



MAINTENANCE CONTROL MANUAL

This manual constitutes the manual required by *Canadian Aviation Regulation (CAR) 406.38*. It reflects the means by which Langley Flying School, Inc. will comply with the current requirements of the *Canadian Aviation Regulations*. All incorporated documents identified herein, and every amendment thereto, shall meet the requirements established in this manual. The policies and procedures outlined in this manual, and in all incorporated documents identified herein, must be strictly adhered to at all times.

Ning Zhang, President
Langley Flying School

12 JUN 2020


Date

Each incorporated document, manual or list shall contain the following certification signed and dated by the person responsible for it within the organisation: "This document meets all requirements established in Langley Flying School's *Maintenance Control Manual* as per the requirements of *CAR 406.38(2)*."

Serial Number: 3

1 Approval

This manual is approved as meeting the requirements for a Flight Training Unit, pursuant to *Canadian Aviation Regulation 406.38*.



For the Minister of Transport




2020-07-06

Date

2 List of Effective Pages

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 James Waugh
 Maintenance Manager,
 Langley Flying School, Inc.
 24 May 2023
 Date


 Krystian Foik
 For the Minister of Transport,
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 2023-06-12
 Date

3 Record of Amendment

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8	June 11, 2020	ALL		
9	1 January 2023	ALL except pages 1 & 2		
10	24 may 2023	3, 4, 20A, 21, 23, 24		

4 Introduction to this Manual

This Maintenance Control Manual, hereafter referred to as the “Manual,” establishes the procedures, terms and conditions of the aircraft maintenance system of Langley Flying School, Inc. The Manual, approved by Transport Canada, defines the duties and responsibilities of individuals participating in that system, and it has been compiled for the use of persons operating or maintaining Langley Flying School aircraft. It contains details of the procedures to be followed to ensure compliance with the *Canadian Aviation Regulations*, hereafter referred to as “CARs,” and the related standards. ***The procedures detailed in this manual apply to all personnel performing maintenance, maintenance control, elementary work or servicing involving Langley Flying School, Inc. aircraft and must be adhered to at all times. Failure to comply with the terms of this manual may result in suspension of the operating certificate, aircraft certificates of airworthiness, or both.***

In case of conflict between this manual and the requirements of the CARs, the CARs will prevail. The amendment status of each page in this manual is printed in the bottom left corner of each page and may be determined to be the most recent revision by reference to the list of effective pages.

No aircraft shall be released for flight unless it has been maintained and certified in accordance with this manual. Where maintenance agreements are in effect, the operator remains responsible for the work done.

Economic considerations shall not take precedence over safety in the inspection and maintenance functions and shall not be factored into any joint or separate decisions made by personnel of the Langley Flying School, Inc. or the Approved Maintenance Organisations (AMOs).

Amendments and deviations must be authorised by Transport Canada.

When reference is made to the Company and/or Operator in this manual, it shall be taken to mean:

LANGLEY FLYING SCHOOL, INC.

The Maintenance Manager is responsible for all maintenance performed on the Company aircraft. Flight Instructors providing or supervising flight training, as well as pilots using Company aircraft for non-training flights, are responsible to ensure that take-offs are conducted in aircraft that are in compliance with the terms and conditions of this manual.

Safety in operations is paramount and any Instructor or Pilot-in-command is fully authorised to terminate or suspend any operation when, in the opinion of the Instructor or Pilot-in-command, the safety of the operation with respect to maintenance or airworthiness is in question.

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1 Maintenance Control Manual Administration

1.1 Distribution of This Manual and Manual Holder Responsibilities

This manual is a serialized Controlled Document. No paper or electronic reproductions of this manual are allowed to be created by anyone unless the person making the copy clearly identifies the reproduction(s) as uncontrolled copies.

This Manual incorporates “Documents Incorporated By Reference” (DIR's) in accordance with Canadian Air Regulation (CAR) 406.38(2).

It is the responsibility of the person to whom the specific serialized issue of this manual is assigned, herein called the Manual Holder, upon receipt of a document transmittal related to this manual, to acknowledge the receipt of the transmittal to the Company Maintenance Manager in writing (email, text message...) and to follow the amendment procedures described herein.

This Manual's distribution described in DIR #1 will make it available to each person who performs or manages maintenance, elementary work or servicing of the Company's aircraft.

The proper distribution of this manual is the responsibility of the Maintenance Manager.

1.2 Amendments to Maintenance Control Manual

The Maintenance Manager conducts amendments to this manual when there are changes in the maintenance control system, when the Minister directs changes, when there are changes in *CARs*, or when there are changes within the Company such as personnel changes or the addition of aircraft operated.

Amendments to individual pages of this manual will be distributed to manual holders listed in DIR #1 either electronically or in paper form by a document control transmittal. The Transmittal will contain all the revised pages embodied in the new revision number and there will be one transmittal per serialized document holder. The Transmittal will be led by a Transmittal front page which shall identify at a minimum: the issuing originator of the document, the intended Document Holder recipient, the assigned Manual Serial Number, The transmittal date, the number of pages, and any other appropriate particulars, and shall identify the transmittal by a unique transmittal number.

It is the responsibility of each Manual Holder to acknowledge the receipt of each document control transmittal they receive to the Maintenance Manager in writing. It is the responsibility of each Manual Holder to replace amended pages in the controlled serialized manual assigned to them with the most recent revision received by transmittal within 30 days of the date of the transmittal.

For the purpose of tracking the amendment process the Maintenance Manager will keep records of document control transmittals for at least 5 years.

1.2.1 Amendment Procedure

Amendments will be conducted by the Maintenance Manager in accordance with the following:

In the bottom left-hand corner of each page of this Manual must appear the ***Revision Number*** and the ***Revision Date*** of the page. The validity of the page is determined by comparing the ***Revision Number*** and the ***Revision Date*** of the page with the ***Revision Number*** and the ***Revision Date*** that appears on the ***List of***

Effective Pages.

When a section of this manual is amended, a vertical line in the left margin will indicate the amendment.

Where an amendment requires additional pages, these pages shall bear the page number of the preceding page in the manual and be suffixed alphabetically.

Any amendment requires that a new *List of Effective Pages* be completed and included in each revision.

To initiate an amendment the Maintenance Manager will prepare and forward to Transport Canada a document transmittal of the complete document incorporating the proposed amendments and including the amended List of Effective Pages for approval.

