

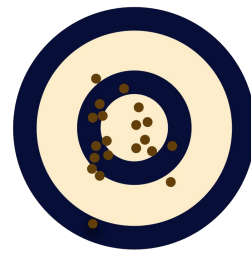


**ORION**  
SCORING SYSTEM

**Daisy National BB Gun Championship  
Team Leaders Briefing**

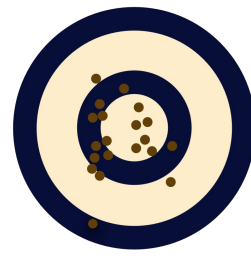
**Erik Anderson Ph.D.  
Shooter's Technology LLC  
1 July 2017**

**Online results available at [www.orionresults.com/daisy](http://www.orionresults.com/daisy)**

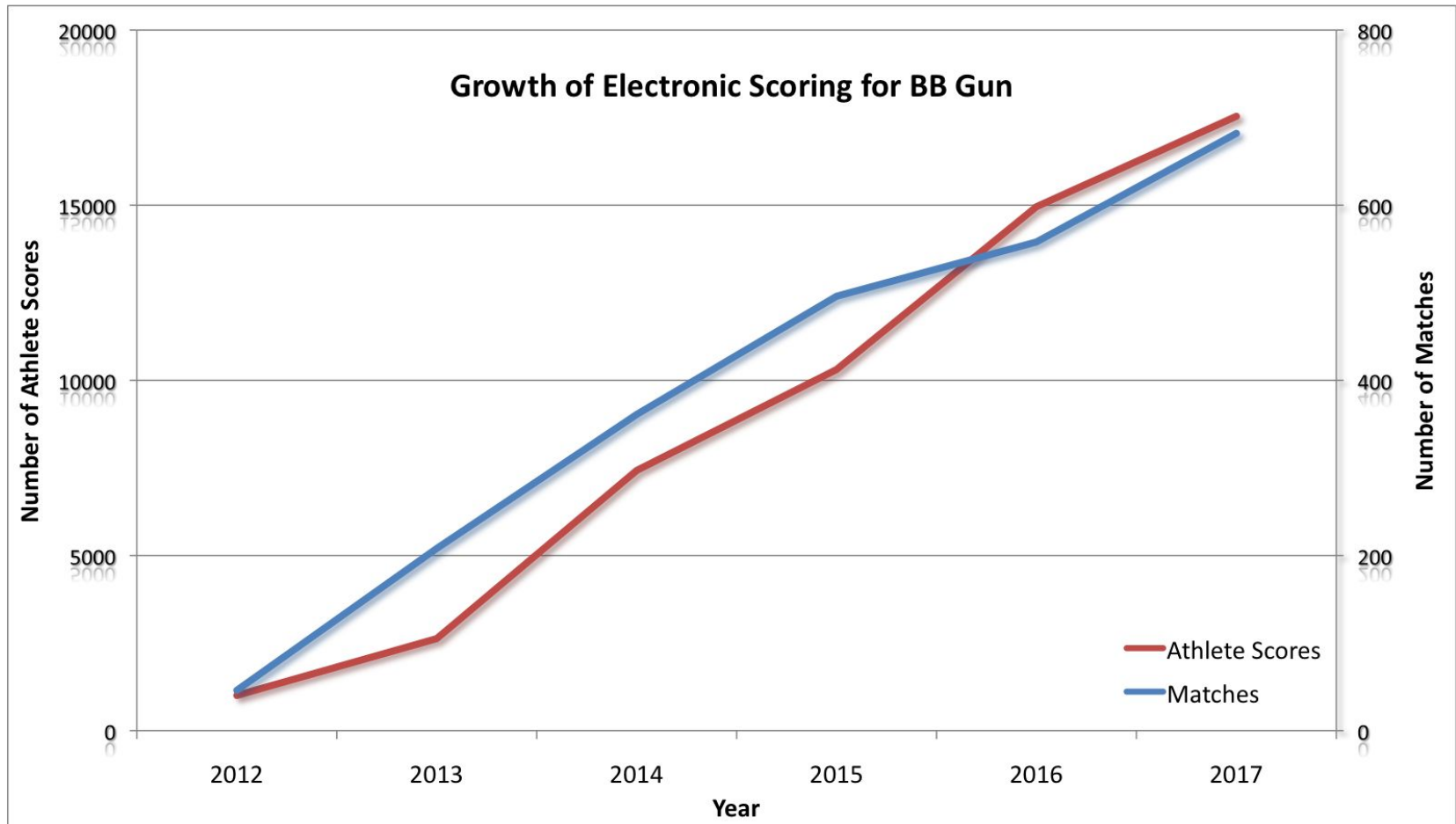


# Logistics

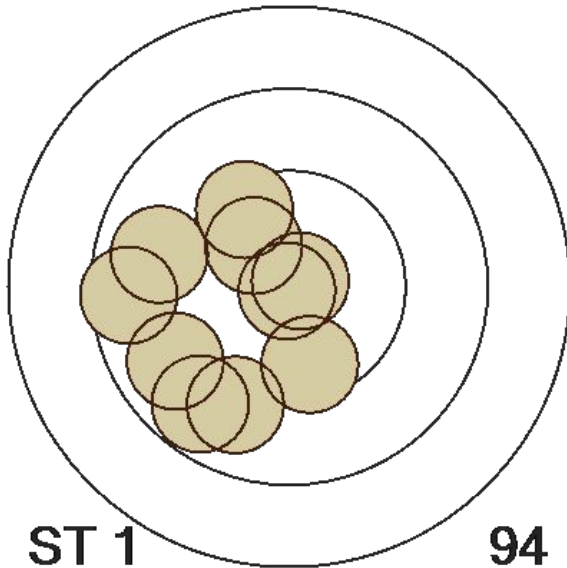
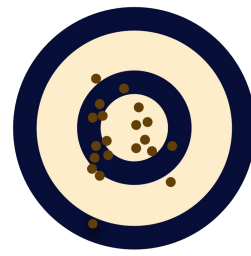
- *Team Leaders Briefing*  
*Saturday 14:15 to 15:00, team coaches only.*
- **Stat Officers Clinic**  
Sunday 10:00 to 11:00, open to all.
- **Improving Youth Shooting Programs**  
Sunday 13:00 to 14:00, open to all.
- **Please ask questions, make comments.**
- **Today's presentation available for pickup.  
Tomorrow's presentations via email.**



