

## **Sofema Aviation Services CAMO Webinar / Workshop March 26<sup>th</sup>, 2026**

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### **1/ Managing CAMO Compliance - What are the Major Gaps Between Compliance Requirements and CAMO Oversight Activities**

#### **Introduction**

The gap between regulatory compliance (meeting the minimum legal standards) and effective CAMO oversight of the AMO (ensuring the actual physical integrity and therefore optimum reliability of the fleet) is where most operational risk resides.

While compliance is binary, asking the correct follow up questions are essential, which translated means oversight is qualitative and requires a deep, technical "interrogation" of the maintenance process.

When a CAMO treats compliance as the destination rather than a step on the journey the operator potentially faces significant reliability exposure.

#### **The Administrative vs. Physical Gap**

A CAMO may appear to be 100% compliant with Part-CAMO while never actually looking at the aircraft. Consider that the Regulations require a CAMO to manage records, verify AD/SB compliance, and update the Aircraft Maintenance Program (AMP) These are essentially administrative tasks.

- **Important Note** - If the oversight activities are restricted to reviewing completed task cards, the CAMO is effectively outsourcing its technical judgment to Part 145.
- **The Risk:** Corroded seat tracks, leaking actuators, or degraded wiring looms may be "signed off" as inspected by the MRO.
- If the CAMO oversight does not include physical "sample" inspections during the maintenance input, they are blind to the fact that the inspection may have been superficial.

### **Reliability Oversight – Data Management Developing Predictive Methodology**

- An effective CAMO will focus on understanding the data to determine why a component was changed. (What was the nature of the Failure)
- Details of the failure conditions and whether the failure within the expected range of performance
- Is there a potential correlation between this failure and the MRO team that performed the last C-Check?

**Important Note** – If the CAMO loses detailed sight of the "hardware," they often lose the ability to perform Predictive Oversight, retreating into the safety of Historical Compliance.

**The Inspector Competence Gap** - Poor workmanship is often masked by the "ease" of component replacement.

**The "Shotgun" Troubleshooting Issue** If a Part 145 inspector lacks the competence to perform a deep-system integration test, they may "shotgun" the system, replacing expensive components until the fault goes away.

- **The Compliance View:** Three components were changed, three CRSs were issued. Compliant.
- **The Oversight View:** The inspector didn't follow the Trouble Shooting Manual (TSM) logic.

**A Potential Airworthiness Review Gap** - The Airworthiness Review Certificate (ARC) process may be mistaken for a deep-dive technical audit.

- **The Gap:** An Airworthiness Review is potentially a "survey of a sample." It verifies that the records match the physical configuration. However, it does not typically test the *quality* of the maintenance performed.

- **The Reality:** An aircraft can have a perfectly valid ARC while harboring latent maintenance induced functional failures.
  - Because the ARC inspector (often within the CAMO) is looking for compliance with the *program*, they may miss the fact that the *inspectors* at the 145 are consistently missing specific issues

## The Operator's Exposure and Reliability Shortfalls

The operator is the ultimate stakeholder. When the CAMO fails to provide adequate oversight of the 145, the consequences manifest as Reliability Shortfalls:

- **Technical Dispatch Reliability (TDR) Drops:** Frequent AOGs for issues that should have been caught during heavy maintenance checks.
- **Premature Component Removals:** High "No Fault Found" (NFF) rates at the workshop because the line maintenance team (acting under poor oversight) is "shot gunning" parts rather than performing root-cause troubleshooting.
- **Safety Margin Erosion:** The accumulation of "minor" deferred defects that, in aggregate, significantly increase the pilot's workload during an emergency.

**CAMO Oversight - Important Consideration** - Oversight is not a "policing" function; it is a "risk-mitigation" function.

- The CAMO must act as the advocate for the aircraft's long-term health.
- Without this oversight, the 145 will naturally gravitate toward the path of least resistance (meeting the minimum legal requirement for the lowest internal cost.)
- The resulting "reliability gap" is a potential cost burden for airline profitability.

**Best Practices for Bridging the Gap** - To move from passive compliance to active management, a CAMO must adopt a more "intrusive" oversight model.

**Independent Technical Sampling** - A CAMO should not just audit the "Process" they must audit the "Product"

- Performing independent physical surveys of the aircraft during deep maintenance allows the CAMO to assess the true quality of the 145's inspectors.

**The Resident Representative (The "Eyes on the Ground")** - For any major maintenance event, the CAMO should have a technical representative on-site.

- This person serves as the bridge. They should be empowered to challenge the 145's findings and, more importantly, their "non-findings."

**The Contractual vs. Competency Gap** - CAMOs often rely on the "Contractual Oversight" of the Part 145. The logic is: "We have a contract with an approved 145; therefore, their work is guaranteed."

**The Gap:** This ignores the "Competence Gap". The 145 organization is a legal entity, but the work is done by humans.

**The Challenge:** A major gap in oversight is the failure to audit the Man-Hour Plan versus the Actual Work Performed. If a heavy check requires 10,000 man-hours but is completed in 7,000, a compliance-led CAMO might celebrate the early return to service.

**Important Note to Take Away** - An oversight-led CAMO would be alarmed, knowing that 3,000 hours of "looking" were skipped, likely leading to reliability shortfalls three months down the line.

## **2/ EASA Part CAMO Consider the reasons for transitioning from Part M Subpart G to Part CAMO and transition challenges**

### **Why the Transition Happened**

The primary reason for moving from Part M Subpart G to Part-CAMO was to bridge a safety gap. EASA wanted to ensure that a Continuing Airworthiness Management Organization (CAMO) had a consistent view with both Operations and Maintenance By mandating a Safety Management System (SMS), the regulator ensured that airworthiness is managed with the same rigor as flight operations.

- **Proactive vs. Reactive:** Subpart G was largely reactive—you found a mistake during a quality audit and fixed it. Part-CAMO is proactive; it requires the organization to look for "latent conditions" (like high staff turnover or poor software interfaces) before they lead to an unairworthy aircraft.
- **Human Performance:** Part-CAMO officially recognizes that humans manage airworthiness. It introduces mandatory Human Factors training and considerations, acknowledging that fatigue, stress, and communication breakdowns happen in the office just as often as they do on the tarmac.

### **The Challenges of Transition**

The "upgrade" to Part-CAMO brought several friction points for organizations, mostly centered around the increased administrative and cultural burden.

### **The Safety Management Burden**

For many smaller CAMOs, the requirement to establish a full SMS was considerable. Under Subpart G, you only needed a Quality Manager. Now, you need a Compliance Manager, a Safety Manager ( the roles may be combined) and a defined Safety Policy.

