

NZMAA FLYING RULES

Section 2: Free Flight

1. FREE FLIGHT: GENERAL RULES

1.1. APPLICABILITY

Free Flight classes flown in New Zealand include the three FAI International classes of FIA (A2 Glider), FIB (Wakefield Rubber), FIC (FAI Power). Refer to rule 1.8 for FAI Contest organisation guidelines.

For domestic (non-FAI) classes the following general rules shall apply.

1.2. MODELS

1.2.1. Model use

No model shall be flown by more than one person in a given event.

1.2.2. Number of Models

A competitor may use a maximum of two models in each contest, but may not have more than one being timed at once. He may interchange and repair their various parts as he wishes, providing the resulting complete model conforms to the rules of the contest and that the parts have been processed.

1.3. TIMEKEEPING

1.3.1. Timing

Timing starts the instant the model is released for flight and includes the length of any engine run. No contestant may time or witness a flight made by his own model. The timekeeper must watch the total flight. The timekeeper must remain within 10 metres of the starting point during the flight. The timing ceases when the model first touches the ground, collides with an obstacle and ceases forward motion or definitely disappears from the sight of the timekeeper. The use of binoculars or other optical timing aid is permissible but not mandatory. The binoculars or optical timing aid should have a magnification of between 4 and 8.

1.3.2. Obstructed Flight

If the model disappears behind some obstacle or in clouds, the timekeeper is to wait for 10 seconds. Should the model not reappear, timing shall cease and the 10 seconds subtracted from the flight time.

1.3.3. Timekeeper

The timekeeper shall not converse or take notice of comments of onlookers as to the visibility of the model or the termination of its flight.

1.3.4. Timekeeper's Error

Should the timekeeper make an error during timing of a flight that adversely affects the contestant's duration for that flight, the competitor may claim another attempt. In an event flown in rounds, a repeat attempt through timekeeper's error may be

taken in the same round or in the round immediately following that in which the error was made.

1.3.5. Fly-Offs

- a) For Record Purposes and Decentralised Contests. If the stipulated number of consecutive maximum flights has been scored, the succeeding maximum times shall increase in increments of one minute until the contestant fails to score a maximum, except for classes F1A, F1B and F1C where the maximum times shall increase in increments of two minutes. The total of these flights on one day shall be used to determine records or decentralised contest placings.
- b) At Centralised Contests: A fly-off to break ties in a contest shall commence within a 10 minute period to be nominated by the Contest Director. At least 15 minutes notice shall be given of the commencement of the flyoff. The flyoff shall comprise of a single flight of unlimited duration, except for classes F1A, F1B and F1C where the maximum times for each fly-off shall increase in increments of two minutes. The Contest Director shall clearly announce the commencement and ending of the fly-off period and models must be released before the expiration of the period. One timekeeper only shall be assigned to each competitor and the timekeeper should use two stop watches to provide against watch malfunction.
- c) No-flights are permissible but the subsequent attempt must be made within the 10-minute period regardless of the reason for the no-flight.

1.4. NO FLIGHTS

A no-flight entitles the competitor to a repeat attempt. Each competitor has the right to two no-flights for each official round. Three no-flights shall constitute a round. In the event of there being no official flight recorded in a round, the competitor shall have the right to have his last no-flight time accepted as his round time. A competitor will not be allowed to claim a no-flight if he is deliberately responsible for terminating his flight. Except for timekeeper's error, repeat attempts following no- flights must be made in the same round as the no-flights.

1.4.1. Recording

Unless otherwise specified, a no-flight is recorded:

- a) When the total flight time is 20 seconds or less
- b) When the motor run exceeds the stipulated maximum
- c) When the model is assisted in any way at ROG or ROW launch.
- d) If any part of the model or any apparatus necessary for take-off or flight is lost or becomes detached during the start or during the timed flight.
- e) If a model collides with a person or any obstruction at launching or with another model or towline, whilst it is in flight.
Note however that should the model continue in its flight, the competitor may opt for the flight to be recorded as official provided that this option is taken before subsequent flights.
- f) In tow-launched glider events if the glider lands without becoming detached from the launching cable or the contestant tows so far that the timekeeper cannot see the moment of release.

