Academy of Model Aeronautics
5161 East Memorial Drive, Muncie, Indiana 47302
(765) 287-1256 – Voice • Competitions Fax (765) 286-3303
www.modelaircraft.org

EXHIBIT A RULES CHANGE PROPOSAL FORM

PROPOSAL NO. CLA 19-01
(To be inserted by Headquarters)

RECEIVED DATE 4/3/17
(To be inserted by Headquarters)

REVISE DATE _____
(To be inserted by Headquarters)

VERSION NUMBER _____
(To be inserted by Headquarters)

RULES CHANGE PROPOSAL FORM

Send to AMA Headquarters via e-mail at: ruleschanges@modelaircraft.org **A copy will be forwarded to the appropriate Contest Board Chairman.**

USE BLACK INK

PROPOSAL TYPE (Check One): ☒ **Basic** ☐ **Cross** **Indicate Original Proposal Number** CL AEROBATICS 19-01

☐ **Urgent/Safety/Emergency** ☐ **Interpretation**

☐ **General Section** ☐ **Executive Council** ☐ **Outdoor FF** ☐ **Indoor FF** ☐ **CL Speed**

☐ **CL Racing** ☐ **CL Navy Carrier** ☒ **CL Aerobatics** ☐ **CL Combat** ☐ **CL Special Events** ☐ **RC Aerobatics**

☐ **RC Scale Aerobatics** ☐ **RC Pylon Racing** ☐ **RC Helicopter** ☐ **RC Soaring** ☐ **Scale** ☐ **Electric**

☐ **Special Events** ☐ **RC Combat**

Brief summary of the proposed change:

TO PERMIT USE OF SPECTRA LINES IN CLPA.

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

SEE ATTACHMENT "A"

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

SEE ATTACHMENT "B"

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.

N/A

Effect, if any, on current AMA records.

N/A

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.

1. Proposer SEE ATTACHED **AMA #**

Address TOM HAMPSHIRE 430 GREENWICH ST.

City BELVIDERE **State** NJ **Zip** 07823

Day Telephone (908) 475 5787 **Evening Telephone**( )

E-Mail address TH31919 @ GMAIL .COM **Date** 3-19-2017

Signature SEE ATTACHED

Dennis Adamisin AMA# 4270 Date 19-MAR-2017

Phil Cartier AMA# 62749 Date 3/19/17

Tom Hampshire AMA# 31919 Date 3-19-17

Robin (Bob) Hunt AMA# 1114 Date 3-19-17

Frank Williams AMA# 4831 Date 3/26/17

4. CONTROL LINES (as per the charts)

4.1

Refer to the Control line general rules for control line materials and construction. Events 322-326 do not have a requirement for the lines to meet the ASTM Tensile Strength Standards. Spectra lines, also known as SPECTRA (Gel Spun Ultra high Molecular weight Polyethylene) shall be permitted for CLPA competition. This shall not affect the use of stainless steel lines; either material may be used at the flier's option.

5. PULL TEST

The lines shall be of the following diameters/rated strengths:

Model Weight (kg)	Required Minimum Diameter of Each Line (mm)			
	Single Strand		Multi Strand	GSUMP
	1 Line	2 Lines	2 Lines	2 Lines Rated Strength (Nominal Diameter)
0-0.396	0.356	0.203	0.203	20 lb (0.254)
0.397 – 1.134	0.356	0.254	0.305	40 lb (0.330)
1.135-1.814	0.356	0.305	0.381	60 lb (0.406)
1.815-2.551	0.406	0.356	0.457	100 lb (0.457)
2.551-3.486	0.533	0.457	0.533	150 lb (0.559)

Model Weight (ounces)	Required Minimum Diameter of Each Line (inches)			
	Single Strand		Multi Strand	GSUMP
	1 Line	2 Lines	2 Lines	2 Lines Rated Strength (Nominal Diameter)
0-14	0.014	0.008	0.008	20 lb (0.010)
14.01-40	0.014	0.010	0.012	40 lb (0.013)
40.01-64	0.014	0.012	0.015	60 lb (0.016)
64.01-90	0.016	0.014	0.018	100 lb (0.018)
90.-123	0.021	0.018	0.021	150 lb (0.022)

* All aircraft will be pull tested to 10G, 10 times the model weight.
* All lines shall be between 25 and 70 feet long.
* Models with electric power shall be weighed with the battery on board.
* Maximum weight of any model shall be 3.5kg, 7lb, 11oz.

In the case of GSUMP lines, the rated strength of the lines as provided by the flier shall govern, as the diameter do not admit of precise thickness measurement.
The pull test alone is to be used to determine compliance herewith.

The knots shall be as set forth in the General section of these rules. Only lines sold under the Spectra or Dyneema brand names shall be used, and lines sold as an equivalent product shall be prohibited. Lines sold under the Fusion name shall also be prohibited.

As per the charts, pull tests shall be performed immediately before each flight. The method for holding the model for the pull test as specified in the Control line General rules shall not apply to Control Line Precision Aerobatics. Considering the fragile construction of the Precision Aerobatics models they may be held in any manner as long as no bodily contact or other interference is made to the leadouts, control lines or any other element of the control system.

ATTACHMENT "A"

Spectra lines have been used for several years now, for general use and in Combat. The material has proven to be much less subject to damage than steel. The typical pit accident of stepping on or tangling lines can pretty much be ignored.

The primary advantage of Spectra in flight is that the Spectra material is about 10% of the weight of steel for the same rated strength. In order to minimize the stretch of Spectra many users will elect to use thicker material than that simply necessary to pass the 10G pull test. Given this, a good estimate for the weight is to say that the Spectra weighs about 20% of the weight of steel. This makes it much easier to properly trim a model about the roll axis.

One other property of Spectra is that it does not conduct electricity. This does not mean that these lines may be used in a lightning storm or near high tension lines. A high voltage shock can result from the creation of an ionization path down the strand to ground. This phenomenon can result from small amounts of moisture, dirt, skin oil or any other contaminent on the surface of the lines, not from the lines themselves being conductive. Spectra has a melting point of about 270 Fahreheit. This should mean that in a flyaway where the lines are caused to short out a high tension line from conductor to conductor, the Spectra will vaporize without causing extensive damage to the high tension line, circuit breakers and attendant transformers. The AMA claims department has expensive experience with the ability of steel lines to do just that.

ATTACHMENT "B"