

The Gold Book
Version 2.0

The general intent of this sporting code is to provide a standard set of rules written in such a manner that they may be readily understood by an average person in order to give each competitor a sporting chance to compete with other competitors on the basis of skill, knowledge, and expertise. In those instances where there is no specific rule, interpretation of intent shall be made by the contest director.

The SIAR sporting code is drawn up by and administered by SIAR H.Q.

This edition of the sporting code is effective on and after May 15, 2002

Local, state, and Federal regulations on the use of Model rockets must be considered by those engaging in the sport.

1. Definitions:

1.1 Model Rocket means an aero model that ascends into the air propelled by means of a solid fuel rocket engine; that includes a device for returning it safely to the ground in a reusable condition.

2. Model Rocket Specifications:

2.1 The maximum weight, including model rocket engine[s] shall not exceed 1 lb.

2.2 There will be no more than 4.4 oz of solid propellant in any one model rocket.

2.3 Construction of the airframe shall be of wood, paper, rubber, or plastic.

3. Model Rocket Engines:

3.1 The following is a list of Model Rocket engine classes;

1/4A = 0.00 to 0.625NS

1/2A = 0.626 to 1.25NS

A = 1.26 to 2.50NS

B = 2.51 to 5.00NS

C = 5.01 to 10.00NS

D = 10.01 to 20.00NS

E = 20.01 to 40.00NS

F = 40.01 to 80.00NS

G = 80.01 to 160.00NS

4. Launching Operations:

4.1 During all launch operations, all authority for safety will be vested in the [R]ange [S]afety [O]fficer.

5. Sanctioned Competition:

5.1 The SIAR will sanction competition which is conducted in accordance with the rules set forth in this Gold Book 2002 edition.

5.2 The contest year begins on January 1st and ends on Dec.31st the same year.

5.3 Any contest may be held on more than two consecutive days.

5.4 Applications for the sanctioning of a Model Rocket meet must be sent in to SIAR H.Q. no later than 30 days before the date of the meet.

6. Contestants:

6.1 A contestant properly entered in a sanctioned meet, may have their models flown by proxy.

6.2 If the meet is sanctioned as a Closed meet, then only SIAR members may fly in the meet.

6.2a If the meet is sanctioned as a Open meet, then the contestant need not be a SIAR member.

7. Entries:

7.1 Each contestant may enter only 'One' model in each event. The model that is entered, processed and makes the first flight shall be the same model that makes the second flight. There shall be no substitution of models, except as provided in Rule 7.2. Only engines and/or recovery devices may be changed for the second flight.

7.2 During any official flight, if a model has a malfunction of the engine and can not be flown due to damage, a second model can be used in place of the first one.

7.3 Each entry shall pass a safety inspection given by the RSO before each flight.

7.4 The pre-flight inspection must include a visual check of the markings on the engine(s) for proper impulse power.

7.5 There must be at least 2 entries officially entered and passed by the RSO before an event can be held.

7.6 If the meet is sanctioned as a SIAR Record meet, (that is a meet were any SIAR member may try to break or set a record), then rule 7.5 does not apply.

8. Official Flights:

8.1 Time and weather permitting, each contestant shall be given an opportunity to make two official flights in each competition event entered.

8.1a Unless otherwise specified, the best time of the 2 flights shall be used to determine a contestant's score.

8.2 A flight is official if the model leaves the launching device, loses contact with the launching device or becomes airborne, except in the case of an engine malfunction, in which case it is not an official flight.

8.3 Three misfires shall be counted as one flight.

9. Competition Points and Championships:

9.1 Competition points will be awarded to each contestant on the basis of the following schedule:

25 points for 1st place.

15 points for 2nd place.

10 points for 3rd place.

05 points for 4th place.

9.2 In case of a tie in any of the first 4 places, duplicate points will be given.

9.3 Competition points will cumulative for each SIAR member or SIAR team who enters and flies in sanctioned competition during each contest year.

10. Altitude Data:

10.1 All entries in any event for which an achieved altitude figure is scored shall be tracked if flight by theodolites or any other reasonable tracking system.

