MAINTENANCE

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

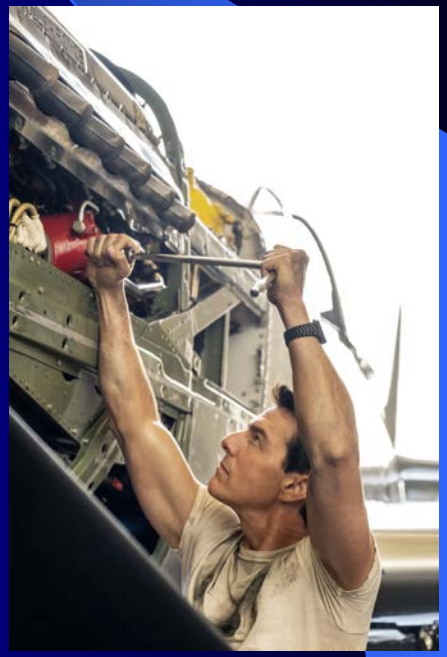
Specifically – Pilot Maintenance

CAA Rule Part 91

CAA Rule Part 43

Tech Log CAA 006

CAA Form 400



CIVIL AVIATION AUTHORITY OF NEW ZEALAND

CAA Rule 91.603 (A) (1) States

The Operator of an aircraft must ensure that the aircraft is maintained in an airworthy condition.

Maintenance

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Scheduled or Unscheduled -

Must comply with Instructions for Continued Airworthiness (ICA's).

E.g. Aircraft Maintenance Manual(s) (AMM)

1. Maint (Tyre change) > Release To Service (RTS) certification.

2. Maint (Installation of dual controls) > Duplicate inspection certification > RTS certification.

3. Maint (Adjustment of helicopter flight controls) > Duplicate inspection certification > RTS for operational flight check > Operational flight check – all ok > Final RTS certification.

Who can perform maintenance?

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CAA Rule 43.51(a): Persons to perform maintenance:

LAME (Licenced Aircraft Maintenance Engineer) OR,

MA (Maintenance Approval) holder OR,

CAA Part 145 Authorisation holder OR, CASA LAME OR,

AME under direct supervision OR,

Pilot with a current type rating.

CAA RULE 43.51(b) A person who holds a **current pilot's licence**, with an appropriate **type rating** issued under Part 61, may perform the maintenance listed in **Part 43 Appendices A.1 (119 air ops) and A.2 (not air ops) -**

IF THE LICENCE HOLDER:

- Is authorised in writing by the operator of the aircraft; and
- Is appropriately trained by a rated LAME – recorded (logbook)
- Holds an appropriate Part 145 Maintenance Approval (MA) for aircraft that are required to be maintained by a Part 145 maintenance organisation.

Part 43 Appendix A Maintenance

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What maintenance is a pilot permitted to perform?

Part 43 Appendices A.1 & A.2 lists maintenance that a pilot may be authorised to perform -

- A.1- Aircraft used to perform 119/115 air operations only
- A.2 - Additional tasks for **non** 119/115 air operations

Example:

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Installation and removal of seats and doors may be performed if the requirements of Part 43.51 and Part 43 App A –A.1(6) are met.

Question:

May a rated pilot of a PA28-161 change the aircraft battery?

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YES!

But what other conditions MUST be met?

Pilot must be rated and current, and

Pilot must have written authorisation from the operator, and

Pilot must have had appropriate training by a LAME **and** have available the applicable maintenance manual(s), or

Hold an appropriate authorisation issued by a Part 145 maintenance organization if the aircraft is required to be maintained by a Part 145 org.

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CAUTION!

Aircraft batteries can be dangerous things if you get it wrong!

IF IN DOUBT – ASK!

Question?

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May the rated pilot of a Robinson R44 carry out a 100 hour inspection on her machine in accordance with Part 43 Appendix A – A.1?

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NO!

WHY?