Transport Canada will either request changes to the proposed amendment or will accept the amendment and will return the Maintenance Manager a copy of the approved List of Effective Pages signed by the Transport Canada inspector.

The Maintenance manager will issue by transmittal to each manual holder in DIR#1 the approved amendment including the signed approved list of effective pages. The transmittal will be led by the transmittal front page described in 1.2.

After issuance to manual holders, the maintenance manager will await the receipt acknowledgement described in this section. If acknowledgement is not received within 30 days it is the maintenance manager's responsibility to make contact with the manual holder in question and confirm the receipt and insertion of the amendment into their controlled copy of this manual.

The Maintenance manager will retain transmittal records along with the receipt acknowledgements.

2 Air Carrier Description

2.1 Location and Operations

LANGLEY FLYING SCHOOL, INC. is a privately owned Company based at #110 – 5385 216 Street Langley, B.C. providing fixed-wing flight training services to the public. Normally, flight-training operations are routinely conducted within the lower Fraser Valley and southern coastal area of British Columbia. Cross-country flight training is conducted elsewhere in accordance with demand for services.

Maintenance is performed by agreement with AMOs, which meet the maintenance and quality standards of Transport Canada. Scheduled inspections are conducted in the approved facilities. Elementary Work and Servicing may be conducted on the ramp. Alternate AMOs holding Company Aircraft Ratings may be used in the event the aircraft requires repair when away from main base, provided this repair is undertaken in accordance with Section 4 of this Manual.

2.2 Aircraft Operated

The category, class, type, and number of aircraft operated is described in DIR #5. The approved maintenance schedules are also identified in DIR #5.

3 Personnel

3.1 Persons Responsible for Maintenance Control System

Specific maintenance control functions for specific maintenance control activities will be as defined in the following sections. All personnel involved in the maintenance control system are required complete initial training and applicable update training before being authorized to perform any maintenance control functions. A chart depicting the distribution of functions as well as the name of each person to whom each function has been assigned can be found in DIR #2.

3.1.1 *President*

The President of the company is responsible in accordance with CAR 406.19 to:

- a) Provide the maintenance manager with the financial and human resources necessary to ensure that the holder of the FTU certificate meets the requirements of the CARS.
- b) Ensure that corrective actions are taken in respect of any findings resulting from a quality assurance program.
- c) Ensure that the Maintenance Manager performs the duties referred to in subsections 406.36(1) and 406.47(2) and (3) of the CARS.

3.1.2 *Maintenance Manager*

The Maintenance Manager is responsible to the President for the control of all required maintenance. This responsibility and control includes, but is not limited, to the following:

- a) Developing this manual and aircraft maintenance schedules.
- b) Maintaining this manual, aircraft maintenance schedules and records of certification and traceability for aeronautical products and material.
- c) Scheduling maintenance, elementary work and servicing according to approved maintenance schedules.
- d) Controlling maintenance records.
- e) Proper delegation of responsibility for service difficulty reporting to the AMOs.
- f) Ensuring controlled document amendments are distributed in accordance with the revision and document control process
- g) Ensuring work conducted by the Companies AMOs, personnel training, aircraft dispatch and control of defects are in accordance with this manual.
- h) Ensuring airworthiness directives are complied with.
- i) Ensuring that aircraft are in conformity with their type design.
- j) The operation and success of the *Quality Assurance Program* described in this manual.
- k) The proper administration of *Quality Assurance Findings* in accordance with CAR 406.36(1), including the planning and administration of corrective action related to *Quality Assurance Findings* described in Section 7 of this Manual.
- l) Managing the training and authorisations for the performance of elementary work, servicing, and maintenance control activities for Company aircraft.
- m) Liaising with AMOs and regulatory agencies.
- n) Monitoring aircraft inspections, repair, overhaul, alteration, defect rectification and certification of work.

- o) Conduct periodic *Weight and Balance* and *Equipment List* data audits in accordance with Section 6.2 of this Manual
- p) Identify items for service difficulty reporting and submit service difficulty reports on time.
- q) controlling all documents *Incorporated by Reference*.
- r) Remove aircraft from service if it is justified because of non-compliance with the CARS or because of a risk to aviation safety of safety of the public.

In the event of temporary absence of the Maintenance Manager, the President may assign another person within the Company's senior management to act as Maintenance manager provided the appointment is not more than 30 days, and the assignment is made in writing. Assignments of Acting Maintenance Manager for periods longer than 30 days require Transport Canada approval.

3.1.3 Flight Instructors

Flight Instructors are responsible to the Maintenance Manager to ensure the flights they authorize are conducted in accordance with the provisions of this Manual. This responsibility and control includes, but is not limited to the following:

- a) Elementary work and servicing is conducted in accordance with the initial and ongoing training they receive, and performed and recorded in accordance with Section 4.5 of this Manual.
- b) Aircraft defects are reported and managed in accordance with Section 4.4 of this Manual.
- c) Technical dispatch of aircraft is conducted in accordance with Section 5.2 of this Manual.
- d) All aircraft used for Company operations have prior flight authority in accordance with Section 6.3 of this Manual.

3.2 Personnel Qualifications, Authorisations and Records

3.2.1 Maintenance Manager Qualifications

The Maintenance Manager shall meet the requirements of *CAR 406.36* and the *Standards of Competence* set out in *CAR 426.36*.

The Maintenance Manager shall meet the human factors training requirements of *CAR 406.45* and *Airworthiness Notice B058*.

3.2.2 List of Authorized Persons

The Maintenance Manager will maintain a list of persons authorised to perform or supervise the performance of elementary work and servicing, as well as defect deferral activities, which shall include the details of task(s) authorised and a description of training undertaken by each person.

3.2.3 Acknowledgement of Aircraft Authorization

Aircraft authorisations provided to persons pursuant to this section will be indicated by the Maintenance Manager's signature in staff Initial Training Records, and will be acknowledged by the authorized person by initialling the training record authorization next to the Maintenance Manager's signature.

3.2.4 Transcripts and Training Records

Each Person authorised to perform elementary work, servicing, and defect deferral activities will receive a transcript of his or her training upon completion of the training.

Training records and authorisations shall be retained for at least two years.