# BB Gun Scoring and Orion



# What is the Orion Scoring System?



1. Score Targets

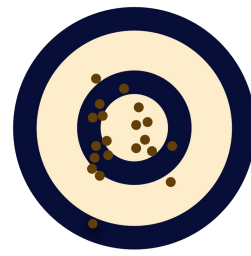
Georgia 4-H Statee BB Match - May 6, 2017

Team - All

Rank	Participant	Region	Prone	Standing	Sitting	Kneeling	Test	Team
1	Walton 1	Athens, GA	492 - 37	455 - 13	485 - 32	469 - 16	480	2363 - 92
2	Pierce 1	Athens, GA	467 - 17	455 - 6	471 - 19	467 - 16	496	2338 - 57
3	Gwinnett Individual	Athens, GA	95 - 5	83 - 0	96 - 5	90 - 4	100	464 - 14
Rank	Participant	Region	Prone	Standing	Sitting	Kneeling	Test	Team
4	Coweta 1	Athens, GA	489 - 32	443 - 8	464 - 15	446 - 12	484	2311 - 63
5	Madison 1	Athens, GA	475 - 21	443 - 8	474 - 20	463 - 21	472	2310 - 65
6	Union 1	Athens, GA	471 - 18	447 - 14	465 - 18	466 - 16	472	2305 - 64
7	Paulding 1	Athens, GA	474 - 16	438 - 7	465 - 16	461 - 15	496	2305 - 54
8	Carroll 1	Athens, GA	478 - 21	441 - 9	469 - 19	452 - 14	484	2301 - 57
9	Elbert 1	Athens, GA	474 - 20	435 - 10	469 - 17	468 - 17	472	2300 - 58
10	Walton 2	Athens, GA	477 - 24	433 - 5	463 - 17	460 - 20	472	2299 - 63
11	Appling 1	Athens, GA	472 - 22	429 - 9	474 - 18	444 - 7	500	2298 - 53
12	Haralson 1	Athens, GA	472 - 19	423 - 6	468 - 17	451 - 16	488	2286 - 51
13	Forsyth 2	Athens, GA	478 - 23	445 - 10	463 - 14	451 - 11	480	2285 - 48
14	Tift 2	Athens, GA	481 - 23	435 - 7	471 - 16	449 - 14	456	2284 - 56
15	Wayne 1	Athens, GA	478 - 25	443 - 10	454 - 11	456 - 11	468	2282 - 56
16	Coweta 2	Athens, GA	474 - 21	423 - 11	462 - 17	445 - 10	484	2279 - 53
17	Hall 1	Athens, GA	463 - 15	437 - 0	457 - 12	461 - 20	468	2276 - 57

For complete results visit [www.orionresults.com/georgia4h](http://www.orionresults.com/georgia4h)

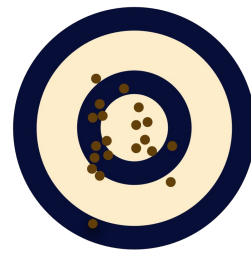
2. Produce Results



# Online Results

[www.orionresults.com/daisy](http://www.orionresults.com/daisy)

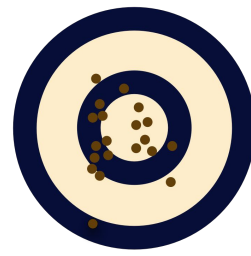
- Updated throughout the tournament.
  - Online scores are preliminary until the review period is over.
  - Please wait until the review period to address any concerns.
  - Test scores will be included.
- Scrolling leader board outside range / online.



# Internet Access

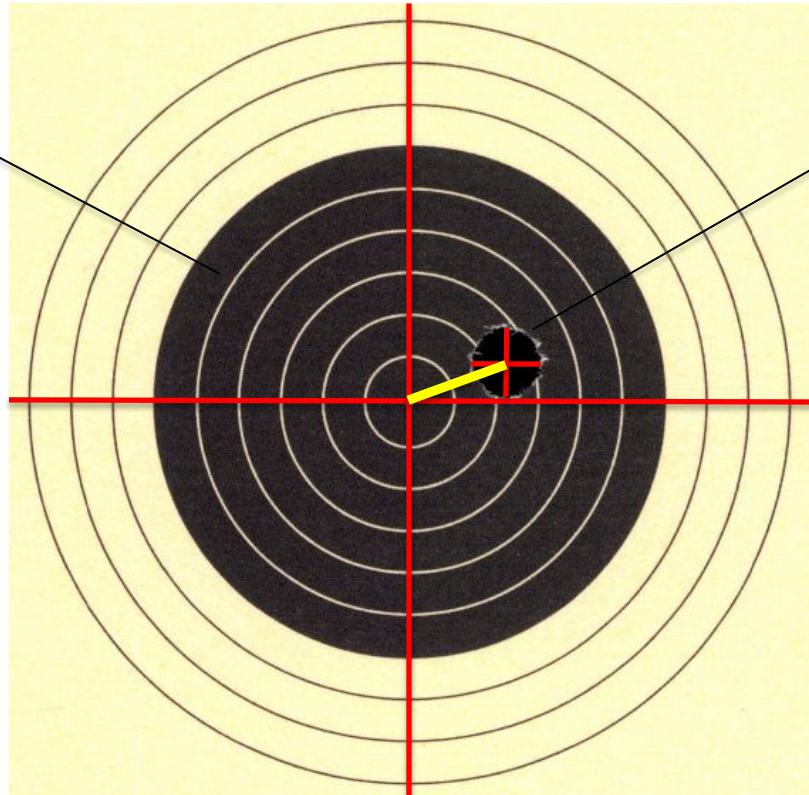
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- Network Name: \_\_\_\_\_
- ID: \_\_\_\_\_
- Password: \_\_\_\_\_



