

Handling of Alternative Jet Fuels (ASTM Specification D7566) for Aircraft

December 10, 2015	First Issue (KOKU-KU-KI-982)
September 29, 2016	Amended (KOKU-KU-KI-5015)
February 3, 2020	Amended (KOKU-KU-KI-1718)

Airworthiness Division, Aviation Safety and Security Department
Japan Civil Aviation Bureau
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Alternative jet fuels are being developed using algae, urban garbage, non-edible plants, etc. as raw materials. In particular, those that can be used as they are in operation if they are mixed with conventional jet fuels (Jet A or Jet A-1 fuels) (so-called drop-in type) are now in the practical stage.

In ASTM specification D7566 for jet fuels including synthetic fuels such as alternative jet fuels, specifications corresponding to the refining methods of synthetic fuels are specified as Annexes.

Example:

Annex 1: Fischer-Tropsch Hydroprocessed Synthesized Paraffinic Kerosine (FT-SPK)

Annex 2: Synthesized Paraffinic Kerosine from Hydroprocessed Esters and Fatty Acids (such as vegetable oils, etc.) (Bio-SPK or HEFA)

Annex 3: Synthesized Iso-Paraffins from Hydroprocessed Fermented Sugars (SIP)

Annex 4: Synthesized Kerosine with Aromatics Derived by Alkylation of Light Aromatics from Nonpetroleum Sources (SPK/A)

Annex 5: Alcohol-to-Jet Synthetic Paraffinic Kerosene (ATJ-SPK)

In the same specification, if these synthetic fuels are blended with conventional jet fuel (Concentrations (volumetric concentrations) of additional synthetic fuels are limited in each Annex) and it is confirmed that the blended fuel conforms to the specification for conventional jet fuel (Jet A or Jet A-1 fuel), the blended fuel may be treated in the same manner as conventional jet fuel.

In light of this, ASTM specification D7566 for aviation turbine fuels shall be handled as follows with regard to the operational limitations related to the fuel specifications for aircraft and engines that are stipulated from the viewpoint of safe operation of aircraft.

Based on ASTM specification D7566, synthetic fuels that meet Annexes of the specification that are blended with conventional jet fuels within the limits of Annexes of this specification, and that meet the jet fuel specification (Jet A or Jet A-1 fuel) specified in Table 1 of ASTM D7566, and that are regarded as ASTM D1655 fuels, may be used for aircraft and engines that ASTM D1655 Jet A or JetA-1 fuels are specified as

the operational limitation.

Provided, however, that this shall not apply to when a person who has obtained the type approval, etc. of individual aircraft or engine separately prohibits the use of such synthetic fuels.

Supplementary Provisions

1. This Circular shall be effective on December 10, 2015.

Supplementary Provisions (September 29, 2016)

1. This Circular shall be effective on September 29, 2016.

Supplementary Provisions (February 3, 2020)

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