CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Advisory Circular
AC91-14

Revision 1
09 March 2011

Light Aircraft Maintenance Programme—Aeroplanes

General

Civil Aviation Authority Advisory Circulars contain information about standards, practices, and procedures that the Director has found to be an **Acceptable Means of Compliance (AMC)** with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate Advisory Circular.

An Advisory Circular may also include **Guidance Material (GM)** to facilitate compliance with the rule requirements. Guidance material must not be regarded as an acceptable means of compliance.

Purpose

This Advisory Circular provides the details of a maintenance programme for a piston engine aeroplane, issued with a standard category or restricted category airworthiness certificate, and is **NOT** operated on air operations under Part 119 and has a MCTOW of 2730 kg or less.

Related Rules

This Advisory Circular relates specifically to rules 91.605(a)(4), 91.603, 43.69, 43.101, and 43.113.

Change Notice

Revision 1 changes the Service items listed in Appendix B to a 50 hour or six month inspection period.

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RESPONSIBILITIES AND STANDARDS

1 Operator Responsibilities

Civil Aviation Rule 91.603 requires the operator of an aircraft to ensure that certain maintenance work specified in the rule is carried out. For instance, the operator is required to ensure that the aircraft is maintained in an airworthy condition, that every applicable airworthiness directive is complied with, and the aircraft is inspected in accordance with Subpart G of Part 91.

The operator of an aircraft is also required to maintain the aircraft in accordance with a maintenance programme specified in rule 91.605 and in respect of this maintenance programme is responsible for –

- the accomplishment of the maintenance prescribed in the programme.
- continuity of the programme.
- compilation and retention of records, reports, and technical reference material.

Refer rule 91.603

Pursuant to rule 91.605(a)(4), this Advisory Circular sets out the details of a maintenance programme that is considered acceptable to the Director in respect of an aircraft that is powered by a piston engine and has a MCTOW of 2730 kg or less. The maintenance programme is to include at least the following:

- details of the responsibilities and standards for maintenance of the aircraft in accordance with the applicable rule requirements:
- details of pre-flight checks:
- details of scheduled maintenance checks and inspections.

2 Certifying Persons' Responsibilities

A person specified in rule 43.101 is responsible for ensuring that the maintenance programme schedules are adhered to and for recording in the appropriate maintenance log book or worksheet any defects or additional maintenance required as a result of implementation of this maintenance programme. The maintenance programme must be identified in the maintenance logbook and the Technical Log for the aircraft *(Refer to rule 43.69).*

3 Maintenance Schedule

Scheduled Maintenance Worksheets in Appendix B of this Advisory Circular are to be used as a recommended inspection guideline. Detailed information of systems and components in the aircraft will be found in various chapters of the relevant instructions for continued airworthiness and pertinent vendor publications. It is recommended that reference be made to the applicable portion of the instructions for continued airworthiness and the vendor's data or publications for torque values, clearances, settings, tolerances, and other requirements. Inspections may be carried out without component removal or dismantling unless considered necessary by the certifying person or where required by this programme.

4 Airworthiness Life Limitations (Retirement/Scrap Lives)

Airworthiness life limitations are those published by the state of design of the Type Certificate or Supplementary Type Certificate Holder.

Airworthiness life limitations must be recorded in the appropriate maintenance log book.

Refer to rules 91.603(b) and 43.69(a).

5 Airworthiness Directives

Compliance with Airworthiness Directives must be recorded in the appropriate sections of the maintenance log books.

Refer to rule 43.69(a)(5).

6 Mandatory Inspections

Compliance with mandatory inspections required under rule 91.605(e) must be recorded in the appropriate sections of the maintenance log books.

7 Overhaul, Additional Inspections and Test Periods

Except as provided under rule 91.603, overhaul, additional inspections and test periods are those recommended by the organisation responsible for the type design.

The Director may vary or mandate overhaul and test periods and additional inspections by the issue of an Airworthiness Directive.

Details of any maintenance performed, including inspections and test results must be recorded in the appropriate maintenance log books.

8 Instructions for Continued Airworthiness (ICA's)

Instructions for continued airworthiness should be assessed for applicability, actioned accordingly, form part of this maintenance programme and recorded in the appropriate maintenance logbook. This includes items such as:

- Service Bulletins, Service Letters, etc,
- Manufacturers Special Inspections,
- Manufacturer and/or Suppliers established recommended overhaul and/or replacement times,
- Manufacturers aging aircraft programme.