3.3 Training

The Maintenance Manager shall ensure that all persons performing or supervising the performance of elementary work tasks and aircraft servicing and defect deferral activities receive initial, update, and additional training as specified in Sections 3.3.1 and 3.3.2 of this manual.

Initial and update training shall include human factors training. Human Factors training will consist of self guided reading of TC publications TP12863, TP12864, and TP12865. After reading the material and understanding how it relates to the work for which they are responsible, the trainee shall acknowledge their understanding by signing the Human Factors Training Record (DIR #11).

Training shall include how to use Flight Schedule Pro software in the performance of their responsibilities.

From time to time, additional training may be required in response to findings related to non-conformance or ineffectiveness as defined under Section 7.2.3 (*Quality Assurance Findings*) of this Manual. In such cases, the record of related training will be attached to the appropriate *Quality Assurance Corrective Action Forms* referred to in Section 7.3 of this Manual.

3.3.1 Initial Training

With respect to the Maintenance Control System, flight instructors shall receive initial training with respect to their responsibilities including the content and requirements of this manual and the applicable sections of the *CARs*.

With respect to aircraft servicing procedures for the aircraft operated by the Company, flight instructors shall also receive initial training on refuelling, oiling, de-icing, pre-flight inspection and aircraft ground handling, and this training must be provided by an AME.

Flight instructors must perform each elementary work task under the direct supervision of an AME, before being authorised to perform the task unsupervised.

Determination of whether or not a person is trained will be with reference to the list of authorised persons, along with their transcript of training.

Initial training for each flight instructor shall be recorded on form DIR #3 which shall be kept on file by the Maintenance Manager for at least two years.

3.3.2 Update and Additional Training

Update training shall be performed on a 12 month cycle. Additional training may be performed as deemed necessary by the Maintenance Manager. Update and Additional training shall be recorded on DIR #4 which will be kept on file by the Maintenance Manager for at least two years.

4 Maintenance Policies

The maintenance policies of the Company are described in this section.

4.1 Approved Maintenance Schedules

All aircraft operated by this Company will be maintained in accordance with the Maintenance Schedules approved by Transport Canada in accordance with Parts 605 and 625 of the *CARs*.

The *Approved Maintenance Schedules* developed by this Company will contain maintenance and inspection requirements for the Company's airframes, engines, propellers, appliances, survival equipment, emergency equipment and other equipment installed on the aircraft, including all applicable out of phase equipment requirements. *Approved Maintenance Schedules* will take into account the requirements of any modification incorporated in the above items.

The Maintenance Manager will review the *Maintenance Reminders* and *Defects* for each aircraft in the *Flight Schedule Pro* software (FSP) as needed, as per Section 5.1 of this Manual, for the purpose of scheduling maintenance.

It is the responsibility of the maintenance manager to ensure that all tasks required by the approved maintenance schedule are being tracked at the approved intervals in FSP.

4.1.1 Identification of Approved Maintenance Schedules

DIR #5 identifies the approved maintenance schedules.

4.1.2 Evaluation and Amendments to Approved Maintenance Schedules

The Maintenance Manager will meet at least once per every 12-month period with each AMO to evaluate the effectiveness of the *Approved Maintenance Schedules* and amend as required to ensure efficiency and effectiveness. A record of this communication will be maintained by the Maintenance Manager.

As the *Approved Maintenance Schedules* used by the Company constitute a separate document, amendments to the *Approved Maintenance Schedule* will be undertaken separately. Once approved, the DIR #5 shall be amended to include the revised schedules per section 8 of this manual.

The Maintenance Manager, in consultation with the AMOs, will prepare proposed amendments to an existing *Approved Maintenance Schedule* and submit them to Transport Canada for approval.

The proposed amendment to the *Approved Maintenance Schedule* will be tracked as using a *Quality Assurance Corrective Action Forms*.

4.2 Approved Maintenance Schedule Tolerances

4.2.1 General

All tolerances applicable to maintenance tasks are identified in the *Approved Maintenance Schedule* for each aircraft type, and shall be authorized and controlled as per the requirements of this section. This section reflects the requirements of *CAS 625.86(8)*.

4.2.2 Requirement for a Maintenance Release

When the invocation of tolerance requires an inspection or other work by the AMO, a maintenance release is required (*CAS 625.86[8,c]*).

4.2.3 Airworthiness Directives and Airworthiness Limitation

Tolerances are not permitted for maintenance tasks that are specified by an airworthiness limitation or airworthiness directive (CAS 625.86[8,d]). If, for example, a repetitive 100-hour airworthiness directive (AD) inspection coincides with a 100-hour scheduled inspection check, the repetitive AD inspection must be accomplished and documented in the *Journey Log* prior to invoking a tolerance on the subsequent 100-hour scheduled inspection check. Tolerances, therefore, do not apply to tasks required by ADs.

4.2.4 Independent Tracking of Scheduled Check Tasks

Each check cycle set out in an *Approved Maintenance Schedule* must be tracked independently such that a 500-hour inspection is not the 5th 100-hour inspection, but instead is due 500 hours from the last 500-hour inspection (CAS 625.86[8,d, ii]). Adherence to the Company policy regarding the calculation of the next inspection time following the invocation of a tolerance will ensure conformity with this requirement.

4.2.5 Calculation of Next-inspection Time

The Company policy regarding the calculation of the next inspection time is as specified by (CAS 625.86[8,d, iii]): “Each scheduled interval of a task is calculated from the time the task was last carried out, regardless if a tolerance is applied. For example, where the first interval of a 100 hour check is carried out at 110 hours, the next inspection is due at 210 hours.”

4.2.6 Procedures for Invoking Tolerance for Component Tasks (e.g, Engine Overhaul)

In compliance with Standard 625.86(8), prior to the commencement of any tolerance to a component task required by the maintenance schedule, the Maintenance Manager shall inspect the aircraft in accordance with the type design and regulatory requirements to the degree necessary to ensure that it is airworthy, and in satisfactory condition to operate for the period of the tolerance. If the maintenance manager is unable to determine the airworthy condition of the aircraft themselves then they shall refer the inspection requirement of this section to an AMO for them to perform. An entry will be made in the *Journey Log* that will attest to this inspection no matter who performs it.

