

MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA



GENERAL RULES AND GUIDELINES FOR THE OPERATION OF MODEL AIRCRAFT

MOP014

Table of Contents

1. PURPOSE	1
2. DEFINITIONS	1
3. GENERAL	3
4. RESPONSIBILITIES	4
5. CAR (1998) PART 101 RULES FOR THE OPERATION OF ALL MODEL AIRCRAFT	4
5.1 General prohibition on unsafe operation. (101.005)	4
5.2 Visibility for operation of model aircraft. (101.385).....	4
5.3 Operating a Model Aircraft at Night (101.390)	4
5.4 Keeping model aircraft away from people (101.395)	4
5.5 Height Limits for Model Aircraft.....	4
5.5.1 Operation within an Approved Area.....	4
5.5.2 Operation of model aircraft outside approved areas (101.400)	4
5.5.3 Operation in controlled airspace (101.070).....	5
5.5.4 Operation near aerodromes (101.075) (101.080).....	5
5.6 Dropping or discharging of things. (101.090).....	5
5.7 Displays. (101.410)	5
6. MAAA RULES, GUIDELINES AND PROCEDURES	5
6.1 Heavy Model Aircraft.....	5
6.2 Gas Turbine Powered Model Aircraft.....	5
6.3 Giant Model Aircraft.....	5
6.4 Fixed Wing Aircraft Flying 3D.....	6
6.5 Helicopter Flying.....	6
6.6 Displays.....	6
6.7 Flying Field Spacing & Distance Between Transmitter Locations	6
6.8 Instruction.....	6
6.9 Inspection of Aircraft.....	6
6.10 30 Metre Rule.....	6
6.11 Flying Site Layout.....	7
6.12 Flight Proficiency.....	7
6.13 Hearing Protection.....	7
6.14 Engine Starting.....	7
6.15 Engine Adjustments	7
6.16 Propellers	7
6.17 Aircraft Restraints.....	7
6.18 Radio Certification	8
6.19 Internal Navigation Systems	8
6.20 Safe Flying Code.....	8
6.21 Radio Equipment and Operations	8
6.21.1 Frequency Control.....	8
6.21.2 Radio Testing	8
6.21.3 Frequencies	8
6.21.4 Operation at 10 kHz Spacing	8
6.21.5 Radio Equipment.....	8
6.22 Indoor Flying.....	8
6.23 SGMA.....	8

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 be used for any other purpose, in whole or in part, without the written approval of the MAAA Executive.

Shading of text identifies changes to the previous version.

GENERAL RULES AND GUIDELINES FOR THE OPERATION OF MODEL AIRCRAFT

1. PURPOSE

- 1.1 The purpose of this publication is to provide all affiliate members of the MAAA a ready reference to their obligations and regulations as required under Commonwealth law, and MAAA rules and procedures for the operation of model aircraft.
- 1.2 It should be noted that where there is any discrepancy Commonwealth Law has precedence. The MAAA advises that where Commonwealth Law, including CAR (1998) Part 101 is referred to it is for guidance only. It is up to every member to take the necessary precautions to ensure that they are aware of the actual detail of current Commonwealth legislation and the MAAA can accept no responsibility for any errors.

2. DEFINITIONS

All definitions given in the CAR (1998) Part 101 apply equally throughout this manual.

3D	Aerobatic manoeuvres that do not involve smooth transitions within and between the manoeuvres and including, for fixed wing aircraft, hovering 'on the propeller' as opposed to flying 'on the wing'.
AAAO	Approved Aviation Administration Organisation An organisation approved by CASA to administer a particular aspect of sport aviation.
Affiliate Member	A person properly affiliated with a Club that is properly affiliated with an MAAA Ordinary Member.
AGL	Above Ground Level
Approved Area	An area approved by CASA as an area for the operation of model aircraft. See the Application to Register an Approved Flying Area Procedure, MOP005, in the MAAA Manual of Procedures.
CASA	Civil Aviation Safety Authority.
Club	A Club properly affiliated with a State Association.
Club Member	A financial member of a Club.
Commercial Activity	A model aircraft flight is considered to be commercial if it is conducted for, or with the intent of, any purpose other than the sport of flying the model or learning or teaching the sport. It is commercial if it is used as a tool for conducting any other commercial purpose such as aerial photography etc.