If ICA recommended inspections in addition to the scheduled core inspections are deemed to be not applicable, then this must be substantiated and accepted in a maintenance programme for the aeroplane as required by rule 91.605(a)(2) or (4).

9 Repairs or Modifications

As required by rule 43.69(a)(1), approved repairs or modifications which have been carried out to the aeroplane, engine, propeller, or components after original manufacture, must be recorded in the appropriate maintenance log book.

Any recurring inspection, or maintenance task resulting from approved repairs or modifications, forms part of this maintenance programme.

10 Duplicate Inspections

When duplicate inspections are required due to performing the initial assembly or the disturbance or adjustment of a control system of the aircraft or a component fitted to the aircraft, the requirements specified in rule 43.113 must be addressed. Guidance material is provided in Advisory Circular 43-1 (latest revision). Certifications must be recorded in the appropriate maintenance logbook or worksheets prior to certifying the release-to-service of the aircraft.

11 Certifying Release-to-Service

On completion of any work required by this maintenance programme, including any additional or out of phase inspections resulting from the review of instructions for continued airworthiness (see

paragraph 8 above), that work must be certified for release-to-service in accordance with rule 43.105 by an entry made in the appropriate maintenance log books. The certifying person's name, signature, licence number/approval number/authorisation number and date of entry must be made against the relevant work carried out.

A certification for release-to-service is required for all tasks accomplished to satisfy the requirements of paragraphs 5 through 10 above.

Where maintenance has been performed by a person in accordance with rule 43.51(b) and Part 43 Appendix A.1 and A.2, the person performing that maintenance must—

- be trained by and have a letter of competency from a licensed aircraft maintenance engineer for the task being carried out; and
- have the aircraft operator's authority to carry out the work; and
- record the details of the maintenance in the appropriate maintenance logbook and
- certify a release-to-service for the work carried out.

12 Scheduled Maintenance Worksheets

The worksheets shown in Appendix B must be completed by the person performing the maintenance. These worksheets become part of the maintenance records required to be kept by the operator.

All additional maintenance carried out in connection with a particular check should be certified on suitably referenced worksheets and included in the package to form part of the aircraft records. These worksheets are to be cross-referenced in the appropriate log book(s) giving general details of the additional maintenance carried out. *Refer to rule 43.69(b).*

13 Definitions

For the purposes of this Advisory Circular the following terms and abbreviations are defined as follows:

Service (Service)

The term 'service' requires that a component or an aeroplane system should be replenished as necessary with fuel, oil, grease, water, oxygen, etc., to a condition specified in the appropriate maintenance manual. The term 'service' may also refer to filter cleaning or replacement.

Inspect (Insp)

The term '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 may be required to be able to satisfy the inspection requirements.

Operational Check (OP/C)

The term 'Operational Check' is a test used to determine that a system or component or any function is operating normally.

Functional Check (F/C)

The term '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 manual. Measured parameters must be recorded. *Refer to rule 43.69(3).*

Check (CHK)

The term‘check’ is the verification of compliance with the type design organisation’s recommendations or other technical data that is applicable to the product or component.

CHECK CYCLE AND VARIATIONS

14 The Maintenance Check Cycle

Check title	Content	Period
Service	All Applicable Items	Not exceeding 50 flying hours or 6 months
100 hour check	All applicable items.	Not exceeding 100 flying hours or 12 months (see note 1, 2, 3)
Review of Airworthiness	CAA Form 24066/06	Not exceeding 365 days (see note 4)

15 Inspection Planning Latitudes (see Notes)

Tasks controlled by flying hours	**Maximum Variation**
50 &100 hour check	10% (See note 1, 2, 3)
Tasks controlled by calendar time	**Maximum Variation**
6 or 12 Months (if aircraft operating hours less than 100 hours for the 12 month period)	2 weeks (50 hr)1 month (See note 1, 2, 3)
Review of Airworthiness	36 days (see note 4)
Tasks controlled by more than one limit	The more restrictive limit must be applied.

