



LARGE MODEL CODE OF
PRACTICE

Amendment Status

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5	Initial Issue	Oct 2007	LM SIG
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Summary of Amendments

Version	Change Detail
5	Initial public Issue
6	Servo sizing revised
7	2.4 GHz receiver criteria and MFNZ references
8.2	Revisions to definitions and servo requirements, wings requirements clarifications
8.3	Updated to comply with Part 102 processes
8.4	Revisions to definitions, Cat 3 TP spec, Failsafe requirement, Rx and battery redundancy, test flight witnessing, Cat 2 secondary pilot testing, Inspection checklist. Revised definition public site to flying site. Revised Wings qualification requirement
8.5	Addition of Cat 2A/2B definitions, revision to Cat 3 definitions. Revision of control linkages. Addition of witness for Cat 2B, 12-month inspection for Ca 2B.
8.6	Revision of Cat 3 definitions, Addition of Cat 2B Insurance and Inspection conditions, Revision of Equipment wiring and switches, Addition of Cat 2B Technical Oversight Inspector, Clarification of Flight-Testing rules, Revision of Change of Ownership aircraft rules section 6.7.

8.7	Revision of Section 5.5.4 battery requirements
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1. Foreword

This code of practice has been prepared by MFNZ to satisfy its obligations as a Civil Aviation Authority of New Zealand (CAA) approved body for the certification of large models under their regulations and to promote the safe operation of large models in NZ for recreational and non-commercial use.

Advancement in technologies require a constant review of LM operations and this document recognises and moves to address these changes.

The key event that leads to risk associated with the operation of large models is loss of control. The consequences of loss of control are potentially more significant with heavier and more powerful models and this is recognised in the CAA regulations requiring certification of large models.

This Code of Practice has been developed in recognition of those aspects of large model design, construction and operation with the potential to lead to a loss of control, with a view to practically minimizing the likelihood of this occurring.

Other MFNZ rules and guidelines, around flying sites and separation distances for example, apply to mitigate the consequences should a loss of control occur. Adherence to the COP and MFNZ rules and guidelines thereby minimise the risk associated with the operation of large models.

Whilst every effort has been made to ensure that this Code of Practice (COP) is complete and error-free, MFNZ cannot be held responsible for any eventuality arising from its application. Therefore, the use of this document is not in any way whatsoever a warranty, guarantee or assurance as to the safety or freedom from defect of the whole or any part of any model or its fittings or equipment, nor of the competence of any person who may fly it.

Safe operation of any large model remains the responsibility of the builder/owner and pilot of the model.

It is of paramount importance that all MFNZ members participating in the large model operations defined in this document strictly comply with the rules set out.

Failure to do so could jeopardise the future operation of LM's and possibly RC aircraft in general...please remember this during your decision making!



2. Introduction

The requirements of this Code of Practice should be read in conjunction with the MFNZ Members Manual, The Model Flying New Zealand CAR102 Operations Manual and prevailing CAA regulations.

Large models by nature require an understanding of model construction techniques by the builder of the model. Forces and stresses on airframes and control surfaces require greater consideration, including the adequacy of control linkages and servos, than those associated with smaller models.

The prevalence of ARF type large models can make it difficult to assess structural integrity of an airframe and consequently this COP incorporates requirements in relation to such ARF models.

Pre-flight inspection checks play an important role in safe operation and have proven to have prevented dangerous situations from occurring.

The Large Model Certification Scheme is not only required for CAA compliance, but also a key element in the management of risk associated with our hobby.

Category 1 & 2a and b aircraft are a legal CAA requirement whilst Category 3 is managed by MFNZ as valuable safety precaution based on a powerful engine component.

MFNZ safety rules require that models within the categories 1, 2a & b, and 3 above be certificated and issued a Permit to Fly. The process for achieving certification and subsequent permit issue in these categories is described in this COP.

Permits are valid for the periods as follow:

- a) Cat 1 & 3: 5 years from date of issue
- b) Cat 2a: 3 years from date of issue
- c) Cat 2b: 1 year from date of issue

Pilots of Categories 1, 2a & b and 3 must also hold an MFNZ LM wings qualification relevant to the aircraft type operated.

