

## NEVADA BOARD OF WILDLIFE COMMISSIONERS

## PETITION FOR ADOPTION, AMENDMENT, FILING OR REPEAL OF REGULATION

(Submit to: Secretary, Board of Wildlife Commissioners, 6980 Sierra Center Parkway, Reno, NV 89511)

Petitioner's Full Name: Ryan Bronson for Federal Premium Ammunition

(Please Print)

Type of Petitioner: (Individual, Partnership, Corporation, Government Agency, Other): Corporation

Petitioner's Mailing Address: 1 Vista Way, Anoka, MN 55303

Petitioner, please complete the following (attach additional sheets if necessary):

1. State the need for and purpose of the proposed regulation: Historically turkey shot and gauge restrictions were based on the limitations of lead and steel shot. Tungsten based shot provides the opportunity to make sub-gauge shotguns adequate for humanely taking turkeys at reasonable ranges. Sub-gauge shotguns also provide additional opportunities for recruitment and re-activation of hunters. 410s are legal in 37 states, and 28 gauge is legal in 38 (Utah). Federal Premium Ammunition is currently marketing a 410 turkey load featuring Tungsten Super Shot, and we suspect additional sub-gauge offerings will become commercially available in coming years. This expands the non-toxic shot options available for hunters.

2. Provide (or attach) the wording for the change you are proposing:

***NAC 503.187 Weapons and type of shot permitted for hunting wild turkey. (NRS 501.105, 501.181, 503.150)***

1. *No weapon other than a:*

(a) *Shotgun which is no larger than 10 gauge nor smaller than 20 gauge and uses a shot size no larger than a number 2 pellet; or*

(b) Shotgun which is .410 or 28 gauge and uses non-toxic shot size no larger than number 6 pellets with a density of 15 grams per cubic centimeter or denser; or

~~(b)~~ *(c) Bow and arrow, may be used to hunt wild turkey.*

2. *Shot used to hunt wild turkey on a wildlife management area must be:*

(a) *Nontoxic shot; and*

(b) *Not larger than standard-size T.*

*(Added to NAC by Bd. of Wildlife Comm'rs, eff. 9-19-90; A by R054-02, 11-19-2002, eff. 3-1-2003; R107-14, 12-22-2014)*

3. What is the estimated "economic" effect of the regulation on the business which it is to regulate?

(a) Include both adverse and beneficial effects: It would provide limited increased sales estimated at a few thousand dollars per year. Those additional sales would include a few hundred dollars of Pittman-Robertson revenue. We are seeking this regulation to provide an additional option for hunters in Nevada. The economics are negligible.

(b) Include both immediate and long-term effects:

4. What is the estimated "economic" effect of the regulation on the public which it is to regulate?  
(a) Include both adverse and beneficial effects: Consumers would have to choose this additional option within a free market, so the economic benefit is negligible.

(b) Include both immediate and long-term effects:

5. What is the estimated cost to the Department of Wildlife for enforcement of the proposed regulation? We don't forecast an additional enforcement cost of adding these to the allowed weapons list for turkey hunting.

6. Does the proposed change overlap or duplicate any regulations of other state or local government agencies? ☒ No. ☐ Yes. If "Yes," list the agency and explain why the duplication or overlapping is necessary:

7. Does the requested change overlap or duplicate a federal regulation? ☒ No. ☐ Yes. If "Yes," list the name of the regulating federal agency?

8. Is the requested change required by federal law? ☒ No. ☐ Yes. If "Yes," please cite or describe the federal law as best you can:

9. Does the requested change include provisions which are more stringent than a federal regulation that regulates the same activity? ☒ No. ☐ Yes.

