

MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA



HEAVY MODEL AIRCRAFT INSPECTION AND OPERATION PROCEDURE

MOP015

Amendments made to MOP015

Shading of text identifies changes to the previous version

Paragraph	Brief description of change	Change incorporated by
		MAAA Member Services May 2023
6.6.3 6.6.4 amended and renumbered.	Delete the below paragraph. No longer a requirement. The MAAA Aircraft Inspector of the model is responsible for ensuring that the bottom section of the completed Permit to Fly is sent to the Ordinary Member	MAA A Secretary January 2015
7.4	Delete the requirement to return a cancelled Permit to Fly form to the issuing body.	
9.2.3	Delete the below paragraph. This data is available via the Membership System. The MAAA Secretary shall supply the Ordinary Members at least annually a list of MAAA Inspectors affiliated with them.	
Form MAAA038 Permit to Fly	Delete bottom section. No requirement to send any part of the form to the State Association. Owner responsible for retaining the entire form.	
1 Introduction	Delete reference to UAVs	MAA A Secretary August 2014
3.0 Definitions	Amend CAR to CASR (Civil Aviation Safety Regulation) Amend AAAO to RAAO (Recreational Aviation Administration Organisation) Amend increase mass weight to 150Kgs Delete reference to UAVs	
5.1	Amend increase mass weight to 150Kgs	
7.6	Requirement for Flying at Displays - Giant models	
Annex	To avoid confusion, the Annex containing the sample form was removed. Refer to the MAAA website to view or download the relevant form.	
	HIGHLIGHTED CHANGES TO 2023 UPDATES	Member Services May 2023

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This Policy and/or Procedure forms part of the MAAA Manual of Procedures. This entire document is for the use of all classes of members of the MAAA in the conduct of activities associated with the MAAA and is not used for any other purpose, in whole or in part, without the written approval of the MAAA Executive.

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be correct at this time)

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HEAVY MODEL AIRCRAFT INSPECTION AND OPERATION PROCEDURE

1. INTRODUCTION

- 1.1 The MAAA requires that Heavy and Gas Turbine powered Model Aircraft be operated in conformance to the CASA regulations, the MAAA Manual of Procedures, and MAAA safety requirements.
- 1.2 A Model Aircraft operated by an Affiliate Member of the MAAA is subject to the requirements of the MAAA Manual of Procedures as well as CASR (1998) Part 101 sections A, B, C and G. **CASA Directive 22/22 (and any replacement Directive).**
- 1.3 The MAAA requires that all model aircraft with a Gross mass (full fuel, smoke oil/fuel, accessories, and batteries) greater than 10 kg have a valid Permit to Fly.
- 1.4 MAAA FW25 and RW25 Aircraft Inspectors are authorised to issue Permits to Fly for Large Models to any Affiliate Member of the MAAA irrespective of State of affiliation of the Inspector or aircraft owner or pilot.
- 1.5 MAAA FW50 and RW50 Aircraft Inspectors are authorised to issue Permits to Fly for Large and Heavy Models to any Affiliate Member of the MAAA irrespective of State of affiliation of the Inspector or aircraft owner or pilot.
- 1.6 MAAA FW150 and RW150 Aircraft Inspectors are authorised to issue Permits to Fly for Large, Heavy and Giant Models to any Affiliate Member of the MAAA irrespective of State of affiliation of the Inspector or aircraft owner or pilot.
- 1.7 MAAA FW25 and RW25 Aircraft Inspectors may inspect a Large or Heavy Model they own, or have built, ONLY when it is impractical due to distance or availability to have another FW25 or RW25 Aircraft Inspector perform the inspection. In this case the inspection and test flight of their own Large Model must be done in the presence of a member of the Inspector's Club Executive who shall countersign the Permit to Fly.
- 1.8 MAAA FW50/**FW150** and RW50/**RW150** Aircraft Inspectors shall not inspect or issue Permits for a Giant model they own or have built.
- 1.9 All Gas Turbine powered model aircraft **(regardless of weight)** require a valid Permit to Fly form in accordance with MOP030 and the relevant requirements of this procedure.
- 1.10 All radio-controlled Pulse Jet powered Model Aircraft require a valid Permit to Fly form in accordance with MOP025 and the relevant requirements of this procedure.

2. DEFINITIONS (THIS SECTION WILL BE MOVED TO A SEPARATE MOP IN FUTURE UPDATES)

If there is any inconsistency between CASR (1998) Part 101 and this Procedure then the provisions of CASR (1998) Part 101 Subparts A, B, C and G apply. All definitions given in the CASR (1998) Part 101 apply equally throughout this manual. In this document the term Model Aircraft is taken to mean both radio controlled Fixed Wing and Rotary Wing model aircraft.

