NOTICE OF PROPOSED AMENDMENT (NPA) NO 2011-15

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

amending Annex I (AMC to Part-M) of Decision No 2003/19/RM of the Executive Director of the Agency of 28 November 2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

'Non-binding guidance on TBO limits'

EXECUTIVE SUMMARY

The Time Between Overhauls (TBO) for certain components is part of the aircraft maintenance programme approved by the competent authorities as required by M.A.302. For smaller aviation, the first criterion considered by the authorities to set the interval for overhaul is to follow the value recommended by the aircraft/component manufacturer. Generally, this interval though is not an airworthiness limitation and, subject to certain conditions and the performance of additional maintenance actions, most authorities allow its extension since the well cared components are often in condition for safe operation. Therefore the aircraft owners may profit to postpone its overhaul. This NPA aims to establish harmonised Acceptable Means of Compliance that can be followed by operators and authorities for the extension of the overhaul of components. For this purpose, the different approaches used today by the competent authorities to extend overhaul intervals were considered to develop this NPA.

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A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending Decision 2003/19/RM of the Executive Director of 28 November 2003[1] to develop AMC material to the relevant paragraphs of Commission Regulation (EC) No 2042/2003[2] . The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) RMT.0239 (MDM.038) and is described in more detail below.

2. The European Aviation Safety Agency (hereinafter referred to as the 'Agency') is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation[3]which are adopted as 'Opinions' (Article 19(1)). It also adopts Certification Specifications, including Airworthiness Codes and Acceptable Means of Compliance and Guidance Material to be used in the certification process (Article 19(2)).

3. When developing rules, the Agency is bound to follow a structured process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'[4].

4. This rulemaking activity is included in the Agency's Rulemaking Programme for 2011. It implements the rulemaking task RMT.0239 (MDM.038).

5. The text of this NPA has been developed by the Agency, considering also replies given by the National Aviation Authorities to a questionnaire prepared by the Agency for this occasion. It is submitted for consultation of all interested parties in accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

II. Consultation

6. To achieve optimal consultation, the Agency is publishing the draft decision of the Executive Director on its Internet site. Comments should be provided within 3 months in accordance with Article 6(4) of the EASA Rulemaking Procedure. Comments on this proposal should be submitted by one of the following methods:

CRT: Send your comments using the Comment Response Tool (CRT) available at UUUU**http://hub.easa.europa.eu/crt/**

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1 Decision No 2003/19/RM of the Executive Director of the Agency of 28.11.2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks. Decision as last amended by Decision 2011/003/R of 16 May 2011.

2 Commission Regulation (EC) 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks (OJ L 315, 28.11.2003, p. 1). Regulation as last amended by Commission Regulation (EU) No 962/2010 of 26 October 2010(OJ L 281, 27.10.2010, p. 78).

3 Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1). Regulation as last amended by Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51).

4 Management Board Decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB 08-2007, 13.6.2007.

E-mail: In case the use of CRT is prevented by technical problems, they should be reported to the CRT webmaster and comments should be sent by e-mail to NPA@easa.europa.eu

Correspondence: If you do not have access to Internet or e-mail, you can send your comment by mail to:

Process Support
Rulemaking Directorate
EASA
Postfach 10 12 53
D-50452 Cologne

Comments should be submitted by **16 December 2011**. If received after this deadline they might not be taken into account.

III. Comment Response Document

7. All comments received in time will be responded to and incorporated in a Comment Response Document (CRD). The CRD will be available on the Agency's website and in the Comment Response Tool (CRT).

IV. Content of the draft Decision

8. Description of today's scenario

While in compliance with M.A.302 and M.B.301, the competent authorities from different European countries are following different approaches in respect of allowing the continued operation of aircraft once they have reached the manufacturer's recommended Time Between Overhauls (TBO) for certain components. This resulted in a non-level playing field for operators from different countries and creates difficulties for the transfer of aircraft between them. This is mainly affecting the case of piston engines installed in aircraft used for general aviation, so more emphasis has been placed in trying to standardise the processing of TBO extensions for these engines.