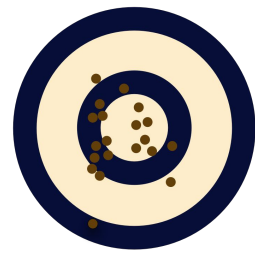
# How Does Orion Score?

1. Orion uses the edge of the aiming bull to find the center of the target.

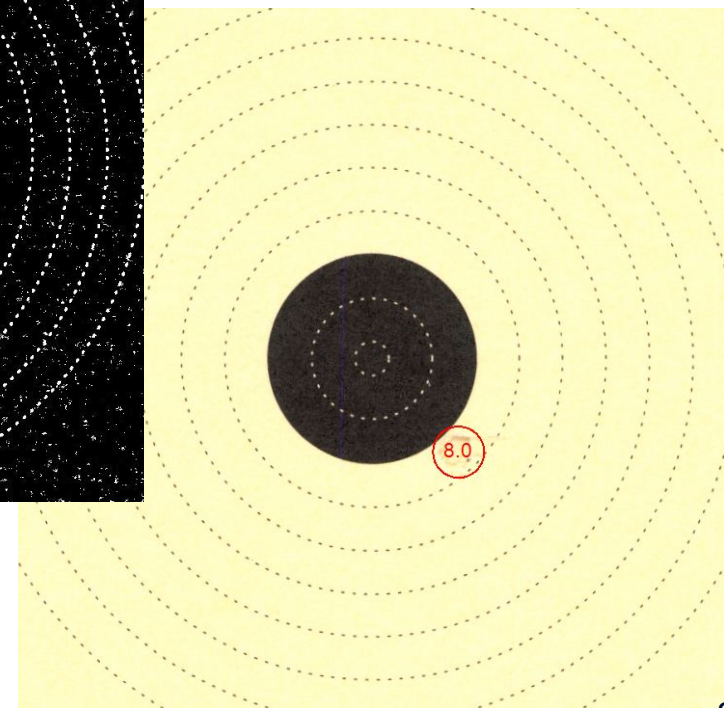
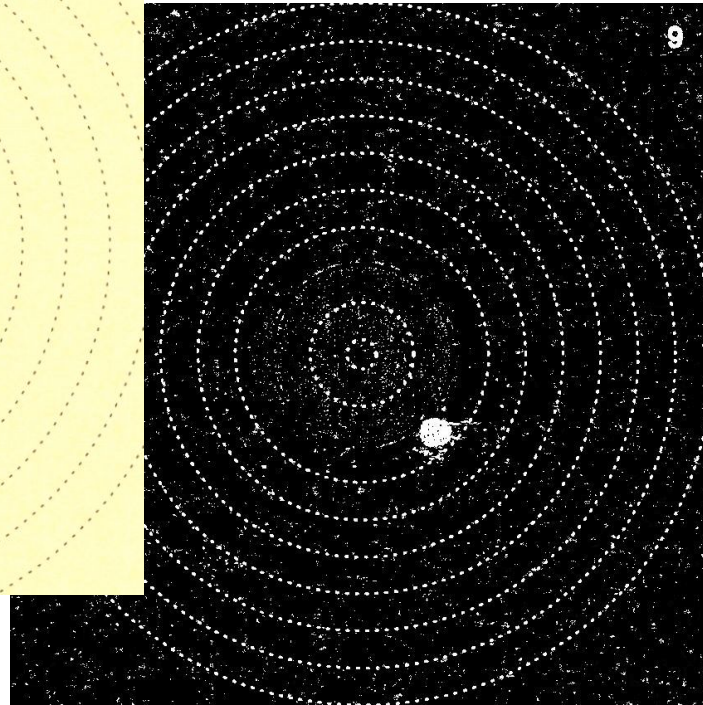
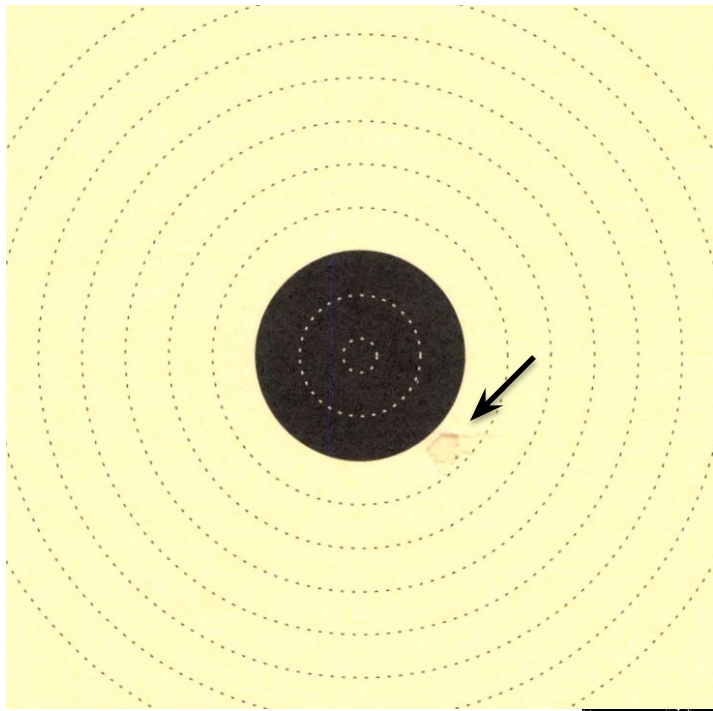


