CAPSIS

CAUSAL FACTORS GUIDE

A practical reference for fact-based, learning-centered reviews

> **REVIEW PREMISE** Causal factors explain the conditions, decisions, actions, and system influences that shaped an outcome. They are selected to support learning and prevention, not to assign blame or restate what happened.

Applies to Review Officers, Commanders, and Safety Directors who support safety reviews in our Civil Air Patrol Safety Information System (CAPSIS).

Purpose and Scope

This guide supports consistent selection and explanation of causal factors and mitigations in CAPSIS. It preserves the factor groups and definitions used by Review Officers while adding practical decision rules, information standards, examples, and final-quality checks.

Use this guide with current CAP regulations, policy, and CAPSIS instructions. It does not replace required notifications, command action, legal processes, cadet-protection routing, or emergency response.

How to Use This Guide

Begin with the available event information and event chain, not with a preferred factor. Select the fewest factors that fully explain the important contributors, and connect each selected factor to a factual statement in the review narrative.

> **REVIEW APPROACH** Be rigorous about facts, fair with people, direct about risk, and relentless about learning.

Verify the Assignment and Start Information Collection

The Review Officer must complete the Verification step in CAPSIS to validate and accept the assignment. Verification moves the SSO into Review and Analysis and initiates an important information-collection step: CAPSIS emails a witness-statement request to each person listed as an individual in the SSO.

Before selecting Verify, review the Individuals list and promptly coordinate correction of missing names or email addresses. Automated requests are only sent to the people listed in the record, so an incomplete list can delay the review or leave an important perspective uncollected.

- **Use the automated requests.** Monitor the returned statements, follow up when a response is needed, and compare the recipient list with the people identified while building the event chain.

- **Collect additional statements when needed.** If another person is identified after Verification, contact that person and obtain a statement through the available CAPSIS process or another appropriate method.
- **Upload statements received separately.** When a witness sends a statement directly to the Review Officer by email or as a Word document, preserve the original and upload it to the CAPSIS Attachments area. Label the attachment so the witness, date received, and document purpose are clear.
- **Treat statements as source information, not conclusions.** A witness statement records that person's account. Compare it with other statements, records, observations, and known conditions before using it in the event chain or causal analysis.

Protect Your Work from eServices Timeouts

eServices can time out after 20 minutes, and work entered in CAPSIS may be lost if it has not been saved before the session ends. Review Officers should be prepared for this while developing causal-factor justifications and mitigation language, which often take time to draft and refine.

- **Draft longer text outside CAPSIS.** Develop causal-factor justifications, mitigation narratives, and other longer entries in a Word document or other approved working document. Once the language is complete and ready for the record, copy and paste it into CAPSIS.
- **Save frequently when working directly in CAPSIS.** When developing or editing a mitigation in CAPSIS, use the Save button regularly and do not wait until the entry is finished. Save before pausing, researching another item, or stepping away so the 20-minute timeout does not catch you with unsaved work.
- **Do not rely on unsaved text remaining on screen.** Save the current work before leaving CAPSIS or allowing the session to sit idle. If eServices times out, unsaved entries may not be recoverable.

> **20-MINUTE TIMEOUT WARNING** eServices can time out after 20 minutes. Build longer justifications outside CAPSIS and paste them in when ready or save frequently in the mitigation area so unsaved work is not lost.

Use Journal Notes as a Working Record

Journal Notes provide an informal internal record of observations, contacts, discussions, questions, and coordination related to the SSO. They support continuity, follow-up communication, and collaboration among those assisting with the review, but they are not part of the official reporting process.

- **Appropriate uses.** Record contact attempts, meeting or interview dates, follow-up questions, coordination status, unresolved issues, and contextual information that may assist later discussion.
- **Not an official analysis field.** Do not use Journal Notes to establish the official event chain, select causal factors, document the mitigation plan, or announce a final conclusion.
- **Move material information to the record.** If information documented in a Journal Note becomes important to the review, confirm it through appropriate sources and record it in the relevant CAPSIS field. Upload the supporting statement or document to Attachments when applicable.

- **Write for internal reference.** Use neutral, factual, need-to-know language. Clearly distinguish an observation, a person's account, a question, and an unresolved assumption. Avoid blame, unsupported conclusions, disciplinary discussion, and unnecessary sensitive personal or medical information.

Journal Notes may provide useful context for future communication, but they should never be interpreted as an official conclusion, formal finding, or substitute for the source records and analysis required elsewhere in CAPSIS.

Begin with the Event Chain

In CAPSIS, reconstruct the occurrence as an event chain before selecting causal factors. CAPR 160-2, Attachment 2, defines the event chain as the series of events culminating in the safety significant occurrence. Each event should be an observable, fact-based snapshot of an action, inaction, condition, or change, placed in sequence. Identify gaps and unknowns rather than filling them with assumptions.

> **REVIEW, NOT INVESTIGATION** CAPR 160-2, paragraph 7.5, states that the safety review process is not a formal investigation. Consistent with CAPR 160-1, paragraphs 1.5.2 through 1.5.2.2, use Just Culture practices to determine what happened and why, not who is to blame. Any disciplinary or administrative accountability is handled outside the safety review process.

Six-Step Selection Process

1. **Reconstruct the event chain.** Build a reliable sequence of fact-based events using records, interviews, environmental information, equipment information, and other available sources (CAPR 160-2, Attachment 2).
2. **Identify the outcome-shaping conditions.** Ask what made the action or decision reasonable at the time and what defenses were absent, weak, bypassed, or unsuccessful.
3. **Look beyond the last action.** Consider organizational, supervisory, situational, and individual influences before selecting an error or deviation.
4. **Apply the contribution test.** Select a factor only when the available information shows it materially increased the likelihood or severity of the outcome.
5. **Write the causal connection.** State how the factor influenced the event; do not simply repeat the factor label.
6. **Match mitigations to factors.** Choose actions that change the contributing condition, assign ownership, and define how effectiveness will be checked.

> **TIMELINE STANDARD** Complete the safety review within 60 days of the SSO, or within 60 days after the SSO was discovered, unless the primary Review Officer's commander approves a justified extension in writing (CAPR 160-2, paragraph 7.4). Mitigation implementation or completion dates must not extend beyond 120 days from the SSO or discovery date unless the appropriate written approval is obtained (CAPR 160-2, paragraphs 8.2.1 and 8.2.2).

Guide Map

Section	Location	Use
CAPSIS workflow records	Early sections	Verification, witness-statement requests, attachments, session timeout/save practices, and appropriate use of Journal Notes
Selection foundations	Early sections	Information support, contribution tests, common pitfalls, and category crosswalk
Causal-factor definitions	Core guide	Six CAPSIS groups with clarified definitions and selection notes
Mitigations	Final sections	Mitigation types, hierarchy of controls (see Addendum C), action quality, and effectiveness
Closure checklist	Final guide section	A concise quality check before the review is submitted or closed
Leadership addendum	Addendum A	Commander and Wing/Region Safety Director roles, decision boundaries, and parallel processes
Worked examples	Addendum B	Evidence-based event chains, factor selection, and mitigations in fictional scenarios
Hierarchy of Controls visual	Addendum C	A visual guide to choosing the highest feasible level of control

Selection Foundations

What Qualifies as a Causal Factor

A causal factor is an action, decision, condition, defense, or system influence that materially shaped the event. It does not need to be the single or primary cause. Most meaningful events involve several interacting factors at different levels.

- **Information support test.** Is the factor supported by records, interviews, observations, or other credible information?
- **Connection test.** Can the review explain how the factor influenced the sequence or outcome?
- **Difference test.** Was this condition meaningfully different from what safe and successful work required?
- **Counterfactual test.** If the factor had been absent or effectively controlled, would the event have been less likely or less severe?
- **Actionability test.** Does identifying the factor reveal a realistic opportunity to strengthen the system, supervision, environment, or performance?

Information and Narrative Standard

Information type	Meaning	How to write it
Known fact	Directly supported by reliable sources	State plainly and identify the source in the review record.
Corroborated account	Consistent information from more than one source	Describe the agreement and any remaining limits.
Inference	A reasoned conclusion drawn from known facts	Label it as analysis and explain the facts supporting it.

Information type	Meaning	How to write it
Unknown	Information cannot be established	Say what remains unknown and why; do not fill the gap with assumption.
Conflicting information	Credible sources do not agree	Describe the conflict, assess reliability, and avoid overstating certainty.

> **WRITE THE LINK** For every selected factor, complete this sentence in substance: This factor contributed because… If the narrative cannot complete that link with documented support, reconsider the selection.

