



**TRIARC** systems  
BALLISTIC DATA COLLECTION  
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## ► SUMMARY

High quality, performance driven weapon systems have never been in greater demand than they are today. Recent violent incidents, including domestic criminal activity, have created an acute need for reliable weapon systems that can effectively engage threats from CQB distances out to several hundred meters. End users must know and trust that their equipment will perform on demand, every time, regardless of the conditions. This is where TRIARC Systems is constantly Pushing Forward.

The firearms industry continues to evolve with new technology, machining techniques, and ballistic properties. As such, TRIARC Systems aims to aid the professional end user with current ballistic data that accounts for these improvements.

**This document was created to give the professional end user access to the performance data of our platforms when used with various types of ammunition in an easy to read and straightforward format.**

It is meant to give Law Enforcement agencies, administrators, and officers a comprehensive guide to make informed decisions on equipment that is intended to be used in the line of duty.



## ► TRIARC SYSTEMS BALLISTIC DATA

The primary focus of the data gathered below is changes in velocity across various ammunition calibers in different barrel lengths. This is not an exhaustive list of all ammunition types but includes ones in common usage with Law Enforcement Agencies. Each test consisted of a 5 shot string. Grouping size was not taken in account as a factor of data collection and is shown only as a reference.

Data will be associated as such:

### **Indoor Range Facility**

Ventilated & A/C Controlled

### **Position**

Seated, bench & bag rested. No barrel rested on support.

### **Optic**

Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR

### **Ballistic Zero**

A 50 yard zero was used in this data collection as the indoor range was limited on distance. The optic mentioned above was mounted on each weapon platform, torqued down and re-zeroed each time with a neutral caliber as follows: Expansion Industries, 223 Remington, 55 gr Full Metal Jacket (FMJ) Boat Tail. Unless another platform was used rifle caliber will be listed as Neutral, or otherwise specified when changed.

### **LabRadar Ballistic Velocity Doppler Radar Chronograph**

A LabRadar was used for ballistic gathering. Settings were as follows:

**Velocity** – Feet Per Second (FPS)

**Distance** – Yards

**Weight Units** – Grains

**Velocity Range** – Rifle



**Projectile Offset** – 6 Inches from side of LabRadar

**Projectile Weight** – Set for each caliber fired. Ex. 55gr for a series of 5 shot string

**Set Distances** – Dis.1 (10yds), Dis.2 (20yds), Dis.3 (30yds), Dis. 4 (40yds), Dis.5 (50yds).

**Trigger Source** – Internal microphone built in

**Trigger Level** – Level 1

**Series Sequence** – Is the sequence or ballistic data stored in the Lab Radar programming to calculate each shot sequence.

**Ammunition(s) – Not all are shown on this page.**

*50 Yard Base Zero Round – Expansion Industries, 223 Remington, 55 gr Full Metal Jacket (FMJ) Boat Tail, Manufacture Velocity 3000 FPS*

- **Federal, American Eagle** – 223 Remington, 55gr FMJ-BT, Manufacture Vel. 3240 FPS
- **Federal, Range Target Practice** – 5.56 NATO, 55gr FMJ, Manufacture Vel. 3165 FPS
- **Federal LE Tactical Bonded** – 223 Remington, 55gr Soft Point, Manufacture Vel. 3150 FPS
- **Federal LE Tactical Bonded** – 223 Remington, 62gr Soft Point, Manufacture Vel. 3050 FPS
- **Hornady Frontier** – 5.56 NATO, 62gr Spire Point, Manufacture Vel. 3060 FPS
- **Hornady TAP GMX Barrier** – 223 Remington, 55gr BTHP, Manufacture Vel. 3242 FPS
- **Hornady Superformance Match** – 5.56 NATO, 75gr BTHP, Manufacture Vel. 2910 FPS
- **Hornady SBR Training** – 5.56 NATO, 75gr BTHP, Manufacture Vel. 2310 FPS

