

***MODEL AERONAUTICAL ASSOCIATION
of AUSTRALIA Inc.***



AUSTRALIAN OFFICIAL RULES

Section 2 - Free Flight Rules

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FREE FLIGHT CONTESTS

1 GENERAL RULES

These rules apply to events conducted for MAAA Free Flight classes. They do not apply to the conduct of events for FAI class models nor for special events conducted by clubs or associations. FAI class models fly under the rules of the FAI Sporting Code (Latest version). All MAAA safety rules must be observed.

1.1 **Free Flight Definition.** Free flight is flight during which there exists no physical connection whatsoever between the model aircraft and the competitor or his helper. Radio control functions are allowed only when specifically stated in the rules for a relevant class.

1.2 **Contest Director.** Contest organisers shall appoint a Contest Director (CD) for each event. The CD shall ensure that models comply with technical specifications for the class to be flown and shall ensure that the contest is conducted within the rules and conditions specified in this document or to conditions notified by organizers prior to the contest. The CD is responsible for the safe conduct of the contest following MAAA safety guidelines.

1.3 **Contest Program.** Outdoor contests must be conducted between the hours of sunrise and sunset when the CD determines suitable visibility.

Events may be flown in rounds or between set times for the specified number of flights as determined by the organisers and as notified in pre-contest information.

1.4 **Interruption of Contests.** The CD may suspend the contest if conditions become dangerous, if visibility is reduced, the wind direction changes significantly or if the wind strength is above 6 m/s, two metres above the ground at the start line for a period of 20 seconds. The CD may indicate a start line position change or may impose a waiting period to see if conditions improve. For an event flown in rounds a reduced max may be implemented for remaining rounds. If further flights are not possible, the CD may postpone the remainder of the event, abandon the event or if at least two thirds of the event has been flown declare a result on the scores.

1.5 **Start Line.** All contest flights in F/F categories should take place from a clearly defined start line. The direction of this line is to be set by the CD placing it at right angles to the wind direction. The position of the line will dictate the safe parking areas of vehicles. Small markers such as witches hat placed 7 to 10 metres apart indicate starting positions along the start line. Spectators are to remain no less than 25 metres from the start line.

1.6 **Official Flight.**
a. The duration achieved on the first attempt unless this attempt is unsuccessful under definition 1.7.
b. The duration achieved on the second attempt. If the second attempt is also unsuccessful under definition 1.7 (a) (b) (d) a zero time is recorded for the flight.

1.7 **Attempts.** In contests conducted under MAAA rules contestants are allowed two attempts to make an official scoring flight. Unless otherwise specified an attempt occurs when

- a. A flight is of less than twenty seconds duration
- b. A part of the model is detached during flight
- c. The model is involved in a mid air collision or a collision with a person other than the competitor while being launched
- d. The allotted engine run for a power class is exceeded
- e. The timekeeper's watch fails to operate correctly

In the case of clause 1.7 (c) (e) the attempt may be repeated even if this is the second attempt. For the occurrence described in 1.7(c), should the model continue in flight in a normal manner, the competitor may demand that the flight be accepted as an official flight, even if the demand is made at the end of the attempt.

- 1.8 Timing of Flights. Two timekeepers are desirable for all flights but it is more usual to have one timekeeper. If at all possible two timekeepers should time each contestant in a fly-off. The use of one timekeeper per contestant in fly-off does not invalidate the results.

All timekeepers must be equipped with an accurate stopwatch which records to one tenth of a second and have available binoculars with a power of at least seven times available.

Timekeepers must remain within a ten-metre radius of the launch point while timing a flight.

Timing commences with the release of the model from the hand or the towline and ends when the model touches the ground, hits an object that definitely ends the flight or when it definitely disappears from the timekeeper's sight. Should the model pass behind an object or into clouds the timekeepers continue timing for another ten seconds and continue timing if the model reappears within that ten seconds. If at the end of ten seconds the model has not reappeared, timing is ceased and ten seconds deleted from the indicated time. This becomes the official flight score.

When two timekeepers are utilized the score is the mean of the two times, rounded down to the mean whole number.

- 1.9 Timing of Engine Runs. Electronic stopwatches are the preferred devices for engine run timing. Timing commences with the release of the model and ends when the engine stops. If two watches are used the time is averaged and rounded down to the next tenth of a second. As examples a time of 10.09 sec is rounded down to 10 sec and is legal while a time of 10.1 sec is an over run.

