Proposal rules for contests large models of altitude rockets

Introduction

Following regulations and definitions refer only to contest large models of altitude rockets „LMAR“ and modified or completed valid constution CIAM-FAI.
Others here unentered case must follow constitutional valid regulations of CIAM-FAI.

Part I – Contest definition.

Altitude contest of large rocket models is designated for rocket models, powered by one or more rocket motors with total impulse maximum 40 Ns /“E“/.
The winner will be determined ,by the model which reaches the highest altitude, or summary several maesured altitudes, that vere measured and calculated.
Contest can be writen out in two section with separate evaluation :

A : One-stage models
B : Two-stage models

Part II – Model definition.

II.1. Large model of altitude rocket „LMAR“.

Large model of altitude rocket „LMAR“ is aeromodel which fly up without using aerodynamic uplift to repress earth gravitation, be powered with rocket motor, contain device for safe return of the model and its sections to earth and is made mainly from non-metalic materials. „LMAR“ maybe to one´s design and colour resemble actual sounding, research or operational rocket. Model must be designed like this, and be able to
make more than one flight.

II.2. Measurements of „LMAR“.

Models in one-stage conversion must have a minimum body diameter of 75 mm on minimum 50% general length. Length of model is minimum 1000 mm. A two-stage model diameter of the first stage must by 75 mm minimum. Total length of two-stage model is 1500 mm. Diameter of second stage is minimum 50 mm,
unbroken on minimum 500 mm length of stage. Minimal diameter 75 mm must be unbroken on minimum 600 mm overall length of model. Length of model or its stages is measured without overhung antenna being more than diameter 20 mm and including fins.

II.3. Material requests.

Model must be built mainly from non-metalic materials.
Main parts : nose cone, body tube and fins must be made from non-metalic materials.

II.4. Return device.

As return device is posible use parachute or streamer. Parachute must be open least partly. None parts of model
or return device oneself not allowed in arrival from model separate. Return device gotta effectively reduce landing speed of model.
Activate return device is possibly a various way /electronic or pyrotechnic/.

II.5. Surface finish.

Recommended surface finish shold be in bright colours /for good visibility/. The surface design compose of the licence number to a minimum 10 mm high /see FAI rules/. The general composition of design can be ones own creation or acopy of a real rocket. The rocket model can also compose of a sponsors logo

Part III – Rocket motors definition.

III.1. Rocket motor „RM“

Rocket motor is reactive motor on solid propellant substance, in which is chemical ingredients inflammable
character forward mixed and prepared in use, or is producer adapted that be able to put together imediately befor usage /for example, AEROTECH motors/. Motors-case can be produced from light metal alloy.
In contest may be use every commercialy made motors, whose performance chart were verification competent national institucion /for example FAI, national aeroclub, TRIPOLI/

III.2. Rocket motors application in contest.

For power „LMAR“ is possible use one or more motors of the total impulse 40 Ns,class „E“. For power two-
stage models may not be general impulse motor /motors/ in second stage biger as general impulse motor /motors/
first stage.

Part IV – Starting system requests.

IV.1. Motors firing of one-stage models, or first stage of two-stage models must be brought over electrical /electric igniter /. Person witch execute motor firing must observe the minimal safe distance 10 m . Starting system /launch pad/ must be up to standard, mimimum diameter 6 mm, minimum length 1000 mm. Be possible use too contact launching pad.

Part V – Contest organization.

V.1. Before every attempt of start will be fulfillment of requst on motor /motors/ and model checking contest
organizer or at it designation person.

V.2. Contest to run in three rounds or without designation rounds, but contest must be to run minimum two hours. In case biggies of the number of contestants is possible contest extend. Begining and end of the round or
contest must be on time proclamation. Individual as well as whole contest is controlled by organizer or at it designation person.

V.3. Every contestant may use in the contest two models. For achievement what the best results has contestant
chance three attempts. For place designation in contest will be inclusive two the best attempts of contestant.

V.4. Altitude measuring is possible make of three form:
1. Altitude measuring by clasical triangulation system with optical device.
2. Altitude measuring by the digital altimeter placing right in the model.
3. Altitude measuring by other trustworthy system mentioned in propozition of the contest.

V.5. Measuring statement of altitude must to be release till 30 min. after start of model. In case measureless altitude, have to be this fact release till 5 min. after start of model.

Part VI – Take-off security.

VI.1. Rocket model must be launched thus, that in flight could not endanger none static, flying object or persons. At doubts about flight properties is possible modl from contest to disqualify.

VI.2. Starts all rocket models on flying position, must be agreed or ignored exclusively with the Range Safety Officer /RSO/.

VI.3. Persons moving oneself localy and surround starting places must be warning earlier, how models be called to the start. Before starts must be run up contdown at least 5 second.

VI.4. Minimal distance of persons from starting post must be bigger than 25 meters. Person which start model gotta observe minimal distance 10 meters.

Part VII – Additional requirements and recommendations.

VII.1. At contemporary arrival on start, will be preferred contestant with smaller count of starts.

VII.2. For one-stage and two-stage models must be write out individual contests.

VII.3. Recommended start from launching pad about 8 mm diameter and 1200-1500 mm length.

VII.4. At crash of engine is possible permit on verbal request of contestant correcting start.

VII.5. Valid attempt about start is this attempt by which model left the launch pad.

VII.6. In case of even counts at several contestants, decide about the rank higher achieved altitude in individual
Attempts these contestants. /see point: V.3./

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P.S. These regulations will be making-up after know-how from competition in the 2010 year.

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