

Doc 9977
AN/489



Manual on Civil Aviation Jet Fuel Supply

Approved by the Secretary General
and published under his authority

First Edition — 2012

International Civil Aviation Organization

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Published in separate English, Arabic, Chinese, French, Russian
and Spanish editions by the
INTERNATIONAL CIVIL AVIATION ORGANIZATION
999 University Street, Montréal, Quebec, Canada H3C 5H7

For ordering information and for a complete listing of sales agents
and booksellers, please go to the ICAO website at www.icao.int

First edition 2012

Doc 9977, *Manual on Civil Aviation Jet Fuel Supply*

Order Number: 9977

ISBN 978-92-9249-105-5

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AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

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FOREWORD

The aim of the manual is to inform aviation and petroleum industries globally about the existence of internationally accepted petroleum and aviation industry fuel practices and to reinforce the need for compliance with them. In addition to informing future work for aviation fuel quality issues, the development of this manual has highlighted the importance of appropriate knowledge throughout the fuel supply chain.

Therefore, the manual acts as a “signpost” document to the relevant industry practices, covering all matters related to aviation fuel quality control, operations and training across the entire supply and distribution system, from refinery to aircraft. Future editions of this manual will consider the inclusion of more signposting information, including areas of training and organizational competence. Technical reviews will continue to be undertaken of any relevant changes in the aviation and/or petroleum industries, as well as methods for verification of organizational competence, appropriate to the industries.

This manual is not associated with any one specific ICAO Annex. The use of “shall” in several places is quoted from, or makes reference to, text that appears in industry standards or national safety regulations only and is not used in the context of ICAO Standards and Recommended Practices (SARPs). Where the word “shall” is used there is a footnote reference provided by the IATA Technical Fuel Group (TFG).

The manual was developed by ICAO from material drafted by a task force of IATA's Technical Fuel Group, in coordination with the Airports Council International (ACI) and Airlines for America (A4A). The membership of the TFG's task force is listed in Appendix 1, and their contribution is acknowledged.



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GLOSSARY

ACRONYMS

ACI	Airports Council International
AFQRJOS	Aviation Fuel Quality Requirements for Jointly Operated Systems
API	American Petroleum Institute
ARP	Aerospace Recommended Practice
AS	Aerospace Standard
ASTM	American Society for Testing and Materials (now called ASTM International)
ATA	Air Transport Association of America Inc. (now called Airlines for America (A4A))
A4A	Airlines for America
CEN	European Committee for Standardisation
COA	Certificate of Analysis
CSA	Canadian Standards Association
EI	Energy Institute
EQA	External Quality Assurance schemes
GOST	Russian National Standard
HM	Hydrocarbon Management
IATA	International Air Transport Association
IATA TFG	IATA Technical Fuel Group
IEC	International Electrotechnical Commission
IFQP	IATA Fuel Quality Pool
ISO	International Organization for Standardization
JIG	Joint Inspection Group
PSPs	Policies, Standards and Procedures
PTC	Periodic Test Certificate
QMS	Quality Management System
RC	Release Certificate
RCQ	Refinery Certificate of Quality
RP	Recommended Practice
RTC	Recertification Test Certificate
SAE	SAE International
SARPs	Standards and Recommended Practices (ICAO)
SMS	Safety Management System
UK AFC	United Kingdom Aviation Fuels Committee
UK MOD	United Kingdom Ministry of Defence

DEFINITIONS

Fuel contamination. For the purpose of this document, fuel that is cross-contaminated by other products, including other fuel grades or additives, that could put the fuel off-specification; contains unacceptable levels of particulates or water — fails the visual clear and bright check or exceeds the cleanliness limits set out in *IATA Guidance Material for Aviation Turbine Fuels Specifications*, Part III, *Cleanliness and Handling*; or contains unacceptable levels of microbiological growth — see Chapter 3, 3.7.

Fuel quality. A degree or level of confidence that fuel provided meets the requirements of the appropriate fuel specification, and end-user purpose, in terms of specification and cleanliness.

Quality

Control. A system of maintaining standards in manufactured products by testing a sample of the output against the specification.

Assurance. A systematic monitoring and evaluation of the various aspects of a project, service or facility to maximize the probability that minimum standards of quality are being attained.

Management. A systemic integration of planning, quality control, quality assurance and process improvement in order to achieve a desired or improved output.

PUBLICATIONS

(referred to in this manual)

ICAO PUBLICATIONS

Annexes to the Convention on International Civil Aviation

Annex 6 — *Operation of Aircraft*

Part I — *International Commercial Air Transport — Aeroplanes*

Part II — *International General Aviation — Aeroplanes*

Part III — *International Operations — Helicopters*

Annex 8 — *Airworthiness of Aircraft*

Annex 14 — *Aerodromes*

Volume I — *Aerodrome Design and Operations*

Manuals

Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335)

Manual on Certification of Aerodromes (Doc 9774)

Safety Management Manual (SMM) (Doc 9859)

PUBLICATIONS OF OTHER STATES OR ORGANIZATIONS

Airlines for America (A4A) (formerly Air Transport Association of America Inc. (ATA))

Airport Fuel Facility Operations and Maintenance Guidance Manual

ATA Specification 103 *Standard for Jet Fuel Quality Control at Airports*

Airports Council International (ACI)

Airside Safety Handbook

American Petroleum Institute (API)

API RP 1543 *Documentation, Monitoring and Laboratory Testing of Aviation Fuel During Shipment from Refinery to Airport*

API RP 1595	<i>Design, Construction, Operation, Maintenance, and Inspection of Aviation Pre-Airfield Storage Terminals</i>
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ASTM International

ASTM D1655	<i>Standard Specification for Aviation Turbine Fuels</i>
ASTM D4057	<i>Standard Practice for Manual Sampling of Petroleum and Petroleum Products</i>
ASTM D4306	<i>Standard Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination</i>
ASTM D6299	<i>Standard Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance</i>
ASTM D6469	<i>Standard Guide for Microbial Contamination in Fuels and Fuel Systems</i>
ASTM D6708	<i>Standard Practice for Statistical Assessment and Improvement of Expected Agreement between Two Test Methods that Purport to Measure the Same Property of a Material</i>

Energy Institute (EI)

Guidance on development, implementation and improvement of quality systems in petroleum laboratories

Guidelines for the investigation of the microbial content of petroleum fuels and for the implementation of avoidance and remedial strategies

Multi-product pipelines: minimum criteria to determine additive acceptability

EI HM 50	<i>Guidelines for the cleaning of tanks and lines for marine tank vessels carrying petroleum and refined products</i>
EI IP 475	<i>Petroleum liquids — Manual sampling (ISO 3170:2004)</i>
EI/JIG Standard 1530	<i>Quality assurance requirements for the manufacture, storage and distribution of aviation fuels to airports¹</i>
EI 1540	<i>Design, construction, operation and maintenance of aviation fuelling facilities</i>
EI Standard 1541	<i>Performance requirements for protective coating systems used in aviation fuel storage tanks and piping</i>
EI 1550	<i>Handbook on equipment used for the maintenance and delivery of clean aviation fuel</i>
EI 1560	<i>Recommended practice for the operation, inspection, maintenance and commissioning of aviation fuel hydrant systems and hydrant system extensions²</i>

1. To be published in the second quarter of 2013.

2. To be published in the first quarter of 2013.