Civil Aviation Authority

Maintenance Programmes for Aircraft operating on a National Permit to Fly

CAP 1740

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Glossary

AAN	Airworthiness Approval Note
AD	Airworthiness Directive
ADS-B	Automatic Dependent Surveillance – Broadcast
AMOC	Alternative Method of Compliance
AP	Air Publications
APU	Auxiliary Power Unit
BCAR	British Civil Airworthiness Requirements
CAAIPs	Civil Aircraft Airworthiness Information and Procedures
CAMO	Continuing Airworthiness Management Organisation
DVI	Detailed Visual Inspection
EASA	European Aviation Safety Agency
ETSO	European Technical Standard Order
EU	European Union
F700	Aircraft Maintenance Form 700 (Military)
FAA	Federal Aviation Administration
FI	Fatigue Index
GR	Generic Requirement (CAP 747)
GVI	General Visual Inspection
ICA	Instructions for Continued Airworthiness
LAA	Light Aircraft Association
LAMS	Light Aircraft Maintenance Schedule
LLP	Life Limited Parts
LOEP	List of Effective Pages
MPD	Mandatory Permit Directive
NLG	Nose Landing Gear

O/H	Overhaul
OOP	Out of Phase
PMR	Permit Maintenance Release
SOAP	Spectrometric Oil Analysis Programme
TCH/DAH	Type Certificate Holder / Design Approval Holder
TSO	Technical Standard Order
UK CAA	United Kingdom Civil Aviation Authority

Introduction & background

In the early days of aviation, owners and engineers concerned with in-flight failures and component reliability developed Maintenance Schedules to help prevent costly occurrences. What to maintain, when to maintain and how to maintain, were and still are key to the content of Maintenance Schedules and form the basis of the modern Maintenance Programme. The schedule of tasks (what, when and how to maintain) together with a set of rules relating to how that schedule is to be applied is collectively referred to as the Maintenance Programme. When approved by the CAA, the document is commonly referred to as the Approved Maintenance Programme. The rules and procedures referred to, include but are not limited to a certification statement by the owner / continuing airworthiness management organisation (CAMO), content and revision control, procedures for variations, procedures for periodic review, details of the aircraft and its major sub-components, repeat mandatory requirements applicable to the aircraft and so on. Only when accompanied by the rules above can the schedule be considered a programme.

BCAR Section A3-7 require Maintenance Programmes for certain categories of aircraft to be approved by the UK CAA. This approval can take the form of a direct CAA approval or an approval issued by an A8-25 (hereafter referred to as CAMO) organisation with indirect Maintenance Programme approval privileges (hereafter referred to as an Indirect Approval). The groups of aircraft operating on a BCAR A3-7 Permit to Fly that require an approved programme are as follows:

- Any aircraft with an engine (single) horsepower of greater than 450hp or;
- Any aircraft with multiple piston engines or;
- Any aircraft with a turbine engine (single or multiple) or;
- Any aircraft classified as complex (BCAR A8-25 Supplement 2) or;
- Any aircraft operated in accordance with an approval issued by the CAA.

From 2019 (related to the issue of a Mandatory Permit Directive), any aircraft issued with a UK CAA Permit to Fly and included in one or more of the groups specified above will have stated on the Permit to Fly that the aircraft must be maintained in accordance with a CAA Approved Maintenance Programme. For aircraft already on the register with an existing Permit to Fly, the Permit will be re-issued during a transition period with the same wording applied. At that point, maintenance of applicable aircraft will be in accordance with an Approved Maintenance Programme either by direct approval from the CAA or indirect approval by an appropriately approved CAMO. Where programmes have been previously

“Accepted” by the UK CAA, for the purpose of the BCAR requirement these programmes should be reviewed and submitted for approval by either the CAA or by indirect approval via A8-25 CAMO.

Unless amended to reflect the manufacturers requirements and individually approved by the UK CAA, any existing generic programmes i.e. Light Aircraft Maintenance Schedule (LAMS CAP411/412) are not considered as approved. The requirement does not apply to twin engine aircraft under the oversight of the LAA.

This document is intended to give guidance for the compilation of a Maintenance Programme that will satisfy the CAA for approval. It can be used with the UK CAA template maintenance programme or as general guidance to produce a standalone maintenance programme in a format chosen by an individual or organisation.

Although this document details a basic process to compile a programme (Part A), the CAA acknowledges that there are other ways to achieve compliance with the requirements, such as but not limited to:

- A group of like-minded owners forming a group programme for aircraft of the same type.
- Owners / Operators approaching an approved organisation to place the aircraft on an existing programme.

Part A Compilation of a Maintenance Programme

SECTION 1

Creating a Programme

Compiling the Basic Schedule of Tasks

1.1 Irrespective of the aircraft origin, the usual place to start when considering the maintenance required is the organisation responsible for the aircraft design. In the case of ex-military aircraft, it could also include the uniformed service documents from its operational service (e.g. Air Publications). For conventional manufacturers of General Aviation Aircraft, this information can generally be found in Chapter 4 & 5 of the Service or Maintenance Manual. The same principles apply to the maintenance of the aircraft, engine(s), propellers and equipment.

1.2 These documents will usually answer the question of what, when and how to maintain by providing some form of task list specifying the work to be done, the frequency and to some extent how to accomplish it. This information forms the basis of the maintenance schedule of tasks.

1.3 In some cases where no maintenance requirements could be defined, the CAA may have approved via the AAN (Airworthiness Approval Note) the use of the CAA Light Aircraft Maintenance Schedule (LAMS). In this case, the document would form the basis of the programme to be approved, but would need to recognise manufacturer's recommendations for the aircraft, engine, propeller and equipment, in accordance with the rules of CAA LAMS and submitted for formal approval

CAUTION *The data used must be the latest applicable data. Applicants should be careful to apply only data that is applicable to the aircraft covered by the programme and have in mind that the most up to date version of any manual, may not be the latest applicable data. For instance, if the programme is for a Mk2 aircraft, and the latest manual for that aircraft covers the Mk7, then the applicant may need to find an earlier revision that fully reflects the effectivity of the aircraft.*

Some manufacturers split the maintenance requirements into different chapters or manuals, so care should be taken to ensure that the full maintenance requirements are captured in the schedule. As an example, some manufacturers have produced a separate Lubrication Programme.

1.4 As data will be obtained from several manuals, there will be a collection of tasks to be accomplished at varying intervals. These intervals can be based either on

flying hours, flight cycles or calendar time and sometimes there are combinations of these. It is quite often inconvenient to take each task as it comes and accomplish it; it is usually expedient to parcel the tasks into packages of work that can be carried out when it is convenient to do so, but at a frequency no less than the recommended manufacturers intervals.

1.5 The general rule that can be applied for compiling work packages is that tasks can quite often be performed earlier than when recommended. They can only be carried out later with agreement of the CAA and only in exceptional circumstances.

1.6 So, for tasks that have more than one frequency in terms of flying hours and calendar time, then the event that occurs first is normally the governing one. Notwithstanding the above, where a threshold for an initial structural inspection is defined, this will be based on analysis of when a defect is likely to be apparent so calling such a task early is not desirable.

1.7 From the work described above is derived the check cycle (e.g. Daily / Minor / Annual / Major or often referred to as letter or flying hour checks). For most Permit types, the check cycle is largely already defined in the manufacturers programme therefore the organisation of tasks into packages is generally already substantially complete. In some cases, it may be appropriate to simply cut and paste those tasks into the maintenance programme, saving both time and avoiding the risk of transcription errors.

1.8 Note also that there will often be tasks that are called up outside of the check cycle. These tasks are referred to as Out of Phase or OOPs. These can be performed out of phase or at the interval reduced to align with the check cycle.

CAUTION *Because OOPs tasks run outside of the check cycle, it makes them more prone to being missed.*

1.9 Where multiple aircraft are included in the same programme, it must be clear which tasks are applicable to which aircraft or stated that tasks are applicable to all aircraft unless stated otherwise. In any case, the applicability of tasks must be clear to the maintainer. Identifying applicability of tasks allows multiple aircraft of the same type to be covered by a common programme, even in cases where different engines are installed.

1.10 An example of a typical task level entry in a Permit Aircraft maintenance programme is as follows and the programme also incorporates the ability to be used as a check work card with sign offs for the Mechanic and Inspector. The

entry shows an hours-based task set at 100 hours applicable to all aircraft listed on the programme.

Item	Description	Frequency / Applicability	Mech	Insp
72a	Service the NLG oleo with DTD 585 & Nitrogen	100h All		

1.11 The schedule of tasks should encompass maintenance related to the entire aircraft including its systems and equipment including but not limited to:

- Preparation for flight i.e daily or before and after flight servicing (carried out by engineering staff)
- Airframe & Systems
- Engine(s)
- Propeller(s)
- Avionics, Electrics and Instrumentation
- Emergency Escape Systems
- Installed Components
- Role Specific Equipment (e.g. safety equipment/smoke generator/bomb doors)

1.12 Turbine Engine Maintenance and the complexity of these units in some cases may require a different method of management with shop visits requiring a task level defined and agreed scope of work. On-wing Health monitoring may include regular oil analysis (SOAP), magnetic plug inspections and borescope inspection. Modules or individual engine parts may have separate lives, generally hot sections being shorter than cold, and Rotating Parts may have finite cyclic lives. Special attention should be paid to ensuring the maintenance for such engines is understood with regard to maintenance task requirements, control of life limited parts and modification status. The above must be comprehensively reflected in the maintenance programme.

