HAUCH AERO LLC

AIRCRAFT MAINTENANCE • INSPECTION • MANAGEMENT

TECHNICAL REPORT

FAA AC 43.13-2C

COMPARATIVE ANALYSIS

Aircraft alterations: technical corrections, larger-tire guidance, revised references, and practical effects compared with AC 43.13-2B

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REPORT OVERVIEW

FAA AC 43.13-2C Compared with AC 43.13-2B

Distribution report prepared by Hauch Aero, LLC

Current edition	AC 43.13-2C, issued July 29, 2026
Superseded edition	AC 43.13-2B, issued March 3, 2008
Scope	Paragraph, table, figure, citation, and operational comparison
Primary users	A&P mechanics, IAs, repair stations, DMEs, and Part 147 programs

Bottom line: AC 43.13-2C is not merely an editorial cover-sheet update. It retains most legacy alteration methods, but adds a substantive larger-tire chapter, corrects structural load inconsistencies, updates regulatory authority, and renumbers every legacy citation.

Executive Summary

- AC 43.13-2C was issued July 29, 2026 and explicitly cancels AC 43.13-2B.
- The document expands from 137 pages to 196 pages.
- The general applicability remains nonpressurized areas of civil aircraft of 12,500 pounds gross weight or less.
- The provision allowing directly applicable alteration data to be used as approved data for major alterations remains in place.
- A new Chapter 14 supplies a field-approval framework for certain larger-tire installations on fixed-gear airplanes under 6,000 pounds.
- The structural-data chapter corrects conflicting sideward and downward load values found in -2B.
- Regulatory citations, FAA organization names, military specifications, cross-references, and terminology were extensively updated.
- Because every carried-over chapter was renumbered, existing Form 337 templates and instructional materials citing -2B must be revised.

Principal Technical Changes

Area	AC 43.13-2B	AC 43.13-2C	Effect
Normal/utility occupant sideward load	3.0g in Table 1-1	1.5g in Table 2-1	Corrects the table to match the example calculation.
Seven-pound equipment sideward test	1.5g / 10.5 lb	1.5g / 10.5 lb	Example unchanged; table is now internally consistent.
Seven-pound equipment downward test	6.0g / 42.0 lb	6.6g / 46.2 lb	Corrects the example to match the load-factor table.
Load-table title	Limit Load Factors	Ultimate Load Factors	Clarifies the emergency-landing values represented.
Rotorcraft cargo-sling static-load citation	14 CFR § 133.43(a)	14 CFR §§ 27.865(a) and 29.865(a)	Moves the design substantiation reference to the applicable airworthiness standards.
Larger-tire installations	No dedicated guidance	New Chapter 14	Adds eligibility, design, test, ICA, documentation, and operational-check guidance.

Structural Load-Factor Corrections

The most consequential correction outside Chapter 14 is the reconciliation of conflicting values in the former structural-data chapter. AC 43.13-2B listed a 3.0g normal/utility sideward value in Table 1-1 while its example used 1.5g. It listed 6.6g downward in the table but used 6.0g in the example. AC 43.13-2C resolves both inconsistencies.

Direction	Corrected factor	Seven-pound test load
Sideward	1.5g	10.5 lb
Upward	3.0g	21.0 lb
Downward	6.6g	46.2 lb
Forward	9.0g	63.0 lb

Practical consequence: The corrected 46.2-pound downward test load is approximately 10 percent higher than the 42.0-pound value printed in the -2B example. New substantiation worksheets should use the -2C value when Table 2-1 applies.

Approved-Data Language

Section 1.1 preserves the central -2B provision: alteration data in the AC may be used as approved data for a major alteration when the specific chapter, page, and paragraph are entered in Block 8 of FAA Form 337 and the user determines that the data satisfy all three conditions below.

1. The data are appropriate to the product being altered.
2. The data are directly applicable to the alteration being made.
3. The data are not contrary to the manufacturer's data.

The FAA also added conspicuous notes explaining that the AC is guidance, is not independently legally binding, and is not the only acceptable means of compliance. An alternative method remains permissible only when it is acceptable to the FAA.

Interpretive limit: The presence of related information in AC 43.13-2C does not create blanket approval for an alteration. Direct applicability, product suitability, manufacturer-data compatibility, and the alteration's certification basis still control.