A 100 hour inspection is **NOT** routine raintenance as intended by the manufacturer to be performed by the pilot. A.1 (10) also mentions that no special tooling or equipment is to be required. E.g. Torque Wrench

PART 66 Maintenance Approval

What about pilot maintenance that is not mentioned in Part 43 APP A– A.1 or A.2?

A Maintenance Approval issued under Part 66

(Note 5 year validity period)

Maintenance Approval Example:

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CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

I. New Zealand

II. Part 66 Certificate of Maintenance Approval

I. Licence No: .....
II. Client No: .....
IV. Holder:
VI. Nationality: **New Zealand**
IVa. D.O.B.:

VIII. Issued in accordance with the New Zealand's Civil Aviation Rules.

IX. This certificate is valid for the period specified, subject to continued compliance with the Civil Aviation Act 1990 and applicable rules made under that Act, and authorises the holder to exercise the privileges of a Maintenance Approval Certificate subject to those rules and the provisions of this certificate.

Valid from: **03-Oct-2024**
Date First Issued: **03-Oct-2024**
Expires on: **03-Oct-2029**
Date Issued: **03-Oct-2024**

XII. Limitations

Issued for the purpose prescribed in CAR 66.155 (b)(1) in respect of the performance of maintenance and certification of release to service for the Removal and Installation of the elevator control push rod assembly (Co-pilots side) P/N 0760103 in accordance with the Cessna 206 Maintenance Manual including Duplicate Inspection and Release to Service on Aircraft Registration

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Maintenance and Release To Service

RTS

Maintenance and Release To Service

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

CAA Rule 91.603

The operator of an aircraft must ensure that:

(a)(6) Maintenance on the aircraft is performed iaw the requirements prescribed in this subpart, Part 43, and any other applicable rule; and

(a)(7) The aircraft is **certified** for **release to service** under Part 43 after the performance of any maintenance on the aircraft – this includes correct records iaw CAA Rule 43.69.

CAA Rule 43.101(a)(6) The holder of a pilot licence who performs maintenance under the conditions prescribed in 43.51(b) may release an aircraft or component to service after maintenance.

Release to service RTS after maintenance

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43.53 (9) To ensure the condition of the aircraft or component is satisfactory for RTS and is equal to its original or properly modified condition with regard to:

Aerodynamic function

Structural strength

Resistance to vibration

Other qualities affecting airworthiness

Maintaining continuing airworthiness only for the maintenance performed.

Release To Service certification

CAR 43.105(a) A person who certifies an aircraft for release to service after maintenance shall enter in the logbook or worksheet and the technical log as may be necessary, immediately adjacent to the details of the maintenance that is required to be recorded under rule 43.69:

Name _ _ _ _ _ _ _ _ _ _ Signature _ _ _ _ _ _ _ _ _ _

Licence/approval/authorisation number _ _ _ _ _ _ _ _

Date _ _ _ _ _ _ _ _

Release To Service statement

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

And the following statement – (verbatim)

Unless the work sheet etc has the same correct preformatted statement:

*"The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the (aircraft)*or (component)* is released to service."*

**Delete as applicable*

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The Duplicate Safety Inspection

CAA
CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Duplicate Safety Inspection of Controls

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Two persons to perform

CAA Rule 43.113(a) – Duplicate inspections:

A duplicate inspection **must** be carried out on any part of any control system after initial assembly, subsequent disturbance or adjustment to ensure the control system:

‘functions correctly’

‘is assembled correctly’

‘is locked correctly’

Example - Dual flight controls

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Duplicate Safety Inspection

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1st Inspection:

1st Inspection to be carried out by a person who meets the requirements in rule 43.101 to certify the aircraft for release to service. (Normally the person that carried out the work):

-A Licenced Aircraft Maintenance Engineer LAME

-A LAME issued by CASA (Australia)

-A Part 145 maintenance organisation authorisation

-A CAA issued Maintenance Approval (MA)

2nd Inspection:

Second inspection to be carried out by another person who is:

Nominated by the first inspection person, and has

Adequate training, knowledge and experience to carry out the safety inspection, and is

Independent of the first person.

