



ADDENDA

**ANSI/ASHRAE Addendum c to
ANSI/ASHRAE Standard 161-2018**

Air Quality within Commercial Aircraft

Approved by the ASHRAE Standards Committee on January 12, 2019; by the ASHRAE Technology Council on January 16, 2019; and by the American National Standards Institute on January 17, 2019.

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ISSN 1041-2336



ASHRAE Standing Standard Project Committee 161
Cognizant TC: 9.3 (Lead), Transportation Air Conditioning and
4.3 (Co-Cognizant), Ventilation Requirements and Infiltration
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FOREWORD

Addendum c corrects an error in Section 8.6, "Hydraulic Fluid," item (b) under "Design," that refers to TCPs in hydraulic fluids (as TCPs are not added to hydraulic fluids). Also, in Section 8.6 and Section 8.7, "Engine Oil," the text is generalized to apply to reportable hazardous ingredients, and the relevant reference is updated.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike-through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum c to Standard 161-2018

Revise Section 8.6 as shown. The remainder of Section 8.6 is unchanged.

8.6 Hydraulic Fluid. See also Section 8.2.

Control Measures

Design	<p>a. Design measures that minimize the potential for hydraulic fluid entering the aircraft air supply systems through the APU or engines should be evaluated. Such measures include an assessment of the robustness of hydraulic fluid lines/clamps, of the durability of high-pressure fittings and clamps that hold hydraulic system lines, and of the reservoir-fill system design to reduce the possibility of overfilling. Based on this evaluation, appropriate measures to reduce the likelihood of hydraulic fluid or mist entering the cabin and flight deck air supply systems should be implemented.</p> <p>b. <u>Safety Data Sheet (SDS) information on the content of hazardous ingredients (defined in 29 CFR 1910.1200²⁶) individual isomers of TCPs in hydraulic fluids used in the airline industry shall be made available to crew members and ground workers that may be working in the aircraft as required by Title 29 CFR Section 1910.1200 (1996). Hydraulic fluids</u> Products with reduced content of those hazardous ingredients or the TCPs that still provide the required performance characteristics for the specific application should be selected.</p>
Maintenance	Hydraulic fluid reservoirs shall not be overfilled during servicing.

Revise Section 8.7 as shown. The remainder of Section 8.6 is unchanged.

8.7 Engine Oil. See also Section 8.2.

Control Measures

Design	<p>a. Engine design features that minimize the potential for engine oil and/or its byproducts to enter the cabin and flight deck air supplies shall be evaluated and implemented, where possible, on new and current engine designs. Such measures include, but are not limited to, the design of more robust oil seals and improved oil reservoir design to include a placard at each servicing point with specific instructions not to overservice and to prevent spillage.</p> <p>b. <u>SDS information on the content of hazardous ingredients (defined in 29 CFR 1910.1200²⁶) individual isomers of TCPs in engine oils used in the airline industry shall be made available to crew members and ground workers that may be working in the aircraft as required by Title 29 CFR Section 1910.1200 (1996). Engine oils</u> Products with reduced content of those hazardous ingredients or the TCPs that still provide the required performance characteristics for the specific application should be selected.</p>
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Add a new reference to Section 11 as shown. The remainder of Section 11 is unchanged.

11. REFERENCES

25. OSHA. 2012. U.S. Occupational Safety and Health Administration, Department of the Labor Code of Federal Regulations Title 29, Standard 1910.1200: Washington, DC.

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

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The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

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