

Model Flying NZ Flying Rules
Section 10c: Radio Control Aerobatics Classic Schedule

1. CLASSIC

1.1 General (Note that the current FAI guidelines also apply)

Classic Pattern – Classic – is currently the only Classic class flown in New Zealand. It is open to pilots of all abilities – from beginner to expert.

Currently any MFNZ legal model of less than or equal to 50cc (glow, gas, or electric equivalent) can be flown. However, as you will see, there are points awarded for embracing 'classic' era models and technology.

1.2 Who can enter?

Any MFNZ member can come along and give this schedule a go. Maybe you have a classic pattern model in your workshop or are interested in building one – that is great! Come along and give this class a go! Anyone past the 'solo' stage is welcome to come along and have a go! If you need help, please ask.....

1.3 Type of model

Because we wish to encourage participation, you can currently fly any MFNZ legal model in this class, so long as it is less than or equal to 50cc gas or glow (or electric equivalent) – but bigger models may sometimes be allowed at the CD's discretion. Eventually, we may require a 'classic' pattern plane – something 1970-~~1985-1983~~ would be appropriate (pre-turnaround designs). Older designs can of course be used. Currently, although you can fly a variety of models, the scoring is such that those flying classic models will likely gain a few extra points, but this class is all about coming along and having some fun flying an older schedule. Model must of course meet MFNZ guidelines, including for noise.

1.4 Competition Format

1.4.1 To enter, competitors must register. This enables a draw to be made to determine flying order. A pilot's briefing will be held prior to commencement of the contest, and this is a good time to ask any questions. Time permitting, a demonstration flight of the schedule will follow for the benefit of both contestants and judges.

1.4.2 The contest will consist of several 'rounds'. A line director will let you know when to start your motor. The contestant shall have a helper/caller to assist with the start, place the aircraft on the flight line, call the manoeuvres during the schedule, and retrieve the aircraft after the flight.

1.4.3 The Classic sequence is flown as a series of centre manoeuvres, one on each upwind and downwind pass. The name of each manoeuvre must be announced to the judges. Commence must be called 1-2 seconds before the start of each manoeuvre, and complete called 1-2 seconds after the finish of each manoeuvre. Provided there is neither a call of 'Commence', nor the aircraft flown past centre, the pilot may manoeuvre the aircraft to position it to his/her satisfaction prior to execution of the manoeuvre. However, all manoeuvres must be completed within the allocated flight time of 10 minutes from beginning to start the engine (or connecting the batteries in the case of an electric model).

1.4.4 Scoring

Each manoeuvre (and two bonus sections) are scored 0 – 10. The 1971 FAI F3A rules are available for download and provide an invaluable framework for how the schedule was flown and what the schedule should look like. There is no doubt this will be the best way to present the manoeuvres! A couple of interesting notes:

~~The take-off finishes as the model commences its first turn.~~

- To avoid confusion, the take off sequence is as per the NZ Clubman takeoff sequence. Takeoff, followed by a 90 degree turn away from the flightline, followed by a 270 in the opposite direction. The manoeuvre finishes when the model passes through 'centre'. See NZ Clubman Rules for full description and downgrade.
- The stall turns in the 'Figure M' are not downgraded unless greater ~~then than~~ two wing spans over the top. The stall directions ~~must can~~ be in either direction. the same (left, left or right, right).
- The double Immelmann only has brief sections of straight flight after the half rolls.
- The slow roll should be 5 seconds in duration.
- The landing sequence is as per NZ Clubman rules. Judged from a height of approx. 5m. In the spirit of the classic rules at the time, touching down inside a 15m circle (or runway markings 7m, either side of centre) will receive a better score than touching down outside those markings. Judges discretion on downgrade. Note the model does not have to stop within the markings, just has to touch down.
- Classic Awesomeness Bonus. The bonus is to reward those flying true classic models. Someone flying a 50cc Extra or a modern two meter model should score a zero here! But the guy flying an old design (1960's – 1983), maybe with a pipe or retracts, should score well. If the model flies fast and sounds good – more points! And if you can smell castor oil, and the pilot is telling everyone how long it took to

hand carve the propeller – then it will score even better! Keep in mind this bonus is here to encourage pilots to come along with a 'classic' design, and not just fly their current plane. Remember, if it's a modern model, think carefully before giving any bonus points.