10. Does the requested change establish a new fee or increase an existing fee? ☒ No.

☐ Yes

Ryan Brown

Date 3-15-18



## State Turkey Hunting Restrictions on Ammunition, Shotguns

Legalizing sub-gauges and ultra-dense fine shot in non  
traditional sizes



# Shot restrictions were implemented for good reason

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- Turkey hunting in the 1970's-90's was new in many places, and accident rates were higher than for other disciplines
- Promoting head shots with fine shot was a strategy because:
  - Encourages closer range shots and positive ID of toms
  - Discourages shooting at sound and movement
  - More lethal, less wounding loss than body shots
  - These combine to be safer for hunters, more humane for turkeys
- Lead shot was the only option
  - #4, #5, #6 shot in lead enabled sufficient pattern density and penetration
  - Ammo companies created turkey loads with bigger payloads
- Many states liberalized shot size regs to allow 7 and smaller from 2008-2014, in response to tungsten and “heavier than lead” options

# States with shot and/or gauge restrictions



State	Regulation on Shot	#7	#8	# 9	Gauges
Delaware	4,5&6 or mixed 7.5	N	n	n	20+
Maine	#4 to #6, or mixed #4 to #7	N*	n	n	20+
Massachusetts	4,5,6 & 7	Y	n	n	ALL
Illinois	#4 to #7.5	Y	n	n	20+
Indiana	#4 to #7.5	Y	n	n	20+
Nebraska	#2 to #7.5	Y	n	n	ALL
New Jersey	#4 to #7.5	Y	n	n	20+
Connecticut	4,5,6 & 7.5	Y	n	n	20+
Rhode Island	4,5,6,7	Y	n	n	20+
Iowa	#4 to #8	Y	y	n	20+
New York	#2 to #8	Y	y	n	ALL
Vermont	#2 to #8	Y	y	n	ALL
Utah	BB to #8	Y	y	n	28+
Minnesota	<#4	Y	y	y	20+
Oregon	<#2	Y	Y	Y	20+
New Hampshire	<#4	Y	Y	Y	20+
Nevada	<#2	Y	Y	Y	20+

Source: Publicly available online hunting regulations in 2017

# Lead (Pb) & Tungsten (W) & Bismuth (Bi)

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## Lead (Pb)

- Pure metal density 11.3 g/cc
- Hardness (Mohs scale) 1.5
- Melting point 621F
- Price quote 1/4/17- \$1.17/lb

## Bismuth (Bi)

- 9.75 g/cc
- Hardness (Mohs scale) 2.5
- Melting Point 520F
- Price quote \$12.40/lb

## Tungsten (W)

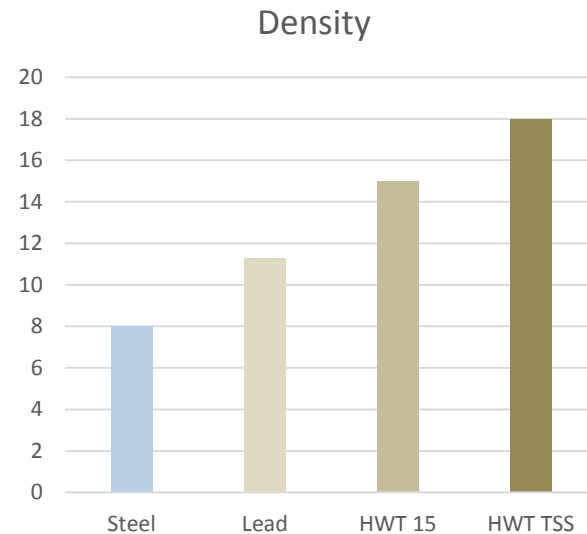
- Pure metal density 19.6 g/cc
- Hardness (Mohs scale) 7.5
- Melting point 6177 F
- Price quote 1/4/17- \$62.70/lb
- In shot, W has been mixed with iron, plastic, nylon and other metals in order to form pellets, soften the pellet, mitigate cost.

