource Management on the Flight Deck, 1979](#)). The Threat and Error Management model that grew out of that work holds that 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](#)). Salas & Maurino's research on team performance in aviation settings found that teams which structure how they check each other consistently outperform teams that simply try harder individually ([Salas & Maurino, Human Factors in Aviation](#)). Cognitive cooperation, in ACT's usage, is that structure — not a personality trait some crews have and others don't, but a set of trained habits any crew can build.

This is the third and final leg of the ACT structure, and instructors should be explicit about why it comes last. Focus and Direction, taught in the two preceding sessions, both describe how a single person should operate. Cognitive Cooperation is the acknowledgment that even a person who has mastered both will still make mistakes, and that the only reliable defense against a single mind's blind spots is a second mind that is actually paying attention and actually willing to speak.

Why It Breaks Down

Authority gradients suppress it. A junior first officer, a new technician, or anyone lower in a perceived hierarchy may notice a problem and stay quiet rather than challenge someone more senior. The slow normalization of shortcuts turns an independent check into a formality — a second signature that gets applied without a genuine independent look. Both sit inside the "[Dirty Dozen](#)" — complacency, lack of communication — and both are exactly the failure modes cognitive cooperation is designed to catch before they combine with a Focus or Direction lapse elsewhere in the operation.

Instructors should also flag a subtler version of authority gradient that has nothing to do with formal rank: familiarity gradients between two peers who have worked together for years can produce the same silence, because a colleague assumes the other person has already seen what they see, or does not want to seem like they are second-guessing a trusted partner. The fix is the same regardless of which gradient is at work — a structured habit of voicing the observation out loud rather than assuming it has already been noticed.

In the Cockpit and On the Floor

Pilot-monitoring callouts, cross-verification, sterile-cockpit challenge-and-response. On the maintenance floor: the independent inspection, the second signature. In every case, the mechanism is the same — a second, independent set of eyes applied on purpose, not a courtesy extended when it's convenient to extend it.

Instructors should note that every one of these mechanisms already exists in the client's operation before ACT arrives — the program is not introducing cross-checking as a new requirement. What ACT adds is the understanding of why the mechanism works when it works, and what it looks like when it has quietly stopped working while still technically being performed. A second signature applied without genuinely looking satisfies the paperwork requirement and fails the actual purpose of cognitive cooperation.

Learning Objectives

- Identify where an authority gradient suppressed a second voice in a worked or real example.
- Explain the difference between a genuine independent check and a check that has been normalized into a formality.
- Apply a speak-up or cross-check technique in a role-played scenario involving a perceived seniority difference.
- Evaluate a debrief scenario to determine whether a cross-check functioned as designed or had quietly degraded into a rubber stamp.

Lesson Plan

Time	Segment	What Happens
0–10 min	Hook	Instructor recounts (in de-identified form) a case where a junior crew member noticed a problem but hesitated to speak up, and asks the class why that hesitation happens even among competent, well-trained people.
10–25 min	Core Concept	Introduce CRM's origin and the Threat and Error Management model; distinguish a genuine independent check from a normalized formality.
25–40 min	Case Study / Activity	Role-play the scenario below in pairs, alternating who plays the senior and junior role.
40–50 min	Discussion	Facilitated discussion on authority gradients in the class's own operating environment and concrete phrases that lower the barrier to speaking up.
50–60 min	Debrief / Close	Instructor summarizes the habit-building bullets and closes the three-competency arc by linking cognitive cooperation back to focus and direction.

Signs of Mastery vs. Signs of Struggle

Instructors use the contrast below during the debrief and during any follow-on observation to gauge whether the competency is actually taking hold, rather than relying on the knowledge check alone.

Signal	Mastery Looks Like	Struggle Looks Like
Speaking up	Voices a concern early, using a structured phrase, regardless of the other party's seniority.	Stays silent until the concern becomes unavoidable, or raises it in an unstructured, confrontational way.
Cross-checks	Treats a second signature or inspection as a genuine independent look every time.	Signs off quickly without a real independent review, especially when time is short.
Debrief	Discusses what almost went wrong honestly, without assigning blame.	Avoids naming near-misses to protect a colleague or avoid conflict.

Facilitator Talking Points

The lines below are written to be said aloud, not read verbatim — instructors should adapt phrasing to the room while keeping the substance.

- “Cognitive cooperation isn't about being polite to each other — it's a structured defense against the fact that one mind checks itself imperfectly.”
- “If the second signature doesn't involve an independent look, it isn't a check — it's a formality wearing a check's clothes.”
- “Speaking up early costs almost nothing. Speaking up late costs a lot more, and it's much harder to do.”
- “An authority gradient doesn't have to be about rank — it can just be experience, tenure, or who talks more.”

Sample Opening Script

The excerpt below is a fuller worked example of how an instructor might open the core-concept segment, provided as a model rather than a script to memorize.

“I want to tell you about a moment — not from here, de-identified, but real — where someone in this exact kind of role noticed something wasn't right, and didn't say anything for almost a full minute because the person who'd made the call had fifteen more years of experience than they did. [Instructor recounts the scenario and what eventually happened.] Here's what I want you to sit with: that hesitation wasn't a character flaw. It's what happens by default when one person outranks another in experience, seniority, or just how much they talk. Today isn't about making that hesitation disappear — it's about building a habit that gets through it faster.”

Discussion Questions

Instructors should let each question run long enough for at least two or three participants to answer before moving on — per the andragogical basis in Section 2.2, the discussion is where the competency actually gets internalized, not the core-concept segment that precedes it.

- Describe a time you noticed something but hesitated to raise it because of who you were raising it to. What eventually made you speak up, or kept you from doing so?
- What's a concrete phrase or technique that lowers the barrier to speaking up in your specific operating environment?
- How can an independent inspection or second signature quietly turn into a formality over time, and how would you notice it happening?
- How does cognitive cooperation depend on focus and direction having already happened correctly earlier in the task?
- Have you ever been on the receiving end of someone speaking up, where in hindsight they were right to do so? What made that easy or hard to hear in the moment?

Case Study / Classroom Activity

In pairs, one participant plays a senior crew member or technician who has just made a call that the other participant (playing a junior colleague) has reason to believe may be incomplete or incorrect. The junior participant must practice speaking up using a structured phrase (e.g., stating the observation, stating the concern, stating a suggested action) rather than either staying silent or issuing an unstructured challenge. Pairs then swap roles and repeat with a new scenario. Instructors should be ready to run a maintenance-floor version (a second inspector reviewing a completed non-routine finding) alongside a flight-deck version (a monitoring pilot noticing an altitude deviation) so both audiences see themselves in the activity.

Because this activity asks participants to voice a challenge out loud in front of peers, instructors should expect a wider range of comfort levels than in the Focus or Direction case studies, and should not rush a pair that is struggling to find the words — the hesitation itself is the exact phenomenon the module is training against, and naming that hesitation in the moment is often more valuable than a smooth run-through.

Instructors should close the activity by asking each pair to name the specific phrase they will use the next time they need to speak up in their own environment — committing to exact language in the room measurably increases the odds it gets used later.

Sample Debrief Notes

Most participants, in their first attempt, either soften the observation into a question ("was that supposed to happen that way?") or lead with the concern rather than the observation, which tends to read as an accusation rather than information. Coach pairs to state the plain observation first — what they actually saw — before naming the concern and the suggested action; this ordering measurably reduces defensiveness on the receiving end. When pairs swap roles, watch for participants who play the senior role dismissively the second time through as a joke — redirect by asking the group what a dismissive response actually costs the operation the next time a real concern goes unspoken because

of how the last one was received.

Common Instructor Pitfalls

- Letting the role-play stay too polite to be realistic — the value of the activity depends on the junior role feeling some genuine friction before finding the words to speak up.
- Treating authority gradients as purely about formal rank when tenure, experience, and even talkativeness create the same effect.
- Allowing the discussion to conclude that cognitive cooperation is a personality trait ("some people are just more assertive") rather than a trainable, structured habit.
- Not connecting the session back to Focus and Direction — cognitive cooperation is the third leg of the stool, not a standalone topic.
- Letting participants who are already comfortable speaking up dominate the role-play practice time, leaving the participants who most need the practice with the least of it.

Knowledge Check

Administer after the debrief. Questions are written at the identify / apply / evaluate tier of Bloom's Taxonomy (Section 2.2) so a correct answer requires applying the competency to a new scenario, not recalling a definition.

1. What does an authority gradient suppress? (a) The technical skill of the more junior crew member. (b) A second voice or independent check that might catch an error. (c) The workload of the more senior crew member.

Correct answer: (b)

2. An independent inspection has been signed off by a second inspector for years without a single discrepancy ever being found. What should an instructor flag as a possible concern? (a) Nothing — a clean record proves the process works. (b) The check may have normalized into a formality rather than remaining a genuine independent look. (c) The original work must be error-free.

Correct answer: (b)

3. Which best describes cognitive cooperation as taught in this program? (a) A personality trait some crews have naturally. (b) A structured, trainable habit of letting others check, question, and correct a decision before it becomes irreversible. (c) A backup plan used only when the primary decision-maker is unavailable.

Correct answer: (b)

Instructor Prep Checklist

Complete before walking into the room. This module runs poorly if any of the following is skipped.

- Confirm whether the cohort is flight-crew, maintenance, or mixed, and select the matching role-play version (monitoring pilot / altitude deviation vs. second inspector / non-routine finding).
- Be ready to model the structured speak-up phrase (observation, concern, suggested action) once yourself before asking pairs to role-play it — groups that see it modeled first perform the activity with noticeably less hesitation.
- Anticipate that some participants will find the role-play uncomfortable if it feels too realistic; frame it explicitly as practice, not evaluation, before starting.
- Prepare a follow-up prompt for cohorts where authority gradients are especially steep (e.g., large seniority gaps) since the standard discussion questions may need more time in those rooms.

Materials Needed

- Role-play scenario cards, two versions (flight-deck and maintenance-floor)
- Structured speak-up phrase reference card (observation / concern / suggested action) for each participant
- Enough physical space or room configuration to let pairs role-play without every pair overhearing every other pair
- Knowledge-check answer sheets (one per participant)

Extending the Module

For recurrent cohorts, instructors may extend the role-play to a three-person version that adds an observer role who debriefs what the speak-up attempt looked and sounded like from outside — useful once a cohort has already been through the standard two-person version at least once.

2.7

Instructor Quick Reference: Part 2 Summary

The reference below consolidates the delivery essentials for all three competency modules onto a single spread, for instructors who need a fast refresher immediately before walking into a session rather than re-reading the full module.

