REVALIDATING YOUR AIRCRAFT'S PERMIT TO FLY

TL 2.00
ISSUE 7
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INTRODUCTION

Every aircraft flying on a Permit to Fly in the UK needs a regular check to help ensure that the aircraft remains airworthy and in a fit state for further flights. Just like a car and its annual MOT test, it's the owner's responsibility to keep the aircraft airworthy throughout the year, with an LAA Inspector checking the aircraft annually to review the owner's good care of the aircraft and if necessary, advising the owner where remedial action is needed.

From 15 April 2025, the LAA's Permit to Fly revalidation process has been modernised to use an online submission system, in order to streamline the process for Owners and Inspectors, as well as reducing application review times and LAA staff workload. This includes the pre-population of certain information fields with centrally held aircraft data and data from previous revalidations. The process makes use of automation to identify which applications require attention from LAA Engineering. On 22 July 2025, the system was updated to include both amateur-built and factory-built gyroplanes.

RELATED DOCUMENTS

TL 1.22 – Finding an Inspector
TL 2.02 – Paperwork Checklist
TL 2.11 – Aircraft Placards, Labels and Registration marks
TL 2.19 – Generic Maintenance Schedule
TL 2.33 – Inspector Categories for Types
Form LAA/AR-REF (FIXED WING)– Airworthiness Review Reference Guide
Form LAA/AR-REF (GYROPLANE)– Airworthiness Review Reference Guide
Form LAA/AR-REF (FBG)– Airworthiness Review Reference Guide
Form LAA/CFS-1 (FIXED WING) – Airworthiness Check Flight Schedule
Form LAA/CFS-1 (GYROPLANE) – Airworthiness Check Flight Schedule
Form LAA/PFRC-1 - Permit Flight Release Certificate

PROCESS

The different steps of the Permit to Fly revalidation process can be accessed through the Member Area of the LAA website. Owners and Inspectors can create a unique username and password to log in to the Member Area. If difficulties arise in logging in or creating a user account, please contact office@laa.uk.com.

Note that when using the online system for the first time, a check flight must have been carried out on the aircraft in the three months prior to the application being submitted. Thereafter, subsequent check flights may be carried out as described on page 4.

The process is based around three main steps, two of which are completed by the Owner and one by the Inspector. The Owner starts the process, as outlined below, once they have talked to their chosen Inspector and agreed for them to inspect the aircraft:

Step 1: Inspector Selection: An Owner starts the revalidation process by going to the '*My Aircraft Data*' section of the Member Area. Once the relevant aircraft tab is selected, the button '*Apply for Revalidation*' will be displayed next to the Certificate of Validity expiry date. This will lead to the Inspector Selection page, where an Inspector can be selected from the drop-down list. Note: This is not a notification service, it serves to tell the LAA which Inspector should have access to Step 2. An Inspector should only be selected if they have agreed to carry out the inspection. An Inspector only appears in the list if they have the appropriate approval category for that aircraft type.

Step 2: Airworthiness Review: Once an Inspector is selected, they will receive an email to let them know that an application is awaiting their review. They will have immediate access to the Airworthiness Review, where the aircraft and inspection details can be provided by the Inspector. This page can only be accessed by the selected Inspector through the '*My Revalidations*' section of their Member Area. Note: Inspectors must complete this step within 1 month of the last day of the physical survey.

Step 3: Owner's Declaration and Payment: After the Airworthiness Review is submitted by the Inspector, the Owner will receive an email to let them know. Owners then go back to '*My Aircraft Data*' to continue the revalidation. In this final submission, Owners will confirm the details of the latest check flight, accept the Owner's declarations and pay their application fee. The Owner must submit this last part of the application within 3 months of the last day of the Airworthiness Review physical survey.

You can view a **step-by-step video** of the process to guide you HERE.

A table with the timings for different stages of the process can be found in Appendix 4.

Once an owner completes the last step, the application will be instantly submitted to LAA Engineering, where automatic checking will determine if the Certificate of Validity is ready to be issued or if further Engineering review is required. Any relevant queries will be sent directly to the Owner and Inspector via email (including request for worksheets if necessary).

For aircraft with multiple Owners, note that only the 'Primary Contact' of the aircraft will be able to carry out the revalidation process. Prior to starting the revalidation process, make sure that the appropriate person is named as the 'Primary Contact': this is indicated by the '*Apply for Revalidation*' button being available in their '*My Aircraft Data*' section. The Certificate of Validity itself will be emailed to the 'Primary Contact'. If you wish to find out the name of, or change, your 'Primary Contact,' please get in touch with LAA Engineering.

For aircraft with 'Corporate Member' Owners, the representative of the organisation will need to log in to the account associated with the Corporate Membership.

In order to keep Owners and Inspectors informed through the process, the following emails will be sent at the end of each stage, containing confirmations of submission and next steps:

1. Once the Inspector Selection is submitted, the Owner will receive a confirmation email. The selected Inspector will receive an email notifying them that an Airworthiness Review is awaiting their attention.

2. After submission of the Airworthiness Review, the Inspector will receive a confirmation email with a PDF copy of the Airworthiness Review. The Owner will receive an email prompting them to continue the revalidation process.

3. Once payment is made, the Owner will receive an email confirmation with a PDF copy of the complete revalidation application, including the Airworthiness Review.

Please note that the system-generated emails may sometimes fail to deliver or get stuck in the 'spam' or 'junk' inbox. These emails act as a prompt only, so the revalidation can always be continued from 'My Revalidations' or 'My Aircraft Data' directly.

CERTIFICATE OF VALIIDITY EXPIRY DATE

A Certificate of Validity is issued by the CAA system when requested by LAA at the end of the revalidation process. The expiry date of this certificate is one year minus a day from the date of issue, except that if the issue date is not more than a calendar month prior to the expiry of the previous certificate, the anniversary of the expiry date is preserved.

For instance, if a certificate expires 15/11/23 then if the new certificate is issued between 15/10/23 and 15/11/23, its expiry date will be 15/11/24. For the same expiry date, if a new certificate is issued 14/10/23 then its expiry date will be 13/10/24; if it's issued 17/11/23, its expiry date will be 16/11/24.

The certificate expires at the end of the day of the expiry date. e.g. if the certificate expires 15/11/23, you may still fly until 23:59 on 15/11/23.

LAA MEMBERSHIP AND MULTIPLE OWNERS

In order to process a revalidation application, all aircraft Owners and co-Owners must be current LAA members, in accordance with the Rules of the Association. Additionally, at least one Owner/co-Owner must be a Full Plus Member. Note that if these membership conditions are not met, the online system will not allow users to proceed with Step 3.

AIRWORTHINESS REVIEW

The Permit to Fly Airworthiness Review records the checks that your Inspector needs to make on the aircraft in order to recommend to us that the Permit be revalidated for another year. It is based on the CAA requirements that we must follow for this process, which are published in BCAR Section A8-26.

Although maintenance may be done at the time of the Airworthiness Review, the purpose of the review is to audit how the aircraft has been cared for since the last review. It's a check that the agreed maintenance has been carried out, that any mandatory actions have been done, the aircraft is in an accepted design configuration, and that the aircraft remains in an airworthy state.

Owners must ensure that Inspectors are able to carry out a thorough physical survey of the aircraft. This includes accommodating any reasonable request to remove panels, fairings, covers, or similar components—either in advance or during the inspection. Note: Inspectors reserve the right to withhold their signature on the Airworthiness Review if the aircraft's full airworthiness status cannot be adequately assessed.

After carrying out an inspection, the Airworthiness Review must be submitted online within 1 month of the last day of the physical survey. This is to ensure that the information received by Engineering is current. Note that once 3 months have elapsed since the last day of the physical survey, the application will be cancelled as the Airworthiness Review will be considered out-of-date. In this scenario, a new application will need to be submitted.

Detailed notes on how to complete the Airworthiness Review online form can be found in Appendix 1.