# Increasing Density



## Tungsten Shot Density Progression

- HEVI Shot 13 g/cc
- Old Federal HEAVYWEIGHT® 15 g/cc
- HEAVYWEIGHT® TSS 18g/cc



# HEAVYWEIGHT® #7 15 g/cc

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- Introduced in 2007
- Currently allowed in all 50 states as a mix, 48 states as pure 7's





# HEAVYWEIGHT® TSS, 7 & 9 Shot



New Denser Shot

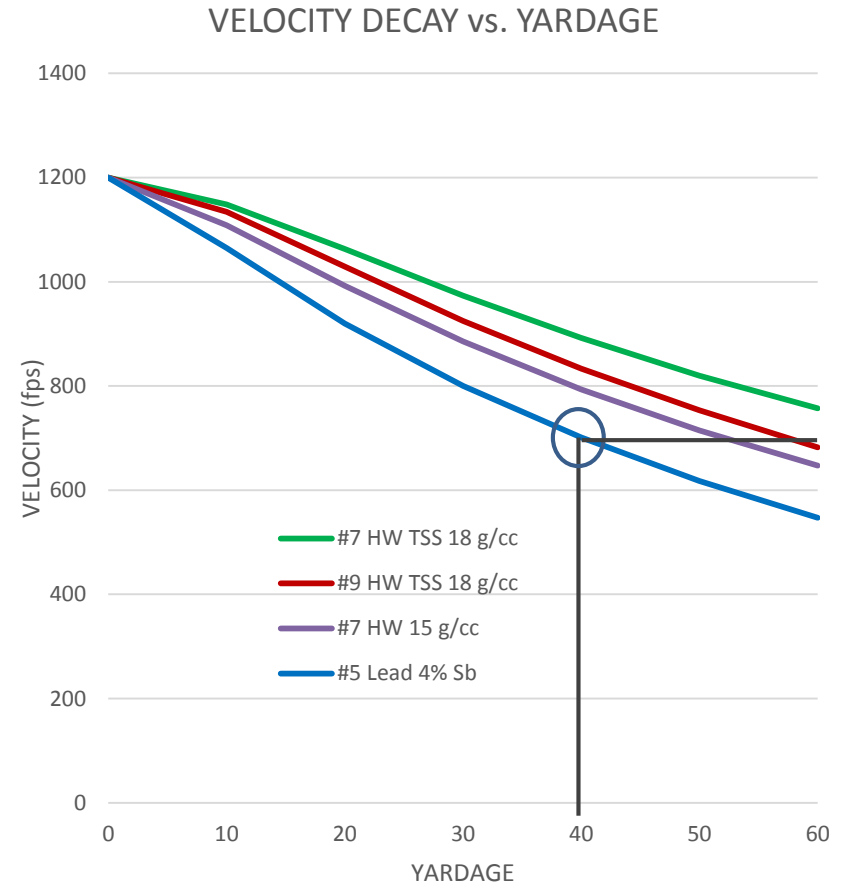
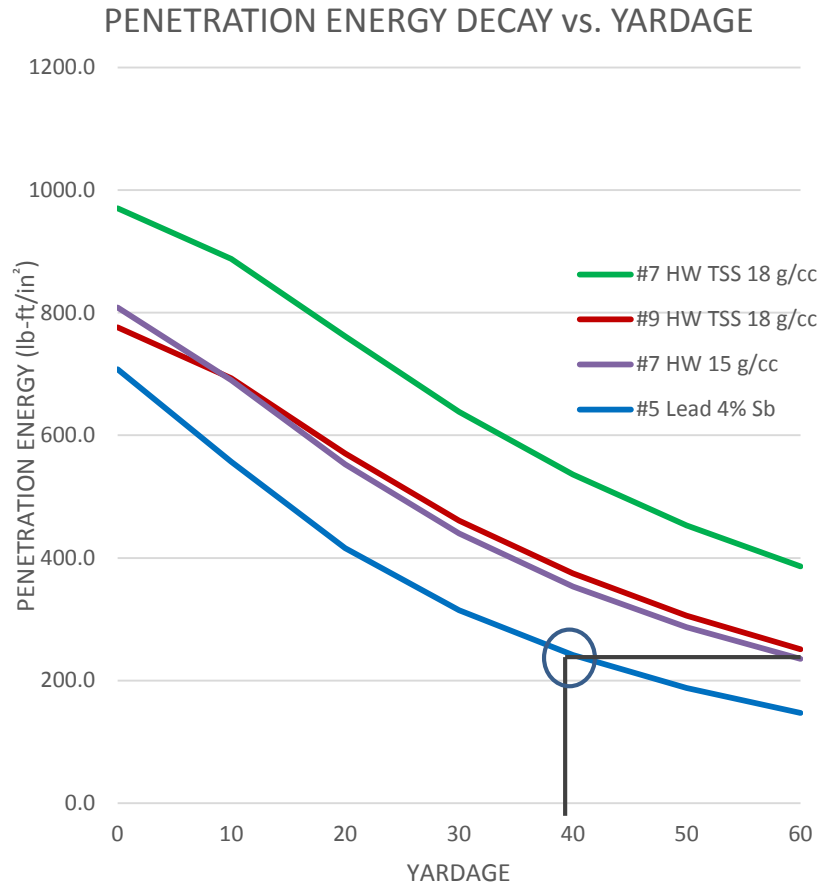