1.5. LAUNCHING AREA

Outdoor Free Flight models shall be launched from within a 50 by 100 meter rectangular area, the longest dimension lying across-wind. In towline glider events, either the competitor or the launcher/helper must start from within the rectangle.

1.6. DETHERMALISER

Where a model uses a fuse-type dethermaliser, it shall be fitted with a suitable tube to contain and snuff the burned fuse.

1.7. RECORDING OF FLIGHT TIMES

Flight times will be recorded to the nearest whole second below with the following exceptions:

- a) Engine run times
- b) Indoor HL Glider, and
- c) When determining no-flights (e.g. a flight of 20.1 seconds will be recorded as an official flight).

In a) b) and c) above the actual stop-watch reading to the nearest one-tenth of a second will be used to determine the official time.

1.8. FAI CONTEST ORGANISATION

FAI Free Flight Contests in New Zealand (FIA, FIB, FIC, FIG, FIH, FIJ) will use rules from the FAI sporting code Section 4c. [1997 Edition].

1.8.1. Waivers

Contest Directors of DOMESTIC CONTESTS may waive the following rules from Section 4c (most of which apply to contest organisation and procedure, but have little effect on the actual flying of the contest):

- a) All of 2.2 (Organisation of International Contests)
- b) 2.3.4 to 2.3.9 inclusive (Marking of motors and models)
- c) 3.3.9 (Timekeeping of FIC)

1.8.2. Applicable Rules

The following rules from Section 4b will apply to NZ contests for FAI classes:

- a) B.3.3 Proxy
- b) B.3.4 Age
- c) B.7.2 Contest Organisers Processing Obligations
- d) B.7.3 Contest Organisers Obligations
- e) B.7.8 Contest Organisers Flying Field Obligations
- f) B.9.2 Recognition of Model
- g) B.9.3 Timing of Flight
- h) B.9.5 Timekeeping
- i) B.9.7 Use of Binoculars
- j) B.11 Contest interruption
- k) B.13 Processing of Models
- l) B.15 Safety
- m) B.16 Disqualification

1.9. MAXIMUM TIME LIMIT PER FLIGHT

Except when otherwise specified, the maximum time limit for outdoor Free Flight classes is 180 seconds. Flight in excess of 180 seconds will not score. There is no maximum flight limit on Indoor F/F or Indoor Tethered classes.

2. FREE FLIGHT: GLIDER

2.1. HAND LAUNCHED GLIDER

- a) Hand launch
- b) 6 flights
- c) 60 seconds maximum per flight
- d) No-flight time 10 seconds or less
- e) No limit on number of models but a contestant may not have more than one model timed at once.

2.2. OPEN GLIDER

- a) Tow launched
- b) 3 flights

2.3. A/1 GLIDER(F1H)

- a) Tow launched
- b) 5 flights
- c) Maximum time - 120 seconds
- d) Maximum surface area - 18 dm²
- e) Minimum weight - 220 grams

2.4. A/2 GLIDER(F1A)

- a) Flown to full FAI (F1A) rules 3.1
- b) Tow launched
- c) 7 flights (first round max of 3min30sec)
- d) Surface area 32 to 34 dm²
- e) Minimum weight 410 grams

2.5. EXPERIMENTAL GLIDER

- a) Tow launched
- b) 3 flights
- c) Flying wing type only

2.6. TOWLINE GLIDER FLYING RULES

2.6.1. Towlines

The model is towed into the air by the contestant and launched by means of a non-extensible cable. The length of the towline measured from tow ring to the extreme end of the handle in a fully unwound condition shall not exceed 50 metres under a tension of 2 kilograms for A/1 Glider and 5 kilograms for all other classes.

2.6.2. Pennant

In order to ascertain the moment of release, a small bright flag or pennant of minimum area 2.5 dm² must be attached to the towline near the towing ring.

2.6.3. Towing

The competitor is free to move in any direction during tow - he must not, however, deliberately interfere with or impede other contestants in the act of towing. The competitor must not discard the tow winch during tow. If the winch is discarded before release of the model, disqualification from that round will result. The competitor may tow without a winch and may release the end of the towline to effect release.

2.6.4. Timing

Timing starts the instant the towline and flag are seen to fall free from the model.

