

Agenda Item Summary

from the Office of the WBSF Vice President

Items to be brought before the WBSF Delegates in 2013

Much time and effort has been applied to this to help make our meeting go smoothly.

This collection of documents will help speed up the meeting process. Also this effort will help in the records of the minutes. Each item contains a written motion, this will also aid in the record keeping process and better help track changes.

Agenda Item

Summary

WBSF Rule Book Agenda Items

- 1 Remove requirement to measure in mm when shooting meters, inches when shooting yards.
- 2 Add Super Shoot format to E.4, Order of Competition
- 3 Grand Agg & 2-Gun tie breaker from average to add up (will make calculation easier)
- 4 Remove D.4 from rule book, there is nothing there.
- 5 Add the word "After" to C.14 line A (no ammunition in rifle until "after" the commence fire.....)
- 6 Remove Line 4 of C.14 in Standard range commands ~~4) Place bolts in your rifle~~ Renumber balance
- 7 Reorganize E.13, E.14 & E.16 to better match drawing in Appendix B, make easier to understand.
- 8 Remove and replace Appendix B with PDF of same wording and good target views
- 9 Add Appendix B.1 Better drawing and all words in same place, make easier for shooter to understand issue.
- 10 Remove last sentence of A.9. There is no need to dictate last day "fun day" distances or formats.
- 11 Add Test Competitor to Stat sheet for shoots, This will test calculations during shoots.
- 12 Split records as was decided on in 2005, This is follow through on old decision.
- 13 Small groups - Standardize you can shoot small group in warm-up, records to reflect.
- 14 Change C.9.e wording to reflect records in MOA
- 15 MOA Since records split, true MOA not comparative error to yards, records to reflect.
- 16 MOA pdf to Appendix G for help to Host countrys.
- 17 Cleanup conflict between C.3 and D6, change to dislodged target section C.3
- 18 Remove last sentence of A.7. It was never voted on to use this language.
- 19 Remove E.15 this item is addressed twice. Section I.4 "Bolts in Rifles:". E.15 was just left in after change.
- 20 Authorize facelift, reorganization and renumber and cleanup of rule book. To PDF format.....
- 21 I will Clean up appendix in Rule book to reflect any changes after the fact. No rule changes fixing this.

Motion: Delete all of the 100 yard and 200y targets and words to describe them in appendix B. Replace with PDF copy Appendix B of new targets with same language that is Currently in the rule book.



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Agenda Item # 10

Remove last sentence of A.9

We have no need to require any type of yardage or metric distance on day after the formal competition has ended. This was true at WBC10 in South Africa where we contested the Championships at 100 and 200 meters. Then on the last day 300 yards was the distance, it was all they had available.

A.9 Conduct of Events:

A World Championship shall be conducted every two years. All events at such Championships will be conducted in accordance with these Rules.

Where the HV300yd/m event cannot be conducted due to range or other limitations, the host country can offer an alternative event. (see A.11)

~~Should the host country traditionally conduct events in metric distances, same will be allowed, however all events for that Championship will be conducted in the metric distances.~~

Motion: Change A.9 as follows;

A.9 Conduct of Events:

A World Championship shall be conducted every two years. All events at such Championships will be conducted in accordance with these Rules. Where the a HV300yard/meter event cannot be conducted on the last day due to range or other limitations, the host country can offer an alternative event.

Second _____ Carried Yes _____ No _____

XX

**Add “Test Calculation” to shoot stat sheet to check calculations.
Add section c.9.f to rule book.**

This addition is not anything that will affect the shooting of the championships and does not need a delay of implementation.

We have used different ways to preform the calculations resulting in errors. We have had rounding errors, and many different ways to calculate MOA, calculations labeled MOA but were just a conversion to inches. By adding a “Test Calculation” to the stat sheet and inputting the correct groups we can see when the stats are printed if there are any problems with the calculations.

When shooting in meters and converting to MOA, we enter 29.09mm for each group at 100 meters and 58.18mm into each group at 200 meters.

When shooting in yards and measuring in inches, we enter 1.000in for each group at 100 yards and 2.000in into each group at 200 yards.

In both examples the MOA and agg will be calculated to 1.000 in the yardages, grands, and 2-Gun.

Motion: Add section as follows; and add “Appendix H” to back of rule book;

Note: Appendix H is an aid to describe why we are doing this, and what to do to check the calculations.

c.9.f *Testing of Calculations*

Host club will add a competitor to the stats with the a Name of "Test Calculation". Then the groups entered into this competitors stats are to be as follows;

- A) For a tournament shot in Meters, measured in mm then 29.09 for each group at 100 meters, 58.18 for each group at 200 meters. (measured in inches, then 1.145 and 2.290)
- B) For a tournament shot in yards, measured in inches, enter 1.000 for each group at 100 yards, 2.000 for each group at 200 yards.

Note; The intended outcome is to have yardage aggregates, grand aggregates and 2-Gun that are 1.000. This will clearly show if there are any math errors or rounding being done by the software being used during the shoots.