NOTES:

1 Inspection planning latitudes may not be applied to applicable airworthiness life limitations.

2 Inspection planning latitudes as per rule 91.611 and must not be cumulative.

3 Any application of an inspection planning latitude to the maintenance check cycle period must be recorded in the appropriate log book(s) together with the reason for the planning latitude by a person who is authorised to sign the log book entry for that particular check. Details of the inspection planning latitude must be recorded in the technical log.

4 Operation after date at which Review of Airworthiness (R of A) is due is permitted under rule 91.615(c) for a period of not more than 36 days to allow for maintenance planning purposes but the new date the R of A is due must be recorded in the aircraft's technical log. In accordance with rule 43.155(c) the due date for the next R of A is not cumulative. Aircraft may also be operated after the R of A is due for the sole purpose of obtaining an R of A.

APPENDIX A

Pre-flight inspection

16 Pilot's Pre-Flight Check

Pilot pre-flight checks are to be carried out in accordance with the Aeroplane Flight Manual, Pilot's Operating Handbook, Pilot's Notes or Operations Manual. In the absence of any manufacturer's pre- flight instructions the following schedule should be used as guidance in carrying out a pilot pre-flight inspection.

General	• Remove frost, snow or ice, if present. Check that the aircraft documents are available and in order. • Ensure all loose equipment is correctly stowed and the aircraft is free of extraneous items. If the aeroplane has not been regularly used, ensure before resumption of flying that: (a) either: (i) the engine has been turned weekly or run fortnightly; or (ii) the manufacturer's recommendations have been complied with; (b) compression appears normal when the engine is turned by hand; (c) previously reported defects have been addressed.
Powerplant/ Engine	• Check - oil level; security of filler cap and dipstick. • Inspect - engine, as visible, for leaks, signs of overheating, and security of all items. • Inspect - air filter/intake for cleanliness. • Check - security of cowlings, access doors and panels.
Propeller	• Inspect - blades and spinner for damage and security.
Windscreen	• Inspect - for damage and for cleanliness.
Fuel System	• Check visually that quantities are compatible with indicator readings. Drain fuel sample from each drain point into a transparent container and check for water, foreign matter and correct colour.
Wings	• Inspect - skin/covering, bracing wires, struts and flying control surfaces for damage and security of all items. • Inspect - Pitot/static vents, fuel vents and drain holes for freedom from obstruction. • Test operation of stall warning device.
Landing Gear	• Check - shock absorbers, struts for leaks and that extension appears normal. • Check - tyres for inflation, damage and creep. • Inspect - brake installation for external evidence of leaks, and for damage and

security.

Fuselage and Empennage	• Inspect - skin/covering, bracing wires, struts, and flying control surfaces for damage and security of all items.
	• Inspect - drain holes and vents for freedom from obstruction.
	• Inspect - radio aerials for damage and security.
Cabin Area	• Check - flying and engine controls, including trimmers and flaps, for full and free movement in the correct sense.
	• Check - brake operation is normal.
	• Check - instrument readings are consistent with ambient conditions.
	• Perform manual override and disengagement check on auto-pilot.
	• Check - avionic equipment operation, using self-test facilities where provided.
	• Inspect - seats, belts and harnesses for satisfactory condition, locking and release.
	• Check - emergency equipment properly stowed and inspection dates valid.
	• Test operation of electrical circuits.
	• Inspect - cabin and baggage doors for damage, security and for correct operation and locking.
	• Check that markings and placards are legible.
Seaplanes	• Inspect - hull floats, spreaders, struts, bracing wires, water rudders and alighting gear for damage, security and corrosion.
	• Drain - all bilge compartments.
	• Check - water rudder system for full and free movement in the correct sense.

APPENDIX B

Scheduled Maintenance Worksheets

Maintenance organisation name: **Site where maintenance was accomplished:**	**Page 1 of** Note: enter total pages issued

A/C Reg: ZK-	Type:	Serial No:	Job No:
Engine Type:	Serial No(s) [Single]:	[L/H]:	[R/H]:
Propeller Type:	Serial No(s) [Single]:	[L/H]:	[R/H]:

A/C Total Hours:	Check Start Date:	Operator:

Check Type: [100 FH] [Annual]

Note: Delete check which is not being carried out and identify any not applicable worksheet tasks as 'N/A'.