RAAO

Recreational Aviation Administration Organisation. An organisation approved by CASA to administer a designated aviation activity.

OWNER/OPERATOR

A person properly affiliated with a Club that is properly affiliated with an MAAA Ordinary Member.

ARF/RTF

Almost Ready to Fly/Ready to Fly. Primarily manufactured by commercial business and assembled by the modeller.

CASA

Civil Aviation Safety Authority.

Endorsed Pilot

Pilots who, having flown test flights unaided to a safe standard while observed by the relevant MAAA Inspector, have their name endorsed on the "Permit to Fly" by the Inspector.

Failsafe

A system which sets a control/s to a predetermined setting when loss of signal is detected.

Fixed Wing Model Aircraft

A Model Aircraft where the lift is provided solely by fixed surfaces.

Class A Large Model Aircraft

Any Model Aircraft with a wet mass (including fuel, smoke oil/fuel and including all batteries if electric powered) of 10 kg or more, to a maximum of 25 kg.

Class B Heavy Model Aircraft

Any Model Aircraft with a wet mass, (including fuel, smoke oil/fuel and including all batteries if electric powered) of more than 25 kg but less than 50 kg.

Class C Giant Model Aircraft

Any Model Aircraft with a wet mass, (including fuel, smoke oil/fuel and including all batteries if electric powered) of more than 50 kg but less than 150 kg.

Inspector

Financial Affiliate Members of the MAAA who have met the requirements for their appointment and have been given written authority to carry out inspections on behalf of the MAAA in connection with the issue of a Permit to Fly.

Relevant Inspector

One of the following categories of MAAA Inspector: FW25, RW25, FW50, RW50, FW150, RW150, Gas Turbine endorsement. See MOP006.

Inspector Check List

The Check List for Inspection of a Model Aircraft as required for the issue of a Permit to Fly.

MAAA

Model Aeronautical Association of Australia Inc.

MAAA Ordinary Member

A State Association properly affiliated with the MAAA Inc.

Model Aircraft

The generic term that covers both Fixed and Rotary Wing Model Aircraft.

Ordinary Member

See MAAA Ordinary Member.

Permit to Fly

A document issued by an authorised MAAA Inspector, valid for two (2) years from date the date of issue, following inspection in accordance with MAAA procedure. A Permit to Fly becomes valid when a single pilot has been endorsed by an authorised MAAA Inspector.

Radio Controlled Model Aircraft

See MAAA Internal and Stabilisation Policy, MOP044.

Rotary Wing Model Aircraft

Otherwise known as a helicopter Or Multi Rotor Aircraft.

State Association

See MAAA Ordinary Member.

Temporary Permit

A permit, valid for the day of issue only, which allows a test flight/s for the purpose of issuing a Permit to Fly.

3. RESPONSIBILITIES

3.1 Owner/Operator

3.1.1 Individual owners/operators of Model Aircraft are responsible for their compliance, and their model's compliance, with CASR (1998) Part 101 Subparts A, B, C and G also with all MAAA rules and the requirements of the MAAA Manual of Procedures. CASA Directive 22/22 (an any subsequent replacement directives)

3.1.2 Owners/operators are responsible for ensuring that all documentation required for the initial inspection and test flights are completed as outlined in this MOP.

3.1.3 Owners are responsible for ensuring that all inspection documentation is kept so that it is available for re-certification processes.

3.1.4 Owners/operators are responsible for contacting and confirming an appointment for the inspection and test flights with the relevant inspector prior to the day of inspection. An inspector is not obliged to carry out "on the spot" inspections or observe test flights.

3.1.5 Owners/operators are always responsible for the safe operation of the Model Aircraft.

3.2 Inspector

3.2.1 Inspectors are responsible for maintaining an awareness of the requirements of the MAAA Manual of Procedures with respect to inspecting and flying of Large, Heavy and Giant Model Aircraft.

4. MAAA REQUIREMENTS FOR ALL LARGE, HEAVY & GIANT MODELS

4.1 General

4.1.1 MAAA rules require that Model Aircraft that weigh between 10 kg and 150 kg, (Maximum Take Off Weight, with full fuel, accessories, and all batteries), all Gas Turbine powered Model Aircraft (regardless of weight) and all radio-controlled Pulse Jet powered Model Aircraft (regardless of weight) require a valid Permit to Fly before they are allowed to take off and be flown.