## ► TRIARC TRACK 2.0, 5.56/.223 Systems

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	16
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Flash Hider
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
62	CONTROL ZERO ROUND - EXPANSION INDUSTRIES	223 REMINGTON	55GR FMJBT	3000	2864
63	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	3148
64	HORNADY FRONTIER	223 REMINGTON	55GR FMJ	3240	2915
65	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2989
66	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2758
67	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2713
68	HORNADY TAP	223 REMINGTON	75GR BTHP	2630	2590
69	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2821

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	14.5
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Surefire Warcomp
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
53	CONTROL ZERO ROUND - EXPANSION INDUSTRIES	223 REMINGTON	55GR FMJBT	3000	2788
54	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	3067
55	HORNADY FRONTIER	223 REMINGTON	55GR FMJ	3240	2821
56	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2926
57	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2709
58	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2643
59	HORNADY TAP GMX BARRIER	223 REMINGTON	55GR BTHP	3242	2868
60	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2745
61	HORNADY SBR TRAINING	5.56 NATO	75GR BTHP	2310	2450

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	13.9
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Surefire Warcomp
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
45	FEDERAL AMERICAN EAGLE	223 REMINGTON	55GR FMJ	3240	2670
46	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	3022
47	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2895
48	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2631
49	HORNADY TAP GMX BARRIER	223 REMINGTON	55GR BTHP	3242	2799
50	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2706
51	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2712
52	HORNADY SBR TRAINING	5.56 NATO	75GR BTHP	2310	2415

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	12.5
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Surefire Warcomp Closed Tine Flash Hider
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
37	FEDERAL AMERICAN EAGLE	223 REMINGTON	55GR FMJ	3240	2601
38	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	2923
39	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2807
40	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2519
41	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2581
42	HORNADY TAP GMX BARRIER	223 REMINGTON	55GR BTHP	3242	2687
43	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2626
44	HORNADY SBR TRAINING	5.56 NATO	75GR BTHP	2310	2339

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	11.5
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Flash Hider
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
29	FEDERAL AMERICAN EAGLE	223 REMINGTON	55GR FMJ	3240	2535
30	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	3598
31	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2760
32	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2486
33	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2564
34	HORNADY TAP GMX BARRIER	223 REMINGTON	55GR BTHP	3242	2684
35	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2578
36	HORNADY SBR TRAINING	5.56 NATO	75GR BTHP	2310	2304

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	10.5
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Flash Hider
<b>Zero Distance</b>	50 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
22	FEDERAL AMERICAN EAGLE	223 REMINGTON	55GR FMJ	3240	2388
23	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2556
24	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2301
25	HORNADY TAP GMX BARRIER	223 REMINGTON	55GR BTHP	3242	2508
26	FEDERAL LE TACTICAL BONDED	223 REMINGTON	62GR SOFT POINT	3050	2424
27	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2430
28	HORNADY SBR TRAINING	5.56 NATO	75GR BTHP	2310	2198

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15
<b>Barrel Length</b>	8.3
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	Flash Hider
<b>Zero Distance</b>	50 Yard
<b>Confirm Distance</b>	84 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
78	CONTROL ZERO ROUND - EXPANSION INDUSTRIES	223 REMINGTON	55GR FMJBT	3000	2301
79	HORNADY FRONTIER	223 REMINGTON	55GR FMJ	3240	2304
81	HORNADY FRONTIER	5.56 NATO	62GR SPIRE POINT	3060	2491
83	FEDERAL RANGE TARGET PRACTICE	5.56 NATO	55GR FMJ	3165	2556
85	FEDERAL LE TACTICAL BONDED	223 REMINGTON	55GR SOFT POINT	3150	2168
87	SPEER GOLD DOT	223 REMINGTON	55GR SOFT POINT	3220	2357
89	HORNADY TAP	223 REMINGTON	75GR BTHP	2630	2105
91	FIOCCHI	223 REMINGTON	55GR FMJ BT	3240	2292
93	FIOCCHI	5.56 NATO	55GR M193 FMJ BT	3240	2454
95	HORNADY SUPERFORMANCE MATCH	223 REMINGTON	73GR ELD MATCH	2930	2200
97	HORNADY SUPERFORMANCE MATCH	5.56 NATO	75GR BTHP	2910	2304