With the aim to know the existing approach followed in different European countries, The EASA inquired its Member States by means of a questionnaire about their national policies in respect of allowing for extension of TBOs beyond the manufacturers' recommendations. This NPA has been developed taking into consideration, among other inputs, the information provided by those countries that replied to the questionnaire: The Netherlands, Iceland, Switzerland, Estonia, United Kingdom, Finland, Austria and France. The Agency thanks them for their contribution.

Most Member States' national practices, to a lesser or greater extent, are less restrictive in terms of allowing TBOs extensions for components belonging to the smaller aircraft and for those operated privately compared to heavier or to those operated for aerial work or commercial air transport. The Agency takes the same approach with this NPA.

9. Proposed approach for this NPA:

9.1. An owner may prefer not to follow the manufacturer's recommended periods for component overhaul. The decision to deviate from the manufacturer's recommendation for TBOs may have safety, economic, operational and other implications. The Agency proposes with this NPA Acceptable Means of Compliance that, when satisfactorily followed by the owner, would lead to the extension of the TBO, if not affecting the airworthiness limitations of the product. Regardless of other considerations and in order not to reduce the level of safety, at the recommended time for component overhaul, the owner intending to exceed the manufacturer's recommended TBO should observe the following:

- The TBO extensions to be performed in accordance with this proposal are applicable to components installed in non-powered and piston engine aircraft other than complex motor-powered aircraft when not used for commercial air transport.
- In order to identify the recommended TBO, the modifications and service bulletins that may affect the components' TBO limits should be considered.
- When an AD stated that it has to be complied at the time of overhaul of a certain component, extending the TBO does not alleviate the AD completion at the time originally scheduled for the overhaul for such component.
- At the time of the component overhaul extension and before the extension is granted, affected components should be inspected in accordance with the maintenance data for obvious defects or abnormal functioning by approved organisations or competent persons and the results should be kept.
- Tests conditions and pass-fail criteria should be defined for the inspection tests before they are performed, based on the components' typical parameters provided by the manufacturer. These conditions and criteria should be part of the approved maintenance programme.
- TBO extensions will be approved and recorded by means of an update to the aircraft maintenance programme. The maintenance programme should identify additional flight hours and/or calendar time inspections required when exceeding the originally recommended TBO for the component(s), so that the aircraft can be operated safely until the new overhaul limit. The new maintenance programme should also set the new limit for the component(s) overhaul.

  Nevertheless, in the case of privately operated aircraft with a MTOM of 2 730 kg or below, indirect approval of the aircraft maintenance programme by a CAMO is possible in respect of the TBO extension as long as this is a recognised procedure in the CAME. The limited use of the aircraft for private operations should be stated in the aircraft's logbook by the organisation granting the extension and affected components should be identified on it.
- The procedure includes the possibility of two extensions of 20 % of the original TBO provided that the conditions for these extensions are satisfied.

  No further extensions are possible except for components installed in privately operated aircraft with a MTOM of 2 730 kg or below, for which there is no limit on the number of extensions, provided that the inspections assessments are positive and that there are no safety records that would recommend not to extend these intervals.

9.2. In addition to describing the steps to be followed for the TBO extension, this NPA describes some situations where the National Aviation Authority may want to consider additional precautions:

- In order to have certain knowledge of the individual aircraft before extending the TBO intervals, the text proposed allows authorities to exclude from this process those aircraft which have been registered in the Member State for less than 12 months or less than 100 flying hours.
- Authorities may not allow CAMOs to extend TBOs for relevant components if the authority has not enough experience with the aircraft type.
- Excluding TBO extensions beyond manufacturers' recommendations for components installed in aircraft involved in certain operations.
- A component that has reached the manufacturer's recommended TBO should not be installed in a different aircraft before overhauled, unless otherwise

accepted by the competent authority of the aircraft where the component would be installed.

9.3. This NPA also includes a new Appendix XIV to AMC#2 M.A.302 (d) with the expected level of inspections to be performed at the time of extending the recommended TBO in the case of a piston engine. This appendix has been developed using as a basis the instructions developed for this purpose by UK CAA, already recognised by some European countries.