Second	Carried	Yes	No
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[illegible]

Agenda Item # 12

Split records into 2 Sets of Records

As was voted on at the delegates meeting in 2005 we decided on 2 sets of records, one for meters and one for yards, which were to be expressed in MOA.

I have provided the Split records;

- 1 set of split records expressed in MOA for meters, as measured (ave) for yards. (recommend
(small groups not converted, meters recorded in mm and inches, yards in inches.)
- 1 set of split records expressed in MOA for meters and yards
(small groups not converted, meters recorded in mm and inches, yards in inches.)

Motion:

1. Accept records in MOA for meters, as measured (average) for yards, any discovered errors in math will be corrected;
2. Insert updated split records into Championship manual, remove old format.

WBSE World Records -- Feb 2013

Team 2 Out Aggregate

Year

Score

MCN

USA 2 (J. Kelly, W. Bogen, T. Cantrell, G. Nozaki)

Start

1991

8,749/153

2039

USA 2 (J. Cho, W. Malt, M. Reagin, G. Nozaki)

1999

7,907/151

2437

USA 1 (T. Bogen, L. Cota, G. Babin, G. Haver)

2011

8,800

2029

Records in Meters

Small Group 100 Meters

Year

Score

MCN

Don Powell

USA

1991

2,21

107

Alan Taylor

AUS

1995

241

106

Paul Long

USA

1999

2,182

180

Steve Williams

USA

2011

1,51

109

Small Group 200 Meters

Year

Score

MCN

Christian Babin

FRG

1991

5,01

201

Estimote-Bogen

ITA

1999

4,60

186

Markus Malt

GER

2001

4,16

182

Carlo Pashori

ITA

2011

4,28

190

100 Meter Aggregate

Year

Score

MCN

Hans De Foresta

GER

1991

6,350

2185

Markus Malt

GER

1999

4,534

1859

200 Meter Aggregate

Year

Score

MCN

Roger Zeman

FRG

1991

7,289

2495

1999

6,055

2842

2007

4,216

1621

Mike Reagin

USA

2011

4,436

1828

Small Aggregate

Year

Score

MCN

Tom Bogen

USA

1991

2,485

2036

Mike Reagin

USA

1999

5,855

2058

1999

4,938/3

1691

--- Light Varmint --- Records in Meters ---

Small Group 100 Meters

Year

Score

MCN

Carlo Pashori

ITA

Start

1995

2,89

197

Jackie Schuler

GER

1999

1,36

109

Small Group 200 Meters

Year

Score

MCN

Faye Bogen

USA

1993

5,01

197

Chickie Taylor

ITA

1999

4,46

189

Larry Cota

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4,21

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100 Meter Aggregate

Year

Score

MCN

Joan Petersen

FRG

1991

5,623

1913

Andreas Aul

AUT

1999

5,168

17706

Paul Long

USA

1999

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Daniel Lohr

USA

2001

4,628

1591

Chickie Gold

USA

2007

4,446

1528

Jack Nassy

USA

2011

4,094

1397

Small Group 300 Meters

Year

Score

MCN

Tom Bogen

USA

1991

6,952

2108

Estimote-Estavi

ITA

1999

6,002

2063

Tom Bogen

USA

2011

4,862

1628

100 Meter Aggregate

Year

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MCN

Hans De Foresta

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1991

6,350

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USA

1999

6,005

2094

Steve Bogen

USA

2011

4,785

1648

200 Meter Aggregate

Year

Score

MCN

Tom Bogen

USA

1991

7,288

2808

1999

6,050

2112

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6,077/5

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--- Heavy Varmint --- Records in Meters ---

Team 2 Out Aggregate

Year

Aggregate

USA 1 (Steve Bogen, Don Powell, Loui Gold)

Start

1995

4,360

USA 2 (Bob Bogen, Tom Bogen, Loui Gold)

1997

3075

USA 1 (Steve Cantrell, Tom Bogen, Loui Gold, Loui Goldmann)

2001

2925

USA 3 (Bob Bogen, Jack Taylor, Larry Silverstein, Mike Fisher)