PERMIT TO FLY REVALIDATION CHECK FLIGHT (Note that this advice replaces TL 2.06)

INTRODUCTION

The check flight is used to verify that the aircraft is handling and performing as expected of the type: it's a time for a pilot to objectively assess the question 'is this aircraft normal?'. It is not intended to be a 'post maintenance check flight'. However, if an aircraft has had work done on it, it is always sensible to carry out a check flight and be prepared for the work to have adversely affected something.

Modern EFIS 'glass cockpit' systems often come with the facility to record the various flight parameters. This information can normally be downloaded and viewed on computers after the event. This can be a very effective and safe way to record check flight results, as it avoids the need to record results, head down, during the flight. Observers can be carried, but they must be briefed as to the purpose of the flight and what flight manoeuvres are involved. Note, however, the requirement to carry out the check flight within 90% of the aircraft's maximum total weight authorised (MTWA), unless previously agreed otherwise by LAA Engineering or stated in the airframe TADS.

The check flight must be carried out in reasonably calm weather in order to give meaningful results and to allow the dive to V_{NE} to be carried out without any risk of overstress. An adequate ceiling will be required to allow stall checks to be carried out at a safe height.

For fixed-wing aircraft, check flights must be recorded on either an *LAA/CFS-1 (FIXED WING) – Airworthiness Check Flight Schedule* or an *LAA/FT-NEW – Flight Test Schedule*. For Gyroplanes, *LAA/CFS-1 (GYROPLANE) must be used.*

Under the online revalidation system, Owners will not be required to submit check flight schedules to LAA Engineering as part of the revalidation process. Only the latest check flight date and a declaration of satisfactory results will be requested in step 3 (above); however, the signed Check Flight Schedule/Flight Test Schedule must be kept with the aircraft's records and is subject to LAA/CAA audits.

CHECK FLIGHT TIMINGS

The majority of LAA aircraft must carry out a check flight at least every 3 years. While Owners are free to carry out as many check flights as they wish, the time elapsed since the last satisfactory check flight must never be more than 3 years (with a maximum allowable deviation of 3 months). There are some aircraft exceptions which must have a check flight on an annual basis:

- Aircraft cleared for glider tugging (note that if the aircraft's Operating Limitations specifies this clearance, the aircraft must be check flown annually even if not used for tugging).
- Aircraft cleared for Night/IFR.
- Aircraft which have flown less than 12 hours since the previous declaration of airframe hours at Airworthiness Review.

Aircraft under an annual check flight cycle will be required to declare a new check flight date on every revalidation.

When a new check flight date is declared, it must not be older than 3 months at the time Step 3 in the revalidation process above is completed.

A flow chart for determining if a check flight is necessary can be found in Appendix 4.

Note: In addition to the requirements above, an Inspector may request a check flight as part of their Airworthiness Review process. Inspectors are empowered to withhold their signature if their request for a check flight is not observed.

PERMIT FLIGHT RELEASE CERTIFICATE

A check flight can only be flown if the Permit to Fly is valid (has a current Certificate of Validity) or your Inspector or LAA Engineering issues a Permit Flight Release Certificate (PFRC).

Following an inspection to check that the aircraft is airworthy, is in a fit state for flight and has no 'open' modifications or repairs ongoing (Inspectors can check the '*Search Aircraft Data*' page for information on open mod/repair applications), a suitably qualified LAA Inspector can issue a PFRC on form LAA/PFRC-1 for up to 1 month at a time, provided that the end date of the PFRC is not later than 24 months after the expiry of the previous Certificate of Validity.

If the Certificate of Validity has expired for more than 24 months, then LAA Engineering will need to issue the PFRC. The application for an LAA-issued PFRC is identical to the process described in the **PROCESS** section of this document above, the only difference being that owners will not be required to declare a check flight in Step 3. Instead, LAA Engineering will issue a PFRC directly, requesting a check is carried out, and review the results.

A PFRC is only valid in UK airspace and therefore it is imperative that if an aircraft is likely to be abroad at the time the Certificate of Validity expires, the check flight is carried out whilst the Permit to Fly is still valid.

Note that a PFRC may also be used to enable a ferry flight to or from a place of storage or the nearest appropriate place where maintenance is to be carried out.

A copy of the PFRC, when issued by an Inspector, must be retained in the aircraft's records and is subject to LAA/CAA audits.

CHECK PILOT QUALIFICATION

The check flight should be carried out by a pilot who has studied the check flight requirements and is fully capable of carrying them out. The exact requirements are given below:

	Pilot Experience Requirement
Fixed Wing Aircraft	Qualified to fly the type, with a minimum experience of 100 hours flying as PIC on class (e.g. SEP aircraft) and 10 hours PIC on type or closely-related type.
Factory-Built Gyroplane	A Gyroplane Instructor **OR** Qualified to fly the type, with a minimum experience of 250 hrs on gyroplanes, including 5 hrs as PIC in the last 12 months.
Amateur-Built Gyroplane	Qualified to fly the type, with a minimum experience of 100 hrs PIC on gyroplanes with 10 hrs on type or closely-related type

Check flight pilots should be suitably insured – check that the aircraft's insurance policy covers them for this activity.

CHECK FLIGHT SCHEDULE NOTES

Detailed notes on how to complete the check flight schedule for fixed-wing aircraft can be found in Appendix 2, and for gyroplanes in Appendix 3.

APPENDIX 1 – NOTES ON COMPLETING THE AIRWORTHINESS REVIEW

The following notes have been produced to provide guidance to Inspectors regarding the Permit to Fly revalidation Airworthiness Review online submission form. The online system will automatically detect the aircraft type and present Inspectors with the relevant questions.

FACTORY-BUILT GYROPLANE TADS

As all TADS for Factory-Built Gyroplanes on the LAA fleet are administered by the CAA, the first question on the Airworthiness Review for these aircraft will be to confirm compliance with the latest known version of the CAA TADS. Any discrepancies must be raised to LAA Engineering so the CAA TADS issue on record can be updated.

AIRCRAFT DETAILS

Please check that the total airframe hours at the last Airworthiness Review match those on the online submission form. Otherwise, answering 'No' to the first question will allow for corrections and details to be provided.

When engines, propellers or rotors have been changed, the designations provided should be complete, including all prefixes, suffixes and blade types, pitches, diameters, etc.

For fixed-wing aircraft and amateur-built gyroplanes, if the aircraft's Operating Limitations document states "or as LAA PROPELLER TYPE LIST-PTL/1" then a propeller may be fitted as described in the type's PTL/1. Similarly, for where the Operating Limitations document states 'as Fiche de Navigabilite' or 'as listed in CAP 562,' propellers listed in these documents may be fitted.

A propeller logbook is only required for in-flight variable pitch propellers. Details of other types of propellers should be recorded in the aircraft's airframe logbook.

WORK, MODIFICATIONS AND REPAIRS

If any work **not** covered by one of the following has taken place, it must be declared on the online Airworthiness Review form:

- The Aircraft Maintenance Programme (see TL2.00 & TL2.19)
- Pilot Authorised Maintenance (see TL2.05)
- Repairs that can be authorised by an Inspector (see TL3.05)

If any work, modification or repair outside of these categories has been carried out since the previous Airworthiness Review, details must be provided, along with the LAA Engineering reference/approval numbers if applicable. For any 'open' modifications or repairs, the status of these modifications and repairs should be recorded, e.g. state 'on hold', 'abandoned', 'work not started', etc.

Under the online revalidation system, worksheets will not be required on initial application. If worksheets are necessary to approve the revalidation, they will be requested directly by LAA Engineering.

The aircraft must not be flown if any modification work has been started, unless authorised by LAA Engineering. Inspectors cannot issue a Permit Flight Release Certificate when an aircraft has been modified or repaired and that work has yet to be approved by LAA Engineering, unless authorised to do so by LAA Engineering.

For Owner, modifications and repairs that have been approved by LAA Engineering should be listed under the '*My Aircraft Data*' section of the LAA website, once logged in. Access is now also provided to Inspectors under '*Search Aircraft Data*' to enable them to access certain information for aircraft that they are involved with.