Competency	One-Line Definition	Opening Hook	Closing Ask
Focus	Directing a finite pool of attention at what matters and holding it there against competing demands.	A relatable everyday story of an attention lapse before narrowing to operational stakes.	Name one personal attention anchor to use in the next 30 days.
Direction	Running the full DECIDE loop on purpose instead of reacting and calling it a decision.	A fast, low-stakes decision scenario worked from gut instinct before the framework is introduced.	Name one recurring decision to consciously run the full loop on and document.
Cognitive Cooperation	Structured, trained habits that let a second person catch an error before it becomes irreversible.	A de-identified account of a hesitation to speak up, and why it happened despite good training.	Commit to the exact phrase to use the next time speaking up is needed.

Version and Revision Notes

This Part reflects the current approved version of all three ACT competency modules as of the manual's publication date. Under the ADDIE Evaluation step described in Section 2.2, each module is reviewed after a set number of deliveries or on a fixed annual cadence, whichever comes first, and revised if knowledge-check results, instructor debrief notes, or a client's own safety-reporting trends suggest a case study, discussion question, or talking point should change. Instructors who identify a recurring issue with any of the three modules — a knowledge-check question that consistently confuses participants for reasons unrelated to the competency being tested, a case study that no longer lands with a particular audience, a discussion question that reliably falls flat — should route that feedback back through COGVATION's instructor certification lead rather than informally revising the module in delivery, so the change goes through the same design process as the rest of the program and stays consistent across every certified instructor delivering it.

Cross-Module Instructor Reminders

A handful of delivery principles apply across all three modules regardless of which competency is being taught on a given day, and are worth restating together here rather than repeating verbatim in each module above.

- The discussion is the module, not a break from it. Per the andragogical basis established in Section 2.2, the facilitated discussion segment is where a competency actually gets internalized. An

instructor who runs long on the core-concept segment and short on discussion has, in practice, delivered a lecture with a case study attached rather than an ACT session.

- Case studies should feel specific, not generic. Wherever possible, instructors should adapt the standard case study using a de-identified detail from the client's own operating environment — the same principle behind the audience-adaptation approach described in Section 2.1.
- Knowledge checks measure application, not recall. Every knowledge-check question in this Part is written at the identify / apply / evaluate tier of Bloom's Taxonomy. A participant who can recite the DECIDE model's six steps but cannot say which two are cut first under pressure has not yet met the module's learning objectives.
- The three competencies are one system. Section 2.3's interlocking-competencies discussion is not background reading — instructors should be ready to draw the connection explicitly any time a class's own discussion surfaces an example that spans more than one competency, which happens in nearly every session.

Instructors who are new to ACT, or who are delivering to a new client for the first time, should treat this Part as required reading before their first certified delivery rather than a reference to consult only when something goes wrong in the room. The instructional philosophy in Section 2.2 is not decorative background — an instructor who understands why ACT is built the way it is will make better in-the-moment judgment calls than one who has only memorized the lesson plan's timing table. When in doubt about how to handle a discussion that has gone somewhere the lesson plan didn't anticipate, the safest default is to return to the andragogical basis of the program: let the room's own experience do the teaching, and trust the framework to bring the discussion back to the competency at hand.

Part 3 of this manual moves from the ACT program itself to how COGVATION and its client roll the three sessions out across a cohort, a fleet, and eventually an entire operation — the scheduling, instructor staffing, and recurrent-training cadence that turn the modules built out in this Part into a standing program rather than a one-time delivery. Instructors finishing this Part should now be able to explain, in their own words, why ACT starts with Focus, why each session runs alone rather than in combination, and why the classroom looks like a discussion rather than a lecture — the three questions this Part was built to answer.



PART 3

The Cognitive Cooperation Council

COGVATION's joint governance-and-review body that approves ACT curriculum standards and turns real events into systemic, non-punitive lessons.

IN THIS PART

- Charter & Purpose
- Composition & Roles
- Curriculum Governance
- Event & Near-Miss Review
- Meeting Cadence
- Escalation & SMS Integration

PART 3 — GOVERNANCE

The Cognitive Cooperation Council

How COGVATION's joint governance-and-review body approves ACT curriculum standards and turns real cognitive-cooperation events into non-punitive, systemic learning — without duplicating the client airline's own SMS.

3.1 Charter & Purpose

The Cognitive Cooperation Council (CCC) is COGVATION's standing governance body for the ACT (Aircrew Cognitive Training) program. It exists to keep ACT anchored to two distinct but complementary functions, and it is the only body inside a client relationship with formal authority over both.

(a) Curriculum governance. The CCC reviews and formally approves ACT curriculum standards — the scenarios, assessment rubrics, and instructor materials that define what “cognitive cooperation competent” means for a given client fleet and operation. No curriculum revision goes live without CCC sign-off.

(b) Event and near-miss review. The CCC also reviews real cognitive-cooperation events — moments where attention, communication, or crew/technician coordination broke down or nearly broke down in live operations — and converts what it learns back into curriculum or procedure. This is the CCC's diagnostic engine: it is how ACT stays grounded in what is actually happening on the line rather than in what a classroom assumes is happening.

The review function is deliberately built on the aviation industry's Just Culture principle. A Just Culture distinguishes an honest error (a normal slip inherent to human performance), from at-risk behavior (a drift into shortcuts, often reinforced by the system around the person), from reckless behavior (a conscious disregard of substantial and unjustifiable risk) — and it disciplines only the last category. The first two are treated as information about the system, not as grounds for punishment.

“Without the trust that a Just Culture provides, safety-related information dries up.” The CCC's review authority exists only because event review is diagnostic and systemic — never punitive — for the honest-error and at-risk categories the UK CAA's Just Culture guidance and ICAO's Improving Just Culture paper both describe.

Practically, this means every CCC review opens with the same question: what about the task, the tools, the schedule, or the training let this happen — not who is at fault. That framing is what allows crews and technicians to report cognitive-cooperation near-misses honestly, which is the raw material the CCC needs to keep ACT accurate.

Behavior Category	Definition	CCC Response
Honest error	A normal, unintended slip inherent to human cognitive performance.	Treated as data on the system; folded into curriculum or procedure review. No individual consequence.
At-risk behavior	A drift toward shortcuts, often reinforced by workload, culture, or design of the task itself.	Treated as a systemic signal; addressed through training, coaching, or design change. No punitive action.
Reckless behavior	A conscious disregard of substantial and unjustifiable risk.	Outside the CCC's non-punitive scope; referred to the client's normal conduct and disciplinary process.

Why one body holds both functions

It would be possible to split curriculum governance and event review into two separate committees. COGVATION deliberately keeps them under one charter for a practical reason: curriculum written without exposure to real events drifts toward generic, textbook scenarios, while event review conducted without curriculum authority produces findings that go nowhere. Housing both functions in the CCC closes that loop inside a single body with a single set of minutes, a single Chair, and a single accountability trail — so a finding from a near-miss review in March can become a curriculum line item by the next quarterly session without waiting on a second committee's calendar.

The Just Culture principle also does double duty. It protects the honesty of event reporting (Section 3.4), and it protects the honesty of curriculum review: instructors and line personnel are more willing to admit “this scenario doesn't match what actually happens” when they trust the same non-punitive norms will apply to that admission as apply to an operational near-miss report.

Scope boundaries

- The CCC governs ACT curriculum content and standards — it does not set client operating procedures, aircraft limitations, or dispatch policy.
- The CCC reviews cognitive-cooperation events and near-misses specifically — attention lapses, communication breakdowns, handoff failures, and similar coordination issues — not the full scope of the client's flight-safety or maintenance-safety programs.
- The CCC's authority is contractual and advisory-governance in nature: it approves what COGVATION delivers under the ACT contract; it escalates, but does not directly command, matters inside the client's own operational chain of command (Section 3.6).

3.2 Composition & Roles

The CCC is a joint body: COGVATION provides the chair and program expertise, while the client airline provides operational, safety, and front-line perspective. Seats are designed so no single function — training, maintenance, or safety — can dominate a decision, and so the people closest to the line

always have a voice.

Seat	Who Holds It	Term	Primary Role
Chair	COGVATION Program Lead / Founder	Standing	Sets agenda, runs meetings, casts tie-break vote, owns curriculum-approval record.
Client Training Seat	Client Chief Pilot or Training Director (or designate)	2 years, renewable	Represents flight-operations training needs; co-signs curriculum approvals.
Client Maintenance Seat	Client Maintenance / Quality representative	2 years, renewable	Represents technician-side cognitive-cooperation needs; flags maintenance near-misses.
Client Safety Seat	Client Safety / SMS representative	2 years, renewable	Bridges CCC findings into the client's SMS; owns escalation coordination.
Independent Advisor	Human Factors advisor (external, non-employee)	Renewed annually	Provides outside expertise on error, workload, and attention science; no vote on personnel matters.
Rotating Seat	Line pilot or line technician	6-month rotation	Brings current front-line perspective; nominated by peers, not management.

Quorum and term rules. A CCC session requires the Chair, at least one client operational seat (training or maintenance), and the client Safety seat to be present; the Human Factors advisor and rotating seat are non-quorum but strongly encouraged. Client seats are nominated by the client and confirmed by the Chair; the rotating seat carries no obligation to attend every session and may bring a peer in its place. No seat may be held by someone under active CCC review for the matter at hand.

Onboarding and conduct expectations

New client seat-holders complete a short CCC orientation before their first session, covering the Just Culture principle (Section 3.1), confidentiality expectations for event discussions, and the decision process (Section 3.5). This is a deliberate onboarding step: a council seat carries real influence over both curriculum and event outcomes, and a seat-holder who does not understand the non-punitive framing can undermine trust in the reporting pipeline faster than any single bad decision.

All seat-holders sign a standing confidentiality commitment: details of an individual event review are not to be shared outside the council except through the formal escalation pathway in Section 3.6. This protects reporters and keeps the council's findings focused on patterns rather than personalities.

Vacancy and replacement

If a client seat becomes vacant mid-term — through role change, departure, or extended leave — the client has 30 days to nominate a replacement; the Chair may convene interim sessions with the

remaining seats provided quorum is still met. The rotating line seat is self-replacing by design: each outgoing holder nominates a peer for the next six-month term, keeping the seat populated without administrative overhead.

Responsibilities between sessions

Council membership is not limited to attending scheduled meetings. Between sessions, seat-holders are expected to surface relevant developments early rather than waiting for the next agenda: a training seat-holder who hears of a recurring simulator observation, or a maintenance seat-holder who notices a pattern in shift-turnover notes, is expected to flag it to the Chair so it can be queued for the next working session rather than surfacing months later as a bigger problem. This ongoing-attentiveness expectation is written into each seat's charter description and reviewed at the annual term renewal.