2008

2049

Records in Yards

Small Group 100 Yards

Year

Score

MCN

Alan Taylor

AUS

Start

1995

106

Bo Peterson

DNK

1997

408

Steve De Foresta

ITA

2001

880

Small Group 200 Yards

Year

Score

MCN

Deann Wagner

DNK

Start

1995

456

Bo Peterson

USA

1997

218

Small Group 300 Yards

Year

Score

MCN

Dennis Thornberry

ITA

Start

1995

2082

Alan Taylor

AUS

1995

2082

Charles Huchko

AUS

1997

1970

100 Yard Aggregate

Year

Score

MCN

Markus Ahlen

FIN

1995

672

Don Powell

USA

1997

2647

Ben Reith

USA

2001

2118

Small Aggregate

Year

Score

MCN

Markus Ahlen

FIN

Start

1995

319

Ben Reith

USA

1997

2504

Charles Huchko

USA

2001

2390

Team 2 Out Aggregate

Year

Score

MCN

Tom Bogen

USA

1991

7,289

2495

1999

6,055

2842

2007

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1621

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1997

218

Small Group 300 Yards

Year

Score

MCN

Dennis Thornberry

ITA

Start

1995

145

Gustavo Tardif

ITA

1997

465

100 Yard Aggregate

Year

Score

MCN

Markus Ahlen

FIN

1995

335

Tom Powell

USA

1997

247

Ben Reith

USA

2001

218

Small Aggregate

Year

Score

MCN

Markus Ahlen

FIN

Start

1995

248

Ben Reith

USA

1997

2182

Brendan Atkinson

AUS

2001

1588

200 Yard Aggregate

Year

Score

MCN

Don Bogen

USA

1995

2938

Tom Bogen

USA

2001

2188

Small Aggregate

Year

Score

MCN

Gono Reagin

USA

1995

3071

Tom Bogen

USA

1997

2845

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2011

4,094

1397

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Start

1995

456

Bo Peterson

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1997

218

Small Group 300 Yards

Year

Score

MCN

Dennis Thornberry

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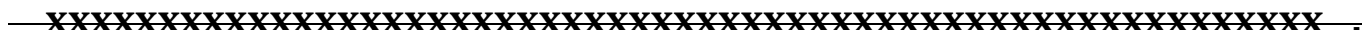
Full size Sheet are attached to end of this PDF File.

Second _____ Carried Yes _____ No _____

If above motion fails;

Motion: Accept split records for meters and yards expressed in MOA, any discovered errors in math will be corrected;

Second _____ Carried Yes _____ No _____



Agenda Item #13

Small group Records

Small groups have been taken from warm-up matches at some shoots and not from others. Records have been updated to reflect this. Besides the split of the records the only change was to the LV200 small groups.

Motion: Accept small groups from all warm-up matches and insert into records accordingly for both meters and yards. Small groups are to be expressed as measured and converted to inches if measured in millimeters for tournaments shot in meters, and as measured for tournaments shot in yards. (Note; this will not affect any changes to any medals, just add consistency to the records)

Second	Carried	Yes	No
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[illegible]

Agenda Item #14

Clean up rule book records reference.

This is to clean up the rule book after the split of records.

C9e Recording – World Championship Record scores / aggregates

World Championship Records will be officially recorded in the Imperial system only *and expressed in MOA per conversion factor.*

Motion: Change C9e to read as follows;

C9e Recording – World Championship Record scores / aggregates

World Championship Records will be officially recorded as measured (mm or inches) and true MOA for tournaments shot in meters, and recorded in the Imperial System for tournaments shot in yards.

Second	Carried	Yes	No
--------	---------	-----	----

XX

Appendix G Math to convert to minute of Angle (MOA)

Motion: Add Appendix G to back of rule book;

Appendix G

Minute of Angle (MOA) Conversion Math

How to calculate Minute of Angle (MOA) in inches.

A circle has a total of 360 degrees, each degree has 60 minutes.
There are 21600 minutes in a complete circle. (360x60 = 21600)
Circumference of a circle is calculated as "2πR" this is 2 x 3.14159 x Radius (in inches) 100 yards = 3600 inches = 91440mm
100 meters = 100000mm = 3937 inches

One MOA at 100 meters =

21600 = 2 x 3.14159 x Radius (This is the total circumference)
1 minute = (2 x 3.14159 x 3937)/21600 = 1.14522591 inches
1 minute = (2 x 3.14159 x 100000)/21600 = 29.0887963 mm

One MOA at 100 yards =

21600 = 2 x 3.14159 x 3600 (This is the total circumference)
1 minute = (2 x 3.14159 x 3600)/21600 = 1.047197667 inches
1 minute = (2 x 3.14159 x 91440)/21600 = 26.5987953 mm

WBC

shot in meters and measured in mm,

MOA = measured Agg in mm / 29.09

shot in meters and measured in inches,

MOA = measured Agg in inches / 1.145

shot in yards and measured in inches,

MOA = measured Agg in inches / 1.047

shot in yards and measured in mm,

MOA = measured Agg in mm / 26.60

Misconception:

1 MOA = 1" at 100 yards

False

1 MOA ≠ 1" at 100 yards

True

1"at 100 yards = .95493 MOA (not 1.0)

True

1 MOA at 100y = 1.04719766"

True

Using 1 MOA = 1" at 100 yards (is an error of 4.7198%).
.95493 MOA = 27.77775mm at 100 meters
This MOA error at meters = (measured Agg in mm) / 27.77777
100 meter with same error = MOA at 100 meters in mm = (Agg in mm) / 1.04719766

A circle has a total of 360 degrees, each degree has 60 minutes.
Each degree has 62.8318 divisions that equal .95493 MOA
There are 22,619.448 divisions in a circle using .95493 MOA. (360x62.8318 = 22619.448)
Circumference of a circle is calculated as "2πR" this is 2 x 3.14159 x Radius (in inches) 100 yards = 3600 inches = 91440mm
100 meters = 100000mm = 3937 inches

.95493 MOA at 100 yards = (2 x 3.14159 x 3600)/22619.448 = 1 inch

.95493 MOA at 100 meters = (2 x 3.14159 x 100000)/22619.448 = 27.77777

Second _____ Carried Yes _____ No _____



Last line of A.7 was added to Rule Book in error.

