

INSTITUTE FOR INDIVIDUAL AVIATION

IIA



COST CONTROL · CASE CC-03

Regulatory Accretion and Compliance Cost Growth

Requirement growth runs one way because addition is career-safe and subtraction is not; each rule was defensible when signed, and no institutional process has ever examined the cumulative load the individual operation carries.

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Abstract

This case studies why the regulatory load on the individual light-aviation operation grows in one direction only. The finding: the growth is not a judgement but an accretion, produced by an asymmetry inside the regulating institutions themselves. Adding a requirement creates a defensible institutional artefact at approximately zero career risk, its cumulative cost dispersed across the regulated population and attributable to no one; removing a requirement exposes the deciding official by signature if any future incident is ever attributed to the absence. The expected-value calculation favours adding in every direction, the infrastructure for addition is permanent while the infrastructure for subtraction is occasional, and no institutional process has ever examined the cumulative load as a whole. The individual operation pays the accretion in money, time, and procedure. The case documents the mechanism, credits the subtractions that do occur, issues a load-management recommendation that never touches the compliance floor, and states its limitations.

1. The Practice and Its Scope

The practice under study: the one-way growth of the regulatory requirements carried by the individual light-aviation operation, and the absence, anywhere in the institutional architecture, of a process that examines what the requirements cumulatively cost the operation that carries them. Each addition is reviewed on its own merits at the moment of signing; the whole is reviewed never.

Scope: the accretion mechanism and its cost to the individual operation, in money, time, and procedural complexity. The safety consequence of the consolidated load, the workload it places on one person's fixed capacity, is the Institute's issued case SM-02 and enters here only as the cross-reference; the price structure of parts, services, and acquisition are cases CC-01 and CC-02 and are not re-argued. This case concerns the growth process itself: why it runs one way, and what that costs.

The compliance floor is unconditional throughout. Nothing in this case questions any operator's obligation to meet every requirement in force; the case questions why no institution asks what the requirements in force cumulatively cost, and it does so without imputing intent to any official or authority.

2. Sources

- The public rule-making record of the major aviation authorities: the permanent institutional infrastructure of addition, rule-making procedure, consultation frameworks, advisory committees, standing publication channels, against the occasional character of retirement and reform initiatives.

- The documented cost of individual mandates landing on the light fleet, including avionics equipage mandates whose compliance cost reached 15 to 20 percent of hull value for aircraft at the affordable end of the fleet.
- The partial-reform record: BasicMed, MOSAIC, Part 21 Light, and the EASA General Aviation Roadmap, as the empirical instances of subtraction and their measured reach.
- Accident-causation analyses (NTSB, AOPA McSpadden series) locating the personal-flying record's dominant factors in workload and decision load rather than in under-regulation.
- IIA research library: the doctrinal analysis of the regulatory output bias and the structural analysis of the accretion mechanism, from which the asymmetry inventory of Section 4 is drawn.

3. Method

The method is an incentive audit of the regulating institution, conducted at the level of structure and not of conduct. For each direction of regulatory change, addition and subtraction, the audit records the career risk to the signing official, the attributability of the resulting cost or benefit, the institutional resourcing of the infrastructure that produces it, and the external pressures acting on it. The asymmetries between the two columns, not any individual rule, are the finding.

The audit's central claim is falsifiable in a specific way: it stands unless an institutional process can be identified that examined the cumulative regulatory load on the individual operation as a whole, at any point. Two results are reported per the Institute's standard: the magnitude, stated as the asymmetry inventory and its documented cost instances, and the sensitivity, what remains after every individual addition is conceded to have been defensible when signed.

4. Findings

Finding one, the asymmetry. Adding a requirement produces a defensible institutional artefact at approximately zero career risk: the cumulative load of every addition is dispersed across the regulated population and attributable to no individual decision-maker. Removing a requirement produces a less defensible artefact at non-zero career risk: if any future incident is later attributed to the absent requirement, the deciding official is exposed by signature. The expected-value calculation, taken across every official in the authority, favours adding in every direction. Around the asymmetry stands its infrastructure: rule-making procedure, public consultation, advisory committees, and standing publication channels are permanent and well-resourced; the infrastructure of subtraction is occasional and under-resourced. Office-level resourcing flows to offices producing legible, which is to say additive, output; external pressure from legislative oversight, the press cycle, and large institutional operators reinforces the same direction; and professional culture rewards the issuance of new requirements wherever any safety case can be made.