Finding qualified personnel who understand risk data analysis—rather than just technical maintenance—became a significant recruitment challenge.

## Documenting the "CAME"

The **Continuing Airworthiness Management Exposition (CAME)** had to be updated. It wasn't just a matter of changing "Subpart G" to "Part-CAMO." Organizations had to document brand-new processes for:

- Hazard identification and risk assessment.
- Safety reporting and internal investigations.
- Management of Change (evaluating risks before moving offices, changing software, or hiring new teams).

## The Competency Assessment Gap

Part-CAMO increased the focus on the management of competence. The expectation is that the organization must now assess and record the actual competence of every person involved in the management system.

## Transitioning the "Quality" Mindset

One of the most difficult challenge was the shift from Quality Assurance (QA) to Compliance Monitoring. In the old days, the Quality Manager was the "policeman." In Part-CAMO, the Compliance Monitoring Manager ensures the rules are followed, but the *entire* management team is responsible for safety. Breaking the habit of "that's the Quality Department's problem" has been a long, uphill battle for many legacy operators.

## Management of Change (MoC)

Under the legacy Part M Subpart G, changes were often handled reactively or viewed as simple administrative updates to the manual. Part CAMO mandates a proactive approach where risks must be assessed *before* a change occurs.

- **Pre-Implementation Risk Assessment:** Organizations are now required to evaluate the potential safety impact of organizational changes—such as moving offices, implementing new software, or hiring new teams—before they are finalized.

- **Focus on Latent Conditions:** The management of change must specifically look for hidden risks, such as high staff turnover or poor communication interfaces, that could eventually lead to an unairworthy aircraft.
- **Documentation in the CAME:** The Continuing Airworthiness Management Exposition (CAME) must be rewritten to include formal procedures for how these changes are evaluated, approved, and monitored.

**Internal and External Incident Reporting** - The transition moves the organization away from a "policeman" style of quality auditing toward a comprehensive Safety Management System (SMS).

- **From "Mistakes" to "Hazards":** While Subpart G focused on fixing mistakes found during audits, Part CAMO requires reporting of "hazards." This means staff must report potential risks before an incident even happens.
- **Internal Investigations:** The reporting system now includes internal investigations into "why" a process failed, moving beyond just technical defects to address human performance issues like fatigue, stress, and communication breakdowns.
- **Safety Reporting Infrastructure:** Organizations must establish a defined Safety Policy and clear channels for staff to report concerns without fear of retribution, fostering a "just culture."

## Key Transition Challenges

The move to Part CAMO isn't just a name change; it represents a significant increase in administrative and personnel requirements.

- **The Competency Assessment Gap:** Organizations must now move beyond simple training records and actively assess and record the actual competence of every person involved in the management system.
- **The Compliance vs. Quality Shift:** A major hurdle is breaking the "legacy" mindset where safety was the "Quality Department's problem." In the new framework, the Compliance Monitoring Manager ensures rules are met, but the entire management team is responsible for the safety data.
- **Recruitment and Personnel:** Finding staff who understand **risk data analysis**—rather than just technical maintenance—has become a primary challenge for smaller CAMOs.
- **The Burden of SMS:** For many, the transition requires hiring or designating a dedicated Safety Manager and a Compliance Manager, roles that require a different skillset than the traditional Quality Manager.

### **3/ Considering The SMS Relationship between Operator – CAMO & MRO**

#### **Introduction**

In 2026 SMS should no longer be a series of independent silos. Since the 2024 implementation deadline for Part-145 SMS, the regulatory expectation is a seamless, multidirectional flow of safety data.

Sitting between the Operator & Maintainer the CAMO serves as the primary "data conduit," engaging with both operational and maintenance risk assessments and managing the exposure as well as developing mitigations across all business processes

#### **Core Features of the Part-CAMO SMS**

Under CAMO.A.200, the management system is expected to move beyond simple "compliance monitoring" (Quality) into active "risk management" (Safety). Key features include:

- **Hazard Identification:** This involves looking past the immediate technical defect to the underlying hazard.
- **Safety Risk Management (SRM):** This is the process of evaluating the impact of maintenance resource shortages, aging fleet issues, or environmental factors on the airline's overall safety case.
- **Safety Assurance:** the CAMO should monitor Safety Performance Indicators (SPIs) that measure the actual health of the maintenance system.

#### **Connecting the SMS: The CAMO-MRO Interface**

Connecting a CAMO SMS to an MRO SMS requires a functional integration that transcends the written contract. This is typically managed through several layers:

##### **The Technical & Safety Agreement**

The expected interface should be clearly defined in the CAME (Continuing Airworthiness Management Exposition) and the MOE (Maintenance Organisation Exposition). It establishes how issues and exposures in the hangar are understood throughout the SMS eco system and how the airline's safety objectives are shared with the AMO.

**Management of Change (MoC)** - Ideally a joint MoC will see the CAMO and the MRO sitting at the same table. The primary goal is to identify both potential exposures driven by potential changes as well as "latent conditions" (hazards that exist in the system but haven't triggered an event yet.)

- **Gap Analysis of Procedures:** CAMO & AMO internal procedures (CAME vs. MOE) will clearly differ. The MoC should identify where these differences create

risk, such as how "Work Orders" are opened, how "Deferred Defects" are managed, or how "Complex Maintenance" is signed off.

- **"Human Factors"** When switching MROs, the new staff may be highly experienced but "new" to the specific operator's fleet standards or specific modifications (STCs). The MoC should assess if the MRO's training program and competence management processes covers adequately all potential exposures.

**Deep Dive: The "Culture Clash" Challenge** – A significant but sometimes ignored aspect relates to the misalignment of safety cultures.

- **Production Pressure vs. Safety Margins:** An MRO is often driven by "Turn Around Time" (TAT) and fixed-price contracts. If the Airline (CAMO) has a high-reliability safety culture but the MRO has a "get it out the door" culture, the friction will manifest as missed safety reports or rushed maintenance.
- **Just Culture Alignment:** The MoC should evaluate how the MRO handles errors, If the flow of safety data to the CAMO has the potential to dry up then a best practice is to align the "Safety Policy" of both organizations during the MoC phase to ensure a shared understanding of "Just Culture."

## Managing New Aircraft Type Entry (EIS)

Adding a new type creates a massive systemic change.

- **Technical Competency "Decay":** The MoC should address the risk of "Type Rating" validity versus "Recent Experience." If the MRO hasn't touched the new type in an extended period of time then a risk mitigation step might be beneficial before the first heavy check.
- **Software and Data Management:** The MoC must evaluate the MRO's capability to manage software loading, cybersecurity protocols, and digital logbook integrations Failure in this area may constitute a continuing airworthiness hazard.