The Office of Vice Chair was added in 2005, Ratigan was not a Delegate when elected in 2005. This addition does not appear in any meeting minutes in 2005, 2007, 2009 or 2011. Recommend to strike this sentence.

A.7 Delegates Committee Meetings:

As a minimum, there will be a Delegates Committee Meeting held at each World Championship. The Delegates Committee will be conducted by an elected President or appointee. Representation will be by a delegate from each approved country who may be accompanied by an official observer. Each delegate present at the meeting will hold one vote. The President may hold his countries vote or a casting vote, but not both. ~~The committee has authority to appoint a Vice-President from amongst the delegates~~

It is important to have officers with some minimum qualifications, being a current delegate is not one of them.

This language would allow a single country to override the will of the WBSF Delegates.

Motion: Remove last sentence of A.7, the result follows;

A.7 Delegates Committee Meetings:

As a minimum, there will be a Delegates Committee Meeting held at each World Championship. The Delegates Committee will be conducted by an elected President or appointee. Representation will be by a delegate from each approved country who may be accompanied by an official observer. Each delegate present at the meeting will hold one vote. The President may hold his countries vote or a casting vote, but not both.

Second _____ Carried Yes _____ No _____

~~XX~~

Remove Section E.15, this is the old duplicate, Section I.4 was added later.

E.15 *Removal of Bolts:*

All rifle bolts must be kept out of all rifles, except on the command of the Range Officer. This provision includes behind the firing line and in all other range areas including Loading Facilities, Parking areas etc. Breach of this rule could lead to disqualification from the championship at the discretion of the Championship Director.

1.4 Bolts in rifles:

Bolts may only be placed in rifles at the firing line and in accordance with range officer instructions. At all other times bolts may not be placed in a rifle unless they have been disassembled (firing pin removed) and a fellow competitor has witnessed this procedure. Failure to follow this procedure will result in disqualification of the competitor from that day's event.

1.5 Smoking

No smoking is permitted in the reloading facility. Further restrictions may be applied by the Organising Committee in accordance with local laws.

Motion: Remove section E.15 from rule book in it's entirety. Also correct mistakes of labeling of 1.4 to I.4 and correct 1.5 to I.5.

Second _____ Carried Yes _____ No _____

Reorganize Rule Book - No Rule Changes.

I, Mike Ratigan, serving in the Office of Vice President am offering to reorganize our rule book.

As taken from our championship manual;

“Future administrators are encouraged to undertake regular reviews of the procedures to ensure they are current and relevant.”

Our rule book reflects the face of Our organization I would consider changing the look of the Rule book to make it's appearance look more professional.

Possibility of adding some art work, possibly a logo. Also add drawings or illustrations to help define our rules where appropriate.

Also, it's time to make the Rule book available in PDF form, rather than a live file form that can be edited. I can also make this happen with acrobat pro 11 software. Live copy's should be kept by a minimum number of officers to guard against any life situations which would require a rewrite.

I would also like to consult with a friend and shooter who works in the field of creating manuals, I would like to learn more about a live appendix that does not need a complete redo on every edit.

I would like to remove as many cross references in the body of the book as possible. This type of thing begs for errors. We might move or change a rule without the realization that there are cross-references to the very thing we moved or changed. My friend that works in the industry will be able to give direction on this.

Motion: To affirm this project, and proceed.

Second

Carried	Yes	No
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
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27	0	0
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89	0	0
90	0	0
91	0	0
92	0	0
93	0	0
94	0	0
95	0	0
96	0	0
97	0	0
98	0	0
99	0	0
100	0	0

Advise is needed on a pager size. Is A4 the most common size outside of the USA? Yes_____ No_____

I will make the finish product on the most common paper format.

~~XX~~

Update Index to reflect changes from this and previous meetings.

Motion: Vice President to move forward with any needed updates to index;