New Chapter 14: Larger Tire Installations

Chapter 14 is the principal new technical subject. It creates a structured path for evaluating and documenting eligible wheel, tire, and brake alterations, commonly called tundra-tire modifications.

General eligibility envelope

- Fixed-gear airplanes.
- Less than 6,000 pounds gross takeoff weight.
- Proposed tire and wheel combination generally no more than 130 percent of the original standard combination.
- Tire size not exceeding 35 × 15 inches under the Chapter 14 job aid.
- FAA-approved tires, wheels, and brakes with appropriate TSO, PMA, TC, or aircraft-part eligibility.

Existing STC rule: If an STC exists, it must be used. Chapter 14 states that the FAA should not field approve a wheel, tire, or brake combination already approved through an STC or another existing approval method.

Design criteria

The proposed wheel limit-load rating must satisfy the relationship $L = S \times f_l$, where L is required wheel limit-load rating, S is maximum static wheel load, and f_l is the landing limit-load factor. When manufacturer drop-test data are unavailable, -2C provides:

$$f_l = 2.80 + 9{,}000 \div (W + 4{,}000)$$

In that equation, W is the certificated gross weight of the airplane.

The axle height, measured from the bottom of the tire to the axle centerline, must not exceed 130 percent of the static rolling radius of the original approved tire and wheel combination. If reduced inflation pressure is necessary to meet the limit, that pressure becomes an installation limitation and must be placarded.

Required evaluation and documentation

- Research the TCDS, specification sheet, and FAA STC database before proposing a field approval.
- Review aircraft records for prior repairs and alterations that may interact with the modification.
- Conduct an aircraft conformity inspection, including wings, tail, control surfaces, rigging, landing gear, and attachment structure.
- Evaluate tire, wheel, brake, axle, landing-gear, structural, aerodynamic, propulsion, and ground-handling effects.
- Revise the equipment list and weight-and-balance data, with the FAA recommending actual weighing for the initial installation.
- Determine forward and aft CG at empty and gross weights.
- Develop or incorporate adequate Instructions for Continued Airworthiness and reference them in Block 8 of Form 337.
- Provide an AFMS or other approved performance information when required.

Operational checks

- No passengers during operational-check flights.
- Checks conducted at maximum gross weight and at forward and aft CG conditions.
- At least two maximum-effort, nonskidding taxi turns in each direction.
- Verification that the brakes hold the airplane static against takeoff power.
- At least two short-field landings using maximum braking at maximum gross operating weight.
- Post-test inspection for tire movement, abrasion, interference, inadequate clearance, or other distress.
- Pilot logbook certification after satisfactory completion under § 91.407(b).

Potential adverse effects identified by the FAA

Ground and structural	Flight characteristics	Propulsion and systems
Reduced braking effectiveness; inability to hold takeoff power; ground-loop or nose-over tendency; axle, gear, firewall, engine-mount, and attachment loads.	Changes in trim, climb, directional stability, stall warning, stall behavior, spin entry or recovery, vibration, buffet, and go-around characteristics.	Changes to fuel flow, unusable fuel, sump and drain function, engine cooling, induction-system icing protection, and wet-runway induction performance.

Inspection and Continued Airworthiness

- Inspect landing-gear attachment areas and axles for cracks, corrosion, and damage that could induce failure.
- Use appropriate nondestructive testing. The chapter calls for dye penetrant with magnification at a minimum for the cited axle and attachment-area inspection context.
- Consider material incompatibility, hardware substitution, service environment, aircraft age, prior history, and hours flown.
- Establish increased inspection frequency when appropriate and maintain records of method and status since the last inspection.
- Address ICA before return to service and reference the ICA in Block 8 of Form 337.

Document Reorganization and Citation Mapping

The FAA inserted a new Chapter 1 for general administrative and applicability material. Every former technical chapter therefore moved forward by one number, with the new larger-tire material added as Chapter 14.