You had better practice your take offs and landings 😊

1.5 Classic Schedule

4.5 The NZ classic schedule is a modified version of the 1971 sequence, with a manoeuvre in each upwind / downwind pass

	<u>NZ Classic Schedule</u>	<u>K</u>	<u>Required direction</u>
<u>1.</u>	<u>Take Off</u>	<u>1</u>	<u>Into wind</u>
<u>2.</u>	<u>Figure M</u>	<u>3</u>	<u>Into wind</u>
<u>3.</u>	<u>Slow Roll</u>	<u>3</u>	<u>Downwind</u>
<u>4.</u>	<u>Double Immelmann</u>	<u>2</u>	<u>Into wind</u>
<u>5.</u>	<u>Four Point Roll</u>	<u>3</u>	<u>Downwind</u>
<u>6.</u>	<u>Top Hat</u>	<u>2</u>	<u>Into wind</u>
<u>7.</u>	<u>Three Outside Loops</u>	<u>3</u>	<u>Downwind</u>
<u>8.</u>	<u>Horizontal Eight</u>	<u>2</u>	<u>Into wind</u>
<u>9.</u>	<u>Three Horizontal Rolls</u>	<u>3</u>	<u>Downwind</u>
<u>10.</u>	<u>Three Turn Spin</u>	<u>2</u>	<u>Into wind</u>
<u>11.</u>	<u>Landing</u>	<u>1</u>	<u>Into wind</u>
<u>12.</u>	<u>Classic "Awesomeness" Bonus *</u>	<u>10</u>	

	<u>Classic Schedule 1971</u>	<u>K</u>	<u>Recommended direction</u>
<u>1.</u>	<u>Take Off</u>	<u>10</u>	<u>Into wind</u>
<u>2.</u>	<u>Figure M</u>	<u>15</u>	<u>Downwind</u>
<u>3.</u>	<u>Double Immelmann</u>	<u>10</u>	<u>Into wind</u>
<u>4.</u>	<u>One Outside loop</u>	<u>15</u>	<u>Downwind</u>
<u>5.</u>	<u>Cuban Eight</u>	<u>10</u>	<u>Into wind</u>
<u>6.</u>	<u>Slow Roll</u>	<u>15</u>	<u>Downwind</u>
<u>7.</u>	<u>Three Inside Loops</u>	<u>10</u>	<u>Into wind</u>
<u>8.</u>	<u>Four Point Roll</u>	<u>15</u>	<u>Downwind</u>
<u>9.</u>	<u>Straight Inverted Flight</u>	<u>10</u>	<u>Into wind</u>
<u>10.</u>	<u>Three Horizontal Rolls</u>	<u>15</u>	<u>Downwind</u>
<u>11.</u>	<u>Horizontal Eight</u>	<u>10</u>	<u>Into wind</u>
<u>12.</u>	<u>Top Hat</u>	<u>15</u>	<u>Downwind</u>
<u>13.</u>	<u>Three Turn Spin</u>	<u>10</u>	<u>Into wind</u>
<u>14.</u>	<u>Rectangular Approach</u>	<u>10</u>	<u>Into wind</u>
<u>15.</u>	<u>Landing</u>	<u>15</u>	<u>Into wind</u>
<u>16.</u>	<u>Classic model (up to 1985)?, coolness (retracts, old design)</u>	<u>30</u>	
<u>17.</u>	<u>Flight impressions — including speed (speed is good!)</u>	<u>30</u>	

SPORTING CODE

Section 4. --- AEROMODELS

(1971)

For maximum points, pick a classic pattern model from the earliest designs up to 1985, and fitting these criteria. As already noted above, almost any model can fly in this class, just losing some of the bonus points.

[For reference purposes, here are the 1971 manoeuvre descriptions, and judging down grades.](#)

[Note that the order is slightly different. Ignore the 1971 K Factors.](#)

5.1.3. General characteristics of radio-controlled aerobatic power models:

Maximum surface area (S _t):	150 dm ²
Maximum total weight:	5 kg
Minimum loading:	12 g/dm ²
Maximum loading:	75 g/dm ²
Maximum total swept volume of the motor (s):	10 cm ³
The motor (s) must be fitted with effective silencer (s)	

SCHEDULE OF MANOEUVRES FOR RADIO-CONTROLLED AEROBATIC POWER MODELS

5.1.13.

The manoeuvres must be executed during an uninterrupted flight in the order in which they are listed and the competitor must indicate in writing, before the start of the flight, any manoeuvre he will not execute.

