

ACES rules 2009-2010

Appendix 3.4 E-Engine short version

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3.1 All E-setups must be suitable for a minimum flight time of 450sec in combat. Remember that this is different from normal flight. You will consume more power when flying with a streamer and you must allow for RPM testing at the start of your heat.

3.2 All E-power systems will be limited by the maximum rpm and the pitch of the propeller. This "**prop-stream-sum**" (**PSS**) will help limit the maximum speed of the model. The "prop-stream-sum" is calculated by multiplying the maximum RPM by the pitch of the propeller in inches. The current limit of the PSS is set at 72000. This system of control allows for a wide variety of power systems to be used without restrictions other than those based on performance.

Examples:

PSS	pitch	max RPM, rounded
72000	7	10.300
72000	6,5	11.100
72000	6	12.000
72000	5,5	13.100
72000	5	14.400
72000	4,5	16.000

5. Replacement of IC-engines:

engine class	max. Wh	max. prop diameter	min weight	max. weight
.10	28 Wh	9 inch	500g	1500g
.15	38 Wh	9 inch	700g	1500g
.21	50 Wh	10 inch	1000g	1700g ; from 01.01.2010 on: 1500g
.25	67 Wh	11 inch	1200g	1700g ; from 01.01.2010 on: 1500g
normal twin	2x .10 or .15 setups	9 inch	2x see above	1700g
all other multiengine A/C	67 Wh	11 inch	1200g	1700g

6. Penalties:

At large events all models will be RPM tested before the heat starts. Your motor, battery and propeller must be of similar/same specifications as the time the model was booked into the contest. If you have changed your system from this you need to ask the contest director for permission to continue. Your allowed rpm and prop size needs to be documented on your score sheet (it helps the judge).

6.1 According the § 3.4.2 Engine over rpm limit

Check your maximum allowed RPM. If your rpm exceeds the allowed limit by more than 100rpm you will receive a penalty for trying to compete with excessive power. Remember the max rpm figure is regulated by the pitch of your propeller.

Example: 72.000 PSS divide 5 inch pitch = 14.400 RPM (max. deviation over the limit is 14.500 RPM)

The RPM measuring shall be done inside 15 sec.

6.2 early landing in case of too much consumed energy

No penalty is given if a forced landing was due to technical damage, streamer in the prop, collision, plane crash or any other unforeseen circumstance.

If the A/C is forced to land **without** a technical problem due to lack of accu/battery power and if the contest judge or organiser has doubts of a correct E-setup they can appoint a "technical control".

(The organisation will have a specialist for this duty. He will check for excessive power consumption.) The pilot can get a penalty of 0 positive points for this round if he is found to be using too much power.

These point is to discourage the E-pilots who go "over the top".