AIRCRAFT MAINTENANCE PROGRAMME

Aircraft Maintenance Programme Declarations: What should I declare as a reference?
Record the reference of the maintenance programme that the aircraft is being maintained to. Some LAA-administered aircraft are required to be maintained to a specific maintenance programme, such as Eurofox, Bulldog, Chipmunk, Night/IFR and four-seater aircraft. In these cases, the required maintenance programmes are named on the aircraft's Operating Limitations document. Note that for these aircraft, the aircraft maintenance programme field will be locked in the online form. If the reference needs to be updated, please contact LAA Engineering.

For Factory-Built Gyroplanes and Factory-Built Microlights, only the maintenance programme specified in the CAA TADS may be used, therefore, the Airworthiness Review will not allow declarations against a different maintenance programme. For Factory-Built Gyroplanes, all scheduled maintenance and defect rectification must be inspected and certified by a suitably approved LAA FBG Inspector or a current CAA BCAR A3-7 Authorised Engineer for the type.

Aircraft Maintenance Programmes: The Context
All Permit to Fly aircraft have to be maintained in an airworthy condition if they are to remain cleared for flight. In order to achieve this, each aircraft is required to have an associated list of maintenance tasks and inspections to be carried out, called an *Aircraft Maintenance Programme*. The frequency and depth of the programme will vary from aircraft to aircraft, depending on the aircraft's complexity and utilisation.

LAA-administered aircraft are maintained under the LAA's CAA A8-26 approval and specifically as detailed in CAP 553 BCAR Section A, Chapter A3-7.

In A3-7 Part 12 c) 'Aircraft Airworthiness Reviews', it states that: *'all the maintenance due on the aircraft according to the maintenance programme has been carried out;'* Furthermore, in part 15 'Aircraft Schedule Maintenance Programme', 15.1: *'Maintenance of each aircraft shall be organised in accordance with an aircraft maintenance programme.'*

The following note accompanies the above statement:

'NOTE: A maintenance programme in this instance is defined as a list of maintenance tasks that will maintain the aircraft to an airworthy standard. The maintenance programme shall take account of any available manufacturer's information or data.'

As the requirement for aircraft to have a maintenance programme is stated in A3-7, LAA-administered aircraft are required to have a specific reference to the aircraft's maintenance programme in the Airworthiness Review submission. Where there is no specific manufacturer's maintenance programme for an aircraft type (refer to the appropriate TADS and Operating Limitations document), CAA CAP 411 'Light Aircraft Maintenance Schedule' (CAA LAMS) or the LAA Generic Maintenance Schedule (LAA GMS) may be used, see TL 2.19.

The LAA Generic Maintenance Schedules have been amended to better reflect the LAA-administered aircraft types and their scheduled maintenance requirements. The various LAA GMS schedules (varying depending on elapsed calendar time and/or hours flown) can be downloaded from the LAA website and tailored to a specific aircraft. There are GMS templates for fixed-wing aircraft at various maintenance cycles and one for amateur-built gyroplanes (LAA/GMS/GYRO).

The LAA GMS should be modified and customised to accommodate the aircraft's needs. Once done, it can be printed off and signed. Alternatively, an owner can (unless otherwise specified) produce their own, bespoke, maintenance programme (i.e. a list of maintenance tasks) based on any other template or from scratch. When following either of these approaches, the resulting maintenance schedule should be given an appropriate title which reflects the contents of the schedule, the aircraft it was made for, and any revision/issues/version. E.g. the title of an AMP based on the LAA GMS could be 'LAA/GMS/G-ABCD Issue 2'. There should be a paperwork trail to the quoted maintenance programme – i.e. a copy of it on the owner's file.

Additionally, it is becoming more common to find aircraft kit manufacturers producing their own maintenance programmes for their aircraft. These are often based around the GA industry standard 100 hour/12 month check cycle (whichever occurs first) and whilst some aircraft (such as glider tugs) will often hit the 100-hour limit first, most LAA-administered aircraft will remain on a calendar-based inspection schedule. When using manufacturer produced maintenance programmes, the title given in the online form should match the title given by the manufacturer.

The aircraft's maintenance schedule should be agreed with the Inspector and printed each time the scheduled maintenance is performed, with each task being signed by the Owner (where permitted under pilot-maintenance), or otherwise by the Inspector.

As a minimum, the maintenance schedule needs to include a list of actions (checks/activities) that are to be carried out on an annual basis.

Further information on what is allowed under pilot authorised maintenance can be found in LAA Technical Leaflet TL 2.05: Pilot Maintenance .

COMPLICANCE WITH APPROVED DESIGN

The applicable airframe TADS number and current TADS issue number will be automatically displayed in the online form. Inspectors must declare compliance with the latest version of TADS; however, if the system displays the wrong information, Inspectors can provide further details by ticking 'No' in this question (except Factory-Built Gyroplanes).

If there is currently no specific TADS for the airframe, the online form will default to 'TADS 000' and this TADS should be checked for generic advice.

Mandatory placards are listed in the aircraft's Operating Limitations document. Additional requirements and guidance can be found in LAA Technical Leaflet TL 2.11: Aircraft Placards, Labels and Registration Marks and the TADS for the airframe type.

Mandatory placards include the statement *'Occupant warning: This aircraft has not been certificated to an international standard',* registration markings in accordance with CAA CAP 523 (unless a CAA exemption exists) and a fireproof metal plate with the aircraft's registration.

Other requirements include ensuring upper torso restraints are fitted for all front seat occupants (unless a CAA-issued exemption exists).

Inspectors should also ensure that if an aircraft is fitted with a Ballistic Parachute Recovery System (BPRS), this is listed in the aircraft's G-INFO page (CAA's aircraft registry website). Note that first responders use G-INFO when attending aircraft related calls as part of their risk assessments.

SERVICE LIFE LIMITED COMPONENTS

Some aircraft types may have mandatory life limited components fitted.

The requirement and wording for this information to be recorded is taken from CAA CAP 553 Section A3-7 'Aircraft Airworthiness Reviews', which LAA-administered aircraft must comply with.

Service life limited components are specific components that have a *mandatory* service life, as dictated:

- by a manufacturer (but only when recorded in Chapter 4 of the relevant maintenance manual)
- or by the issuance of an Airworthiness Directive or Mandatory Permit Directive
- or as mandated by LAA via a Mandatory Technical Directive/Airworthiness Information Leaflet.

As an example, Chipmunks have mandatory service lives (mostly controlled by fatigue hours) on many components. These are called up in TNS138 which is mandated by a CAA Airworthiness Directive.

Engine overhaul requirements are 'recommendations' by engine manufacturers and are not 'service life limited components:' therefore, there is no mandatory requirement to have an engine overhauled at the manufacturer's recommended 'Time Between Overhauls'. This is the case for LAA-administered aircraft and even certified aircraft maintained under Part-ML. This is also the situation for propellers and other components and equipment.

However, in some instances, a manufacturer's maintenance manual may state that, for instance, an engine manufacturer's maintenance schedule must be complied with and that manufacturer's maintenance schedule may include reference to life limited parts or overhaul. If the Operating Limitations document for that specific aircraft requires compliance with a maintenance manual or schedule then those instructions must be complied with.

Further information may also be found in the relevant airframe, engine or propeller TADS.

ADDITIONAL DOCUMENTATION

Some aircraft require additional documentation to be uploaded as part of the revalidation process. For these aircraft, an extra section will be displayed on the online form prompting the Inspector to upload the relevant supplements as detailed below:

DHC-1 Chipmunks

- DHSL Annual Role Factor Certificate (TNS 138)
- DHSL Form C (TNS 138)

Scottish Aviation Bulldog

- DHSL Fatigue Index Statement

Yaks

- Supplement to Permit to Fly for Yak types

DEFECTS

If any defects are discovered during the physical survey of the aircraft and not rectified at the time, they may be carried forward if they are not critical to safety. The details should be recorded. A good way of keeping track of deferred defects is with a Deferred Defects Log (form LAA/DD).

COMPLIANCE WITH ADs, MPDs AND MTDs
All applicable mandatory continuing airworthiness information must be complied with. This includes Airworthiness Directives (issued by the State of Design and/or Registration), CAA Mandatory Permit Directives and LAA Mandatory Technical Directives/Airworthiness Information Leaflets.