2. Orion uses the edge of the bullet hole to find the center of the shot.

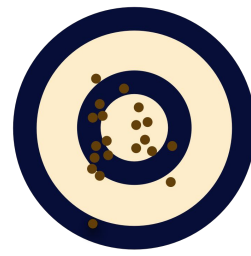
3. The distance between the center of the aiming bull to the center of the shot (i.e. the radial distance) is used to calculate the score value.



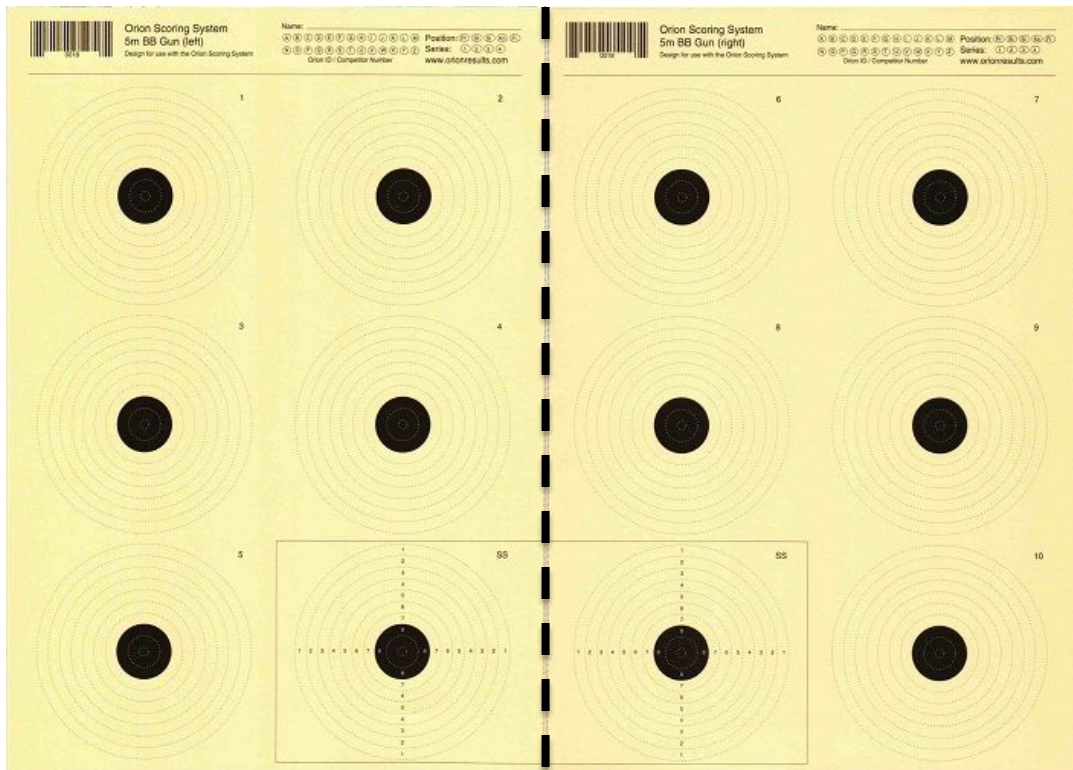
# How Does Orion Score



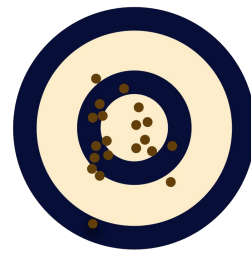




# Orion Targets



- High quality target paper
- Perforated down the center; sized to fit commodity scanners.
- Scoring rings are printed for the shooters reference only.



# Scanable Test Sheets

## BB Gun Test Scorecard



Athlete's Name: \_\_\_\_\_

### General Instructions

Use a number 2 pencil, with an eraser, do not use ink.

Write your name and fill in the bubbles corresponding to your competitor number.

For each question, fill in the circle corresponding to your answer.

- **T** is for true.

- **F** is for false.

To change an answer, erase the old mark completely, then fill in the new bubble.

Not all tests have 50 questions, only fill in an answer if there is a question.