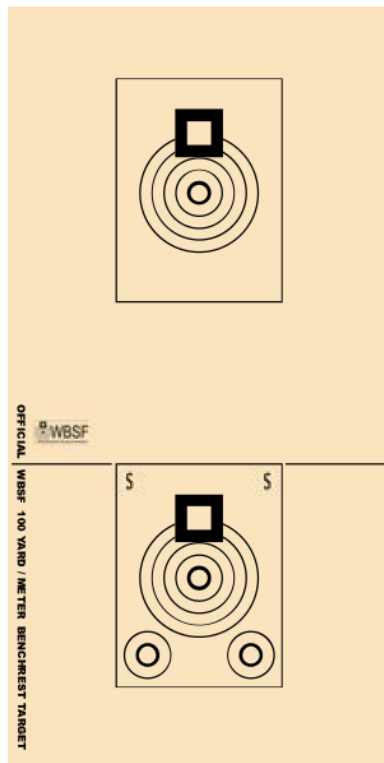
Second _____ Carried Yes _____ No _____

Appendix B

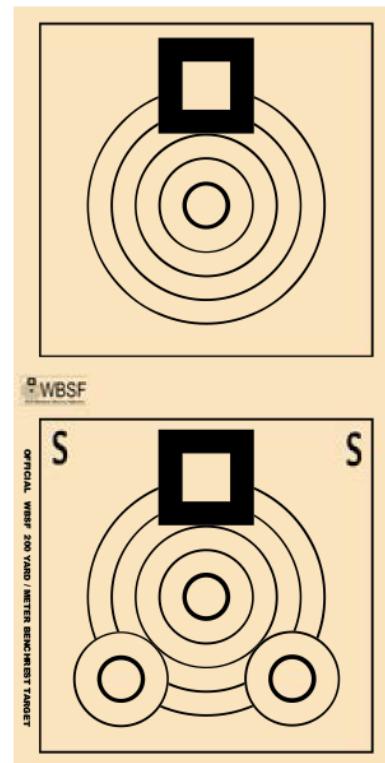
The official 100 yard/meter target (WBSF100) for all registered benchrest rifle competition shall have a ten ring of one half inch outside diameter. The nine ring shall be one-inch diameter. Succeeding rings shall increase one-half inch in outside diameter to and including the six ring. The aiming square shall be one inch square and placed tangent the eight ring at the twelve o'clock position. Thickness of the sides of the aiming square will be one quarter inch. The target shall have a black border line forming a rectangle 3.5 x 4.75 inches in size, which will be centred on a target card approximately 8x8 inches with no printing except the target inside the border line. A sighter target of the same basic design shall be on the same target card directly below the record target. The entire target card will measure approximately 8x16 inches. The sighter target is to have an S appear in both of the upper corners of the box. The target is to also have an additional 10 and 9 ring placed in the third and fourth quadrants of the target. The additional 9 ring is to be tangent with the 8 ring. The distance between the record target bottom border and the top border of the sighter target should be approximately 3 1/2 inches. All of the printing of the target shall be done in black.

Targets for the longer ranges shall be increased in direct proportion to the range in all ring and, aiming square dimensions, except in ring thickness and distance between sighter and record targets. Overall size of the 200-yard/meter target (WBSF200) will be approximately 8x8 inches with a black borderline one-half inch from the edge. The printing of the 300-yard target (WBSF300) shall be 18x18 inches with the border one-half inch from the edge. The printing on the 300-yard targets shall be red.