Refer to the relevant TADS for the airframe, engine and propeller for links to the various regulating authorities for applicable ADs and MPDs. If there is no airframe TADS for the type, refer to 'TADS 000: Generic TADS'.

The TADS are updated and amended as time permits. Therefore, TADS do not necessarily record all current applicable ADs and/or MPDs or MTDs. The associated regulating authorities' websites (e.g. CAA, FAA, OSAC, LAA, etc) should be checked for the current listing of applicable ADs, MPDs and MTDs.

LAA Mandatory Technical Directives were previously termed 'Airworthiness Information Leaflets' and these AILs remain applicable, with compliance as detailed in the specific documents.

A continuing airworthiness compliance statement must be produced and kept up to date. This may be held in the logbook 'pink pages' or a separate compliance document (such as produced in MS Word or Excel). When a separate compliance statement is produced, this should be referred to in the pink pages and a copy held with the logbooks. When an AD, MPD or MTD is complied with, this should also be recorded as embodied on the worksheets and/or in the relevant 'white' pages of the aircraft's logbooks.

WEIGHT AND BALANCE REPORT
It is recommended that all LAA-administered aircraft are re-weighed every ten years. Aircraft weight can increase for a variety of reasons such as avionics upgrades, repainting, new interior trim and modifications.

It is always possible that an aircraft is lighter than previously weighed, especially with the advancement in modern weighing equipment.

A copy of the current weight and balance report must be kept with the aircraft documents that are readily available to the pilot and be presented to the LAA Inspector, as part of the annual Airworthiness Review.

Note: Gyroplane types may have a hang check report instead of a weight and balance report.

DOCUMENTATION REVIEW
This is a list of documents that must be checked during the Airworthiness Review. Some documents may not be required for, or applicable to, a particular aircraft.

An avionics installation certificate (AD917) is required for installed transmitting avionics (radios, transponders, ELTs, etc). This is not required for aircraft that have transferred from a Certificate of Airworthiness (or from a CAA-administered Permit to Fly for Factory-Built Gyroplanes) for which there's a record of the installation having been approved prior to transfer and the avionics remain unchanged since the aircraft was transferred to the LAA. Installation certificates are not required for handheld radios or other 'carry on' devices. TL 3.03 gives further details.

NIGHT/IFR APPROVED AIRCRAFT
Some LAA aircraft are approved for operating at Night and/or IFR. These permissions are indicated on the aircraft's Operating Limitations document. On the online Airworthiness Review, this section will only be displayed for aircraft where the Owner has declared that they are intending to maintain the Night and/or IFR approval for the aircraft.

For aircraft with Night/IFR approval, certain additional checks are required at each annual Airworthiness Review. Further details can be found in the 'continued airworthiness' section of TL 2.27. Inspectors signing an Airworthiness Review for such aircraft must have approval for 'Night/IFR'.

PHYSICAL SURVEY OBSERVATIONS AND COMMENTS

The physical survey is the inspection of the aircraft as a whole and is identical to that previously required as part of the annual revalidation process of the Permit to Fly. Comments entered by the Inspector here will not be routinely reviewed by LAA Engineering but will be included in the final PDF summarising the Airworthiness Review submission and sent to the Owner. This section should be used to record work that is likely to be needed before the next Airworthiness Review, items that should be monitored, etc.

SUBMITTING THE APPLICATION

By submitting the Airworthiness Review, the Inspector confirms that an Airworthiness Review has been carried out in accordance with BCAR A3-7, Paragraph 12 and that the aircraft is in a safe and airworthy condition and is in compliance with the applicable airframe, engine and propeller TADS (or CAA TADS for Factory-Built Gyroplanes and Microlights). In submitting, the Inspector is recommending that the Permit to Fly should be revalidated.

A Permit Maintenance Release must also be signed in the aircraft's logbooks, stating that the Permit to Fly revalidation Airworthiness Review and physical survey has been carried out.

APPENDIX 2 – NOTES ON COMPLETING THE CHECK FLIGHT SCHEDULE LAA/CFS-1 (FIXED WING)

Note that these notes supersede TL 2.06, which has now been withdrawn.

CHECK FLIGHT SCHEDULE

1: Pre-Flight Documentation Check

a. Confirm that the aircraft is currently UK-registered by reviewing the aircraft's entry on G-INFO.
b. Confirm that the insurance requirements are satisfactory, i.e. that the aircraft has current insurance and that it covers the check flight by the intended pilot.
c. If the previous Certificate of Validity has expired, confirm that a Permit Flight Release Certificate (PFRC) has been completed and that the check flight will take place within the time period authorised by the dates on the PFRC (see section in the main text of this leaflet).
d. Confirm that the pilot's experience is satisfactory: check flights may be performed by any pilot qualified to fly the type and who has a minimum experience of 100 hours flying as 'Pilot in Command' on class (e.g. SEP aircraft) and 10 hours 'Pilot in Command' on type or similar type.
e. Add any relevant comments.

2: Loading

The check flight pilot should be in possession of the current weight and balance schedule for the aircraft and the aircraft's Operating Limitations document.

Check Flight Schedule Notes:

a. Enter the weight of the aircraft at take-off. This is the empty weight of the aircraft as given in the aircraft's weight report added to the payload (occupant weights, fuel load, baggage, equipment carried, etc). This must be as close to the maximum authorised weight for the aircraft as possible (as stated in the aircraft's Operating Limitations document) and at least 90% unless previously agreed with LAA Engineering or stated in the TADS for the type. The weight must not exceed the maximum authorised for the aircraft, as shown on the Operating Limitations document.
b. Enter the centre of gravity (cg) position of the aircraft at take-off. This is calculated from the weight and balance report for the aircraft, accounting for the distribution of the payload. The cg position must be within the limits stated on the aircraft's Operating Limitations document, using the same datum reference.
c. Add any relevant comments.

3: Engine Run

Particular attention needs to be paid to the engine ground run checks if the aircraft has been worked on in preparation for its Permit to Fly revalidation inspection, prior to the flight.

All that is required is to allow the engine to warm up to its normal operating temperatures and then record the maximum static engine rpm, having been sure to position the aeroplane over a piece of ground free of grit, etc, which might damage the propeller. Check all other instrument indications and that the engine controls operate normally. Causes for rejection would be any unusual instrument indication or control malfunction, or a maximum static engine rpm which was outside the permitted range. For many homebuilt aircraft the acceptable range is undefined, but most ex-certificated aircraft have specified limits in their Flight Manuals which should be complied with.

Check Flight Schedule Notes:

a. Ensure that the ground run is carried out in a safe area and on a suitable surface.
b. Run the engine up to normal operating temperature and check rpm, pressures, temperatures, ignition and carb heat drop, and general operation of the engine, propeller and fuel controls.
c. *Caution*: some high-performance aircraft may not be able to reach maximum static rpm safely without the aircraft being chocked and/or tied down. If maximum static rpm is not achieved, add a comment as to the reason (e.g. 'maximum brakes holding rpm').
d. Enter the maximum static engine speed (rpm) and the maximum and minimum oil pressures observed (including the units), and indicate whether the engine ground run was satisfactory.
e. Note that the engine static rpm must be within the maximum permitted by the Operating Limitations document – if it isn't, there may be a problem such as a misreading tachometer or a propeller of incorrect pitch.
f. Add any relevant comments.

4: Ground Checks
Check Flight Schedule Notes:

a. Flying controls must be checked for appropriate backlash (that 'lost motion' or deadband in the controls when you reverse the direction of the control), friction levels, full and free moment and correct sense of control surface movement – these should all be normal for the type.
b. Add any relevant comments.
c. Instruments must be checked during the ground run that they appear to be indicating correctly. Note that there is a later check for correct operation of instruments at section 8.
d. Add any relevant comments.

5: Taxiing
The check flight schedule requires that the aeroplane is taxied out in the normal way, and to check for any abnormal features or inadequacies of the brakes, steering, controllability, etc. Common causes of rejection here would be stretched and ineffective tailwheel steering springs, unserviceable or wrongly adjusted 'break-out' tailwheel steering mechanisms, and snagging or uneven brakes.