- 1.10 Scoring. Unless otherwise stated a maximum of 180 seconds is scored for any official flight. The final score is the total of the official flights recorded in the contest.

The contestant with the highest score is the winner.

- 1.11 Resolution of Ties. If a number of contestants have equal scores at the end of the contest proper, classification order is determined by additional flights by those contestants.

Ties may be resolved by progressively increasing maximums or by unlimited fly-offs. It is desirable that fly-offs take place when thermal activity and wind speed are at their lowest which generally means early mornings or late afternoons.

Events flown to increasing maximums will require clearly identified time slots for successive flights until a winner is decided.

Unlimited fly-offs flights will commence in a ten minute window as specified by the organizers.

In framing programs, organizers should indicate which fly-off procedure will be adopted and whether the fly-off will be conducted late in the afternoon or early next morning.

- 1.12 Weighing of Models. Where technical specifications require a model to have a minimum weight and rubber motors to have a maximum weight, models and rubber motors should be weighed prior to, at random during or after contest is completed. The organisers should provide as many weighing posts as possible so that the operation will not cause undue delay during rounds.
- 1.13 Model Identification. All outdoor models shall carry the competitor's AUS registration number as issued by the MAAA on the wing in numbers and letters at least 25 mm high. This does not apply to scale models and indoor models

2 HAND LAUNCHED GLIDER

- 2.1 **Definition.** A hand launched glider is a free flight glider which obtains its initial speed and height from a hand launch only.
- 2.2 **Models.** No restriction is placed on the design of the models. A contestant may use any of six models for any of his official flights.
- 2.3 Each contestant is entitled to six official flights.
- 2.4 The Duration of the contest for six official flights shall be two (2) hours.
- 2.5. Only one attempt is permitted for each official flight.
- 2.6 It is considered an attempt when the contestant releases the model on launching.
- 2.7 Timing of flights is limited to a maximum of 60sec.
- 2.8 **Scoring.** The sum of the times for the best three flights gives the contestant's score. In the event of two or more models achieving the same time for three flights, then the aggregate of the remaining three flights will determine the winner. In the further event of two or more models achieving equal times over six flights, there will be a fly-off with no time limit.

NOTE:-The Contest Director may, at his discretion, impose a time limit for which a time keeper can be held by a contestant waiting for good launching conditions.

2.9 CATAPULT GLIDERS

- 2.10 Catapult gliders follow the rules for Hand Launch Glider above with the exception that they are launched by a catapult.
- 2.11 Catapult Specifications. The catapult shall consist of a loop of 6.4mm(1/4inch) flat rubber strip or its equivalent cross section e.g. four strands of 3.2mm(1/8) wide flat strip. The loop shall measure a maximum of 23cm(9 inches) in its relaxed state. The loop may be attached to a handle no longer than 15cm(6 inches) in length
- 2.12 HLG and CLG are flown as a combined class.

Catapult gliders: When launching model, one end of the catapult or the attached handle is held in one hand and the model released by the other hand.

3. FREE FLIGHT SCRAMBLE

3.1. **Definition:** A scramble is a simultaneous contest between any number of contestants, the aim being for each contestant to keep his model airborne as much as possible during one hour but within time limits for each flight.

3.2. **Models:** Any free flight model will be eligible provided it is powered by piston type motor(s). The total engine capacity shall not exceed 1 cc. Entrants may use portions of other models, such as wings, tails, propellers etc. should the model crash but the original fuselage and engine(s) must be used throughout the contest.

3.3. **Starting:** Motors may not be started until the signal for commencement is given and must not be running during retrieval. Each competitor must start his own motor(s) BY HAND and regulate them himself throughout the contest. Each flight shall commence from the original take-off point, any infringement of this rule incurs automatic disqualification. Each entrant will be allowed one helper only who may help to retrieve but not launch the model.

No form of transport is permitted to retrieve the model.

3.4. **Timing:** Timing is as for all free flight contests except that the model must remain airborne for a minimum of 15 seconds for an official flight to be recorded.

The timing of each flight is limited to a maximum of two minutes. At the end of a sixty minute period, all timing will cease. No time shall be recorded for flights that continue past the contest end. Should a model be launched within the 15 seconds before the end of the contest period, no flight shall be recorded.

3.5. **Classification:** The entrant having the greatest official flight time total within the hour shall be the winner.