3.3 Governance Function: Curriculum Standards

ACT curriculum is not static. The CCC runs an annual, evidence-driven revision cycle: operational data, near-miss findings, instructor feedback, and assessment results from the prior year are compiled, reviewed against the current curriculum, and used to decide what changes — additions, removals, or emphasis shifts — are warranted for the coming year.

This mirrors the logic behind EASA's [Evidence Based Training \(EBT\)](#) approach, which replaced fixed, checklist-style recurrent training with training driven by actual operational data about where competencies are weak. The CCC applies the same principle to cognitive cooperation specifically: curriculum content is justified by what the data says crews and technicians are actually struggling with, not by tradition or convenience.

Annual curriculum cycle

- **Compile.** COGVATION assembles the year's event/near-miss findings (Section 3.4), instructor observations, and assessment trend data into a single evidence packet.
- **Draft.** COGVATION Program Lead drafts proposed curriculum changes mapped to specific evidence items — no change is proposed without a cited reason.
- **Review.** The full CCC reviews the draft at the quarterly session dedicated to curriculum (Section 3.5), with the Human Factors advisor validating that proposed changes are behaviorally sound.
- **Sign-off.** Adoption requires consensus per the decision process in Section 3.5; the Chair and the client Training seat both sign the approval record, which becomes the authoritative curriculum baseline for the year.
- **Publish.** Approved changes are versioned and distributed to all ACT instructors before the next training cycle begins.

Interim changes outside the annual cycle are permitted only for urgent safety-relevant findings escalated under Section 3.6, and still require Chair plus client Safety-seat sign-off before instructors may use them.

Evidence sources feeding the cycle

Evidence Source	What It Tells the CCC
Event / near-miss findings (Sec. 3.4)	Where real cognitive-cooperation breakdowns are occurring and under what conditions.
Instructor observation notes	Which scenarios consistently expose the same weak competencies across cohorts.
Assessment trend data	Whether prior-year curriculum changes measurably improved performance.
Client operational changes	New aircraft, routes, or procedures that introduce cognitive-cooperation demands not yet covered.

This mirrors the EBT principle directly: just as EASA's framework ties recurrent-training content to observed competency gaps rather than a fixed syllabus, the CCC ties ACT's content to observed

cognitive-cooperation gaps rather than repeating the same modules year over year regardless of whether they are still the highest-value use of training time.

The sign-off record itself becomes part of the client's training compliance documentation: each approved curriculum version is dated, versioned, and traceable to the evidence packet that justified it, so an auditor or regulator can see not just what changed but why.

3.4 Review Function: Event & Near-Miss Review

The review function is where the CCC earns the trust that makes curriculum governance possible. Its process is designed to move a real event from raw report to curriculum lesson without ever assigning blame to the individuals involved.

From report to lesson

- **Report.** Any crew member, technician, or instructor may submit a cognitive-cooperation event or near-miss through the same channel used for other safety reports — no separate, harder-to-use process for cognitive events.
- **Triage.** COGVATION's Program Lead and the client Safety seat jointly triage the report within five business days to confirm it falls within Just Culture's honest-error or at-risk categories rather than requiring separate disciplinary handling.
- **Review.** The event is reviewed at the next CCC session (or convened out-of-cycle if urgent) using structured questions about task, tools, workload, and training gaps — never “who did this.”
- **Convert.** Findings are written as a systemic lesson: a curriculum update, a scenario addition, or a procedural note — attributed to the pattern observed, not to the reporting individual.
- **Close the loop.** The reporter (if known) and the relevant instructor cohort receive a summary of what changed as a result, reinforcing that reporting produces improvement rather than consequence.

Stage	Target Timeframe	Owner
Report received	Immediate	Reporting individual
Triage complete	Within 5 business days	Program Lead + Client Safety Seat
Structured review	At next session, or out-of-cycle if urgent	Full CCC
Finding converted to lesson	Within 30 days of review	Program Lead
Loop closed with reporter/cohort	Within 45 days of review	Program Lead + relevant instructor(s)

This process is deliberately built to plug into — not duplicate — the four components of an SMS defined by [ICAO's Safety Management Manual](#): Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.

ICAO SMS Component	How the CCC's Review Function Plugs In
Safety Policy	The CCC's Just Culture commitment is a standing policy statement that governs how every cognitive-cooperation report is handled.
Safety Risk Management	Structured event review (task/tools/workload questions) is the CCC's hazard-identification and risk-assessment step, feeding directly into curriculum risk controls.

ICAO SMS Component	How the CCC's Review Function Plugs In
Safety Assurance	The annual evidence-driven curriculum cycle (Section 3.3) is the CCC's assurance loop — confirming that adopted changes actually reduce the near-miss pattern that triggered them.
Safety Promotion	Closing the loop with reporters and instructor cohorts, and the rotating line seat, keep cognitive-cooperation awareness visible and credible across the operation.

Because the CCC's review function is explicitly mapped onto this four-part structure, it functions as a specialized cognitive-cooperation lens inside the client's broader SMS rather than a parallel, competing safety process.

What counts as a reportable event

The CCC deliberately sets a low bar for what is worth reporting, because near-misses -- events that did not result in harm -- are the majority of the useful signal. Reportable events include, but are not limited to, the patterns below.

Category	Example
Attention breakdown	A checklist item was skipped or misread under time or workload pressure and caught before consequence.
Communication breakdown	A handoff between crew or between crew and maintenance omitted a key detail, caught downstream.
Coordination breakdown	Two parties each assumed the other had completed a shared task.
Near-miss with no breakdown yet observed	A condition that felt like it was about to produce one of the above, without an actual lapse.

Confidentiality and de-identification

Reports are de-identified before they reach full CCC review whenever possible: the triage step (below) strips names and, where feasible, flight or work-order numbers before the finding is discussed at the table. The Chair and client Safety seat may retain the identified version for follow-up questions, but the council's working record refers to patterns, not people. This is the operational expression of the Just Culture commitment in Section 3.1 -- it is not enough to say events are handled without blame; the process has to make it structurally difficult to assign blame in the first place.

3.5 Meeting Cadence, Agenda Template & Decision Process

The CCC runs on a two-tier cadence: quarterly full-council sessions for governance decisions, and monthly working sessions for operational review and preparation.

Cadence

- Quarterly full-council session — all seats convene; curriculum sign-off, escalation review, and formal decisions happen here.
- Monthly working session — Chair, client Safety seat, and any relevant seat review incoming event reports, prepare evidence packets, and handle non-urgent triage between quarterly sessions.

Sample quarterly agenda

Time	Item	Owner
0:00–0:10	Review of prior action items	Chair
0:10–0:35	Event / near-miss review (Just Culture findings)	Client Safety Seat
0:35–1:00	Curriculum evidence packet & proposed changes	COGVATION Program Lead
1:00–1:20	Human Factors advisor input on proposed changes	HF Advisor
1:20–1:35	Line-seat operational perspective	Rotating Seat
1:35–1:50	Decision: curriculum sign-off / escalations	Full Council
1:50–2:00	Next-quarter priorities & action items	Chair

Decision process

Decisions are made by consensus-seeking discussion: the Chair frames the question, each seat states its position, and objections are worked through until agreement is reached or clearly cannot be. If consensus is not reached after reasonable discussion, the Chair casts a tie-break vote — but only after every seat present has been heard, and the dissenting position is recorded in the minutes regardless of outcome. This keeps decisions timely without silencing disagreement.

Minutes and record-keeping

Every session — quarterly or monthly — produces written minutes distributed to all seats within five business days. Minutes record: decisions made, the evidence each decision was based on, any dissenting position and its rationale, and action items with named owners and due dates. Minutes referencing an individual event review are stored under the same confidentiality commitment described in Section 3.2 and are not attached to personnel files.

Between-session communication

Urgent matters do not wait for the next scheduled session. The Chair may convene an out-of-cycle session — by video or in person — when a finding under Section 3.4 or 3.6 cannot reasonably wait,

using the same quorum rule as a standard quarterly session. Between sessions, the Chair and client Safety seat maintain a running log of open items so nothing raised in a monthly working session is lost before it reaches full-council review.

3.6 Escalation Pathway & Relationship to Client SMS

The CCC is not a replacement for the client airline's own Safety Management System — it is a specialized governance layer that sits alongside it and feeds it. Every client already operates an SMS covering the full range of operational hazards; the CCC's scope is deliberately narrower and focused on cognitive-cooperation performance.

When a finding escalates

- Serious finding identified. A CCC review surfaces a pattern with safety-risk implications beyond curriculum — for example, a systemic scheduling or workload issue driving cognitive-cooperation breakdowns.
- Client Safety seat initiates escalation. The client Safety/SMS representative — who sits on both bodies — formally routes the finding into the client's existing SMS Safety Risk Management process, using the client's own risk-assessment tools.
- CCC retains the training lens; SMS owns the operational fix. The CCC continues to own any curriculum or training response; the client's SMS owns any operational, scheduling, or procedural fix outside training's control.
- Joint tracking. Both the CCC minutes and the client's SMS risk register record the finding, so it is visible in both systems until resolved.

The CCC does not duplicate the client's SMS — it is the client's SMS's dedicated cognitive-cooperation channel, translating training-side findings into the client's own Safety Risk Management and Safety Assurance processes exactly as described in ICAO's [Safety Management Manual](#).

This design is intentional: because the client Safety seat has a standing role on the CCC, there is never a gap between what the CCC learns and what the client's SMS acts on. The council coordinates; it does not compete.

Escalation tiers

Not every finding warrants the same level of urgency. The CCC uses three escalation tiers to route findings to the right timeframe and the right audience, keeping the client SMS informed at a level proportionate to the risk involved.

Tier	Trigger	Action
Tier 1 — Informational	Isolated near-miss, no systemic pattern yet evident	Logged in CCC minutes; monitored for recurrence at next monthly working session.
Tier 2 — Curriculum-relevant	Pattern across multiple reports pointing to a training gap	Routed into the annual curriculum evidence packet (Section 3.3); no SMS escalation needed unless risk is also operational.

Tier	Trigger	Action
Tier 3 — SMS escalation	Pattern implicates scheduling, staffing, procedure, or equipment outside training's control	Client Safety seat formally escalates into the client's SMS Safety Risk Management process; tracked jointly until closed.

Coordination, not duplication — a working example

Consider a Tier 3 example: a near-miss review surfaces that a particular shift-handoff window is producing repeated communication breakdowns between outbound and inbound crews. The CCC's training lens can add a scenario addressing handoff discipline — but it cannot change the shift schedule that is producing the time pressure in the first place. The client Safety seat escalates the scheduling pattern into the client's SMS, where it is assessed alongside every other operational risk the airline manages, using tools and authority that belong to the airline, not to COGVATION. The CCC's role ends at raising the flag clearly and staying engaged until the client confirms the risk has been addressed — it does not extend to directing an airline's staffing decisions.