The name and start of each manoeuvre must be announced by the pilot or his assistant. Un-announced manoeuvres will not be scored. It is recommended that the end of each manoeuvre also be announced. The landing manoeuvre need not be announced but must be executed in an uninterrupted manner.

The competitor may make only one attempt to execute each figure during any one flight.

The pilot has ten minutes in which to start his motor and complete the programme of manoeuvres.

One motor must be running during execution of the manoeuvres 5.1.13.1. to 5.1.13.13. inclusive.

5.1.13.1. Take-off: The model must stand still on the ground with the motor running without being held by the pilot or mechanic and must then take off into wind. The taxi-run should be straight and the model should lift gently from the ground and climb at a gradual angle. The take-off is completed when the model is turned out of the take-off path. The take-off should be down-graded at least one point for each of the following reasons:-

1. Model does not stand still when released.
2. Changes in heading during the run.
3. 'Jumping' from the ground.
4. Retouching the ground after becoming airborne.
5. Too steep a climb angle.
6. Gallops in elevation during climb.
7. Changes in heading during climb.
8. Dropping a wing tip

K = 10

5.1.13.2. Figure M: The model starts in straight and level flight, pulls up to a vertical altitude, performs a stall turn (left to right) through 180 deg. then makes half an inverted loop pulling up again to vertical flight, performs a second stall turn in a direction opposite to the first stall turn and then recovers on the same altitude and heading as the entry. When viewed from the side, the model creates the letter 'M'. The manoeuvre should be down-graded for the following reasons:-

1. Model not level at start.
2. Does not become vertical.
3. Turns left or right during pull-up.
4. Turn radius at top of stalls is larger than two wing spans.
5. Turns at top of stall are less than 180 degrees.
6. Diving paths are not parallel to climbing paths.
7. Bottom of inverted position is at different altitude than entry.
8. Turning point of second stall turn is at different altitude from the first turn.
9. Manoeuvre not finished at same altitude as entry.
10. Model not level at finish of manoeuvre.
11. Model slides tail first.
12. If second stall turn is in the wrong direction, score zero.

K = 15

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5.1.13.3. Double Immelman: Model starts in level flight, pulls up into a half loop, followed by half a roll, flies straight and level for approximately one second, then makes half an outside loop, followed by half a roll, recovering in straight and level flight. The manoeuvre should be down-graded for any of the following reasons:-

1. Model not level at start.
2. Model deviates left or right during half-loop.
3. Half-loop not completed exactly above point of commencement of half-loop.
4. Half-roll does not commence immediately after half-loop.
5. Plane deviates from a straight line during roll.
6. Model flies longer than one second upright before commencing half outside loop.
7. Model deviates left or right during half outside loop.
8. Half outside loop not completed at same altitude as entry.
9. Half outside loop not completed at exactly below point of commencement.
10. Model does not commence half-roll immediately at bottom of half-loop.
11. Model travels farther during second half roll than it did in first half-roll.
12. Model does not finish in level flight.
13. Model does not finish on same heading and altitude as entry. K = 10

5.1.13.4. Inverted Loops: The model commences the inverted loop flying straight and level, then noses down into three inverted loops and recovers flying straight and level on the same heading and altitude as the entry. The first loop may be down-graded because:-

1. Entry not level.
2. Loop not round.
3. Loop deviates left or right.
4. Finish of loop not at same altitude as entry.
5. Recovery not on same heading as entry.

The second loop may be down-graded because:-

1. Not on same heading as first loop.
2. Not the same diameter as first loop.
3. Loop deviates left or right.
4. Finish of loop not at same altitude as entry.

The third loop may be down-graded because:-

1. Not on same heading as first loop.
2. Not the same diameter as first loop.
3. Loop deviates left or right.
4. Recovery not at same altitude as entry.
5. Recovery not on same heading as entry.
6. Recovery not level.

Note: Loops must appear round and super-imposed to the ground observer even in the presence of the wind.

K = 15

5.1.13.6. Slow Roll: Model commences from straight and level flight and then rolls slowly at a uniform rate through one complete rotation. The approximate time of the roll to be five seconds. Down-grading shall result for any of the following reasons:-

1. Model not level at entry.
2. Model deviates from a straight line during roll.
3. Roll rate not uniform.
4. Model does not roll through exactly one revolution.
5. Model changes altitude during roll.
6. Model changes heading.
7. Roll rate is too rapid resulting in much less than five seconds.
8. Model is not level at finish of roll.