To avoid confusion, it is noted that a long-standing association formed by MFNZ members also uses the term 'Large Models' to describe aircraft that satisfy a dimensional specification (nominally 2 metres) chosen by the group for rally-flying purposes but are lighter than Category 1 and have motors smaller than Category 3.

These models do not require certification, and the aspects of this COP that pertain to certification standards and procedures do not apply to them.

3. Definitions

CAA	Civil Aviation Authority of New Zealand
Inspector	<p>A person appointed by the Large Model Controller to advise the owner of a project requiring large model certification and to approve, as appropriate, the model's design, construction and flight testing. Inspectors are appointed to projects on the basis of relevant knowledge and experience.</p> <p>An applicant for a LM Inspector's role must be a current member of MFNZ. An MFNZ LM inspector will be appointed to the position by the LMC based on one or more of the following criteria:</p> <ol style="list-style-type: none">Appointed directly by the LMC on receipt of an accompanying summary of the intended inspectors experience with large models and model building in general.Nominated by another inspector with an accompanying summary of the intended inspectors experience with large models and model building in general.Nominated by a club with the secretary of the club providing an accompanying summary of the intended inspectors experience with large models and model building in general.
Large Model	<p>Model aircraft that fall within the categories detailed below:</p> <ol style="list-style-type: none">Category 1: Models 15kg – 25kg with fuel Authority is delegated to MFNZ by CAA to issue Permits to fly to owners of radio-controlled model aircraft in the weight range 15kg – 25kg with fuel. <u>It is illegal</u> under NZ law for models of this weight to be flown without written permission from MFNZ.Category 2a: Models 25kg – 75kg with fuel Category 2b: Models 76kg – 150kg with fuel Authority is delegated to MFNZ by CAA to issue Flight Authorisations to owners of radio-controlled model aircraft in the weight range 25kg – 150kg with fuel to operate. <u>It is illegal</u> under NZ law for models of this weight to be flown without written permission from MFNZ and authorised on behalf of CAA.Category 3: Models less than 15kg but with IC motors greater than 88cc, Turbines greater than 142N, electric motors greater than 5kW sustained input, turbo prop or turbine helicopters greater than 5.2kW sustained output. It should be noted that multi engine aircraft are viewed as the total engine power not exceeding the above limits. <p>Note: CAR102 definitions specified in the MFNZ CAR102 Operations Manual for the above Cat 1, 2A, 2B & 3 categories take precedence over the LMCOP should variation occur.</p>
MFNZ	New Zealand Model Aeronautical Association (Incorporated) also known as Model Flying NZ
Flying Site	Any site that the pilot has assessed as compliant with the MFNZ members manual, is suitable for large model operation and has the site owners/operator's permission.
Shall/Must	Indicated an obligation to comply.
Weight	The weight taken is the gross weight of the complete model including fuel and any temporary fittings such as underwing stores, smoke fluids, powders, liquids.

4. Operation of Large Models

4.1 A large model may be flown only if it has been certificated under the Large Model Certification Process (Refer to Section 6) or as part of the certification process.

4.1.2 Cat 2B owners with aircraft weighing 100kg to 150kg MUST carry their own private 3rd party insurance cover.

MFNZ insurance does not cover aircraft in this weight range additionally pilot/owners will be required to produce proof of relevant insurance cover prior to any flight authorisation being granted.

4.2 Pilots must be under the direct supervision of a LM certified pilot when undertaking training flights. It is permissible to use a buddy box system when undertaking training flights only.

4.3 All large models shall be checked before the first flight of the day. The Pre-Flight Checklist in Appendix 1 specifies the checks that shall be undertaken prior to the first flight of the day. The inspection may be carried forward to subsequent days of a flying rally. The inspection check shall also be undertaken subsequent to any incident / accident – no matter how minor.

4.4 Pilots of large models need to consider the restrictions posed by a particular flying site and the weather conditions, and therefore it's suitability for the large model they are intending to operate and only proceed to operate the model if it can be done safely.