What a Causal Factor Is Not

- **Not the outcome.** Injury, damage, illness, delay, or mission failure describes what happened, not why it happened.
- **Not a character judgment.** Labels such as careless, unsafe, poor attitude, or should have known are conclusions, not causal analysis.
- **Not automatically a violation.** A difference from written procedure may reflect error, ambiguity, local adaptation, conflicting goals, or normalized practice.
- **Not selected by severity.** A serious outcome does not prove reckless behavior, and a minor outcome does not make a risky condition acceptable.
- **Not a quota.** Do not add weak factors to make a review appear thorough. Quality comes from explanatory value.

Choosing the Best-Fit Group

Start at the level where the available information shows the contributing condition existed. Select factors from more than one group when each describes a distinct part of the causal pathway; avoid duplicate selections that merely restate the same issue.

Group	Primary focus	Key question
Organizational	System-wide priorities, resources, roles, policy, training design, or organizational change	Would this condition likely affect more than one person, team, or event?
Supervisory	Planning, briefing, task assignment, intervention, staffing ratios, or leader oversight	What did leaders establish, communicate, monitor, accept, or fail to correct?
Situational	Equipment, automation, facility, weather, visibility, workspace, or other external conditions	What in the physical or operating environment shaped performance?
Individual/Personnel	Readiness, perception, attention, stress, communication, proficiency, attitudes, or biases	What condition affected the individual's ability to perceive, decide, communicate, or act?
Unintentional Error	An intended action was carried out incorrectly, incompletely, too early, too late, or without intended control	Was the action unintentional, even if the result was consequential?

Group	Primary focus	Key question
Intentional Act or Deviation	A conscious departure from a rule, standard, instruction, or expected practice	Was the departure intentional, and what made it appear acceptable or necessary?

Common Observations and Where to Look

Observation	Potential factors to examine
Time pressure	Operational tempo; external pressures; task saturation; supervisory planning
Staffing shortage	Adequate resources; supervision ratio; supervision not provided; task saturation
Poor handoff or coordination	Roles not communicated; crew/team resource management; communication
Procedure not followed	Unintentional error, workaround, or routine deviation - determine intent and context first
Equipment unavailable or unsuitable	Adequate resources; design/engineering; procedure; environmental or facility factors
Known hazard persisted	Safety culture; supervision best practices; intervention timeliness; risk assessment
Changing weather or conditions	Environmental conditions; planning/briefing; risk assessment; continuation bias
Training issue	Training content; lack of training/experience; lack of proficiency - distinguish system design from individual preparation

> **DO NOT CODE FIRST** A crosswalk points to questions, not conclusions. Establish intent, timing, context, and system influences before choosing between an error, a deviation, and an organizational or supervisory condition.

Organizational Factors

> **SELECTION FOCUS** Use when the contributor is rooted in organizational priorities, resources, roles, policy, training design, or change - especially when the condition could affect multiple people, teams, or events.

- **Organizational Safety Culture (Attitudes/Actions).** Shared and accepted values, attitudes, priorities, or behaviors in the organization did not adequately support safe mission execution.
- **Operational Tempo Too High or Expectations Unreasonable.** The pace of activity or expectations established by leadership exceeded the available time, staffing, capability, or margin needed for a safe outcome.
- **Adequate Resources Not Available or Provided.** Financial, personnel, time, equipment, information, or other resources were not adequate to support a safe outcome.
- **Procedure or Checklist Inadequate, Incomplete, or Unclear.** An existing procedure, checklist, or written operational tool did not adequately support safe and reliable performance.
- **Procedure or Checklist Does Not Exist.** A procedure, checklist, or written operational tool needed to support safe performance did not exist.

- **Regulation, Standard, or Guidance Inadequate, Incomplete, or Unclear.** An existing institutional requirement or formal guidance document did not adequately support a safe outcome.
- **Regulation, Standard, or Guidance Does Not Exist.** An institutional requirement or formal guidance document needed to support a safe outcome did not exist.
- **Roles and responsibilities not adequately defined.** Individual and/or group roles, duties, and reporting structures were not defined well enough to support a safe outcome.
- **Roles and responsibilities not adequately communicated.** Individual and/or group roles, duties, and reporting structures as defined were not communicated in a timely manner or well enough to support a safe outcome.
- **Expectations/intentions not adequately defined.** Expectations and/or intentions of leadership were not defined well enough to support a safe outcome.
- **Expectations/intentions not adequately communicated.** Expectations and/or intentions of leadership were not communicated in a timely manner or well enough to support a safe outcome.
- **Organizational change.** Organizational growth, downsizing, or restructuring of command and staff positions caused misunderstandings that led to an undesired outcome.
- **Training content inadequate or not standardized.** Existing training materials, delivery methods, or their uniform standardization did not equip learners with necessary skills and knowledge, or the training experience varied significantly across individuals, teams, or locations.
- **Training content does not exist.** Training materials necessary to support a safe outcome did not exist.

Supervisory Factors

> **SELECTION FOCUS** Use when planning, assignment, briefing, supervision, intervention, or leader oversight shaped the conditions under which the work occurred.

- **Crew/Team Resource Management Ineffective.** A breakdown in team/crew function or capability due to leadership actions or inactions.
- **Mission/Activity Planning/Briefing Inadequate.** Non-completion of preparatory tasks associated with the planning or briefing of a mission/activity.
- **Rank/Position Intimidation.** Individual or team/crew performance was degraded by actual or perceived rank or role intimidation.
- **Risk Assessment Inadequate or not performed.** The risk assessment (deliberate/documented or real-time) was not sufficient to address anticipated hazards and controls and/or it was not performed in accordance with CAP requirements.
- **Supervision assignment beyond member ability.** Assigned tasks required supervisory skills, knowledge, or experience that the team member(s) didn't possess or hadn't developed sufficiently to support a safe outcome.
- **Supervision best practices not followed.** Commonly accepted or required supervisory practices were not followed.
- **Supervision best practices not defined.** Supervisory practices were not codified in requirements or guidelines.

- **Supervisory intervention timeliness inadequate.** Expected supervisory intervention was not timely enough to prevent an undesired outcome.
- **Supervision not provided.** Leadership did not ensure that activity supervision was in place to support oversight, guidance, and/or instruction.
- **Supervision ratio inadequate.** The required or expected activity supervision ratio was not in place or was not in accordance with CAP requirements.

Situational Factors

> **SELECTION FOCUS** Use for equipment, automation, facilities, environmental conditions, workspace limitations, and other physical or operational circumstances that influenced performance.

- **Mechanical or electrical malfunction or failure.** Failure of a mechanical or electrical component, or device, contributed to an undesired outcome.
- **Design or Engineering Inadequate or Improper.** The design, engineering, construction, configuration, or human-machine interface of equipment or a system contributed to the outcome.
- **Automated System Created an Undesired State.** The design, function, reliability, symbology, logic, mode awareness, or behavior of an automated system contributed to the outcome.
- **Controls or Switches in Incorrect State.** A control or switch was in an incorrect state, and its location, shape, size, design, lighting, guarding, or feedback did not adequately prevent or reveal the condition.
- **Instrumentation or Warning Systems Ineffective.** Instrumentation, displays, alerts, or auditory, visual, or tactile warnings did not provide timely or usable awareness.
- **Workspace Visibility Restrictions.** Lighting, windshield, windscreen, canopy design, glare, reflections, or workspace obstructions restricted visibility needed for the task.
- **Cramped Quarters.** Limited space or restricted movement in the work area contributed to the outcome.
- **Heat/Cold Stress.** Actions or behaviors were adversely affected by exposure to heat or cold.
- **Lighting.** Actions or behaviors were adversely affected by inadequate lighting, glare, or sudden brightness.
- **Noise Interference.** Actions or behaviors were adversely affected by noise or sound not directly related to the task.
- **Obscured Visibility.** Actions or behaviors were adversely affected by obscured visibility.
- **Wet/Slick Conditions.** A slippery surface contributed to an undesired outcome.
- **Improper Use of Facility.** The facility was used in a way it was not intended to be used.
- **Inadequate Facility.** Lack of a facility or a lack of adequate size, storage, organization of a facility or inadequate maintenance of a facility led to an undesired outcome.
- **Housekeeping.** Conditions in the area of operation were not maintained in a clean and orderly manner, posing risks and leading to an undesired outcome. This includes clutter, spills, improper storage, or the presence of sharp objects or hazards that are not adequately secured.

- **Plants and Animals.** The area of operation was harmful due to the presence of plants or animals. This includes domestic or wild animals, poison ivy/oak, or infestation by insects, birds, spiders, rodents, bats, etc.
- **Biological Matter.** Mold, fungus, fecal matter, organic decay, or another non-animal, non-plant biological hazard contributed to the outcome.
- **Environmental Conditions.** A natural or environmental condition, such as severe weather, temperature, wind, smoke, fire, flooding, snow, ice, or lightning, adversely affected the mission or activity.
- **Uncontrollable Factor.** A factor outside reasonable individual or organizational control materially affected the outcome. Use only after determining that no practical control, preparation, or response could have meaningfully reduced the risk.
- **Labels/placards/signs are inadequate or poorly worded.** Information intended to warn or inform about hazards, provide instructions, or ensure safety was unclear, insufficient, or easily misinterpreted.
- **Labels/placards/signs do not exist.** Not in place to serve as a hazard control.