10.2 One or more tracking devices will be used on a measured baseline of at least 100 ft.

10.3 Angular data obtained from theodolite devices will be reduced to an achieved altitude figure by means of trigonometry or by computer software.

10.4 The computed altitude in feet or meters from each tracking stations altitude data must be within 10% of each other to be considered valid.

10.5 If using only one tracking station, then rule 10.4 does not apply.

11. Timing Data:

11.1 In all events for which a time of flight figure is scored, at least one timer, but not more than two timers, will be stationed in the launching area with a stop watch(s).The timer(s) may not leave the timer box to keep the model in sight. A 2nd or 3rd member of the timing team may use binoculars to keep the model in sight. When the model is lost by either the timer(s) or the member using binoculars, the timing will be stopped.

11.2 The binoculars will be no more nor less than 7x(x=power).

11.3 All entries will be timed from the first motion on the launcher until the part to be scored for time of flight touches the ground or caught in tree, power lines, or lost to sight.

12. SIAR Model Rocket Performance Records:

12.1 All records can be set either at a model rocket contest, or any time/place.

12.2 SIAR records may be set in any of the following events:

Altitude ... Payload ... Single Egglofting

Dual Egglofting ... Streamer Duration

Dual Streamer Duration ... Parachute Duration

Dual Parachute Duration ... Apollo Parachute Duration

Boost-Glider Duration ... Dual B/G Duration

Advanced B/G Duration ...Rocket Glider Duration

12.3 Attempts to surpass an established record must exceed by 1% the value of the established record.

12.4 All data must be submitted to SIAR-HQ in written form, or via text E-Mail.

13. Altitude Competition:

13.1 Altitude competition comprises 7 events open to single or multi-staged rockets, with the entry achieving the highest maximum altitude as tracked and recorded being the winner.

13.2 Altitude competition will be divided into classes based on the maximum allowable total impulse of the engine(s) powering the rocket. Any number of engines may be used in any arrangement, so long as the sum of the total impulses does not exceed the maximum impulse for that class.

13.3 The following are classes for the Altitude events:

Class	Total Impulse(N.S.)
0	0.01 - 1.25NS
1	1.26 - 2.50NS
2	2.51 - 5.00NS
3	5.01 - 10.00NS
4	10.01 - 20.00NS
5	20.01 - 40.00NS
6	40.01 - 80.00NS
7	80.01 - 160.00NS

14. Payload Competition:

14.1 Payload competition comprises 5 events open to model rockets that carry one 1 oz payload. In this event the rocket achieving the highest maximum altitude as tracked and recorded will be the winner.

14.2 The payload carried in a model must be completely enclosed and contained within the model. The payload must be removable and the payload must not separate from the model

in flight.

14.3 The model rockets used in these events must use one or more parachutes for recovery.

14.4 The classes for this event are as follows:

Class	Total Impulse
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C1.1	0.01 - 5.00NS
C1.2	5.01 - 10.00NS
C1.3	10.01 - 20.00NS
C1.4	20.01 - 40.00NS
C1.5	40.01 - 80.00NS
C1.6	80.01 - 160.00NS

15. Single Egglofting:

15.1 This competition comprises 5 events open to single or Multi-staged rockets that carry as a payload one fresh Grade 'A' large hen's egg [raw].

15.2 The purpose of this competition is to carry an exceedingly fragile payload to as high an altitude as possible and to return the payload without damage.

15.3 The Contest Host will provide the fresh egg to each contestant.

15.4 The rocket achieving the highest altitude tracked and recovering the payload unbroken and uncracked will be the winner.

15.5 The Classes for this event are as follows:

Class	Total Impulse
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Robin	5.01 - 10.00NS
Vulture	10.01 - 20.00NS
Ostrich	20.01 - 40.00NS
Roc	40.01 - 80.00NS
Dragon	80.01 - 160.00NS

16. Dual Egglofting:

16.1 This competition has 3 events open to single or multi-staged rockets that can carry two[2] fresh grade 'A' large hen's eggs as payloads.