4.5 Pilots must hold a Wings Qualification rating with a supplementary LM endorsement for the relevant model category.

The rating categories are:

Class	Aircraft Specifics
BP	Basic Powered Fixed Wing
AP	Advanced Powered Fixed Wing
BG	Glider
AG	Advanced Glider
BH	Helicopter
AH	Advanced Helicopter
MR	Multicopter
AM	Advanced Multicopter
BT	Basic Turbine
AT	Advanced Turbine
DS	Dynamic Soaring

Note: All LM ratings must be flown with a Category 1, 2a & b or 3 certified aircraft.

4.6 In addition to an LM rating all Cat 2a & b pilots require the Advanced Power (AP) rating.

Example: pilot with BP rating sits LM theory test completes one flight test with Cat 1 or 3 aircraft result = BP (LM) rated.

4.7 Cat 2a and b pilots must complete in addition to the theory test a minimum of 3 completed flights demonstrating the entire flight envelope intended for the aircraft.

4.8 Refer to Wings Qualification scheme at www.modelflyingnz.org for further details.

4.9 Motors shall be disabled when models are in the pits. Battery ignition systems or turbine ECUs shall be switched off and glow plug circuits disconnected when the model is unattended. Electric powered models shall have the batteries supplying the motor disconnected when in the pits.

4.10 There shall be a means to stop all motors from the transmitter.

4.11 All categories must have a radio fail safe active during model operation. Physical demonstration of this function may be required during pre-flight or event registration inspection.

4.12 Failsafe function will require as a minimum the engine, turbine or electric motor reducing to idle power for a maximum of 5 seconds followed by a shutdown if control is not regained.

5. Large Model – Criteria for Model Design, Construction, and Equipment

5.1. General

5.5.1 The fundamental criterion is that a Large Model must be as safe as practically possible to operate. The standards of design, engineering and construction must be appropriate and adequate for the chosen technologies and materials, power, and model type.

5.5.2 In this context, current best practice is desirable and is determined by reputable published plans, current publications by knowledgeable authors, reputable kitset manufacturers, and the knowledge and experience of people recognised by MFNZ.

5.5.3 In all cases the manufacturers recommendations must as a minimum be adhered to!

5.2. Design

5.2.1 Where designs are to be utilised that are not known or recognised, they may be assessed by comparison to existing proven designs for comparable airframes in terms of size, weight, materials, construction techniques and potential performance. Where no such comparison is available the design may be qualified by analysis of the loads that will be applied to, and load bearing capacity of, the proposed structure.

5.3. Construction

5.3.1 Construction shall be assessed based on the quality of the materials used, the techniques employed to ensure adequate strength at joints as well as the accuracy and workmanship as they affect the ability of the airframe to perform as intended.

5.3.2 Control surface hinging, engine, undercarriage, as well as servo and other mounting systems shall be assessed for appropriate strength and rigidity.

5.4. Equipment

5.4.1 Receivers: Two receivers and redundant power supplies for receivers and servos are mandatory for Category 2a and 2b models and are strongly recommended for Category 1 and Category 3.

5.4.2 These requirements can be met in either of the following ways:

- a) Option 1: A primary receiver accompanied by one or more linked satellite receivers, with two or more power supplies linked either directly to the primary receiver or to a junction box that regulates power to the receivers and servos.
- b) Option 2: Dual independent receivers, each with its own servos and power supply, which share each of the primary controls of the aircraft. For example, one receiver would drive the port aileron and the second would drive the starboard aileron. Similarly, each receiver would control half of a separated elevator surface, or each would control one of two servos that are ganged to a single elevator surface.
- c) Option 3: Multiple independent receivers powered with dual batteries via an electronics power distribution system. The receivers in turn connected to a multiple input/multiple servo output device capable of distributing servo power and output data to independent or ganged servos. The receivers could be connected to the output device via serial bus.

For example: two Futaba receivers connected to a Power Box Royal SRS or Power Expander SRS.

5.4.3 Category 2b models require in addition multipath transmission/reception capability.

- a) Cat 2b models: A transmitter capable of transmitting on two or more independent FHSS frequencies with a matched receiver capability on NZ legal 2.4Ghz or 915Mhz bands.
For example, the Jeti or Powerbox Core range of radio control equipment.

- b) It is recommended that a full evaluation of any proposed receiver system be undertaken prior to consideration for use in terms of this COP.