Individual/Personnel Factors

> **SELECTION FOCUS** Use when a condition affected a person's readiness, perception, attention, communication, judgment, knowledge, skill, or ability to act. Avoid treating normal human limitations as character defects.

Workload, Communication, and Perception

- **Task Saturation.** The distribution of tasks led to a work overload on an individual or team/crew.
- **Clear, Concise, and Direct Communication.** Critical information was not communicated with sufficient clarity, assertiveness, persistence, accuracy, or timeliness.
- **Motion/Balance Illusion.** Physical sensations caused an individual to become disoriented.
- **Spatial Disorientation.** An individual succumbed to forces that resulted in incorrectly sensing position, motion, or attitude of an aircraft/vehicle.
- **Visual Illusion.** Visual stimuli resulted in a sense of disorientation.
- **Misinterpreted/Misread Instrument.** An instrument indication was read or interpreted incorrectly.
- **Misperception of Changing Environment.** Misperception or misjudgment of altitude, separation, speed, closure rate, road conditions, aircraft/vehicle location or other operational conditions led to an undesired outcome.

Fitness and Readiness

- **Fatigue.** Diminished physical/mental capability resulting from chronic or acute periods of prolonged wakefulness, sleep deprivation, jet lag, shift work or poor sleep habits interfered with performance.
- **Nutrition/Diet/Hydration.** Nutrition, hydration state, or dietary practices resulted in degraded performance or illness.

- **Physical Strength and Coordination.** Relative physical strength and/or coordination was not sufficient to support task demands.
- **Substance Effects.** The effects of legal or illegal drugs, supplements, energy drinks or other substances interfered with performance or contributed to illness/injury.
- **Disclosed Medical Condition.** A known and disclosed health or medical condition interfered with performance or contributed to illness or injury.
- **Undisclosed Medical Condition.** A pre-existing health condition, injury, or illness that was not disclosed before the activity or mission interfered with performance or contributed to illness or injury.
- **New Medical Condition.** A health or medical condition first occurring or first becoming apparent during the CAP activity or mission interfered with performance or contributed to illness or injury.
- **Emotional State (Stress).** The influence of a strong positive or negative emotion interfered with a task or performance was affected by stressful circumstances.

Attitudes, Pressure, and Bias

- **Complacency.** A sense of complacency led to a false sense of security or disregarding of hazards.
- **External Pressures.** A course of action was committed to because of a perception of external pressure to complete a task, activity or mission.
- **Habit Pattern.** A personal habit pattern detracted from desired safety outcomes.
- **Negative Habit Transfer.** An individual reverted to a previously learned behavior that was not appropriate for the task or situation.
- **Hazardous Attitudes.** Impulsivity, invulnerability, overconfidence, anti-authority, or resignation affected judgment or performance. Select a specific subfactor when the available information supports it.
- **Impulsivity.** The individual acted quickly without adequately considering likely consequences or available alternatives.
- **Invulnerability.** The individual behaved as though a negative outcome was unlikely to happen to them.
- **Overconfidence/Macho.** Confidence in personal ability exceeded demonstrated capability or led the individual to discount risk, assistance, or contrary information.
- **Anti-Authority.** Resistance to rules, standards, or appropriate direction adversely affected the decision or action.
- **Resignation.** The individual believed the outcome was beyond their influence and did not take available action that could have improved it.
- **Internal Bias.** A cognitive bias, such as confirmation, optimism, expectation, or continuation bias, shaped how information was noticed, interpreted, or acted upon.
- **Confirmation Bias.** Information supporting an existing belief was favored while contradictory information was discounted or overlooked.
- **Optimism Bias.** The individual underestimated the likelihood or potential impact of a negative event affecting them or the mission.
- **Expectation Bias.** The individual perceived or interpreted information in a way that matched what they expected to see or hear.

- **Continuation Bias.** The original plan was continued despite emerging cues, changed conditions, or warning signs that supported reassessment.

Attention, Cognition, and Response

- **Reaction Time.** The ability to react to an emerging event or situation contributed to an undesired outcome.
- **Attention.** Reduced alertness, vigilance, or readiness contributed to a missed cue, hazard, or change in conditions.
- **Confusion.** An individual's experience of bewilderment, lack of clear thinking, or perceptual disorientation led to an inability to maintain a cohesive and orderly awareness of events.
- **Distraction.** An individual experienced a cue in the environment that led to an interruption of attention or a redirection of attention.
- **Fixation.** An individual focused on a limited number of environmental cues to the exclusion of others.

Knowledge, Skill, and Experience

- **Lack of Proficiency.** Inadequate or outdated knowledge or lack of proper application skills contributed to an undesired outcome.
- **Lack of Training or Experience.** Required or appropriate training was not completed, or experience with the task or activity was insufficient to prevent an undesired outcome.

Unintentional Errors

> **SELECTION FOCUS** Use when the person intended an appropriate action or compliance but performed it incorrectly, incompletely, too early, too late, or without the intended control. Also identify the conditions that made the error likely or difficult to detect.

- **Control of aircraft/vehicle/system.** Conditions were responded to by either over- or under-controlling the aircraft/vehicle/system.
- **Speed of task accomplishment.** The necessary action as dictated by the situation was taken but performed too quickly or too slowly.
- **Unintended Operation of Equipment.** Bodily movements inadvertently activated or deactivated equipment, controls, or switches when there was no intent to operate them.
- **Visual Scan.** Execution of visual scan patterns was ineffective or inadequate.
- **Training or Best Practices Not Followed Correctly.** The individual intended to follow applicable training or accepted practice but applied it incorrectly, incompletely, or out of sequence.
- **Labels, Placards, or Signs Not Followed Correctly.** The individual intended to comply with a label, placard, or sign but misunderstood or incorrectly applied its direction.
- **Procedures or Checklists Not Followed Correctly.** The individual intended to follow an applicable procedure or checklist but performed it incorrectly, incompletely, or out of sequence.
- **Regulations, Standards, or Guidance Not Followed Correctly.** The individual intended to comply with an applicable requirement or guidance but misunderstood or incorrectly applied it.

Intentional Acts or Deviations

> **SELECTION FOCUS** Use when available information shows a conscious departure from an understood rule, standard, instruction, or accepted practice. The departure may have been intended even though the outcome was not.

- **Workaround.** A rule, standard, instruction, or best practice was intentionally adapted or bypassed because the deviation was believed to be the most workable or safest course under the circumstances.
- **Routine Deviation.** A rule, standard, instruction, or best practice was intentionally bypassed because the deviation had become accepted or normalized practice.
- **Deliberate Act.** The act was committed with knowledge that it was contrary to established direction or with intent to cause harm or damage. Immediately refer suspected deliberate acts to the commander and follow applicable reporting and legal guidance.

Determining Intent: Error or Deviation?

Intent refers to whether the person consciously departed from an understood expectation - not whether they intended the outcome. A person can intentionally deviate without intending harm.

Classification	Information-based distinction
Unintentional error	The person intended to perform correctly but the action was mistaken, incomplete, mistimed, or misapplied.
Workaround	The person knowingly adapted or bypassed the expected method because it appeared necessary or more workable in the situation.
Routine deviation	The person knowingly departed from the expectation because the departure had become normal or accepted practice.
Deliberate act	The person knowingly acted contrary to established direction with aggravating intent or intended harm/damage; refer immediately to command.

> **JUST CULTURE CHECK** Ask what the person understood, what alternatives were available, what others normally did, what leaders knew, and how the system rewarded or tolerated the behavior. Do not infer intent from outcome alone.

Selecting Mitigations

Review Officers may select one or more mitigation types in CAPSIS. Select the type that best describes how the action will reduce risk, then write the action with enough detail to show who will do what, by when, and how effectiveness will be verified.

Mitigation type	Use when the action...	Examples
Hazard Prevention	Eliminates or reduces a hazard before exposure or an event occurs.	Remove the hazard, redesign the activity, or prevent exposure.
Control	Reduces the likelihood or severity of a hazard that remains.	Engineering safeguards, barriers, limits, or administrative controls.