2nd Inspection continued…

The second person must be a document holder:

-Part 66 licence holder

-Maintenance Approval holder

-Part 61 current and rated pilot on type

-Part 145 authorisation holder

-Licence or approval holder of ICAO contracting state

43.113 (c) Duplicate Inspection

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Duplicate inspection certification requirements.

Control system must be identified and the Scope of Inspection must be detailed.

The statement in 43.113 (c) (3) must be used verbatim.

The names, signature, licence no, date.

Duplicate certification requirements

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

CAR 43.113 requires:

We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed ,the control system is assembled and locked correctly.

System.....Scope of work performed .....

1st insp Name:..... Signature:.....

Lic /Auth /App No..... Date:.....

2nd insp Name:..... Signature:.....

Lic /Auth /App No:..... Date: .....

Spot The Mistake

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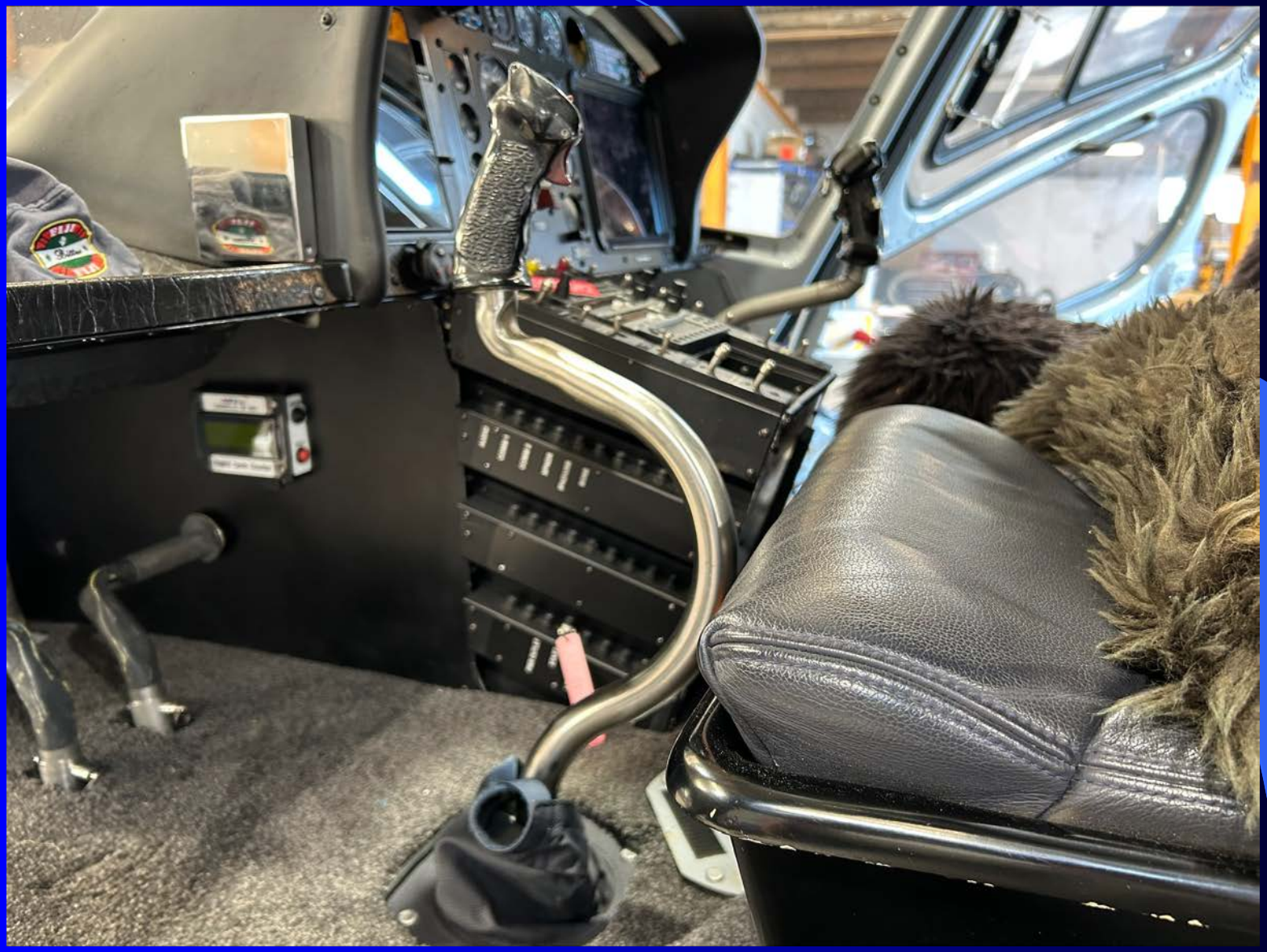

