# MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA


# MAAA PULSE JET RULES

# **MOP025**

APPROVED: MAAA President Date: 16/02/2014

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# OPERATION OF PULSE JETS RULES

## 1. PURPOSE

The purpose of this publication is to provide all members of the MAAA a ready reference to their obligations and regulations as required under MAAA rules and procedures for the safe operation of Pulse Jet powered models.

## 2. DEFINITIONS

**Affiliate Member** ……..... A person properly affiliated with a Club that is properly affiliated to an MAAA Ordinary Member.

**Club** …….. A Club properly affiliated with an MAAA Ordinary Member.

**Club Member** ……. See Affiliate Member.

**Inspector** ..... A financial Affiliate Member of the MAAA appointed by the MAAA to inspect specific types of Model Aircraft. Refer to MOP015: *Heavy Model Aircraft Inspection and Operation Procedure* for obligations of a Model Aircraft Inspector.

**MAAA** ……..….. Model Aeronautical Association of Australia Inc.

**MAAA Ordinary Member**…. A State Association properly affiliated with MAAA Inc.

**MOP** ……. Manual of Procedures

**Permit To Fly** ……. A document valid for 3 years from date of issue, issued by an MAAA Aircraft Inspector holding (for the purposes of this document) Pulse Jet endorsement, following inspection carried out in accordance with MAAA guidelines. Refer to MOP015: *Heavy Model Aircraft Inspection and Operation Procedure*.

**Pulse Jet Endorsement** ….. An endorsement, authorised by the MAAA, added to an existing MAAA Aircraft Inspector Status. This endorsement allows inspection and issue of the appropriate permits for Pulse Jet powered model aircraft.

**Ordinary Member** ……..... See MAAA Ordinary Member

## 3. POLICY

Pulse Jet powered models, whether Control Line or Radio Controlled (RC) model aircraft that are powered with a Pulse Jet(s), shall only be operated in accordance with the requirements of this document.
All Radio Controlled Pulse Jet powered Model Aircraft are subject to an airframe and engine installation inspection in accordance with MOP015, irrespective of the aircraft weight and must undergo an assessment.
Pulse Jets must not be operated in a noise sensitive area.

### 3.1 Control Line

3.1.1 Pulse Jet powered Control Line models shall conform to the current MAAA Competition Rules.

3.1.2 A $CO_2$ or Powder fire extinguisher suitable for the task must be present with safety pin removed during engine start up and operation.

### 3.2 Radio Controlled Pulse Jet powered Model Aircraft

#### 3.2.1 General

(a) Flying a Radio Controlled Pulse Jet at organised events requires the written approval of the State Association for the State in which the aircraft is to be flown. Approval shall be required for each day of operation that an RC Pulse Jet is to be flown. The State Association for the State in which the flight is to take place may delegate the responsibility for approval of the flight to the State Association to which the Member is affiliated, if different. At other than organised events, radio controlled pulse jets can be flown with the written permission from the club committee responsible for operations at the site.

(b) The State Association approving the flight may impose additional restrictions to the approval to operate a Radio Controlled Pulse Jet.

(c) Fuels allowed are any fuel (except banned substances)

(d) A $CO_2$ or Powder fire extinguisher suitable for the task must be present with safety pin removed during engine(s) start up and shut down and during crash recovery.

(e) For organised events involving the public the event CD must ensure at a minimum, one $CO_2$ fire extinguisher is present at the starting location in addition to operators' personal fire extinguishers. A second $CO_2$ fire extinguisher is to be available for recovery deployment.

(f) During start up, operators are required to maintain a clear distance of 8 metres from any other personnel not associated with the start-up and they are to advise others that no smoking is permitted within 8 metres of a start up area. "No Smoking" signs are to be displayed at organised events and public demonstrations.

(g) For organised events, all operators of Radio Controlled Pulse Jet powered Model Aircraft are required to have an assistant present during engine(s) start up, the flight and engine shut down.