V. Regulatory Impact Assessment

10. Purpose and intended effect:

a. Issue which the NPA is intended to address

The lack of harmonisation among different European authorities for the management of TBOs extensions of the components installed in aircraft not used in commercial air transport.

b. Scale of the issue

There are no such harmonised criteria accepted by the different European aviation authorities and therefore there is no level playing field in Europe in this respect. This fact also puts some aircraft owners in difficulty if the aircraft is to be registered in a different Member State. This mostly affects general aviation, particularly for piston engines.

c. Brief statement of the objectives of the NPA

This NPA is proposing some Acceptable Means of Compliance in order to set up a process that should be accepted by all European authorities for the TBOs extensions of the components of certain aircraft.

11. Options:

a. The options identified

Option 1: Do nothing

Option 2: Develop this change proposal as an Acceptable Means of Compliance to harmonise the approach to TBO extensions, taking into account current experience in the NAAs.

b. The preferred option selected is Option 2, aiming to achieve the intended objectives.

12. Sectors concerned

This NPA is proposing certain criteria as AMC considering the existing practices in EASA Member States known to the Agency. Countries with more stringent policies to extend TBOs would have to accept the request for TBO extensions when the proposed conditions are fulfilled. This will affect National Aviation Authorities.

The benefit for aircraft owners would be that this practice for the extension of TBOs is widely recognised in Europe. More than 10 000 European aircraft used in general aviation could profit from the proposed measures.

Some maintenance organisations, especially those involved in the overhaul of components, would be economically negatively impacted. On the other hand, the activity of some maintenance organisations or independent certifying staff may increase since there will be inspection required when the TBO will be extended.

Since maintenance programmes would have to be updated, some CAMOs and aviation authorities may also increase their activity.

13. Impacts

a. All identified impacts

i. Safety

Option 1 has evidently no impact. Since Option 2 is not going beyond national practices which are providing safe standards in some European countries, it is believed that its harmonisation across Europe will not impact safety negatively.

ii. Economic (analysis for Option 2)

Depending mainly on the aircraft utilisation, extending TBOs may or may not reduce the costs of operating an aircraft. Aircraft owners should assess this impact before deciding on it. But in any case it would be a voluntary decision and may reduce operating costs for many owners.

Maintenance organisations overhauling components will certainly lose revenues derived from components overhauls.

Other maintenance organisations, independent certifying staff and CAMOs may be slightly positively impacted since they may gain some activity because of the inspections required for the overhaul extension.

iii. Environmental

None

iv. Social

A minor number of negatively impacted maintenance organisations may reduce their staff in the medium or long term if they cannot re-orientate their business.

If operating costs of the aircraft are reduced, this may have a positive effect on the development of light aircraft activity, with positive consequences for the industry.

v. Other aviation requirements outside the EASA scope

None.

b. Equity and fairness in terms of distribution of positive and negative impacts among the concerned sectors

Option 2 is believed to have no relevant safety, environmental or social impact. Negative economic impact will be on certain maintenance organisations that will lose some revenues, but the most direct effect will be savings for aircraft owners, being a cheaper overall maintenance system. Other stakeholders are not that much impacted. Aircraft owners will benefit of a European harmonised approach to the extension of overhauls for the aircraft affected.

14. Summary and final assessment:

a. Comparison of the positive and negative impacts for each option evaluated.

See 13.

b. A summary describing who would be affected by these impacts and analysing issues of equity and fairness.

See 13.

c. Final assessment and recommendation of the preferred option

Considering the above statements, the Agency proposes Option 2 as it is expected to enhance harmonisation of TBO extensions across Europe and promote general aviation activity.

B. Draft Decision

The text of the amendment is arranged to show deleted text, new text or new paragraph as shown below:

1. deleted text is shown with a strike through: ~~deleted~~
2. new text is highlighted with grey shading: new
3. … indicates that the remaining text is unchanged in front of or following the reflected amendment.

1) A new AMC, AMC#2 M.A.302 (d) is added:

AMC#2 M.A.302 (d) — Time Between Overhauls

1. When the instructions for continuing airworthiness referred to in M.A.302 (d) (ii) contain overhaul intervals for components, typically referred to as Time Between Overhauls (TBO), they should be taken into account when developing the aircraft maintenance programme. Unless paragraph 2 or 3 is followed, TBO values established by the design approval holder[5] (DAH) should apply. TBOs included in the Airworthiness Limitations Section or otherwise mandated by the Agency cannot be deviated from. TBOs are normally defined in terms of calendar time and/or operating or flying hours/cycles/landings, whichever occurs first.
   Intervals proposed by the DAH as TBOs may be different for different variants of the component and for components with changes or service bulletins embodied.