4. FREE FLIGHT FLYING SCALE

4.1. **Definition of Scale Models.** A scale model shall be a replica (copy) of a heavier-than-air man carrying aircraft. To indicate the subject full size aircraft being scale-modelled, the word "prototype" is always used.

4.1.1 Scale Models. All Free flight scale models will be flown to F4A Rules as in Volume F4 Flying Scale Model Aircraft of the FAI Sporting Code as follows:

6.1. GENERAL RULES AND STANDARDS FOR JUDGING OF SCALE MODELS

6.4. CLASS F4A-SCALE OUTDOOR FREE FLIGHT MODEL AIRCRAFT (ENGINE POWERED)(PROVISIONAL) WITH, ANNEX 6D CLASS F4A (PROVISIONAL) JUDGES' GUIDE OUTDOOR F/F POWER CLASS

6.6 CLASS F4D-INDOOR FREE FLIGHT SCALE MODEL AIRCRAFT (EXTENSIBLE MOTORS)(PROVISIONAL)

5 FREE FLIGHT VINTAGE

- 5.1. **General.** The contest is for replicas of model aircraft built originally prior to 31st December 1956.

The event may be flown as a combined glider, rubber and power event or, when sufficient entries are received, as separate glider, rubber and power events.

5.2. **Characteristics Of Vintage Models.**

- 5.2.1 **General.** Vintage models must be as original with no modifications which would improve the flying characteristics of the model. Modifications to improve the durability and safety of the model and minor alterations to detail will be permitted.

Models with functioning retractable undercarriages may be flown with the undercarriage in a retracted position or a fixed [extended] undercarriage of similar shape and size may be substituted.

Modern composite materials may not be substituted for original wooden components but may be used for local reinforcement or repairs.

No change or modification shall be permitted if, in the opinion of the Contest Director, such changes would improve the flying quality of the model.

- 5.2.2. **Glider.** A suitable auto rudder may be fitted if not shown on the original plan. Circle towing devices are prohibited. Tow line length is to be 100 metres.

- 5.2.3. **Rubber.** Diameter and pitch of propellers must be as shown on original plan.. Maximum rubber to be used shall be as stated on the plan or construction article [by weight or length and cross-section] or, if not stated, 100 grams.

- 5.2.4. **Power.** Engines must be of pre-1957 design. Engines of a pre-1957 design produced after 1956 may be used. Modern reproduction engines must not incorporate major design changes, for example, the incorporation of schneurle or similar porting if not in the original engine. There are no restrictions on fuel or fuel systems. Maximum engine run from time of launch is 15 seconds. Motor size shall not exceed that shown on the plan or stated in the construction article.

- 5.3 **Proof of Age.** Proof of age must be provided by the contestant, for example, date on a published plan, construction article, three view or advertisement in the case of a model kit. While these examples are the most robust means of identifying the age of a model design, they do not exclude other means which, in the view of the Contest Director, may positively authenticate the age and construction of the model.

Proof of construction must also be provided by the contestant, that is, published plan, three view or kit plan showing construction details.

- 5.4. **Number of Flights.** Each contestant is entitled to three official flights.

- 5.5. **Definition of an Official Flight** 1.6 applies

- 5.6. **Definition of an Attempt** 1.7 applies
- 5.7 **Scoring** One point will be awarded for each second of flight time to maximum of 180 points. Two bonus points for each year that the model pre-dates 1956 will be added to each flight score to a maximum total flight score of 180 points. No bonus points will be awarded where no official flight is recorded.
- 5.8 **Classification** The total points awarded for the three official flights is taken for the final classification.
- 5.9. **Resolution of Ties.** 1.11 applies. Bonus points are added to the fly-off time score to give the final result.

6 OPEN FREE FLIGHT EVENTS

6.1. Open free flight events are intended to widen the scope of contests for juniors and for those who like to build models larger than FAI classes admit while conforming to the General Rules, that are:

Max Weight	5kg
Max Surface Area	150 sq dm
Max Loading	100gm/sq dm
Max Cap for Engines	10 cc

6.2 OPEN SAILPLANE

6.2.1 Definition. Any sailplane design that does not exceed 5kgs max weight and 150 sq decimetres.

6.2.2 Official Flights. 1.6 applies. Each contestant is entitled to three official flights.

6.2.3 Attempts. 1.7 applies.

6.2.4 Duration of Flights. The maximum duration of each of three official flights shall be 180 seconds unless a different maximum has been announced in advance.