Maintenance Manual Reference	**Issue/Revision No.**	**Date**
Airframe:		
Engine:		
Propeller:		

Structural

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
1	External structure of fuselage, mainplanes, empennage, cowlings, nacelles, control surfaces, flaps and other high lift devices.	INSP	100 FH 12 months		
2	Internal structure of fuselage, floors, bulkheads, mainplanes, nacelles, empennage. control surfaces, flaps and other high lift devices, structural attachment joint assemblies, struts, bracing wires and their attachments. Note: The need for removal of fabric for detailed inspection of attachments must be assessed when accomplishing this task.	INSP	100 FH 12 Months		
3	Internal corrosion protective treatments, drain holes and paths.	INSP	100 FH 12 Months		
4	Wooden/Composite Construction: Vent holes, glued joints, bonded assemblies, protective treatments and finishes. Note: The need for removal of fabric for detailed inspection of attachments must be assessed when accomplishing this task.	INSP	100 FH 12 Months		
5	Static discharge wicks and attachment bases.	INSP	100 FH 12 Months		
6	Surface de-icer system.	INSP	100 FH 12 Months		
7	Normal and emergency doors and windows, door hinges, door hinge attachment points, required placards and operating instructions.	INSP	100 FH 12 Months		
8	Doors, hatches and windows latching and locking.	OP/C	100 FH 12 Months		
9	Seaplanes: Hull, floats, spreaders, struts, bracing wires, water rudders, alighting gear, bilge compartments.	INSP	100 FH 12 Months		
10	Seaplanes: Water rudder system.	OP/C	100 FH 12 Months		

Landing Gear

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
11	Landing gear assemblies, shock-absorber struts/units for leaks and correct extension, brake system, brake linings, drums/discs, wheels, tyres.	INSP	100 FH 12 Months		
12	Structural members, attachment fittings, pivot points, shock absorbing devices, bungee rubbers, torque links, shimmy dampers, main wheels, nose/tail wheels, bearings, skids, hoses and lines, hydraulic and electric actuators, jacks, struts, wheel fairing. **Note: Carry out with weight off the landing gear.**	INSP	100 FH 12 Months		
13	Main and parking brake systems.	OP/C	100 FH 12 Months		
14	Normal/emergency retraction and extension, locking devices, doors and operating linkages, indicators, warning devices.	OP/C	100 FH 12 Months		
15	Hydraulic/pneumatic operating system.	CHK	100 FH 12 Months		
16	Tyre pressures, hydraulic brake system fluid level.	SERVICE	All Checks 50 FH 6 Months		

Flying Controls

17	Hinges, brackets, push-pull rods, bellcranks, control horns, balance weights, cables, pulleys, chains, tubes, guides, fairleads, rollers, tracks, rails, screw jacks/rams, auxiliary gearboxes and other power-operated systems. Note: The need for removal of flying control cables and control system components for detailed inspection must be assessed when accomplishing this task.	INSP	100 FH 12 Months		
18	Turnbuckles, locking devices in safety.	CHK	100 FH 12 Months		
19	Primary/secondary flight controls and trim systems for full and free movement in the correct sense. Position indicators agree with surface movement.	OP/C	100 FH 12 Months		

Liquid, Air and Gas Systems

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
20	Hydraulic, pneumatic, vacuum, other fluid systems.	INSP	100 FH 12 Months		
21	Fluid levels in reservoirs, accumulator pressures.	SERVICE	All Checks 50 FH 6 Months		
22	Tanks, power packs, valves, pipelines, hoses, actuators, filters, venturis.	INSP	100 FH 12 Months		
23	Pitot/static system vents, pitot head, drains clear. Pitot head correctly aligned.	INSP	100 FH 12 Months		

Equipment and Environmental

24	Correct stowage of equipment, validity of date on emergency equipment.	CHK	100 FH 12 Months		
25	Seats, belts/harnesses, attachment, locking and release.	INSP	100 FH 12 Months		
26	Cabin air system, heater, blower.	INSP & OP/C	100 FH 12 Months		
27	Fire extinguisher for leakage or discharge.	CHK	100 FH 12 Months		