### Athlete's Competitor Number

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 1  A  B  C  D  E

Question 2  A  B  C  D  E

Question 3  A  B  C  D  E

Question 4  A  B  C  D  E

Question 5  A  B  C  D  E

Question 6  A  B  C  D  E

Question 7  A  B  C  D  E

Question 8  A  B  C  D  E

Question 9  A  B  C  D  E

Question 10  A  B  C  D  E

Question 11  A  B  C  D  E

Question 12  A  B  C  D  E

Question 13  A  B  C  D  E

Question 14  A  B  C  D  E

Question 15  A  B  C  D  E

Question 16  A  B  C  D  E

Question 17  A  B  C  D  E

Question 18  A  B  C  D  E

Question 19  A  B  C  D  E

Question 20  A  B  C  D  E

Question 21  A  B  C  D  E

Question 22  A  B  C  D  E

Question 23  A  B  C  D  E

Question 24  A  B  C  D  E

Question 25  A  B  C  D  E

Question 26  A  B  C  D  E

Question 27  A  B  C  D  E

Question 28  A  B  C  D  E

Question 29  A  B  C  D  E

Question 30  A  B  C  D  E

Question 31  A  B  C  D  E

Question 32  A  B  C  D  E

Question 33  A  B  C  D  E

Question 34  A  B  C  D  E

Question 35  A  B  C  D  E

Question 36  A  B  C  D  E

Question 37  A  B  C  D  E

Question 38  A  B  C  D  E

Question 39  A  B  C  D  E

Question 40  A  B  C  D  E

Question 41  A  B  C  D  E

Question 42  A  B  C  D  E

Question 43  A  B  C  D  E

Question 44  A  B  C  D  E

Question 45  A  B  C  D  E

Question 46  A  B  C  D  E

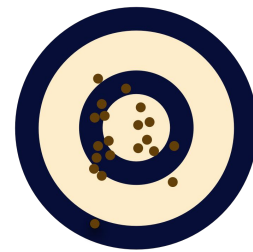
Question 47  A  B  C  D  E

Question 48  A  B  C  D  E

Question 49  A  B  C  D  E

Question 50  A  B  C  D  E

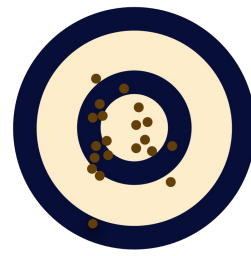
- Scans and scores test results.
- True / False and Multiple Choice



# Handling Targets

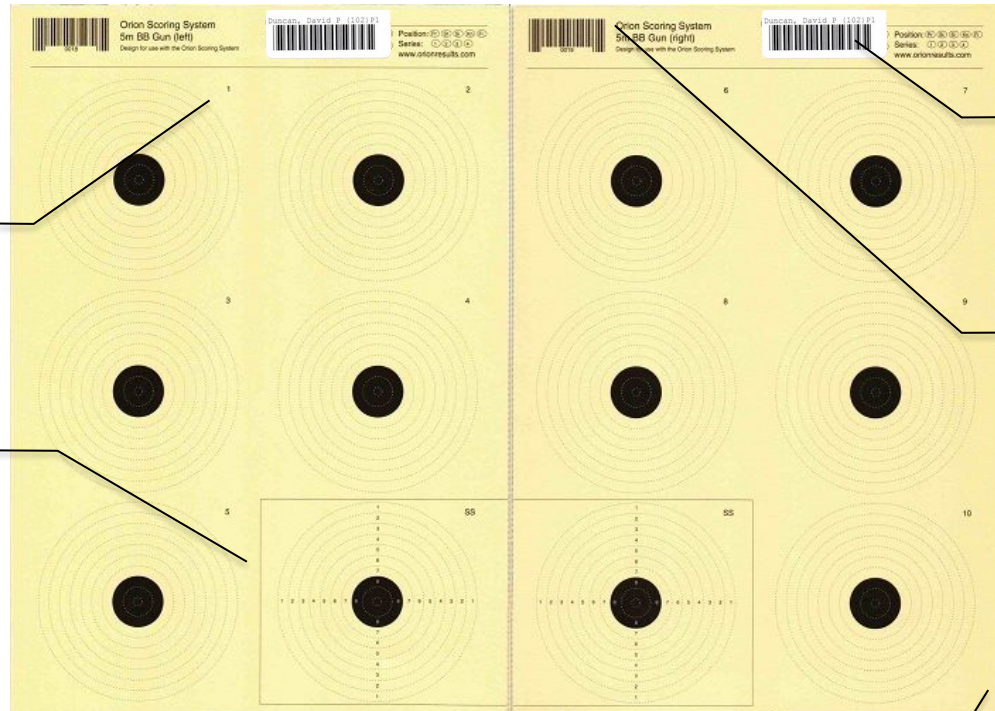
- Targets will be picked up in bundles per position.
  - 7 Answer sheets, 1 for each athlete.
  - 7 Targets, 1 for each athlete.
  - Each targets labeled with the athlete's name and competitor number.
- Do not bend or step on them.
- Keep them dry.
- Have a single team leader keep track of targets before they are shot. Keep them in the supplied folder for safe keeping.
- Use provided push pins to hang.
- Remove your targets quickly, hand them to RO or Daisy Staff quickly.
- Do NOT separate your left and right targets.





# Orion BB Gun Target

**Make sure the competitor barcode on the left hand target matches the barcode on the right hand target.**



Make sure all writing and the barcode label is above the reference line.

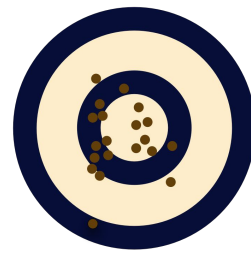
Sighter bull is demarcated with a rectangle. Remaining bulls numbered 1 through 10.

Barcode on the right tells Orion who the athlete is, position, and series number.

Barcode on the left tells Orion this is a BB Gun target.