**Common Shortfalls in the MoC Process** - Experience from recent EASA findings suggests that MoCs often fail in the following ways:

- **The "Static" MoC:** The MoC is treated as a one-time document signed at the start of the contract. In reality, an MoC should be a "live" document that is reviewed periodically after the change to see if the predicted risks were accurate.
- **Lack of Mitigation Evidence:** An auditor will look at a risk (e.g., "Lack of specific engine tooling") and check for the mitigation. If the mitigation should be real and evidence based on planned future activities.

- **Missing Financial/Commercial Context:** While SMS is predominantly about safety, an MoC process must commercial reality is flawed. If the contract is too thin, it creates a "hidden" safety hazard of resource cutting.

#### **Best Practices:**

- **Joint Safety Review Board (SRB):** hold periodic joint SRBs. This ensures that "early-onset" trends (like repeated errors in a specific task) are caught before they become systemic.
- **Safety Liaison Presence:** Ensuring a CAMO representative on-site at the MRO essentially serves as a safety mitigation to ensure the MRO's SMS is functioning as expected.

## **4/ Considering the Practical Impact of The New Part-IS regulation within an EASA CAMO**

### **Introduction**

The practical impact of Regulation (EU) 2023/203 (Part-IS) on Part-CAMO organizations represents a fundamental shift from treating cybersecurity as a generic IT function to integrating it as a core component of aviation safety management.

By the February 22, 2026 (passed) deadline, CAMOs should have moved beyond simple firewalls to a proactive Information Security Management System (ISMS).

### **Practical Impact on CAMO Compliance**

The regulation mandates that CAMOs protect the integrity, availability, and confidentiality of systems critical to continuing airworthiness.

- **Integration with SMS:** CAMOs must integrate information security into their existing Safety Management Systems (SMS). This ensures that a cyber event, such as a ransomware attack on maintenance tracking software, is treated with the same urgency as a physical safety hazard.
- **Asset and Interface Mapping:** Organizations must now identify all digital interfaces with Original Equipment Manufacturers (OEMs), Approved Maintenance Organisations (AMOs), and regulators. Any unmapped connection, such as a remote access tool for an auditor or a cloud-based digital logbook, is now a compliance gap.
- **Reporting Mandates:** CAMOs must establish both internal and external reporting schemes. Significant incidents must be reported to the Competent Authority (CA) within 72 hours.

### **Auditing Against Part-IS (Internal & External)**

Auditing must transition from verifying "if" a security tool exists to "how" it protects safety-critical processes.

## Internal Auditing Best Practices

- **Scenario-Based Testing:** Rather than checking a box for "Incident Plan," auditors should verify readiness through ransomware simulations or tabletop exercises.
- **Credential and Access Audits:** Verify that user privileges follow the "least-privilege" principle, specifically for personnel accessing airworthiness data like AD/SB compliance and configuration records.
- **Competency Reviews:** Auditors should check that training is not just general "cyber-awareness" but role-specific

## External Auditing (Competent Authorities & Partners)

- **Documentation Traceability:** External auditors will look for a complete Information Security Management Manual (ISMM) that is approved by the Accountable Manager and clearly cross-referenced with other management expositions.
- **Supply Chain Oversight:** CAMOs are responsible for the cybersecurity posture of their contractors. External audits will require proof of supplier security audits and cybersecurity clauses in service contracts.

## Key Issues, Challenges, and Best Practices

- **Cultural Resistance:** Many maintenance teams still view cybersecurity as "the IT department's problem" rather than a shared safety responsibility.
- **Resource Constraints:** Smaller CAMOs often lack specialized cybersecurity expertise and may struggle with the increased administrative workload.
- **Legacy Systems:** Older MRO software and hardware may lack the patching capabilities or encryption required by modern standards.
- **Establish a "Just Culture":** Encourage employees to report anomalies (like suspicious emails or system slowdowns) without fear of reprisal, mirroring aviation's traditional safety reporting.
- **Leverage Automation:** For organizations with limited headcount, deploying Security Information and Event Management (SIEM) tools and automated vulnerability scanners can reduce manual monitoring workloads.
- **Continuous Risk Assessment:** should not be a "once-a-year" event. Assessments must be updated immediately following any significant IT infrastructure change or a new industry threat alert

## 5/ What is the role of Maintenance Planning - Last Done, Next Due (LDND) Monitoring

### Introduction

Aircraft planning and maintenance monitoring are the backbone of aviation safety and operational efficiency. It's a complex balancing act between keeping planes in the air (generating revenue) and keeping them in the hangar (ensuring safety).

### Aircraft Maintenance Planning

Aircraft maintenance planning is the strategic scheduling of an aircraft's life cycle. It ensures that the correct maintenance is performed on time without disrupting the airline's flight schedule.

- **Strategic Alignment:** Planners must align the Maintenance Planning Document (MPD) provided by the manufacturer (e.g., Boeing or Airbus) is correctly interpreted and documented within the Operator Specific Aircraft Maintenance Program. (AMP)
  - **Capacity Planning:** This involves forecasting hangar space, specialized tooling, and manpower availability months or even years in advance.
  - **Yield Management:** The goal is to maximize "time on wing." Planners try to group smaller tasks together during scheduled downtime to avoid taking the aircraft out of service multiple times.

### Induction

Induction is the formal process of transitioning an aircraft into a maintenance facility for a scheduled check. It is the "bridge" between planning and execution.

- **Pre-Induction Meeting:** Stakeholders (Production, Planning, Quality, and Logistics) meet to review the **Work Package**. They ensure all long-lead parts (like engines or landing gear) are on-site.
- **Work Package Review:** The package includes Routine Tasks (standard inspections) and Non-Routine Tasks (repairs based on previous findings).
- **The Handover:** The aircraft is physically moved into the hangar, grounded, and "opened up" (panels removed). At this stage, the clock starts on the Turnaround Time (TAT).

### Maintenance Planning: Last Done Next Due (LDND)

The **LDND** report is the "holy grail" of aircraft record-keeping. It is a live document that tracks every single task required to keep the aircraft airworthy.

- **Last Done:** The date, flight hours (FH), or flight cycles (FC) when a specific task was last completed.
- **Next Due:** The hard limit for when that task must be repeated.
- **Intervals:** Tasks are tracked based on three main metrics:
  1. **Calendar Time:** (e.g., every 12 months).
  2. **Flight Hours:** (e.g., every 500 hours).
  3. **Flight Cycles:** (e.g., every 300 landings/take-offs).
- **Monitoring:** Maintenance Planning Control (MPC) monitors the LDND daily. If an aircraft is approaching a "due" limit, they must either schedule the maintenance or, in rare cases, apply for a short-term "extension" from the local aviation authority (like the FAA or EASA).