This division of labor is what allows the CCC to operate across multiple client airlines without ever needing to replicate a client's internal SMS structure: it plugs into whatever SMS already exists, using the same ICAO four-component framework referenced in Section 3.4, and hands off exactly the piece that belongs to the client's own safety organization.



PART 4

Instructor Facilitation Guide

How to set up the room, run a standard ACT session start to finish, and adapt it to pilots, mechanics, and skepticism alike.

IN THIS PART

- Facilitation Principles
- Classroom Setup
- Session Flow Template
- Pilots vs. Maintenance Audiences
- Handling Resistance
- Debrief Techniques

4.1

Facilitation Guide

This part is the instructor's working manual for delivering ACT (Aircrew Cognitive Training) sessions on the ground — how to set up the room, run a session from open to close, adapt to the audience in front of you, and hold your footing when the room pushes back.

4.1 Facilitation Principles

ACT is delivered to working adults with thousands of flight or shop hours between them, not to students encountering a subject for the first time. The facilitation approach for every ACT session — Focus, Direction, or Cognitive Cooperation — is built on [adult-learning theory \(andragogy\)](#), most closely associated with the work of Malcolm [Knowles](#). Knowles argued that adult learners differ from child learners in four ways that matter directly to how an instructor should run a room: adults need to know why they are learning something before they will invest in it, they are self-directed and resist being talked down to, they arrive with a deep reservoir of lived experience that is itself a learning resource, and they are problem-centered rather than subject-centered — they want to solve something real, not complete a syllabus.

The table below translates each principle into a concrete practice for the instructor standing in front of an ACT class.

Andragogy Principle	What It Means	ACT Facilitation Practice
Need to know	Adults disengage from training that feels imposed rather than useful.	Always open with why this matters to their actual job, not the syllabus — lead with a real incident or near-miss relevant to their fleet or shop before you name the competency being taught.
Self-directed	Adults resent being treated as passive recipients of instruction.	Frame yourself as a facilitator of the room's own experience, not a lecturer. Ask questions before you give answers; let the group arrive at the concept, then name it.
Prior experience	Every pilot and mechanic in the room already has a working model of attention, decision-making, and teamwork.	Draw the model out of the room first ("who has seen this happen?") before presenting the ACT framework — treat their stories as the raw material, not a distraction from the material.

Andragogy Principle	What It Means	ACT Facilitation Practice
Problem-centered	Adults learn best when the content is organized around a real task or decision, not an abstract topic outline.	Anchor every module in a case study or scenario the audience will actually face, and close with an action they can take on their next shift or flight, not just a takeaway to remember.

The instructor's job is not to cover material. It is to make the room recognize something it already half-knows, give that thing a name, and leave with one thing they will do differently on their next shift.

Why Andragogy, and Not Just “Good Teaching”

It is worth being explicit about why ACT is built on andragogy rather than a generic classroom pedagogy borrowed from primary or secondary education. Pilots and maintenance technicians are credentialed professionals with years of accumulated operational judgment; a facilitation style that treats them as blank-slate students — heavy on lecture, light on their own input, organized around a fixed syllabus rather than their actual risks — will be read, correctly, as condescending. That reaction alone is enough to shut down learning regardless of how sound the underlying cognitive-performance content is. Andragogy is not a soft add-on to the ACT curriculum; it is the delivery mechanism that keeps the content credible in front of an audience that has every reason to be skeptical of another training mandate.

Two further andragogical points shape everyday facilitation choices beyond the four core principles above. First, adults are motivated more by internal factors — professional pride, safety of their crew, wanting to avoid a repeat of a bad day — than by external ones like a certificate or a compliance checkbox; instructors should appeal to those internal motivators explicitly rather than leaning on “this is required.” Second, adults learn best when new material is explicitly linked to what they already know, which is why every ACT module opens by drawing out the room's existing mental model before introducing new vocabulary for it.

In practice this means an instructor should be able to answer, before walking into any session, a short set of andragogy-driven questions: What is the one operational reason this specific audience needs this competency this week? What have they likely already experienced that relates to it? What real problem will the case study ask them to solve? If any of these three cannot be answered concretely, the session plan is not yet ready to teach, regardless of how complete the slide deck looks.

Sample Opening Language by Principle

New instructors often ask what andragogy actually sounds like out loud. The examples below are not scripts to memorize verbatim, but they show the register each principle should produce in the room.

Principle	Sounds Like This in the Room
Need to know	"Last quarter a crew missed this exact cue and it turned into a 36-hour diversion — we're going to spend the next hour on why."
Self-directed	"Before I tell you what this is called, who's already run into something like it? Walk me through it."
Prior experience	"You've all made this call under time pressure before — what did you actually rely on in that moment?"
Problem-centered	"Here's the scenario your pod is working. By the end, I want a specific answer for what you'd do differently next time."

Notice that none of these openings name the competency (Focus, Direction, or Cognitive Cooperation) in the first sentence. The label comes after the room has already engaged with the underlying problem, which is precisely what the Hook segment of the Session Flow Template (Section 4.3) is built to do.

4.2 Classroom Setup & Materials Checklist

Room layout and group size shape how much of the andragogy above is actually possible. A lecture-style room with rows facing a podium works against self-direction and experience-sharing; ACT sessions should be run as a workshop, not a briefing.

Physical Room Setup

- Arrange seating in pods of 4–6 (round or clustered tables) rather than classroom rows — this makes small-group discussion the default mode, not an interruption.
- Keep a clear sightline from every seat to the facilitator and the front wall or screen; avoid placing pods directly behind one another.
- Reserve wall or whiteboard space for capturing the group's own language for concepts (their words, not just the slide's) — this reinforces that the room's experience is the material.
- If mixing flight-deck and maintenance participants in one session, seat pods as mixed groups rather than by department, so cross-functional cognitive cooperation is modeled in the room itself.

Recommended Group Size

12–18 participants per session is the practical sweet spot: large enough to generate varied experience and multiple small-group pods, small enough that every person speaks at least once and the instructor can track individual engagement. Above ~20, discussion time per person drops and quieter participants disengage; below ~8, small-group exercises lose their value because there is no real breakout.

Materials Checklist

Item	Quantity	Notes
Participant handout (competency-specific)	1 per participant	Focus, Direction, or Cognitive Cooperation edition matching the session
Case study / scenario cards	1 set per pod	Shuffle in at least one flight-deck and one hangar-floor scenario per set
Facilitator session guide (this manual)	1 per instructor	Includes time-box template and debrief prompts
Flip chart or whiteboard + markers	1 per room	For capturing group language and debrief takeaways
Sign-in / attendance sheet	1 per session	Required for training-record compliance
Session feedback / self-report card	1 per participant	Collected at debrief; see Section 4.6
Name tents or tags	1 per participant	Especially important for mixed pilot/maintenance groups
Timer (visible to instructor)	1 per room	Keeps activity segments inside the time-box

Pre-Session Room Checklist

Arrive at least 30 minutes before start time to confirm the room supports the workshop format rather than adapting the session to whatever layout is already in place. Specifically:

- Confirm pod seating is set (or reset it yourself) — do not assume the prior occupant left the room in a usable configuration.
- Test any screen, projector, or audio before participants arrive; a slow technical start burns Hook momentum before the session even begins.
- Pre-stage case study cards by pod so the transition into the Case Study segment (Section 4.3) does not require mid-session distribution.
- Post or project the session agenda and time-boxes where the room can see them — visible time-boxes reduce anxiety about where we are and keep discussion from running long by default.
- Silence or remove distracting signage from unrelated training programs — a room that visually reads as generic corporate training works against the credibility-building described in Section 4.1.

For virtual or hybrid deliveries, the same principles apply in adapted form: use breakout rooms sized to 4-6 for the Case Study segment, assign a pod reporter in advance so report-back does not stall, and keep cameras on during Discussion and Debrief so the instructor can read the room the same way they would in person.

Common Setup Mistakes to Avoid

- Inheriting a lecture-row layout without resetting it — the single most common setup failure, and one that silently undermines every other andragogical practice in Section 4.1 before the session even starts.
- Running sessions with fewer than 8 participants without adjusting the activity design — small groups need a modified single-group discussion format rather than a pod breakout that leaves only one or two people per pod.
- Scheduling ACT sessions back-to-back with unrelated compliance training in the same room — participants arrive primed to treat the session as “more of the same,” which directly feeds the skepticism addressed in Section 4.5.
- Under-stocking case study cards for a mixed-audience session — running out of relevant cards mid-session forces improvisation that weakens the problem-centered design the whole template depends on.

A five-minute setup check against the materials checklist and the common mistakes above, done before every session regardless of how many times an instructor has delivered ACT before, prevents the majority of avoidable friction in the room.

4.3 Session Flow Template

Every ACT session — regardless of which of the three competencies (Focus, Direction, or Cognitive Cooperation) is being taught — follows the same five-part shape. Consistency in structure lets instructors focus their preparation on content rather than reinventing the session design each time, and it lets returning participants recognize the rhythm of the program across modules.

Segment	Time-Box	Purpose	Instructor Move
1. Hook	5–7 min	Establish the “why” before naming the topic.	Open with a real incident, near-miss, or provocative question tied to the audience's own operation — never open by announcing the competency name first.
2. Core Concept	10–15 min	Name and define the competency in plain, operational language.	Introduce the model briefly; use the room's own language from the Hook discussion wherever possible instead of pure lecture.
3. Case Study / Activity	20–25 min	Apply the concept to a realistic scenario in small groups.	Break into pods; assign a fleet- or role-appropriate case study card; circulate and coach rather than intervene.
4. Discussion	15–20 min	Surface differing views and connect the activity back to the concept.	Facilitate report-back from each pod; resist supplying the “correct” answer too quickly — let tension between viewpoints surface first.

Segment	Time-Box	Purpose	Instructor Move
5. Debrief / Close	8–10 min	Lock in one concrete commitment per participant.	Run the structured debrief (Section 4.6); close with a single action each participant will take on their next shift or flight.

A standard session runs roughly 60–75 minutes total using the midpoints above; instructors may compress the Case Study and Discussion segments symmetrically for a 50-minute slot, but the Hook and Debrief/Close should never be cut — they are what make the session stick rather than simply being attended.