Aeroplane Lubrication

28	Lubricate aeroplane in accordance with manufacturer’s maintenance manual	LUB	100 FH 12 Months		

Powerplant Installation

Task No.	Task Description	Task Nature	Task Interval	Mech		Insp	
				LH	RH	LH	RH
29	Engine and propeller controls for full and free movement -throttle, mixture, carburettor heat, cowl flaps, propeller.	OP/C	100 FH 12 Months				
30	Crankcase, accessory housings, cylinder assemblies, accessory drive belts, accessories, engine shock mounts, mount frames, bulkheads, firewalls and sealing, cooling baffles, cowlings, breathers and vents, items in engine bay for mutual interference.	INSP	100 FH 12 Months				
31	Valve operating mechanism. Next due: Note: In accordance with manufacturer's recommendations.	CHK	100 FH or See Note				
32	Cylinder compression and leakage. Record results below. Method:	CHK	100 FH 12 Months				

Left engine

Eng Cyl	Result	Eng Cyl	Result
1		4	
2		5	
3		6	

Right engine

Eng Cyl	Result	Eng Cyl	Result
1		4	
2		5	
3		6	

Air Induction

Task No.	Task Description	Task Nature	Task Interval	Mech LH	Insp LH	Mech RH	Insp RH
33	Carburettor heat, alternative air bypass doors, control systems.	INSP & OP/C	100 FH 12 Months				
34	Air filter, Flame traps..	SERVICE	All Checks 50 FH 6 Months				
35	Drains, intake and induction system, turbocharger impeller.	INSP	100 FH 12 Months				

Exhaust

36	Cabin heat exchanger.	INSP	100 FH 12 Months				
37	Turbocharger, control system, pipelines, hoses.	INSP	100 FH 12 Months				
38	Exhaust manifold, mufflers	INSP	100 FH 12 Months				

Fuel system

39	Filters for cleanliness and tank vents unobstructed. Drain samples from all drain points and check for presence of water, foreign matter and correct colour	SERVICE	All Checks 50 FH 6 Months				
40	Tanks, filler caps, filler point placards	INSP	100 FH 12 Months				
41	Selector valves, fuel selector control, pumps, pipelines, hoses,	INSP	100 FH 12 Months				
42	Carburettor, injector systems, throttle, mixture controls.	INSP	100 FH 12 Months				

Ignition

Task No.	Task Description	Task Nature	Task Interval	Mech LH	Insp LH	Mech RH	Insp RH
43	Magnetos, harnesses, leads, switches, starting vibrators, contact breakers, cooling system and ventilators.	INSP	100 FH 12 Months				
44	Magneto timing to engine.	CHK	100 FH 12 Months				
45	Magneto impulse cam. Next due: Note: In accordance with manufacturer's recommendations or, if applicable, A.D requirements	LUB	100 FH or See Note				
46	Spark plugs. Clean, inspect and test. Replace as necessary	CHK	100 FH or See Note				

Engine Lubrication

47	Magnetic plugs	CHK	100 FH 12 Months				
48	Engine oil change. Oil filter. Screens. Next due: Note: In accordance with manufacturer's recommendations.	SERVICE	All Checks 50 FH 6 Months or See Note				
49	Tanks, sumps, coolers, hoses, pipelines, vents.	INSP	100 FH 12 Months				
50	Engine controls in accordance with manufacturer's recommendations.	LUB	100 FH 12 Months				

Propeller

Task No.	Task Description	Task Nature	Task Interval	Mech LH	Insp LH	Mech RH	Insp RH
51	Blades, spinner, backplate.	INSP	100 FH 12 Months				
52	Accumulator dome pressure.	CHK	100 FH 12 Months				
53	Hub, constant speed unit, governor, accumulators, de-icing boots, slip rings and brushes, fluid systems, control systems.	INSP	100 FH 12 Months				
54	Pitch change mechanism for backlash.	CHK	100 FH 12 Months				
55	Lubricate propeller in accordance with manufacturer's recommendations.	LUB	100 FH 12 Months				

Radio

56	Aerials, insulators, controllers, instruments, displays, microphones, headsets, jack plugs and sockets.	INSP	100 FH 12 Months		
57	Placards and markings legible.	INSP	100 FH 12 Months		
58	VHF ground function.	OP/C	100 FH 12 Months		
59	Cables and terminals, cooling systems, moisture trap areas.	INSP	100 FH 12 Months		