## Maintenance Checks Monitoring

The intensity of maintenance monitoring depends heavily on the utilization rate of the aircraft.

### Low Utilization

This applies to "boutique" carriers, private jets, or aircraft in long-term storage.

- **The Challenge:** When an aircraft doesn't fly often, calendar-based tasks become the primary drivers. Corrosion and seal degradation are the biggest enemies here, rather than mechanical wear.
- **Monitoring Focus:** Planners focus on "aging aircraft" programs. Even if the plane has zero flight hours in a month, it still requires weekly "parking and storage" checks and monthly engine runs.
- **Cost:** Ironically, low utilization can be more expensive per flight hour because the heavy calendar-based maintenance costs are spread over fewer revenue flights.

### Average (to High) Utilization

This is the standard for commercial airlines (e.g., flying 10–14 hours a day).

- **The Challenge:** Tasks are driven by Flight Hours (FH) and Cycles (FC). The aircraft hits its limits very quickly.
- **Monitoring Focus:** Monitoring is focused on "progressive" maintenance. To avoid grounding the plane for a month-long "D-Check," airlines break heavy checks into smaller segments (e.g., "Phase Checks") performed overnight or during short 2-day windows.
- **Utilization Adjustment:** If an aircraft is flying more than the "average" predicted in the maintenance program, planners must accelerate the maintenance schedule to ensure it doesn't "bust" its LDND limits.

### Typical Exposures (Inherent Risks)

Exposures in the LDND (Last Done, Next Due) process are often systemic risks that can compromise airworthiness if not actively managed.

- **The "Data Integrity" Gap:** The most significant exposure is the reliance on manual data entry from Technical Logs into the Planning system. A single typo such as recording 15,000 Flight Hours instead of 10,500—can lead to a "maintenance bust," where an aircraft flies past a mandatory safety limit.
- **Dynamic Utilization Spikes:** If an aircraft's flight schedule suddenly increases (e.g., during a peak holiday season), the "Next Due" dates for hour-based or cycle-based tasks will accelerate. If the planning department doesn't monitor these changes daily, the aircraft may reach its limit before hangar space is secured.
- **The "Extension" Culture:** Relying on short-term "extensions" from the FAA or EASA as a standard operational buffer is a major exposure. Extensions are meant for unforeseen circumstances; using them to cover for poor planning reduces safety margins and invites regulatory scrutiny.
- **OOT (Out of Tolerance) Events:** There is a risk that a task is physically completed, but the paperwork takes days to reach the CAMO office. During this "administrative lag," the aircraft may appear non-compliant in the system, leading to unnecessary groundings.

### Typical Shortfalls (Systemic Weaknesses)

Shortfalls are common failures in how the management process is structured or executed.

- **Communication Silos:** A lack of synchronization between Flight Operations (who schedule the routes) and Maintenance Planning (who monitor the LDND). When "Ops" changes a tail number on a long-haul flight without consulting "Planning," they may inadvertently push the aircraft past its maintenance limit.
- **Neglect of Low Utilization Aircraft:** There is a misconception that aircraft not flying are "safe." In reality, calendar-based tasks (corrosion inspections, seal replacements, engine runs) are often more critical for parked aircraft.
  - A shortfall occurs when these "aging aircraft" programs are not monitored with the same rigor as high-utilization fleets.
- **Inadequate Pre-Induction Reviews:** Failing to verify the availability of "Long-Lead Items" (parts that take months to order) before the aircraft enters the hangar. This results in an increased Turnaround Time (TAT) and lost revenue while the aircraft sits "opened up" waiting for a single bracket or bolt.
- **Reliance on Basic Tools:** Using basic spreadsheets for LDND monitoring instead of dedicated MRO (Maintenance, Repair, and Overhaul) software. Spreadsheets lack automated alerts and robust audit trails, making them prone to unrecorded changes.

## Best Practices for Optimization and Safeguards

To move from a reactive state to a proactive, high-reliability organization, the following practices should be implemented.

### Implementing the "Four-Eyes" Principle

To safeguard against human error in LDND monitoring, every data entry point from the Tech Log should be verified by a second, independent person. This "Double-Check" ensures that the "Last Done" data is 100% accurate before the "Next Due" is calculated.

### Predictive Task Clustering (Yield Management)

Instead of performing tasks exactly when they are due, planners should "bridge" tasks. If Task A is due in 20 hours and Task B in 60 hours, perform both during a single overnight window. While this sacrifices a few hours of "time on wing," it prevents the aircraft from being taken out of service twice, thereby maximizing operational efficiency.

## Real-Time Utilization Monitoring

Integrate the MRO software directly with ACARS or digital flight logs. This allows the LDND report to update automatically after every landing. This "Live Document" approach ensures that planners are never surprised by a sudden jump in Flight Cycles or Hours.

## Establishing Maintenance "Buffers"

Establish a "soft limit" for every task. If a task has a hard limit of 500 hours, set a system alert at 450 hours (the "Amber" zone). This 10% buffer allows the planning team to find a gap in the flight schedule without the stress of an impending "AOG" (Aircraft on Ground) situation.

## The "Frozen" Work Package

For major inductions, implement a "Work Package Freeze" 14 to 30 days before the aircraft enters the hangar. This prevents last-minute additions of non-routine tasks, allowing the logistics team to ensure that 100% of the required parts, tools, and manpower are on-site before the clock starts on Turnaround Time.

## 6/ Discuss the Treatment of Non - Mandatory SBs in an EASA Part CAMO Organisation

### Introduction

The assumption that "no mandate equals no obligation" is a common trap in aviation management. While you are legally correct that a non-mandatory Service Bulletin (SB) does not carry the same "ground-the-airplane" weight as an Airworthiness Directive (AD), a CAMO's obligation is not defined by the *action* of the SB, but by the process of evaluation.

### The Regulatory Oversight Expectation

Regulators do not expect you to embody every SB, but they absolutely expect you to **manage** them. Under Part-CAMO requirements, your organization must have a robust system to monitor and assess all continuing airworthiness information.

- **The Assessment Mandate:** You cannot simply ignore a bulletin. You must be able to prove to an auditor that the SB was received, reviewed by a competent person, and a conscious decision was made to either implement it, defer it, or reject it.
- **The "Instructions for Continued Airworthiness" (ICA):** Many SBs eventually become part of the manufacturer's Maintenance Planning Document (MPD). If a

non-mandatory SB is absorbed into the ICA, its status changes from "optional" to a required part of the maintenance program unless an alternative is approved.