16.2 The rules are the same as for single egglofting.

16.3 The Classes for this event are as follows:

Class	Total Impulse
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Mercury	20.00 - 40.00NS
Gemini	40.01 - 80.00NS
Apollo	80.01 - 160.00NS

17. Parachute Duration:

17.1 This competition has 9 classes open to single or multi-staged rockets powered by one or more engines, containing a single parachute for recovery.

17.2 The rocket with the longest time of flight will be the winner.

17.3 Except for wadding and/or lower stages, a model may not separate into two[2] or more unattached parts.

17.4 The Classes for this event are as follows:

Class	Total Impulse
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Cl.0	0.01 - 0.625NS
Cl.1	0.626 - 1.25NS
Cl.2	1.26 - 2.50NS
Cl.3	2.51 - 5.00NS
Cl.4	5.01 - 10.00NS
Cl.5	10.01 - 20.00NS
Cl.6	20.01 - 40.00NS
Cl.7	40.01 - 80.00NS
Cl.8	80.01 - 160.00NS

18. Dual Parachute Duration:

18.1 This competition is the same as single parachute duration except that the rocket must fully deploy two[2] parachutes.

18.2 The Classes and rules are the same for this event as single parachute duration, except for the number of parachutes used.

19. Apollo Parachute Duration:

19.1 This competition is the same as single parachute duration except that the rocket must fully deploy three[3] parachutes.

19.2 All Classes and rules are the same as for single parachute duration except for the number of parachutes deployed.

20. Streamer Duration:

20.1 This event is open to single or multi-staged rockets that deploy a streamer for recovery.

20.2 Except for wadding and/or lower stages, a model may not separate into two or more unattached parts.

20.3 The Classes for this event are the same as single parachute duration.

21. Dual Streamer Duration:

21.1 This event is the same as single streamer duration, except that the rocket must deploy two streamers as recovery device.

21.2 The rules and classes are the same as single streamer duration, except for the number of streamers used.

22. Boost Glider Duration:

22.1 This event is open to any single or multi-staged model rocket, one portion of which returns to the ground in a stable gliding flight.

22.2 In this event, a parachute or streamer recovery device on the glider portion of the model, will not be considered to be a supporting surface. However, one or more parachutes and/or streamers may be used to effect recovery of other portions of the entry.

22.3 The power classes for this event are as follows:

Gnat	0.01 - 0.625NS
Hornet	0.626 - 1.25NS
Sparrow	1.26 - 2.50NS
Swift	2.51 - 5.00NS
Hawk	5.01 - 10.00NS
Falcon	10.01 - 20.00NS
Eagle	20.01 - 40.00NS

Condor **40.01 - 80.00NS**
Dragon **80.01 - 160.00NS**

23. Dual Boost Gliders Duration:

23.1 Dual B/G is open to any single or multi-staged rocket that carries TWO gliding portions which return to the ground in a stable gliding flight.

23.1a To minimize confusion for those timing this event, the two gliders should be sufficiently different in color and/or design to be easily identified.

23.2 Both gliding portions will be timed and the time will then be averaged. The entry with the longest averaged time of flight will be the winner.

23.3 For this event, there must be at least TWO timers with stop watches on the timing team.

23.3a If used, there must be at least 2 pair of binoculars too.

23.4 The power classes and the rest of the rules for this event are the same as used for single boost glider duration.

24. Advanced Boost Glider Duration:

24.1 In Advanced B/G, a glider must make three [3] flights, with each flight using the same type and power of engine(s). The 3 times of flight will be averaged and the entry with the longest time of flight will be the winner.

24.2 The same glider must make all 3 flights.

24.3 The power classes and the rest of the rules are the same as for single boost glider duration.

25. Rocket Glider Duration:

25.1 Rocket Glider Duration is open to Only Single Staged rockets only, in this event, the model must NOT under any circumstance or in any manner separate into two or more unattached parts.

25.2 What goes up, must come down together in stable gliding flight.

25.3 The power limits and classes for this event are the same as those used in single boost glider duration.