Control-Line Model Aircraft	A model aircraft that is constrained to fly in a circle, and is controlled in attitude and altitude, by means of inextensible wires attached to a handle held by the person operating the model.
Display	An organised display of any type of model aircraft flying conducted in front of non MAAA Affiliate Members (including Control Line model aircraft and indoor flying).
Endorsed Pilot	A pilot who, having flown a test flight unaided to a safe standard while observed by the relevant MAAA Heavy or Giant Model Inspector, has his/her name endorsed on the "Permit to Fly" by the Inspector.
Giant Model Aircraft	Any model aircraft with a dry mass, (excluding fuel, but including all batteries if electric powered) of more than 25Kgs but less than 50 Kgs.
Heavy Model Aircraft	Any model aircraft with a dry mass (excluding fuel, but including all batteries if electric powered) of 7Kgs or more, to a maximum of 25Kgs.
Helicopter	See Dictionary
Inspector	A financial Affiliate Member of the MAAA who has met the requirements for his/her appointment and has been given written authority to carry out inspections on behalf of the MAAA in connection with the issue of a Permit to Fly.
Indoor Model Aircraft	A model aircraft flown in an area constrained by four walls and a roof.
Large Model	A Model Aircraft with a dry mass, (excluding fuel, but including all batteries if electric powered), of greater than 7Kgs but less than 50Kgs.
MAAA	Model Aeronautical Association of Australia Inc.
MAAA Ordinary Member	A State Association properly affiliated with the MAAA Inc.
Model Aircraft	See Dictionary
Ordinary Member	See MAAA Ordinary Member
Permit to Fly	A document issued by an MAAA Inspector following inspection carried out in accordance with MAAA guidelines.
Pits	An area, generally adjacent to the runways, set aside for the assembly, preparation and maintenance of aircraft prior to and after flight.

Radio Controlled Model Aircraft ..	See MAAA “Internal Navigation and Stabilisation Policy”, MOP044.
SGMA	Self Guided Model Aircraft.
Self Guided Model Aircraft	A model aircraft that has the capability of flying without the direct inputs of a human pilot including both general flight and the capability to Return to Home as a specific implementation.
State Association	See MAAA Ordinary Member.
Turbine Powered Model Aircraft ..	A model aircraft powered by a gas turbine engine.
UAV	Unmanned Aerial Vehicle. A model aircraft used, or intended to be used, for commercial purposes or activity.

3. GENERAL

- 3.1 Any model aircraft in flight (excepting as noted in Paragraph 3.3) is subject to the regulations imposed by the Civil Aviation Safety Authority. The CIVIL AVIATION SAFETY REGULATIONS – CAR (1998) Part 101 cover all unmanned aircraft, including all model aircraft, except as detailed hereunder.
- 3.2 This document is intended to give an overview of CAR (1998) Part 101 but it is strongly recommended that affiliated members obtain and read the actual CAR (1998) Part 101 document and CASA’s Advisory Circular AC101.3
- 3.3 Models Exempt from CAR (1998) Part 101 requirements, but not from MAAA Rules or the requirements of the MAAA Manual of Procedures:
 - (a) Models weighing less than 100 grams (3.5oz).
 - (b) Control Line models and
 - (c) Any model flown indoors (contained in four walls and roof)
- 3.4 CASA recognises the Model Aircraft Association of Australia (MAAA) as an Approved Aviation Administration Organisation to administer and regulate the operation of Model aircraft under Part 101. CASA expects the level of flying operation to be regulated by the MAAA so as to maintain a high standard of safety.
- 3.5 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 CAR (1998) Part 101.
- 3.6 The regulations and requirements contained in this document are not applicable to Unmanned Aerial Vehicles (UAVs) as they are not considered model aircraft. UAVs are subject to specific sections of CAR (1998) Part 101.
- 3.7 Operation of a model aircraft for intended, financial reward for any purpose other than the sport of flying the model or learning or teaching the sport is only permitted under CASA rules for the operation of UAVs. See CAR (1998) Part 101.235(1)
Note 1.