SECTION 2

Customising a Programme

Consideration of Utilisation

2.1 When creating the original maintenance requirements, the aircraft manufacturer and/or military operator may have based it on an expected utilisation controlled by flight cycles or hours only. Most ex-military aircraft operated privately have a significantly lesser utilisation than the assumptions upon which the original programme was based.

2.2 As an example, see the below showing a task required by the original schedule based on flying hours. The example makes the comparison between a military aircraft flying 250h per year and the private use of the same aircraft operating 25 hours per year.

Military Service Utilisation:	250h per year
Task Interval:	1000h
Years to Interval	**4 years**
Civil Use Utilisation:	25h per year
Task Interval:	1000h
Years to Interval	***40 years***

2.3 In this case and in the absence of a low utilisation programme from the manufacturer, it would be entirely appropriate to add a calendar backstop to the programme to ensure that the programme remains valid for the aircraft and its anticipated utilisation. A typical presentation of a calendar backstop may be as follows:

Item	Description	Frequency / Applicability	Mech	Insp
72a	Service the NLG oleo with DTD 585 & Nitrogen	100h / 12m All		

2.4 Care must be taken to fully understand the assumptions for utilisation upon which the original programme was based before transcribing them into the task list.

2.5 In the absence of the manufacturer, the applicant should review the tasks that may be affected and consider if left as they are, will the maintenance tasks be effective at preventing the condition they were put in place to prevent throughout the entire task interval? Will the aircraft be maintained airworthy with the degree of certainty intended by the manufacturer? Some examples of where degradation over time maybe an issue, are as follows:

- Degradation of rubber compounds (especially in fuel and air systems)
- Degradation of lubrication properties (engine oils / gearbox oils)
- Degradation of structure through corrosion
- Degradation of system components due to wear / inactivity
- Loss of lubricants over time from gearboxes / hubs
- Degradation of system fluids i.e. hydraulic fluids particularly if exposed to overheat, water ingress or poor maintenance practice
- Degradation of wooden structures and fabric coverings

2.6 By way of summary, it is clear from the way permit aircraft are operated that in many cases the actual utilisation of the aircraft is very low – often less than fifty hours per year. In addition, the history of these aircraft can include extended periods parked or in storage. This does not reflect the expected utilisation upon which a manufacturer may have developed an outline schedule of inspections. In practice, there is a danger that critical inspections or servicing tasks may be not be accomplished for a number of years simply because they are based on flying hours, with no calendar backstop and the utilisation is far less than that the assumptions made when the schedule of tasks was conceived.

2.7 The maintenance schedule for the aircraft must be reviewed and amended to take account of the utilisation and type of operation. Task intervals originally specified in flight hours should be reviewed and where necessary converted to appropriate calendar periods. These tasks should be reviewed on a regular basis to ensure that the task content and interval remain applicable and effective. The aim should be to end up with a programme that provides balance between the low utilisation and the likely onset of deterioration and failure.

CAUTION *Several incidents / accidents have been attributed to low utilisation not being reflected in the aircraft Approved Maintenance Programme. The introduction of calendar-based time limits, where appropriate for the aircraft utilisation helps prevent accidents and incidents in the future.*

2.8 The anticipated utilisation must be specified in the programme along with a tolerance. Operation outside of that tolerance should initiate a review to ensure

the maintenance programme remains effective. Whilst in commercial operations the tolerance is often expressed as a percentage, consideration should be given to using a “window of hours” as with already low utilisation, a relatively high percentage will not provide much flexibility. The key here is striking a balance between flexibility and the effectiveness of the Maintenance Programme.

Operational Conditions

2.9 The area of operation is important consideration, for example operating over salt water may require special tasks such as engine compressor washes and other maintenance, to be done on a more frequent basis. Similarly, operation in sandy areas or off rough strips may affect the tasks required. Additionally, where an aircraft is used for aerobatics, this may also impact the required maintenance and should be reflected in the programme. An operating base in coastal regions may also impact the structural inspection requirements.

Modifications and Repairs

2.10 Where an aircraft has been repaired, the repair data from the manufacturer or design organisation may require repeat inspections of the repair at certain intervals. These tasks must be included in the programme.

2.11 Where an aircraft has been modified, the modification data may specify certain maintenance to verify the airworthiness of the affected system or component. Typically, these are referred to as Instructions for Continued Airworthiness (ICA) and must be incorporated into the programme where applicable. This may also include modifications derived from manufacturer’s instructions such as Service Bulletins.

2.12 It is worth noting that there may be maintenance requirements for systems that have been modified to render them permanently inoperative, in part or in whole. Examples include inert ejection systems, bomb doors, deck arresting hooks. Where systems are retained for historic purposes but are inoperative, care must be taken to consider any required maintenance related to them (e.g. security of installation or maintenance related to interface with other systems or structure). This may be specified in any associated approved modification.

2.13 Where tasks are applicable to modifications or repairs that are not embodied on all aircraft covered by the programme, the applicability of the task needs to be indicated. An example of such an indication is as follows:

Item	Description	Frequency / Applicability	Mech	Insp
72a	Service the NLG oleo with DTD 585 & Nitrogen	100h / 12m All		
72b	Check the NLG oleo extension	50h All		
73	Replace NLG oleo seals (aircraft with AF mod)	200h G-ABCD		

Mandatory requirements

2.14 Certain mandatory requirements are specified by the manufacturer and must be included in the Maintenance Programme. In series civil aircraft these include Certification Maintenance Requirements and Airworthiness Limitations. As this terminology is not normally used in Military Aircraft documentation, the general concept is that if the manufacturer sees fit to single a task out as mandatory or of airworthiness significance, this must be annotated in the Maintenance Programme. When considering variations or escalations, these tasks can generally not be varied or escalated without CAA approval. An example of how this can be shown in the maintenance programme is as follows:

Item	Description	Frequency / Applicability	Mech	Insp
72a	Service the NLG oleo with DTD 585 & Nitrogen	100h / 12m All		
72b	Check the NLG oleo extension	50h All		
73	Replace NLG oleo seals (aircraft with AF mod) ***MPD 2017-24***	200h G-ABCD		

2.15 Where the AAN specifies tasks to be performed as a condition of the aircraft airworthiness certification, those tasks must also be added to the maintenance programme.

2.16 Repeat mandatory requirements resulting from Mandatory Permit Directives (CAP 661), Airworthiness Directives and CAP 747 Generic Requirements must be included in the Maintenance Programme. Notwithstanding the above, records of compliance with the maintenance programme repeat mandatory requirements can be demonstrated elsewhere, for example, a CAMO run computer system controlling the mandatory requirements. The key to this provision is demonstrating acceptable control over those repeat requirements.

2.17 Repetitive mandatory requirements (ADs / MPDs / GRs) must be applied as applicable to the aircraft, engine(s), propeller(s), components and equipment.

2.18 Single action or one time ADs / MPD / AMOCs must be accomplished and recorded in the aircraft records, however, on the basis that there is no repetitive requirement, they do not need to be listed in the Maintenance Programme.

2.19 Where an Alternative Method of Compliance (AMOC) is accepted by CAA, scheduled inspections, Life Limited tasks or other Instructions for Continued Airworthiness (ICA) should be included in the programme. It is important that the source of a task included in the programme, derived from an AMOC, MPD or otherwise of a mandatory nature is maintained, kept special, so as not to be inadvertently exceeded if variation is considered for a package of maintenance.

Scrap Life / Overhaul Life / Ultimate Airframe Life

2.20 Where the aircraft is limited by an ultimate life, usually expressed in hours or cycles, this must be specified in the programme.

2.21 Where components are limited by an ultimate life or an overhaul / off wing maintenance limitation, usually expressed in hours, cycles or calendar time, this must be specified in the programme. Examples include but are not limited to vacuum pumps, hoses, fuel system components, gearboxes, pressure vessels, escape system cartridges, engines, propellers.

2.22 The list must include basic detail of the work required (e.g. 500h inspection, overhaul, scrap).

2.23 Examples of typical presentations of this information in a maintenance programme is as follows:

Item	Description	Frequency / Applicability	Mech	Insp
83	Overhaul Engine	1500h / 15y All		
84	Replace rotor head (scrap).	1500h / 15y All		
85a	Remove crew O2 cylinder for hydrostatic test (composite)	10y G-ABCD		
86b	Perform crew O2 cylinder hydrostatic test (steel)	5y G-ABCA, G-ABCF		
87	Perform 500h inspection of Magnetos	500h All		

2.24 Note that CAAIPs (CAP562) Leaflet 70-80 has been developed to provide continuing airworthiness recommendations for the management of engines against potential calendar time related deterioration. This is particularly relevant to certain categories of non-EASA aircraft types where the product is no longer actively supported by the engine manufacturer. If the Original Equipment Manufacturer (OEM), does not provide any recommended calendar time between overhauls, under a low utilisation operation regime, this can result in an engine remaining on wing for a protracted period before removal for workshop strip/overhaul under the TBO limit (in hours or cycles run). The leaflet provides a framework of generic best practices as examples of how to allow ageing engines to continue to operate with acceptable standards of continuing airworthiness and where applicable should be reviewed in the context of ageing engines.