Finding two, the unexamined whole. The cumulative state of the framework is an accretion, not a judgement: each addition was individually reviewed at signing, and no institutional process has examined the resulting whole at any point. This is the case's central verifiable claim, and it is falsifiable by any authority able to point to the process. The consequence is a framework whose marginal compliance cost to the individual operation now runs high relative to its marginal safety benefit, while the accident-causation record of the personal segment is dominated by workload and decision factors that subtraction would address more plausibly than addition.

Finding three, where the cost lands. The accretion's cost is paid by the operation least equipped to absorb it. In money: recurring compliance items and equipage mandates, of which the recent avionics mandate is the documented instance, its cost reaching 15 to 20 percent of hull value at the affordable end of the fleet, a proportion no institutional operator ever faces. In time and procedure: the administrative load lands on the same person who flies, maintains, and funds the operation, with no compliance department to carry it. And in participation: cumulative procedural complexity operates as a barrier to entry that contracts the population, which thins the very ecosystem, parts, insurance pools, airfields, that the remaining operators depend on.

Finding four, the export test. The asymmetry is a property of regulatory institutions, not of any one authority: career risk, attributability, and the resourcing of addition over subtraction operate identically in every mature regulatory system, and both major frameworks exhibit the same monotonic growth. Jurisdictions differ in the pace and in the occasional reform; none possesses a standing subtraction process, and none is obliged to build one. The mechanism travels with the institutional form itself.

WHERE THE HEADROOM OF THE LARGEST RECENT REFORMS LANDS



Figure CC-03. Where the effective headroom of the largest recent reforms lands, from the analysis cited in the case. The proportions are approximate and drawn from that analysis rather than from a survey of adopters; each reform is credited in full, and the share is the finding.

Findings in the other direction, per the Institute's standard. Individual additions are routinely justified: aviation safety does require evolving requirements, and this case concedes, for the purpose of its sensitivity test, that every addition was defensible when signed; the finding survives the concession intact, because it concerns the process, not the rules. Subtraction does occur under sufficient external pressure: BasicMed, MOSAIC, Part 21 Light, and the EASA General Aviation Roadmap are real, and are credited here as the mechanism's own proof, occasional, externally forced, and partial, with the analysis of the largest recent reforms finding perhaps a third of their effective headroom reaching the existing individual operator. And the framework genuinely works for the operator class it is calibrated to: institutional operators, whose

outcomes are excellent. The conflation of that class with the individual operation is addressed as a cover proposition in Section 5. Sensitivity: at the bound least favourable to the finding, every rule defensible, every reform credited, the asymmetry inventory, the monotonic direction, and the absent examination of the whole all remain.

5. The Mechanism

The accretion persists because it is what the institution's own incentive function produces. No official chooses growth; each official chooses the career-safe direction, and the sum of career-safe choices is monotonic growth. The bias has operated for decades and will continue until external pressure substantial enough to redirect the incentive function appears; no such pressure is currently visible at the scale required. No intent is imputed to any party; the equilibrium follows from what is safe to sign.

Three cover propositions maintain it. That aviation safety requires evolving requirements: true at the margin, silent on the cumulative case. That the framework reflects accumulated deliberative judgement: it reflects accumulated additions, each defensible at signing, none ever examined against the whole. That the framework is, on the whole, working: the proposition conflates two operator classes whose outcomes diverge, the institutional operator, for whom the framework is calibrated and outcomes are excellent, and the individual operation, for which the framework is over-calibrated and outcomes are dominated by structural factors the framework does not address. Each proposition is true where it is narrow and cover where it is broad.

6. Recommendation

Issued to individual operations, in aviation's non-mandatory form: adopted voluntarily, at the adopter's responsibility, and never below the compliance floor, which is met as a matter of course. The floor is a floor: what follows is a standard the operation sets above it by its own decision, and carries. Load management is lawful pathway choice and process participation, never non-compliance.