How it should be installed!

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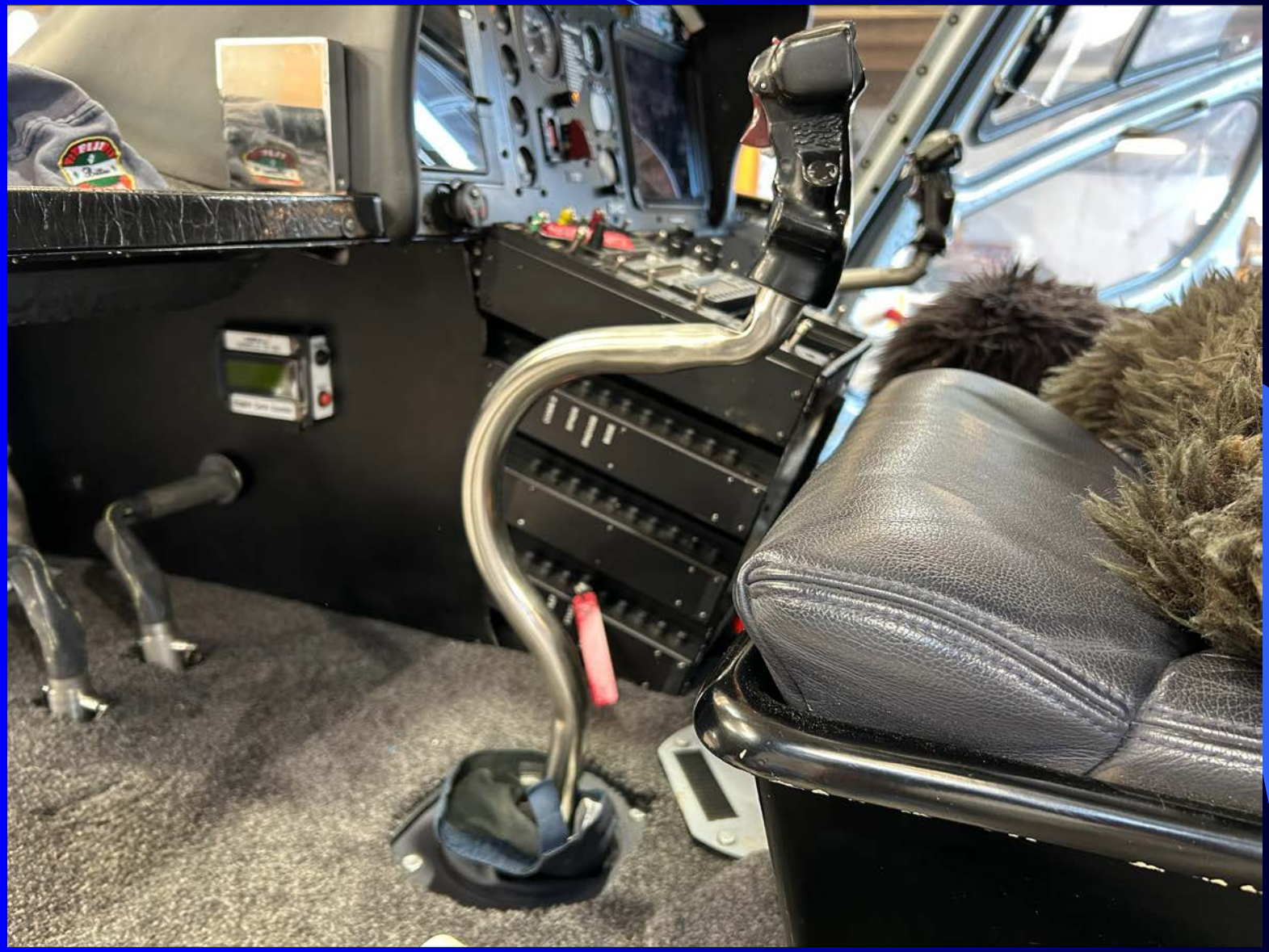