Once the required inspection is completed and recorded the tolerance shall be invoked by the Maintenance Manager by way of

- a) In the *Flight Schedule Pro* software, the *Maintenance Reminder* for the maintenance task to which the tolerance has been applied will have its “last performed” time or date edited to adjust the next TTAF or date the task is due at.
- b) Ensure an entry is made in the journey logbook attesting that the inspection required by Standard 625.86(8) was performed and that the aircraft is airworthy and in satisfactory condition to operate for the period of the tolerance.
- c) A clear notation in the *Journey Log* that states the original TTAF or date at which the task was required, and the revised TTAF or date that the task is required.

4.2.7 Procedures for Invoking Tolerance for Scheduled Maintenance Checks (e.g, non-Component Tasks)

The maintenance manager may invoke a tolerance to a scheduled maintenance check required by the approved maintenance schedule using the same process as for component tasks described in the preceding section, but must additionally first examine the appropriate technical records and the *Flight Schedule Pro* software and ensure that the proposed tolerance period will not be in conflict with cycle of task completion required by an airworthiness limitation or airworthiness directive.

4.2.8 Procedures for Invoking Tolerances for Aircraft located away from the Main Base

In the event that an aircraft is caught away from the main base owing to unforeseen circumstances such as the requirement for a diversion due to weather, a tolerance can be invoked with the verbal approval from the Maintenance Manager provided the inspection requirements determined by the Maintenance Manager are undertaken and the circumstances of the verbal approval are entered in the aircraft *Journey Log* by the Pilot-in-Command. The *Maintenance Reminder* in the *Flight Schedule Pro* software will be Edited by the Maintenance Manager to reflect the new date or TTAF the affected task is due.

4.3 Maintenance Arrangements and/or Contracts

This Subsection describes the Company's Maintenance Arrangements with affiliated AMOs.

4.3.1 Regular Maintenance Arrangements

Performance of maintenance is contracted to appropriately rated AMOs.

The relationship between the Company and AMOs is founded on the expectation that the AMOs, being certified by Transport Canada, have the skill and knowledge to ensure that technical aspects and functions of this maintenance control system will be undertaken to ensure safe and reliable aircraft operations.

It is the explicit policy of the Company that decisions related to aircraft maintenance be made based on the principle that safety is paramount, and at no time will economics or Company expenditure be a factor in the decision-making process.

To remain effective and efficient, communication with the AMOs will be by a Purchase Order System. All work will be requested in writing using a Purchase Order, and a copy of the Purchase Order will be retained by the Maintenance Manager for a period of two years.

All maintenance arrangements will be subject to the Company's *Quality Assurance Program* described in Section 7 of this Manual.

4.3.2 Airworthiness Directive Response Procedures

The Maintenance Manager is responsible to ensure compliance with all applicable *Airworthiness Directives* (ADs). The Maintenance Manager will subscribe to the Transport Canada e-Bulletins to receive notification of new and revised Canadian and Foreign AD's.

In consultation with an appropriately rated AMO the Maintenance Manager will immediately assess the application and impact of the AD and determine the appropriate response or disposition.

The Maintenance Manager will raise a QA finding for the AD and will record a summary of the Director of Maintenance's interpretation of the AD and document a plan of action in accordance with that interpretation in the QA finding. A plan of action required by this section will be processed and tracked as a *Quality Assurance Finding*, in accordance with Section 7.3.1 of this Manual.

If a maintenance event is required by the AD, the Maintenance Manager will immediately edit or create (as applicable) a *Maintenance Reminder* in the *Flight Schedule Pro* software to ensure all maintenance requirements of the AD are performed within the time specified in the AD. The AD maintenance requirements will then be scheduled in the same way as any other scheduled maintenance per this manual and performed at an appropriately rated and contracted AMO.

4.3.3 Unforeseen Maintenance Arrangements

Unforeseen maintenance denotes any unpredicted event in which immediate maintenance of a Company aircraft is required and the AMOs are unable to perform the maintenance required owing to location of the

aircraft. In the event of unforeseen maintenance being required, the Maintenance Manger will ensure that all unforeseen maintenance is conducted by an AMO holding the appropriate rating.

4.4 Defect Reporting and Rectification

Section 4.4 describes the policies and procedures related to the reporting and rectification of defects on Company aircraft.

4.4.1 Reporting Defects

All defects of aircraft must be immediately recorded in the affected aircraft's *Journey Log* prior to the next flight by the person who found the defect. People who are unsure whether what they are observing constitutes a defect or not shall consult with a flight instructor or the maintenance manager or an AMO and shall keep custody and control of the journey logbook in question until a determination is made.

In reporting the defect in a *Journey Log*, the nature and effect of the defect must be sufficiently detailed so as to make any operational personnel reading the entry readily able to interpret the consequences of the defect on aircraft airworthiness.

All defect reports in a *Journey Log* shall be dated and signed by the person making the entry, and the entry shall include his or her licence number.

In the case of defects discovered during training flights, the person responsible for making a defect report in the *Journey Log* shall be the Flight Instructor authorizing the training flight.

In the case of *defects discovered during non-training flights*, the person responsible for the defect report in the *Journey Log* shall be made by the Pilot-in-command.

All defects shall be dealt with in accordance with this Section immediately upon discovering the defect, or immediately after a flight during which the defect was discovered.

Flight Instructors will notify the Maintenance Manager of all reported defects.

Flight Instructors will add a *Defect* to the *Defects* page for that aircraft in the *Flight Scheduler Pro* software.

4.4.2 Removing Aircraft from Service

Effectively and safely removing an aircraft from service is the responsibility of the person making the defect report in the *Journey Log*.

When an aircraft is "removed from service" the person responsible shall immediately complete the following procedure:

- a) Report the defect following the process in section 4.4.1.
- b) in the *Journey Log* write the additional statement "***Aircraft removed from service;***"
- c) physically remove the aircraft *Journey Log* and keys from operational circulation by placing the keys inside the *Journey Log*, and then placing the *Journey Log* in the specially designated place for unserviceable aircraft journey logs;
- d) When the person enters the *Defect* into the *Flight Scheduler Pro* software per 4.4.1 they then check the "Ground Aircraft" box.
- e) communicate to the Maintenance Manager in writing that the aircraft has been removed from service.

4.4.3 Deferring Defects

Where permitted by *CAR* 605.10, aircraft having outstanding defects may be operated subject to the provisions of this Section.

Only Authorized Persons who have completed initial and update maintenance control system training may defer a defect when permissible.