4.1.2 A Permit to Fly, is issued by an MAAA Inspector: FW25, RW25, FW50, RW50, RW150, FW150 with/without Gas Turbine/ Pulse Jet Endorsement, depending on the aircraft classification, on behalf of an MAAA Ordinary Member when the requirements detailed in this document have been met.

4.1.3 Unless suspended or cancelled, a Permit to Fly shall remain valid for a period of two (2) years.

- 4.1.4 A Permit to Fly remains valid until any of the circumstances requiring suspension or cancellation occurs (see 7.3 & 7.4).
- 4.1.5 A suspended Permit to Fly may be revalidated when a relevant MAAA Aircraft Inspector is satisfied with the repairs and/or alterations and that they have witnessed the recertification test flight of the aircraft, as described in 8.2 below.
- 4.1.6 An MAAA Inspector for the relevant aircraft shall issue a Temporary Permit to Fly, valid only on the day of issue, to allow test flights as described below to take place.
- 4.1.7 On satisfactory completion of test flights required under this Procedure, the Inspector shall endorse the Temporary Permit accordingly, which then becomes a Permit to Fly.
- 4.1.8 If it is impractical to obtain the services of a fully qualified MAAA Inspector for the relevant aircraft, a viable alternative can be arranged by contacting the MAAA Executive.
- 4.1.9 Operators of any Large, Heavy, or Giant models (including all gas turbine models regardless of weight) are required to hold the MAAA Gold Wings endorsement relevant to the model they are flying.
- 4.1.10 In the case of ignition powered (petrol) aircraft, they will be capable of being shut down from the transmitter by an alternate means to the throttle control. For example, a separate channel operating an ignition kill switch.
- 4.1.11 All Large, Heavy & Giant Models must operate on approved 2.4 GHz radio systems (back-up frequencies may be used) for control. The use of 29 MHz or 36 MHz systems is not permitted.
- 4.1.12 All operators of Large, Heavy & Giant Models and Gas Turbine Models shall operate strictly under the requirements of MAAA MOP055 Alcohol, Drugs & Medical Conditions Policy.
- 4.1.13 A Permit to Fly may be suspended immediately following written advice from the State Heavy Model Inspector, a National SIG, or the Ordinary Member. This notice must detail the actions necessary for the suspension to be lifted.

5. **REQUIREMENTS FOR THE ISSUE OF A PERMIT TO FLY**

5.1 Prior to Inspection Process

5.1.1 All Large, Heavy & Giant Models

5.1.1.1 Owners of Model Aircraft that require a Permit to Fly should obtain the Permit to Fly form (Form MAAA038 **to be updated**) from the Forms Section of on the MAAA web site (www.maaa.asn.au).

5.1.1.2 The owner of the aircraft shall:

- (a) Fill in the applicable fields of the Permit to Fly form.
- (b) Sign the "Owner's Declaration" section of the Permit to Fly form.
- (c) Identify on the Permit to Fly form the proposed Flight Envelope of the model. The Flight Envelope shall be selected from:
 - (i) level maneuvers, flat turns, gentle climbs, and dives
 - (ii) aerobatics except flick
 - (iii) unrestricted aerobatics

5.1.1.3 The owner shall use as appropriate: the "Check List for Inspection of a Fixed Wing Model Aircraft" the "Check List for Inspection of a Rotary Wing Model Aircraft", the "Check List for Inspection of a Gas Turbine Powered Aircraft", the "Check List for Inspection of a Pulse Jet Powered Aircraft" and the "Giant Model Aircraft Pre and During Construction/Assembly Inspection Assessment" as a guide to check the aircraft and rectify any details that require attention. All check lists are available from the MAAA website. (www.maaa.asn.au)

5.1.1.4 Once satisfied that the aircraft is ready to be assessed for the issue of a Permit to Fly, the owner shall contact an appropriate MAAA Aircraft Inspector (for Gas Turbine powered models a relevant FW or RW Inspector with Gas Turbine endorsement is required) to arrange a date and time for the inspection and completion of Permit to Fly.

5.1.1.5 The Ordinary Member shall maintain a list of MAAA Aircraft Inspectors affiliated with the Ordinary Member who are authorised to issue Permits to Fly.

5.1.2 Heavy & Giant Models – Additional requirements

5.1.2.1 Prior to the commencement of work on a Heavy or Giant Model the builder/owner shall contact an MAAA FW50/FW150 or RW50/RW150 Inspector (for a gas turbine powered Giant Model an FW150 or RW150 with Gas Turbine endorsement is required). The Inspector shall assess the building drawings, ARF kit or pre-built model, to determine when the inspection schedule required should commence, taking into account the degree of complexity of the project. Multiple inspections may be made during construction as required by the Inspector.