5.5. Flight Batteries

5.5.1 Redundant (dual) flight batteries are mandatory and may be provided by use of:

- a) Separate battery inputs to the receiver via a dual battery redundancy unit.
- b) A junction box unit that regulates dual power supplies to receiver(s) and servos.
- c) A single receiver input via a suitable electronic dual battery redundancy unit that meets the servo current loading.

5.5.2 The total battery capacity shall take into account the number and power of the servos, the required control movement, the size and speed of the model together with the expected number of commands to be exercised in flight.

5.5.3 It is recommended that an individual battery capacity of at least 2000 mAh be utilized and that the battery chemistry allows for high current capacity under load.

5.5.4 Cat 2a aircraft must use a minimum of 3000 mAh batteries and Cat 2b a minimum of 5000 mAh batteries, unless the aircraft manufacturer specifies otherwise.

Alternatively, if the owner can provide a demonstrated method of battery management to the LMC that meets the aircrafts operational demands, this may be acceptable. Acceptable methods of alternative compliance may include -

- Telemetry showing voltage/capacity
- Additional redundant batteries
- Onboard charging

Alternative option batteries however must have a rated capacity no less than 2100mAh at 10C.

5.6. Servos, Extension Leads and Switches

5.6.1 The servos installed for control surface operation should be a minimum of the following:

- a) Manufacturer or plan designer recommendation for the particular model aircraft, or
- b) Specifically calculated for the given control surface and aircraft performance.

5.6.2 Written documentation is required to the satisfaction of the Large Model Controller justifying the servos selected for Category 2a and 2b models and may be required for Category 1 and 3 models.

5.6.3 Servo extension leads shall be selected consistent with the current draw that the servo is capable of, the length of the lead and its associated voltage drop under load. This consideration also applies to battery leads. This requirement will usually mean that heavy duty servo extension leads are required. Consideration should also be given where appropriate to separating ancillary electrical systems from primary flight control power.

5.6.4 Switches must be of the "latch on" failure type such as Powerbox, Emcotec, Booma RC to name a few. The Important point is the switch failure mode must be to ensure the ON position is maintained until batteries can be disconnected.

Slide or toggle contact type switches are deemed unreliable and must not be used for any primary or backup RC battery switching purposes. This includes ignition or ECU and is for safety reasons should this switch type suddenly go open circuit.

Use of these slide or toggle type switches is limited to non-flight control situations such as lighting etc.

5.7. Control Linkages

5.7.1 All control linkages, clevises and horns shall be able to withstand the maximum torque output of the servo. When selecting the type and design of pushrods, consideration should be given to the likely forces that will be imposed on the control surfaces, to ensure that bending of pushrods and/or un-commanded deflection of control surfaces does not occur.

5.7.2 Where pushrods/clevises are used for primary control surfaces, the minimum size shall be 4–40 (or 3mm). Consideration should be given as to whether to use clevises or opt for a more solid bolt on ball link.

5.7.3 In addition to the above it is strongly recommended that carbon fibre or similar performance tubing be used to stiffen all 4-40 or 3mm pushrods.

5.7.4 It is a mandatory requirement on Cat 2b aircraft to fit good quality 4mm metal ball joints and increase pushrod size to a minimum 4mm thread size with carbon tube or similar performance tube sleeves.

5.7.5 In addition, the control surface horns should be ganged with a central mounted ball link with thru bolt connection and servo horns to be of alloy or steel construction tapped minimum 4mm at ball link attachment point.

5.7.6 Pull/pull systems are recommended where appropriate. For large aerobatic models, specialized heavy-duty linkages, servo arms, and hinges are recommended.

5.7.7 Heavy duty hinges are recommended for all control surfaces and careful attention to the required number of hinges in each control surface to ensure control surface integrity in relation to the likely loads on the control surface during flight.

5.7.8 All hinges shall be 'pinned' or secured in such a manner as to prevent control surface separations. Robart type hinges are acceptable.

6. Large Model Certification Process

6.1. The Certification Process

6.6.1 This has three sequential parts, Part A, Part B, and Part C, as follows:

Part A: Registration of Project and Appointment of Inspector

The Owner of the project applies to the Large Model Controller for registration of the project, using Form A.