Check Flight Schedule Notes:

a. Check that all aspects of the aircraft's ground handling whilst taxiing appears normal.
b. Add any relevant comments.

6: Take-Off
Please refer to the comments above for taxiing as they are also relevant to the take-off.

Check Flight Schedule Notes:

a. Take-off with full power and the aircraft configured in the normal configuration for the type and operating surface. Any unusual tendency to swing on take-off should be noted. Operation/functioning of retractable undercarriage should be noted, if fitted.
b. Add any relevant comments.

7: Climb
Although this check comes first after take-off on the check flight schedule, it is not necessary to carry out the climb check immediately after take-off. You may want to feel the aeroplane out

first, or position to a piece of unrestricted airspace. The climb should, however, be done fairly early on in the check flight, so as to ensure that the total weight is close to that calculated, i.e. not too much fuel has been burnt off.

The aim of the climb check is to measure the rate of climb under steady state conditions at full throttle and check the engine operation under these conditions. Before starting this check, you should record the QNH and the outside air temperature. This information is required so that should the need arise, the measured climb rate results can be corrected back to 'standard atmosphere' conditions, i.e. adjust the figures to account for the effect of the actual air density on the day. This would only normally have to be done if the climb rate is marginal while carrying out the check on a very hot day.

It is important to carry out the climb in a piece of airspace free of turbulence, thermic or orographic activity which will upset the results - this means choosing a day when there is not too much wind, clear of cumulus type cloud and hilly areas.

It is not acceptable to fly along level at full throttle at 1000 ft, pull the stick back to climb and simultaneously start the stopwatch. The extra airspeed at the start would result in a 'zoom climb' in which the initial climb rate would be much higher than the sustainable rate. Assuming the climb check is not being made directly after take-off, the climb should be started by first setting the aircraft up in level flight at approximately 200 feet below the targeted 'start altitude'.

The airspeed should be slowly reduced to the best climb airspeed, at the same time reducing the throttle setting to maintain roughly level flight and the aircraft trimmed accordingly.

Once the correct airspeed is established, the throttle should be opened fully and nose raised into the climb, making whatever further trim adjustment is needed to stabilise at the best climb airspeed, at the same time making sure that the skid ball is accurately centred by proper use of the rudder.

The stopwatch should be started when passing through the selected start altitude. It is important to concentrate on flying accurately straight ahead and in balance, at within 2 kts/3 mph of the trimmed airspeed, if necessary, banking no more than 10 degrees for visibility ahead. If the aircraft is an RV or Pitts, then the check may only take 30 seconds or so, while lower-powered aircraft may spend 2 or 3 minutes in the climb up to the finish altitude.

Towards the end of the climb, the airspeed should be confirmed and the engine rpm recorded. At the finish altitude, the elapsed time should be noted.

Any significant degradation in the climb rate from that obtained in previous check flights must be investigated. It may be that the engine is no longer producing peak power for some reason, or, for instance, a wooden propeller may be warping out of true pitch with age, or the aircraft may be 'out of rig'. The engine rpm in the climb should demonstrate that the propeller is suitably matched to the engine and airframe. The engine rpm at full throttle in the climb must not exceed the engine's maximum permitted rpm stated on the aircraft's Operating Limitations document.

Check Flight Schedule Notes:

a. Prior to the start of the timed climb, the aircraft should be established in a stable climb at the normal best climb speed, full throttle set and flaps and undercarriage retracted (as applicable).
b. Record the altitude at the start of the climb.
c. Airspeed in the climb should be kept within +/- 2 kts (3 mph).
d. Record the QNH, climb airspeed (and units), outside air temperature and the engine/propeller rpm in the climb.

e. Record the time taken to climb 1000 ft in seconds.
f. Add any relevant comments.

8: Systems Function
The function check simply involves running through all the aircraft systems and checking each system in turn for correct operation. This is broken down into the categories of controls, instruments, engine and propeller.

It should be checked that each flying control operates freely without undue friction or backlash, that the trimmer and their associated indicators work properly throughout the range and hold a set position rather than 'creeping back' under air loads and vibration.

Each flap position should be selected at the maximum appropriate and permissible flap lowering speed and it must be checked that operation is normal and that there is no undue change in lateral trim (i.e. rolling tendency) when the flaps are lowered, which would indicate that the flaps are not moving evenly, port and starboard.

All the instruments should be checked to ensure that they are functioning correctly, especially the primary flight instruments.

EFIS systems should be checked to ensure they are functioning correctly including the check of any back-up batteries and associated stand-by instruments. Back-up batteries are normally set up for a periodic self-test on the ground.

Engine checks include engine and propeller operation, indication and for undue vibration. Each fuel tank should be selected for at least 3 minutes to check that the fuel system is working correctly.

Check Flight Schedule Notes:

a. Confirm the checking of all aircraft systems.
b. Add any relevant comments.

9: Avionics
All avionics systems and devices should be checked to ensure that they function correctly.

As with the more sophisticated installations this could potentially involve a fair time spent 'head down' in the cockpit, with two-seaters, it is a good idea to have someone else on board to check the avionics.

Check Flight Schedule Notes:

a. Confirm the checking of all installed avionics.
b. Add any relevant comments.

Guidance on what to check on transmitting avionics (radios, transponders, etc) can be found in section 7 of TL 3.03.

10: Stalls
The check flight schedule states that the stalls should be carried out at a safe altitude. What constitutes a safe altitude will depend on the type of aircraft concerned: 2000 ft AGL might be appropriate for a microlight, whereas a pilot might want twice this height for a high-performance aircraft.

Depending on the aircraft type, you may not expect any dramatic stall characteristics to be revealed in straightforward stalls with the engine throttled back, but aircraft seem to be particularly good at springing a surprise on the unsuspecting, when there is not much height to play with. For example, the engine might stop mid-stall, therefore it is preferable to have a field within gliding distance, to have run through the engine restart procedure beforehand and have a 'decision height' in mind.

The stall should be approached in approximately level flight, with the throttle closed and the speed bleeding off very slowly, the airspeed dropping by roughly 1 kt/1 mph per second. It may take a few attempts to get used to bringing the stick back at the correct rate to achieve this and to use the rudder to keep the aircraft in balance, as the speed falls away. If the stick is brought back too quickly, the aircraft's nose will end up way too high, with the result that when the stall comes it is much more violent than is required and the nose will drop well through the horizon.

All that is required is a gentle stall, in which there should be plenty of time to note the airspeed at which stall warning starts (natural pre-stall buffet or artificial stall warning device) and the minimum airspeed achieved before the nose or wing starts to drop (or the control reaches the back-stop). As soon as this occurs, normal recovery action should be taken. Notice whether there has been any unusual tendency for a wing to drop or any other unusual characteristic such as a 'lightening off' of the rearward stick force just before the stall or tendency of the rudder to snatch at the stall.

Note the results on the schedule and then repeat the procedure with the flaps down. This time, particular care will be needed to avoid exceeding the flap limiting speed on the recovery from the stall.

Any significant change in the recorded stalls speeds or characteristics from those obtained in previous years will require further investigation. It might be that the airspeed indicator needs to be recalibrated, or the pitot realigned, or it might be that the airframe or controls have been mis-rigged. Another cause might be that the wings have been re-covered and that small but vital stall strips were not been refitted afterwards.

Be aware of the fact that the loaded centre of gravity position and the piloting technique will probably have a significant effect on the stall results and different pilots may have approached the stalls differently and therefore the results might not be comparing like with like.

Check Flight Schedule Notes:

a. At a safe altitude, the aircraft should be stalled with the throttle closed, flaps and gear retracted (as applicable) and commencing with the aircraft in balance and the wings level.
b. The aircraft should be trimmed to approximately 40% above the stall speed and the control column pulled gently back so as to reduce the airspeed at a rate not exceeding 1 kt/1 mph per second.
c. If no flaps are fitted, record the stall speeds in the 'flaps up' column.
d. Record the operating speed of the artificial stall warning device (if fitted), natural pre-stall buffet speed and the minimum airspeed achieved.
e. Confirm the behaviour of the aircraft during the stalls.
f. Repeat with full flaps and undercarriage extended if fitted.
g. Add any relevant comments.