Fatigue Life Monitoring

2.25 If the aircraft is subject to fatigue life monitoring, a defined fatigue index (FI) or flight hour factoring based on aircraft use, the rules/calculations associated with the applicable system should be defined or referenced in the maintenance programme.

2.26 Source data may include information published by the manufacturer, content from military maintenance schedules, F700 or specified in the aircraft AAN.

2.27 Items subject to fatigue monitoring and ultimate fatigue life limitations shall be included in the maintenance programme

Parking and Storage

2.28 Within the Permit to Fly fleet, there are many aircraft that operate throughout the year, and conversely many aircraft that have a seasonal peak with little activity during the colder months. Parking of the aircraft is sometimes outside in the elements, sometimes in a hangar and on occasion with little distinction between parking and long-term storage. The method and duration of parking / storage is clearly key to preventing deterioration effects on the aircraft and it's components. In the wrong conditions and without adequate care, periods of extended inactivity can be more damaging to the aircraft than the effects of high utilisation.

2.29 With the above in mind, the Maintenance Programme should specify what maintenance is required during these periods of inactivity. Typically, the expectation is that some form of preventative maintenance shall be performed after a certain period such as engine runs / moving the aircraft on its wheels, lubrication etc. The requirements should be specified in the Maintenance Programme along with the threshold and intervals for carrying out such activity.

2.30 Where longer term storage is required, the threshold should be specified where the aircraft moves from parking to storage. In a manner similar to parking, the Maintenance Programme should specify how the aircraft is put into storage, how that storage programme is maintained and how the aircraft is removed from storage in order that it can be returned to service.

2.31 Where the manufacturer specifies requirements for parking and storage, these should be reflected in the Maintenance Programme. With regard to engine storage (installed and off wing), in the absence of manufacturers specifications for this activity, CAAIPs (CAP562) Leaflet 70-10 provides acceptable details relating to engine storage procedures.

2.32 Where specific parking / storage requirements were specified on the AAN or by the manufacturer, these must be reflected in the Maintenance Programme.

2.33 When considering this subject, the question to ask is for the period of storage or parking, what maintenance will be required to prevent the condition of the aircraft, components and installed equipment from deteriorating?

UK CAA Additional Requirements & Specifications

2.34 There are UK CAA Specific Maintenance Requirements that need to be considered as follows:

Item	Description	Frequency / details
1	Aircraft Battery Capacity Test – Maintenance / Replacement in accordance with manufacturers data. In the absence of any requirements, bench check / capacity test as follows: Note: requirement applies to an aircraft where electrical system is essential for continued safe flight	Lead Acid 3m Ni-cad 4m
2	Flexible Hoses – Maintenance / Replacement in accordance with manufacturers data. In the absence of any requirements, pressure test as follows:	Pressure Test6yr from new - 3 yrs. thereafter
3	Emergency Equipment & Escape Provisions, Maintenance, Stowage and Expiry in accordance with the manufacturers recommendations. First aid kits if required to be checked every 12 months. In the absence of manufacturer recommendations, emergency hatches and doors to be checked every 6 months.	As detailed and required.
4	Pressure Vessels – Maintenance / Replacement in accordance with manufacturers data. In the absence of any requirements, EU standards to be applied.	EASA SIB 2015-11.
5	Fuel / Oil System Contamination Checks – Consumable fluids and gases uplifted prior to flight shall be of the correct specification / free from contamination and correctly recorded. Fuel system water drain checks to be performed.	At uplift and prior to flight.
6	Seat Belts – Maintenance / Replacement in accordance with manufacturers data. In the absence of any requirements, seat belts and harnesses shall be subject to detailed visual inspection (DVI)	Not exceeding 6 months.
7	Maintenance related to the application of ETSO / FAA TSO for equipment	As required.
8	Maintenance Related to Mode S / ADS-B Surveillance data items (as applicable)	As required
9	Review of CAP 562 and CAA Specifications for applicable items	As required

Interval Escalations

2.35 Following a period in operation it may be noticed that a particular inspection is carried out routinely and no faults are ever detected. Providing data supporting this can be presented to the CAA, it may be possible for the task frequency to be reduced, such that the task is carried out less frequently. The key to this is the supporting data and it should be noted that in itself, lack of findings on a particular inspection may not in all cases be justification for escalation and certain categories of task may not be considered for escalation at all.

2.36 In all cases the CAA must be satisfied from the data submitted that an acceptable level of safety can be maintained with the adjusted frequency.

2.37 Any escalated tasks must be declared when making application for approval and changes should be made in an incremental and controlled manner.

SECTION 3

Programme Rules and Procedures

3.1 The previous section gave detail on how to compile the list of tasks from the manufacturers information, modify it based on utilisation, operational conditions, modifications, repairs, mandatory requirements and reflect the parking and storage requirements. At this point, the document represents a schedule of tasks, without any framework giving instruction in how those tasks should be applied, how short-term extensions can be granted, what standard the maintenance needs to be performed to and who can release the work performed. It doesn't reflect responsibility for the application of the programme or when it needs review to ensure continued effectiveness. These rules and procedures are what creates a completed Maintenance Programme as opposed to a schedule. Considerations are as follows and are usually ordered as below.

Programme Details, Aircraft Details & Utilisation Assumptions

3.2 This information should include as applicable, the following minimum detail:

- Aircraft type
- Aircraft Registration
- Aircraft Serial number
- Engine Type
- Propeller Type
- APU
- Owner details or CAMO details as appropriate
- CAA Programme Reference
- Anticipated Annual Utilisation in hours and cycles / landings as appropriate

3.3 With regard to the utilisation, the programme should give a tolerance within which the programme is considered to be effective. The intention here is to prompt a review of the programme should the aircraft operate outside of that specified tolerance, to ensure that the programme continues to be effective.

Certification Statement

3.4 The certification statement sets the responsibilities related to the maintenance programme. An acceptable statement is as follows:

*This maintenance programme addresses the scheduled maintenance requirements for the subject aircraft operating on a UK CAA Permit to Fly in accordance with BCAR A3-7. This programme is based on the recommendations of the *Type Certificate Holder/*Organisation Responsible for Type Design)/*as specified on the applicable Airworthiness Approval Note (AAN) and supplemented with information relating to continued airworthiness of installed equipment both operable and inoperable. The *owner / *CAMO undertakes to maintain the aircraft in accordance with this programme.*

This maintenance programme also includes tasks based on a review of the specific aircraft operation, utilisation vs the manufacturers original assumptions or assumptions from the associated derived military programme. This programme also includes instructions for longer term parking and / or storage.

Any variations from the original manufacturers requirements have been fully considered and recorded in compiling this programme.

The programme will be reviewed at least annually to ensure it remains valid for the subject aircraft considering at a minimum the published maintenance data for the aircraft type, modifications and repairs, mandatory requirements, utilisation, defects arising since the last review and aircraft storage periods. Such reviews shall be recorded in this programme.

It is recognised that approval of this programme does not prevent the necessity of compliance with mandatory instructions that from time to time may be issued by the UK CAA or country of type / equipment design.

It is recognised that the compliance with this programme alone does not discharge the owner / operator from ensuring that the programme reflects the maintenance needs of the aircraft, such that continuing safe operation can be assured. It is further understood that the UK CAA reserves the right to suspend, vary or cancel the approval of the maintenance programme if the CAA has evidence that the requirements of the maintenance programme are not being followed or that the required standards of airworthiness are not being maintained.

3.5 The statement must be dated and signed by the person responsible for the continuing airworthiness of the aircraft, usually that person being either the A8-25 Continued Airworthiness Manager or the Owner.

Amendment Record, Content Control (List of Effective Pages)

3.6 This section should include the following:

- The revision status and a method of recording future revisions
- List of effective pages or sections as appropriate

3.7 The intent of this is that when reviewing the programme, the person should be able to identify the revision status of the programme and that it is complete (i.e. no pages missing or at the incorrect revision).

Data used to compile the programme

3.8 This section should include any data used to compile the schedule of tasks, typically including the type design / military operators data, including also data related to installed equipment. Where there are separate programmes for various activities (e.g. lubrication programme) then this detail should also be listed.

3.9 The specific information should include a document title, reference and revision status / date as applicable.

Certification of Maintenance

3.10 This section should include details on the release requirements of the aircraft. In the case of BCAR A3-7, this is a Permit Maintenance Release (PMR) and can only be issued by a person authorised by the UK CAA or an approved organisation as appropriate.

Duplicate / Independent Inspections

3.11 This section should show the minimum requirements of the maintenance programme with respect to completing Duplicate / Independent inspections as specified in BCAR A3-7.