Applying the Template Across Competencies

The five-part shape is deliberately competency-agnostic so instructors can reuse the same muscle memory whether teaching Focus, Direction, or Cognitive Cooperation — only the Core Concept content and the Case Study cards change. For a Focus session, the Hook is often a distraction-driven error; for Direction, a decision made under ambiguity or time pressure; for Cognitive Cooperation, a breakdown in cross-checking or handoff. In every case the surrounding scaffolding — Hook, Discussion structure, and Debrief model — stays identical, which is what allows an instructor to run three different competency modules in a single day without the room feeling like it is experiencing three unrelated trainings.

Instructors should treat the time-boxes in the table above as defaults, not rigid limits. If Discussion is genuinely productive — the room is surfacing real disagreement rather than repeating the same point — it is usually worth extending it by trimming the Core Concept segment rather than cutting Debrief/Close short. The single most common facilitation error is protecting lecture time at the expense of the segments that actually change behavior.

If you are ever forced to cut something to stay on schedule, cut from the middle of the Core Concept lecture — never from the Hook or the Debrief.

Worked Example: A Focus Session Using the Template

The walkthrough below shows the template applied to a single competency so instructors can see how the five segments connect in practice, from opening line to closing prompt.

Segment	What the Instructor Actually Does
Hook	Present a short, real account of a missed checklist item caused by an interruption mid-task; ask “what do you think broke down here?” and take two or three answers before moving on.
Core Concept	Introduce Focus as the ability to protect attention against interruption and task-switching; connect it explicitly to the interruption the Hook just described.

Segment	What the Instructor Actually Does
Case Study	Assign pods a scenario card describing a multi-interruption task sequence; ask each pod to identify the point where attention was lost and what recovery step was missing.
Discussion	Have each pod report their identified failure point; surface disagreement about whether the fix is procedural (a checklist step) or behavioral (a personal habit) before resolving it.
Debrief / Close	Run the three-prompt structured debrief (Section 4.6); ask each participant to name one specific interruption-recovery habit they will use on their next shift or flight.

4.4 Engaging Pilots vs. Maintenance Audiences

The ACT competencies are identical across flight-deck and hangar-floor audiences, but the language, pacing, and case studies that land well are not. Treating both groups identically is one of the fastest ways to lose a room — each culture has its own operational vocabulary, its own version of authority gradient, and its own instinct for what counts as “real” evidence.

Flight-Deck (Pilot) Audiences

- Use case studies built around checklist discipline, sterile-cockpit moments, and captain–first officer dynamics — pilots respond to scenarios framed around specific phases of flight.
- Expect a comfort with structured, procedural language (callouts, checklists, CRM terms already familiar from recurrent training) — connect ACT concepts explicitly to that existing vocabulary rather than introducing entirely new terms.
- Authority-gradient issues in this audience most often show up as junior first officers hesitating to challenge a captain; frame Cognitive Cooperation content around specific, low-friction language for speaking up in the moment.

Maintenance (Hangar-Floor) Audiences

- Use case studies built around shift handoffs, sign-offs under time pressure, and multi-technician tasks — mechanics respond to scenarios framed around specific tasks and paperwork moments, not flight phases.
- Expect more direct, informal communication norms and a strong peer-to-peer culture; case studies that lean on rank or hierarchy will land less well here than ones built around crew/shift dynamics and workload.
- Authority-gradient issues in this audience more often involve experienced technicians dismissing newer hires' observations, or shift handoff gaps where nobody “owns” catching an inconsistency — frame Cognitive Cooperation content around handoff protocol and cross-checking, not just speaking up to a superior.

For mixed sessions, use at least one case study from each domain so neither group feels like a guest in the other's training, and explicitly call out the parallel between the two examples during Discussion — this is itself a live demonstration of Cognitive Cooperation across functions.

Reading the Room in Real Time

Beyond pre-planned adaptations, instructors should watch for a few reliable early signals of which audience style is in front of them and adjust on the fly. Heavy use of checklist and callout language, references to specific flight phases, or questions framed around crew pairing usually signal a pilot-heavy room; heavy use of task, sign-off, and handoff language, or questions framed around shift overlap, usually signal a maintenance-heavy room. When the signals are mixed, default to maintenance-style task framing first — pilots generally translate task language into flight-deck equivalents more easily than mechanics translate flight-phase language into hangar equivalents.

Instructors new to a given audience type should ask a program point of contact (chief pilot's office or maintenance training lead) for one or two recent, sanitized real incidents from that group before the session, rather than relying solely on the pre-built case study library. A single locally relevant example, even a minor one, consistently outperforms a more dramatic but generic scenario for building credibility in the room.

Language to Adjust, Not Just Examples

Adaptation goes beyond swapping case studies — the vocabulary an instructor uses in transitions and instructions should shift as well. The comparison below shows the same instructional moment phrased for each audience.

Instructional Moment	Flight-Deck Phrasing	Maintenance Phrasing
Introducing the case study	"You're mid-approach and something doesn't match the briefing."	"You're mid-task and the paperwork doesn't match what you're seeing on the aircraft."
Framing the stakes	"This is the kind of moment that shows up in an ASAP report."	"This is the kind of moment that shows up in a write-up or a deferred item."
Prompting Cognitive Cooperation	"What would you need to hear from the other seat to feel comfortable speaking up?"	"What would you need to hear from the outgoing shift to feel comfortable signing off?"

4.5 Handling Resistance & Difficult Moments

Skepticism is a normal and even healthy response from experienced operators being asked to sit through training on "soft skills." The instructor's job is not to eliminate resistance but to meet it without becoming defensive, so the room stays open rather than shutting down.

"This Is Just Corporate Training" Skepticism

- Do not argue the premise. Acknowledge it directly ("fair — a lot of training you've sat through probably was") before redirecting to the specific, operational stakes of this session.
- Return to the Hook. If the opening incident or scenario was well chosen, refer back to it: "whatever you think of the training, that near-miss was real — let's talk about what actually happened there."

- Avoid over-explaining or over-justifying the program's existence at length — extended defensiveness reads as insecurity and invites more pushback, not less.

Authority–Gradient Pushback During Discussion

- When a senior voice in the room dismisses a junior participant's point, redirect rather than referee: “let's hear the rest of that” or “what did the rest of the pod think?” keeps the floor open without putting the instructor in conflict with the senior participant.
- If a participant challenges the instructor's own authority or credibility directly, respond with curiosity, not defense: ask what specifically doesn't match their experience, and use their answer as case-study material rather than treating it as an attack to win.
- If a session stalls entirely, it is acceptable to name the dynamic out loud (“this is exactly the kind of hesitation we're talking about — notice what just happened in this room”) — this converts resistance itself into a live example of the material.

You will not win the room by being right faster than the skeptic. You win the room by staying curious one exchange longer than they expected you to.

Other Difficult Moments

- A participant discloses a real, unresolved safety concern during discussion: acknowledge it seriously, do not attempt to resolve it live in the session, and follow the program's established reporting pathway immediately afterward — do not let it be forgotten once the session moves on.
- The room goes silent after a discussion prompt: resist the urge to fill the silence yourself. Wait it out for a full 8–10 seconds — silence often means the group is actually thinking, and jumping in early trains the room to wait you out instead of engaging.
- One participant dominates every discussion: redirect by name and role rather than by silencing them — “I want to hear how this looks from the ramp side” — which reframes the redirect as seeking a different perspective rather than shutting someone down.
- A participant raises a leadership or scheduling grievance disguised as a training comment: acknowledge it briefly without validating or dismissing it, and offer to follow up one-on-one after the session rather than letting the room's time be consumed by a grievance the training cannot resolve.

In all of these moments, the underlying instructor posture is the same: stay curious, stay specific, and route the moment back toward the session's operational purpose rather than treating it as a fight to be won or a distraction to be shut down.

Quick–Reference Response Bank

The table below is a quick reference for the moment a difficult comment lands and the instructor needs a response ready, not a framework to reconstruct on the spot.

If the Room Says...	A Response That Keeps the Room Open
“We've heard all this before.”	“Fair — tell me what version you've heard, and I'll tell you how this one is different or admit if it isn't.”

If the Room Says...	A Response That Keeps the Room Open
"This doesn't apply to my aircraft/shop."	"Walk me through why not — if it genuinely doesn't apply, I want to know that, and if it does, let's find where."
"With respect, you've never done this job."	"That's true. I'm not here as the expert on your job — I'm here to run the exercise. You're the expert in the room."
A junior voice is talked over by a senior one	"Hold that thought — I want to come back to you in a second, finish what you were saying."

4.6 Debrief Techniques

The debrief is where a session's ideas either convert into a habit or evaporate by the time participants reach the parking lot. A rushed or skipped debrief is the single most common way an otherwise strong session fails to produce any lasting change in behavior.

A Simple Structured Debrief Model

Close every session with three prompts, asked in this order, to the full group or by pod:

- What happened? — a plain factual recap of the case study or discussion, no interpretation yet.
- What did it mean? — connect the facts back to the named competency (Focus, Direction, or Cognitive Cooperation) and to the room's own prior experience.
- What will you do differently? — each participant states one specific, small action for their next shift or flight; write these down on the self-report card described in Section 4.2.

Instructor Self-Report

The instructor should close by modeling the same honest self-report being asked of participants — naming one moment from their own operational history where the competency being taught was relevant, including a moment they got it wrong, not only a success story. An instructor who only tells success stories teaches the room to perform confidence rather than to actually self-report, which undercuts the entire premise of Cognitive Cooperation. Modeling a real, specific admission signals that honest self-report is genuinely safe in this room, not just an item on the agenda.

*If the instructor never admits to a mistake, why would anyone else in the room admit to one?
The debrief only works if the instructor goes first.*

Making the Commitment Stick After the Session

The self-report card collected at Debrief/Close should not simply be filed away. Where the program's follow-up cadence allows it, instructors or program coordinators should reference each participant's own stated commitment in any subsequent recurrent session or check-in — "last time you said you'd start doing X, how has that gone?" This single practice does more to convert a one-time session into a lasting habit than any additional content added to the session itself, because it signals that someone is actually tracking whether the commitment was real.

Instructors should also debrief themselves after every session, not only the participants. A short private note — what landed, what fell flat, which case study needs to be swapped for this audience — keeps the facilitator's own practice improving in the same way the structured debrief keeps participants' practice improving. Over a full rollout across many sessions, this instructor-level debrief log becomes the most reliable source for updating and refining the case study library referenced in Section 4.2.

Sample Self-Report Card Fields

The physical or digital self-report card handed out at Debrief/Close (see Section 4.2 materials checklist) should stay short enough to complete in under two minutes. The fields below are the minimum needed to make the commitment specific and trackable at a later session.