5.1.2.2 For the purposes of inspection on all Giant Model Aircraft, it is a requirement that two (2) FW150/RW150 shall carry out all inspections.

5.1.2.3 The FW50/FW150 or RW50/RW150 Inspector shall determine the construction inspection program based on the experience of the modeller, if it is a proven design, the plans the aircraft is being constructed to and any other relevant information. An enlarged commercially available plan shall be treated as an "own design".

5.1.2.4 The FW50/FW150 or RW50/RW150 Inspector/s shall note on the Giant Model Aircraft Pre and During Construction/Assembly Inspection Assessment form, MAAA030, the number of and details of "during construction" inspections that shall be made and the stage/s of construction that these inspections are to be made.

5.1.2.5 For new ARF models, the FW50/FW150 or RW50/RW150 Inspector shall closely examine the model's construction method to the maximum extent possible and ensure that adequate test flying is carried out to confirm the structural airworthiness of the model.

5.1.2.6 In the case of already constructed models being inspected after change of ownership or revalidation, except ARF models as above, proof of previous inspections during construction (eg a previous valid Giant Model Permit) must be supplied.

5.1.2.7 If the proof of previous inspections and/or the previous Permit to Fly is not available then the FW50/FW150 or RW50/RW150 Inspector shall conduct a detailed inspection of the model taking into account the condition and type of model, previous knowledge of the model and other such factors.

5.1.2.8 For all Heavy and Giant Model Aircraft, the owner/operator shall maintain a logbook/record showing dates, approximate flight time, damage, changes, repairs, or servicing of the model.

5.2 Inspection Process – All Large, Heavy & Giant Models

5.2.1 The MAAA Aircraft Inspector shall check the Permit to Fly form to ensure that the Ownership and Model Details are completed, and that the Owner's Declaration is signed and dated.

- 5.2.2 The MAAA Inspector shall check that the model details on the Permit document are correct, including validating all the radio equipment and batteries.
- 5.2.3 Prior to assembly of the aircraft to verify general airworthiness, "as distinct from structural integrity", the MAAA Inspector shall, using the relevant Check List for Inspection, inspect the aircraft, marking on the Checklist "Not Applicable" or indicating "Satisfactory" with a tick as appropriate. Any unsatisfactory items must be rectified, re-examined, and marked/indicated "satisfactory" before test flights commence.
- 5.2.4 After assembly of the Model Aircraft, the MAAA Inspector shall examine the complete Model Aircraft to verify general airworthiness. Any unsatisfactory items must be rectified, re-examined, and marked satisfactory before the test flight procedure commences.
- 5.2.5 If the MAAA Inspector is satisfied that the aircraft is suitable for a test flight a Temporary Permit to Fly for the day shall be issued by filling in and dating that section of the Permit to Fly form.
- 5.2.6 If the MAAA Inspector is not satisfied that the aircraft is suitable for a test flight the owner shall be informed of the problem/s that require attention to bring the aircraft to a state that would allow a Temporary Permit to be issued to allow a test flight to be undertaken.
- 5.2.7 If the problems identified by the Inspector are of a minor nature and can be repaired immediately, the owner can make repairs and submit the model for re-inspection.
- 5.2.8 Prior to any engine start (where applicable) the Inspector should ensure that the Radio Fail Safe has been. The engine must be set to idle or shutdown in fail safe condition. This test should also be completed with the engine running and the model suitably restrained.

5.3 Additional Inspection Requirements and Recommendations for Heavy & Giant Models

5.3.1 Control Systems

The following minimum requirements for control systems shall apply. An Inspector may recommend upgrading the requirements depending on the size and performance of the Giant Model under examination. However final responsibility for the selection of a suitable system remains with the builder.

5.3.1.1 Receiver

To provide a form of redundancy, Heavy and Giant Models are required to have at least two receivers with separate power supplies and wiring or used through a suitable power distribution system for the size, complexity, and type of aircraft. These may share each of the primary controls of the aircraft at the discretion of the owner/operator.

Onboard telemetry shall be installed to indicate altitude above ground level with audible alerts set on the transmitter to warn the pilot of altitude limits.

5.3.1.2 Battery/Switch

A battery redundancy system must be installed with suitable fail-safe switching employed.

The total battery capacity shall take into account the number and power consumption of the servos, the required control throws, the size, and speed of the model together with the expected number of commands to be exercised in flight. It is unlikely that a total battery capacity of less than 4000 mAh would be sufficient for Heavy or Giant Models. An inspector shall not pass the model for flight if they believe the system is not adequate.