Mitigation type	Use when the action...	Examples
Supervision	Improves real-time oversight, coaching, intervention, or task monitoring.	Define supervisor presence, ratio, checkpoints, and intervention criteria.
Oversight	Evaluates program performance, compliance, trends, or control effectiveness over time.	Audits, assurance reviews, trend checks, or leadership monitoring.
Training	Builds the knowledge, skill, judgment, or practice needed for performance.	Scenario-based instruction, qualification, demonstration, or recurrent practice.
Awareness	Improves recognition of hazards, expectations, or lessons.	Targeted communication, briefings, labels, alerts, or lessons learned.
Procedures	Creates or improves standardized steps, decision points, or operating guidance.	Revise checklists, procedures, escalation criteria, or job aids.
Documentation	Creates or improves records needed for continuity, decisions, or assurance.	Capture inspections, decisions, maintenance, handoffs, or action status.
Resources	Provides equipment, funding, tools, information, or other assets needed for safe execution.	Acquire, replace, stage, or make resources reliably available.
Environment	Changes physical or operational conditions affecting exposure or performance.	Improve lighting, layout, temperature control, access, or scheduling conditions.
Staffing	Changes personnel availability, qualifications, workload, or coverage.	Add qualified staff, adjust ratios, redistribute workload, or set limits.

Use the Hierarchy of Controls (see Addendum C)

Whenever practical, favor controls that remove the hazard or reduce it at the source before relying on procedures, training, warnings, or personal protective equipment. Multiple controls may be needed when one measure cannot reduce risk to an acceptable level.

Level	Purpose	Relative reliability
1. Elimination	Remove the hazard or exposure entirely.	Strongest
2. Substitution	Replace the activity, equipment, material, or process with a safer alternative.	Stronger
3. Engineering controls	Isolate people from the hazard through design, guarding, automation, or physical barriers.	Strong
4. Administrative controls	Change procedures, scheduling, training, supervision, or communication.	Supportive
5. Personal protective equipment	Reduce exposure or injury through properly selected and used protective equipment.	Last line

Corrective-Action Quality

A recommendation is not complete because it sounds reasonable. It must address an identified causal factor, be owned by someone with authority and resources, and include a way to determine whether it worked.

- **Linked.** Directly addresses one or more supported causal factors.

- **Specific.** Describes the action, responsible owner, affected population or process, and expected result.
- **Feasible.** Can be implemented with available or deliberately approved authority, resources, and time.
- **Time-bound.** Has a realistic due date and, when needed, interim milestones.
- **Measurable.** Includes confirmation of completion and an effectiveness measure.
- **Sustainable.** Can be maintained after initial attention fades and does not depend solely on memory or exceptional effort.
- **Risk-aware.** Does not create a new hazard, transfer unreasonable burden, or make the mission impracticable.

Completion Is Not Effectiveness

Follow-up measure	Question answered	Examples
Completion confirmation	Shows the action was implemented	Procedure published; equipment purchased; training delivered; staffing plan approved
Effectiveness indicators	Show the contributing condition changed	Observed compliance; reduced repeat events; improved response time; verified control use; member feedback
Sustainment indicators	Show the improvement remains in place	Follow-up review; recurring audit; trend monitoring; owner handoff; periodic validation

Weak and Strong Action Statements

Quality	Action statement	Why
Weak	Remind members to be careful.	Relies on attention and does not change the causal condition.
Stronger	Activity director will add a pre-start equipment status check to the written briefing checklist by 15 October and verify use during the next three activities.	Defines owner, action, date, location in the process, and verification.
Weak	Provide more training.	Does not identify the performance gap, audience, method, or measure.
Stronger	Wing operations will deliver scenario-based diversion decision training to current pilots by 30 November and evaluate application during the next proficiency flight.	Targets the factor and includes a performance check.

Review Officer Closure Checklist

Before submitting or closing the review, verify that the analysis tells a coherent, fact-based story from event conditions through corrective action.

#	Final check	Complete / N/A
1	Verification was completed and the assignment accepted; the Individuals list was reviewed so witness-statement requests reached all listed persons, and missing or incorrect contact information was addressed.	☐ Complete ☐ N/A
2	Returned statements and statements received separately by email or document were preserved and uploaded to the CAPSIS Attachments area.	☐ Complete ☐ N/A

#	Final check	Complete / N/A
3	Journal Notes contain only informal working information; source records and official analysis are recorded in the appropriate CAPSIS fields and attachments.	☐ Complete ☐ N/A
4	The CAPSIS event chain reconstructs the SSO through observable, fact-based events in chronological order.	☐ Complete ☐ N/A
5	The event chain and narrative distinguish fact, inference, conflicting information, and unknowns.	☐ Complete ☐ N/A
6	Immediate care, required notifications, preservation needs, and urgent interim controls were addressed.	☐ Complete ☐ N/A
7	The analysis considered organizational, supervisory, situational, and individual influences - not only the final action.	☐ Complete ☐ N/A
8	Each selected factor is supported by documented information and linked to the event chain and review narrative.	☐ Complete ☐ N/A
9	The review used Just Culture practices to understand what happened and why rather than assign blame.	☐ Complete ☐ N/A
10	Outcome severity was not used as proof of intent, blame, or recklessness.	☐ Complete ☐ N/A
11	Similar factors are not duplicated unless each describes a distinct contributor.	☐ Complete ☐ N/A
12	Errors and intentional deviations are distinguished by available information about intent and context.	☐ Complete ☐ N/A
13	Deliberate acts, cadet-protection matters, legal issues, and specialized concerns were routed appropriately.	☐ Complete ☐ N/A
14	Each causal factor has at least one recommended mitigation, and each mitigation directly addresses its linked factor using the strongest practical control.	☐ Complete ☐ N/A
15	Each action identifies an OPR, implementation or completion date, completion confirmation, and effectiveness measure.	☐ Complete ☐ N/A
16	The 60-day review and 120-day mitigation limits were met, measured from the SSO or discovery date, or the required written approvals are documented.	☐ Complete ☐ N/A
17	The final narrative uses neutral language, protects sensitive information, and provides lessons another unit can act upon.	☐ Complete ☐ N/A

FINAL TEST Does the review help CAP understand what shaped the event, protect people, strengthen readiness, and reduce the chance or consequence of recurrence? If not, continue the analysis before closure.

References and Use Notes

CAPR 160-1, Civil Air Patrol Safety Program, 1 November 2022, paragraphs 1.5.2-1.5.2.2: Just Culture and safety review purpose.

CAPR 160-2, Safety Reporting, Reviewing, and Action Planning, 28 December 2022, ICL 26-08 incorporated: 7.4-7.6 (review limits and purpose); 8.2.1-8.2.2 (mitigation limits); Attachment 2 (Event Chain and Safety Review).

Use current operational directives and CAPSIS instructions. CAPSIS labels and system configuration control if this guide differs; report gaps to National Headquarters Safety. Hazardous-attitude concepts are adapted from FAA aeronautical decision-making guidance.

Addendum A - Leadership Roles in the Causal-Factor Process

This addendum explains how Commanders and Wing and Region Directors of Safety support a Significant Safety Occurrence (SSO) review without turning it into an investigation or directing a preferred conclusion. It supplements, but does not replace, CAPR 160-1, CAPR 160-2, current region supplements, or CAPSIS instructions.

> **CORE PRINCIPLE** The Review Officer owns the fact-based review analysis. Commanders own the organizational response. Safety Directors enable the process, coach the Review Officer, monitor quality and timeliness, and help leaders turn supported conclusions into effective action.

Roles at a Glance

Role	Primary contribution	Important boundary
Review Officer	Constructs the event chain; evaluates information; identifies contributing and causal factors; records the review in CAPSIS; recommends mitigations and an OPR.	Explains what happened and why. Does not determine discipline, liability, or Report of Survey outcomes.
Commander	Ensures participation, resources, accurate CAPSIS information, qualified Review Officer assignment, and completion of accepted mitigations.	May act on recommendations and separately address accountability, but must not use protected review information to determine discipline, liability, or a Report of Survey outcome.
Wing Director of Safety	Assigns or assists with Wing-level reviews; supports Review Officers; checks completeness and timeliness; assists with mitigation implementation; monitors overdue work.	Coaches the method and tests the logic. Does not substitute a desired finding for the Review Officer's supported analysis.
Region Director of Safety	Performs the same functions for Region-level events; coordinates cross-Wing support; provides higher-echelon guidance; monitors trends, overdue reviews, and overdue mitigations.	Promotes consistency across Wings, approves mitigation dates beyond 120 days when authorized, and elevates national-interest or unresolved matters to CAP/SE.

Selecting the Right Review Officer

CAPR 160-2 establishes required training and participation restrictions for Review Officers, but it does not require an aircraft-related SSO to be reviewed by a pilot. As a non-directive best practice, the commander or Director of Safety should select the Review Officer based on the questions the review must answer, the member's independence, the complexity of the event, and the member's ability to complete a timely, learning-centered review. Relevant competence may come from CAP qualifications, specialty-track development, training, education, professional experience, or a combination of these sources (CAPR 160-2, paragraphs 5.1.6, 5.4.5, and 7.1-7.3).

> **BEST PRACTICE** Choose for independence and the competence needed to understand the event. The primary Review Officer does not need to possess every specialty, but must recognize gaps and obtain qualified support when the review crosses operational, technical, medical, or program areas.