Field	Example Entry
Competency covered	Cognitive Cooperation
What happened (fact)	Our pod's scenario had a handoff where the incoming tech didn't ask about the open item.
What it meant	We assume silence means nothing was missed, instead of confirming it out loud.
One action for next shift/flight	I will state open items out loud at handoff, even if I think they're obvious.
Follow-up date (optional)	Next recurrent session or 30 days

Part 4 Instructor Readiness Checklist

Before delivering any ACT session, an instructor should be able to answer yes to each item below.

- I can state, in one sentence, why this specific audience needs this competency this week (Section 4.1).
- The room is set up in pods, not rows, and the materials checklist is complete (Section 4.2).
- I have a Hook, Core Concept, Case Study, Discussion, and Debrief/Close planned with time-boxes (Section 4.3).
- My case studies are matched to whether this is a pilot, maintenance, or mixed audience (Section 4.4).
- I have planned responses ready for likely skepticism or authority-gradient pushback (Section 4.5).
- I have a self-report story of my own ready to share honestly at Debrief (Section 4.6).

Part 4 Summary

Good facilitation is what allows the ACT curriculum — Focus, Direction, and Cognitive Cooperation — to actually change behavior rather than simply being attended. The andragogical foundation in Section 4.1 sets the posture; the room setup in Section 4.2 makes that posture physically possible; the Session

Flow Template in Section 4.3 gives every module a consistent, repeatable shape; and the audience adaptation, resistance handling, and debrief practices in Sections 4.4 through 4.6 are what keep the session credible and durable once it is underway. An instructor who consistently applies all six should expect sessions that participants describe afterward as relevant to their job, not as “just another training.”



PART 5

Assessment & Certification

How instructors verify Focus, Direction, and Cognitive Cooperation actually transferred, and how that evidence feeds CCC governance.

IN THIS PART

- Assessment Philosophy
- Focus Knowledge Checks
- Direction Knowledge Checks
- Cognitive Cooperation Knowledge Checks
- Certification & Recertification

Assessment & Certification

PART 5 — EVALUATING WHAT ACT ACTUALLY BUILT

Teaching Focus, Direction, and Cognitive Cooperation is only half the instructor's job. The other half is finding out — honestly, and with evidence — whether the session actually changed how a crew member thinks and acts under pressure. This part gives instructors the philosophy, the question banks, and the certification criteria to do that well.

5.1

Assessment Philosophy

An assessment that only asks a trainee to recall a definition proves the trainee can recall a definition. It proves nothing about whether that trainee will actually protect a critical phase of flight, run the DECIDE loop under pressure, or speak up when something looks wrong. ACT assessment is deliberately built to test higher up Bloom's Taxonomy than recall — a framework that orders cognitive learning objectives from remembering and understanding through applying, analyzing, evaluating, and creating (UIC Center for the Advancement of Teaching Excellence, Bloom's Taxonomy of Educational Objectives). Every knowledge check in this part is written to sit at the understand, apply, or evaluate level, not the recall level.

In practice, that means an ACT question rarely asks “what does the DECIDE model stand for.” It asks a trainee to look at a short scenario and identify which step of the loop was skipped, or to judge whether a described response to a distraction actually protected focus or only looked like it did. Writing objectives and assessments this way — starting from the level of thinking you actually want to measure, then working backward to the question — is the same approach recommended for structuring learning goals around Bloom's levels (Yale Poorvu Center for Teaching and Learning, Using Bloom's Taxonomy to Write Learning Goals, Objectives, and Outcomes).

Formative vs. Summative Assessment

ACT instructors use two distinct kinds of assessment, and they serve different purposes. Formative assessment happens in-session — a discussion question, a quick show-of-hands poll, a cold call during a scenario debrief. Its purpose is not to score the trainee; it is to give the instructor a running read on whether the room is following the material, so the instructor can slow down, re-explain, or push harder in real time. Formative results are never entered into a trainee's certification record.

Summative assessment happens at the end of a module — the knowledge check bank in this part, plus the practical observation component described in Section 5.5. Its purpose is to produce a documented judgment: did this trainee demonstrate the competency at a certifiable level. Summative assessment is the practical expression of the Evaluation phase of the ADDIE instructional design model (Analyze, Design, Develop, Implement, Evaluate) — the phase where a training program's actual impact on learners is measured against its stated objectives, rather than assumed from the fact that the session happened (Wikipedia, ADDIE model).

Formative assessment checks whether the room is learning. Summative assessment checks whether the trainee learned. ACT instructors run both, every module, and never confuse one for the other.

The distinction also determines how instructors should react to a wrong answer in the moment. A wrong answer during formative, in-session questioning is useful information, not a problem to hide from the trainee — it tells the instructor exactly where to slow down, and it costs the trainee nothing on the certification record. A wrong answer on the summative knowledge check is different: it is evidence that goes into the record described in Section 5.5, and it should trigger the remediation path described there rather than an on-the-spot correction that quietly resolves the gap without documenting it.

One practical marker instructors can use to tell the two apart in the moment: if correcting a wrong answer on the spot would embarrass no one and change nothing on paper, it was formative. If the answer is being scored and recorded, it is summative, and the correction belongs in the remediation conversation described in Section 5.5, not folded quietly into the next sentence of the lesson.

Practically, this means every ACT module closes with the same two-part evaluation: a written or verbal knowledge check drawn from the bank for that competency (Sections 5.2–5.4), and a practical observation of the trainee applying the competency in a scenario or on the job (Section 5.5). A trainee who answers every knowledge-check question correctly but cannot demonstrate the behavior in a scenario has not met the competency — and the reverse is equally true.

Instructors should also resist the temptation to treat a strong formative-assessment performance as a substitute for the summative check at the end of the module. A trainee who answers every in-session discussion question sharply may simply be a confident, articulate speaker in the moment; that is worth noting, but it is not the same evidence as a completed knowledge check and a documented observation. The two assessment types measure different things and neither one can stand in for the other on the certification record.

Writing Questions at the Right Level

Instructors who write their own supplemental questions — beyond the bank in Sections 5.2–5.4 — should test each draft question against a simple filter before using it: could a trainee answer this correctly by memorizing a sentence from the module, without ever having to picture a real situation? If the answer is yes, the question is sitting at the recall level and should be rewritten. A recall-level question asks a trainee to name the Dirty Dozen; an apply-level question describes a technician mid-task and asks whether a specific interruption is being handled correctly. A recall-level question asks a trainee to list the DECIDE steps; an evaluate-level question presents a completed decision and asks the trainee to judge which step was weakest and why.

This filter matters most at the top of Bloom's hierarchy, where evaluate-level items ask a trainee to judge the quality of a decision or a cross-check against a standard, rather than simply reproduce a step. Those are the items most predictive of real performance, and the items most instructors are tempted to skip because they take longer to write than a fill-in-the-blank question (UIC CATE, Bloom's Taxonomy of Educational Objectives).

What Instructors Should Not Do

- Do not treat the knowledge check as a formality to clear before handing out a certificate.
- Do not reuse the identical question set every cycle — trainees will memorize answers from peers rather than the underlying competency, which defeats the purpose described above.
- Do not certify on the knowledge check alone when the practical observation component in Section 5.5 has not yet been completed; a passing score with no observed behavior is an incomplete evaluation, not a conservative one.

Why Scenario-Based Items Fit Adult Learners

This scenario-first approach is not only a Bloom's Taxonomy consideration; it also fits how the ACT audience actually learns. Andragogy — the theory of adult learning — holds that adult learners are problem-centered rather than subject-centered, and that they engage most when new material connects directly to situations they already recognize from their own work ([Wikipedia, Andragogy](#)). A pilot or maintenance technician sitting through an ACT module has spent a career accumulating exactly the kind of situational judgment a scenario-based question is designed to test, and a purely abstract recall question wastes that experience instead of drawing on it.

This is why every sample question in Sections 5.2 through 5.4 below is written around a described situation — a technician mid-task, a crew mid-decision, a coworker who stayed silent — rather than an abstract definition. Instructors extending the bank with their own items should hold to the same standard: if a question could be answered the same way by someone who has never set foot on a flight deck or a hangar floor, it is not yet an ACT-appropriate item.

A Worked Example: Turning a Lesson Objective Into an Assessment Item

Consider a Focus module objective: “trainees will recognize when an interruption during a critical task should be deferred rather than absorbed.” A recall-level question would ask the trainee to define an interruption — technically correct, but it does not test the objective. An apply-level question instead describes a technician mid-torque being asked an unrelated question by a coworker, and asks the trainee to choose the correct response from several options, only one of which defers the interruption without abandoning the task. An evaluate-level follow-up then asks the trainee to explain, in their own words, why absorbing the interruption — even if the technician answers correctly — still represents a lapse in focus discipline. This progression, from apply to evaluate, is what separates a knowledge check that measures the stated objective from one that only measures test-taking.

Instructors building supplemental items for their own cohorts should follow this same progression: state the objective first, write the scenario second, and only then write the question — never the reverse. Writing the question first tends to produce recall items, because it is far easier to ask “what is X” than to construct a scenario that actually requires applying X correctly.

One more check is worth running on any new item: read the correct answer on its own, without the question. If the correct answer reads like a definition copied from the module slide, the question is still testing recall no matter how the scenario around it was dressed up. A correct answer that reads like a judgment — “defer the question until the fastener is torqued and confirmed” rather than “an interruption is anything that diverts attention” — is the signal that the item is actually operating at the apply or evaluate level this manual asks for.

5.2

Knowledge Check Bank — Focus

These questions test whether a trainee understands focus as a finite, allocable resource — and can apply that understanding to recognize when it is breaking down. Use three to five per module; rotate which ones are used across cohorts so instructors are not teaching to a fixed answer key.

Question	Answer
A technician is torquing a fastener while a coworker starts a conversation about an unrelated job. The technician keeps talking but still calls out the correct torque value. Has focus been maintained?	No — focus is the resource being split, even though the outcome was correct this time. The task should be paused or the conversation deferred until the step is complete.
Which best distinguishes focus from vigilance or effort?	Focus is the deliberate allocation of a finite attentional resource to what matters most; a person can be alert and working hard and still be unfocused if attention is split across competing demands.
Name two of the “Dirty Dozen” human factors that specifically attack focus, and explain how each does so.	Any two of: fatigue (narrows attention before it is noticed), complacency (lets a familiar task run on autopilot past the point it should be re-checked), or interruption/distraction (breaks the mental thread holding a task together).
Why does the sterile cockpit rule apply specifically below 10,000 feet rather than for the entire flight?	Because it targets the phases of flight where focus matters most and competing demands are removed only when the cost of a lapse is highest, not as a blanket restriction for its own sake.
A trainee says checklists exist mainly to help people remember steps. What is the more precise ACT framing?	Checklists function primarily as attention anchors — they redirect and hold focus at the right point in a task — not primarily as memory aids for people who might otherwise forget the steps.