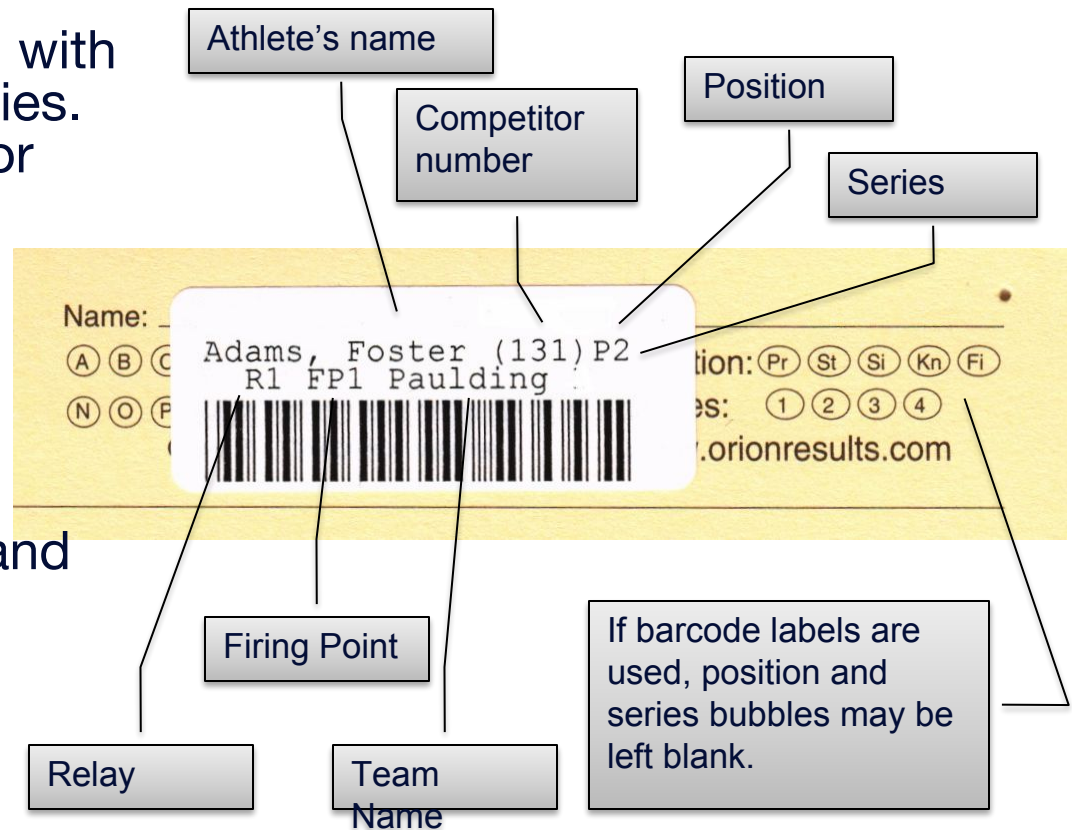
Use pushpins to hang targets.

**Don't bend or step on the targets!**

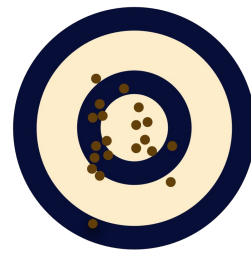


# Barcode Labels

- Barcode labels are encoded with the target's position and series. "P1" for example is short for prone series 1.
  - P = Prone
  - S = Standing
  - I = Sitting
  - K = Kneeling
  - T = Test
- Relay (R), Firing Point (FP), and Team/Organization listed on second line.
  - All Relays are listed as 1.



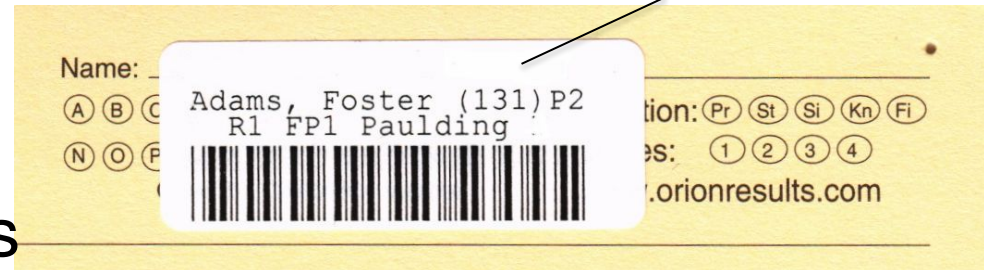
**Check that you are hanging the right target for the right athlete.**

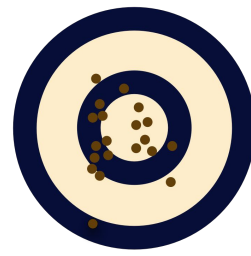


# Barcode Label Coloring

- All of your team targets should have the same color barcode label.
- Competitor numbers should be sequential.
- Competition target label's will be blue or white for the regular match, and yellow for the champions match.

Color denotes which Orion system will record your team scores.

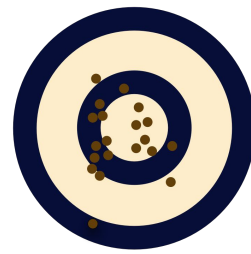




# While you are shooting

- Fire only 1 shot per bull.
- Fire only 10 record shots.
- Alert the range officer if:
  - First sighter shot is outside the sighter rectangle. RO should mark the shot as a sighter.
  - Wrong target is hung for an athlete. RO should write in the name of the correct shooter and black out the barcode label.
  - Fire 6 on one target 4 on the second. RO should mark accordingly.
  - Bullet bounces back hitting the target in reverse.