3.12 Where the technical characteristics of the aircraft or the requirements of the owner / CAMO have identified other tasks that should be subject to such inspections, these can also be listed. It is noteworthy that once approved, the

aircraft must be maintained in accordance with the programme, therefore it must be understood that identifying tasks outside of the regulatory requirements bestows on those tasks the same status as other programme tasks.

3.13 An example of an acceptable policy for compliance with December 2017 version with BCAR A3-7 is as follows:

Duplicate Inspections (may be referred to as Independent or Second Inspections)

A duplicate inspection shall be carried out after any flight safety sensitive maintenance task. Maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing a duplicate inspection.

A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

Duplicate inspections should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant Permit Maintenance Release (PMR) is issued.

A duplicate inspection is an inspection first made by an authorised person signing for the maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found. The second independent competent person is independent if they were not involved in doing the work being inspected.

*The second independent competent person is not issuing a maintenance release therefore is not required to hold certification privileges. However they should be suitably qualified to carry out the inspection. *Where the work and first inspection has been carried out by an authorised person, the pilot may carry out the second inspection.*

**The requirements of BCAR A3-7 and/or appropriate organisational procedures (e.g. A8-25) shall be complied with when performing Duplicate Inspections. An owner, operator or CAMO may extend the list of items requiring Duplicate*

Inspection beyond the above based on operational, maintenance or specific type experience.

Permitted Variations & Tolerances

3.14 This section should detail the permitted variations to the maintenance programme requirements. These variations are used to cater for unforeseen events and give an exceptional extension to a check period. They must not be used as a method of routine maintenance planning.

3.15 A tolerance is where a programme allows for the early completion of a maintenance check or task without losing time on the overall check cycle. An example could be an aircraft on an annual maintenance regime where the check could be performed a month early without penalty, effectively meaning the next check could be performed 13 months later. Tolerances may be used as a maintenance planning tool.

3.16 It should be noted that tolerances and variations cannot be used together as this could permit variation far beyond the intention of the programme.

3.17 Variations cannot be issued for mandatory items such as Airworthiness Directives, Scrap Life Limits, O/H life limits, Mandatory Permit Directives, Generic Requirements or specific task requirements from the aircraft AAN. Where extension to these items is required, the CAA must be contacted.

3.18 An example of an acceptable policy for Maintenance Programme Variations where the manufacturer does not specify such information is as follows:

Variations shall be permitted only when the periods prescribed in this programme cannot be complied with due to circumstances which could not reasonably have been foreseen by the operator or by the contracted Maintenance Organisation. Examples of such circumstances:

- Aircraft on Ground away from main base
- Weather conditions preventing return of aircraft
- Maintenance provider goes out of business
- Failure of ground equipment
- Non-availability of a hangar due to late release of another aircraft

Period Involved	Maximum Variation of the Prescribed Period
(a) Items Controlled by Flying Hours.	
(i) 5000 flying hours or less	10%
(ii) More than 5000 flying hours	500 flying hours
(b) Items Controlled by Calendar Time.	
(i) 1 year or less	10% or 1 month, whichever is the lesser
(ii) More than 1 year but not exceeding 3 years	2 months
(iii) More than 3 years	3 months
(c) Items Controlled by Landing/Cycles	
(i) 500 landings/cycles or less	10% or 25 landings/cycles, whichever is the lesser
(ii) More than 500 landings/cycles	10% or 500 landings/cycles, whichever is the lesser

NOTES

1. Permitted variations for tasks controlled by flying hours should not be understood to be a maintenance planning tool, but as an exceptional means to allow the operator to fly for a limited period of time until the required check is performed.
2. Permitted variations may not be applied to Airworthiness Directives, Mandatory Permit Directives, CAA Generic Requirements, airworthiness life limitations or overhaul and test periods.
3. The more restrictive limit shall be applied for tasks controlled by both flying hours and calendar time.
4. Any application of a permitted variation to the maintenance check cycle period must be recorded in the appropriate log book(s) together with the reason for the variation, by a person who is authorised to sign the log book entry for that particular check. Details of the permitted variation must be made visible to the pilot.
5. Permitted variations are not required to be deducted from the next scheduled check.

Maintenance Programme Review

3.19 The Certification Statement commits to perform a review of the maintenance programme to ensure that the programme remains effective for the aircraft.

3.20 This section should detail how often that review is performed (at least annually), by whom and provide a method of recording that the review has taken place.

3.21 The review should cover the period since the last review and include:

- Changes to published data for the type and its equipment
- Modifications and repairs
- Defects arising
- Aircraft utilisation
- Aircraft extended parking and or storage
- Changes in the aircraft operation
- Unscheduled Component Changes

3.22 The output of the review should be establishing that the programme remains effective without any required changes or identification of changes to ensure the programme remains effective. A well-considered review contributes to continued safe operation and may be financially beneficial.

Inspection Standards

3.23 Whilst larger aircraft manufacturers define in detail the inspection criteria to be applied, it is less common in the Permit Aircraft environment.

3.24 The task below requires a check of the NLG oleo, which in simple terms could just tell the Inspector what to look at. Without some definition of what “check” means, the intent of the programme is not clear.

Item	Description	Frequency / Applicability	Mech	Insp
72a	Service the NLG oleo with DTD 585 & Nitrogen	100h All		
72b	Check the NLG oleo extension	50h All		

3.25 For this reason, maintenance programmes should define what is meant by the various descriptors being used for the maintenance work. Where this is provided by the aircraft manufacturer, then that detail must be included in the programme. Where no definition is provided, the following definitions may be used.

CAUTION *The following definitions should only be used in the absence of definitions from the aircraft manufacturer. Where there is conflict between the definitions below and the intent of a maintenance task published by the manufacturer, the interpretation should be made in favour of the manufacturer.*

Service / Lubrication

3.26 The terms “service” or “lubrication” requires that a component or system should be serviced and/or replenished as necessary with fuel, oil, grease, water, oxygen, nitrogen etc. to a condition specified in the appropriate maintenance manual. The term “Service” may also be used to require filter cleaning or replacement.

Inspect

3.27 An “inspection” is a visual check performed externally or internally in suitable lighting conditions from a distance considered necessary to detect unsatisfactory conditions/discrepancies using, where necessary, inspection aids such as mirrors, torches, a magnifying glass etc. surface cleaning and removal of detachable cowlings, panels, covers and fabric maybe required to satisfy the inspection requirements. Special access equipment may also be required, particularly for larger aircraft.

Operational Check

3.28 An “operational check” is a test used to determine that a system of component or any function thereof is operating normally.

Functional Check

3.29 A “Functional Check” is a detailed examination of a complete system, sub-system or component to determine if operating parameters are within limits of range of movement, rate of flow, temperature, pressure, revolutions per minute, degrees of travel etc. as specified in the appropriate maintenance data. Measured parameter should be recorded.

Check

3.30 A “Check” is the verification of compliance with the type design organisations recommendations.

Responsibilities, Ownership, Transfer and Approval

3.31 The owner / operator as applicable is responsible for the continuing airworthiness of the aircraft and shall ensure that no flight takes place unless the maintenance of the aircraft is performed in accordance with the aircraft maintenance programme. For certain categories of permit to fly aircraft, the approval of such a programme is a condition associated with the issue and validity of the Permit to Fly.

3.32 Reflecting the responsibility of the owner or operator for the airworthiness of the aircraft, the Certification Statement detailed earlier in this Section 3 will usually be signed by that owner or operator.

3.33 Notwithstanding the above, elements of the airworthiness management including the development of the maintenance programme may be contracted to an appropriately approved A8-25 organisation. When properly contracted, it is permitted for the Continuing Airworthiness Manager of that A8-25 organisation to sign the certification statement and assume the associated responsibilities.

3.34 Aircraft may only be maintained to a single maintenance programme therefore must be listed in the effective aircraft section of one programme only.

3.35 When moving an aircraft from one programme to another, suitable amendments reflecting the change must be made to both programmes and those amendments must be approved.

3.36 The aircraft is not considered to be maintained in accordance with a programme until it is specifically reflected in that programme, the associated amendment approved, an assessment performed to establish what if any maintenance action is needed to align the aircraft with that programme and such maintenance has been performed and certified.

3.37 An assessment of the maintenance status of an aircraft against the programme requirements when moving an aircraft to a new programme is important in ensuring that no maintenance actions are inadvertently omitted. Resultant packages of work are often referred to as bridging checks.

3.38 For a programme that is already approved, the CAA will allow transfer of responsibility for that programme between A8-25 CAMO and / or owners provided all parties agree.

3.39 Where such a programme transfer occurs, an amendment must be prepared to ensure that the transfer is appropriately reflected. Items that may have been specific to the previous organisation or person(s) such as AMOCs, internal procedure references etc will require review and amendment as applicable. In addition, the amendment must include a certification statement signed by the new responsible person(s), effectively transferring responsibility to the new owner / operator or A8-25 CAMO as appropriate

3.40 When due to aircraft removal a programme no longer contains aircraft for which it is effective, it should be cancelled or maintained as a generic programme. If maintained as a generic programme, it must be reviewed and amended to reflect addition of new aircraft prior to approval and further use.