For the purpose of tracking deferred defects, the Company shall maintain a *Deferred Defects List* (DIR#8) for each aircraft, which shall be affixed to the backmost pages of the aircraft *Journey Log*.

When an aircraft is released from an AMO following maintenance, outstanding defects may be noted in the AMO's Journey Log entry. It is the responsibility of the Maintenance Manager to address any defects noted by the AMO in accordance with this manual section 4.4.4.

4.4.4 Deferral of Defects by Authorized Persons

Where permitted by CAR 605.10, People who have completed the required training and are authorized per section 3.2 of this manual may defer a defect for up to 5 days and therefore affect continued operation of an aircraft during this period provided they follow the **Defect Deferral Procedures** specified in this section of the MCM, and ALL of the following conditions exist:

- a) the safety of continued operation of the aircraft is not in doubt;
- b) the defect does not constitute a hazard to any other aircraft system or to any person on board owing the defective equipment not being isolated or secured;
- c) the defect does not entail buckling, cracks, or extensive corrosion to the skin or structure of the aircraft;
- d) the defect does not pertain to any of the following incidents:
 - i. abnormally hard landings, nose-wheel landings, or landings involving tail strikes or excessive side-loading on the landing gear;
 - ii. bird strikes or possible bird strikes;
 - iii. collision or possible collision with any object during ground or flight operation;
 - iv. flap deployment in excess of the limit speeds specified for the aircraft;
 - v. airspeed in excess of the maximum structural cruise speed;
 - vi. the exceeding of any other aircraft limitation prescribed by the *Pilot Operating Handbook*.
- e) the defect is not related to the pilot's movement of control surfaces or engine controls;
- f) the defect is not related power plant (engine) or equipment related to the power plant, including abnormal engine gauge indications;
- g) the defect is not related to electrical malfunction (excluding normal light bulb failure);
- h) the defect does not relate to fuel control, fuel supply, or fuel security;
- i) the defect does not relate to braking or directional control associated with ground manoeuvring including taxiing, takeoffs and landings;
- j) the defect is not related to physical security of cockpit equipment or passengers;
- k) the defect does not relate to emergency equipment, including fire extinguisher, first aid kits, and survival kits;
- l) the defect is not related to the ability of persons to exit the cabin in the event of an emergency;
- m) the defect is not related to the turn-coordinator;
- n) the defect does not violate the minimum equipment specifications of an intended flight as specified by CARs 605.14 (Day VFR), 605.15 (VFR OTT), 605.16 (Night VFR), or 605.18 (IFR)

4.4.5 Extension of Deferred Defect Rectification Deadlines by the Maintenance Manager

The Maintenance Manager may extend the deferral of a defect provided the conditions of Section 4.4.4 exist, or the AMO has been consulted regarding the safety of additional deferral, and a record of this safety consultation is referred to in the *Journey Log*. Extensions of deferral deadlines are invoked by an entry in the *Journey Log*, *The Deferred Defects List*, and *Flight Schedule Pro* software so as to be readily apparent to persons evaluating the deferred defect status of an aircraft.

In cases where the evaluation of a defect for deferral status is complex or clearly requires evaluation by AMO staff owing to the nature of the defect, the AMO will provide a written consultation in the *Journey Log*.

4.4.6 Deferred Defect Procedure

In the event that a defect is to be deferred as per Section 4 of this Manual, the following procedure must be accomplished by the Person Authorized by section 3.2 to make the deferral:

- a) Complete the Defect Reporting process described in section 4.4.1
- b) Check that the defect is allowed to be deferred in accordance with section 4.4.4.
- c) Assess whether the safety of continued operation of the aircraft is in doubt. If You have any Doubt that the aircraft will be safe then STOP and consult the maintenance manager or local qualified AMO.
- d) When deferring unserviceable equipment that could constitute a hazard to any other aircraft system or to any person on board the aircraft ensure that it is isolated, secured and made safe. Maintenance requiring a maintenance release from an AMO may be required to make the unserviceable equipment safe. The Maintenance manager should be consulted if there is any doubt regarding the safety of unserviceable equipment.
- e) In the Journey Log following the defect report Write “Deferred Until” and then the Date 5 days following the day the entry is made.
- f) In the Journey Log entry Write any restrictions to the operation of the aircraft arising from the deferral such as these examples: Day VFR Only, Dual Pilot Only, Local Flights Only.
- g) Sign the Deferral Entry and write pilot license number. By signing you take responsibility for the recording and assessment of the defect, the decision to defer it, and that any operational restrictions have been noted.
- h) In the Journey Log Entry write the actions taken to isolate or secure unserviceable equipment being deferred. (eg: pulled circuit breaker)
- i) Make entry in the aircraft’s *Deferred Defects List*, including the date at which the defect was noted in the *Journey Log*, and the date by which the defect must be rectified.
- j) Defer the defect in the *Flight Scheduler Pro* software by entering comments that it is deferred until (date) and any operational restrictions arising from the defect. .

4.4.7 Rectification of Defects

At scheduled maintenance events, AMO staff will be requested to review the *Deferred Defects List* for the purpose of undertaking rectification.

In the case that the defect is rectified during the maintenance event, notation of this rectification will be included in the Maintenance Release following the maintenance event.

In the case of “outstanding defects” (defects appearing on the *Deferred Defects List* that cannot be immediately rectified) information shall be included in the Maintenance Release describing the reason for non-rectification and the action that have been taken towards completing rectification. The outstanding defects will remain on the current *Deferred Defects List* located in the back of the aircraft *Journey Log*.

4.4.8 Recurring Defects

A recurring defect is a defect that is repeated three (3) times on a particular aircraft within a period of fifteen (15) flight segments of a previous repair.

The Maintenance Manager is responsible for identification of Recurring Defects. The Return To Service checklist (DIR #11) referenced in section 5.1 shall include a check to determine if any defects that were rectified or otherwise noted by the AMO constitute Recurring Defects.

If a recurring defect is identified, the Maintenance Manager will review the recurring defect with the Director or Directors of Maintenance for the AMO participating in the rectification attempts and devise a plan of action to remedy the recurrence. The Maintenance manager will record in the *Journey Log* in a separate entry: Identify the recurring defect, summarize the rectifications that have been attempted so far, and summarize the plan devised in consultation with the AMO of what to attempt next if the defect recurs again.