The operator is required to perform a battery current load test on the model to clearly demonstrate the total current being expended on the system.

The results of this test must fall within an acceptable range of the system specifications.

Onboard telemetry shall be installed to monitor the battery systems with suitable audible warnings set to alert the pilot of low voltage readings.

5.3.1.3 Servos – General

Servos must be visible for inspection (i.e. with the wing off, or through an access panel).

The following paragraphs specify the minimum servo torque required to power the primary control surfaces. Where servo torque is suggested for a control surface this can be provided by one or more servos working together. The minimum may not be sufficient for fast flying models or those with large control surfaces or throws.

It is suggested that if the builder does not have experience with the size and class of model being built that they take into account the recommendations of the designer, those of other models of similar weight and performance which are published in magazines or on the internet, the experience of other modelers or information published to calculate required servo performance.

Mechanical or other means of boosting torque supplied to a control surface may be taken into account when considering servo torque requirements on a control surface. This may be in the form of boost tabs or similar systems that assist control surface movements.

All servos installed on the model shall be task specific for each control surface application using the manufacturer's specifications and recommendations. The operator of the model may be required to provide this information to the Inspector for both the model and the servos.

5.3.1.4 Control linkages

The control linkages, clevises and horns shall be able to withstand the maximum torque output of the servo.

Where commercial clevises are used for primary control surfaces, they must be a minimum of 4-40 type. Pull/Pull systems are recommended where appropriate. Heavy-duty linkages that are available for large aerobatic models, and heavy-duty servo arms, are recommended. These control linkages should be sufficiently rigid for the aircraft type.

5.3.1.5 Engine(s)

All powered aircraft employing ignition systems shall have a radio activated kill switch.

5.3.1.6 Gas Turbine Powered

An MAAA FW50/FW150 or RW50/RW150 Inspector with Gas Turbine endorsement is responsible for the issue of the Permit to Fly for that type of Gas Turbine powered Giant Model. In addition to the above inspection requirements for Giant Models the installation and operation of the turbine/s shall be inspected and approved by the FW50/FW150 or RW50/RW150 Inspector with Gas Turbine endorsement.

6.3 Test Flights – General

- 6.3.1 Test flights can only take place after the relevant MAAA Aircraft Inspector has issued a Temporary Permit to Fly by the dating of the Permit to Fly form. A minimum of three successful test flights are required (including any turbine powered model regardless of weight). Additional flights may be requested at the discretion of the Inspector.
- 6.3.2 The minimum combined test flight time to issue a permit for a Large Model is 20 minutes.
- 6.3.3 The minimum combined test flight time to issue a permit for a Heavy Model is 40 minutes.
- 6.3.4 The minimum combined test flight time to issue a permit for a Giant Model is 60 minutes.
- 6.3.5 For the purposes of a revalidating a suspended permit (refer to section 7.3), the Inspector may elect to complete the revalidation process with one successful test flight if the Inspector is satisfied that the operator has complied with the conditions of the Permit to Fly.
- 6.3.6 All test flights shall take place in the presence of the relevant MAAA Inspector while a Temporary Permit to Fly is in force for the model.
- 6.3.7 At a recognised MAAA club or CASA approved site suitable (including height limits) for the purpose and the weight of the model and to mitigate danger to people and property.
- 6.3.8 With all fuel tanks full. If a smoke system is employed, at least one test flight must be completed with a full tank of smoke fuel/oil.
- 6.3.9 The relevant MAAA Aircraft Inspector shall observe the proposed pilot test fly the aircraft. The model shall then be flown to demonstrate its ability to perform safely all the maneuvers contained in the nominated flight envelope.
- 6.3.10 The relevant MAAA Aircraft Inspector shall observe the proposed pilot has adequate knowledge of the radio system installation, including an explanation of flight conditions, mixing systems, flaps, retracts or any other additional control systems installed for the test flights.
- 6.3.11 If the operator has installed a gyro or any other type of flight control stabilisation system, they must demonstrate adequate knowledge of that system and be able to demonstrate that the system can be deactivated if necessary during the test flights. At least two of the three required test flights must be undertaken with the stabilisation system active.
- 6.3.12 Pilots of aircraft being flown for a test flight shall demonstrate that they are able to maintain control of the model while performing safely the nominated maneuvers. The maneuvers must be recognisable and be performed without any disorientation or loss of control.