6.2.5 Scoring. 1.10 applies.

6.2.6 Resolution of Ties. 1.11 applies.

6.2.7 Towline. The towline shall comply with FAI specifications. (maximum of 50 metres under 2 kg tension)

6.2.8 Interruptions to Contest. 1.4 applies.

6.3 OPEN RUBBER

6.3.1 Definition. There are no restrictions on the design of the model other than a maximum weight of 5kgs and a maximum area of 150 square decimetres. It must be powered by an extensible rubber motor.

6.3.2 Official Flight. 1.6 applies. Each contestant is entitled to three official flights.

6.3.3 Attempts. 1.7 applies.

6.3.4 Duration of Flights. The maximum duration of each of the three official flights shall be 180 seconds unless a different maximum has been announced in advance.

6.3.5 Scoring. 1.10 applies.

6.3.6 .Resolution of Ties 1.11 applies

6.3.7 Interruption to Contest 1.4 applies.

6.4 OPEN POWER DURATION

- 6.4.1. **Definition.** Model aircraft in which the energy is provided by piston type motors.
- 6.4.2. **Maximum Engine Capacity.** Maximum engine capacity is 10cc.
- 6.4.3. **Maximum Engine Run.** Maximum engine run is 10 seconds. 1.9 applies.
- 6.4.4. **Official Flights.** Each competitor is entitled to three official flights. 1.6 applies.
- 6.4.5. Attempts 1.7 applies
- 6.4.6. Timing 1.8 applies
- 6.4.7. Duration of Flights. The maximum duration for each of the three official flights shall be 180 seconds unless a different maximum has been announced in advance.
- 6.4.8. Scoring 1.10. apply
- 6.4.9. Resolution of Ties 1.11 applies
- 6.4.10. Interruption of Contests 1.4 applies

7 P - 30 RUBBER

7.1. **Definition:** P-30 is a simple rubber powered class for models with limited dimensions, restrictions on the type and size of propeller fitted and on the weight of rubber carried.

7.2. **Characteristics:** No part of the model shall exceed 762 mm [30 inches] when assembled.

The minimum weight of the model without rubber-motor shall be 40 grams.

The rubber motor shall not exceed 10 grams in weight.

The propeller shall be a commercially available plastic free wheeling propeller of between 23 to 25 cm in diameter unaltered except for balancing and addition of a freewheeling latch. The propeller may have one end sanded to achieve balance.

7.3. **Number of Flights:** Each competitor is entitled to three official flights.

7.4. **Definition of an Official Flight:** A flight of more than 20 seconds is an official flight.

7.5. **Number of Attempts:** There shall be no limit on the number of attempts allowed in order to record an official flight.

7.6. **Timing** The maximum recorded duration for each flight shall be 120 seconds.

7.7. **Number of Models:** A competitor is entitled to three aircraft in the contest.

7.8. **Classification:**The total time of the three flights of each competitor is taken for the final classification. The contestant with the highest score is the winner

8.9 Resolution of Ties. 1.11 applies.

8 PEANUT SCALE

- 8.1. **Definition** A peanut Scale model is a rubber-powered recognisable scale model of a man-carrying aircraft.
- 8.2. **Characteristics** The maximum wing span shall be 330mm [13 inches] or, if this is exceeded, the maximum overall length shall be 230 mm.
- 8.3. **Number of Flights** Each contestant is entitled to six official flights with no attempts.
- 8.4. **Timing.** Flight timing starts when the model ceases to have any contact with the floor during ROG. Alternatively timing starts when the model leaves the launcher's hand during hand launch. A bonus of 20 second will be given to each flight which ROGs.
- 8.5. **Scoring** $\frac{1}{3}$ **B** *single best flight* shall be added to the static points to give the contestant's score.
- 8.6. **Classification** The contestant whose model accrues the highest number of points is the winner.