Duplicate Inspection

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CAUTION:

Duplicate Inspections also apply to the interconnecting wiring associated with:

* FADEC CONTROLS
* FLY BY WIRE CONTROLS

Experience

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It is also prudent, as part of your Duplicate Inspection, to check the surrounding areas for FOD (Foreign Object Debris).

For example, tooling, torches, rags, cellphones…

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Where to record maintenance and duplicate inspections

The CAA Form 400

Maintenance Record Sheet

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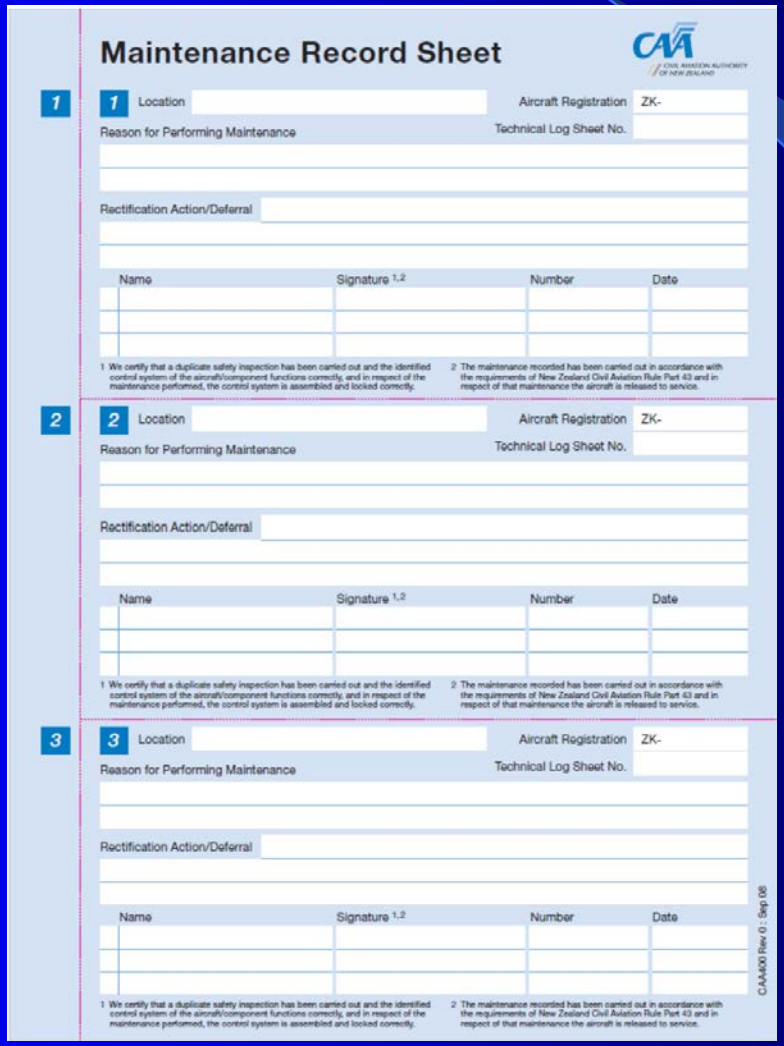