Including #9 Shot



New in 2018

# Ballistic benefits small dense shot

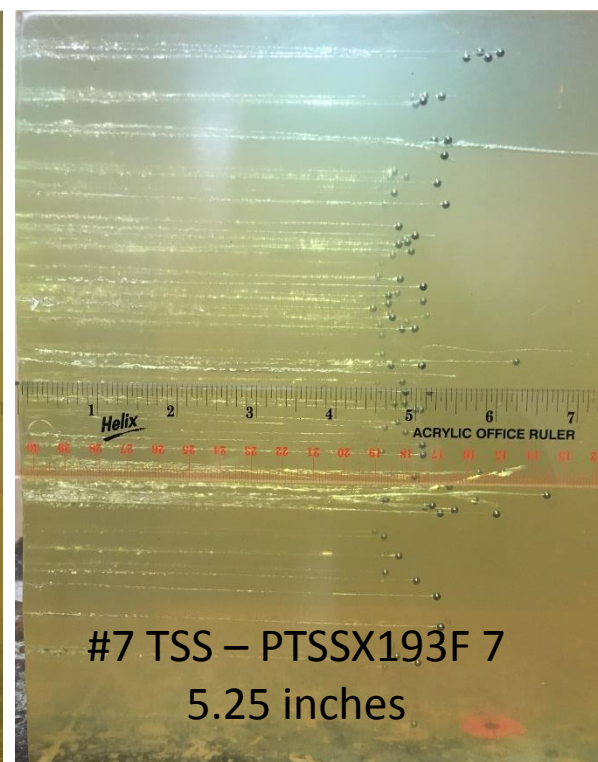
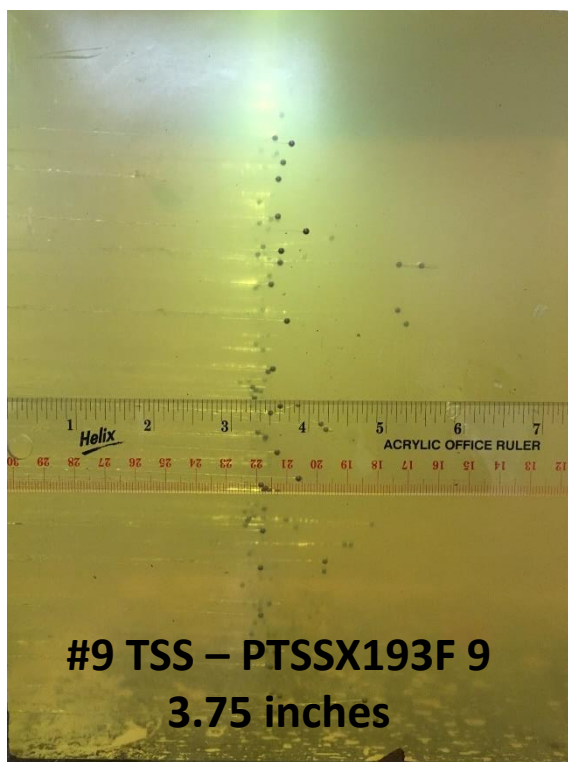
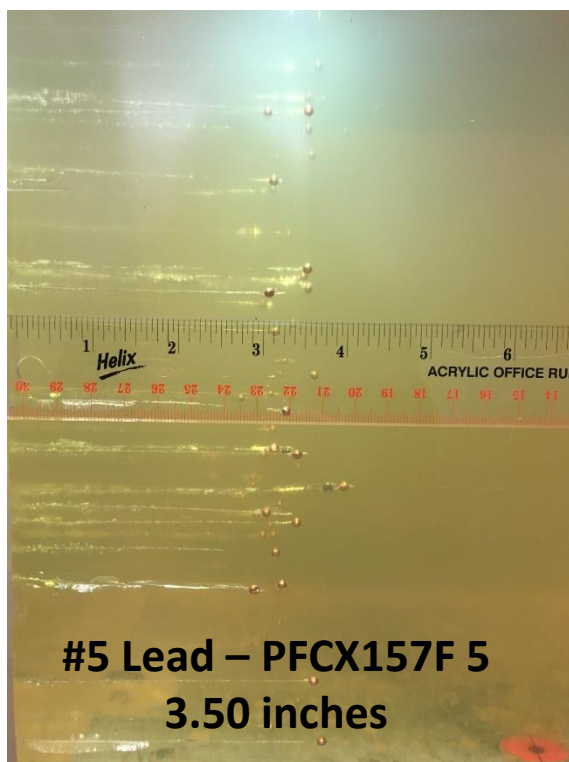