JUDGING CRITERIA - STATIC SCORE

A. Workmanship	5 points maximum
B. Authentic Colouring and Marking	
- Excellent	3 points
- Good	2 points
- Lax	1 point
- No adequate documentation	0 points
C. Detail Accuracy with a score 0 - 5	
- No adequate documentation	0 points
D. Flying Surfaces	
All double covered or as prototype	3 points
Double wing, single tail	2 points
Single	0 points
No adequate documentation	0 points
E. Finish realism with a score of 0 - 6.	
F. Landing Gear	
- Scale length	3 points
- Slightly enlarged	2 points
- Greatly enlarged	0 points
- No adequate documentation	0 points
G. Dihedral	
- Scale	3 points
- Up to 6 degrees increase	1 point
- Over 6 degrees	0 points

- No adequate documentation	0 points
H. Outline Accuracy	
- Scale	3 points
- Slightly enlarged or reduced	1 point
- Greatly enlarged or reduced	0 points
- No adequate documentation	0 points
I. Minus Points	
Each deviation from scale to aid flying performance	2 points
- lengthening nose or tail moments	
- moving the wing back	
- simplifying fuselage cross-section or outline	
- enlarging rudder	
- omitting struts etc.	
- other non-scale aids.	
J. Bonus points	
Aircraft type:-	
- low wing or canard	1 point
- biplane	3 points
- triplane	5 points
- jet (ducted fan)	6 points
- quadraplane	7 points
- autogiro	8 points
- helicopter	9 points
- flying boat or floats	3 points
Construction	
- scale number of wing ribs [per wing]	2 points
- scale number of tailplane ribs	1 point
- scale number of ribs in fin and rudder	0.5 points
- hinged ailerons	1 point
- hinged rudder, elevator or flaps	1 point
- oval or round cross section fuselage	1 point
- Wheel spats or pants	1 point
- three dimensional pilot figure	1 point
- two functioning propellers	3 points
- more than two functioning propellers	3 points
- each extra functioning propeller	2 points
- dummy engine nacelle or pod and/or any radial or rotary engine [each]	1 point

9 OLD TIMER FREE FLIGHT RULES

9.1. GENERAL RULES

Eligibility: Any model designed and published on or before 31st December 1942 may be flown. Proof of age in the form of a dated magazine article or three-views from a magazine or book shall be presented to the Contest Director at the time of registration of entry.

9.2. MODIFICATIONS

Models shall be constructed as per plan except for modifications for D/T and cut-off for motor; substitution of modern materials may be permitted, however, foam with veneer covering, for example, will not be tolerated.

The original outline of the model must be maintained.

Wing and stabiliser attachment method may be altered providing the model is not changed in general outline.

An auto-rudder may be fitted to sailplanes if the contestant so desires even though the original plan does not feature this device.

9.3. CONTEST PROCEDURES

Number of Models Permitted. Each contestant will be allowed two models in an event to complete three official flights of over forty seconds.

Flight Timing. Flights will be timed to MAAA rules with a maximum flight time of 180 seconds. The maximum time may be reduced at the discretion of the C.D. depending on field and wind conditions. There will normally be three flights, however, the C.D. may decide on less.

Engine Run. There shall be 25 seconds engine run allowable for spark ignition and 20 seconds for diesel engines.

Age Bonus Points. Two points per year older than 31st December 1942 shall be added to each flight time.

R.O.G. A bonus of ten points per flight will be awarded for unassisted take-off.

Attempts. Flights of under 40 seconds will be considered an attempt. Engine over runs will automatically cause the flight to be recorded as an attempt.

9.4. SAILPLANE

The towline shall be 50 metres.

The pull test is up to the C.D.'s discretion.

No circle towing is permitted.

9.5. **RUBBER**

Propellers must be as per plan, free-wheeling, single folder, etc. Modern propeller technology must not be used.

Rubber shall be as stated on original plan or article. If not stated, then a maximum of 100 grams will be allowed.

9.6. **POWER**

The capacity of spark ignition engines must not exceed that shown on the plan. Where no engine size is shown, (e.g. Thermal Thumber Pond Plan), the size will be within the capacity for that class in that year.

e.g	Class A	0.000 to 0.20
	Class B	0.201 to 0.30
	Class C	0.301 to 1.20

Spark ignition engines shall also be limited to manufacture prior to 1950 with the following exceptions:

Replica engines showing the original manufacturer's name will be acceptable.

Glow conversion to spark ignition will be acceptable to the following capacities:-

Original Spark	Converted Glow
0.00 to 0.20	0.00 to 0.15
0.21 to 0.30	0.151 to 0.25
0.31 to 1.20	0.251 to 0.40

Spark ignition engines above 0.65 in³ displacement shall be original motors manufactured prior to 1950.

Diesels manufactured prior to 1950 will be permitted.