Specific Requirements for Fixed Wing Model Aircraft are:

- (a) No control surface flutter is apparent.
- (b) The deflection of each control surface during level flight at full throttle produces the correct response.
- (c) Take-off and landing must be flown by the above pilot so that:
 - (i) During take-off, the aircraft must not deviate from its initial selected heading in excess of 30 degrees until it achieves a safe height to maneuver.
 - (ii) Landing must be achieved in the same general area as used for take-off and should not result in any major airframe damage to the aircraft under test. (For example, a nose-over resulting in a broken propeller would not be grounds for a rejection but a smashed landing gear from a heavy landing will require a re-test.)

Specific Requirements for Rotary Wing Model Aircraft are:

- (a) no vibration or flutter is apparent.
- (b) The deflection of each control during hover produces sufficient and correct response to enable stable control within close proximity of the take off point.
- (c) the deflection of each control during forward flight produces sufficient and correct response to enable stable control.
- (d) takeoff, hover, flight, and landing must be flown by the above pilot so that:
 - (i) during forward flight the aircraft must not deviate from its initial selected heading in excess of 30 degrees until it achieves a safe height to maneuver.
 - (ii) landing must be achieved in the same general area as used for takeoff and should not result in any major airframe damage to the aircraft under test. (For example, a minor ground strike by the tail rotor would not be grounds for a rejection but a damaged main rotor blade or landing gear from a heavy landing may require a re-test).

6.3.13 Any number of test flights may be made on the day, if changes other than adjustment of trimming devices and control throws are approved by the relevant MAAA Aircraft Inspector.

6.3.14 The MAAA Aircraft Inspector will require the pilot to demonstrate maneuvers within the model's stated flight envelope to prove the aircraft's airworthiness and/or suitability for the maneuver.

6.3.15 The MAAA Aircraft Inspector shall sign the Permit to Fly Form adjacent to the flight envelope which has been demonstrated successfully and is within the capabilities of the aircraft and pilot. This is then considered the flight envelope of the aircraft for the endorsed pilot.

6.3.16 All pilots listed on the Permit to Fly form must have their flight envelope tested, approved, and endorsed **based on a minimum of three (3) successful flights** on the Permit to Fly form by a relevant MAAA Aircraft Inspector. The endorsing of pilots on the form can be done at any time.

6.3.17 If faults are identified by the MAAA Aircraft Inspector during the test flight/s and it is considered appropriate, the Inspector shall allow further test flights to be conducted in their presence after rectification and inspection of the faults identified.

6.3.18 If for any reason the MAAA Aircraft Inspector is not satisfied with the airworthiness of the model as demonstrated in the test flight/s, the Temporary Permit to Fly shall be cancelled.

6.4 Additional Test Flight Requirements for Heavy & Giant Models

6.4.1 For the purposes of the test flights and inspection prior to the test flights, two (2) MAAA certified FW50/FW150 or RW50/RW150 Inspectors shall be present.

6.4.2 A minimum of three flights or more as required by the relevant FW50/FW150 or RW50/RW150 Aircraft Inspectors with flight times as noted in 6.3.1.

6.4.3 Each flight is to be **logged (electronic or journal entry)** and at least the last two test flights to be made without any retrim, repair, or major adjustment to the airframe or radio, before final certification.

6.5 Issue of a Permit to Fly

- 6.5.1 When the MAAA Aircraft Inspector is satisfied that the model meets with the requirements of this manual, the Temporary Permit shall be endorsed with the flight envelope tested, date of demonstration and signature. The endorsed Temporary Permit then becomes a valid Permit to Fly, and the date of demonstration becomes the date of issue. In the case of Giant Models, the form MAAA030 "Giant Aircraft Pre and During Construction/Assembly Inspection Assessment" shall also be signed by the MAAA Inspector.
- 6.5.2 The owner shall retain the Permit to Fly form and be able to produce it on demand when operating the aircraft. In the case of a Giant Model, form MAAA030 "Giant Aircraft Pre and During Construction/Assembly Inspection Assessment" forms part of the documentation that the owner retains.

6. OPERATION UNDER A PERMIT TO FLY

6.1 Pilots of Large, Heavy & Giant Models

A valid Permit to Fly allows flights of the subject aircraft under the control of the pilot whose name appears on the Permit to Fly as an "Endorsed Pilot". This may include more than one pilot, but all pilots must be endorsed on the Permit to Fly. The Permit does not allow for flights of the subject aircraft of any pilot whose name does not appear on the Permit to Fly.