4. RESPONSIBILITIES

4.1 The individual operator of a model aircraft is responsible for his/her compliance, and his/her model's compliance, with CAR (1998) Part 101 and also with all MAAA rules as required by the MAAA Manual of Procedures.

5. CAR (1998) Part 101 RULES FOR THE OPERATION OF ALL MODEL AIRCRAFT

(Except exempt models) CAR (1998) Part 101 references are in brackets

This section identifies the major requirements of CAR (1998) Part 101. Affiliate members are requested to read the relevant sections of Part 101 document that is available on the CASA or MAAA web sites, www.casa.gov.au and www.maaa.asn.au.

It should be noted that in some cases MAAA Rules are more stringent than those contained in CAR (1998) Part 101.

5.1 General prohibition on unsafe operation. (101.005)

A person must not operate an unmanned aircraft (Model aircraft) in a way that creates a hazard to another aircraft, another person, or property.

5.2 Visibility for operation of model aircraft. (101.385)

A person may operate a model aircraft only if the visibility at the time is good enough for the person operating the model to be able to see it continuously.

5.3 Operating a Model Aircraft at Night (101.390)

A person may operate a model aircraft at night only in accordance with the written procedures of an Approved Aviation Administration Organisation.

See MAAA Procedure – Night Flying, MOP018.

5.4 Keeping model aircraft away from people (101.395)

A person must not operate a model aircraft over a populous area at a height less than the height from which, if any of its components fails, it would be able to clear the area.

Someone who is operating a powered model aircraft must ensure that, while the model aircraft is IN FLIGHT, or is LANDING or TAKING OFF, it stays at least 30 metres away from anyone not directly associated with the operation of model aircraft.

This regulation is not contravened if somebody stands behind the model aircraft while it is taking off. This regulation is not contravened if the model aircraft is flown in a competition within 30 metres of someone who is judging the competition.

Note: The MAAA 30 Metre rule is more stringent than the requirements of 101.395 above. See item 6.10 for details for the MAAA 30 Metre rule.

5.5 Height Limits for Model Aircraft.

5.5.1 Operation within an Approved Area.

The height limit within an Approved Area is governed by the terms of approval from CASA

5.5.2 Operation of model aircraft outside approved areas (101.400)

A person may operate a model aircraft outside an Approved Area above 400 feet AGL only if he or she keeps it in sight and keeps it clear of populous areas.

- 5.5.3 Operation in controlled airspace (101.070)
A person may operate a Model Aircraft above 400 feet in controlled airspace only:
- (a) In an Approved Area at a maximum height as specified in the terms of approval; and
 - (b) In accordance with an air traffic control clearance.

- 5.5.4 Operation near aerodromes (101.075) (101.080)
CASA permits operation of a model aircraft at an altitude above 400 feet AGL within 3 nautical miles of an aerodrome only under certain conditions. Authority for the operation must be obtained from the Air Traffic Control Service that controls the aerodrome, or in the case of other than a controlled aerodrome, authority must be obtained from CASA.

The operation of model aircraft within 3 nautical miles of an aerodrome shall be in accordance to the MAAA Policy MOP061 - Models Near Full Size Aerodromes.

- 5.6 Dropping or discharging of things. (101.090)
A person must not cause a thing to be dropped or discharged from an unmanned aircraft (model aircraft) in a way that creates a hazard to another aircraft, a person, or property.

- 5.7 Displays. (101.410)
Displays must be conducted in an approved area and in accordance with the rules and procedures of an Approved Aviation Administration Organisation (AAAO). MAAA. Note, the MAAA is an AAAO.
See the Display Procedure (MOP019) in the MAAA Manual of Procedures and CAR (1998) Part 101.410.

6. MAAA RULES, GUIDELINES AND PROCEDURES

- 6.1 Heavy Model Aircraft
The MAAA requires that all model aircraft with a dry mass, (excluding fuel, but including all batteries if electric powered), of greater than 7kgs and less than 25kgs must be inspected by an MAAA Heavy Model Inspector prior to its first flight. Heavy Model Aircraft must be operated in accordance with the Large Model Aircraft Operation Procedure (MOP015) in the MAAA Manual of Procedures.