Maintenance Record Sheet

1 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

2 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

3 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

CAA400 Rev 0 : Sep 08

CAA 400 – Maintenance Record Sheet

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

The CAA Form 400 is a CAA document that may be used to record maintenance, in addition to the CA006 TECH LOG.

The Form 400 may be used as an extension to the Tech Log, or as a stand-alone document to record and certify maintenance such as:

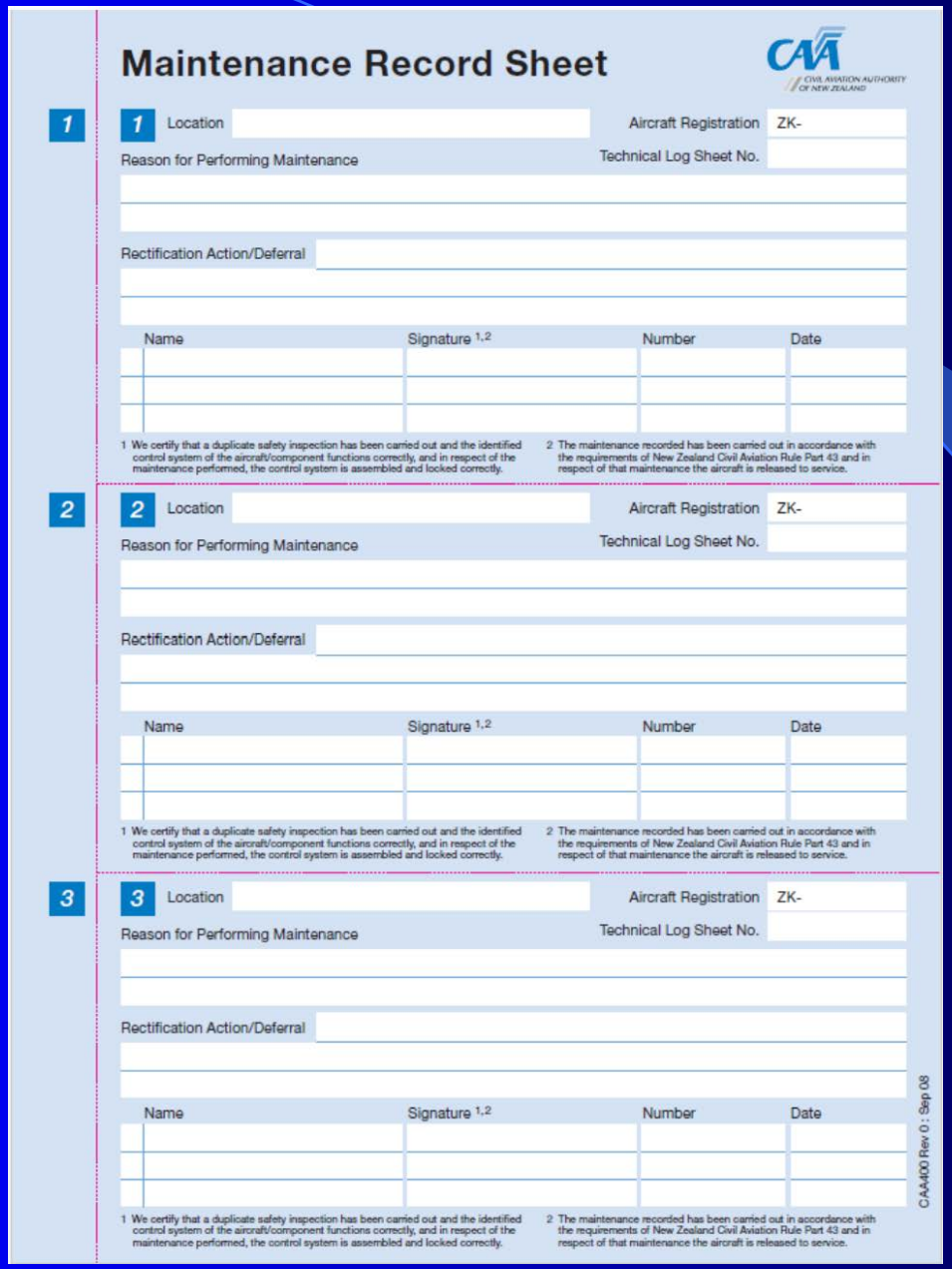
Defect Rectification – RTS Statement

Role Equipment Changes – RTS Statement

Duplicate Inspections – It has the required wording

CAA 400 – Maintenance Record Sheet

CIVIL AVIATION AUTHORITY OF NEW ZEALAND



Maintenance Record Sheet

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

1

1 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

	Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

2

2 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

	Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

3

3 Location | Aircraft Registration ZK-

Reason for Performing Maintenance | Technical Log Sheet No.

Rectification Action/Deferral

	Name	Signature [1,2]	Number	Date

1 We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the aircraft is released to service.

CAA400 Rev 0 : Sep 08

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CAA 006 - Technical Log (Tech Log)

Technical Log

SECTION 1

Date Raised (DAY / MONTH / YEAR) Sheet Number

Aircraft Type and Model Registration ZK-

Operator Details Name Address Phone

Maintenance Programme

Review of Airworthiness / Maintenance Review Next Due Date / /

Next Scheduled Inspection Due Type Hours Date / /

Maintenance Due prior to next scheduled inspection

Maintenance required	Due Date/Hours	Date/Hours cleared (see over)

CA006 Rev 3: September 2020 Instructions for use – Refer AC91-6

SECTION 2 Aircraft Hours and Cycles

Last Sheet Number

Total Hours from last sheet

Total Cycles or Other from last sheet

Total Hours carried forward

Total Cycles or Other carried forward

Date	Name	Hours	Total Time in Service Hours 1000s	100s	Decimal	Cycles or Other	Total Cycles or Other