Electrical System

Task No.	Task Description	Task Nature	Task Interval	Mech		Insp	
60	Battery, stowage/compartment, vents and drains. Electrolyte level.	INSP & SERVICE	All Checks 50 FH 6 Months				
61	Alternator/generator drive belt tension and condition.	INSP	100 FH 12 Months				
62	Components, wiring, terminals, connectors.	INSP	100 FH 12 Months				
63	Warning circuits.	OP/C	100 FH 12 Months				
64	Correct type and rating of fuses and circuit breakers. Correct spare fuses carried.	CHK	100 FH 12 Months				
65	Lamps and lighting. Correct spare lamps carried.	CHK	100 FH 12 Months				
66	Brushes in starters, alternators and generators. Next due: Note: In accordance with manufacturer's recommendations.	CHK	100 FH or See Note				

Instrument Systems

67	Legibility of markings and associated placards, band ranges and limit markings.	INSP & CHK	100 FH 12 Months		
68	Readings consistent with ambient conditions. Stall warning device operation.	CHK	100 FH 12 Months		
69	Compass 'deviation' or 'steer by' cards - valid until next check.	CHK	100 FH 12 Months		
70	Instruments, displays, controllers, panels, mounts, pipes, hoses, electrical wiring, gyro filters, flux detectors, instrument transmitters.	INSP	100 FH 12 Months		

Auto-Pilot and Flight Director

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
71	Displays, instruments, controllers.	INSP	100 FH 12 Months		
72	Manual override, disengagement functions.	OP/C	100 FH 12 Months		
73	Computers, amplifiers, power supplies, servo motors, connections to flying control systems, automatic trim systems, yaw dampers, interconnections	INSP	100 FH 12 Months		

Annual Check/Non-Aligned Tasks

Structural

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
1	Emergency exits by internal and external release methods.	OP/C	12 months		
2	Lightning strike bonding if fitted	CHK	12 months		
3	Internal condition of struts, control tubes and similar hollow members. Next due: Note: In accordance with manufacturer's recommendations or, if applicable, A.D schedule.	INSP	See Note		

Liquid, Air and Gas Systems:

4	Pitot/static system sense and leak.	F/C	24 Months		
5	Hydrostatic test of pressure vessels. Next due: Note: In accordance with manufacturer's recommendations.	INSP & CHK	60 Months or See Note		
6	Flexible fuel and oil hoses pressure test. Next due: Note: In accordance with manufacturer's pressure testing recommendations but in either case only until the ultimate service life, if stated, is achieved.	CHK	72 Months from new, then every 36 Months or See Note		
7	Internal examination and pressure testing of fluid tanks and reservoirs. Next due: Note: In accordance with manufacturer's recommendations.	CHK	See Note		

Equipment and Environmental

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
8	Fire extinguisher contents by pressure/weight. Reference NZS 4503	CHK	12 months		
9	Inspection of First Aid Kits 91.605(e)(6)	CHK	12 months		
10	Reweigh 91.605(e)(9)	F/C	10 years		
11	Inspection floatation equipment 91.605(e)(8)	CHK	Mfr's instructions or 12 Months		

Electrical Systems

12	Over/under-volt system, warnings. Load sharing.	OP/C	12 months		
13	All ground operable electrical circuits. Exercise manually operated circuit breakers.	OP/C	12 months		

Instrument Systems

14	Air Speed Indicator calibration (in situ is permissible).	F/C	24 Months		
15	Altimeter calibration in accordance with Part 43 Appendix D	F/C	24 Months		
16	Instruments and indicators - satisfactory condition, mounting, marking and operation. Note: This task is applicable to all instruments and indicators that could affect the airworthiness or operating safety of the aircraft.	F/C	24 Months		
17	Compass swing in accordance with Part 91.605 (e)(5). Next due:	F/C	24 Months		