- 6.2 Gas Turbine Powered Model Aircraft
The MAAA requires that all gas turbine powered model aircraft must be inspected by an MAAA Gas Turbine Inspector prior to its first flight. Gas Turbine powered Model Aircraft must be operated in accordance to MOP030 – Gas Turbine Rules in the MAAA Manual of Procedures.

- 6.3 Giant Model Aircraft
The MAAA requires that all model aircraft with a mass, (excluding fuel, but including all batteries if electric powered), of greater than 25kgs and less than 50kgs must be inspected by an MAAA Giant Model Inspector prior to its first flight. Giant Model Aircraft must be operated in accordance with the Large Model Aircraft Operation Procedure (MOP015) in the MAAA Manual of Procedures.

Although CASA define a Giant Model Aircraft as a model which weighs between 25kgs and 150kgs, MAAA Rules only allow models with a maximum mass of 50kgs. The operation

of models over 50kgs will not be covered by the MAAA insurance policies. The MAAA definition of Giant Model Aircraft applies to this document.

6.4 Fixed Wing Aircraft Flying 3D

The MAAA requires that all fixed wing model aircraft flying 3D manoeuvres outdoors, excluding electric models with a wing span of one (1) metre or less, are not to be flown any closer than 9 metres to all pilots operating at the time.

6.5 Helicopter Flying

The MAAA requires that helicopters flying outdoors are not to be flown any closer than 9 metres to all pilots operating at the time.

6.6 Displays

The MAAA requires that all Displays of Model Aircraft Flying organised and conducted by the MAAA, MAAA Ordinary Members (State Associations), Clubs and Affiliate Members of the MAAA to which non Affiliate Members of the MAAA are invited or expected (because of the nature of the event) to attend are approved by the relevant State Association and where required through them to CASA.

See the Display Procedure (MOP019) in the MAAA Manual of Procedures.

6.7 Flying Field Spacing & Distance Between Transmitter Locations

The MAAA requires a minimum spacing of radio-controlled model aircraft flying sites of 4kms. Operations at less than this distance shall be carried out in accordance with the Close Fields Operation Procedure and Policy (MOP008) in the MAAA Manual of Procedures.

6.8 Instruction

Inexperienced operators operating under the MAAA insurance policy shall be instructed on all relevant safety and frequency management matters prior to the commencement of operations by an experienced member.

6.9 Inspection of Aircraft

It is recommended that prior to flight the operator does a safety inspection applicable to the type of aircraft.

6.10 30 Metre Rule

The CASA requirement for safe operation of model aircraft is specified in CASR (1998) Part 101. However this is not in detailed terms and in order to give MAAA members better guidance on acceptable practice the MAAA requirements are as follows.

Someone who is operating a model aircraft, must normally ensure that, while the model aircraft is IN FLIGHT, or is LANDING or TAKING OFF, it stays at least 30 metres horizontally away from, and at any height vertically above, any person or occupied building/vehicle, not directly associated with the operation of model aircraft.

This requirement is not contravened if:

- (i) people are behind the model aircraft while it is taking off.
- (ii) the model aircraft is flown in a competition within 30 metres of someone who is judging the competition.
- (iii) the model aircraft is flown within 30 metres of pilots and their assistants operating other aircraft, Flight Line Directors, Safety Officers, Instructors, and similar people who are directly involved with the operation of model aircraft at the time. In addition these may include pilots and their assistants with aircraft in the "pits" provided that this area is **not** accessible by the public. Wherever possible the pits shall be located outside the 30 metre

limit or if this is not possible as near to 30 metres as can be reasonably achieved.

Whilst CASA require that a person must not operate a model aircraft over a populous area at a height less than the height from which, if any of its components fails, it would be able to clear the area, model aircraft can fail in modes that do not permit the aircraft to glide clear of an area. It is acceptable to the MAAA that the requirement be relaxed and model aircraft be allowed to fly above ground where there **may** be people directly below provided it shall only be at a reasonably high altitude and after careful consideration that there is low risk to the life, safety or property of someone who may be in the area but is not connected with the operation. This shall not, under any circumstances, include the car parks and public viewing areas of model aircraft clubs.