2. In accordance with M.A.302 (d) (iii), the owner or the CAMO managing the aircraft maintenance programme may propose different intervals for overhauling the components (TBO** from now on) compared to those TBOs proposed by the DAH (TBO* from now on), except in the case of periods affecting Airworthiness Limitations.

   For non-powered and piston engine aircraft other than complex motor-powered aircraft that also satisfy the additional considerations of paragraph 3, in order to obtain the approval of a different overhaul interval compared to the one established by the DAH, the following should be observed:

   a) At the TBO* the component should be inspected (and possibly testing, depending on the type of component) by an appropriately rated maintenance organisation in accordance with the maintenance data for obvious defect or abnormal functioning.

      When permitted by M.A.802, these inspections may also be performed by M.A.801 (b) 2 certifying staff.

   b) For piston engines, this inspection should satisfy Appendix XIV to this AMC#2.
   c) Based on the components' typical parameters provided by the DAH's manuals, inspection standards and tests conditions as well as pass-fail criteria should be stated before the component is inspected. These standards, conditions and criteria should be considered part of the aircraft maintenance programme.
   d) During the inspection, all component's parts identified by the DAH for replacement at TBO* should be individually inspected, replacing them if necessary.
   e) The results of the inspection should be considered as maintenance records by the maintenance organisation and should be conclusive. A copy of the inspection results should be provided to the aircraft owner.
   f) Airworthiness Directives affecting the component and required to be completed at the time of the overhaul should be completed not later than TBO*.

[5] Type certificate, Supplemental Type Certificate or repair design approval holder as applicable

g) If the inspection is satisfactory and there is no reason to believe that the component will not function as intended (e.g. consideration should be given to past occurrences affecting the individual aircraft), the TBO** will be reflected in the aircraft maintenance programme together with any additional maintenance action identified as necessary so that the component can continue to be operated safely until that time. As a minimum, another conclusive inspection should be programmed when 50 % of the extended interval ((TBO** – TBO*)/2) is reached. TBO** should not exceed 20 % of TBO* in calendar time or operating hours, whichever comes first.

h) At TBO**, a second extension (TBO**2 from now on) of a maximum of 20 % of TBO* may be granted when conditions a) to g) are similarly met.

i) No further overhaul extension should be allowed except for components fitted on privately operated aircraft with a MTOM of 2 730 kg or below, for which there is no limit on the number of extensions (20 % of TBO* each) to be sought when conditions a) to g) are similarly met. In this case, at the time of the third TBO extension, the fact that the aircraft is privately operated should be stated in the aircraft's continuing airworthiness records (e.g. aircraft logbook). The components affected should also be recorded.

j) Based on the results of the inspection, the aircraft maintenance programme updates containing TBO extensions should be approved by the competent authority. Alternatively, the maintenance programme may be approved in accordance with the M.A.302 (c) indirect approval procedure for privately operated aircraft with a MTOM of 2 730 kg or below.

3. Additional considerations:

a. TBO extensions in accordance with this AMC#2 should not be considered for components installed in aircraft used in commercial air transport or training activities, for components linked to IFR operations and for components for which their normal serviceable condition could be affected because of the aircraft's utilisation/typical environment (e.g. engine on an aircraft used for towing or aerobatic flights or components affected by the operation of the aircraft in highly corrosive environment).

b. A component with an extended TBO should not be installed in a different individual aircraft unless agreed by the competent authority of the Member State of Registry.

4. For aircraft covered by paragraph 2, alternatively to the maintenance programme containing scheduled overhauls of the components, the competent authority may accept, at the beginning of the component's life, a maintenance programme based on trend monitoring and analysis of these trends, together with component rejection criteria. Competent authorities should accept this approach based on a positive opinion of the DAH or when having enough knowledge and history record of the subject component, considering also the particular circumstances (e.g. intended utilisation) of the individual aircraft.