Muzzle vel= 1200 fps

# Penetration in Tissue



## PENETRATION DATA: Bare Gel – 40 YARDS

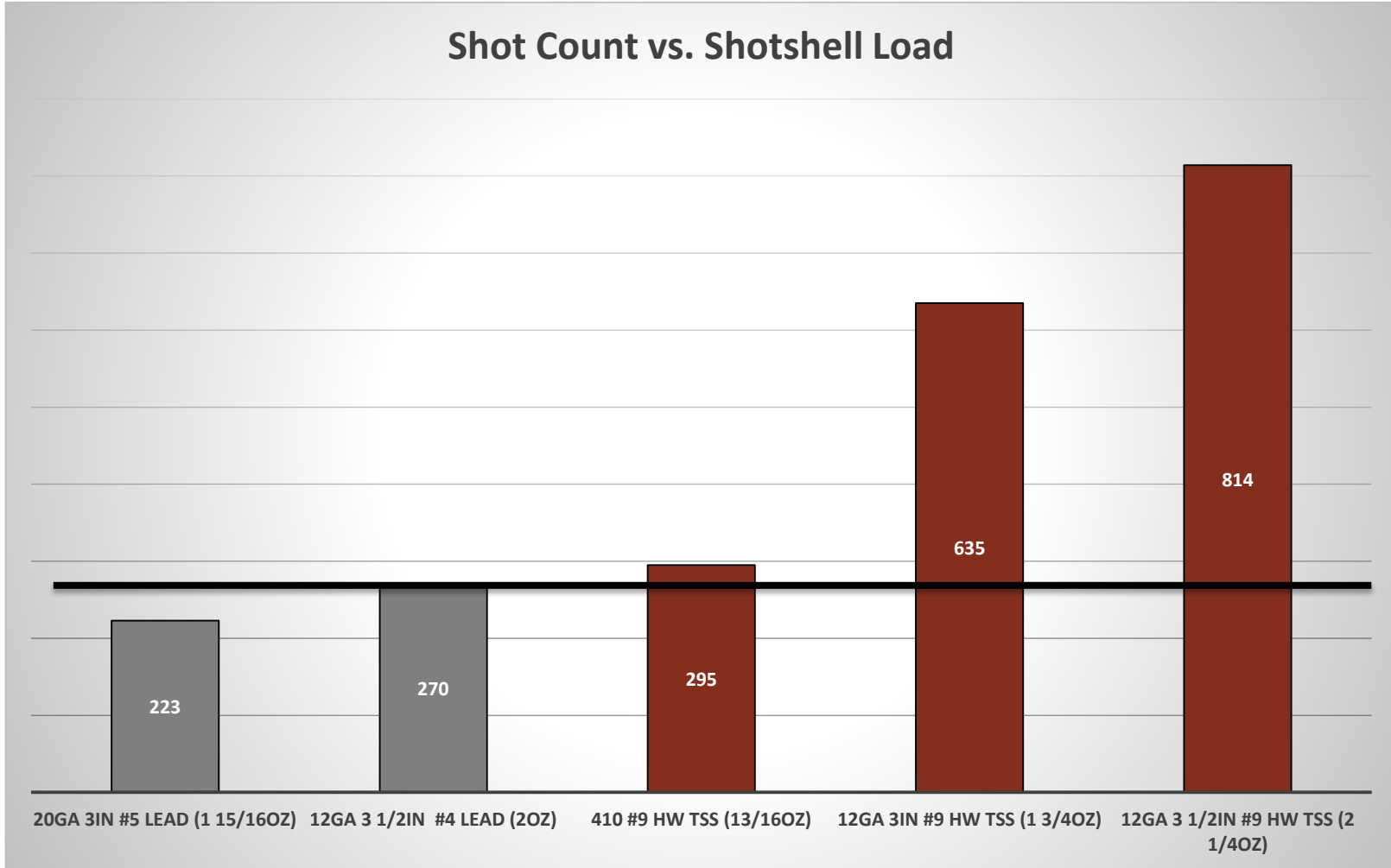


Muzzle Velocity = 1200 fps

# Smaller shot = more pellets



Shot Count vs. Shotshell Load





# Pellet count reference chart



## AVERAGE PELLET COUNT — LEAD SHOT

Shot Size	Payload Weight													
	1/2 (14.17)	11/16 (19.49)	3/4 (21.25)	7/8 (24.80)	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)	1 5/16 (37.21)	1 3/8 (38.98)	1 1/2 (42.52)	1 5/8 (46.06)	1 7/8 (53.15)	2 (56.70)	2 1/4 (63.78)
9	292	402	439	512	585	658	731	767	804	877	951	1097	1170	1316
8-1/2	249	342	373	435	497	559	621	652	683	745	808	932	994	1118
8	205	282	307	359	410	461	512	538	564	615	666	769	820	922
7-1/2	175	241	262	306	350	394	437	459	481	525	569	656	700	787
6	112	155	169	197	225	253	281	295	309	337	366	422	450	506
5	85	117	127	149	170	191	212	223	234	255	276	319	340	382
4	67	93	101	118	135	152	169	177	186	202	219	253	270	304
2	43	60	65	76	87	98	109	114	120	130	141	163	174	196
BB	25	34	37	44	50	56	62	65	69	75	81	94	100	112

Weight of Shot in Ounces (Grams) (3% Antimony)

## AVERAGE PELLET COUNT — HEAVYWEIGHT TSS SHOT

Shot Size	Payload Weight			
	13/16 (23.03)	1 1/2 (42.52)	1 3/4 (49.61)	2 1/4 (63.78)
9	294	544	634	815
7	—	283	330	424

Weight of Shot in Ounces (Grams)

## SHOT SIZE REFERENCE CHART



PELLET	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9
DIAMETER INCHES	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08
DIAMETER MM	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03

# Sample regulation language

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## Simplest

- Shotguns and shotshells with number 4 or smaller shot may be used to take wild turkeys.

## Special shot regs for sub gauges

- Shotguns in 28 gauge and .410 must be loaded with shot no larger than #6 shot and a density of at least 15 grams per cubic centimeter and a muzzle velocity of at least 1000 fps.



**For government relations and  
regulatory assistance:**

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