If the owner of the model seeks certification of the model when flown by another pilot, a further inspection for the additional pilot must be carried by a suitable Inspector and demonstrate at least 15 minutes of flight time for Large and Heavy Models, and 30 minutes of flight time for Giant models.

For the purpose of training, the Endorsed Pilot may employ a "Buddy Box" system to allow a pilot who is not endorsed on the Permit to Fly to safety train on that aircraft for the purpose of becoming an Endorsed Pilot. Training flights are not permitted at displays.

6.2 Pre-Flight Inspection

The pilot of a model aircraft requiring a Permit to Fly shall verify all items in the relevant Inspection Checklist, before the first flight on any one day. Items marked "P" must also be verified before each flight.

6.3 Suspension of Permit

A Permit to Fly shall be considered suspended whenever the model for which it is issued:

- (a) Suffers damage to its primary structure or any control surface.
- (b) Suffers any control malfunction during flight.
- (c) Suffers damage to the undercarriage to a point that renders the model unable to take off again.
- (d) Is structurally or aerodynamically modified including radical changes to the control throws.
- (e) Is fitted with a different type or size of engine or engine mount.
- (f) Is fitted with a different type or size of servo operating a control surface
- (g) Is fitted with a different type of battery with lower capacity.
- (h) Is fitted with a different radio receiver from that originally approved
- (i) Undergoes a change of ownership, unless the new owner is a person that is already named on the original Permit to Fly.
- (j) Following instructions from the State Model Inspector, Ordinary Member or representatives from a National Special Interest Group, the MAAA retain the right to suspend a Permit to Fly from the operator if they are deemed to have flown in an unsafe manner or flown the model outside its design envelope, or the model considered not airworthy.
- (k) Following such instruction to suspend a Permit to Fly, the Ordinary Member must have established an appropriate action plan to ensure that the operator be assisted in

having the suspension removed.

A suspended Permit may be re-validated as described in 8.2 below.

6.4 Cancellation of Permit

A Permit to Fly shall be cancelled whenever the model for which it is issued:

- (a) Is damaged beyond repair. The owner/operator should take all steps to determine the cause of the crash and document the information.
- (b) Is modified such that it is no longer accurately described in the Permit.
- (c) Ownership of the model is transferred to another person unless that person is named on the original Permit to Fly.
- (d) Is over two (2) years old from the date of issue of Permit to Fly and has not been issued with a new Permit to Fly.
- (e) Following instructions from the State Model Inspector, State Association, or representatives from a National Special Interest Group, the MAAA retain the right to rescind a Permit to Fly from the operator if they are deemed to have flown in an unsafe manner or flown the model outside its design envelope, or the model considered not airworthy.

6.5 Flying at Displays or Organised Events

Flying of any Heavy Model aircraft at Displays, as defined in MOP019, shall only be done in accordance with the requirements of MOP019.

Only those pilots listed on the Permit to Fly shall pilot an aircraft requiring a Permit to Fly at Displays that require the issue of a Display Permit under MOP019. The test flying of models (including turbine models regardless of weight) and the training of pilots of models requiring a Permit to Fly is not permitted at Displays or during the operational hours of organised events. Flying under the supervision of an MAAA inspector whilst using an approved buddy box system may be permitted at organised events at the discretion of the organising body.

6.6 Flying at Displays or Organised Events – Heavy & Giant Models

Prior to any demonstration flights to the public or at organised events, a Giant Model (25-150 kg) and pilot shall have logged a minimum of six flights, which may include test flying for the Permit to Fly, and a minimum of one hour accumulated, logged, flying time.

6.7 Flying Sites for Heavy & Giant Models

Heavy and Giant Models cannot be flown at a Club Field unless this has been approved in writing by the Club.

It is the responsibility of the pilot of a Heavy and Giant Model to be satisfied that the proposed flying area is suitable for the model under the conditions present on the day.

When considering the suitability of any site the Heavy and Giant Model pilot should pay particular attention to, but not be limited to, the following items:

- The size speed and number of any other aircraft that may be flying at the same time,
- The maximum airspeed of the model,
- The area required for the model to carry out normal planned maneuvers.
- Safety margins needed to cover any unforeseen incidents such as engine failure or control anomaly,
- Wind speed and direction,
- Length and surface of runway,
- Take off clearance of obstacles,
- Landing glide path clearance of obstacles,
- Consideration of possible engine failure on takeoff or landing,
- Obstacles in general flight path,
- Possible alternate emergency landing areas,

- Overshoot considerations,
- Noise considerations,
- **Height restrictions**
- Location and clearance of other personnel, buildings and car parks, relative to the planned flight path and that which might be required in an emergency.