Review focus	Knowledge to consider	How to apply it
Flight operations or ADM	Pilot, instructor, check pilot, aircrew, or operations experience relevant to the decisions and procedures involved	A pilot should participate when flight decisions, cockpit actions, aircrew coordination, weather, or operating procedures are material to the review; the pilot does not automatically need to be the primary Review Officer.
Aircraft systems or maintenance	Aircraft maintenance, A&P, engineering, or system-specific technical experience	A maintenance or engineering specialist may be more useful than a pilot when the central questions concern component failure, maintenance, configuration, or aircraft systems.
Cadet or activity practices	Cadet Programs specialty-track knowledge, activity or encampment leadership, supervision, or youth-program experience	Include this perspective when cadet supervision, activity design, medical disclosure, communication, or program practices are part of the causal pathway; a cadet's presence alone does not automatically require a Cadet Programs Review Officer.
Health or medical conditions	Appropriate Health Services or licensed clinical knowledge	Use consultation only to the extent needed to understand the event, and protect sensitive personal and medical information.
Vehicle or fleet operations	Transportation, vehicle management, driver operations, maintenance, or mission experience	Match the resource to the questions involving driver decisions, vehicle condition, dispatch, supervision, or environmental conditions.
Multiple or complex domains	A combination of the relevant competencies	Assign supporting Review Officers or obtain subject-matter support so one person is not expected to analyze unfamiliar technical or program areas alone.

A supporting Review Officer should complete the required Reviewing a Safety Significant Occurrence course, meet the same participation restrictions, and be assigned a defined part of the review. A subject-matter resource may explain technical information without becoming responsible for the overall analysis. The primary Review Officer remains responsible for integrating the information, maintaining a coherent event chain, and completing the CAPSIS review.

When Not to Assign the Member

- **The member was involved in the SSO.** CAPR 160-2, paragraph 7.3, prohibits this assignment unless the member was strictly a witness.
- **The member would be reviewing their own program or decisions.** Avoid assignments where the member's actions, supervision, standards, procedures, or program responsibilities are reasonably likely to become part of the causal analysis. Consider both actual conflicts and situations that could undermine confidence in the review's independence.
- **The member is likely to own or decide a major mitigation.** A Review Officer should not be placed in the position of recommending their own office as the OPR and then personally owning, accepting, or validating the resulting action. For example, the Wing Standards and Evaluation Officer may be a valuable aviation resource, but should not be the primary Review Officer when

the review may evaluate Standardization and Evaluation processes or produce mitigations that office must implement (CAPR 160-2, paragraphs 5.6.4 and 8.1-8.2).

- **The member lacks the needed competence and adequate support.** Do not rely on position title alone. Add a supporting Review Officer or subject-matter resource when important portions of the event fall outside the primary Review Officer's knowledge.
- **The member cannot reasonably meet the review requirements.** Availability, workload, access, and the 60-day review limit are legitimate assignment considerations. Reassign early when these constraints threaten review quality or timeliness.

When the Wing Needs Outside Support

A Wing should not accept a preventable conflict or an avoidable knowledge gap simply because the preferred skill set is unavailable locally. The Wing Commander or Wing Director of Safety should coordinate with the Region Commander or Region Director of Safety to identify an independent, appropriately qualified Review Officer from another Wing or to assemble suitable supporting expertise. Any assignment must follow the responsibilities and command coordination in CAPR 160-2, paragraphs 7.1.1-7.1.4. Paragraph 7.1.1.1 specifically allows a Review Officer from another involved Wing to support the review after coordination with the applicable Wing Commander or Director of Safety.

Shared Operating Principles

- **Preserve Just Culture.** Use the review to understand what happened and why. Accountability decisions, when warranted, belong outside the safety review channel (CAPR 160-1, paragraphs 1.5.2-1.5.2.2; CAPR 160-2, paragraph 7.5).
- **Protect the review's purpose.** Do not use statements, event-chain information, causal factors, mitigations, or their justifications to determine a related Report of Survey outcome (CAPR 160-2, paragraphs 7.6.3-7.6.7).
- **Keep analysis information-led.** Leaders may ask for clarification, additional support, or missing information. They should not direct the Review Officer to select, remove, or rewrite a factor merely to protect a person, unit, program, or reputation.
- **Address immediate risk now.** Do not wait for the completed review to establish an interim control when credible information shows an ongoing hazard.
- **Separate findings from decisions.** Causal factors explain the conditions that shaped the SSO. Command decisions determine which actions will be accepted, revised, returned, or declined and who will implement them.

Related Commander Authorities and Parallel Processes

An SSO may trigger more than one required process. The commander must activate each applicable channel without waiting for the safety review, while keeping the purposes, information, and decision records appropriately separated. The following references are common, but the event may require other mission- or program-specific directives.

When the SSO also involves...	Primary reference	Command consideration

When the SSO also involves...	Primary reference	Command consideration
General command responsibility	CAPR 30-1, paragraph 6.3	Commanders may delegate authority to staff, but retain responsibility for compliance and staff actions. Assigning a Review Officer or relying on the Director of Safety does not transfer command ownership of the response.
Confidential and personal information	CAPR 1-3; CAPR 1-2(I); CAPR 160-2, 7.6	Restrict review information to members with an authorized need. Protect downloaded CAPSIS information and refer requests for release of safety information to CAP/SE.
Complaint, misconduct, or criminal allegation	CAPR 20-2, sections 7 and 15	Use the required IG, General Counsel, or command-inquiry channel. A commander may conduct limited due diligence, but formal investigative interviews and investigations must follow CAPR 20-2. Do not repurpose the safety review as that investigation.
Cadet protection concern	CAPR 60-2, sections 4.1-4.4	Ensure the cadet's safety and make required notifications, including the two-hour commander-notification requirements when applicable. A CAPSIS review neither replaces nor delays cadet-protection reporting, legal consultation, suspension requirements, or authorized investigation.
Aircraft or aircrew SSO	CAPR 70-1, sections 8.1-8.3	Make required flying-privilege decisions from the initial SSO information and the operational-readiness criteria in CAPR 70-1. Do not treat the eventual presence of pilot error as automatic proof that suspension for cause is required.
sUAS SSO	CAPR 70-4, section 8	Apply the sUAS suspension, notification, appeal, and reinstatement provisions when triggered, while keeping the safety review focused on learning and prevention.
Loss of or damage to CAP property	CAPR 174-1, paragraphs 2-26 and 2-27, including current ICLs	Initiate the required Report of Survey process when applicable. Property determinations belong in a separate memorandum, not the safety-review report. Use separate personnel and information channels; protected safety-review information cannot determine the Report of Survey outcome.
Public or media interest	CAPR 160-2, paragraphs 6.5.4-6.5.5 and 6.8	Notify the National Operations Center when required, refer media inquiries through authorized channels, prevent speculation, and protect the confidentiality of review information.

PARALLEL DOES NOT MEAN COMBINED The same occurrence may require a safety review, an operational restriction, a cadet-protection response, an IG or legal process, and a Report of Survey. Coordinate the overall response, but do not merge protected safety-review information into another decision channel.

Commander Responsibilities

Before and During the Review

- **Assign an appropriate Review Officer.** Ensure the member is trained, sufficiently independent, and suited to the event's complexity. Coordinate for outside-Wing or higher-echelon support when impartiality, expertise, workload, or confidence in the process warrants it (CAPR 160-2, paragraphs 5.1.6 and 7.1-7.3).
- **Provide access and resources.** Enable timely access to people, records, equipment information, subject-matter expertise, and other information needed for the review (CAPR 160-2, paragraphs 5.1.1-5.1.3).
- **Set the tone.** Make clear that cooperation, candor, and learning are expected and that the review is not a search for someone to blame.
- **Protect the Review Officer's analytical role.** Ask whether conclusions are supported and complete; do not prescribe the conclusion. Avoid communications that could reasonably be understood as pressure to protect an outcome or target a person.
- **Manage time limits.** Maintain awareness of the 60-day review limit. The primary Review Officer's commander may approve a justified extension in writing under CAPR 160-2, paragraph 7.4.

When the Review Is Submitted

- **Read the review as a learning product.** Evaluate whether the event chain is coherent, each causal factor is traceable to documented information, system influences were considered, and uncertainty is stated honestly.
- **Decide on recommended mitigations.** Accept, return, revise, or decline actions in CAPSIS. Provide justification when an action is returned, revised, or declined (CAPR 160-2, paragraphs 8.1-8.1.3).
- **Place action with authority.** Confirm that the selected OPR can make the change, has the needed resources, and knows what completion confirmation and effectiveness measures are required.
- **Implement and communicate.** Ensure accepted or revised mitigations are completed and that affected members receive the information they need (CAPR 160-2, paragraphs 5.1.4-5.1.5 and 8.2).
- **Keep accountability separate.** If independently obtained information supports administrative or disciplinary action, handle that matter through the appropriate channel without repurposing protected safety-review information.