When the Large Model Controller registers the project, it arranges for an Inspector who will then work with the Owner, and informs both the Owner and the Inspector, with contact information. It is then the responsibility of the Owner to contact the Inspector and so proceed to Part B.

Part B: Certification of Design and Construction and Permit to Flight Test

The Inspector appointed in Part A records inspection and approvals of the aircraft design and construction, using Form B, which is signed by both the Owner and the Inspector when construction has been approved.

Approval of construction will normally require a minimum of three inspections:

- a) Inspection 1: assessment of project intentions/plans
- b) Inspection 2: assessment of construction while internal structures are accessible/visible
- c) Inspection 3: assessment of the model presented ready for flight.

At the discretion of the LMC, Inspector, or at request of the Owner, further inspections may be undertaken at any stage during construction.

Cat 2b inspectors will be specifically chosen by the LMC and appointed accordingly. There will be a Primary inspector and a Technical Oversight inspector. The oversight inspector will review and confirm all calculations undertaken in respect to servos, control system linkages, electronic and power plant installations.

Part C: Approval of Flight Testing and Permit to Fly

The Categories have different processes, as follows:

- a) Categories 1 and 3: The model is eligible to commence flight testing as soon as both the Owner and the Inspector have signed Form B, but before sending it to the Large Model Controller. Upon receiving Form B, the Large Model Controller will issue to the Owner a Certificate of Design and Construction and a confirmation of Authorisation to Flight Test. A copy will be sent to the inspector.
- b) Category 2a & b: Flight testing requires prior approval in writing from the Large Model Controller. The Controller will arrange this as soon as Form B is received signed by the Owner and Inspector. The Authorisation to Flight test will be sent to the Owner and Inspector by the Large Model Controller together with a Certificate of Design and Construction. Flight testing may commence only after these documents have been received.

6.2. Flight Testing

6.2.1 This must be completed within one year of the Certificate of Design and Construction being issued.

Upon issue of the Approval to begin Flight Testing, the aircraft must be marked with the Large Model registration number. This marking must be in an area which is easy for a witness to see, preferably in the cockpit area but scale models may be marked in the wing opening or behind a hatch.

- a) Flight Testing may take place at flying sites as defined in this COP. If this site is adjacent to a full-size airfield, testing shall not take place while full-size aircraft are active.
- b) The personnel present at Flight Testing must be limited to the Owner, Pilot, Inspector/Witness, and essential helpers. No spectators are permitted on the flight line and no other flying may take place while Flight Testing is in progress.

- c) All other flight safety standards and rules established by MFNZ must be observed.

- d) Owners of Cat 2a and Cat 2b aircraft MUST obtain a Flight Authorisation document from the LMC PRIOR to commencing any test flights. For aircraft 100kg>150kg a 3rd party insurance policy document must also be forwarded to the LMC prior to Flight Authorisation issue.

6.3. Witness

6.3.1 All flights must be witnessed by the project Inspector for Cat 2b aircraft or a person appointed by the Large Model Controller (preferably but not essentially the project inspector) for Cat 1, 2a and 3 aircraft.

6.3.2 The witness MUST be a current member of MFNZ. It is the responsibility of the Witness of each flight to ensure that all the requirements of the Flight Test Log (see below) are met, and that the flight is signed off.

6.4. Flight Test Log

6.4.1 Approval of Flight Testing requires completion of the Flight Test Log (Form C). The Witness of each flight should include brief notes about the performance of the model and pilot, if appropriate. By signing the Log, the Witness confirms that the model appears to be safe to fly at the place and in the weather conditions noted. The Witness should take care that this confirmation is carried out accurately and without fear or favour.