11: Maximum Speed Check

The purpose of this check is to demonstrate safe handling of the aircraft at Vne and to check that this can be achieved without exceeding the maximum permitted engine RPM. The Vne speed is that stated in that specific aircraft's Operating Limitations document and which overrules all other sources. Vne must never be exceeded under any circumstances. Beware of an inaccurate

reading ASI – ASI's should be regularly checked to ensure they are reading correctly. Engine RPM data which exceeds the maximum permitted in the Operating Limitations document requires investigation.

The maximum speed check is to be made in smooth air conditions from a normal or high cruise speed and safe altitude. The aircraft is to be dived, reducing the throttle sufficiently to prevent engine over-speed and to allow the minimum dive angle possible, to its maximum specified speed (Vne) as recorded on the aircraft's specific Operating Limitations document. Check for any unusual behaviour and whether control forces appear normal. Controls should record a degree of self-centering to small movements. Keep the airspeed, engine rpm and temperatures within the maximum permissible limits.

Note: The Vne of an aircraft has been established as a safe speed for the aircraft; however, do not make any large control movements at or near Vne. If any abnormal behaviour (flutter, vibration, noise, etc) is detected, close the throttle immediately and gently raise the nose to slow the aircraft – resume normal flight once the abnormal behaviour stops and a normal flying speed is attained – land as soon as practicable and thoroughly check the control systems.

Check Flight Schedule Notes:

a. Record the aircraft's published Vne as stated in the aircraft's Operating Limitations document.
b. Record the maximum speed achieved (which should be Vne).
c. Record the maximum engine rpm seen during the dive.
d. Add any relevant comments.

12: Simulated Go-Around

The aim of this check is to show that the aircraft handles satisfactorily and that the engine responds properly when the throttle is opened up swiftly, during a go-around. This check is particularly relevant to the older types of engines, which are prone to plug fouling after a long period of idling and, having simple carburettors, may be prone to a 'lean cut' when the throttle is opened too quickly. This might prevent the engine from responding promptly to opening the throttle, or may even cause it to stop altogether. Other engine types may suffer a 'rich cut' if the throttle is advanced too rapidly.

The method used is to set the aircraft up in a normal throttled-back approach, at a safe altitude, then opening up the throttle rapidly and re-establish the aircraft in a maximum rate climb. The aim is not to slam the throttle open, but merely to open it fully and positively in one movement, as would occur in an actual go-around.

The aircraft handling aspects of a go-around very rarely present a problem. The only time that this may cause concern is with a design with a high engine thrust line (such as the Quad City Challenger microlight) in which there is a marked nose-down pitch when the throttle is opened. In an extreme case, there might be a risk of, when carrying out an actual go-around, nosing the aeroplane into the ground before getting the pitch under control.

Check Flight Schedule Notes:

a. Confirm that the aircraft's behaviour was satisfactory (or not) in the simulated go-around.
b. Add any relevant comments.

13: Landing

Ensure the undercarriage is locked down, if the aircraft is fitted with a retractable undercarriage. A normal approach and landing should be made and any unusual characteristics or unsatisfactory tendencies noted. Reasons for rejection would include inability to control the aircraft directionally

after touchdown (assuming the conditions did not exceed the crosswind limits and normal techniques are used), jammed undercarriage 'shock-absorbers', poor braking, undue tendency to lift the tail when brakes are applied and engine stopping on touchdown due to a too-slow idle or some other factor.

Aircraft fitted with a retractable undercarriage system should have the undercarriage retraction and extension systems checked at the maximum speed allowed. Ideally, the functioning of any emergency extension system should be carried out on jacks in a hangar.

Check Flight Schedule Notes:

a. Record the aircraft's handling during the landing and when on the ground.
b. Immediately after parking the aircraft and with the engine at idle, record the engine oil pressure.
c. Add any relevant comments.

14: Check Flight Pilot's Declaration
Once a satisfactory check flight has been concluded, the pilot must sign a declaration to certify that the aircraft was flown and that the characteristics recorded are truthful. By signing the declaration, the check pilot acknowledges that the aircraft's behaviour is satisfactory, normal and safe.

An LAA/CFS-1 form can be used as an aid to track defects found during the check flight itself; however, it should only be signed when the check flight was satisfactory. Any deficiencies found should be recorded in the aircraft's logbook as soon as possible. Any adjustments or other corrective work required should be arranged at the earliest opportunity so that the appropriate parts of the check can be repeated (if required). Work on the aircraft needs to be signed for by an LAA Inspector or by the pilot/owner (if allowed under pilot maintenance), in the normal way.

Under the online Permit system, check flight schedules will not have to be submitted to LAA Engineering for review; however, check flight schedules must be kept with the aircraft's documentation. Owners revalidating their Certificate of Validity will only be required to provide the date of the latest check flight covering the application. In an Aircraft Continuing Airworthiness Monitoring (ACAM) audit, any check flight schedules associated with a revalidation application must be present in the aircraft's records.

APPENDIX 3 – NOTES ON COMPLETING THE CHECK FLIGHT SCHEDULE LAA/CFS-1 (GYROPLANE)

CHECK FLIGHT SCHEDULE

1: Pre-Flight Documentation Check

a. Confirm that the aircraft is currently UK-registered by reviewing the aircraft's entry on G-INFO
b. Confirm that the insurance requirements are satisfactory, i.e. that the aircraft has current insurance and that it covers the check flight by the intended pilot.
c. If the previous Certificate of Validity has expired, confirm that a Permit Flight Release Certificate (PFRC) has been completed and that the check flight will take place within the time period authorised by the dates on the PFRC (see section in the main text of this leaflet).
d. Confirm that the pilot's experience is satisfactory. Pilot experience requirements are as follows:

	Pilot Experience Requirement
Factory-Built Gyroplane	A Gyroplane Instructor **OR** Qualified to fly the type, with a minimum experience of 250 hrs on gyroplanes, including 5 hrs as PIC in the last 12 months.
Amateur-Built Gyroplane	Qualified to fly the type, with a minimum experience of 100 hrs PIC on gyroplanes with 10 hrs on type or closely-related type

e. Add any relevant comments.

2: Loading

The check flight pilot should be in possession of the following:

- The current weight and balance schedule and/or hang check report for the aircraft
  and
- for amateur-built gyroplanes, the aircraft's Operating Limitations document, or for factory-built gyroplanes, the TADS for the aircraft and POH/Flight Manual specifying the loading limitations.

Check Flight Schedule Notes:

a. Enter the weight of the aircraft at take-off. This is the empty weight of the aircraft as given in the aircraft's weight report added to the payload (occupant weights, fuel load, baggage, equipment carried etc). This must be as close to the maximum take-off weight authorised (MTWA) for the aircraft as possible (as stated in the aircraft's Operating Limitations document or, for Factory-Built gyroplanes, the TADS) and at least 90% MTWA, unless previously agreed with LAA Engineering or stated in the TADS for the type. The weight must not exceed the maximum authorised for the aircraft, as shown on the Operating Limitations document.
b. Add any relevant comments.

3: Engine Run

Particular attention needs to be paid to the engine ground run checks if the aircraft has been worked on in preparation for its Permit to Fly revalidation inspection, prior to the flight.

All that is required is to allow the engine to warm up to its normal operating temperatures and then carry out a run-up to full throttle. Be sure to position the gyroplane over a piece of ground free of grit, etc, which might damage the propeller. Record the maximum static rpm, and check all other instrument indications and that the engine controls operate normally. Causes for rejection would be any unusual instrument indication or control malfunction, or a maximum

static engine rpm or other indication which was outside the permitted range. For many homebuilt aircraft the acceptable ranges are undefined, but most factory-built gyroplanes have specified limits in their TADS and Pilot's Operating Handbook/Flight Manual, which should be complied with.