4.4.9 Service Difficulty Reporting

The Maintenance Manager is responsible to submit *Service Difficulty Reports* in compliance with the Aeronautics Act Subpart 521 Division IX within the time limits described therein. Transport Canada document AC521-009 will be used for guidance.

In the case of service difficulties discovered during maintenance, the AMO performing the maintenance will be responsible for submitting the SDR in accordance with CARs 521.401-402, and for notifying the Person Responsible for Maintenance that an SDR has been submitted. Between visits to the AMO, any employee of the operator discovering a defect that may warrant submission of an SDR must immediately bring it to the attention of the Person Responsible for Maintenance, who will determine whether a report is required.

A copy of Service Difficulty Reports will be retained by the Maintenance manager.

4.5 Elementary Work and Servicing

This Section describes the system used by the Company to ensure that Elementary Work and Servicing is conducted in accordance with the *CARs*.

4.5.1 *Elementary Work and Servicing Restrictions*

Only those tasks listed in *CAS 625, Appendix A* will be undertaken as elementary work, only those tasks defined in *CAR 101*, will be undertaken as servicing.

As per *CAR 101*, *servicing* means *cleaning, lubricating and the replenishment of fluids not requiring disassembly of the product.*

Only persons trained and authorized in accordance with Section 3 of this Manual will perform elementary work.

Only persons trained and authorized in accordance with Section 3 of this Manual will perform or directly supervise the performance of servicing.

4.5.2 *Elementary Work and Servicing Standards*

In accordance with *CAS 571.02(1)*, the standards used for the performance of elementary work or servicing will be the same as, or equivalent to, those specified in the aircraft manufacturer's instruction or are recognized industry standards.

4.5.3 *Elementary Work and Servicing Control and Recording*

Methods, techniques and practices used by the Company in the performance of Elementary Work and Servicing are the same as, or equivalent to, those specified in the aircraft manufacturer's instruction or are recognized industry standards.

In sampling the aircraft fuel, only fuel sample devices designed for that purpose shall be used.

The use of any tools, equipment, and test apparatus by persons other than AMO staff must be supervised by AMO staff.

Parts and materials used for Elementary Work and Servicing shall meet the requirements of Part 571 of the *CARs*.

Fuels, oils, lubricants and cleaning materials shall be kept in closed containers, clearly marked with the contents. No fluids shall be dispensed from any unmarked container.

The person performing elementary work is responsible to ensure that a record of the work is made in the appropriate aircraft *Journey Log*, and that the entry conforms to the requirements of *CAS 571.03* to elementary work, summarized as follows:

- a) product identification (aircraft registration marking, nomenclature, type/model number, name of manufacturer, part number, and serial number), unless the entry is being made in technical record that contains this information;
- b) a brief description of the work performed;
- c) where a standard other than the manufacturer's recommended practice is being used, reference to the standard used in the performance of the work.

Additionally, in accordance with *CAR571.03(2)*, the record of elementary work in the *Journey Log* must also include accuracy "*with respect to any outstanding elements of the work performed, in particular, the need to secure any fastening device that was disturbed to facilitate the work.*"

5 Maintenance Planning, Control and Dispatch

This Section describes the Company's system for maintenance planning, control and dispatch.

5.1 Maintenance Planning and Control

The Company uses a web browser based software called *Flight Schedule Pro* to track periodic aircraft maintenance and to facilitate real time communication between Pilots and the Maintenance Manager of Aircraft Times, Maintenance Scheduling, Defect Control, and Aircraft Removal From Service.

It is the Maintenance Manager's responsibility to ensure that all required maintenance tasks are entered into the tracking database in *Flight Schedule Pro* with their repetition period. Examples of required periodic maintenance tasks are those arising from Airworthiness Directives or from an STC being embodied on the aircraft or from an Approved Maintenance Schedule. Any other periodic aircraft task may also be added to *Flight Schedule Pro* including periodic tasks in the maintenance control system that the Maintenance Manager is responsible throughout the year (such as checking aircraft equipment lists).

When a company aircraft is released back to the company by the AMO, the maintenance manager will complete the Return To Service Checklist (DIR#11) before returning the plane into company operations. The Return To Service Checklist forms part of the Aircraft Technical Records and is filed and retained with the PO.

5.2 Technical Dispatch

The person responsible for system of safe and proper technical dispatch of aircraft is the Maintenance Manager.

Flight Instructors are responsible to Maintenance Manager to ensure that safe and proper technical dispatch of individual flight operations.

Prior to conducting a take-off in a Company aircraft the Flight Instructor who Authorizes the flight will conduct the following:

- a) examine *Flight Schedule Pro* to ensure the times and dates of required maintenance events are not exceeded, or will not be exceeded during the course of the anticipated flight;
- b) examine *Flight Schedule Pro* to ensure defects do not exist that may bring into doubt the airworthiness of the aircraft during the anticipated flight;
- c) examine *Flight Schedule Pro* to ensure that any operational restrictions arising from deferred defects complied with;

Prior to conducting a take-off in a Company aircraft the Pilot In Command will conduct the following:

- a) Ensure that a Flight instructor has authorized the planned flight;
- b) Examine the Journey Logbook and Deferred Defects List to ensure defects do not exist that may bring into doubt the airworthiness of the aircraft during the anticipated flight;
- c) examine the Journey Logbook and Deferred Defects List to ensure that any operational restrictions arising from deferred defects complied with;
- d) ensure that the weight and balance during all phases of the anticipated flight is in accordance with the *Pilot Operating Handbook*;
- e) If the flight is planned to travel outside the Fraser Valley geographical area and further than 25 nautical miles from the aerodrome of departure then ensure a Survival Kit for the number of people on board is

on board in accordance with CAR 602.61.

- f) If the flight is planned to travel over water more than 50 miles from shore ensure that lifejackets are on board for each person on board and they are stowed in position that is easily accessible to the person for whose use it is intended in accordance with CAR 602.62.
- g) for the purposes of determining airworthiness, conduct a pre-flight inspection of the aircraft in accordance with the *Pilot Operating Handbook* and, in the event of the first flight of the day, initial that a daily inspection (DI) was completed in the aircraft *Journey Log*;
- h) for the purposes of determining airworthiness, conduct pre-takeoff checks in accordance with the *Pilot Operating Handbook* and aircraft Checklist.