- **The Safety Management System (SMS) Link:** Modern oversight focuses on risk. If an SB addresses a known technical "nuisance" that could lead to an in-flight shutdown or a high-energy failure, ignoring it is seen as a failure of your Risk Management process, even if the SB isn't "mandatory."

## Risk and Best Practice

Treating non-mandatory SBs as "optional" creates a blind spot in your safety and financial strategy. Best practice involves categorizing these bulletins to determine their true priority.

**The Safety-Related "Pre-AD" SB** Often, a manufacturer issues an SB to fix a safety issue while the regulator is still drafting an AD. (Note an ALERT Service Bulletin is the closest industry can get to an AD – Serious Organisations will always comply with Alert SB's)

- If a CAMO ignores this SB and an incident occurs, "it wasn't mandatory" is a legally indefensible position.
- Best practice is to identify SBs that address "Safety of Flight" and prioritize them as if they were mandatory.

**Operational Reliability and Financial Risk** Some SBs are designed to fix components that have high failure rates.

- While not a safety threat, a failure can cause an Aircraft on Ground (AOG) situation. The cost of performing the SB during a scheduled check is almost always lower than the cost of an unscheduled engine change or a cancelled flight at a remote outstation.

**Asset Value and Lease Conditions** If you manage leased aircraft, "non-mandatory" is a misnomer.

- Most Lease Agreements contain clauses requiring the operator to embody SBs of a certain "Recommended" status.
- Returning a "dirty" aircraft (one with low SB compliance) can result in massive financial penalties or "buy-back" costs during the redelivery phase.

## Potential Exposure: The Hidden Liabilities

By choosing not to address a non-mandatory SB, the CAMO is essentially "accepting the risk." This creates three specific types of exposure:

**Legal and Liability Exposure** In the event of a mishap, a plaintiff's legal team will compare the manufacturer's recommendations against your actions. If the manufacturer

provided a "fix" and you chose not to apply it solely to save money, it can be characterized as negligence, regardless of the SB's legal status.

**Insurance and Underwriting** Insurance companies increasingly look at SB incorporation rates as a KPI (Key Performance Indicator) for an operator's safety culture.

- A low compliance rate for recommended safety enhancements can lead to higher premiums or more restrictive policy terms.

**Warranty and Maintenance Credits** Many manufacturers offer "goodwill" or "warranty" pricing for parts and labor if an SB is performed within a certain window.

- If you ignore the SB and the part fails later, you will likely be forced to pay full list price for the replacement, losing the financial protection the SB offered.

### **Summary of the CAMO's "Right" Approach**

The "right" answer is that while you have no statutory obligation to *do* the work, you have a procedural obligation to **justify why you didn't**.

A high-performing CAMO should have a written "SB Assessment Form" for every non-mandatory bulletin. This form should document the technical benefit, the risk of non-compliance, the impact on fleet commonality, and the final management decision. This creates a "paper trail of safety" that protects the organization during audits and in the event of technical failures.

## **7/ What Are the Necessary Skills Needed to be an EASA Part CAMO Engineer?**

### **Pivot from Maintenance Data to Airworthiness Data**

In Part-145, you follow the AMM or SRM. In a CAMO, you dive deeper and typically interrogate the data that creates those manuals.

#### **To Possess the Skill to Build Manuals:**

- You should master the Aircraft Maintenance Program (AMP). You are no longer just performing a task; you are deciding when and why a task exists.
- You need to learn how to analyze the MRB (Maintenance Review Board) and MPD (Maintenance Planning Document) to justify changes to the task intervals based on your fleet's specific reliability.
- Willing to build competence related to reliability to understand the management of component failures and how hangar findings influence the fleet-wide program.

### **Master the "Back-to-Birth" Record Audit**

As certifying staff, you ensure the current work is signed off. As a CAMO engineer, you must ensure the aircraft's entire history is legally intact.

- To develop Forensic Traceability skills, means verifying the EASA Form 1 or 8130-3 for all fitted components and for Life Limited Part (LLP) that we have full Back to Birth History
- Understand how to audit "Delivery/Redelivery" binders. This is the highest level of CAMO engineering, ensuring millions of dollars in asset value is protected by a flawless paper trail.

### **Transition to Proactive Risk Management (SMS)**

Part-CAMO introduced a mandatory Safety Management System (SMS). The CAMO's SMS is typically analytical in nature.

- Paying attention to proactive Hazard Identification rather than just "Error Capture." In the hangar, you catch an error.
- In the office, you must predict a hazard. For example, if you notice a trend of corroded sensors in the hangar, your CAMO role is to perform a Risk Assessment and potentially create a fleet-wide inspection before a failure occurs.
- To Familiarize yourself with Root Cause Analysis (RCA) methodologies (like the 5 Whys or Fishbone) beyond just "Human Factors."

### **Develop Technical Liaison and Contract Oversight**

In a 145 environment, your "customer" is the operator. In a CAMO, you *are* the customer, and you must manage the 145 MRO.

- Develop the ability to write and oversee a Maintenance Contract (Appendix I to Part-M). You must ensure the MRO has the right facilities and capacity before the aircraft arrives.
- Be Able to excel at "Technical Writing" by drafting Engineering Orders (EOs). Ensure they are so precise that a 145 mechanic can execute them without needing to call you for clarification.

### **Formal EASA Competency Requirements**

To be accepted by the National Aviation Authority (NAA) as a CAMO engineer, you typically need to satisfy AMC1 CAMO.A.305(c):

- Maybe you already have the "Practical Experience" from the hangar, but you generally need 5 years in aviation, with a focus on continuing airworthiness.
- You need to prove knowledge of Part-M, Part-21 (for mods/repairs), and Part-CAMO.
- You will need an "EASA Part-CAMO Initial" certificate and, crucially, a Human Factors and Safety Management System (SMS) training certificate.

## 8/ How to Convert Military MRO Experience to CAMO Experience

**Introduction** - Transitioning from a military aviation background—specifically one rooted in EMAR (European Military Airworthiness Requirements)—to a civilian EASA Part CAMO (Continuing Airworthiness Management Organisation) environment is a natural progression. Because EMAR was designed to mirror EASA regulations, the technical "language" remains consistent, though the commercial application differs significantly.