3.41 A8-25 organisations with Indirect Privileges for the approval of maintenance programmes may approve programmes and amendments within the limitations of procedures approved by the UK CAA and included in the CAME. Any indirect approval of maintenance programmes or amendments must be notified to the CAA by the completion and submission of Form SRG 1766.

3.42 Applications for direct approval of maintenance programmes by the UK CAA must be submitted using form SRG 1766.

3.43 Maintenance programmes may be issued an internal reference number by the submitting person / organisation however, it must be noted that for all initial issue programmes, a number shall be allocated by the UK CAA on receipt of the application / notification. This CAA generated number must then be clearly displayed in the maintenance programme and the programme resubmitted for approval / notification. It should be noted that this applies to all programmes, irrespective of the nature of approval (i.e. direct CAA or indirect approval).

Part B BCAR Section A3-7 Aircraft Maintenance Programme (Aeroplanes and Helicopters)

Introduction

The following Maintenance Programme template has been produced by the UK CAA as a preferred format for maintenance programmes that require CAA approval. The template has been produced to satisfy the requirements of BCAR A3-7 for aircraft operating on a UK National Permit to Fly only.

Whilst the template has obvious formatting parallels with the UK CAA published Light Aircraft Maintenance Schedule (LAMS), a significant difference is that this programme does not detail task content as for compliance reasons and to be effective for the associated aircraft, the programme should be based on the manufacturers requirements as set out in the guidance section of this CAP.

The UK CAA acknowledges that the use of this document whilst preferred is not mandatory and other formats may be used if the requirements of BCAR A3-7 are met. In producing this template, the CAA is providing a common structure that will assist the CAA in approving the expected volume of programmes in the set timeframe and reduce the amount of industry time and research required to produce a compliant programme.

BCAR Section A3-7 Aircraft Maintenance Programme (Aeroplanes and Helicopters)

Aircraft Type:
Maintenance Programme CAA Reference Number:
Maintenance Programme Organisation/Operator* Reference Number:
Anticipated annual aircraft utilisation of between: _____ and _____ hours; _____ and _____ cycles/landings.
Maintenance Programme Owner:
Name & Address:

This maintenance programme is approved by:	
UK Civil Aviation Authority *	BCAR A8-25 organisation (with indirect approval privileges) *
Revision Number / Date:	
Name / Position:	
Date:	
Authorisation:	

Section 1 Aircraft Details

This maintenance programme is applicable to the following aircraft only:

Aircraft Basic Type / Name:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Registration:	G-		
Aircraft Designation:		Serial Number:	
Engine Type / Mk:		Prop Type / Mk:	

Section 2 Certification Statement

This maintenance programme addresses the scheduled maintenance requirements for the subject aircraft operating on a UK CAA Permit to Fly in accordance with BCAR A3-7. This programme is based on the recommendations of the *Type Certificate Holder / *Organisation Responsible for Type Design)/*as specified on the applicable Airworthiness Approval Note (AAN) and supplemented with information relating to continued airworthiness of installed equipment both operable and inoperable. The *owner / *CAMO undertakes to maintain the aircraft in accordance with this programme.

This maintenance programme also includes tasks based on a review of the specific aircraft operation, utilisation vs the manufacturers original assumptions or assumptions from the associated derived military programme. This programme also includes instructions for longer term parking and / or storage.

Variations from the manufacturers requirements are stated and fully justified in this programme.

The programme will be reviewed at least annually to ensure it remains valid for the subject aircraft considering at a minimum the published maintenance data for the aircraft type, modifications and repairs, mandatory requirements, utilisation, defects arising since the last review and aircraft storage periods. Such reviews shall be recorded in this programme.

It is recognised that approval of this programme does not prevent the necessity of compliance with mandatory instructions that from time to time may be issued by the UK CAA or country of type / equipment design.

It is recognised that the compliance with this programme alone does not discharge the owner / operator from ensuring that the programme reflects the maintenance needs of the aircraft, such that continuing safe operation can be assured. It is further understood that the UK CAA reserves the right to suspend, vary or cancel the approval of the maintenance programme if the CAA has evidence that the requirements of the maintenance programme are not being followed or that the required standards of airworthiness are not being maintained.

Name:	Position:		Signed:
Date:			

*Delete where not applicable

Section 3 Amendment Record

Revision	Date of Incorporation:	Reason for Revision

NOTE: Revisions to the content of this programme are indicated by margin bars or highlighting.

Section 4 – List of Effective Sections and Pages

Section	Title	Revision	Date	Pages	Applicable
Section 1 to 6	Aircraft Details				Yes
	Certification Statement				
	Amendment Record				
	List of Effective Sections and pages				
	Programme Review				
	Instructions for continued airworthiness				
	Programme Rules				
Appendix 1	Maintenance Check cycle & Scheduled Task List				Yes
Appendix 2	Maintenance related to modification and repairs				Yes/No
Appendix 3	Repeat Mandatory Requirements (e.g. Airworthiness Directives / Generic Requirements / AMOC)				Yes/No
Appendix 4	Life Limited Parts (LLP) / Overhaul Life / Airframe Ultimate Life				Yes/No
Appendix 5	Parking & Storage				Yes/No
Appendix 6	Deviations / Permitted Variations				Yes/No
Appendix 7	Fatigue Life Monitoring				Yes/No
Appendix 8	Additional Operator Defined Tasks and Pilot Maintenance				Yes/No
Appendix 9	Tasks relating to UK National Requirements				Yes/No

Section 5 Programme Review

This maintenance programme shall be reviewed at intervals not exceeding 12 months and details recorded in the table below. The review shall include

- Changes to published data for the type and its equipment
- Modifications and repairs
- Defects arising
- Aircraft utilisation
- Aircraft extended parking and or storage
- Changes in the aircraft operation
- Unscheduled Component Changes

Date	Review Details / Outcome	Name / Signature

*Approval of the maintenance programme approves the format of the above table and does not signify approval of the content.

Section 6 Instructions for Continued Airworthiness / Maintenance Data

Data stated below is the latest data applicable to the aircraft, engine(s), propellers and components as appropriate.

This programme is based on the instructions for continued airworthiness issued by the Type Certificate Holder, organisation responsible for type design and/or Original Equipment Manufacturers as follows:

	Document Title / Reference	Rev No. / Date	Comments
Aircraft			
Engine(s)			
Propeller(s)			
Escape System			

Section 7 Programme Rules

Responsibilities

Owners/CAMO are responsible for the accomplishment of the maintenance prescribed in this maintenance programme and ensuring that the aircraft remains airworthy. They are also responsible for ensuring that the programme is reviewed at least annually and/or when Certifying Persons highlight any defect or condition which in their judgement is related to deficiencies in either the content or application of this programme.

Certifying Persons and / or Organisations are responsible for ensuring that the maintenance required by this programme, as ordered by the owner/CAMO is performed and released to service in accordance with the standard defined in this programme and that all identified defects are accurately and adequately recorded in the aircraft records, rectified prior to further aircraft operation or deferred in accordance with an approved standard.

Certifying Persons are also responsible for reporting directly to the owner/CAMO any defect or condition which in their judgement is related to deficiencies in either the content or application of this maintenance programme.

Utilisation

This maintenance programme is based on an anticipated annual utilisation as stated on the front page. Any utilisation outside of this anticipated annual utilisation shall lead to a review of the maintenance programme to ensure that it remains effective for the anticipated utilisation.

Permit Maintenance Release

With the exception of maintenance performed by the pilot, the aircraft shall be issued with a Permit Maintenance Release Certificate (PMR) on the completion of maintenance activity. The PMR supports the continued validity of the Permit to Fly and the associated Certificate of Validity. The aircraft log books/worksheets shall contain the particulars of the maintenance performed and shall include the following certification statement:

“The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight”. The statement shall be accompanied by the signature of the person issuing the PMR, that persons authorisation details and the date of release.

Only those persons specifically approved by the UK CAA or persons specifically authorised by an organisation appropriately approved by the UK CAA may issue a Permit Maintenance Release.

Duplicate Inspections (may be referred to as Independent or Second Inspections)

A duplicate inspection shall be carried out after any flight safety sensitive maintenance task. Maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing a duplicate inspection.

A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

Duplicate inspections should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant Permit Maintenance Release (PMR) is issued.

A duplicate inspection is an inspection first made by an authorised person signing for the maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found. The second independent competent person is independent if they were not involved in doing the work being inspected.

The second independent competent person is not issuing a maintenance release therefore is not required to hold certification privileges. However, they should be suitably qualified to carry out the inspection. *Where the work and first inspection has been carried out by an authorised person, the pilot may carry out the second inspection.

* The requirements of BCAR A3-7 and/or appropriate organisational procedures (e.g. A8-25) shall be complied with when performing Duplicate Inspections. An owner, operator or CAMO may extend the list of items requiring Duplicate Inspection beyond the above based on operational, maintenance or specific type experience.