100 Yard/Meter
Target



200 Yard/Meter
Target

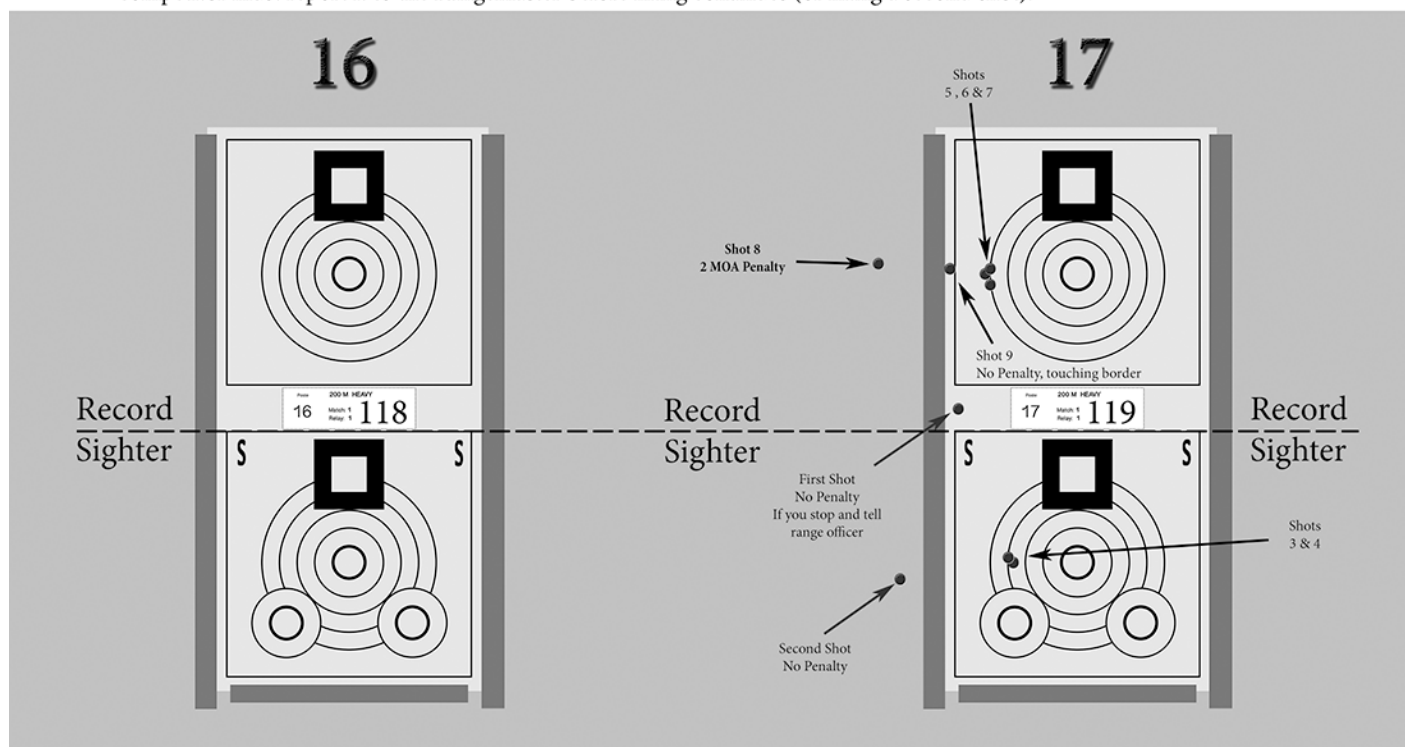


Appendix B.1 Penalties, Record Target (explained), Disqualifications, and Crossfires.

(a) No Penalty. Any competitor whose first shot of any match (or target) shall strike the record portion of the target shall report at once to the Range Officer before firing another shot. The Range Officer shall satisfy himself/herself that no other shots have been fired and shall make a note to the Official Scorer that the target not be penalized, and the first shot not be scored.

Note: The "Record" portion of the target is everything above the level of the top line of the sighter target. As shown in the drawing, any shot above (and not touching) an imaginary line between the top of the sighters is a record shot.

(b) Required No. of Shots. Any target having less than the required number of shots, or having any shot (other than the first shot) outside of (and not touching) the border line on the record target and above the height of the top line of the sighter target, will be penalized 1 minute of angle for each shot missing or for each shot outside the border line. (See: Target Drawing above.) A shot above the top line of the sighter target will be a record shot unless it is the first shot, the competitor must report it to the Rangemaster before firing continues (or firing a second shot).



(c) Crossfires. Any competitor who is aware that he/she crossfired shall report it to the Range Officer immediately following the completion of that match, and shall fire the balance of his/her shots on his/her own target. If such a report is not made, and the competitor has not fired more than the required number of shots on record targets (total is crossfires plus shots on own target), and the crossfire can be identified and attributed to him/her by means of the stationary backer target, he/she shall be deemed to have crossfired inadvertently and shall not be disqualified but in either event the shooter shall be penalized as follows:

The crossfiring shall be transferred to his/her target and shall be measured as if fired in that position on that target. To his/her measurement shall be added a penalty of 1 minute of angle for each shot fired. (1 inch at 100 yards; 2 inches at 200 yards; 3 inches at 300 yards.)

Any competitor found to have crossfired, and whose target shows him/her to have fired more than the required number of shots (including crossfires) shall be deemed to have tried to conceal the fact of his/her crossfire and shall be disqualified. No competitor shall be allowed to re-fire any match.

Note: Targets with more than the required number of shots will not be disqualified but, except for identified crossfires, group measurement must be taken from the 2 widest shots on the target.

Appendix G

Minute of Angle (MOA) Conversion Math

How to calculate Minute of Angle (MOA) in inches.

A circle has a total of 360 degrees, each degree has 60 minutes.

There are 21600 minutes in a complete circle. ($360 \times 60 = 21600$)

Circumference of a circle is calculated as " $2\pi R$ " this is $2 \times 3.14159 \times \text{Radius (in inches)}$ $100 \text{ yards} = 3600 \text{ inches} = 91440 \text{ mm}$
 $100 \text{ meters} = 100000 \text{ mm} = 3937 \text{ inches}$

One MOA at 100 meters = $21600 = 2 \times 3.14159 \times \text{Radius}$ (This is the total circumference)
1 minute = $(2 \times 3.14159 \times 3937) / 21600 = 1.14522591 \text{ inches}$
1 minute = $(2 \times 3.14159 \times 100000) / 21600 = 29.0887963 \text{ mm}$

One MOA at 100 yards = $21600 = 2 \times 3.14159 \times 3600$ (This is the total circumference)
1 minute = $(2 \times 3.14159 \times 3600) / 21600 = 1.047197667 \text{ inches}$
1 minute = $(2 \times 3.14159 \times 91440) / 21600 = 26.5987953 \text{ mm}$

WBC	<u>shot in meters and measured in mm,</u>	MOA = measured Agg in mm / 29.09
	shot in meters and measured in inches,	MOA = measured Agg in inches / 1.145
	<u>shot in yards and measured in inches,</u>	MOA = measured Agg in inches / 1.047
	shot in yards and measured in mm,	MOA = measured Agg in mm / 26.60

Misconception: 1 MOA = 1" at 100 yards False

1 MOA \neq 1" at 100 yards True

1" at 100 yards = .95493 MOA (not 1.0) True

1 MOA at 100y = 1.04719766" True

Using 1 MOA = 1" at 100 yards (is an error of 4.7198%).