6.5. Flight Testing Requirements

These are different for each Category and the aircraft must have successfully completed all trimming flights prior to the following test flight regimes commencing:

- 6.5.1 Categories 1 and 3: The model will complete 5 flights with all chosen manoeuvres completed on every flight. If all manoeuvres are not completed, the flight cannot be counted this includes taxi back after landing. The manoeuvres listed in the Flight Test Log must demonstrate the integrity and controllability of the model in the entire envelope in which it is intended to be flown.
- 6.5.2 It is envisaged that as a minimum the manoeuvres will consist of rolling and looping or combinations thereof as applicable to the aircraft type.
- 6.5.3 Category 2a & b: The completed Flight Test Log must total a minimum of one hour flying time for Cat 2a and 1.5hrs for Cat 2b with all chosen manoeuvres completed on every flight. If all the manoeuvres are not completed within the flight it cannot count for the Log this includes taxi back after landing . The flying time must be completed in not less than 6 flights for Cat 2a and 10 flights for Cat 2b and each flight must demonstrate controlled start up and shut down of all engines and the radio control system.
- 6.5.4 It is stressed that one hour (or 1.5hrs for Cat 2b) is the absolute minimum and it is likely that it will take longer than this to satisfactorily complete the test programme. Any requirements for modifications to the model that are identified during the test programme shall be carried out and this may mean further testing is required.
- 6.5.5 It is expected that for unusual or complex types of models new to the pilot, the test programme will be extended.
- 6.5.6 Additional Pilots: Whenever the owner seeks certification of the model when flown by another pilot, a further Flight Test Log must be completed. This Flight Test Log must record completion by this new pilot of at least one hour flying time for Cat 2a or 1.5 hours for Cat 2b that include all of the chosen manoeuvres.
- 6.5.7 For all Categories: The Flight Routine specified in the Log of Flights must be approved in advance by the Inspector and must include demonstration of all control functions and manoeuvres that are intended to be flown under the Permit to Test Fly. A pilot in consultation with their Inspector may omit manoeuvres

such as a stall if they believe the aircraft type is unsafe to do so or based on a manufacturer's recommendation.

6.5.8 At the discretion of the Owner or Pilot, prior flights that are not eligible for the Log may be undertaken to establish initial control settings and flight envelope not to exceed a maximum of six (6) flights. It is expected that the Log will be completed over a period of time and not in one day. Witnesses should ensure that the model can be operated in a variety of weather conditions and not only on a "nice" day.

6.6. Pilots

6.6.1 The requirements concerning pilots differ between the Categories, as follows:

- a) Categories 1 and 3: Flight testing may be undertaken by any pilot holding a Wings Qualification with LM endorsement for the relevant model category refer to Section 4 of this COP for details. Any such qualified pilot may operate the model when it has a Permit to Fly. The Permit to Fly for Category 1 and 3 models will be valid for a period of no more than five years. All flights must be recorded in the owner's logbook.
- b) Category 2a and b: The aircraft and pilot are tested and certified as a combination. Thus, a separate and new Flight-Testing programme is required for each pilot that the Owner registers to fly the aircraft as specified in Flight Testing Requirements.
The Permit to Fly is limited to a specified pilot, who has operated the aircraft throughout Flight Testing. A separate Permit to Fly is issued for the aircraft with each pilot who qualifies the aircraft through completing a Flight Testing programme.
The Permit to Fly for Category 2a models will be valid for a period of no more than three years and Cat 2b no more than One year. All flights must be recorded in the owner's logbook.

6.6.2 Pilots must hold a Wings Qualification rating with a supplementary LM endorsement for the relevant model category, in addition Cat 2a & 2b pilots must also hold the (AP) Advanced power rating.

6.6.3 Permit to Fly: When Flight Testing has been completed, the Inspector will verify that the aircraft remains airworthy, and will then complete and sign Form C.

6.6.4 Upon receiving the completed and signed Form C with attached Flight Log, the Large Model Controller will issue to the Owner a Permit to Fly, which authorises the aircraft to be flown, subject to the 'Pilots' specification above, at any flying site as defined in this COP, subject to the Large Model Controller reserving the right to limit the operation of Category 2a and b aircraft to specifically designated sites.

6.6.5 The Permit to Fly for Category 2a aircraft will be valid for a period of no greater than three years, Cat 2b aircraft require annual inspection and therefore permits are valid for 12 months only from date of issue.

6.6.6 All flights for Cat 1, 2a and Cat 2b and Cat 3 aircraft must be recorded in the owner's logbook.

6.6.7 For Category 2a and 2b, the permission obtained from the Large Model Controller prior to Flight Testing remains the primary permit, to which the MFNZ Permit to Fly is added after completion of Flight Testing.