Section 8 Maintenance Programme Appendices

Maintenance programme appendices include specific maintenance tasks and procedures for the applicable aircraft. Whilst most appendices will be relevant, there are some aircraft for which certain appendices do not apply and this is indicated in Section 4 (List of Effective Sections and Pages).

The programme is designed to accommodate single aircraft or multiple aircraft of the same type that are substantially similar in both operation and design. Where maintenance requirements for a particular aircraft or group of aircraft vary significantly due to modification status or nature of operation in a way that would make the content or applicability of the appendices unclear, the aircraft or group shall be removed from this programme and moved to a programme designed for the specific maintenance needs of that aircraft or group.

Note that Appendix 8 has been created for any operator specific requirements to be included in this programme. Use of these appendices is indicated in Section 4 and the content is defined by the person or organisation creating this programme.

The specific details of the appendices are as follows:

Appendix 1 Maintenance Check Cycle & Scheduled Task List

This appendix details the check cycle for the maintenance programme, listing the specific maintenance check package titles and frequency from pre-flight check up to the most extensive maintenance checks. The check cycle also includes any scheduled structural or aging aircraft packages as defined by the organisations responsible for the type design or other approved sources (e.g. A8-21 organisation or as required by the AAN).

The appendix also includes listings and / or work sheets related to each check package.

As applicable, this appendix encompasses maintenance related to:

Airframe & Systems
Engine(s)
Propeller(s)
Avionics, Electrics and Instrumentation
Emergency Escape Systems

Installed components
Role Specific Equipment & equipment required to meet operational requirements (e.g. safety equipment / smoke generator)

Scheduled maintenance tasks falling outside of the check cycle specified are also included as “Out of Phase” tasks.

Scheduled maintenance tasks arising from a review of CAA requirements and CAA specifications are to be included in this section.

Where available from the manufacturer, definitions relating to the performance of maintenance shall be included in Appendix 1 and form part of this maintenance programme. Where the manufacturer has not provided definitions, the following shall apply:

Service / Lubrication
The terms “service” or “lubrication” requires that a component or system should be serviced and/or replenished as necessary with fuel, oil, grease, water, oxygen, nitrogen etc. to a condition specified in the appropriate maintenance manual. The term “Service” may also be used to require filter cleaning or replacement.

Inspect
An “inspection” is a visual check performed externally or internally in suitable lighting conditions from a distance considered necessary to detect unsatisfactory conditions/discrepancies using, where necessary, inspection aids such as mirrors, torches, a magnifying glass etc. surface cleaning and removal of detachable cowlings, panels, covers and fabric maybe required to satisfy the inspection requirements. Special access equipment may also be required, particularly for larger aircraft.

Operational Check
An “operational check” is a test used to determine that a system of component or any function thereof is operating normally.

Functional Check
A “Functional Check” is a detailed examination of a complete system, sub-system or component to determine if operating parameters are within limits of range of movement, rate of flow, temperature, pressure, revolutions per minute, degrees of travel etc. as specified in the appropriate maintenance data. Measured parameter should be recorded.

Check
A “Check” is the verification of compliance with the type design organisations recommendations.

Appendix 2 Maintenance Related to Modifications and Repairs

Approved changes that have been carried out to the aircraft, engine(s), propeller(s) and components after original manufacture shall be recorded in the appropriate log book(s) and copies of associated approved data used in the repair or modification retained. Where as a result of modifications and repairs, the design organisation generates associated instructions for continued airworthiness (ICA) such as additional inspections, these requirements shall be included in this Appendix.

Appendix 3 Maintenance Related to Mandatory Requirements (e.g. Airworthiness Directives / Generic Requirements / AMOC)

The following documentation is reviewed for applicability and shall be complied with within the provisions and limitations of the issued document. Unless already included in Appendix 1, any items requiring repeat inspection shall be listed in the Appendix 3 of this maintenance programme.

1. CAP 747 CAA Mandatory Requirements for Airworthiness (Including Airworthiness Directives and Generic Requirements)
2. UK CAA Mandatory Permit Directives (MPD) Inc. CAP 661
3. Airworthiness Directives of the state of design
4. Any maintenance requirements specified on the applicable Airworthiness Approval Note (AAN)
5. Alternative Method of Compliance (AMOC) relating to a mandatory requirement

The above applies to the aircraft, engine(s), propeller(s) and installed components / equipment as applicable.

Notwithstanding the detail above, where such requirements are controlled by a BCAR A8-25 Approved Organisation, this appendix can be cross referenced to the computer system or report used to control compliance with mandatory requirements. In such a case the appendix will detail the organisation name, CAMO approval reference of the organisation performing this service.

Appendix 4 Life Limited Parts (LLP) / Overhaul Life / Airframe Ultimate Life

This appendix lists all items subject to an ultimate life, including the airframe itself if applicable (e.g. dry vacuum pump / oil and fuel flexible hoses / escape system cartridges / pressure vessels). It also includes components to be removed for off wing maintenance not already covered by Appendix 1 (e.g. Engine(s) / Propeller(s) / Magnetos).

The list includes detail relating to the type of maintenance required (e.g. Overhaul / 500h Inspections / hydrostatic test) and the associated task frequency.

Appendix 5 Parking and Storage

The appendix details the aircraft / engine / systems maintenance and preservation requirements for periods where the aircraft is not being operated for periods more than 7 days. Where applicable, details of preservation and storage requirements for “off wing” or “spare” engines are also included.

Appendix 6 Deviations and Permitted Variations

Deviations from the organisation responsible for type design maintenance recommendations are listed in this appendix showing both the nature of the deviation and the associated justification with reference to source data if applicable.

Where the aircraft manufacturer defines permitted variations from the maintenance programme, appendix 6 shall include relevant information with reference to the source data.

Variations shall be permitted only when the periods prescribed in this programme cannot be complied with due to circumstances which could not reasonably have been foreseen by the operator or by the contracted Maintenance Organisation. Examples of such circumstances:

- *Aircraft on Ground away from main base*
- *Weather conditions preventing return of aircraft*
- *Maintenance provider goes out of business*
- *Failure of ground equipment*
- *Non-availability of a hangar due to late release of another aircraft*

Period Involved	**Maximum Variation of the Prescribed Period**
(a) Items Controlled by Flying Hours	
(i) 5000 flying hours or less	10%
(ii) More than 5000 flying hours	500 flying hours
(b) Items Controlled by Calendar Time	
(i) 1 year or less	10% or 1 month, whichever is the lesser
(ii) More than 1 year but not exceeding 3 years	2 months
(iii) More than 3 years	3 months
(c) Items Controlled by Landing/Cycles	
(i) 500 landings/cycles or less	10% or 25 landings/cycles, whichever is the lesser
(ii) More than 500 landings/cycles	10% or 500 landings/cycles, whichever is the lesser

NOTES

1. Permitted variations for tasks controlled by flying hours should not be understood to be a maintenance planning tool, but as an exceptional means to allow the operator to fly for a limited period of time until the required check is performed.
2. Permitted variations may not be applied to Airworthiness Directives, mandatory permit directives, CAA Generic Requirements, airworthiness life limitations or overhaul and test periods.
3. The more restrictive limit shall be applied for tasks controlled by both flying hours and calendar time.
4. Any application of a permitted variation to the maintenance check cycle period must be recorded in the appropriate log book(s) together with the reason for the variation, by a person who is authorised to sign the log book entry for that particular check. Details of the permitted variation must be made visible to the pilot.
5. Permitted variations are not required to be deducted from the next scheduled check.

Appendix 7 Fatigue Life Monitoring

This appendix identifies which items, if any are subject to fatigue life monitoring, a defined fatigue index (FI) or flight hour factoring based on the aircraft use. The rules / calculations associated with the applicable system are defined in this appendix, including also the maintenance requirements of any installed equipment (e.g. fatigue meter).

Source data may include information published by the manufacturer, content from a military maintenance programme or requirements specified on the aircraft AAN.

Appendix 8 Additional Operator Tasks / Pilot Maintenance

This Appendix identifies additional tasks inserted by the operator and the details of any permitted Pilot Maintenance.

Appendix 9 Tasks Relating to UK National Requirements

This Appendix identifies additional tasks required by UK National Requirements.

SECTION 1

Maintenance Programme Template

Appendix 1 Cover Sheet – Check Cycle & Scheduled Tasks

Cover Sheet – Check Cycle & Scheduled Tasks

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
A description and details of the check cycle		
Scheduled tasks (check packages)		
Out of Phase Tasks		
Tasks arising from additional CAA requirements		
Tasks arising from CAA specifications		

*Tick as applicable to each item.

Appendix 2 Cover Sheet – Maintenance Related to Modifications and Repairs

Maintenance Related to Modifications and Repairs

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Maintenance tasks related to repairs to the aircraft, engines and equipment		
Maintenance tasks related to modifications to the aircraft, engines and equipment		

*Tick as applicable to each item.

Appendix 3 Cover Sheet – Repeat Mandatory Requirements

Maintenance Related to Mandatory Requirements

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Maintenance tasks related to Airworthiness Directives		
Maintenance tasks related to Mandatory Permit Directives		
Maintenance tasks related to CAP 747 Generic Requirements		
Maintenance tasks specified on the aircraft AAN or equivalent		
Maintenance tasks related to an Alternative Method of Compliance		

*Tick as applicable to each item.