Check Flight Schedule Notes:

a. Ensure that the ground run is carried out in a safe area and on a suitable surface.
b. Run the engine up to normal operating temperature and check rpm, pressures, temperatures, ignition and carb heat drop, and general operation of the engine, propeller and fuel controls.
c. Caution: some gyroplanes may not be able to reach maximum static rpm safely without the aircraft being chocked and/or tied down. If maximum static rpm is not achieved, add a comment as to the reason (e.g. 'maximum brakes holding rpm').
d. Enter the maximum static engine speed (rpm) and the maximum and minimum oil pressures observed (including the units), and indicate whether the engine ground run was satisfactory.
e. Note that the engine static rpm must be within the maximum permitted by the Operating Limitations document or, for factory-built gyroplanes, the TADS and/or the POH/Flight Manual – if it isn't, there may be a problem such as a misreading tachometer or a propeller of incorrect pitch.
f. Add any relevant comments.

4: Ground Checks
Check Flight Schedule Notes:

a. Flying controls must be checked for appropriate backlash (that 'lost motion' or deadband in the controls when you reverse the direction of the control), friction levels, full and free moment and correct sense of rotor head and rudder control surface movement – these should all be normal for the type. Check operation of the rotor brake.
b. Instruments must be checked during the ground run that they appear to be indicating correctly. Note that there is a later check for correct operation of instruments at section 9.
c. Add any relevant comments.

5: Taxiing
The check flight schedule requires that the gyroplane is taxied out in the normal way, and to check for any abnormal features or inadequacies of the brakes, steering, controllability, etc. Common causes of rejection here would be stretched and ineffective nosewheel steering springs, nosewheel shimmy and snagging or uneven brakes. Check operation of the rotor brake.

Check Flight Schedule Notes:

a. Check that all aspects of the aircraft's ground handling whilst taxiing appears normal.
b. Add any relevant comments.

6: Take-Off
Please refer to the comments above for taxiing as they are also relevant to the take-off.

Check Flight Schedule Notes:

a. Take-off using the technique applicable to the type (for factory-built gyroplanes, using the technique as specified in the POH/Flight Manual for a normal take-off). Any unusual difficulty in controlling the aircraft on take-off should be noted. Operation/functioning of the pre-rotator should be noted, if fitted, including any tendency to snatch or slip, and

recording the maximum rotor RPM achieved with the pre-rotator and the corresponding engine RPM just prior to disengaging the pre-rotator.

b. Add any relevant comments, including any unusual vibration level or blade-sailing tendency.

7: Climb

Although this check comes first after take-off on the check flight schedule, it is not necessary to carry out the climb check immediately after take-off. You may want to feel the gyroplane out first, or position to a piece of unrestricted airspace. The climb should, however, be done fairly early on in the check flight, so as to ensure that the total weight is close to that calculated, i.e. not too much fuel has been burnt off.

The aim of the climb check is to measure the rate of climb under steady state conditions at full throttle and check the engine operation under these conditions. Before starting this check, you should record the QNH and the outside air temperature. This information is required so that should the need arise, the measured climb rate results can be corrected back to 'standard atmosphere' conditions, i.e. adjust the figures to account for the effect of the actual air density on the day. This would only normally have to be done if the climb rate is marginal while carrying out the check on a very hot day.

It is important to carry out the climb in a piece of airspace free of turbulence, thermic or orographic activity which will upset the results - this means choosing a day when there is not too much wind, clear of cumulus type cloud and hilly areas.

It is not acceptable to fly along level at full throttle at 1000 ft, pull the stick back to climb and simultaneously start the stopwatch. The extra airspeed at the start would result in a 'zoom climb' in which the initial climb rate would be much higher than the sustainable rate. Assuming the climb check is not being made directly after take-off, the climb should be started by first setting the aircraft up in level flight at approximately 200 feet below the targeted 'start altitude'.

The airspeed should be slowly reduced to the best climb airspeed, at the same time reducing the throttle setting to maintain roughly level flight and the aircraft trimmed accordingly.

Once the correct airspeed is established, the throttle should be opened fully (for those aircraft fitted with VP props, propeller pitch should be in fully fine) and nose raised into the climb, making whatever further trim adjustment is needed to stabilise at the best climb airspeed, at the same time making sure that the skid ball or yaw string is accurately centred by proper use of the rudder.

The stopwatch should be started when passing through the selected start altitude. It is important to concentrate on flying accurately straight ahead and in balance, at within 2 kts/3 mph of the trimmed airspeed, if necessary, banking no more than 10 degrees for visibility ahead. If the gyro is a high-powered type, the check may only take 30 seconds or so, while lower-powered gyroplanes may take 2 or 3 minutes in the climb up to the finish altitude.

Towards the end of the climb, the airspeed should be confirmed and the engine rpm recorded. At the finish altitude, the elapsed time should be noted.

Any significant degradation in the climb rate from that obtained in previous check flights must be investigated. It may be that the engine is no longer producing peak power for some reason, or, for instance, a wooden propeller may be warping out of true pitch with age, or the aircraft may be 'out of rig'. The engine rpm in the climb should demonstrate that the propeller is suitably matched to the engine and airframe. The engine rpm at full throttle in the climb must not exceed the engine's maximum permitted rpm stated on the aircraft's Operating Limitations document or for factory-built gyroplanes, the TADS and / or POH/Flight Manual.

Check Flight Schedule Notes:

a. Prior to the start of the timed climb, the aircraft should be established in a stable climb at the normal best climb speed, full throttle set and flaps and undercarriage retracted (as applicable).
b. Record the altitude at the start of the climb.
c. Airspeed in the climb should be kept within +/- 2 kts (3 mph).
d. Record the QNH, climb airspeed (and units), outside air temperature and the engine and rotor rpms in the climb.
e. Record the time in seconds taken to climb 1000 ft.
f. Add any relevant comments, including any unusual vibration level

8: Cruise
The gyroplane should be flown at its normal cruise speed to check it is in trim and the engine cooling once the engine has had time for the temperatures to stabilise. Note also the rotor tracking error by looking at the rotor blade tips and estimating the difference in path of the two blades by the visible width of the blurred circle created. Note also whether constant rudder pressure is needed to keep the gyroplane in balance according to the slip ball or yaw string, indicating the need for an adjustment of the rudder trim tab to achieve 'feet off' flight in balance.

Check Flight Schedule Notes:

a. Note any unusual vibration levels, rotor tracking error or whether constant rudder pressure is required.
b. Add any relevant comments.

9: Systems Function
The function check simply involves running through all the aircraft systems and checking each system in turn for correct operation. This is broken down into the categories of controls, instruments, engine, propeller and rotor.

It should be checked that the rotor and rudder controls operate freely without undue friction or backlash, that the trimmer(s) and their associated indicators work properly throughout the range and hold a set position rather than 'creeping back' under air loads and vibration.

All the instruments should be checked to ensure that they are functioning correctly, especially the primary flight instruments.

EFIS systems should be checked to ensure they are functioning correctly, including the check of any back-up batteries and associated stand-by instruments. Back-up batteries are normally set up for a periodic self-test on the ground.

Engine checks include engine and propeller operation, indication and for undue vibration. Each fuel tank should be selected for at least 3 minutes to check that the fuel system is working correctly. Note any unusual rotor vibrations.

Check Flight Schedule Notes:

a. Confirm the checking of all aircraft systems.
b. Add any relevant comments.

10: Avionics
All avionics systems and devices should be checked to ensure that they function correctly.

As with the more sophisticated installations, this could potentially involve a fair time spent 'head down' in the cockpit; with two-seaters it is a good idea to have someone else on board to check the avionics.

Check Flight Schedule Notes:

a. Confirm the checking of all installed avionics.
b. Add any relevant comments.

Guidance on what to check on transmitting avionics (radios, transponders, etc) can be found in section 7 of TL 3.03.

11: Steep Turns
The steep turns called up in the check flight schedule should be carried out at a safe altitude. What constitutes a safe altitude will depend on the type of gyroplane concerned.

Notice whether there has been any unusual tendency for the nose-up pitch control force to diminish as the turn is tightened up, and the vibration level throughout the manoeuvre.

