



# Academy of Model Aeronautics

5161 East Memorial Drive, Muncie, Indiana 47302  
(765) 287-1256 – Voice • Competitions Fax (765) 286-3303  
[www.modelaircraft.org](http://www.modelaircraft.org)

## RULES CHANGE PROPOSAL FORM INSTRUCTIONS

This document is designed for you to print out and write in your proposal. If you want to type your proposal, PLEASE go back to the website and select ON-LINE PROPOSAL FORM. Please complete this form, scan into your computer and e-mail it to: [ruleschanges@modelaircraft.org](mailto:ruleschanges@modelaircraft.org). A copy will be forwarded to the appropriate Contest Board Chairman. The current issue of Competition Regulations must be referenced.

PROPOSAL NO. OFF19-02

(To be inserted by Headquarters)

RECEIVED DATE 4/24/2017

(To be inserted by Headquarters)

REVISE DATE \_\_\_\_\_

(To be inserted by Headquarters)

VERSION NUMBER \_\_\_\_\_

(To be inserted by Headquarters)

PROPOSAL TYPE (Check One):  Basic  Urgent  Safety/Emergency  Interpretation

Cross (Indicate Original Proposal Number) \_\_\_\_\_

### SELECT APPLICABLE COMPETITION REGULATIONS

- |  |   |   |  |
|--|---|---|--|
| <input type="checkbox"/> General Section | <input checked="" type="checkbox"/> Outdoor Free Flight | <input type="checkbox"/> Indoor Free Flight | <input type="checkbox"/> CL General          |
| <input type="checkbox"/> CL Speed        | <input type="checkbox"/> CL Racing                      | <input type="checkbox"/> CL Navy Carrier    | <input type="checkbox"/> CL Aerobatics       |
| <input type="checkbox"/> CL Combat       | <input type="checkbox"/> CL Special Events              | <input type="checkbox"/> RC Aerobatics      | <input type="checkbox"/> RC Scale Aerobatics |
| <input type="checkbox"/> RC Pylon Racing | <input type="checkbox"/> RC Helicopter                  | <input type="checkbox"/> RC Soaring         | <input type="checkbox"/> RC Fixed-wing Scale |
| <input type="checkbox"/> CL Scale        | <input type="checkbox"/> RC Combat                      | <input type="checkbox"/> RC Special Events  |  |

### Brief summary of the proposed change.

The performance of E36 models is posed to increase dramatically due to a recent significant increase in motor power. To address excess performance it is proposed to shorten motor as a function of the **motor's wattage** and the **model's weight**.

**Exact wording proposed for the rule book. (List paragraph numbers where applicable. Example: Change "quote present rule book wording" to "exact wording required".**

*(Page 38, inserted under the table in paragraph 3.2. The last column on E36 motor runs is eliminated.)*

### E36 motor runs

The standard motor run in the first three flights will be determined by the motor's wattage and the model's weight. The wattage of a motor with the propeller used in flight is measured statically, 5 seconds after reaching full power, using a freshly charged battery. The wattmeter will be equipped with XT30 connectors, with a male connector on the battery side. The model's weight is measure in grams.

$$\text{Motor run} = 4.5 * \text{Weight (grams)} / \text{Wattage}$$

The motor run is 10 seconds or less, rounded within 0.5 second and is posted on the model's pylon or fuselage together with the model's wattage and weight in grams. The CD can request a static wattage

test to verify the model's motor run.

The standard motor run will be halved in the subsequent flights. For example, if the motor run is 9 seconds in the first three flights, it would be 4.5 seconds on the following flights.

**Logic behind proposed change, including alleged shortcomings of the present rules. State intent for future reference.**

Recently the Chinese have developed a new generation of powerful quadcopter motors that can also be used in E36s. Consequently, fliers using such motor have been able to gain extraordinary heights in 10 second motor runs. (See Tapio Linkosalo's article in the 2017 Symposium, reaching heights exceeding 150 meters, or 490 feet.)

The underlying issue is the availability of more powerful motors and the need to keep flights in sight and on the field. Since this is an electrical issue, a Wattage static test quantifies it directly. Measuring Wattage is straight forward and has been used in F1Q for models without energy limiters. A Wattmeter can cost under \$25.

The numeric 4.5 is the energy budget coefficient, in Watt-sec or Joules per gram. This is a generous energy budget, as F1Q currently have a 4 Joules per gram budget, with a good chance of having it reduced due to high performance.

Suppose an E36 model weighs 200 grams and has a 100 Watt motor. Then its motor run is

$$\text{Motor run} = 4.5 * 200 / 100 = 9 \text{ seconds.}$$

Had the model weighed 212 grams, the motor run would be 9.54 seconds, rounded up to 10 seconds. But a lighter model weighing 211 grams would have a 9.49 seconds, is rounded down to 9 seconds.

The e-timer manufactures could address the motor runs by a two-step process:

- (1) Select the basic motor run (10 to 6 seconds) with a beep back.
- (2) Have a toggle switch or an equivalent to half the motor run.

**New event test data/information (new events only), please provide what testing of this new event has taken place to include number of participants and number of contests.**

This short video should a wattage test of super motor used in E36 that reads close to 120 W.

<https://youtu.be/RZHTQCf0TCM>

**Effect, if any, on current AMA records.**

All records for this event will be reset.

**Note: The Contest Board Chairman may, in coordination with the submitter of the proposal, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and to avoid ambiguity provided the proposal intent is not changed.**

Aram Schlosberg      AMA # 63362

Version 01/01/2016

79-02 212 St. Bayside NY 11364 718 479 0478 aram.schlosberg1@verizon.net  
Signature *Aram Schlosberg* 4/24/17