5.1.13.8. **Four-Point Roll:** The model starts in straight and level flight, does one quarter of a horizontal roll till wings are vertical, then hesitates, to demonstrate controlled "knife-edge" flight. It then continues with a second quarter roll to inverted, hesitates, does another quarter roll to "knife-edge" position again and finally does a quarter roll to upright and level flight at same altitude and heading as entry. The manoeuvre will be down-graded for the following:-

1. Not level during entry.
2. Rolls more or less than 90 degrees and does not hesitate with wings vertical.
3. Does not provide ample hesitation to demonstrate controlled "knife-edge" flight.
4. Wings not horizontal at end of second quarter of rolls.
5. Repeat 2, 3 and 4 above for remaining third and fourth quarter rolls.
6. Model changes altitude or heading during roll.

5.1.13.10. **Rolls:** Model commences from straight and level flight then rolls at a uniform rate through three complete rotations and finishes in straight flight, all on the original heading; the time of the three rolls to be approximately four seconds. Down-grading shall result from any of the following reasons:-

1. Model not level at entry.
2. Model deviates from straight line during rolls.
3. Roll rate not uniform.
4. Model does not roll through exactly three revolutions.
5. Model changes altitude during rolls.
6. Model changes heading during rolls.
7. Roll rate is extremely rapid so that rolls are completed in less than three seconds.
8. Model is not level at the finish of the rolls.

K = 15

5.1.13.11. **Horizontal Eight:** The plane commences flying straight and level, pulls up into three-quarters of an inside loop, does one full inverted loop starting from straight down, the quarter of an inside loop finishing in straight and level flight. The Horizontal Eight may be down-graded because:-

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5.1.13.11. Continued.

1. Entry not level.
2. First loop not round.
3. Plane deviates left or right during first loop.
4. Plane not vertical at start of loop.
5. Second loop not the same diameter as first loop.
6. Second loop not round.
7. Second loop deviates left or right.
8. Does not finish level.
9. Does not finish on same heading as entry.
10. Does not finish at same altitude as entry.

K = 10

5.1.13.12. Top Hat - Model starts in straight and level flight, pulls up into vertical climb and makes a half roll, then levels out inverted on the same heading as entry. After a short inverted flight, model dives vertically, performs a half roll and finally recovers in straight level upright flight on the same heading and height as entry. The Top Hat should be down-graded if:

1. Model does not start level.
2. Model does not go vertical before starting roll.
3. Roll does not stop at exactly 180 degrees from entry.
4. Model does not climb vertically for a brief period of completing roll.
5. Model does not go to an exactly horizontal inverted position after the quarter loop.
6. Model does not fly inverted for the same distance as the vertical climb and roll.
7. Model does not dive vertically briefly before starting half roll.
8. Second half roll not started at the same altitude as that where the first half roll was completed.
9. Second half roll not completed at same altitude as that where first roll started.
10. Model does not dive vertically for a brief period after completing second half roll.
11. Model deviates left or right of the entry path at any point in the manoeuvre.
12. Model does not recover at same altitude and heading as entry.

K = 15

5.1.13.13. Spin - Three Turns - The model establishes a heading direction by flying straight and level, pulls up into a stall and commences the spin through one, two, three turns and recovers to level flight on the same heading as the initial flight direction. The judge must watch carefully to be sure this is a spin and not a vertical roll or a spiral dive. In the Spin, some part of the model always intersects an imaginary vertical line along the path of descent. In the Spiral dive, the model circles around, out outside of the imaginary vertical line. The Spin may be down-graded because:-

1. Initial heading is not level.
2. Commencement of first spin is sloppy or uncertain.
3. Does not do exactly three turns. Less than two or more than four turns should be scored zero.
4. Does not finish on same heading as initial heading.
5. Does not finish level.
6. If any of the three turns are spiral dives rather than spins the score is zero.

K = 10.

5.1.13.15. Landing - The model flares smoothly to touch the ground with no bouncing in heading and rolls to a stop.

- K = 15 when landing is in 15m diameter circle.
- K = 10 when landing is in 30m diameter circle.
- K = 5 when landing is outside 30m diameter circle.

The landing should be down-graded because:

1. Approach to ground is too steep.
2. Model impacts ground due to lack of flare-out.
3. Model bounces on landing.
4. One wing low.
5. Model deviates left or right while rolling to a stop.
6. If the model ends on its nose or back - zero points.