Appendix 4 Cover Sheet – Life Limited Parts / Overhaul Life / Airframe Ultimate Life

Life Limited Parts / Overhaul Life / Airframe Ultimate Life

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Ultimate Scrap Life Items (inc. airframe if applicable)		
Off wing maintenance tasks (up to and including overhaul)		

*Tick as applicable to each item.

Appendix 5 Cover Sheet – Parking & Storage

Parking & Storage

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Maintenance tasks related to parking		
Maintenance tasks related to aircraft storage		
Maintenance tasks related to preservation of off wing spare engines		

*Tick as applicable to each item.

Appendix 6 Cover Sheet – Deviations / Permitted Variations

Deviations and Permitted Variations

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Details of manufacturers permitted variations **see note below		
Details of deviations from the manufacturers recommendations		

*Tick as applicable to each item

**Where N/A, permitted variations from Section 7, programme rules apply

Appendix 7 Cover Sheet – Fatigue Life Monitoring

Fatigue Life Monitoring

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Rules and tasks related to any fatigue life limitations or monitoring system		
Details of any flight hour factoring programme		
Maintenance requirements for any associated equipment or systems		

*Tick as applicable to each item

Appendix 8 Cover Sheet – Additional Operator Defined Tasks and Pilot Maintenance

Additional Operator Tasks & Pilot Maintenance

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Details of any additional tasks required by the owner / operator / CAMO		
Details of any permitted pilot maintenance		

*Tick as applicable to each item

Appendix 9 Tasks Relating to UK National Requirements

Additional Tasks related to National Requirements

CAA MP Reference: Revision:

The following pages_____ to _____ contain:

Details	*Yes	*N/A
Details of any additional tasks generated from National Requirements		

*Tick as applicable to each item

Application for Approval of a Maintenance Programme (A3-7 National Permit to Fly Aircraft)

The application form is available to complete online: www.caa.co.uk/SRG1766

It has been included in the following pages for reference.

Application for Approval, or Notification of the Indirect Approval, of a Maintenance Programme for CAP553, BCAR A3-7 National Permit to Fly Aircraft

Please complete this form online (preferred method) then print, sign and submit as instructed. Alternatively, print, then complete in BLOCK CAPITALS using black or dark blue ink.

FALSE REPRESENTATION STATEMENT
It is an offence under the UK Air Navigation Order to make, with intent to deceive, any false representation for the purpose of procuring the grant, issue, renewal or variation of any certificate, licence, approval, permission or other document. This offence is punishable on summary conviction by a fine, and on conviction on indictment with an unlimited fine or imprisonment or both.

1a. Applicant Details - An Individual (including sole traders and partnerships)

Title: ..... Forename: ..... Surname: .....

Date of birth (dd/mm/yyyy): ..... Nationality: .....

Town of birth: ..... Country of birth: .....

Permanent Address: .....

.....

Country ..... Postcode: .....

Telephone: ..... Mobile telephone: .....

E-mail: .....

Trading Name: (if applicable) .....

Website address: .....

A certified copy of your Passport, EAA/EU National Identity Card or Full Photographic Driving Licence must accompany your application as proof of identification if this is your FIRST application.

In the case of a partnership, please provide complete details of all partners in Box 10.

1b. Applicant Details - A Registered Company

Registered Company Name (in full): .....

Registered Company Number: .....

Country of Company Registration: .....

Registered Office Address: .....

..... Postcode: .....

Telephone: ..... Fax: .....

E-mail: .....

Trading Name: (if applicable) .....

Trading Address (primary site): .....

..... Postcode: .....

Authorised Representative of Company
This application is to be signed by either a Director or Company Secretary or a person authorised by the Board to act on behalf of the Company.

Title: ..... Forename: ..... Surname: .....

Position in Company: .....

Telephone No: ..... E-mail: .....

If you are not a Director or Company Secretary and have been authorised to sign the application form on behalf of the Company, proof of that authority must be provided with the completed application form.

This application will be considered in respect of and, if appropriate, granted to, the company registered under the Company number provided on this form.

1.c Applicant Details - An Unincorporated Association or other body

Name of Unincorporated Association or other body: .....

Address: .....

.....

Country: ..... Postcode: .....

Telephone: ..... Fax: .....

E-mail: .....

Website address:.....

Authorised Representative of Unincorporated Association or other body

This application is to be signed by a person or persons authorised by the body named above to act on behalf of it. This should normally be a member or members of the managing committee of the association or other body. Evidence of the authorisation to act on behalf of the association or body should be provided with the application.

Title: ..... Forename: ..... Surname: .....

Position in Company: .....

Telephone No: ..... E-mail: .....

Charity Number (if applicable): .....

This application will be considered in respect of and, if appropriate, granted to, the company registered under the Company number provided on this form.

2. Application Details

Application for the Direct Approval of a Maintenance Programme by the CAA:

Initial Issue ☐ Amendment ☐ Temporary Amendment ☐

Or, notification of an A8-25 Indirect Approval holding applicable privilege. By ticking this box, you are declaring that the amendment does not exceed the scope of your indirect approval limitations. ☐

CAA Maintenance Programme Number: .....

Operator / Owner Name: .....

Is this maintenance Programme for aircraft to be operated in accordance with CAP 553, BCAR A3-7 and/or an approval issued by the UK CAA?

BCAR A3-7 ☐ CAP 632 ☐ SSAC ☐

*A8-25 CAMO Name: ..... A8-25 CAMO Approval Number: .....

*if applicable.

An approved maintenance programme is required;

- for an aircraft with an engine (single) horsepower of greater than 450 hp;
- for aircraft with multiple piston engines or turbine (single or multiple) engine;
- for aircraft classified as complex (A8-25 Supplement 2);
- or is operated in accordance with an approval issued by the CAA.

For all applications and indirect approval notifications, please supply an electronic copy of the full programme. (Please ensure that the electronic copy contains the complete programme - not just the amended pages).

3. AIRCRAFT ADDED TO OR REMOVED FROM THE MAINTENANCE PROGRAMME (CONTINUE IN SECTION 9 IF REQUIRED)

Is any aircraft already on a different maintenance programme?

Yes ☐ No ☐

If yes, please provide confirmation that the aircraft is being or has been removed from the other programme.

Other Programme Owner: ..... Other Programme Number: .....

Aircraft Manufacturer: ..... Aircraft Type: .....

	Aircraft Registration	Aircraft Serial Number	Addition or Removal
a)	.....	.....	Addition ☐ Removal ☐
b)	.....	.....	Addition ☐ Removal ☐
c)	.....	.....	Addition ☐ Removal ☐
d)	.....	.....	Addition ☐ Removal ☐
e)	.....	.....	Addition ☐ Removal ☐
f)	.....	.....	Addition ☐ Removal ☐
g)	.....	.....	Addition ☐ Removal ☐
h)	.....	.....	Addition ☐ Removal ☐
i)	.....	.....	Addition ☐ Removal ☐
j)	.....	.....	Addition ☐ Removal ☐
k)	.....	.....	Addition ☐ Removal ☐
l)	.....	.....	Addition ☐ Removal ☐
m)	.....	.....	Addition ☐ Removal ☐
n)	.....	.....	Addition ☐ Removal ☐

4 CHECKLIST
The purpose of this maintenance programme checklist is to assist owners / operators with a view to ensuring that the BCAR requirements are met and important elements of the aircraft maintenance regime are considered and included. Correct completion may also reduce CAA processing time. Continue in Section 9 if necessary.

Item	Does the programme include:	Yes	No	Remarks / details
1.	Details of the aircraft as follows:			
	Aircraft type	☐	☐	
	Registration(s)	☐	☐	
	Aircraft Serial Number(s)	☐	☐	
	Installed Engine(s)	☐	☐	
	Installed Propeller(s)*	☐	☐	
	Installed APU*	☐	☐	
	*if applicable	☐	☐	
2.	Signed statement by the owner/operator/CAMO	☐	☐	
3.	Date / revision status / amendment record	☐	☐	
4.	Details of all source data used to create the programme	☐	☐	
5.	Details of any deviations from the source data	☐	☐	
6.	Details of tasks, intervals / frequencies at which maintenance should be carried out as follows:			
	Aircraft	☐	☐	
	Installed Engine(s)	☐	☐	
	Structure	☐	☐	
	Installed Propeller(s)	☐	☐	
	Installed Components & accessories	☐	☐	
	Installed Avionics, electrics and instruments	☐	☐	
	Installed Emergency escape systems & safety equipment	☐	☐	
	Role specific equipment	☐	☐	
	Inoperative systems, components and accessories	☐	☐	
	Related to modifications	☐	☐	
	Related to repairs	☐	☐	
	Related to repeat mandatory requirements (MPD/ADs/GRs/AAN/AMOC)	☐	☐	
7.	Details of maintenance to be performed off wing, up to and including overhaul as follows:			
	Engine(s)	☐	☐	
	Propeller(s)	☐	☐	
	Installed Components & accessories	☐	☐	
	Avionics, electrics and instruments	☐	☐	
	Emergency escape systems & safety equipment	☐	☐	
	Role specific equipment	☐	☐	