2) A new GM, GM M.B.301(c) is added:

GM M.B.301 (c) — Maintenance programme

In respect of the extension of the TBOs mentioned in AMC#2 M.A.302 (d):

1. the competent authority may decide not to extend the component's TBO when the individual aircraft has been under its register for less than 12 months or has flown under that registration for less than 100 flying hours. If necessary, CAMO procedures allowing maintenance programme indirect approval should be limited accordingly..

2. for aircraft types for which the competent authority considers itself not having enough experience, it may decide not to allow CAMOs to use the indirect approval procedure for the extension of TBOs.

3) A new appendix, Appendix XIV to AMC#2 M.A.302 (d) is added:

Appendix XIV to AMC#2 M.A.302 (d) — Inspection to Time Between Overhauls

Piston engine maintenance requirements for operation beyond design approval holders' recommended overhaul periods

1 Subject

This appendix gives guidance on the procedures needed for a piston engine to be accepted as being in a condition allowing operation beyond the recommended overhaul period. Refer to AMC#2 M.A.302 (d).

2 Introduction

A piston engine that has reached the end of its normal overhaul period may be expected to have suffered some wear to cylinders, pistons, valves, bearings and other moving parts, but an engine that has been carefully operated and maintained may still be in a condition suitable for a further period of service.

2.1 Many factors affect the wear that takes place in an engine. The most important of these include: the efficiency of the air intake filter; the techniques used in engine handling, particularly during starting; the quality of the fuel and oil used in the engine; and the conditions under which the aircraft is housed when not in use. Conditions of operation are also relevant; the length of flights; the atmospheric conditions during flight and on the ground; and the type of flying undertaken. Many of these factors are outside the duties of the maintenance engineer, but meticulous compliance with the approved maintenance programme and any instructions provided in the form of service bulletins or DAH's recommendations will undoubtedly help to prolong the life of an engine.

2.2 The inspections and tests that may be necessary to assess the condition of an engine in compliance with AMC#2 M.A.302 (d) are detailed in the following paragraphs.

3 Inspection and maintenance

A number of items included in the normal scheduled maintenance of an engine may be repeated to determine the condition of an engine at the end of its normal overhaul period, and additional inspections may also be specified.

3.1 External condition

The engine should be examined externally for obvious defects such as a cracked crankcase, excessive play in the propeller shaft, overheating and corrosion, which would make it unacceptable for further use.

Special attention should be drawn to the cables, plugs, connectors and sensors of engines equipped with electronic control systems regarding improper mounting, shaving, worn contacts, and other kind of damage. Worn or damaged parts have to be repaired/replaced according to the Design Approval Holder's (DAH) instructions.
External tubes and houses should be checked and if necessary replaced in accordance with the DAH's instructions.

3.2 Internal condition

Significant information concerning the internal condition of an engine may be obtained from an examination of the oil filters and magnetic plugs, for metal particle contamination. These checks may be sufficient to show that serious wear or breakdown has taken place and that the engine is unacceptable for further service.

3.3 Oil consumption

Since the oil consumption of an engine may have increased towards the end of its normal overhaul period, an accurate check of the consumption over the last 10 flying hours would show whether it is likely to exceed the maximum recommended consumption by the DAH, if the overhaul period were to be extended.

3.4 Compression check

Piston ring or cylinder wear, or poor valve sealing could, in addition to increasing oil consumption, result in a significant loss of power. A cylinder compression check should be carried out in accordance with the DAH's recommendations.

The usual method of checking engine compression is the differential pressure test. In this test a regulated air supply (normally 560kPa (80 lbf/in^2)) is applied to each cylinder in turn and a pressure gauge is used to record the actual air pressure in the cylinder. Since some leakage will normally occur, cylinder pressure will usually be less than the supply pressure and the difference will be an indication of the condition of the piston rings and valves. By listening for escaping air at the carburettor intake, exhaust and crankcase breather, a defective component may be located. It is usually recommended that the differential pressure test is carried out as soon as possible after running the engine.