.95493 MOA = 27.77775mm at 100 meters

This MOA error at meters = (measured Agg in mm) / 27.77777

100 meter with same error = MOA at 100 meters in mm = (Agg in mm) / 1.04719766

A circle has a total of 360 degrees, each degree has 60 minutes.

Each degree has 62.8318 divisions that equal .95493 MOA

There are 22,619.448 divisions in a circle using .95493 MOA. ($360 \times 62.8318 = 22619.448$)

Circumference of a circle is calculated as " $2\pi R$ " this is $2 \times 3.14159 \times \text{Radius (in inches)}$ $100 \text{ yards} = 3600 \text{ inches} = 91440 \text{ mm}$
 $100 \text{ meters} = 100000 \text{ mm} = 3937 \text{ inches}$

.95493 MOA at 100 yards = $(2 \times 3.14159 \times 3600) / 22619.448 = 1 \text{ inch}$

.95493 MOA at 100 meters = $(2 \times 3.14159 \times 100000) / 22619.448 = 27.77777$

Appendix H

“Test Calculation”

.....to test calculations used on the Stat Sheets

Enter a competitor with first name of “Test”, last name of “Calculation”.
This will come out as either “Test Calculation” or “Calculation Test” on the Stat sheet.

Meters Only

For exact MOA Shot in Meters, measured in mm (conversion is $\text{agg}/29.09$)

Enter 29.09 in each group at 100 meters, yardage aggs in MOA will be 1.00000000, rounded to 1.000

Enter 58.18 in each group at 200 meters, yardage aggs in MOA will be 1.00000000, rounded to 1.000

For exact MOA Shot in Meters, measured in inches (conversions = $\text{agg}/1.145$)

Enter 1.145 in each group at 100 meters, yardage aggs in MOA will be 1.00000000, rounded to 1.0000 MOA

Enter 2.290 in each group at 200 meters, yardage aggs in MOA will be 1.00000000, rounded to 1.0000 MOA

Grand aggs will be calculated to be 1.00000000, then rounded to 1.0000 MOA

2 gun aggs will be calculated to be 1.00000000, then rounded to 1.0000 MOA

Yards Only

For Testing the Calculations of a tournament Shot in Yards, measured in inches (conversions = $\text{agg}/1.000$)

Enter 1.000 in each group at 100 yards, yardage aggs will be 1.00000000, rounded to 1.000

Enter 2.000 in each group at 200 yards, yardage aggs will be 1.00000000, rounded to 1.000

For Testing the Calculations of a tournament Shot in Yards, measured in inches (conversions = $\text{agg}/25.40$)

Enter 25.40 in each group at 100 yards, yardage aggs will be 1.00000000, rounded to 1.0000

Enter 50.80 in each group at 200 yards, yardage aggs will be 1.00000000, rounded to 1.0000

Grand aggs will be calculated to be 1.00000000, then rounded to 1.0000

2 gun aggs will be calculated to be 1.00000000, then rounded to 1.0000

WBSF World Records (as of May 2013)

Records in Meters

<u>Team 2 Gun Aggregate</u>	<u>Year</u>	<u>mm</u>	<u>MOA</u>
USA 2 (G. Kelbly, W. Berger, T. Cantwell, G. Newick)	Start 1991	8.781915	.3019
USA 2 (S. Otto, B. White, M. Ratigan, G. Newick)	1999	7.087875	.2437
USA 1 (T. Boyer, L. Costa, G. Bukys, C. Harris)	2011	5.8806	.2022

--- Light Varmint --- Records in Meters ---

<u>Small Group 100 Meters</u>	<u>Year</u>	<u>mm</u>	<u>Inches</u>
Scott Withey AUS	Start 1991	2.71	.107
Don Powell USA	1993	2.42	.095
Paul Jung FRA	1999	2.02	.080
Steve Williams RSA	2011	1.51	.059

<u>Small Group 200 Meters</u>	<u>Year</u>	<u>mm</u>	<u>Inches</u>
Christian Balagna FRA	Start 1991	6.85	.270
Eunice Berger USA	1993	7.50	.295
Kevin Duckworth NZL	1999	7.18	.282
Gene Bukys USA	2003	4.32	.170
Gaintonio Quaglino ITA	2007	4.28	.169
Carlos Pacheco FRA	2011	2.27	.089

<u>100 Meter Aggregate</u>	<u>Year</u>	<u>mm</u>	<u>MOA</u>
Herve Du Plessis FRA	Start 1991	6.356	.2185
Martin Menke GER	1999	4.534	.1559

<u>200 Meter Aggregate</u>	<u>Year</u>	<u>mm</u>	<u>MOA</u>
Roger Serian FRA	Start 1991	7.259	.2495
Mike Ratigan USA	1999	6.055	.2082
Giantonio Quaglino ITA	2007	4.716	.1621
Mike Ratigan USA	2011	4.436	.1525