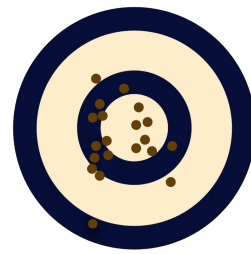




# Review Period

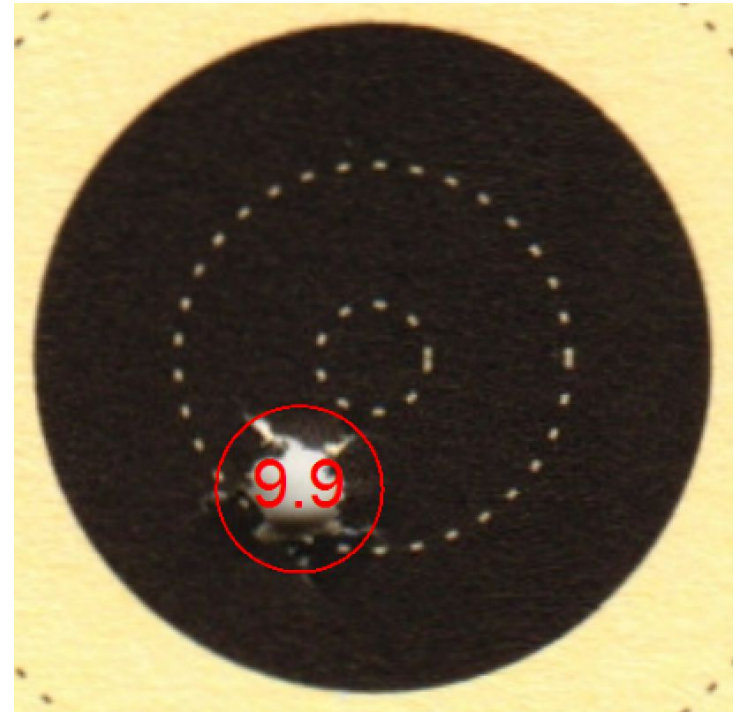
- There will be a review period at the conclusion of each day.
  - Approximately 30 minutes after last shot is fired for each relay.
  - Targets will be stacked for each team along with your athlete's individual score sheet.
  - Test may be reviewed during Sunday's review time.
  - Separate review periods for morning and afternoon relays.
- On the results:
  - Spelling of your team's and athletes' names.
  - Check to make sure individual athletes are correctly categorized as "team member" or "alternate."
  - Check that your team correctly lists your "team members."



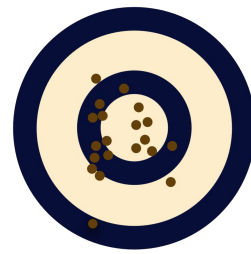


# What to look for during the review

- Obvious errors, scored shots that are not a reasonable interpretation of the physical shot hole.
- Obvious errors mostly caused by:
  - Tears around the shot hole or near the corners of the target.
  - Two shots very near each other.
  - A shot hole that collapse in on itself.
  - Writing on the shot hole.
- Correctly assigned penalties.
- Bring any questions you have to the statistical officer.
- It is unethical to ask for every 9.9, 8.9, etc to be looked at.



This is not an obvious error, this is an 9!



# Individual Score Sheet

**Athlete's name**

**Match name**

**Aggregate score, including test. The first integer is the score, the second is the number of inner tens.**

**Each shot is listed separately.**

**Shot's score. Integer value listed first, then decimal score in parenthesis. Asterisk represents inner ten.**

**Haralson County BB Invitational**  
**Frank, Morgan (102): 481 - 21**  
 Team: Carroll County 1  
 Hometown: Carrollton, GA  
 Date: Saturday, 27 February 2016

**Visual display of shot group, plus graphical group analysis**

Shot	Bull	Score	X Pos.	Y Pos.	Radius
P1	1	10*(10.4)	2.17	0.63	2.26
P2	2	10*(10.2)	-2.18	1.83	2.83
P3	3	10*(10.7)	-0.33	-1.00	1.05
P4	4	10*(10.9)	0.26	0.19	0.32
P5	5	10*(10.2)	-3.01	-0.07	3.01
P6	6	10(10.0)	-3.59	-0.84	3.68
P7	7	10*(10.6)	-0.83	-0.84	1.18
P8	8	10(10.0)	-0.23	3.74	3.75
P9	9	9(9.9)	3.95	-0.32	3.96
P10	10	9(9.8)	2.09	-3.83	4.37

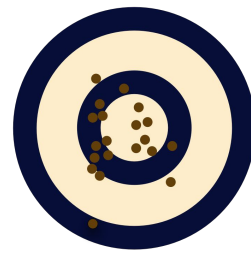
**PR 1: 98 - 6**  
 Group Center: (-0.17mm, -0.05mm)  
 Group Area: 35.77mm<sup>2</sup>  
 Group Roundness: 1.29

**Series score**

**Group analysis quantitative values.**

**Aiming bull number, labeled 1 – 10.**

**Cartesian coordinates and radial value, measured in mm.**



# Reviewing the Test

Question 1: A Correct  
Question 2: B Correct  
Question 3: C Correct  
Question 4: D Correct  
Question 5: E Correct  
Question 6: A Correct  
Question 7: A Wrong (B)  
Question 8: C Correct  
Question 9: D Correct  
Question 10: E Correct  
Question 11: A Correct  
Question 12: Not Marked Wrong (B)  
Question 13: C Correct  
Question 14: D Correct  
Question 15: E Correct  
Question 16: E Wrong (A)  
Question 17: A Wrong (B)  
Question 18: C Correct  
Question 19: D Correct  
Question 20: E Correct  
Question 21: A Correct  
Question 22: B Correct  
Question 23: C Correct  
Question 24: D Correct  
Question 25: E Correct  
Question 26: A Correct  
Question 27: B Correct  
Question 28: B Wrong (C)  
Question 29: D Correct  
Question 30: E Correct  
Question 31: A Correct  
Question 32: B Correct  
Question 33: C Correct  
Question 34: D Correct  
Question 35: E Correct  
Question 36: A Correct  
Question 37: A Wrong (B)  
Question 38: C Correct  
Question 39: D Correct  
Question 40: E Correct  
Question 41: B Wrong (A)  
Question 42: B Correct  
Question 43: C Correct  
Question 44: D Correct  
Question 45: A Wrong (E)  
Question 46: B Wrong (A)  
Question 47: C Wrong (B)  
Question 48: C Correct  
Question 49: D Correct  
Question 50: E Correct

## Question 1: A Correct

Athlete filled in “A” (or true), which is the correct answer.