4 Power output of aeroplane engines

The power developed by an aeroplane engine after initial installation is established in the form of a reference engine speed, which is recorded in the appropriate logbook so that a comparison can be made during subsequent power checks. The reference engine speed is the observed engine speed obtained using specified power settings and conditions corrected, by means of graphs supplied by the engine DAH, to the figure which would be obtained at standard sea-level atmospheric temperature and pressure; changes in humidity do not produce large changes of power and are ignored for the purpose of establishing a reference engine speed or subsequently checking engine power. Power checks should be corrected in the same way.

4.1 Power checks

The majority of light aeroplane piston engines are air-cooled and rely on an adequate flow of air for proper cooling of the cylinders. This condition can only be obtained during flight and ground runs should therefore be as brief as possible.

Cooling can be assisted by facing the aircraft into wind, but high wind conditions must be avoided when making power checks, as they will significantly affect the results obtained. Before running the engine at high power the normal operating temperatures should be obtained (not the minimum temperatures specified for operation) and during the test careful watch should be kept on oil and cylinder temperatures to prevent the appropriate limitations being exceeded.

4.1.1 Normally-aspirated engines are tested at full throttle and, where a controllable-pitch propeller is fitted, with fully fine pitch selected. The changes in barometric pressure affecting engine power are considered to be balanced by changes in propeller load, so

that only temperature correction is necessary. This correction factor may be obtained from a graph supplied by the engine DAH. The observed full throttle speed multiplied by the correction factor will give the corrected speed.

4.1.2 Although normally-aspirated engines are often fitted with variable-pitch propellers, the engine speed obtained at full throttle is usually less than the governed speed and the propeller remains in fully fine pitch. With supercharged engines, however, the propeller is usually governed to a constant speed at high power settings and small changes in power will not affect engine speed. The power of a supercharged engine is, therefore, checked by establishing a reference speed at prescribed power settings.

a) Since a supercharged engine is run at a specified manifold pressure regardless of the atmospheric pressure, corrections must be made for both temperature and pressure variations from the standard atmosphere.

b) The procedure is to run the engine until normal operating temperatures are obtained, open up to maximum take-off manifold pressure, decrease power until a fall in engine speed occurs (denoting that the propeller blades are on their fine pitch stops), then throttle back to the manifold pressure prescribed by the DAH and observe the engine speed obtained.

c) The correction factor to be applied to the observed engine speed of a supercharged engine may be obtained from graphs supplied by the engine DAH.

4.1.3 Although the engine speed obtained during a check of engine power is corrected as necessary for atmospheric temperature and pressure, no correction is made for humidity, ambient wind conditions or instrument errors and, consequently, the corrected engine speed is seldom exactly equal to the reference speed even if the engine condition is unchanged. However, engine power may usually be considered satisfactory if the corrected speed obtained during a power check is within 3 % of the reference speed.

4.1.4 If it is not possible to assess power deterioration by means of a power check (e.g. due to fitting a different propeller), a rate-of-climb flight test should be carried out.

5 Power output of helicopter engines

The power developed by the engine of a single-engine helicopter is considered to be adequately checked during normal operations; any loss of power should be readily apparent. It is thus not considered necessary to check the power output of a helicopter engine separately specifically for the purpose of complying with this annex.

6 Power loss

If the power check (paragraph 4) or normal engine operation reveal an unacceptable loss of power or rough running, it may be possible to rectify this by carrying out certain normal servicing operations or by replacement of components or equipment. The replacement of sparking plugs, resetting of tappets or magneto contact breaker points, or other adjustments to the ignition or carburation systems, are all operations that may result in smoother running and improve engine power.

7 Servicing

If the engine proves to be suitable for further service, a number of servicing operations will normally be due in accordance with the approved maintenance programme. Unless carried out previously (paragraph 6), these operations should be completed before the engine is returned to service.

8 Logbook entries

A record of the checks made, and any rectification or servicing work, must be entered and certified in the engine logbook before the engine is cleared to service for its recommended or extended life under the provision of AMC#2 M.A.302 (d). The logbook entry made should also specify any restriction on further use (refer to AMC#2 M.A.302 (d)).

9 Maintenance programme amendments

The aircraft maintenance programme should reflect the maintenance tasks required and their periodicity to operate the aircraft engine beyond its recommended overhaul period as detailed in AMC#2 M.A.302 (d).