Item	Does the programme include:	Yes	No	Remarks / details
8.	Details of any applicable scrap or retirement life (inc. Airframe life)	☐	☐	
9.	Details of maintenance requirements related to parking and storage	☐	☐	
10.	Details of permitted variations to the stated periodicities	☐	☐	
11.	A section for recording the programme review activity and any actions	☐	☐	
12.	Details of Inspection standards	☐	☐	
13.	Details of Release to Service requirements (e.g. PMR)	☐	☐	
14.	The maintenance / life requirements (Appendix 2 refers) of the following as applicable are included in the maintenance programme (UK CAA Requirements):			
	a. Battery Capacity Check	☐	☐	
	b. Flexible Hoses	☐	☐	
	c. Pressure Vessels	☐	☐	
	d. Emergency Escape Provision	☐	☐	
	e. Fuel / Oil System Contamination	☐	☐	
	f. Seat belts and harnesses	☐	☐	
	g. Mode S / ADS-B Surveillance data items (as applicable)/	☐	☐	
	h. TSO/ETSO Equipment	☐	☐	
	i. UK CAA Specifications reviewed for applicability (appendix 1 refers)	☐	☐	
	j. Review of CAP562 (CAAIPS) for applicable requirements.	☐	☐	

5. TECHNICAL DECLARATION

This maintenance programme complies with BCAR A3-7 as applicable and is appropriate for the effective aircraft, considering utilisation, installed equipment and operational conditions.

The programme establishes compliance with:

- Instructions issued by the CAA
- Instructions for continued airworthiness issued by the manufacturer of the aircraft/engine/propeller/equipment or related to any design change / repair instructions

The programme has been reviewed and calendar backstops applied if considered appropriate.

The programme will be reviewed when necessary to ensure that it continues to be valid considering operating experience and instructions from the CAA.

Any deviation from the source data for the aircraft, engine(s), propeller(s), components and equipment have been declared.

I hereby declare that to the best of my knowledge the particulars entered on this application are accurate and a true statement of all the aircraft on this maintenance programme.

I declare that I hold the necessary aircraft data such as Aircraft Maintenance Manuals, Service Bulletins, Mandatory Permit Directives and Airworthiness Directives as applicable and necessary to support this maintenance programme.

I understand that the CAA may conduct sample checks upon aircraft, the location of the maintenance and aircraft records.

5. TECHNICAL DECLARATION (continued)

Name of person holding technical responsibility: .....

Position of person holding technical responsibility: .....

Signature of person holding technical responsibility: .....

Date: .....

The information submitted will be stored on a database and is restricted to authorised persons in accordance with the General Data Protection Regulations.

6. FINANCIAL DECLARATION

I hereby declare that to the best of my knowledge the particulars entered on this application are accurate.

I enclosed the charges payable on application in accordance with the scheme of Charges (www.caa.co.uk/ors5).

I agree to pay any additional charges which may become payable in respect of this application under the scheme of charges.

Name of Applicant (named in 1): .....

Position of Applicant (named in 1): .....

Signature of Applicant (named in 1)
Or Signature of Authorised Representative (named in 1): .....

Date: .....

The information submitted will be stored on a database and is restricted to authorised persons in accordance with the Data Protection Act 1998.

7. SUBMISSION INSTRUCTIONS

When you have completed this Form, please send it together with the appropriate fee to:

Approvals and Certification, Shared Service Centre, Aviation House, Gatwick Airport South, West Sussex, RH6 OYR

Email: apply@caa.co.uk

8. FEES

The fee(s) required are as calculated in accordance with the CAA Airworthiness Scheme of Charges (published in CAA Official Record Series 5) to be paid on application are enclosed herewith.

NB: This application will not be processed until the applicable fees have been received.

Total fees included are: £ .....

IMPORTANT NOTES:

Where the cost of the CAA investigations exceeds the application charge payable, the applicant shall pay additional charges to recover those excess costs incurred by the CAA in accordance with the Scheme of Charges.

If the CAA is required to travel overseas in respect of this application you are advised to read the CAA Scheme of Charges to which this application relates and the section entitled 'Additional charges where functions are performed abroad.' All expenses incurred in pursuance of this application by virtue of travelling overseas will be payable by the applicant on demand.

9. ADDITIONAL INFORMATION (IF REQUIRED)

Appendix 1

UK CAA Specifications - Maintenance Requirements resulting from the application of CAA Specifications for Equipment Approval .

Specification Number	Title	MP Task Reference or N/A if not applicable
1	Safety Belts	
2	Inflatable Life Rafts	
5	Inflatable Life Jackets	
6	Escape Chutes	
7	-Specification removed-	
8	Flame Resistance Testing for aircraft interior materials	
9	Child's Floatation cot	
10	Flight Data Recorder (FDR) systems	
10A	FDR for Aeroplane Accident Investigation	
11	Cockpit Voice Recorder (CVR)	
12	Underwater Sonar Location Device - Approval, installation and maintenance	
14	Ground Proximity Warning System (GPWS)	
15	Public Address (PA) System	
16	Automatic Deployable Emergency Locator Transmitter (ADELT) for Helicopters	
17	Aeroplane Wheels and Brakes Assemblies - Minimum Performance	
18	FDR for Helicopter Accident Investigation	
19	Helicopter Crew Member Immersion Suits	
20	Passenger Protective Breathing Equipment (PPBE) - Smoke Hoods	
21	Helicopter Public Address Systems	
22	Global Positioning Systems (GPS) for Use in Rotorcraft for En-Route Navigation	

Note: Ensure that each applicable specification is cross referred to the maintenance task that satisfies the specification.

Appendix 2

UK SPECIFIC MAINTENANCE REQUIREMENTS.

2.1 **AIRCRAFT BATTERY CAPACITY CHECKS.** Aircraft batteries shall be maintained in accordance with the manufacturer's recommendations. In the absence of any manufacturer's instructions the following periods apply.

a) Lead acid Battery - not exceeding 3 months: capacity check, bench test

b) Ni-Cad Battery - not exceeding 4 months: capacity check, bench test.

2.2 **EMERGENCY EQUIPMENT.** The required Emergency Equipment will be maintained to a programme based on the equipment manufacturer's recommendations. In addition, the following requirements are complied with in the Maintenance Programme:

Emergency equipment is to be checked for correct complement, stowage, installation and expiry date(s) at suitable periods.

First Aid Kit(s) contents are checked at periods not exceeding 12 months.

2.3 **EMERGENCY ESCAPE PROVISIONS** (as applicable)

a) Emergency Exits/Hatches. All emergency exits and hatches are functioned by both internal and external means at periods specified in this Maintenance Programme. In the absence of manufacturer's specific recommendations these occur at suitable periods not exceeding 6 months elapsed time.

2.4 **FLEXIBLE HOSES.** Flexible hoses shall be inspected, overhauled or life limited in accordance with the manufacturer's recommendations.

In the absence of manufacturer's recommendations, hoses shall be subject to a programme of pressure testing at periods not exceeding 6 years from installation and 3 yearly thereafter, or in accordance with an alternative programme as agreed by the CAA.

2.5 **FUEL/OIL SYSTEM CONTAMINATION CHECKS.** Consumable fluids, gases etc. uplifted prior to flight will be of the correct specification, free from contamination, and correctly recorded

Fuel system water drain checks are to be carried out in accordance with CAME procedures.

The procedures shall be in accordance with the manufacturer's recommendations. In the absence of manufacturer's recommendations, the frequency of the water drain checks shall be approved by the CAA.

2.6 **PRESSURE VESSELS**. Pressure vessels are to be overhauled or tested in accordance with manufacturer's recommendations. In the absence of any such recommendations the appropriate European standards should be applied. (EASA SIB 2015-11)

2.7 **SEAT BELTS AND HARNESSES.** In the absence of manufacturer's recommendations, all installed seat belts and harnesses shall be subject to a programme of Detailed Visual Inspection at periods not exceeding 6 months.

2.8 **CAP 562**. Civil Aircraft Airworthiness Information and Procedures (CAAIPs) detail additional maintenance requirements. Procedures are in place to assess all CAAIP leaflets on a continuing basis for applicability to aircraft maintained to this Maintenance Programme. Where necessary relevant maintenance tasks are included in the Maintenance Programme.

2.9 **VITAL POINTS AND CONTROL SYSTEMS**. Whenever inspections are made or work is undertaken on vital points, flying or engine control systems, a detailed investigation must be made on completion of the task to ensure that all tools, rags or any other loose articles which could impede the free movement and safe operation of the system(s) have been removed and that the system(s) and installation in the aircraft zone are clean and unobstructed.

If, as a result of the application of tasks associated with the programme, any part of either the main or any associated system is dismantled, isolated, adjusted, repaired or renewed, that part of the system(s) which has been disturbed shall be subjected to an independent inspection in accordance with point A3-7 para 24.