## Question 12: Not Marked Wrong (B)

Athlete either didn’t answer the question, or did not fill in the bubble correctly. The correct answer was “B”.

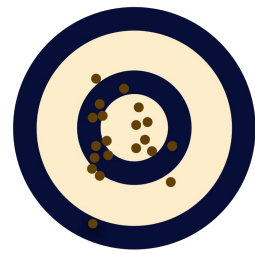
## Question 28: B Wrong (C)

Athlete filled in “B” which is the wrong answer, the correct answer was “C”.

## Test : Murray, Chris J – T 1: 80

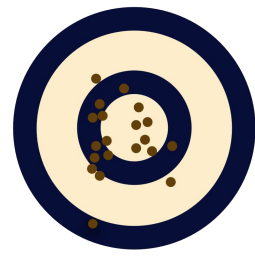
Total score on the test, 80 points.

**Note:** In the true false portion of the test, the Individual Score Sheets report True as “A” and False as “B”.



# Interpreting Score

- **Aggregates**
  - “94 – 2” means a score of 94 with 2 inner tens.
  - “87 – 0” means a score of 87 with 0 inner tens.
- **Individual Shots**
  - $10^*(10.4)$  means an inner ten, and a decimal value of 10.4.
    - Asterisk denotes inner ten.
  - $10(10.1)$  means a ten, and a decimal value of 10.1.
  - $8^(8.7)$  means an eight, and a decimal value of 8.7.
    - Carrot (^) denotes a manually modified shot.

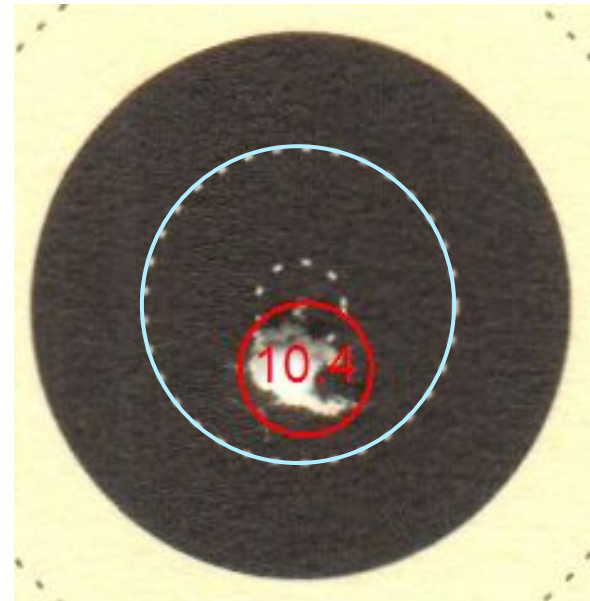


# What is an Inner Ten

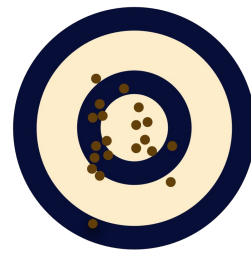
An “Inner Ten” is a shot that is scored as a ten, that is also completely inside the 9 ring.



Is not an Inner Ten

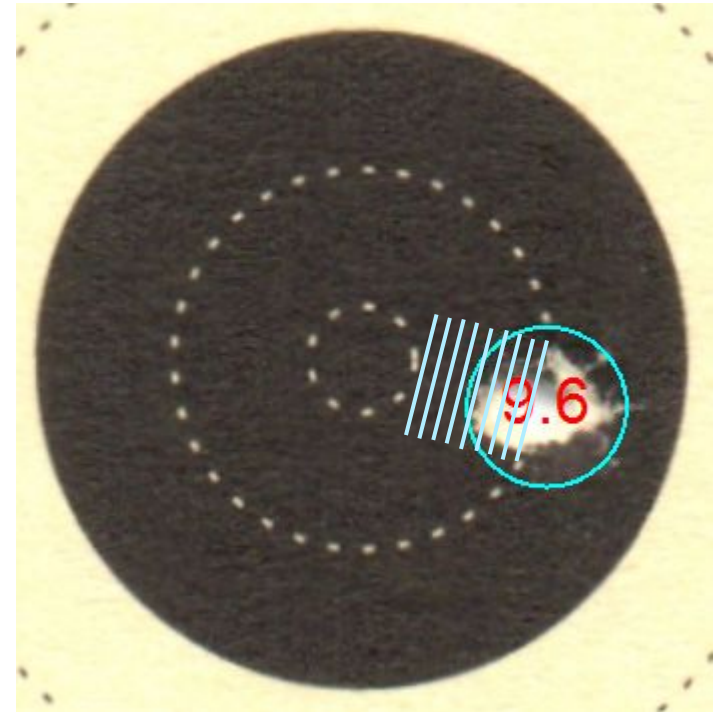


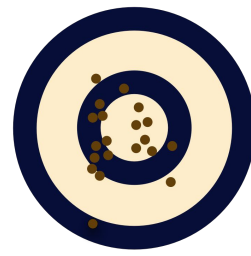
Is an Inner Ten



# Decimal Scoring

- Each integer ring is further divided into 10 “sub-rings.”
- Highest value is a 10.9.
- Seen as a more precise way to measure an athlete's performance.
- Used in Finals and in all Olympic Air Rifle events.





# Questions



[facebook.com/orionscoring](https://facebook.com/orionscoring)



[www.orionscoringsystem/bbgunleague](http://www.orionscoringsystem/bbgunleague)

## **Office Hours and Contact Information**

Monday through Friday 10AM – 6PM

Saturday : 9 AM – 4PM

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[support@shooterstech.net](mailto:support@shooterstech.net)