The recommendation is a compliance-load discipline. First, keep the account the institution does not: inventory the operation's recurring compliance items and price them in money and hours per year, the cumulative examination conducted at the one scale where someone has an incentive to conduct it. Second, choose the load at the planning stage: lawful pathways and categories differ materially in the recurring regulatory load they carry, and the load is a selectable parameter of the acquisition-path analysis the Institute's case CC-02 recommends, selected before the aircraft is chosen, not discovered afterwards. Third, participate in the subtraction channels that exist: the comment dockets, the association processes, and the exemption pathways are the occasional infrastructure of subtraction, and they move only when the regulated population uses them. Fourth, never self-exempt: an unexamined framework is still the law, and the case's entire force depends on the distinction between questioning the process and complying with its output.

7. Gain Estimate Methodology

The gain claims published with this case are constructed as follows, with their honesty conditions. To avoid double-counting, the price multiples of parts and services and the acquisition value shares are quantified in the Institute's cases CC-01 and CC-02 and are not claimed again; this case's gain concerns the recurring regulatory load as a selectable and auditable parameter.

Individual gain. The operation that keeps the compliance account can select its exposure: between lawful pathways and categories, the recurring regulatory load spans severalfold in annual money and hours, and the single documented mandate instance of finding three shows what an unselected exposure can cost, up to a fifth of hull value in one equipage cycle at the affordable end of the fleet. The published claim: the recurring load is a selectable parameter, and the selection is available exactly once at full value, at the planning stage.

Cumulative gain. Stated as the missing artefact: no institutional process has examined the cumulative load; every operation-level compliance account is a fragment of the examination the institution never conducts, and the aggregate of such accounts is the evidence base any future subtraction initiative will require. The case publishes no monetary figure for the accretion's total cost, because no honest derivation of one exists, which is itself the finding.

Secondary benefit. The personal segment's accident causation is dominated by workload and decision factors; a framework examined for subtraction would address that record more plausibly than further addition. The direction is claimed; the magnitude is not. This case does not quantify the benefit.

Sensitivity and honesty conditions. The severalfold pathway spread inherits the pathway analyses of the Institute's cost cases and is stated as a range, not a promise; the mandate instance is one documented case, not a rate. The cumulative claim is deliberately non-monetary. And the gain is procedural: the case claims the account and the selection as the mechanism, not a measured cost reduction.

8. Limitations

The asymmetry inventory is drawn from the structure and public record of the major authorities, not from internal deliberations, which are not observable; the mechanism is inferred from what the institutions produce, which is the only evidence a structural claim can have. The central claim, that no process examined the whole, is a negative existential and is held falsifiable rather than proven: one identified process defeats it, and none has been identified. The severalfold load spread between pathways varies by jurisdiction and aircraft class and is stated as a direction with instances, not a universal ratio. The reform record is credited as of this issue and will change; the mechanism that makes reform occasional is the part expected to persist. None of this touches the central claims: that addition is career-safe and subtraction is not, that the

growth is therefore monotonic, that the whole has never been examined, and that the individual operation pays for the accretion in money, time, and procedure.

References

Public rule-making records and procedural frameworks of the Federal Aviation Administration and the European Union Aviation Safety Agency; consultation and advisory structures as published.

Federal Aviation Administration. ADS-B Out equipage mandate (14 CFR 91.225/91.227) and published compliance-cost analyses; market records of equipage cost against hull values at the affordable end of the fleet.

Federal Aviation Administration. BasicMed (2017); Modernization of Special Airworthiness Certification (MOSAIC), final rule (2025). European Union Aviation Safety Agency. General Aviation Roadmap; Part 21 Light. The partial-reform record.

NTSB accident analyses and AOPA Air Safety Institute, Richard G. McSpadden Report series. Causation distribution of the personal segment.

Institute for Individual Aviation, research library: doctrinal analysis of the regulatory output bias; structural analysis of the accretion mechanism. Asymmetry inventory of Section 4.

Institute for Individual Aviation. Issued cases CC-01, CC-02 (price structure), and SM-02 (protection asymmetry), cited for scope boundaries and to avoid double-counted gains.