### Key Challenges of the Transition

While your engineering expertise is a direct match, the "Civilian Mindset" shift involves several hurdles:

- **Commercial vs. Operational Priority:** In the military, "Mission Accomplishment" can sometimes justify expedited processes.
  - In a civilian CAMO, the Certificate of Airworthiness (CofA) is the ultimate authority. If the documentation isn't perfect, the aircraft does not fly—regardless of the commercial cost of a grounded plane.
- **The "Just Culture" in SMS:** EASA Part CAMO places a massive emphasis on a Safety Management System (SMS).
  - This requires a shift from a traditional hierarchical command structure to a collaborative, risk-based reporting environment where "human factors" are analyzed over "blame."
- **Licensing Gaps:** Military trade certificates do not always translate 1:1 to an EASA Part 66 License. While CAMO roles are office-based, higher-level technical positions often require a "C" license or at least a deep understanding of the Part 66 categories ( or ) to manage maintenance effectively.
- **Data Integrity & Software:** Civilian CAMOs utilize sophisticated MIS (Management Information Systems) like AMOS or Envision. Military personnel

may find the civilian focus on "digital birth certificates" for life-limited parts to be more granular than military record-keeping.

**Best Action Steps** - To move into a Part CAMO role efficiently, follow these steps:

- **Regulatory Certification:** Ensure you have a current certificate in EASA Part M & Part CAMO (Regulation (EU) 1321/2014) and Human Factors. (Also Fuel Tank Safety & EWIS) Most civilian employers view these as non-negotiable prerequisites.
- **Translate Your Experience:** Remove military acronyms from your CV. Instead of "Flight Line NCOIC," use "Line Maintenance Coordinator." Highlight your experience with AMP (Aircraft Maintenance Programmes) and AD/SB (Airworthiness Directive/Service Bulletin) assessment.

### Typical Transition Timeline

1. **Preparation (6 Months prior to exit):** Research the specific civilian aircraft types you want to work with (e.g., Boeing 737, Airbus A320) and begin networking on platforms like LinkedIn.
2. **Training Phase (2–4 Months prior to exit):** Complete your initial regulatory training.
3. **Application Phase (Last 3 Months):** Start applying for roles. Military veterans are often highly sought after for their reliability and systematic approach to safety.

### Initial 6 months in your New Role

- **Technical Records (The Foundation):** You will likely start by "clearing" flight logs. This isn't just data entry; it's a forensic audit. You will be checking that a component swapped on a Friday night in a different country has a valid **EASA Form 1**, that the serial numbers match exactly, and that the "Next Due" figures were calculated correctly.
- **Maintenance Planning (The Strategy):** You may move into creating work packages or managing the Aircraft Maintenance Programme (AMP). In a civilian CAMO, the AMP is a living document. You will learn how to "escalate" or "de-escalate" tasks based on reliability data—a critical skill for any future ARS.

### Bridging the "Culture Gap"

The first six months are less about engineering and more about Regulation (EU) 1321/2014.

- **Understanding the CAME:** Every CAMO operates under a Continuing Airworthiness Management Exposition (CAME). This is your new "Standing Orders." Your onboarding will involve memorizing how *your specific company* interfaces with the National Aviation Authority
- **The Just Culture Shift:** You will experience your first civilian Safety Report. Unlike the military, where an error might lead to a formal "Summary Hearing," the civilian CAMO should use these 6 months to train you on Root Cause Analysis (RCA). You'll learn how to fix the *system*, not just reprimand the person.

## Available Positions for the Right Candidate

For someone with an EMAR background, these roles are the best fit:

- **Maintenance Planner:** Scheduling hangar visits and line maintenance based on the Aircraft Maintenance Programme.
- **Technical Records Specialist:** Managing the "life" of the aircraft by ensuring every component has a valid EASA Form 1.
- **Reliability Engineer:** Using data to identify if certain parts are failing prematurely and adjusting the maintenance schedule accordingly.
- **Technical Services/Powerplant Engineer:** Managing complex engine health monitoring or major structural repairs.
- **Compliance Monitoring Auditor:** A high-level role ensuring the CAMO follows all EASA regulations—perfect for those with a military "Quality Assurance" background.

## 9/ EASA Part CAMO Interview Preparation

### Introduction

Since 2022, the shift from Part-M Subpart G to Part-CAMO has placed a massive emphasis on the Management System, so expect heavy questioning there.

### The Part-CAMO Management System (The "New" Standard)

The most critical change is the integration of Safety Management into the CAMO. You must be able to discuss:

- **Compliance Monitoring vs. Quality:** Explain that Compliance Monitoring is no longer just "checking boxes" but ensuring the effectiveness of the entire system.

- **Safety Management Systems (SMS):** Be ready to talk about Hazard Identification, Risk Assessment, and Safety Performance Indicators (SPIs).
- **Just Culture:** Understand how the CAMO encourages open reporting of maintenance errors or safety concerns without fear of punishment.
- **The CAME:** Familiarize yourself with the structure of the **Continuing Airworthiness Management Exposition** and how it governs your specific procedures.

## Continuing Airworthiness Core Tasks

This is the "bread and butter" of the role. Be prepared to explain your process for:

- **The AMP (Aircraft Maintenance Program):** How you take the manufacturer's Baseline (MPD) and customize it for your fleet's specific operations.
- **Reliability Programs:** How you analyze Pilot Reports (PIREPs) and component removals to adjust maintenance intervals for maximum safety and efficiency.
- **AD and SB Management:** The process for assessing an **Airworthiness Directive** for applicability and ensuring it is scheduled and embodied within the legal deadline.
- **Technical Records:** Maintaining the "Continuous Airworthiness Record System." You must ensure every task has a valid Certificate of Release to Service (CRS) and a traceable "dirty fingerprint" (the original technician's sign-off).

## Boeing vs. Airbus: Technical Nuances

While the EASA regulations are identical for both, the way you interact with the data differs:

- **Documentation Systems:** For **Airbus**, you will use the AirN@v suite, focusing on the AMM (Maintenance Manual) and TSM (Troubleshooting Manual). For Boeing, you will primarily use MyBoeingFleet and the FIM (Fault Isolation Manual).
- **Task Management:** Airbus MPDs (Maintenance Planning Documents) are often structured around functional groupings. Boeing MPDs frequently rely on specific "Task Number" systems that require careful tracking during "Zonal" inspections.
- **Aging Aircraft Programs:** Be aware of the differences in structural programs. Boeing has a heavy focus on the Aging Airplane Program, whereas Airbus uses specific Corrosion Prevention and Control Programs (CPCP) integrated into the maintenance schedule.

## Oversight and Subcontracting

A CAMO often outsources the physical maintenance to a Part-145 organization. You must understand:

- **Contract Management:** How you ensure the Part-145 is performing the work correctly. The CAMO is ultimately responsible for the aircraft's airworthiness, even if another company does the work.
- **The ARC (Airworthiness Review Certificate):** The difference between a "controlled environment" (where the aircraft is managed by a single CAMO for 12 months) and an uncontrolled one, and how this affects the extension of the Form 15.