(h) Multiple Pulse Jet start ups are permissible in the designated start up area provided that there is a 2 metre separation between aircraft and that the 8 metre separation is maintained from non associated parties.

(i) During start up and shut down the model must be suitably restrained.

(j) It is a requirement that the Pulse Jet engine can be shut down by two independent methods, which are to be operated remotely by means of the transmitter control. It is also a requirement that the installation include a manual (by hand) means of shutting the engine down and that this method be accessible during the whole start up and shutdown phase of the Pulse Jet.

(k) The engine(s) and fuel system installation must prevent fuel from being forced or siphoned to the engine(s) during refuelling of the aircraft.

(l) Operators of commercially manufactured engines must follow the manufacturer's installation and operating guidelines at all times. This is in addition to any further installation requirements prescribed in these regulations.

(m) The failsafe for the Pulse Jet engine control must be set to shut down the engine, in the event of a failsafe occurrence.

(n) In the case that any Radio Controlled Pulse Jet powered Model Aircraft sustains damage to any flying surface, control surface, fuselage or structural mounting points, its Permit will be deemed to be suspended until such time that repairs are carried out and the model undergoes an airworthy examination by an MAAA Inspector holding a Pulse Jet endorsement. The model is not required to undergo a complete Permit to Fly Application & Inspection.

### 3.2.2 Inspection

There are four aspects to the inspection and issue of a Permit to Fly for a Radio Controlled Pulse Jet powered Model Aircraft.

(a) The airframe is subject to an inspection to assess its suitability in terms of construction, hardware installation, radio equipment, suitability for the Pulse Jet installed and airworthiness.

(b) The Engine installation in the airframe is inspected to assess the suitability of the installation, heat insulation and to ensure that the remote & manual shut down features as required in Section 3 (j) are fitted and suitable for the purpose.

(c) The operator must demonstrate the safe operation of the aircraft through a ground run demonstration including fuelling, start up and shut down procedures. This will be followed by a test flight of the aircraft by the operator to demonstrate the airworthiness of the aircraft and the operator’s ability to manage the aircraft safely and within their limits.

(d) With respect to the flight inspection, this may be accomplished over a series of flights not necessarily on the same day; i.e. the operator may

choose to have an experienced operator fly the aircraft (provided they have a current Permit for the aircraft) and start their inspection flight with circuits only following up with take offs and landings in subsequent flights.
Once a full flight combining take off, circuits, nominated flight envelope manoeuvres and landing has been achieved, then the operator will have achieved a valid Permit.

### 3.2.3 Certification

(a) Certification of Radio Controlled Pulse Jet powered aircraft will be carried out using the Check List for Inspection of a Pulse Jet Powered Model and Permit to Fly by a designated MAAA Aircraft Inspector for that type of aircraft who holds a Pulse Jet Endorsement. Refer to MOP015*: Heavy Model Aircraft Inspection and Operation Procedure.* All Check Lists and the Permit to Fly form are obtained from the Forms Section of the MAAA Manual of Procedures on the MAAA web site (www.maaa.asn.au).

(b) The onus for organising inspection lies with the operator.

(c) No MAAA affiliated club shall permit the flight of a Radio Controlled Pulse Jet powered aircraft unless the operator is in possession of a current Permit to Fly or is in the process of obtaining one from an MAAA Inspector.

(d) The operator is required to sign the Permit to Fly as certifying their assurance that they understand and undertake to operate the aircraft in a safe and responsible manner and within the MAAA rules and regulations.

(e) Unless the aircraft sustains any damage (refer to Section 3 (n)) the Permit to Fly is valid for three years from date of issue.

(f) The safe operation of any Pulse Jet powered aircraft remains the sole responsibility of the operator.

## 4. FORMS

4.1 Check List for Inspection of a Pulse Jet Powered Model – Form No MAAA040.
Permit to Fly – Form No MAAA038.

Forms are available from the Forms Section of the Manual of Procedures on the MAAA web site.