Wing Director of Safety Responsibilities

- **Assign and orient.** Assign the primary Review Officer when authorized, verify required training, identify conflicts or needed expertise, and explain expectations for scope, communication, and timeliness (CAPR 160-2, paragraphs 5.4.5 and 7.1.1-7.3).
- **Coach without taking over.** Help the Review Officer develop the event chain, distinguish fact from inference, test causal connections, use CAPSIS correctly, and identify missing information. Preserve the Review Officer's authorship and judgment (CAPR 160-2, paragraph 5.4.2).

- **Perform quality assurance.** Before leadership action, check that the record is complete, causal factors are supported, each causal factor has at least one recommended mitigation, and the proposed OPR has suitable authority.
- **Monitor the 60-day clock.** Use the CAPSIS dashboard to identify reviews approaching or exceeding the limit, contact the Review Officer early, remove barriers, and elevate extension needs to the appropriate commander (CAPR 160-2, paragraph 7.4 and Attachment 1).
- **Support action planning.** Assist commanders and functional leaders with mitigation implementation, and return an action plan when additional review information is needed (CAPR 160-2, paragraphs 5.4.3 and 8.1.3).
- **Track follow-through.** Monitor implementation and completion when the Wing is the OPR, identify overdue actions, and help verify that the action changed the causal condition (CAPR 160-2, paragraph 5.4.4 and Attachment 1).
- **Escalate when appropriate.** Seek Region support when the event crosses Wings, involves a conflict of interest, exceeds available expertise or capacity, or may have broader implications.

Region Director of Safety Responsibilities

- **Provide higher-echelon oversight.** Guide Wing Safety Directors, promote consistent review practices, and help resolve questions of scope, independence, assignment, or technical support.
- **Assign and coordinate Region reviews.** Assign Review Officers for Region-hosted or Region-responsible events and coordinate support when multiple Regions or Wings are involved (CAPR 160-2, paragraphs 7.1.2-7.1.2.1).
- **Monitor performance across the Region.** Use CAPSIS to identify reviews beyond 60 days and mitigations that are overdue, then work through the responsible Wing or Region leadership to restore progress (CAPR 160-2, Attachment 1).
- **Review for consistency and system learning.** Look across events for recurring factors, ineffective controls, shared resource gaps, and actions that should be considered beyond one Wing.
- **Exercise delegated decision authority carefully.** When delegated by the commander, accept, return, revise, or decline mitigations with a documented rationale. Region Directors of Safety may approve mitigation dates beyond 120 days in writing under CAPR 160-2, paragraph 8.2.1.
- **Elevate national-interest matters.** Coordinate with CAP/SE when an event meets national assignment criteria, has implications beyond the Region, or requires authority or resources not available within the Region (CAPR 160-2, paragraphs 5.2.2-5.2.6 and 7.1.3-7.1.4).

How Leaders Should Evaluate the Review

Leadership lens	Question to ask
Event chain	Does it present a chronological sequence of observable, fact-based events and clearly identify gaps or unknowns?
Information support	Can each important conclusion be traced to reliable information, with fact, inference, conflicting information, and uncertainty distinguished?
Causal depth	Does the analysis look beyond the last action to organizational, supervisory, situational, and individual influences?

Leadership lens	Question to ask
Just Culture	Is the language neutral and focused on conditions and decisions rather than blame, character, or hindsight?
Mitigation alignment	Does each causal factor have an action that changes or controls the condition instead of merely restating it?
Ownership	Does each action have an OPR with authority, resources, a due date, completion confirmation, and an effectiveness measure?
Protection	Is sensitive review information restricted to its safety purpose and kept separate from investigative or disciplinary channels?
Timeliness and learning	Will the review and actions meet applicable limits, and can the resulting lesson help another unit prevent recurrence?

> **RETURN FOR QUALITY - NOT FOR A PREFERRED ANSWER** A Commander or Safety Director may return work when facts are missing, logic is unsupported, required analysis is incomplete, or an action needs clarification. The review should not be returned merely because a supported finding is uncomfortable or reflects on leadership, a program, or the organization.

Regulatory Basis for This Addendum

CAPR 160-1, Civil Air Patrol Safety Program, 1 November 2022: paragraphs 1.5.1-1.5.3 (reporting, Just Culture, and learning culture), especially 1.5.2-1.5.2.2.

CAPR 160-2, Safety Reporting, Reviewing, and Action Planning, 28 December 2022, ICL 26-08 incorporated: paragraphs 5.1, 5.4, 5.6, 7.1-7.6, 8.1-8.2, Attachment 1, and Attachment 2.

Related active directives consulted: CAPR 1-2(I), Personally Identifiable Information; CAPR 1-3, Disclosure of Confidential Information by Volunteer Members; CAPR 20-2, Complaints Resolution; CAPR 30-1, Organization of Civil Air Patrol; CAPR 60-2, Cadet Protection Program; CAPR 70-1, CAP Flight Management; CAPR 70-4, Civil Air Patrol sUAS Flight Management; and CAPR 174-1, Property Management and Accountability. Use the current publication and incorporated Interim Change Letters.

CAPSIS CAUSAL FACTORS GUIDE

ADDENDUM B

Worked Examples for Review Officers

> **TRAINING PREMISE** These fictional scenarios demonstrate a review method, not predetermined answers. Actual causal factors and mitigations must follow the evidence in the specific CAPSIS record.

Purpose

This addendum helps Review Officers practice moving from an occurrence to an evidence-based event chain, supported causal factors, and useful mitigations. Each example shows what to examine, what not to assume, and how to write the causal connection in neutral language.

Use the examples to frame questions and test logic. Do not copy a factor merely because a new event resembles one of these scenarios. Similar outcomes can arise from very different conditions.

The Review Path Used in Each Example

1. **Stabilize and preserve.** Confirm immediate care, notifications, evidence preservation, and any urgent interim controls.
2. **Build the event chain.** Record observable actions, conditions, decisions, and changes in chronological order.
3. **Separate evidence from assumption.** Identify known facts, conflicting accounts, inferences, and unresolved unknowns.
4. **Evaluate potential causal factors.** Select only factors that materially influenced the event and can be linked to evidence.
5. **Write the connection.** Explain how each selected factor changed the likelihood or consequence of the outcome.
6. **Recommend proportionate action.** Match mitigations to the factor, assign an OPR, and define completion and effectiveness evidence.
7. **Apply Just Culture.** Seek context and system learning without using outcome severity as proof of blame or intent.

Scenario Map

The examples examine three different review patterns: a cadet medical event involving undisclosed information; hangar rash involving missing movement controls; and a deer strike in which the evidence does not support human fault. In every case, follow the evidence rather than the severity of the outcome.

Scenario 1 | Undisclosed Preexisting Condition at Encampment

> **LEARNING FOCUS** Distinguish a supported medical-readiness factor from assumptions about motive, blame, supervision, hydration, or heat exposure.

Scenario Snapshot

A 15-year-old cadet arrived at a weeklong encampment with registration information indicating no medical limitations or accommodations. During a scheduled outdoor drill block on the third day, the cadet became dizzy, sat down, then briefly lost consciousness. Staff stopped the activity, provided immediate care, contacted emergency medical services, and notified the parent. The cadet was transported to a hospital and observed overnight.

During follow-up, the parent advised that the cadet had a diagnosed condition associated with exertion and fainting and had previously received activity guidance from a medical provider. The condition and guidance were not included in the information available to the encampment. The cadet recovered without permanent injury.

> **DO NOT START WITH BLAME** The non-disclosure is an important fact, but it does not establish why the information was omitted. The Review Officer should examine privacy concerns, fear of exclusion, misunderstanding, outdated information, unclear instructions, and how the activity invited confidential updates.

Step 1 | Build the Event Chain

Sequence	Observable event or condition	Evidence to seek
1	Registration information was submitted without a medical condition, limitation, or accommodation.	Submitted forms or system record; date; person completing the information.
2	Arrival processing was completed and no new health information was provided to authorized activity staff.	Check-in process; briefing content; staff and family accounts.
3	The cadet participated in normal encampment activities for two days without a documented medical complaint.	Schedule; attendance; staff observations; cadet account.
4	During an outdoor drill block, the cadet reported dizziness, sat down, and briefly lost consciousness.	Witness accounts; weather and activity conditions; timeline.
5	Staff stopped participation, initiated care, called EMS, and notified the parent.	Care log; call records; EMS report; staff accounts.
6	The parent disclosed the diagnosed condition and prior activity guidance after transport.	Parent statement; information voluntarily provided or appropriately released.

Step 2 | Sort the Evidence

- **Known.** The activity did not have the condition or limitation in the information available before the event; the cadet experienced symptoms and required hospital evaluation.
- **Verify.** What the registration and arrival instructions asked; whether updates could be submitted confidentially; whether staff followed the heat, hydration, supervision, and emergency plans actually in effect.