AC 43.13-2B	AC 43.13-2C
Chapter 1, Structural Data	Chapter 2
Chapter 2, Communications/Navigation/ELT	Chapter 3
Chapter 3, Antennas	Chapter 4
Chapter 4, Lighting	Chapter 5
Chapter 5, Skis	Chapter 6
Chapter 6, Oxygen	Chapter 7
Chapter 7, Rotorcraft External Loads	Chapter 8
Chapter 8, Tow Hitches	Chapter 9
Chapter 9, Shoulder Harnesses	Chapter 10
Chapter 10, Batteries	Chapter 11
Chapter 11, Instruments	Chapter 12
Chapter 12, Cargo Tiedowns	Chapter 13
Not present	Chapter 14, Larger Tires

Form 337 impact: A chapter, page, or paragraph citation copied from -2B will generally identify the wrong location in -2C. Standard descriptions of work, approved-data statements, checklists, and reusable Form 337 templates should be revised.

Updated References and Terminology

- References to an Aircraft Certification Office were modernized to the responsible Aircraft Certification Service office.
- The AC adds a Part 23 Amendment 23-64 note addressing performance-based certification and accepted means of compliance under § 23.2010.
- FAA Order 8300.16, AC 43.9-1, and other current approval and recordkeeping references were added.
- Rotorcraft external-load design references were corrected from operating-rule language to §§ 27.865 and 29.865 where appropriate.
- Wire-marking, flammable-fluid, and other cross-references to AC 43.13-1 were updated.
- Military cable and material references were updated to current MIL-DTL and related designations.
- Current TSO references were added for tires, wheels, brakes, restraints, and associated equipment.

The Part 23 note is operationally important. It explains that legacy prescriptive provisions may remain directly usable for traditional designs, but may be insufficient or inappropriate for modern designs certificated under performance-based rules. For those products, an accepted means of compliance must be selected under § 23.2010.

Material Largely Carried Forward

The technical methods in the former antenna, lighting, ski, oxygen, external-load, tow-hitch, shoulder-harness, battery, instrument, and cargo-tiedown chapters remain recognizable and are largely carried forward. Many apparent changes result from:

- Single-column reflow and expanded pagination.
- Modern paragraph numbering and explicit subsection titles.
- New purpose, hazards, warnings, and reference subsections.
- Expanded acronyms and standardized units.
- Grammar and terminology corrections.
- Replacement of outdated references and FAA organizational terms.
- Cross-reference changes caused by chapter renumbering.

Practical Implementation

For maintenance and IA work

- Use -2C citations for new alteration records and Form 337 submissions.
- Revalidate standard alteration narratives, worksheets, and approved-data statements that cite -2B.
- Update structural substantiation worksheets to the corrected 1.5g sideward and 6.6g downward values where Table 2-1 applies.
- Use Chapter 14 as the framework for eligible larger-tire field-approval packages, but first determine whether an existing STC or other approval must be used.
- Address ICA, weight and balance, operational checks, performance information, and post-test inspection early in the alteration plan.

For DME and Part 147 use

- Replace -2B chapter and paragraph references in lesson plans, projects, worksheets, tests, and oral-question banks.
- Teach the corrected structural-load example and explain why the -2B example was internally inconsistent.
- Add larger-tire alteration evaluation as a practical field-approval and documentation exercise.
- Continue emphasizing that AC applicability depends on certification basis, direct applicability, manufacturer data, and alteration classification.

Comparison Method and Sources

This analysis was produced by comparing the official 137-page AC 43.13-2B PDF with the 196-page AC 43.13-2C PDF. The review included extracted-text comparison, paragraph and chapter mapping, table-value checks, regulatory-reference checks, and visual verification of the principal affected pages and tables. Formatting-only changes were separated from changes affecting technical values, approval pathways, documentation, or operational practice.

Federal Aviation Administration. AC 43.13-2C, Acceptable Methods, Techniques, and Practices – Aircraft Alterations, issued July 29, 2026.

Federal Aviation Administration. AC 43.13-2B, Acceptable Methods, Techniques, and Practices – Aircraft Alterations, issued March 3, 2008.

Electronic Code of Federal Regulations. Title 14 CFR parts 21, 23, 27, 29, 43, 65, 91, and 133, as referenced by the advisory circulars.

Use note: This report is a technical comparison and implementation aid. For an actual alteration, use the current AC itself, applicable manufacturer data, the product certification basis, current regulations, and FAA approval guidance.

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