When a Company aircraft is operated away from its main base (distant operations), all persons acting as Pilot-in-command will, prior to departure from the main base of operations, conduct the review of *Flight Schedule Pro* as required above, giving due consideration for the period of time distant operations will be conducted. Flights conducted under Flight Permit authority can only occur if a Flight Permit issued by Transport Canada is carried on board the aircraft. The requirements for Flight Permit authority are described in Sec. 6.3 of this Manual.

5.3 Technical and Regulatory Publications

The Company will facilitate access to the majority of up to date technical and regulatory publications by way of its computer terminals connected to the internet. Following is a list of the technical and regulatory publications that will be maintained by the Maintenance Manager to current status:

- a) *Pilot Operating Handbooks* for Company aircraft;
- b) The parts of *Aircraft Service Manuals* or *Aircraft Maintenance Manuals* for Company aircraft that describe specifications or instructions for performing Elementary Maintenance or Servicing.

The Maintenance Manager will contact the manufacturer of Company aircraft annually to ensure the *Pilot Operating Handbooks* are maintained as current status. A record of this communication will be maintained on file.

The Maintenance Manager will subscribe to Transport Canada Civil Aviation e-Bulletins to be made aware of any new or revised AD's applicable to the Company fleet.

Every six months the Maintenance Manager will perform a search in the Canada Gazette for any amendments to the Regulations that are applicable to the Company. Any Company non-compliance found resulting from a regulation amendment will be treated as a QA finding in accordance with section 12.

The Maintenance Manager will ensure the above publications are readily available to persons conducting technical dispatch via internet access or via direct access on aircraft.

Access to the correct up to date technical publications such as Aircraft Maintenance Manual or Illustrated Parts Catalogue when performing aircraft maintenance except elementary maintenance is the responsibility of the AMO performing the maintenance.

6 Aircraft Technical Records and Documents

The Section sets out the Company's standards with respect to the administration and maintenance for aircraft technical records and documents.

Aircraft Technical Records

The President is responsible for the archived aircraft technical records at the Company's office as long as the aircraft is registered and in the possession of Langley Flying School. The President shall ensure that all necessary measures are taken to protect the technical records from damage and loss in accordance with CAR 605.96.

The maintenance manager is responsible for the current working volume of aircraft technical records kept in their office as long as the aircraft is registered and in the possession of Langley Flying School. The Maintenance Manager shall ensure that all necessary measures are taken to protect the technical records from damage and loss. in accordance with CAR 605.96.

Following maintenance, the AMO under contract to perform the maintenance shall make the appropriate *Journey Log* entries and the JL will be passed to the maintenance manager. The Maintenance Manager shall complete The Return To Service Checklist DIR#11 before returning the aircraft to normal operation. The Maintenance manager will ensure that *Journey Log* entries are transcribed to the Technical Logs within 30 days.

The Maintenance Manager shall retain copies of all work packages, for all maintenance performed on Company aircraft. For purposes of this requirement, work packages shall include, but shall not be limited to the following:

- a) LFS Purchase Order for the maintenance
- b) AMO Work Order
- c) Inspection Check Sheets;
- d) additional work orders or invoices;
- e) parts lists;
- f) conformity certificates;
- g) weight and balance / equipment list amendments
- h) flight manual supplements
- i) other maintenance related documents.

6.1 Aircraft Weight and Balance Control

The Maintenance Manager shall ensure that the *Weight and Balance Reports* and Amendments to the *Weight and Balance Reports* of Company aircraft shall conform to the *Part V—Standard 571 Appendix C (Aircraft Weight and Balance Control)* of the CARs.

At intervals not exceeding intervals of 7-months, the Maintenance Manager will conduct an audit of Company aircraft weight and balance data to ensure the *Weight and Balance Reports* and *Amendments*, as well as the *Equipment Lists* and *Electrical Load Analysis (ELA)*, remain current and accurate.

This weight and balance audit shall be based on the requirements of Standard 571 Appendix C. and will consist of a review of maintenance activity during the audit period to ensure all equipment changes were properly documented through weight and balance amendment reports.

The audit will also review maintenance activity for electrical equipment changes that may require ELA documents. In the case of uncertainty regarding ELA documentation, the applicable AMO performing the electrical equipment change will be consulted.

A record of the audit, including specification of the audit period, will be recorded by the Maintenance Manager in applicable aircraft *Journey Log*.

The Company does not use a fleet weight and balance control system.

6.1.1 Removal or Installation of Passenger Seats

The removal or installation of passenger seats requires that the weight and balance calculations for the flight are amended to reflect this change.

To ensure adherence, passenger seats may only be removed or installed with the consent of the Maintenance Manager.

The Maintenance Manager is responsible to ensure that the weight and balance data is amended when the seat configuration is changed for more than the occasional flight.

6.2 Aircraft Flight Authority

In accordance with Section 605.03 of the *CARs*, no person shall operate a Company aircraft unless a flight authority is in effect with respect to that aircraft and that flight authority is carried on board the aircraft.

As set out in Section 507 (Flight Authority) of the *CARs*, a flight authority is a valid *Certificate of Airworthiness*, a *Special Certificate of Airworthiness*, or a *Flight Permit*.

In the event that an aircraft operated by the Company no longer conforms to the conditions of issue for its *Certificate of Airworthiness*, and a flight is required for the purpose of repairs or maintenance, the Maintenance Manager will make application for a *Flight Permit* in accordance with Part V—Standard 507, Appendix B (Application for a Flight Permit) of the *CARs*

The Company's authorization requirements for a flight conducted under the authority of a *Flight Permit* are described in Section 5.2 of this Manual.

6.3 Location of Records

Working technical records related to the maintenance system will be kept at the Ascendance Aviation AMO #80-20, Hangar 10, 5225 216 Street Langley, B.C. in the custody and control of the Company Maintenance Manager. Archives of technical records are kept the Company's main base described in section 2.1.

7 Quality Assurance Program

This Section describes the Company's quality assurance with respect to the maintenance control system.

7.1 Quality Assurance Program

In accordance with CAR 406.47, Langley Flying School maintains a *Quality Assurance Program* (QAP), the purpose of which is to ensure its maintenance control system, including *Approved Maintenance Schedules*, has continued effectiveness and remains in compliance with the *Canadian Aviation Regulations*.