There shall be no special fuel mixes allowed. For spark ignition, only petrol and oil mix will be allowed and standard kerosene, castor oil and ether for diesels.

Until such time as free flight Old Timers entries allow, all classes will compete in the one competition. When numbers allow, categories such as "Pylon" and "Cabin" will provide separate competition as perhaps Class A, B or C.

10 HANGAR RAT

10.1 **Definition:** Indoor Hangar Rat is a free flight event flown in an enclosed space using a model built to a specified design.

10.2. **Characteristics:** The model must be built as per plan in outline and wood sizes with tissue covering only. (condenser paper, microfilm or mylar are not permitted) The propeller must be made as per plan or the plastic propeller as provided in commercial kits. Wire or tube bearings are allowed. Plastic wheels are allowed.

Rubber Motor for the model is to be 36 inches (91.44 cm) in length before tying into a loop.

10.3. **Number of Flights:** Total of best two flights to count out of six official flights.

10.4. **Launching:** Model must rise off ground R.O.G.

10.5. **Number of Models:** A competitor may use up to three models for his/her official flights. Any model that has been used for an official flight may not be use by any other competitor to make one of their official flights.

10.6 **Timing of Flights:** The timing of each flight shall commence when the model leaves the floor after release.

Timing will terminate when:

- a) The model lands on the floor of the building.
- b) The model comes in contact with any person, any part of the building or its contents other than the floor and translational movement ceases.

Note: In this case the timekeepers shall continue to time the flight for ten seconds after translational movement has ceased. Should the model remain in contact with the building or its contents after 10 seconds, timing will cease and ten seconds will be subtracted from the flight time. Should the model release itself from contact with the building in less than ten seconds, timing will continue normally. Time spent rolling along the floor at the beginning and at the end of the flight is not included in the flight score.

10.7. **Steering of Models:** Steering of models with balloon and line, or rod is not permitted.

10.8. **Classification:** Points are allocated on a one point per second basis. The total of the two best flights of each competitor shall be taken for the final classification. In the case of a tie, the third best flight decides and so on in case of a further tie.

11 OZ DIESEL

- 11.1 Model Design. There are no restrictions on the model design, materials, or construction methods other than as listed below (12.3). Original designs, kits or published plans are allowed. There are no weight restrictions for these models.
- 11.2 Engines Any plain bearing diesel engine with a maximum capacity of 1.5 cc may be used..
- 11.3 Restrictions The following are NOT PERMITTED
Auto surfaces
Engine brakes
Folding propellers
Pressurised fuel systems.
- 11.4 Motor Run The maximum motor run is 10 seconds.

The timing of the motor run is taken from when the model is launched until the cessation of the last audible power (combustion stroke of the motor) Propeller run down is not recorded as part of the motor run time.
- 11.5 Number of Flights Each contestant is entitled to five official flights.
- 11.6 Maximum Flight A maximum flight score is 120 seconds.
- 11.7 Attempts (1.7)
- 11.8 Scoring. The score is the sum of official flight times. The winner is the contestant with the highest score.
- 11.9 Resolution of Ties. (1.11)

Introduction of a New Provisional Event

E36 Electric Power

- 12.1 **E36 Small Electric Power Model**
- 12.2 **Contest Format.** The contest consists of three flights.
- 12.3 **Characteristics of the Model.**
1. Maximum projected wingspan of 36 inches(91.44cm).
2. Minimum weight, ready to fly is 120gm.
3. No auto surfaces permitted. After launch only one movement of wing or stabiliser permitted for D/T purposes.
- 12.4 **Power Requirements**
Any type of electric motor allowed. Power is limited to a two cell Lithium Polymer battery. Folding propellers are permitted.
- 12.5 **Duration of Flights**
A flight of 120 seconds constitutes a max.

12.6 **Motor Run**

The maximum motor run shall be ten(10) seconds.

The motor run must be timed either in flight or on the ground before the flight. The battery may be replaced after the ground test.

12.7 **Attempts**

A flight is recorded as an attempt if

- i. the flight is less than 20 seconds
- ii. the motor run is more than ten (10) seconds

Two(2) attempts are allowed to record an official flight.

The flight time of a second attempt is recorded as the official time except in the case of a motor over run where a zero score is recorded.

12.8 **Resolution of Ties**

Ties shall be resolved by a fly-off in which the motor run is reduced to five (5) seconds and the maximum remains at 120 seconds. Fly-offs shall continue until ties are resolved.