## ► TRIARC TRACK .300 Blackout Systems

<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15 - <b>300 BLACK OUT</b>
<b>Barrel Length</b>	10.3
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	N/A
<b>Zero Distance</b>	50 Yard
<b>Confirm Distance</b>	84 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
116	CONTROL ZERO ROUND - FIOCCHI SUBSONIC	300 BLACK OUT	220 GR MATCHKING	1020	886
118	HORNADY BLACK SUBSONIC		208GR AMAX	1020	949
120	SIG SAUER SUBSONIC		220GR OTM	1000	1026
122	HORNADY SUBSONIC		190GR SUB-X	1050	1042
124	FEDERAL AMERICAN EAGLE		150GR FMJ	1900	1838
126	HORNADY BLACK SUPER SONIC		110GR VMAX	2375	2253
128	SIG SAUER SUPER SONIC		125GR FMJ	2200	2150



<b>Weapon</b>	TRIARC Systems
<b>Model</b>	TSR-15 - <b>300 BLACK OUT</b>
<b>Barrel Length</b>	8.3
<b>Optic / Sights</b>	Leupold Mark 8 CQBSS 1.1-8x24mm, Front Focal M-TMR
<b>Suppressor</b>	N/A
<b>Muzzle Device</b>	N/A
<b>Zero Distance</b>	50 Yard
<b>Confirm Distance</b>	84 Yard

Shot Series	Ammunition Manufacture	Projectile Caliber	Projectile Weight	Manufacture Velocity	Total Average Velocity
99	CONTROL ZERO ROUND - FIOCCHI SUBSONIC	300 BLACK OUT	220 GR MATCHKING	1020	875
101	REMINGTON UMC SUBSONIC		220GR OTFB	1015	907
103	REMINGTON UMC SUPERSONIC		120GR OTFB	2202	1869
105	SELLIHER & BELLOT		124GR FMJ	2165	1943
107	SIG SAUER SUPER SONIC		125GR FMJ	2200	2072
109	HORNADY BLACK		110GR VMAX	2375	2168
111	HORNADY BLACK SUBSONICS		208GR AMAX	1020	942
113	SIG SAUER SUB SONIC		220GR OTM	1000	879
115	FRONTIER HORNADY		125GR FMJ	2175	1961
117	FEDERAL AMERICAN EAGLE		150GR FMJ	1900	1739
119	HORNADY SUBSONIC		190 GR SUB-X	1050	1035




## ► CONCLUSION

The data collected is an analysis of ballistic data of various factory manufactured carbine ammunition and the effects on round velocity when fired through various barrel lengths. TRIARC Systems aims to provide the professional end user with current ballistic data. **The correct ammunition choice is extremely important to aid in precision shot placement and terminal performance of the round.** Since velocity fluctuates depending on the type of ammunition and length of barrel, it is vital to make certain the proper combination is achieved to ensure the round performs as intended on target.

Because of their lighter weight and superior maneuverability in confined spaces, Short Barrel Rifles (SBR) are becoming increasingly popular. Typically, an SBR will produce less velocity due to incomplete powder burn in the barrel or the round exiting the barrel before its ideal velocity has been achieved. Choosing ammunition with a very efficient powder burn sequence is critical for SBRs. This data will provide the ideal rifle barrel length and ammunition combination that generates lethal velocity—and will ensure that a TRIARC Systems rifle will deliver efficient, high performance when making a shot.

**Using the data collected above as a guide, the end user can select the correct ammunition to pair with their chosen carbine barrel length.** This will reduce the time and expense associated with large quantity ammunition purchases for internal department analysis. As new developments emerge in ammunition technology, TRIARC Systems will continue to update and publish ballistic data in conjunction with TRIARC System products.



This data will best inform the end user in advance of the combination of platforms and ammunition for their desired application. Throughout the collection of this data, **our tests have demonstrated a minimal loss in velocity when compared to other barrels of a similar length.** This is because TRIARC Systems carbine platforms are thoughtfully designed to distribute energy efficiently across the entire weapon system. Our engineers are subject matter experts who adhere to strict quality control standards and ensure every part that goes into our rifles does the same. This produces a finished product that performs well above the sum of its parts and allows the end user to continue Pushing Forward.