## Post-Holder Roles (Form 4)

Understand the specific legal duties of the "Post-Holders" you will be working under:

- **The Accountable Manager:** Who holds the financial and legal responsibility.
- **The CAMO Manager:** Who manages the daily airworthiness tasks.
- **The Safety Manager:** Who is independent and focuses strictly on risk management.

Now watch the following You Tube Video –

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## 10/ Command Your Career: The SOL CAMO Learning Path Diploma

### Introduction

In the aviation landscape of 2026, the transition to EASA Part-CAMO and the mandatory implementation of SMS and Cybersecurity (Part-IS) have redefined competence. For those aiming for high-level roles as Post Holders, Nominated Persons, or Airworthiness Review specialists, "knowing the basics" is no longer enough. You need a credential that proves technical depth and leadership discipline.

The Sofema Online (SOL) CAMO Diploma is your professional roadmap. This 16-course masterclass takes you from the foundations of maintenance planning to the cutting edge of digital airworthiness.

### Why This is the Ultimate Investment in You

- **Recognizable Authority:** Completing this program signals to recruiters and EASA auditors that you have mastered the entire Continuing Airworthiness ecosystem.

- **Massive Financial Advantage:** Individually, these 16 courses cost €1,562. By choosing the Diploma path, you secure your training for €1,170, saving €392 immediately.
- **The 15-Month Success Window:** This sustainable choice for working professionals allows you to deeply absorb complex topics like Reliability and Engine Trend Monitoring without the pressure of a ticking clock.

## Choosing Your Path for 2026

To achieve the best value, the SOL Plus Paid Membership is essential. As of April 1st, 2026, the annual fee is €125 (+ VAT)—an investment that pays for itself through significant course discounts.

### Option 1: The Dedicated Specialist (The CAMO Diploma)

- **Standard Price:** €1,170 | **With SOL Plus (15% Discount):** €994.50
- **The Strategy:** Ideal for the professional working full-time who wants to take their time. You receive 15 months of access to complete the 16-course syllabus, allowing you to revisit material during real-world scenarios like upcoming audits or new aircraft inductions.

### Option 2: The High-Speed Achiever (The 6-Month Freedom Pass)

- **Standard Price:** €995 | **With SOL Plus (10% Discount):** €895.50
- **The Strategy:** If you are in a career transition or have significant study time, the Freedom Pass is the ultimate "all-you-can-learn" sprint. You have 6 months to finish the 16 required courses. At a lower entry price, you also gain access to the entire SOL catalog of 525+ courses.

## A Curriculum Built for the Modern Expert

The program uses a hybrid approach: High-impact Voiceover (VO) modules guide you through regulatory nuances, while intensive technical deep dives ensure you master data with laser focus.

### The 16-Course Roadmap Includes:

- **The Technical Core:** Aircraft Maintenance Planning (5-Course Suite), Technical Records, and Engine Trend Monitoring.

- Regulatory Mastery: Part M for Large Aircraft (VO), Part-CAMO Obligations (VO), and SMS Obligations (VO).
- 2026 Essentials: Part 145 Cybersecurity, Reliability Program Essentials, and RVSM Operations (VO).
- Operational Depth: Part 21 Review, MMEL/MEL Introduction, and AD/SB & Repair Considerations.

### **Don't Just Work in CAMO—Master It.**

The difference between a job and a career is a plan. Whether you choose the 15-month specialized focus or the 6-month "sprint," you are positioning yourself at the top of the global candidate pool.

### **Are you ready to claim your seat at the table?**

## **11/ Enhancing EASA Part-CAMO Compliance in MRO and Repair Environments**

### **Introduction: The Evolution of Compliance Management**

In the contemporary aviation landscape of 2026, the transition from EASA Part-M Subpart G to EASA Part-CAMO has moved beyond a simple administrative update to a fundamental shift in organizational philosophy.

The shift toward proactive compliance is not merely a technical upgrade; it is a strategic necessity for the modern MRO. By centralizing manuals, linking data, and prioritizing continuous risk identification, organizations can move from a state of "surviving the audit" to a state of "operational excellence."

The era of "passing the audit" as a once-yearly hurdle is over. Today, regulatory bodies and industry leaders demand a continuous, integrated approach where compliance and safety are managed through real-time, data-driven oversight.

For Maintenance Repair Organizations (MROs) and repair shops, the primary challenge remains the management of massive volumes of technical data while ensuring day-to-day operations align with the overlapping requirements of EASA, the FAA, and Transport Canada. (to name but 3)

This white paper explores the critical transition from reactive compliance

- Fixing issues only after they are flagged by auditors
- To proactive oversight, which identifies risks and procedural gaps before they manifest as findings or safety incidents.

## The Complexity Crisis in MRO Operations

Today MROs are facing an unprecedented influx of technical data and regulatory nuances. Several factors contribute to this growing complexity:

- **Dual and Multi-Approval Environments:** Organizations holding concurrently several regulatory approvals including EASA Part-145 and FAA Part-145 approvals must navigate systems that, while similar, often possess critical differences in Human Factors, training requirements, and documentation standards.
- **The Technical Data Deluge:** The sheer volume of Airworthiness Data including Airworthiness Directives (ADs), Mandatory service information, Service Bulletins and OEM manual updates creates a significant "ripple effect." Across MRO's
  - A single change in a primary manual can inadvertently invalidate dozens of internal procedures across different departments.
- **Traceability Gaps:** Without a centralized, digital ecosystem, proving compliance often involves a "scramble" for evidence.
  - This reactive behavior not only increases administrative costs but significantly erodes operational efficiency.

## Defining Proactive Compliance Oversight

Proactive compliance is the practice of continuous monitoring and risk identification integrated directly into the maintenance workflow. Under EASA Part-CAMO (specifically CAMO.A.200), the management system must include a robust function to monitor compliance with all relevant requirements.

Taking a deep dive across all data sets allows for the performance of a risk identification across the entire business that impacts day-to-day operations.

- Essentially it is prioritizing the understanding of areas where exposures could occur

## Contrast in Approaches

- In a Reactive System, the focus is almost entirely on audit findings and corrective actions. The timing is post-event, and knowledge is often siloed within a few Subject Matter Experts (SMEs).

- This creates a "single point of failure" where compliance is maintained through individual heroics rather than institutional process.
- Conversely, a Proactive System prioritizes risk identification and trend analysis.
  - It can operate in real-time through linked, live digital libraries rather than static PDF or paper manuals.
  - Knowledge is distributed across the entire team, ensuring that if a key staff member leaves, the compliance logic remains embedded within the organization's tools.