6.6.8 A Permit to Fly remains valid only if the Owner maintains the aircraft in the state of airworthiness that existed at the time of the Permit being issued. Aircraft that hold this Permit must be re-inspected when required by the Large Model Controller, which may decline to renew the Permit.

6.6.9 All incidents IAW CAR 102 Section 9: Accident and Incident Reporting must be advised to the LMC for investigation and further action as required.

6.6.10 In the event of a mishap requiring substantial repairs, the Large Model Controller may require repetition of Part B and/or Part C.

6.6.11 It is the responsibility of the Owner to advise the Large Model Controller of any such mishaps.

6.6.12 It is the responsibility of all Pilots of Category 2a and 2b aircraft to advise the Large Model Controller of any events or occurrences that may limit their piloting capabilities.

6.6.13 At their own discretion, the Large Model Controller may suspend or cancel a Permit on the grounds that the aircraft (and the Pilot in the case of Category 2a & 2b) no longer reaches the necessary standards defined in the MFNZ documentation.

6.7. Special Cases: Completed, Semi-Completed, ARF and Change of Ownership Aircraft

6.7.1 If an Owner registers a project when it is already completed to apparent flight condition, semi-completed, or as an Almost Ready to Fly (ARF) kit, the above process will still be followed. Within Part B, it is likely that the Inspector will proceed directly to either Inspection 2 or Inspection 3.

6.7.2 In cases where internal construction is not visible the Inspector will be obliged to rely on information provided by the Owner, such as plans and/or the specifications and manuals provided by ARF manufacturers.

6.7.3 The acceptability of such evidence is at the discretion of the Inspector or LMC; if the information available is insufficient to make responsible judgments at Part B, construction will not be approved and no authorisation to Flight Test will be issued.

6.7.4 The risk of such an outcome is borne entirely by the Owner. At the discretion of the Inspector, the Owner may be given the option of removing specified parts or structures so that an appropriate inspection may take place.

6.7.5 **Under all circumstances**, an aircraft acquired by a new Owner will be required to undertake:

- a) Form A Registration of Project,
- b) Aircraft Re-Inspection form
- c) Form C Approval of Flight Testing

Details of current and new owner should be lodged on the Change of Ownership form available on the MFNZ website.

Where the specification of the aircraft has changed from that originally inspected, for instance the removal of the engine or control equipment the level of inspection shall be determined by the LMC who may request a full Form B inspection.

APPENDIX 1 Large Model Pre-Flight Inspection Checklist

Name		Date	
Model Description			
Large Model Registration No			

CHECKLIST	Accept	Reject	Recheck
GENERAL APPEARANCE – overall appearance (Check for damage, warps, loose covering etc.)			
PROPELLER – secure (check for cracks, damage)			
ENGINE – Securely attached (including muffler)			
ENGINE KILL – to prevent accidental starting (Ask if able to kill with radio)			
LEFT WING – Attachment secure			
LEFT WING – Aileron hinges secure			
(WING – Control link keeper)?			
LEFT WING Control pushrod stiffness			
ELEVATOR – Hinges secure			
ELEVATOR – Control link keeper			
ELEVATOR – Control pushrod stiffness			
RUDDER – Hinges secure			
RUDDER – Control link keeper			
RUDDER – Control pushrod stiffness			
TAIL SURFACE – Brace wires secure			
TAIL SURFACE – Brace wires keepers			
RIGHT WING – Attachment secure			

RIGHT WING – Aileron hinges secure			
RIGHT WING – Control link keeper			
RIGHT WING – Control pushrod stiffness			
HATCHES OR COVERS – Secure			
WHEELS AND LANDING GEAR – Secure			
BATTERIES FULLY CHARGED – Ask			
WEIGHT & BALANCE – Any changes since approved?			
Radio Checks			
Transmitter Battery			
Range Check and confirm Failsafe operation.			
Control directions			
Crystal-based frequency and peg correct			
Synthesized module - setting checked against frequency peg			
Frequency selectors sealed with sticker			

AUTHORIZATION:

I certify that the above-described aircraft has been inspected pursuant the Large Model Code of Practice

INSPECTED BY

MFNZ No