Check Flight Schedule Notes:

a. Record the aircraft's angle of bank
b. Record any relevant comments.

12: Maximum Speed Check
The purpose of this check is to demonstrate safe handling of the aircraft at Vne and to check that this can be achieved without excessive vibration or exceeding the maximum permitted engine rpm. The Vne speed is that stated in that specific aircraft's Operating Limitations document (which for amateur built gyroplanes overrules all other sources) or for factory-built gyroplanes, the TADS and/or POH/Flight Manual. Vne must never be exceeded under any circumstances. Beware of an inaccurate reading ASI – ASI's should be regularly checked to ensure they are reading correctly. Engine RPM data which exceeds the maximum permitted in the Operating Limitations document requires investigation.

The maximum speed check is to be made in smooth air conditions from a normal or high cruise speed and safe altitude. The aircraft is to be dived, reducing the throttle sufficiently to prevent engine over-speed and to allow the minimum dive angle possible, to its maximum specified speed (Vne). Check for any unusual behaviour and whether control forces appear normal. Note any unusual vibration level. Keep the airspeed, engine RPM and temperatures within the maximum permissible limits.

Note: The Vne of an aircraft has been established as a safe speed for the aircraft; however, do not make any large control movements at or near Vne. If any abnormal behaviour (vibration, noise etc) is detected, close the throttle immediately and gently raise the nose to slow the aircraft – resume normal flight once the abnormal behaviour stops and a normal flying speed is attained – land as soon as practicable and thoroughly check the control systems.

Check Flight Schedule Notes:

a. Record the aircraft's published Vne as stated in the aircraft's Operating Limitations document or, for factory-built gyroplanes, the TADS and/or POH/Flight Manual.
b. Record the maximum speed achieved (which should be Vne).
c. Record the maximum engine rpm and the rotor rpm seen during the dive to Vne.
d. Add any relevant comments.

13: Minimum Speed Check The aim of this check is to show that the aircraft handles satisfactorily when flown in level flight at low speed and high power 'on the back of the drag curve'. From level cruise flight decelerate the aircraft progressively while opening the throttle as required to maintain height. Check that the aircraft is safely controllable about all three axes at speeds down the published minimum control speed, and that height can be maintained at speeds down to and including Vmc (power on).

This test is optional for amateur built types where the minimum control speed Vmc (power on) is not published.

Check Flight Schedule Notes:

a. Confirm that the aircraft's behaviour was satisfactory (or not) in the slow flight test
b. Add any relevant comments.

14: Normal Glide Descent at Idle Power
The aim of this test is to test the aircraft's controllability when gliding at idle power at the recommended approach speed - where this is not stated for the gyroplane concerned, the airspeed for flattest descent gradient may be used. From level cruise flight progressively close the throttle to idle and assume the recommended approach speed. Check that the aircraft is safely controllable about all three axes and where applicable, can be trimmed for this condition.

Check Flight Schedule Notes:

a. Confirm that the aircraft's behaviour was satisfactory (or not) in the glide descent at idle power test.
b. State the airspeed flown, rotor RPM and engine RPM.
c. add any relevant comments.

15: Descent at V_{MC} (POWER OFF)
The aim of this check is to show that the aircraft handles satisfactorily when flown in a power-off descent at very low air speed i.e. approaching a vertical descent. From level cruise flight decelerate the aircraft progressively while closing the throttle. Check that the aircraft is safely controllable about all three axes at speeds down the published minimum control speed, and in particular that directional control can be maintained at speeds down to and including Vmc (power off). Regain level flight by adding power and pitching gently forward to allow the gyroplane to accelerate to normal cruise speed, avoiding unloading the rotors in the process by too rapid a pitch forward.

This test is optional for amateur built types where the minimum control speed Vmc (power off) is not published.

Check Flight Schedule Notes:

a. Confirm that the aircraft's behaviour was satisfactory (or not) in slow power-off descending flight
b. State the airspeed flown, rotor RPM and engine RPM.
c. Add any relevant comments.

16: Landing
A normal approach and landing should be made and any unusual characteristics or unsatisfactory tendencies noted. Reasons for rejection would include inability to control the aircraft directionally after touchdown (assuming the conditions did not exceed the crosswind limits and normal techniques are used), jammed undercarriage 'shock-absorbers', poor braking, poor steering,

nosewheel shimmy and engine stopping on touchdown due to a too-slow idle or some other factor.

Check Flight Schedule Notes:

a. Record the aircraft's handling during the landing and when on the ground.
b. Immediately after parking the aircraft and with the engine at idle, record the engine oil pressure.
c. Add any relevant comments.

17: Check Flight Pilot's Declaration
Once a satisfactory check flight has been concluded, the pilot must sign a declaration to certify that the aircraft was flown and that the characteristics recorded are truthful. By signing the declaration, the check pilot acknowledges that the aircraft's behaviour is satisfactory, normal and safe.

An LAA/CFS-1 (Gyroplane) form can be used as an aid to track defects found during the check flight itself; however, it should only be signed when the check flight was satisfactory. Any deficiencies found should be recorded in the aircraft's logbook as soon as possible. Any adjustments or other corrective work required should be arranged at the earliest opportunity so that the appropriate parts of the check can be repeated (if required). Work on the aircraft needs to be signed for by an LAA Inspector or by the pilot/owner (if allowed under Pilot Maintenance), in the normal way.

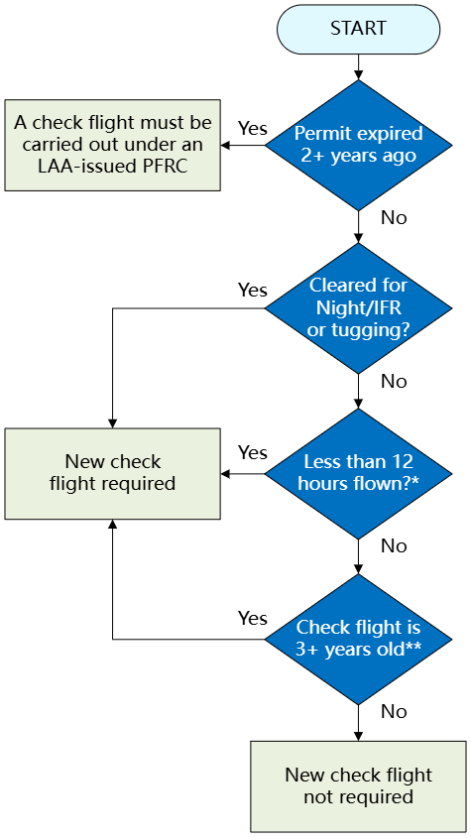
Under the online Permit system, check flight schedules will not have to be submitted to LAA Engineering for review; however, check flight schedules must be kept with the aircraft's documentation. Owners revalidating their Certificate of Validity will only be required to provide the date of the latest check flight covering the application. In an Aircraft Continuing Airworthiness Monitoring (ACAM) audit, any check flight schedules associated with a revalidation application must be present in the aircraft's records.

Appendix 4 – Notes on application timings and when a check flight is required

The online permit system has some timing considerations Owners and Inspectors should be aware of. Note that any application which falls outside the following time thresholds may be rejected.

Item	Timing	Impact
Inspector's submission of the Airworthiness Review	No more than 1 month after the physical survey of the aircraft.	Online system will stop submission of the Airworthiness Review
Submission of application & response to queries	All submissions and answers to queries must be received within 3 months of the physical survey.	If this timescale is exceeded, a new application will be required.
Check Flights	All check flights must be no older than 3 months at the time of declaration in step 3 of the revalidation process.	Online system will not allow dates older than 3 months.

The following flowchart has been prepared to assist in determining if a new check flight is necessary for an aircraft's Permit to Fly revalidation.



* Since the last airworthiness review
** In practice, the online system will require owners to declare a new check flight when the last check flight was carried out more than 27 months ago (e.g. every third revalidation). This is to ensure that the 3-year limit cannot be exceeded.

Please report any errors or omissions to LAA Engineering: engineering@laa.uk.com