Radio

Task No.	Task Description	Task Nature	Task Interval	Mech	Insp
18	HF Communication. In accordance with Part 43 appendix B	OP/C	24 Months		
19	ADF - ground function using station(s) of known bearing to establish accuracy. Audio on all bands, in accordance with Part 43 appendix B	F/C	24 Months		
20	ILS Localiser and Glide Slope - with a Field Test Set, including flag warnings of single tone failure, centre-line accuracy, sense, course widths, audio, in accordance with Part 43 appendix B	F/C	24 Months		
21	VOR -with a Field Test Set, including flag warnings, omni-radial resolving, radio- magnetic indicator accuracy at 90° intervals, sense and course width, in accordance with Part 43 appendix B	F/C	24 Months		
22	Marker - with a Field Test Set, including 3-tone operational check, high/low sensitivity, in accordance with Part 43 appendix B	F/C	24 Months		
23	DME - with a Field Test Set, including range accuracy, audio, in accordance with Part 43 appendix B	F/C	24 Months		
24	ATC Transponder -with a Field Test Set, including frequency tolerance, side lobe suppression, mode ‘C’ and ‘S’. In accordance with Part 43 appendix E	F/C	24 Months		
25	Audio, including emergency operation, in accordance with Part 43 appendix B	OP/C	24 Months		
26	ELT, including battery. Battery due: Note: In accordance with Part 43 appendix F.	CHK	12 months		
27	VHF Communication -with a Field Test Set, including frequency tolerance of transmitted frequencies. Next due: Note: In accordance with Part 43 appendix A	F/C	24 Months		

Auto-Pilot/Flight Director

28	Auto-Pilot/Flight Director-all modes	OP/C	24 Months		

Engine Performance Log

Aircraft Registration: ZK-..... Job No:.....

Altitude..... Pressure Altitude (1013 Hpa)..... Ambient Temperature..... C

Start engine I.A.W. the aircraft manufacturer's instructions, observe gauges for normal operation, shut down engine if correct parameters are not achieved.

During Warm –up

Carry out magneto check at manufacturer's recommended idle speed,
Check each magneto momentarily to **OFF**. Satisfactory? **Y/N**

If fitted, check carburettor heat control, move from **COLD** to **HOT.** Check RPM drop? **Y/N**
Return to **COLD.** Check for RPM rise? **Y/N**

When oil temperature and CHT are in the green continue as listed.

Ignition system check

Set engine rpm to .....(per A/C Flight Manual) Magneto drop LH ..... RH.....

Propeller pitch change check

Set throttle to maintain RPM as above. Move propeller pitch control to reduce RPM
by maximum 300 rpm. Return to fine, RPM increase? Function correct? **Y/N**

Electrical system check

Maintain RPM set above. Check alternator/generator is charging. Function correct? **Y/N**

Vacuum system check

Maintain RPM set above. Check vacuum gauge reading/limits, and
vacuum gyro instruments operation Function correct? **Y/N**

Full throttle/Take off power

Set throttle to maximum RPM and manifold pressure ensuring adequate clearance from other people/aircraft/buildings; record the following information:

Static rpm ..... (corrected for temperature) Reference RPM..... Manifold Pressure .....
Reference Manifold Pressure ..... Oil pressure .....psi Oil Temp.....C/F

CHT .....C/F. Fuel pressure/Flow ..... EGT .....

Reduce throttle slowly to idle rpm and record .....rpm

Oil Pressure .....psi Oil Temp .....C/F Fuel pressure/Flow .....

Idle rise mixture check

Set engine to idle rpm. Pull mixture control slowly towards **FULL LEAN.** Check and record idle rise .....rpm.

Engine shut down

Ensure temperatures and pressures are within manufacture's limits before moving the mixture to **FULL LEAN** or I.A.W. the aircraft manufacturer's instructions.

Final Checks (Include with all checks)

Ground Run

In accordance with manufacturer's limits or flight manual limits as applicable
Record results in accordance with rule 43.115

Task No.	Task Description	Task Nature	Task Interval	Insp		Certifying Person	
				LH	RH	LH	RH
1	Powerplant, liquid, air and gas systems for leaks during and following ground run.	INSP	All Checks				
2	Instruments, systems and services. Radio for electromagnetic interference.	OP/C	All Checks				
3	Following ground run, ensure all cowling, access panels and doors are secure	CHK	All Checks				

Certification

Task No.	Task Description	Task Nature	Task Interval	Insp	Certifying Person
4	Work pack and Log Book entries have been completed and certified. Ensure items due in accordance with Out of Phase Section have been accomplished and certified.	CHK	All Checks	N/A	

Release to Service

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:

Name..... Signed……..... Licence/Approval No……. Date……