- **Unknown until established.** Who knew the condition, why it was not disclosed, whether the cadet recognized the early symptoms, and whether earlier knowledge would have changed participation or monitoring.
- **Protect.** Collect only health information needed for the safety review, restrict access, and avoid placing unnecessary medical detail in the general narrative.

Questions That Move the Review Forward

- **To the cadet and parent.** What did you understand the activity needed to know? Were you concerned that disclosure would prevent attendance or participation? Had the information changed since registration?
- **To activity staff.** What did the forms and arrival briefing request? Who could receive a confidential update? What symptoms were observed, and when did staff act?
- **To the evidence.** Were the activity conditions within the approved risk controls? Did any separate lapse increase the likelihood or severity of the medical event?

Step 3 | Evaluate Potential Causal Factors

Potential causal factor	Decision	Evidence-based reasoning
Undisclosed Medical Condition	Likely select	The known condition was not disclosed before the activity and materially affected the cadet's performance and need for care.
Procedure or Checklist Inadequate, Incomplete, or Unclear	Conditional	Select only if registration or arrival instructions were ambiguous, did not provide a workable update path, or failed to identify information needed for safe participation.
Supervision Not Provided	Do not select without evidence	A medical event can occur under adequate supervision. Select only if required supervision was absent and that absence delayed recognition or response.
Nutrition/Diet/Hydration or Heat/Cold Stress	Do not infer	Symptoms alone do not prove dehydration or heat stress. Select only when observations, environmental data, or medical information support the connection.
Deliberate Act	Normally do not select	Failure to disclose does not by itself show intent to cause harm or an aggravating purpose. Establish understanding, choice, and context before considering any intentional-deviation category.

Example Causal Connection

> **SUPPORTED STATEMENT** The cadet's preexisting condition was not included in the health information available to authorized encampment staff. As a result, the activity could not consider the existing medical guidance when planning participation or monitoring, increasing the likelihood that routine exertion would lead to a medical event requiring hospital evaluation.

Step 4 | Develop Proportionate Mitigations

Action	OPR and completion evidence	Effectiveness check
Revise major-activity registration and pre-arrival messaging to require the parent and cadet to confirm current limitations and provide a confidential method for late updates.	Activity or Cadet Programs OPR; revised language and communication issued before the next activity.	Audit the next two major activities for completed confirmations and the number of health updates resolved before arrival.
Add an arrival message explaining that early symptom reporting and requests for help are expected and will not automatically result in punishment or dismissal.	Activity Director with Safety and authorized health support; briefing slide or script and attendance record.	Short cadet/staff knowledge check and review of whether symptoms are reported earlier during the next activity.
Preserve the effective emergency-response practices demonstrated in this event and correct only verified gaps.	Activity Director; after-action record identifying sustained practices and any assigned improvement.	Exercise or observe the response process before the next encampment.

Example Closure Narrative

The event chain shows that the encampment did not have information about a diagnosed condition associated with exertion before the cadet became symptomatic. The review supports Undisclosed Medical Condition as a causal factor. It does not establish that the cadet or parent intended harm, that staff supervision caused the event, or that heat or hydration contributed. Staff recognized the emergency and obtained appropriate care. Recommended actions focus on clearer confidential disclosure and update pathways, early symptom reporting, and verification of emergency-response readiness.

> **JUST CULTURE CHECK** Would another reasonable family or cadet understand what to disclose, how to update it, who would see it, and what would happen next? The review should improve that system without turning a health event into a moral judgment.

Scenario 2 | Hangar Rash During Aircraft Movement

> **LEARNING FOCUS** Treat the wingtip strike as the outcome. Examine the movement plan, assigned roles, clearance cues, workspace, and controls that should have prevented contact.

Scenario Snapshot

After a local training flight, two members moved a Cessna 172 by hand into a shared hangar. Equipment stored along one wall narrowed the normal path. One member controlled the tow bar while the other finished opening the hangar and then walked near the aircraft's nose. No one was assigned as a wing walker or spotter, and the team did not walk the intended route before moving the aircraft.

As the aircraft turned through the doorway, the tow-bar operator watched the nosewheel and right-side clearance. The left wingtip contacted the metal door frame, damaging the wingtip fairing and scratching the frame. No one was injured.

> **FRAME THE OCCURRENCE** "The member hit the hangar" is an outcome statement. The review must explain why the contact was not anticipated, detected, or stopped before damage occurred.

Step 1 | Build the Event Chain

Sequence	Observable event or condition	Evidence to seek
1	Stored equipment narrowed the normal aircraft-movement path inside the shared hangar.	Photos, measurements, hangar-use expectations, prior observations.
2	The two members began moving the aircraft without walking the full route or assigning a wing walker.	Member accounts; local procedure; training records; common practice.
3	One member controlled the tow bar; the second member remained near the nose rather than monitoring the left wingtip.	Positions reconstructed from accounts and scene layout.
4	The aircraft turned through the doorway while the operator's attention was directed to the nosewheel and right side.	Operator account; geometry; visibility from the tow-bar position.
5	The left wingtip contacted the door frame before either member called stop.	Damage marks, photos, witness accounts.
6	Movement stopped, the aircraft was secured, and the damage was reported for inspection.	Maintenance and notification records.

Step 2 | Ask the Control Questions

- **Method.** Was there a written or consistently taught aircraft-movement procedure? Did it require a route walk, minimum staffing, wing walkers, standard signals, and stop authority?
- **Workspace.** Was the hangar path adequate for the aircraft? Was stored equipment authorized, visible, marked, or previously identified as a clearance issue?
- **People.** What training and experience did each member have? How were roles discussed? Was anyone supervising a less-experienced member?
- **Practice.** Was moving aircraft without a spotter an isolated error, a workaround, or the locally accepted norm?
- **Recovery.** Was the aircraft secured and inspected before further flight, and were property and maintenance notifications made?

Step 3 | Evaluate Potential Causal Factors

Potential causal factor	Decision	Evidence-based reasoning
Mission/Activity Planning/Briefing Inadequate	Likely select	The team did not survey the route or assign clearance-monitoring roles before movement.
Procedure or Checklist Does Not Exist	Conditional	Select if the unit lacked a usable aircraft-movement standard covering route checks, staffing, signals, and stop criteria.
Supervision Best Practices Not Followed	Conditional	Select if an applicable, understood two-person or wing-walker practice existed and the responsible leader did not apply it.

Potential causal factor	Decision	Evidence-based reasoning
Cramped Quarters or Workspace Visibility Restrictions	Likely select if supported	The restricted path and the operator's limited view of the left wingtip materially reduced clearance margin and cue visibility.
Unintentional Error	Optional, avoid duplication	The turn continued without adequate left-wing clearance monitoring. Select only if it adds explanatory value beyond the stronger planning, procedure, and workspace factors.
Deliberate Act	Do not select	Nothing in the scenario supports intent to damage the aircraft or an aggravating purpose.

Example Causal Connections

- **Planning/briefing.** The team began moving the aircraft without first walking the narrowed route or assigning a member to monitor the left wingtip. This left a critical clearance area unobserved during the turn.
- **Workspace.** Stored equipment reduced the available turning margin, and the tow-bar position did not provide a reliable view of the left wingtip, increasing reliance on a spotter who had not been assigned.
- **Procedure.** The unit did not have a clear, consistently used aircraft-movement procedure defining route checks, wing-walker placement, standard calls, and stop authority, allowing an improvised method to be used.

Step 4 | Develop Stronger Controls

Action	Control strength and owner	Evidence and effectiveness
Restore the required clearance path and mark storage boundaries and aircraft stop/turn reference points.	Environment/engineering control; Logistics or facility OPR.	Photos and measurements; observe three aircraft movements without encroachment or clearance correction.
Adopt a short aircraft-movement checklist requiring a route walk, assigned tow operator and wing walker, standard signals, and stop authority before movement.	Procedure/control; Operations and Logistics OPRs.	Published checklist and briefing record; spot-check use during the next ten movements.
Provide hands-on qualification for members who move aircraft, including practice stopping when visual contact or clearance is lost.	Training; unit Operations or Aircraft Manager.	Demonstrated proficiency record; follow-up observation at 30 and 90 days.

Example Closure Narrative

The wingtip strike occurred while the aircraft was being moved through a narrowed hangar path without a prior route walk or an assigned wing walker. The tow-bar operator could not reliably monitor the left wingtip while controlling the nosewheel and watching right-side clearance. The supported causal factors concern planning, the physical workspace, and the absence or non-use of a

standardized movement process. The evidence does not support deliberate damage. Actions address clearance, standard roles, stop authority, and demonstrated aircraft-movement proficiency.

> **QUALITY TEST** If the only recommendation is "be more careful," the review has not changed the conditions that made the contact likely. A stronger action makes the safe method easier, visible, and repeatable.