## **Strategic Best Practices for Part-CAMO Compliance**

To achieve a proactive stance, Sofema Aviation Services recommends a "Building Block" approach to organizational oversight:

### **Centralize and Link Documentation**

The first step toward a scalable system is the centralization of the Continuing Airworthiness Management Exposition (CAME) and all associated maintenance procedures. Organizations should transition away from disconnected Excel sheets and toward digital platforms that link regulatory text directly to internal procedures.

- When an EASA regulation changes, a "red-flag" system should immediately notify the procedure owner of the specific impact.

### **Establish a "Compliance Library"**

Develop a centralized repository where Part-CAMO and Part 145 requirements are mapped to specific manual paragraphs. This ensures Data Transparency, allowing any technician or manager to see *why* a procedure exists and exactly which legal text mandates it. This clarity eliminates "unnecessary checks" and allows the team to focus on high-value safety activities.

### **Reduce SME Dependency**

One of the greatest risks to MRO stability is the reliance on a single person's knowledge of a compliance sheet. By utilizing tools that enable the whole team to engage with the compliance process, the organization becomes more resilient. Proactive oversight means the process is ingrained in the culture, not just a file on a specific manager's laptop.

### **Integrate SMS with Compliance Monitoring**

Under Both Part 145 and Part-CAMO, the interface between the Safety Management System and the Compliance Monitoring Function is vital.

- Data analysis should be used to spot where errors could occur in day-to-day operations.
- By monitoring how regulations are written into documentation and pushed to the floor, organizations prevent the "scrambling" that leads to human factor errors.

### **The Importance of Data Transparency**

Transparency is the antidote to regulatory uncertainty. When maintenance teams have live visibility into how their task cards relate to the latest ADs or EASA requirements, they operate with significantly higher confidence.

Transparent systems strengthen the link between legal text and written procedures. This helps clarify maintenance programs, simplifies the training of new staff, and ultimately makes the organization safer. When you can see the direct connection to documents, you know exactly where to spend your time and attention.

### **Conclusion: Securing the Future of Airworthiness**

The era of managing compliance through disconnected spreadsheets and "audit scrambling" is no longer viable. For the modern MRO, Data Transparency is the ultimate tool for operational resilience. By bridging the gap between regulatory text and shop-floor execution, organizations not only ensure legal compliance but also significantly reduce the risk of Human Factor errors and administrative bottlenecks.

**Sofema Online (SOL)** supports this transition by providing a vast portfolio of specialized training courses designed to empower Accountable Managers, CAMO Post Holders, and Quality Managers. Through our comprehensive online platform, your team can gain the expertise needed to transform compliance from a regulatory burden into a strategic advantage, ensuring your organization remains at the forefront of safety and efficiency in 2026 and beyond.

### **12/ EASA CAMO Challenge Related to Shortage of Parts**

Considers the relationship between parts availability and MEL usage and variations, how to manage this problem compliant with SMS ALARP

### **Introduction - The Operators Triple Threat**

- **The Financial Burden of Surplus** -When a business over-invests in inventory to avoid AOGs, it creates a "material cost" burden. As well as the initial purchase price
  - **Holding Costs:** Warehousing, insurance, and the specialized climate control required for sensitive avionics or composites.
  - **Technical Obsolescence:** Service Bulletins (SBs) or Airworthiness Directives (ADs) might render a part unusable or require expensive modifications while it's still sitting in the box.
  - **Administrative Requirements:** Every part requires a valid EASA Form 1 or FAA 8130-3. Managing the traceability for a large inventory is an additional administrative burden.
- **The AOG (Aircraft on Ground) Nightmare** - Not having enough parts is the most visible failure of a CAMO. An AOG triggers a cascade of costs:
  - **Recovery Logistics:** Chartering a flight to move a spare engine or hiring a "Go-Team" of engineers.
  - **Brand Erosion:** Frequent delays due to "technical issues" (read: no parts) kill passenger loyalty and can lead to regulatory scrutiny regarding your operational control.
- **The MEL Exposure & "The Snowball"** - When you don't have the part, you defer the defect via the Minimum Equipment List (MEL). Operating at ALARP means you can't just keep deferring indefinitely.
  - **Reduced Redundancy:** If the MEL allows you to defer you are now only 1 additional failure away from an AOG situation.
  - **Operational Restrictions:** You might lose ETOPS capability or the ability to land in low visibility (CAT II/III), which forces diversions and increases fuel burn.
  - **Shortage Complications:** If a specific part is globally short (e.g., a specific actuator), your entire fleet might end up on the same MEL. This creates a "fleet-wide fragility" where a single further failure could ground the entire operation.

**How to Manage at ALARP** - To keep risk "As Low As Reasonably Practicable," consider to move from reactive to predictive management.

- **Dynamic Provisioning:** Instead of buying "just in case," use reliability data to identify "No-Go" items (parts that have no MEL relief). If it has no MEL relief, you *must* have it in stock or on a high-speed exchange contract.
- **The "MEL Buffer":** Establish a policy where no more than, say, 25% of the fleet can have "Category B" MELs open simultaneously. If you hit that limit you implement additional recovery actions (Pseudo AOG)
- **Robbery Control:** This is a controversial but necessary tool using Maintenance Check Aircraft as donors to clear MELs on the active fleet. This keeps the "live" fleet at a higher level of redundancy.

## MEL & Part Shortage Risk Assessment

To help a CAMO manager justify a decision (like a robbery or an expensive AOG purchase) while demonstrating to regulators that they are operating at ALARP.

### I. Hazard Identification

- **Primary Hazard:** Continued operation with [Part Name] inoperative under MEL [Reference #].
- **Secondary Hazards:** Loss of CAT III capability, increased crew workload, or potential for compounding failures (e.g., if the redundant system fails).

### II. Risk Analysis

Use the formula:

- **Severity:** (Minor / Major / Hazardous / Catastrophic)
  - *Note: Consider what happens if the remaining redundant system fails.*
- **Likelihood:** (Frequent / Occasional / Remote / Extremely Improbable)
  - *Note: Based on MTBF (Mean Time Between Failure) data for the remaining system.*

### III. Mitigation Strategies (ALARP Measures)

- **Operational Mitigations:** (e.g., Restricted to Day VFR only; No ETOPS;).
- **Maintenance Mitigations:** (e.g., Additional functional test of the remaining redundant system).

- **Logistical Mitigations:** (e.g., Part has been sourced via AOG desk with ETA of 48 hours; robbery authorized).

#### **IV. Impact on Fleet Resilience**

- How many other aircraft in the fleet are currently using this specific MEL?
- What is the cumulative risk if a fleet-wide issue develops?

#### **V. Approval & Review**

- **CAMO Manager Signature:** \_\_\_\_\_
- **Flight Ops Manager Signature:** \_\_\_\_\_
- **Re-assessment Date:** [Usually 72 hours for Cat B items]