Facilitator note: Question 1 is deliberately designed so the correct outcome does not excuse the underlying lapse — instructors should watch for trainees who answer “yes, focus was maintained” because the torque value happened to be right. That answer signals the trainee is judging focus by outcome rather than by process, which is exactly the misunderstanding this module exists to correct.

5.3

Knowledge Check Bank — Direction

These questions test whether a trainee can apply the DECIDE model to identify which step of a decision was skipped or rushed, not merely recite the model's letters.

Question	Answer
List the six steps of the FAA's DECIDE model in order.	Detect, Estimate, Choose, Identify, Do, Evaluate.
A crew notices an abnormal indication, quickly agrees on a response, and acts — but never discusses alternatives or reviews the outcome afterward. Which DECIDE steps were skipped?	Identify (options) and Evaluate (the result) — the crew detected, estimated, and chose/did, but never cleanly identified alternatives or evaluated after the fact.
Why is documenting a decision considered part of exercising direction, not a separate administrative task?	Because an undocumented decision was never fully finished or communicated — documentation is how a decision becomes something the rest of the team and future crews can rely on, not paperwork added after the real work is done.
Give one maintenance-floor example and one flight-deck example of direction in practice.	Maintenance: an MEL deferral decision or a non-routine finding writeup. Flight deck: a go-around call, a diversion decision, or a hold-short call.
What typically happens to the DECIDE loop under high workload or a rushed turn, and why?	The slower steps — identifying real alternatives and evaluating the outcome — are cut first, because detecting and reacting feel faster and more urgent than pausing to choose and document deliberately.

Facilitator note: Question 2 works well as a short verbal scenario read aloud rather than a written prompt — pause after describing the crew's quick agreement and ask the room which steps are still missing before revealing the answer. This surfaces the common misconception that reaching a decision quickly is the same as completing the DECIDE loop.

Instructors running this module for a maintenance-heavy cohort should lean on Question 4's maintenance examples rather than the flight-deck ones when framing follow-up discussion, since a maintenance technician who has never called a go-around will otherwise treat the flight-deck example as abstract. The underlying DECIDE structure is identical across both domains, but the discussion lands better when it starts from the trainee's own operational world.

5.4

Knowledge Check Bank — Cognitive Cooperation

These questions test whether a trainee understands cognitive cooperation as a structured practice of mutual checking — not a courtesy extended when convenient.

Question	Answer
What historical event motivated the development of Crew Resource Management training?	A string of accidents involving technically proficient crews who failed to use every resource and voice available, examined at a 1979 NASA/industry workshop on resource management on the flight deck.
According to the Threat and Error Management model, where does operational risk come from, and what is the best defense?	Risk comes from both expected and unexpected threats; the best defense is a crew that catches and traps each other's errors before they combine.
A junior technician notices something questionable in a senior technician's work but says nothing because the senior technician is clearly confident. What failure pattern is this, and what should the junior technician do instead?	This is an authority gradient suppressing cognitive cooperation. The junior technician should speak up early rather than defer silently to seniority or confidence.
Give one flight-deck example and one maintenance-floor example of cognitive cooperation as a structured practice.	Flight deck: pilot-monitoring callouts, cross-verification, sterile-cockpit challenge-and-response. Maintenance floor: the independent inspection, the second signature.
Why do researchers describe cognitive cooperation as outperforming individual effort, even when every team member is highly skilled?	Because a single mind checks itself imperfectly; teams that structure how they check each other consistently outperform teams that simply try harder individually, since cross-checking catches errors an individual would not catch alone.

Facilitator note: Question 3 is the one most likely to expose an authority-gradient problem in the room itself, not just on paper — if a trainee answers correctly in writing but visibly hesitates when asked to say it out loud in front of more senior colleagues, that hesitation is itself a data point worth noting in the practical observation described in Section 5.5, separate from the written score.

5.5

Certification Criteria & Recertification

Certification exists to answer one operational question honestly: is this specific person, right now, demonstrably able to apply Focus, Direction, and Cognitive Cooperation under real conditions — not whether they attended the session, and not whether they are generally a capable professional. A certification program that certifies attendance rather than competency provides false assurance to the airline and to the CCC that reviews the resulting data, which is why both a score and an observed behavior are required rather than either one alone.

ACT certification is deliberately built so that a passing score alone is never sufficient. A trainee earns certification in a competency only by clearing both components below, because a knowledge check proves understanding and an observation proves the behavior actually transfers to real conditions.

The practical observation component uses a structured form rather than an instructor's informal impression, so that certification decisions are consistent across instructors and cohorts. The observing instructor rates specific, named behaviors — for example, whether the trainee verbally protected a critical phase of a scenario, whether a decision was documented and not just made, or whether the trainee raised a cross-check without being prompted — rather than assigning a single holistic impression of “good” or “needs work.” This keeps the observation anchored to the same competency definitions used throughout this manual, so two different instructors observing the same trainee should reach the same conclusion.

Component	Threshold to Pass
Knowledge check score	At least 80% correct across the module's question bank (Sections 5.2–5.4), assessed at the understand/apply/evaluate level, not recall alone.
Practical observation	A certified instructor observes the trainee applying the competency in a live scenario, simulator exercise, or on-the-job task, and rates the behavior as meeting the standard on a structured observation form.
Certification outcome	Both components must be met in the same evaluation cycle. A pass on one component with a fail on the other results in a documented remediation plan, not a certification.

When a trainee falls short on one component, the remediation plan is specific rather than a blanket repeat of the whole module: a trainee who fails the knowledge check but passes the observation typically needs a short, targeted review of the missed concepts before retesting, while a trainee who passes the knowledge check but fails the observation needs additional supervised repetitions of the behavior itself, since the gap is in transfer, not understanding. Either way, the instructor documents which component failed and why, so the remediation addresses the actual gap.

Recertification Cadence

Certification in each of the three core competencies is not permanent. Trainees recertify annually, on the same cycle as the airline's other recurring training requirements, so that Focus, Direction, and Cognitive Cooperation stay current rather than becoming a one-time credential earned early in a career and never revisited. Recertification uses a fresh draw from the knowledge check bank — never the identical question set the trainee saw previously — paired with a new practical observation.

The annual cadence is not treated as a fixed ceiling. A trainee involved in an event that the CCC reviews — or an instructor who observes a concerning pattern in day-to-day performance — can be moved onto an earlier recertification cycle for the specific competency in question. This keeps recertification tied to demonstrated need rather than functioning purely as a calendar requirement.

Instructors themselves are not exempt from this cadence. An ACT instructor recertifies against the same annual schedule as the trainees they teach, and their own recertification includes a review of how consistently they have been applying the observation form described above — because an instructor whose observation ratings drift from the rest of the corps over time introduces exactly the kind of inconsistency the structured form was built to prevent.

Trigger	Recertification Timing
Standard cycle	Annual, aligned to the airline's other recurring training requirements.
Event-linked review	Accelerated cycle for the specific competency implicated in a CCC-reviewed event.
Instructor-flagged concern	Accelerated cycle when day-to-day observation raises a specific concern.
Curriculum revision	Recertification against the revised material at the next scheduled module delivery.

How Certification Records Feed CCC Governance

Individual certification records are not filed away once a trainee passes. Aggregate, de-identified certification data — pass rates by competency, common wrong answers on knowledge checks, recurring gaps flagged in practical observations — is reviewed by the Cognitive Cooperation Council (CCC) as part of its ongoing curriculum oversight function. If certification data shows, for example, that trainees across cohorts consistently miss the same Direction question about documenting a decision, that is a signal to the CCC that either the module's instruction or the assessment item itself needs revision.

Certification is not the end of the assessment loop. Aggregate certification data is how the CCC knows whether the ACT curriculum is actually working across the whole instructor corps, not just in any single session.

This closes the loop described in Section 5.1: summative assessment produces certification records, and certification records — in aggregate — become the evidence base the CCC uses to evaluate and revise the curriculum itself, consistent with the Evaluation phase of ADDIE operating continuously rather than only once at program launch ([Wikipedia](#), [ADDIE model](#)).

What the CCC Actually Looks For in the Data

The CCC does not review a raw roster of pass and fail marks. Instructors submit certification results through the standard reporting cycle, and the data is aggregated before it reaches the council in a form built to answer three governance questions rather than to evaluate any single trainee.

Governance Question	What the Aggregate Data Shows
Is the curriculum teaching the right things?	Competency-level pass rates across cohorts and bases; a persistently low pass rate on one competency signals a curriculum or delivery problem, not a trainee problem.
Are the assessment items themselves working?	Item-level miss rates within the knowledge check bank; a question missed by nearly everyone is usually a poorly written question, not evidence of a poorly trained cohort.
Is the program keeping pace with real events?	Correlation between CCC-reviewed operational events and the competencies and questions tied to those events, used to prioritize which modules get revised first.

When the CCC identifies a problem from this data — a competency with a falling pass rate, a question that no longer discriminates between trainees who understand the material and those who do not — the revision flows back into the instructor corps through the same channel this manual came from: an updated module, an updated question bank entry, and, where the gap is significant, an accelerated recertification requirement as shown in the cadence table above. The instructor's own certification records are therefore not a one-way report up to governance; they are the input side of a cycle that eventually comes back down as better material to teach.

An instructor who documents certification results carefully is not doing paperwork for its own sake. That documentation is the raw material the CCC uses to keep the entire ACT program honest about whether it is actually working.

This same aggregate certification data also anchors the CCC's periodic reporting to the client's own leadership. Rather than reporting a subjective impression of how ACT is going, the CCC can point to specific, evidence-based figures — competency pass rates, recertification completion rates, and which modules have needed revision and why — giving both COGVATION and the client airline a shared, documented basis for judging whether the program is delivering what it was built to deliver.

For instructors, the practical takeaway from this entire part is simple: teach to the competency, assess at the level Bloom's Taxonomy describes as understanding and applying rather than merely recalling, document both the knowledge check and the observation honestly, and trust that the record produced by doing so well is exactly what keeps the ACT program — and the CCC that governs it — accountable to whether Focus, Direction, and Cognitive Cooperation are actually being built, not just taught.



PART 6

Appendices

Glossary, citations, reproducible forms, and quick-reference cards to support every ACT session.

IN THIS PART

- Glossary of Terms
- Master Reference List
- Forms & Templates
- Quick-Reference Cards

Appendices

PART 6 — REFERENCE MATERIALS

This closing part collects the shared vocabulary, source citations, reproducible forms, and condensed quick-reference cards an instructor needs on hand while delivering ACT — everything here is meant to be photocopied, printed, or kept open on a second screen during a live session.