Scenario 3 | Passenger Van Strikes a Deer

> **LEARNING FOCUS** Show how a review can identify a situational factor, preserve useful lessons, and recommend proportionate controls without inventing driver fault.

Scenario Snapshot

A CAP passenger van carrying six members was traveling on a rural two-lane highway shortly after sunrise. The road was dry, visibility was good, all occupants were wearing seat belts, and the driver was traveling below the posted speed limit. A deer emerged rapidly from brush beside the road and entered the lane at close range.

The driver braked firmly and maintained lane control rather than swerving into opposing traffic or the shoulder. The van struck the deer, causing extensive damage to the grille, bumper, and cooling system. The driver brought the van to a controlled stop off the roadway, activated hazard lights, accounted for all occupants, and made the required calls. No one was injured.

> **NO FAULT DOES NOT MEAN NO REVIEW** The purpose is to establish what happened, confirm whether existing defenses worked, identify any practical improvement, and capture a lesson. Damage severity does not require a finding of human error.

Step 1 | Build the Event Chain

Sequence	Observable event or condition	Evidence to seek
1	The van departed with six belted occupants on a planned rural-highway route shortly after sunrise.	Trip plan, dispatch record, passenger accounts.
2	Road conditions were dry and the van was traveling below the posted speed limit.	Driver and passenger accounts; law-enforcement report; available vehicle data.
3	Brush along the roadway limited early visibility of an animal approaching from the right.	Scene photos, road geometry, public roadway information.
4	A deer entered the travel lane at close range, leaving little time and distance for avoidance.	Consistent accounts; impact location; physical evidence.
5	The driver braked, maintained lane control, and struck the deer without a secondary collision.	Passenger accounts; tire or vehicle evidence if available.
6	The driver stopped safely, activated hazards, checked occupants, and reported the event. No injuries occurred.	Call records, photos, vehicle and response records.

Step 2 | Test the Alternative Explanations

- **Speed.** Do records or reliable accounts support excessive speed for the actual conditions? A damaged grille does not answer that question.

- **Attention.** Was the driver distracted, fatigued, or otherwise unable to perceive the hazard? Do not convert the short warning time into an attention finding.
- **Vehicle.** Were headlights, brakes, tires, restraints, and other relevant systems serviceable? Did any defect affect the occurrence or consequence?
- **Route and timing.** Was the corridor known for recurring wildlife collisions, and was a practical alternate route or departure time available without creating greater risk?
- **Response.** Did braking and lane control avoid a more severe secondary collision? Did the post-impact response protect occupants from traffic and mechanical hazards?

Step 3 | Evaluate Potential Causal Factors

Potential causal factor	Decision	Evidence-based reasoning
Plants and Animals	Select	The sudden presence and movement of the deer directly created the collision hazard and materially shaped the outcome.
Environmental Conditions	Usually do not select	Dry road and good general visibility do not independently explain the collision. Select only if lighting, weather, or road conditions materially contributed.
Uncontrollable Factor	Usually avoid as duplicative	A specific situational factor already describes the animal hazard. Use Uncontrollable Factor only when no practical individual or organizational control could meaningfully reduce the risk and the label adds value.
Reaction Time or Attention	Do not select without evidence	A short opportunity to respond is not proof of degraded reaction time or attention. The controlled braking response may show the opposite.
Speed of Task Accomplishment or Deliberate Act	Do not select	The scenario provides no evidence of rushing, intentional deviation, or misconduct.

Example Causal Connection

> **SUPPORTED STATEMENT** A deer emerged from roadside brush and entered the van's lane at a distance that did not allow the driver to avoid contact safely. The animal hazard caused the collision; the available evidence does not show that driver speed, attention, or vehicle condition increased its likelihood.

Step 4 | Keep Mitigations Proportionate

Action	When it is justified	Evidence and effectiveness
Add a brief wildlife-collision response item to CAP vehicle driver guidance: brake under control, avoid unsafe swerving, stop in a safe location, assess occupants, and report damage.	Useful when current driver material does not address animal strikes or secondary-collision risk.	Updated guidance and driver communication; periodic knowledge check or scenario discussion.

Action	When it is justified	Evidence and effectiveness
Flag recurring high-wildlife corridors or dawn/dusk travel for route and schedule consideration during trip planning.	Use when local history or reliable roadway information shows a recurring exposure and an alternate is practical.	Trip-planning record; compare reported wildlife encounters or collisions over time.
Document the effective restraint use, lane-control response, occupant accountability, and safe shutdown so those defenses are reinforced.	Appropriate because the controls reduced the consequence even though they did not prevent impact.	After-action communication; future observation or driver refresher confirms the practices remain understood.

Example Closure Narrative

The event chain shows that a deer entered the van's lane from roadside brush at close range. The driver braked, maintained lane control, and avoided a secondary collision. The review supports Plants and Animals as the causal factor and does not support a driver-error, distraction, speed, or deliberate-act factor. Existing occupant restraints and the driver's controlled response limited the consequence. Proportionate actions focus on wildlife-risk awareness, safe response, and route or schedule consideration where a recurring exposure is documented.

> **JUST CULTURE CHECK** Would the same evidence lead to the same conclusion if the grille damage had been minor? The factor analysis should follow conditions and behavior, not the repair cost.

Compare the Three Review Patterns

These examples use the same review method but reach different kinds of conclusions. The comparison below is the main lesson: the seriousness of the outcome does not determine the factor category or whether a person is at fault.

Review lens	Cadet medical event	Hangar rash	Deer strike
Outcome	Hospital evaluation	Aircraft and hangar damage	Extensive vehicle damage
Human action in the chain	Known condition not disclosed; reason requires context	Route not walked and no wing walker assigned	Driver used a controlled avoidance response
Primary factor pattern	Individual/personnel, with system factors only if evidence supports them	Planning, procedure, supervision, and workspace conditions	Specific situational animal hazard
Intent treatment	Do not infer harmful intent from omission	Determine error, workaround, or local norm from evidence	No intentional or erroneous act supported
Best learning	Make confidential disclosure and early reporting clear and workable	Make safe aircraft movement standardized and visible	Reinforce safe response and use proportionate wildlife-risk controls

Habits of a Strong Review Officer

- **Write events before factors.** A reliable event chain keeps the analysis anchored to what occurred.
- **Use conditional language honestly.** A potential causal factor remains a question until the evidence supports the causal link.
- **Test alternatives.** Ask what evidence would support or disprove fatigue, supervision, training, environment, intent, and other plausible explanations.
- **Avoid duplicate coding.** Do not select several labels that merely restate the same condition.
- **Recognize effective defenses.** A review should capture what reduced harm, not only what failed.
- **Match the action to the factor.** Do not recommend training when the real issue is design, access, staffing, procedure, or physical clearance.
- **State what is not supported.** A concise explanation of rejected factors makes the logic transparent and protects against hindsight.

> **FINAL TEST** Can another Review Officer trace each selected factor from the event chain to evidence, understand why plausible alternatives were rejected, and see how each mitigation changes the contributing condition?

Regulatory and Practice Basis

CAPR 160-1, Civil Air Patrol Safety Program, 1 November 2022, paragraphs 1.5.2 through 1.5.2.2: Just Culture and the learning purpose of safety review.

CAPR 160-2, Safety Reporting, Reviewing, and Action Planning, 28 December 2022, with current incorporated changes: paragraphs 7.4 through 7.6 (review requirements and purpose), paragraphs 8.1 through 8.2 (action planning), and Attachment 2 (event chain and safety review).

Use current operational directives, approved region supplements, CAPSIS instructions, and program-specific requirements. These scenarios are fictional training examples and do not replace the Review Officer's evidence-based judgment.

Addendum C Hierarchy of Controls

CONTROL MEASURES

CONTROL THE HAZARD AT ITS SOURCE
Stronger controls are more reliable and less dependent on individual action.

HIERARCHY OF CONTROLS

Choose the highest feasible level.

SOURCE CONTROL
MORE RELIABLE

PERSON-BASED
LESS RELIABLE

1 ELIMINATION
Remove the hazard entirely.
Example: Cancel an outdoor activity due to severe weather.

2 SUBSTITUTION
Replace it with a safer alternative.
Example: Use simulator training when flight risk is elevated.

3 ENGINEERING CONTROLS
Use equipment, technology, or physical barriers.
Examples: Safety systems, seat belts, cones, tie-downs, lighting.

4 ADMINISTRATIVE CONTROLS
Plan, train, brief, schedule, supervise.
Examples: ORM, flight release, safety briefings, hydration plans, crew-duty limits, and increased supervision.

5 PERSONAL PROTECTIVE EQUIPMENT (PPE)
Reduce the consequences of remaining hazards.
Examples: Reflective vests and helmets, hearing and eye protection, gloves, and appropriate cold-weather gear.

AIM HIGH
Start with elimination. Move down only when higher-level controls are not feasible.
Combine controls when one measure is not enough.

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