<u>Grand Aggregate</u>	<u>Year</u>	<u>mm</u>	<u>MOA</u>
Tony Boyer USA	Start 1991	7.4925	.2576
Mike Ratigan USA	1999	5.8055	.1996
Mike Ratigan USA	2011	4.92000	.1691

WBSF World Records (as of May 2013)

--- Heavy Varmint -- Records in Meters ---

<u>Small Group 100 Meters</u>			<u>Year</u>	<u>mm</u>	<u>Inches</u>
Carlos Pacheco	FRA	Start	1991	2.59	.102
Joachim Schafer	GER		1999	1.35	.053

<u>Small Group 200 Meters</u>			<u>Year</u>	<u>mm</u>	<u>Inches</u>
Faye Boyer	USA	Start	1991	5.01	.197
Giuliano Turini	ITA		1999	4.66	.183
Larry Costa	USA		2011	4.21	.166

<u>100 Meter Aggregate</u>			<u>Year</u>	<u>mm</u>	<u>MOA</u>
Jean-Pierre Troin	FRA	Start	1991	5.622	.1933
Andrea Atzl	AUT		1999	5.168	.17766t
Paul Jung	FRA		1999	5.168	.17766t
Darrel Loker	USA		2001	4.628	.1591
Chris van Zijl	RSA		2007	4.446	.1528
Jack Neary	USA		2011	4.064	.1397

<u>200 Meter Aggregate</u>			<u>Year</u>	<u>mm</u>	<u>MOA</u>
Faye Boyer	USA	Start	1991	6.975	.2398
Enrico Erenzi	ITA		1999	6.002	.2063
Tony Boyer	USA		2011	4.882	.1678

<u>Grand Aggregate</u>			<u>Year</u>	<u>mm</u>	<u>MOA</u>
Jean-Pierre Troin	FRA	Start	1991	6.3465	.2182
Paul Jung	FRA		1999	6.0905	.2094
Gene Bukys	USA		2011	4.7855	.1645

<u>Two Gun Aggregate</u>			<u>Year</u>	<u>mm</u>	<u>MOA</u>
Tony Boyer	USA	Start	1991	7.2888	.2506
Mike Ratigan	USA		1999	6.4350	.2212
Mike Ratigan	USA		2007	6.0775	.2089
Gene Bukys	USA		2011	5.38575	.1851

WBSF World Records (as of May 2013)

Records in Yards

Team 2 Gun Aggregate	Year	Aggregate
USA 1 (Faye Boyer, Don Powell, Lowell Frei)	Start 1995	.4366
USA 2 (Ron Hoehn, Tony Boyer, Lester Bruno, Don Creach)	1997	.3075
USA 1 (Wayne Campbell, Tony Boyer, Armond Pagliai, Lowell Hottenstein)	2001	.2925
USA 3 (Billy Stevens, Jack Neary, Larry Scharnhorst, Allie Euber)	2005	.2649

--- Light Varmint --- Records in Yards ---

Small Group 100 Yards	Year	Inches
Dennis Thornbury USA	Start 1995	.145
Giuliano Turini ITA	1997	.065

Small Group 200 Yards	Year	Inches
Stefan Karlsson SWE	Start 1995	.335
Tony Boyer USA	1997	.251
Tony Boyer USA	2001	.214
Bill Goad USA	2005	.184

100 Yard Aggregate	Year	Inches
Tony Boyer USA	Start 1995	.2638
Eunice Berger USA	1997	.2142
Brendan Atkinson AUS	2001	.1588

200 Yard Aggregate	Year	Inches
Don Nielson USA	Start 1995	.2936
Tony Boyer USA	2001	.2188

Grand Aggregate	Year	Inches
Glenn Newick USA	Start 1995	.3071
Tony Boyer USA	1997	.2845
Brendan Atkinson AUS	2001	.2207
Paul Jung FRA	2005	.2129

WBSF World Records (as of May 2013)

--- Heavy Varmint --- Records in Yards ---

Small Group 100 Yards			Year	Inches
Alan Peake	AUS	Start	1995	.106
Bo Petersson	SWE		1997	.098
Herve Du Plessis	FRA		2005	.080

Small Group 200 Yards			Year	Inches
Dennis Wagner	USA	Start	1995	.456
Bo Petersson	SWE		1997	.218

100 Yard Aggregate			Year	Inches
Alan Peake	AUS	Start	1995	.2082
Charles Huckeba	USA		2001	.1870

200 Yard Aggregate			Year	Inches
Markku Ahlava	FIN	Start	1995	.4752
Don Powell	USA		1997	.2647
Rex Reneau	USA		2005	.2218

Grand Aggregate			Year	Inches
Markku Ahlava	FIN	Start	1995	.3930
Ron Hoehn	USA		1997	.2504
Charles Huckeba	USA		2001	.2390

Two Gun Aggregate			Year	Inches
Tony Boyer	USA	Start	1995	.3789
Ron Hoehn	USA		1997	.2742
Brendan Atkinson	AUS		2001	.2625
Jari Raudaskoski	FIN		2005	.2480