How to Use This Part

Part 6 is organized as a working reference rather than a narrative read. Instructors are not expected to read it start to finish before a session; instead, each subsection is meant to be pulled up independently, exactly when it is needed.

Section 6.1, the Glossary of Terms, is the fastest way to settle a vocabulary question mid-session — if a trainee asks what “TEM” or “Just Culture” actually means, the answer is a single row away. Section 6.2, the Master Reference List, exists for the trainee who wants primary-source depth beyond the classroom, and for any auditor or client stakeholder who wants to verify that ACT’s claims trace back to real regulatory and academic literature rather than to internal opinion. Section 6.3, Forms & Templates, is the part of this manual most likely to leave the binder and travel to a printer or copier — these are working documents, not illustrations. Section 6.4, Quick-Reference Cards, is designed to be detached, laminated, or displayed on a second screen while an instructor is actively teaching a module, so the core definition and habit list for Focus, Direction, or Cognitive Cooperation are always one glance away.

Nothing in this appendix is meant to be memorized. It is meant to be within arm's reach.

6.1

Glossary of Terms

Plain-English definitions of the acronyms and models used throughout this manual. Instructors should be comfortable defining every term below without notes — trainees will ask, and a confident, jargon-free answer builds more credibility than a rehearsed definition read off a slide.

Use this glossary two ways: as a pre-session refresher before teaching any module that leans on a model (the DECIDE model in Direction, the Dirty Dozen across all three competencies), and as a shared vocabulary check with new instructors so that “CRM” or “Just Culture” means the same thing across every classroom in the program.

Term	Definition
ACT	Aircrew Cognitive Training — the COGVATION program built around the three core competencies of Focus, Direction, and Cognitive Cooperation.

Term	Definition
CCC	The three Core Cognitive Competencies at the heart of ACT: Focus, Direction, and Cognitive Cooperation.
COGVATION	The founder-owned company that designs and delivers ACT under contract to airline clients; not a division of any airline it serves.
DECIDE model	The FAA's six-step decision-making framework — Detect, Estimate, Choose, Identify, Do, Evaluate — used to teach the Direction competency.
CRM (Crew Resource Management)	A training discipline, born from a 1979 NASA/industry workshop, that teaches crews to use every available resource — including each other — rather than relying on one person's judgment alone.
TEM (Threat and Error Management)	A model holding that risk comes from both expected and unexpected threats, and that the best defense is a crew that catches and traps each other's errors before they combine.
The Dirty Dozen	Twelve well-documented human-error preconditions in aviation — including complacency, fatigue, distraction, and lack of communication — that ACT scenarios are built to surface and interrupt.
EBT / CBTA (Evidence-Based / Competency-Based Training)	Training approaches that assess trainees against demonstrated competencies drawn from real operational data, rather than against a fixed maneuver checklist alone.
ADDIE	A five-phase instructional design framework — Analyze, Design, Develop, Implement, Evaluate — used to build and refine ACT curriculum and materials.
Andragogy	The theory and practice of teaching adult learners, who bring prior experience and expect practical, self-directed relevance — as opposed to pedagogy, the teaching of children.
Just Culture	A safety governance principle that draws a clear line between honest mistakes, which are reported and studied without punishment, and reckless or willful violations, which are held accountable.
SMS (Safety Management System)	An organization-wide, documented approach to managing safety risk, built on four components: policy, risk management, assurance, and promotion.

Instructors delivering their first few ACT sessions often find it useful to tab this glossary page separately from the rest of the binder, since it tends to get referenced more often, in shorter bursts, than any other appendix section.

6.2

Master Reference List

Every source cited across this manual, grouped by topic and hyperlinked to its original document. Instructors and program auditors can use this list to verify any claim made in the preceding parts, and trainees who want to go deeper on a model than a single classroom session allows can be pointed here directly.

None of these sources are proprietary to COGVATION — they are the same regulatory handbooks, agency publications, and peer-reviewed human-factors literature that the wider aviation training industry already relies on. That is deliberate: ACT's claims should always be traceable to public, checkable evidence rather than to COGVATION's word alone.

Decision-Making / DECIDE Model

FAA. Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25, Ch. 16 (Aeronautical Decision-Making).
download.aopa.org/epilot/2008/8083-25-chap16.pdf

Crew Resource Management / Threat & Error Management

FAA. The Evolution of Crew Resource Management Training. faa.gov/sites/faa.gov/files/2022-11/crmhistory.pdf

NASA. Resource Management on the Flight Deck (1979 NASA/Industry Workshop Proceedings).
ntrs.nasa.gov/.../19800013796.pdf

Helmreich, R.L. Models of Threat, Error, and CRM in Flight Operations.
code7700.com/pdfs/helmreich_models_of_threat_error.pdf

Salas, E. & Maurino, D. (Eds.) Human Factors in Aviation, 2nd ed. shop.elsevier.com/books/human-factors-in-aviation

Attention / Human Factors / Dirty Dozen

UK CAA / SKYbrary. Flight-Crew Human Factors Handbook. skybrary.aero/sites/default/files/bookshelf/3199.pdf

SKYbrary Aviation Safety. "The Human Factors 'Dirty Dozen.'" skybrary.aero/articles/human-factors-dirty-dozen

FAA. Aviation Maintenance Technician Handbook — General, FAA-H-8083-30B. faa.gov/.../amtg_handbook.pdf

Evidence-Based / Competency-Based Training

EASA. Evidence Based Training (EBT). easa.europa.eu/.../evidence-based-training-ebt

Instructional Design Frameworks

Wikipedia. ADDIE model. en.wikipedia.org/wiki/ADDIE_model

UIC Center for the Advancement of Teaching Excellence. Bloom's Taxonomy of Educational Objectives.
teaching.uic.edu/.../blooms-taxonomy-of-educational-objectives

Yale Poorvu Center for Teaching and Learning. Using Bloom's Taxonomy to Write Learning Goals, Objectives, and Outcomes. poorvucenter.yale.edu/.../writing-learning-goals-objectives-and-outcomes

Adult Learning Theory (Andragogy)

Wikipedia. Andragogy. en.wikipedia.org/wiki/Andragogy

Knowles, M. (via ERIC). Andragogy: Adult Learning And Education At Its Best? files.eric.ed.gov/fulltext/ED492132.pdf

Safety Governance / Just Culture / SMS

ICAO. Safety Management Manual (SMM) — four SMS components. [icao.int/safety-management/SMI/SMM/Chapter 9](https://www.icao.int/safety-management/SMI/SMM/Chapter%209.pdf)

ICAO. Improving Just Culture. [icao.int/.../wp_193_en.pdf](https://www.icao.int/publications/Documents/193/en/wp_193_en.pdf)

UK CAA. Just Culture. [caa.co.uk/media/sf3eisz/fwm20160629_06_just-culture.pdf](https://www.caa.co.uk/media/sf3eisz/fwm20160629_06_just-culture.pdf)

European Commission. European Corporate Just Culture Declaration. transport.ec.europa.eu/.../declaration.pdf

Rollout / SMS Staff Instruction

ICAO. Safety Management Manual (SMM), 4th ed. highlights. [icao.int/.../SMM-4th-edition-highlights.pdf](https://www.icao.int/publications/Documents/4th-edition-highlights.pdf)

Each entry above follows the same pattern: author or issuing organization, the title of the work, and a hyperlink to the exact document. Where a source is reused from an earlier internal document (the Rollout Roadmap), that reuse is noted under its own heading rather than hidden, so instructors can see at a glance which sources anchor which parts of the curriculum.

6.3

Forms & Templates

Reproducible forms for use in live ACT sessions. Print as needed; each is designed to fit a single page when photocopied at full size. Blank rows are intentional — fill in what applies and leave the rest empty rather than forcing an entry.

Keep completed forms with the session record. Sign-in sheets and feedback forms support attendance and curriculum-improvement tracking; the event report form feeds directly into the safety reporting pathway described in the Just Culture material referenced in the Master Reference List above, and should be routed to the client's SMS reporting channel, not filed away locally.

A short note on tone: the event report form below is a Just Culture instrument, not a disciplinary one. Its purpose is to surface contributing factors — the same Dirty Dozen patterns taught throughout this manual — so the program can adjust training and procedures, not to assign blame to the person who filed it. Instructors introducing this form for the first time should say so explicitly.

Session Sign-In Sheet

Name	Role	Date	Signature

Instructor Session Feedback Form

Field	Response
Session / Competency	
Date	
What Worked	
What to Adjust	
Instructor Notes	

Cognitive Cooperation Event / Near-Miss Report Form

Field	Response
Date	
Location	
Description	
Immediate Action Taken	
Contributing Factors (reference the Dirty Dozen checklist)	
Submitted By	

See the Dirty Dozen entry in the Glossary of Terms (Section 6.1) and the SKYbrary Dirty Dozen reference when completing the contributing-factors field.

6.4

Quick-Reference Cards

One condensed card per core competency — a working definition, where it shows up in the cockpit and on the hangar floor, and its Building the Habit bullets — for instructors to keep open during a session or hand to a trainee as a takeaway.

These cards are deliberately short. The full teaching material — learning objectives, lesson plans, discussion questions, and assessments — lives in the competency modules earlier in this manual; these pages are the compressed version for quick recall in the moment.

Focus

Focus is the deliberate act of directing a limited pool of attention at what matters most in the moment, and holding it there against everything competing for it.

In the cockpit: the sterile cockpit rule below 10,000 feet. On the floor: task card discipline — one system verified at a time, one torque value confirmed before moving on.

Building the Habit

- Protect critical phases.
- Brief before you start.
- Use checklists as attention anchors, not memory aids.
- Debrief the distraction.

Direction

Direction is what turns attention into action — running the FAA's DECIDE loop on purpose instead of detecting and reacting without ever cleanly choosing.

In the cockpit: a go-around call, a diversion decision, a hold-short. On the floor: an MEL deferral, a non-routine finding writeup, the call to pull a borescope and look closer.

Building the Habit

- Run the loop on purpose.
- Document the decision, not just the finding.
- Brief the alternative before you need it.
- Evaluate after the fact.

Cognitive Cooperation

Cognitive cooperation is the structured practice of letting other people check, question, and correct a decision before it becomes irreversible.

In the cockpit: pilot-monitoring callouts, cross-verification, sterile-cockpit challenge-and-response. On the floor: the independent inspection, the second signature.

Building the Habit

- Speak up early.
- Cross-check as a discipline, not a formality.
- Brief the alternative, not just the plan.
- Debrief honestly.