The QAP centres on the detection and remedy of non-conformance or ineffectiveness within the maintenance control system. The detection component consists of two processes, the first is continued surveillance by the Maintenance Manager, and the second is an annual *Quality Assurance Audit* (QAA). The remedy component consists of systematic analysis and response to findings of non-conformance and ineffectiveness in accordance with Section 7.3 of this Manual.

7.1.1 Retention of Quality Assurance Program Records

In accordance with CAR 406.47(4), the records derived from the QAP, including the record of findings derived from continued surveillance and the annual QAA, as well as the corrective actions and related follow-up, shall be retained for the greater of two audit cycles or two years.

7.1.2 Control and Responsibility

The QAP is under the sole control of the Maintenance Manager.

The Maintenance Manager is also responsible for all corrective actions (CAs) made in response to unsatisfactory findings identified by the QAP.

7.1.3 Standards for Corrective Actions

This section establishes the standards for the actions and concepts associated with a *Quality Assurance Finding* (QACAF) and their related *Corrective Actions* (CA).

A **root cause** is an initiating cause of a causal chain which leads to an outcome or effect of interest. Commonly, root cause is used to examine in depth the causal chain where an intervention could reasonably be implemented to change performance and prevent an undesirable outcome.

A **causal chain** is an ordered sequence of events in which any one event in the chain causes the next event.

Short-term Corrective Actions are action taken to immediately remedy the non-conformance identified in a finding, and must be timely, taking due consideration for safety risks associated with the QACAF. Accordingly, short-term corrective action must correct the non-conformance, must change the operation as necessary so as to prevent recurring, and must entail communication to staff regarding the necessary operational changes.

Long-term Corrective Actions must prevent or significantly reduce the odds of non-conformance happening again, and must directly address the outcome of the root cause analysis.

7.2 Quality Assurance Audit

In periods not exceeding twelve months, the Maintenance Manager will co-ordinate the execution of the QAA that will provide an evaluation of all aspects of the systems and practices used for the control of

maintenance in Langley Flying School. The audit will produce an unbiased picture of Langley Flying School's performance to verify that activities and practices comply with the MCM and confirm that the system and procedures, as described in the MCM, remain effective.

The QAA will include an examination and evaluation of the AMOs performing maintenance work for the Company. This evaluation will ensure the AMOs are appropriately rated and maintain these ratings, and that its approvals are still valid. The QAA will also ensure AMOs have the following adequacies: facilities, tools, equipment, and personnel at the location where maintenance is undertaken.

7.2.1 *Quality Assurance Audit Procedures*

Using the checklist provide in the *Quality Assurance Audit Form* contained in the *Documents Incorporated by Reference*, the QAA will systematically examine checklist items to ensure compliance and effectiveness.

7.2.2 Auditor Appointment and Briefing

In accordance with the *CAR 406.47(6)*, the person appointed by the Maintenance Manager to conduct the QAA shall have no responsibility for carrying out the maintenance system management tasks or activities subject to audit evaluation.

The person appointed to conduct the QAA will be briefed by the Maintenance Manager with respect the following:

- a) the function and operation of the Maintenance Control System;
- b) the role of the Maintenance Control Manual as the governing contract;
- c) the role of QAA as measure of success for the Maintenance Control System;
- d) the role and purpose of the *Quality Assurance Audit Form*, including the need for determining satisfactory or unsatisfactory findings;
- e) the need to indicate satisfactory and unsatisfactory findings using the auditor's initials.
- f) the role and purpose of the *Quality Assurance Finding Form* and the *Quality Assurance Corrective Action Form*.
- g) the role of Maintenance Manager during and after the audit.

7.3 Non-conformance and Ineffectiveness

7.3.1 Response to Non-conformance or Ineffectiveness (*Quality Assurance Findings*)

In the event that non-conformance or ineffectiveness is detected, either by the continued surveillance or the annual Quality Assurance Audit, the Maintenance Manager is responsible to ensure that a *Quality Assurance Corrective Action Forms (QACAF)* is completed. The QACAF is contained the *Documents Incorporated by Reference*.

The content of the QACAF must provide specific reference to the following:

- a) the specific section of the Maintenance Control Manual with which the non-conformance or ineffectiveness is related;
- b) a specific example of the non-conformance or ineffectiveness; and
- c) a description of the Short-term Corrective Action to immediately correct the non-conformance, including the target date of implementation;
- d) an analysis of the root cause of the QAF event, including the acceptance of the root-cause analysis by the accountable executive;
- e) a description of the proposed Long-term Corrective Action to prevent recurrence, including the target date of implementation.;
- f) a record of a follow-up review that evaluates the Long Term Corrective Action, including an indication of effectiveness of this action;
- g) where the follow-up review indicates success, acceptance by the accountable executive;
- h) where the follow-up review indicates non-effectiveness, the initiation of a new QACA form.

As a rule, long-term Corrective Action should be completed within 90 days of the initial date of the

QACAF; where additional time is required, the reasons for additional time beyond 90 days should be addressed.

Where the *Short-term Corrective Action* meets the requirements for *Long--term Corrective Action*, this must be so stated in the *QACAF*.

8 Documents Incorporated by Reference

8.1 General

Some activities of the Company which are subject to frequent changes can more effectively be addressed in documents separate from the *Maintenance Control Manual*.

The documents listed in this section of this manual are the only documents *Incorporated by Reference* in this Manual in accordance with *CAR 406.38(2)*. The approval by Transport Canada of the most recent revision of this page listed on the approved List of Effective Pages shall be considered authorization by the minister in accordance with regulation 406.38(2).

DIR's will be controlled in the same manner as this MCM and distributed to all entities to whom is distributed this MCM.

8.2 Index of Documents Incorporated by Reference

- 1) Distribution List of the Langley Flying School *Maintenance Control Manual*;
- 2) Langley Flying School Organization Chart—Personnel and Organizations;
- 3) Langley Flying School *Record of Initial Training*;
- 4) Langley Flying School *Record of Update and Additional Training*;
- 5) Identification of Langley Flying School's Fleet and *Approved Maintenance Schedules*;
- 6) (deleted)
- 7) (deleted)
- 8) Langley Flying School *Deferred Defects List*;
- 9) Langley Flying School *Quality Assurance Audit*;
- 10) *Quality Assurance Corrective Action Form*.
- 11) Return To Service Checklist