Note: This rule is more rigorous than the requirements of CAR (1998) Part 101 - 101.395 – see item 5.4

6.11 Flying Site Layout

Flying sites ideally should be arranged such that all flight operations are conducted in front of the operators with the pit area and all other persons to their rear. Where this is not possible, as a minimum, pilots should have a clear and unobstructed view of the flying area and there should be clearly designated no fly zones complying with the 30 metre rule covering the pit and other public areas.

Car parking facilities for both Members and Public shall be arranged so they are at an absolute minimum distance of 30 metres from the flying area. Greater distances are encouraged as damage to cars is a significant insurance cost. Where possible they should be placed in a location which would minimise the possibility of being struck by a model should control of the model be impaired during take off or landing.

6.12 Flight Proficiency

State/Territory Associations and clubs are encouraged to promote the use of the MAAA Flight Proficiency Scheme. See the Procedure Guidelines for the Award of Wings (MOP027) in the MAAA Manual of Procedures.

6.13 Hearing Protection

It is recommended that hearing protection be worn by any person conducting noise testing in connection with any competition or where lengthy engine running or testing is required.

6.14 Engine Starting

It is recommended that hand starting (that is, without chicken stick, or electric or spring start) be prohibited with engines of capacity greater than 2.5 cc.

6.15 Engine Adjustments

It is recommended that all adjustments to running engines be done from behind the engine.

6.16 Propellers

It is recommended that propellers fitted to engines of capacity greater than 2.5 cc (not being static, non-flying propellers) have the tips delineated with a contrasting colour.

6.17 Aircraft Restraints

It is recommended that the model aircraft be restrained mechanically and/or physically by a person other than the person starting the aircraft, during engine start-up.

6.18 Radio Certification

The MAAA has recommendations for radios to be checked and certified by an approved testing station prior to use. See the MAAA Radio Certification Policy (MOP052) in the MAAA Manual of Procedures.

6.19 Internal Navigation Systems

The MAAA does not allow the use of internal navigation systems in model aircraft. See the MAAA Internal Navigation and Stabilisation Policy (MOP044) in the MAAA Manual of Procedures.

6.20 Safe Flying Code

See the Safe Flying Code (MOP056) in the MAAA Manual of Procedures.

6.21 Radio Equipment and Operations

6.21.1 Frequency Control

An adequate frequency control system shall be used at all flying sites where radio controlled models are operated. A keyboard system is recommended. See the MAAA Frequency Directive (MOP013) in the MAAA Manual of Procedures.

6.21.2 Radio Testing

Radio testing shall be as per the MAAA Frequency Directive (MOP013) in the MAAA Manual of Procedures.

6.21.3 Frequencies

Only frequency approved by the MAAA shall be used for the control of model aircraft. See the MAAA Frequency Directive (MOP013), 40MHz Policy (MOP047), 27MHz Model Aircraft Policy (MOP048) and 2.4GHz Policy (MOP058) in the MAAA Manual of Procedures.

6.21.4 Operation at 10 kHz Spacing

Clubs may decide to allow operation with radio frequencies separated by 10 kHz. All individuals taking advantage of this should ensure that the 10 kHz rated radio equipment that they use conforms to the 10 kHz testing requirements for technical performance and currency specified in the MAAA Frequency Directive (MOP013). In addition, in view of the more stringent requirements for operating at 10 kHz spacing, these clubs are required to ensure that all members comply with the field practices also specified in MOP013.

6.21.5 Radio Equipment

See the following documents in the MAAA Manual of Procedures;

- (i) Radio Certification Policy (MOP052),
- (ii) Frequency Synthesised Equipment Policy (MOP053),
- (iii) Mobile Phones at Model Aircraft Flying Fields Policy (MOP045),
- (iv) MAAA Frequency Directive, (MOP013)
- (v) 40MHz Policy (MOP047) and
- (vi) 27MHz Model Aircraft Policy (MOP048).
- (vii) 2.4GHz Equipment (MOP058)
- (viii) Interference Policy (MOP060)

6.22 Indoor Flying

Indoor flying shall be conducted in accordance to MOP059 – Indoor Flying Policy.

6.23 SGMA

Operation of SGMA shall be conducted in accordance with MOP067.