Totals carried over page

Tech Log – rear page

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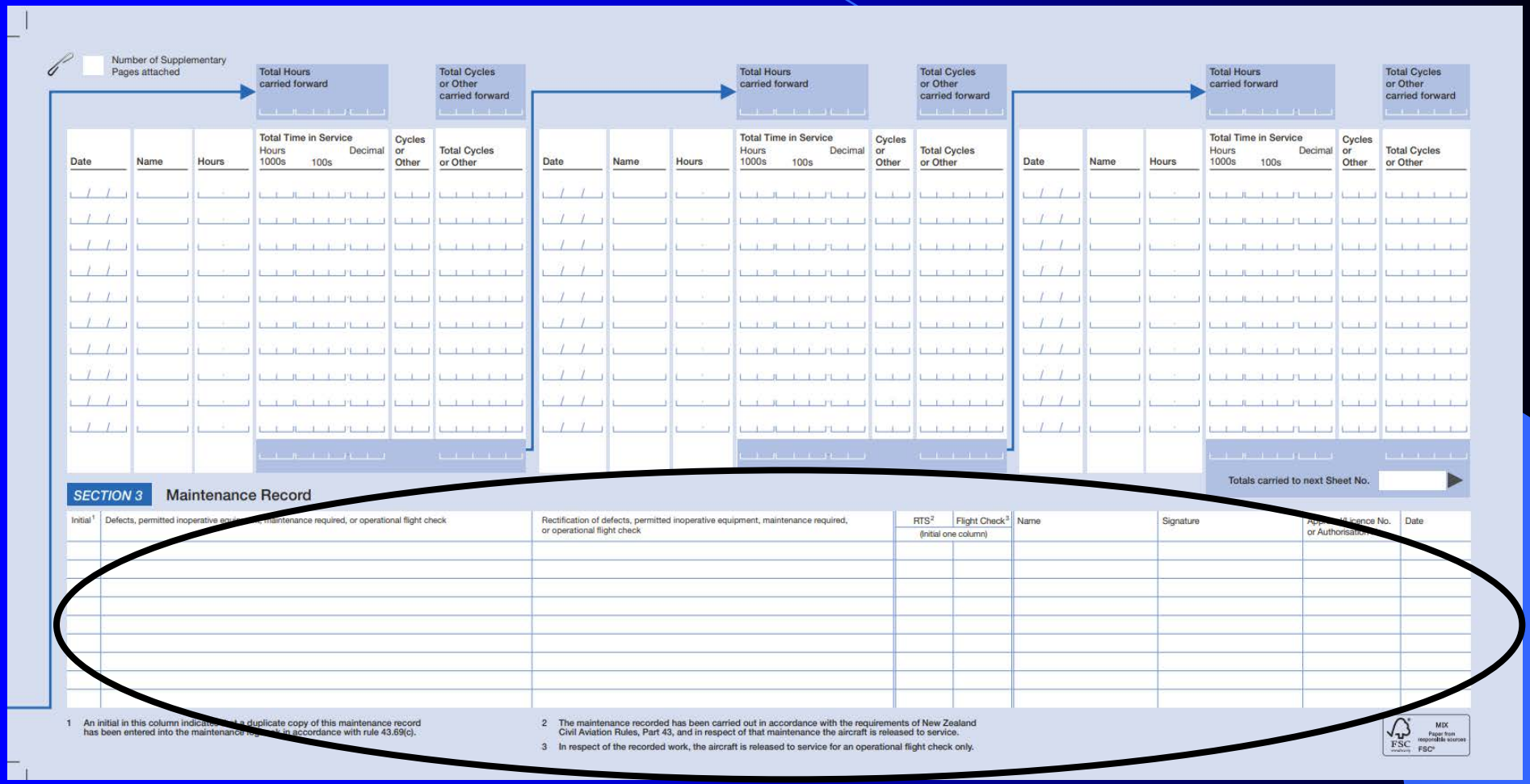

Number of Supplementary Pages attached

Total Hours carried forward

Total Cycles or Other carried forward

Date	Name	Hours	Total Time in Service Hours 1000s	100s	Decimal	Cycles or Other	Total Cycles or Other

Totals carried to next Sheet No.

SECTION 3 Maintenance Record

Initial[1]	Defects, permitted inoperative equipment, maintenance required, or operational flight check	Rectification of defects, permitted inoperative equipment, maintenance required, or operational flight check	RTS[2] (Initial one column)	Flight Check[3] (Initial one column)	Name	Signature	Appropriate licence No. or Authorisation	Date

1 An initial in this column indicates that a duplicate copy of this maintenance record has been entered into the maintenance log book in accordance with rule 43.69(c).

2 The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rules, Part 43, and in respect of that maintenance the aircraft is released to service.

3 In respect of the recorded work, the aircraft is released to service for an operational flight check only.

MIX Paper from responsible sources FSC

Summary

CAA Rule Part 43 does allow for Pilot Maintenance.

Part 43 Appendix A – A.1 and A.2 lists the tasks that are allowed as Pilot Maintenance, in conjunction with requirements in rule 43.51(b)

A Part 66 Maintenance Approval is required for a pilot to carry Maintenance tasks not listed in A.1 or A.2 in Part 43 App A.

All maintenance is to be recorded and Released to Service.

A Duplicate Inspection is required after certain maintenance action(s), E.g. disturbance of flight controls.

As a Pilot, you may be required to carry out the 2nd part of a Duplicate Inspection. **Ensure you have knowledge of your responsibilities.**

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The Finish