3. FREE FLIGHT RUBBER: OUTDOOR

3.1. OPEN RUBBER

- a) Hand launch, ROG, ROW.
- b) 3 flights

3.2. COUPE D'HIVER(F1G)

- a) Hand launched.
- b) 3 flights
- c) 120 seconds maximum per flight
- d) Minimum weight of model less motor(s) 70 grams
- e) Maximum weight of motor/s lubricated 10 grams

3.3. WAKEFIELD(F1B)

- a) Flown to full FAI, FIB rules 3.2
- b) 7 flights (first round max of 3min30 sec)
- c) Minimum weight of model less motor(s) 195 grams
- d) Maximum weight of motor(s) lubricated 35 grams
- e) Surface area 17 to 19 dm²

3.4. EXPERIMENTAL RUBBER

- a) Launch optional
- b) 3 flights
- c) Flying wing, ornithopter, helicopter, autogyro

3.5. P.30

- a) Hand launch
- b) 3 flights
- c) 120 seconds maximum per flight
- d) Minimum weight without rubber 40 grams
- e) Maximum weight of rubber 10 grams (lubricated)
- f) Maximum wingspan 30 inches
- g) Maximum length 30 inches
- h) Freewheeling plastic propeller 9 1/2 inch diameter
- i) The prop may be balanced and a freewheeler clutch may be fitted. No other modification to the propeller permitted.

3.6. TIMING

Timing commences at the moment of release and includes the time that the motor is running

4. FREE FLIGHT: POWER

4.1. CLASS 1/2A POWER

- a) Maximum motor capacity 1cc
- b) Maximum motor run 7 seconds
- c) 3 flights
- d) Hand launch, ROG, or ROW
- e) 120 seconds maximum per flight

4.2. CLASS A POWER (Open Power)

- a) Maximum motor capacity 10cc
- b) Maximum motor run 10 seconds
- c) 3 flights
- d) Hand launch, ROG, or ROW

4.3. CLASS B POWER (Aggregate)

- a) Maximum motor capacity 1.5cc
- b) No limit on motor run
- c) Launch optional
- d) Flights of less than 20 seconds are not recorded
- e) 180 seconds maximum per flight
- f) Flying is for a period of 30 minutes, the object being to accrue the maximum possible flying time in this period. Motors must not be started until the start of the 30 minute period. At the end of the period, the contest Director shall signal the stopping of all watches.
- g) One model only may be used and no major components (wing, tail, fuselage) may be replaced during the contest.
- h) The contestant must start and adjust his own motor, launch and retrieve his own model on foot.
- i) The model must be launched from within 5 metres of the same starting point on each flight.
- j) Placings and records are determined from total flying times of each contestant.

4.4. CLASS C POWER (Payload)

- a) Maximum motor capacity 2.5cc.
- b) ROG or ROW. Models shall be fitted with a conventional under-carriage having, in case of land-planes, at least two wheels, and shall take-off from this undercarriage in an orthodox manner.
- c) Payload weight of 141 grams per cc minimum is to be carried in the form of a dummy of minimum dimensions as detailed on the diagram.
- d) The dummy must be placed upright in the model and facing forward, and must have at least 180 vision measured from the back of the head. The dummy must be removable without dismantling the model in flying condition.

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- f) Three flights. No-flights as per General F/F rules.

4.7. EXPERIMENTAL POWER

- a) Launch optional. Flying wing, ornithopter, helicopter or autogyro.
- b) Maximum motor run 20 seconds.
- c) Three flights.

5. FREE FLIGHT: INDOOR

5.1. INDOOR HAND LAUNCH GLIDER

- a) Construction shall be solid wood
- b) Surface reinforcement may be attached to the outer surface of the wood
- c) Hand launch
- d) The best two flights of ten shall determine placings and records
- e) All attempts count as a flight
- f) Timing shall be recorded to the nearest tenth of a second

5.2. F1L

- a) Wingspan, maximum projected: 45,72 cm (18,0 inches)
- b) Wing chord maximum: 7,62 cm (3,0 inches)
- c) Stabiliser area maximum: 50% of wing
- d) Structure:
 - i) Only balsa wood and adhesive are to be used for the basic structure. Exempted are the propeller shaft, rear hook, thrust bearing, surface holding fittings and reinforcements for their attachments. No external bracing is allowed except balsa wood wing struts
 - ii) The motor stick must be a solid single piece of balsa. The tail boom must also be solid and of one piece but may be an extension of the motor stick. Balsa splices up to one centimetre in length may be used to repair breaks in the motor stick or boom
 - iii) The propeller must be all balsa except for ground adjustable pitch fittings, if used
 - iv) There are to be no devices for changing any part of the model's geometry or torque during flight. Only the normal flexing of the structure due to flight loads or motor forces is allowed
- e) Covering:

Models are to be covered with any commercially available solid sheet material such as paper or plastic. Microfilm is not allowed
- f) Minimum weight without rubber 1.2 grams
- g) The best time of two of six flights to determine placings or records
- h) Hand launch
- i) No-flight time 60 seconds or less. A flight may be terminated by any physical means within the first sixty seconds. One no flight allowed for each of the six official flights (not accumulative).

5.3. F1D

For full F1D rules refer to the Sporting Code

- a) Maximum projected wingspan 650 mm
- b) Minimum weight without rubber 1 gram

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- c) Hand launch
 - d) The best two of six flights shall determine placings and records
 - e) No-flight time 60 seconds or less.

5.4. OPEN MICROFILM

- a) Covering of all flying surfaces including fin and propeller shall be microfilm
- b) The best of three flights shall determine placings and records
- c) No-flight time 30 seconds or less
- d) Hand launch

5.5. FUSELAGE

- a) Maximum projected wingspan 915mm
- b) Min. fuselage cross section is the square of the overall length divided by 100
- c) Hand launched, ROG or ROW
- d) The best of three flights shall determine placings or records
- e) No-flight time 30 seconds or less

5.6. EXPERIMENTAL

- a) Autogyros, helicopters, flying wing and ornithopters only.
- b) Launch optional
- c) No-flight time 20 seconds or less
- d) The best of three flights shall be determine placings or records

5.7. OPEN TISSUE

- a) None of the flying surfaces including fin or propeller may be covered in microfilm
- b) The best of three flights shall determine placings and records
- c) No-flight time 30 seconds or less
- d) Hand launch
- e) Maximum weight with rubber 5 grams

5.8. INDOOR FLYING RULES

5.8.1. Winding

Either the competitor or his helper may wind the rubber motors.

5.8.2. Influence

During flight, the model may not be influenced by the use of hands or by the production of artificial air currents.

5.8.3. Steering

To prevent a model colliding with the structure of the building or with another model, a balloon, its line or a stick 2 to 8 metres long may be used up to three times per flight. Each steering period must not exceed 15 seconds. The altitude of the model must not increase during the steering period. HL Gliders may not be steered.

5.8.4. Timing

The timing of each flight commences when the model is released. Timing will terminate when the model first touches the floor of the building or when jettisoning occurs. Should the model strike an obstruction other than the floor and forward movement ceases, the timekeepers shall continue to time the flight for 15 seconds. Should the model remain in contact with the obstruction after 15 seconds, timing will cease and the 15 seconds will be subtracted from the flight time. Should the model release itself from the obstruction in less than 15 seconds, timing will continue normally.

5.8.5. Building Categories

For contest and record purposes, the following ceiling heights apply:

Category 1 up to 9.15 metres

Category 2 over 9.15 metres.

Ceiling height is the distance from the floor to the highest point in the building that can be seen looking vertically up from the floor.

5.8.6. Ceiling Factors

For Decentralised contests, performances in buildings of varying ceilings are converted to equate with a 'standard' ceiling. The duration is multiplied by the factor below to give the standardised duration.

Ceiling Height	Factor
Zero to 2.99 metres	2.60
3.00 to 3.49 metres	2.30
3.50 to 4.49 metres	2.00
4.50 to 4.99 metres	1.60
5.00 to 5.49 metres	1.47
5.50 to 5.99 metres	1.37
6.00 to 6.49 metres	1.30
6.50 to 6.99 metres	1.25
7.00 to 7.49 metres	1.20
7.50 to 7.99 metres	1.16
8.00 to 8.99 metres	1.09
9.00 to 9.99 metres	1.03
10.00 to 10.99 metres	0.98
11.00 to 11.99 metres	0.94
12.00 to 12.99 metres	0.91
13.00 to 13.99 metres	0.88
14.00 to 14.99 metres	0.85
15.00 to 15.99 metres	0.83
16.00 to 16.99 metres	0.79
17.00 to 17.99 metres	0.76

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