



MANDATORY PERMIT DIRECTIVE

Number: 2026-001

Issue date: 05 January 2026



In accordance with article 41(1) of the Air Navigation Order 2016 as amended the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

Design Approval Holder's Name:

Rolls-Royce, de Havilland, Motorlet, Ivchenko

Type/Model Designation(s):

Rolls-Royce Avon series,
Rolls-Royce Viper series,
Rolls-Royce Orpheus series,
Rolls-Royce Nene series,
Rolls-Royce Derwent series,
Rolls Royce Adour series,
Rolls Royce Pegasus series,
de Havilland Goblin series,
de Havilland Ghost series,
Motorlet M701 series,
Ivchenko AI-25 series

Effective Date:	19 January 2026
TADS/Modification Number(s):	N/A
Foreign AD / MPD (if applicable):	N/A
Supersedure:	This MPD Supersedes MPD 2016-001 R1 dated 20 February 2017

ATA 73 – Engine Fuel and Control – Fuel System Elastomerics – Inspect For Ageing Effects

Manufacturer(s):

Rolls-Royce, de Havilland, Motorlet, Ivchenko

Applicability:

Turbine engines of the following types fitted to ex-military jet aircraft:

Rolls-Royce Avon series,
Rolls-Royce Viper series,
Rolls-Royce Orpheus series,
Rolls-Royce Nene series,
Rolls-Royce Derwent series,
Rolls Royce Adour series,
Rolls Royce Pegasus series,
de Havilland Goblin series,
de Havilland Ghost series,
Motorlet M701 series,
Ivchenko AI-25 series

Definitions:

Unsafe condition: For the purposes of this MPD unsafe is a “severe” failure of an elastomeric component such that continued safe flight and landing would be prevented.

Elastomerics: Any components in the engine fuel and/or engine ancilliary fuel control systems which contain or are constructed partly or fully from rubber, be it natural or synthetic.

Reason:

During an investigation following an accident involving a turbojet powered aircraft in 2015, the CAA were notified of significant deterioration in a rubber coated diaphragm used in the fuel pump of an engine fuel system. While not being considered a factor in the accident, the deterioration observed has been attributed by the engine manufacturer to ageing, chemical attack and air exposure.

Such components were not lifed by the original manufacturer, since the extended calendar times in service now experienced in civil operation were not envisaged for the original military operation.

Once fitted to an engine, the life of rubber or rubber coated seals and diaphragms can be affected by various factors including fuel type, operating environment, compression load and time. Stale fuel in contact with diaphragms and seals over long periods with the aircraft parked or stored causes attack of rubber parts due to reaction with the material.

Draining of fuel away from diaphragm and seal faces during periods of inactivity also leads to air exposure, loss of plasticity and subsequent cracking.

During periods of inactivity, it is therefore important that regular running and/or inhibiting of fuel systems is carried out in accordance with the manufacturer’s instructions. Note that many manufacturers specify the need for action to protect the fuel system after as little as 1 month of inactivity.

Failure of an elastomeric component within a fuel system unit could lead to interruption of the fuel supply to the engine and therefore to partial or total engine failure. This unsafe condition, if not corrected, could lead to an emergency landing or the need to abandon the aircraft.

In response to the above, MPD 2016-001 was raised which required a review of records of ageing fuel systems used on ex-military gas turbine jet engines to check that fuel system protection has been carried out in accordance with the manufacturer’s instructions.

MPD 2016-001 was later revised to require the identification of any actions necessary as a result of “significant” failures and the provision of any necessary crew information. This action was added to the MPD as it was considered that while “significant” failures are not unsafe conditions, in order to maintain an appropriate level of safety, they may still require crew actions to mitigate the failures.

This MPD has been raised to update the applicability to include the Rolls Royce Adour series of engines, and the Rolls Royce Pegasus series of engines.

Required Action(s) and Compliance Time(s):

Required as indicated by this MPD, unless the action(s) required by this MPD have been already accomplished.

- 1) For any applicable turbine engine with calendar time greater than 20 years since last overhaul, within 1 month or 10 flying hours from the effective date of this MPD, whichever limit is reached first, examine the engine records subsequent to the release from military service and record evidence found of:
 - a) regular running of the engine, shown to be at intervals and to methods in accordance with manufacturer’s instructions; and

- b) inhibition of the engine fuel system in accordance with manufacturer's instructions after any period of inactivity specified in the relevant operating manuals.

If, following examination of the records, it can be shown that the engine has been run at the specified intervals and inhibited in accordance with the manufacturer's instructions, the requirements of this paragraph can be considered to have been met and paragraphs (2), (3) and (4) are not applicable.

- 2) Following examination of the records, for any engine which cannot be shown to have been run at specified intervals and inhibited in accordance with the manufacturer's instructions, within three months from the effective date of this MPD, conduct a failure analysis of the elastomeric components in the engine fuel system units and determine the seriousness of each mode of failure. Guidance material is provided with this MPD which includes the classification of the different levels of seriousness.

If there are "severe" failures, i.e. failure of any elastomeric component within any particular fuel system unit that would prevent the aeroplane's continued safe flight and landing, paragraph (3) of this MPD is applicable.

If there are "significant" failures, i.e. failure of any elastomeric component within any particular fuel system unit that could potentially reduce the aircraft or crew's capability to cope with adverse conditions to the extent that there would be a reduction in safety margins or functional capability, an increase in crew workload or discomfort to occupants, paragraph (4) of this MPD is applicable.

Note: Such a failure analysis is considered an Alternative Method of Compliance (AMOC) and requires separate CAA acceptance. The authors of the analysis and the analysis method to be used are to be acceptable to the CAA.

- 3) If the failure analysis identifies "severe" failures, the AMOC must be enhanced and include:
 - a) Mitigation, acceptable to the CAA, of the "severe" failures.
 - b) Based on the outcome of the failure analysis, development of an ongoing aeroplane level performance monitoring programme may be required to assess deterioration within the fuel system and remove parts from service before this reaches an unacceptable level.
 - c) Based on the outcome of the failure analysis, a continuing airworthiness programme for the engine fuel system items, potentially including a programme of stripping of fuel system units, may also be required.
- 4) For any failures that are categorised as "significant", any actions required by the crew following the identification of such a failure must be defined. If such actions are not already covered by the aircraft flight manual / pilot's operating handbook / pilot's notes, supplementary information must be provided to and accepted by the CAA.
- 5) Due to the potential for age related deterioration, from the effective date of this MPD, do not install engine fuel system units which have not been stored in accordance with manufacturer's instructions and any time limits specified unless they can be demonstrated to be serviceable in accordance with a maintenance/overhaul schedule acceptable to the CAA.
- 6) Repeat the actions in paragraph (1) every 12 months and if necessary carry out the requirements in paragraphs (2), (3) and (4).

Reference Publications:

Nil

Remarks:

- [1]. Based on the extended applicability, with unchanged compliance actions, the CAA has decided to issue this MPD without consultation.
- [2]. If requested and appropriately substantiated, the CAA can approve Alternative Methods of Compliance for this MPD.
- [3]. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this MPD, and which may occur, or have occurred on a product, part or appliance not affected by this MPD, can be reported to the [CAA aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this MPD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed.
- [4]. Enquiries regarding this MPD should be referred to: ga@caa.co.uk.
- [5]. For any questions concerning the technical content of the requirements in this MPD, please contact: ga@caa.co.uk.