7. **INSPECTION PROCEDURES**

7.1 **Inspection Before Test Flights**

See Section 6.2 and 6.3

7.2 **Revalidation of a Suspended Permit to Fly**

A relevant MAAA Aircraft Inspector may revalidate a suspended permit provided that:

- (a) the modification or repairs causing suspension have been examined and found to meet the appropriate standards, and
- (b) the model in its modified state has been inspected and test flown as in 6.2, 6.3, 6.4, 6.5 and 6.6 as applicable.

7.3 **Appeals**

In the event of unresolved disputes, the applicant for a Permit to Fly may appeal to the Ordinary Member. That Ordinary Member shall be the final arbiter in all disputes.

7.4 **Two Year Revalidation Inspection**

- (a) This inspection is to revalidate a permit that is more than **two years** old from the date of issue. **A permit can be revalidated prior to the end of the two-year period.**
- (b) The MAAA Aircraft Inspector shall cancel any Permit to Fly if the permit has been found to be in breach of clause 7.3 **and the model will be considered a new model and be subject to the full inspection process.**
- (c) The relevant MAAA Aircraft Inspector shall, after approving a **two-year** inspection of an aircraft and obtaining the Permit to Fly form from the operator, issue a new Permit to Fly and in the case of a Heavy or Giant Model other documents as required by this procedure to the owner with all appropriate details stated on the form/s and validated by signing and dating where required. The inspection documents for Heavy and Giant Models shall be retained by the owner.

7.5 **Documentation**

The Permit to Fly documentation for revalidation shall be handled as detailed in clause 6.6. **THE PERMIT/S MAY ALSO BE RECORDED ELECTRONICALLY, SIGNED AND STORED IN ANY APPROVED MAAA SYSTEM.**

8. **AUTHORISED INSPECTORS**

8.1 **Appointment**

8.1.1 Inspectors shall be appointed and reappointed in accordance with the Appointment and Reappointment of Inspectors Procedure, MOP006.

8.1.2 The MAAA may define any requirements deemed necessary for appointments as an Inspector and shall issue a statement of authority in the form of an endorsement printed on the MAAA membership card of the candidates who meet these requirements. See MAAA Appointment and Reappointment of Inspectors Procedure, MOP006.

8.1.3 IN ACCEPTING A NOMINATION THE INSPECTORS AGREE TO HAVING THEIR CONTACT DETAILS BEING AVAILABLE TO GENERAL MEMBERS?

8.2 **Register of Inspectors**

- 8.2.1 The MAAA Secretary shall maintain the register of MAAA Inspectors.
- 8.2.2 The Ordinary Members shall maintain registers of MAAA Inspectors affiliated with them.

8.3 Obligations of an Inspector

- 8.3.1 In accepting nomination as an MAAA Aircraft Inspector, an Affiliate Member accepts the responsibility implicit in the appointment and undertakes:
 - (a) to be, generally and reasonably, available with adequate notice to attend and observe test flights when requested, and
 - (b) to carry out all duties in accordance with this document
- 8.3.2 An MAAA Inspector carries no responsibility for a failure of an aircraft and any subsequent damage, however caused, during a test flight.
- 8.3.3 There is no liability for subsequent flights under any circumstances as the conditions of operation are outside the inspector's control.
- 8.3.4 ANY NON-COMPLIANCE WITH THE EXPECTED AND DOCUMENTED PROCEDURES MAY RESULT IN THE SUSPENSION OR REMOVAL OF THE ACCREDITATION. (USE THE SAME PROCESS AS SUSPENSION OF A PERMIT TO FLY? STATE TO MANAGE AND DETERMINE? IT IS AN MAAA ENDORSEMENT SO THEY SHOULD BE ADVISED ANY ACTION TAKEN? THOUGHTS)

9. FORMS

Permit to Fly Form MAAA038 See the MAAA Website - Forms

Checklist for Inspection of a Fixed Wing Model Aircraft
(2 Pages) Form MAAA014 See the MAAA Website - Forms

Checklist for Inspection of a Rotary Wing Model Aircraft
(2 Pages) Form MAAA033 See the MAAA Website - Forms

Checklist for Inspection of a Gas Turbine Powered Model Aircraft
(2 pages) Form MAAA039 See the MAAA Website - Forms

Checklist for Inspection of a Pulse Jet Powered Model Aircraft
(2 pages) Form MAAA040 See the MAAA Website - Forms

Giant Model Aircraft
Pre and During Construction/Assembly Inspection Assessment (2 pages) Form MAAA030 See the MAAA Website - Forms