

# AN INVESTIGATION OF FIFTY CALIBER RIFLE CAPABILITIES

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## Introduction

The “Military Sniper Weapon Regulation Act of 2001” was recently (2001-Mar-9) reintroduced as Senate Bill S.505 (full text included below as Appendix B).

The sponsors of S.505 (Diane Feinstein D-CA, Charles Schumer D-NY, and Edward Kennedy D-MA) seek to impose special regulations on .50 caliber rifles, effectively criminalizing possession by common citizens.

Bills that have been introduced at the provincial level with similar intent are A1534 and S742 in the New York State legislature, HB2359 in the Illinois General Assembly, and SB1405 in the General Assembly of Connecticut.

As this report explains in detail, no valid state interest would be served by these regulations, and there exists no rational basis for the qualitative differentiation of .50 caliber rifles from other rifles not subject to present or proposed special regulation.

## S.505's Apparent Motivation

An astute observer must wonder what sort of paranoia has Feinstein and her cosponsors in its grip. They appear to fear citizens launching paramilitary assaults on armored vehicles and radar facilities, but this is nonsense. Presently there are no armored vehicles extant for the citizenry (whom she apparently fears and distrusts) to fire on, even if they were inclined to - and they are presently rather strongly disinclined, of course. Does Feinstein envision a future in which state agents patrol our communities in armored personnel carriers - *and* regularly come under attack by formerly upstanding citizenry? It seems unlikely that her constituency in California is aware of her frightening vision, and even less likely that they (or any constituency) would support it.

## Correcting False Premises

The allegations of Feinstein *et al.*, articulated in the text of S.505 and elsewhere, are factually inaccurate. The .50 BMG cartridge (by far the most common .50 caliber rifle cartridge in the United States) is ballistically similar to common hunting calibers, and has almost never been used in the United States (or indeed anywhere) in the commission of crimes of violence. Due to the price and unwieldy size and weight of the equipment, .50 BMG will likely never play a significant role in criminality. It has no exceptional abilities in terms of range and accuracy that are significant from a policy perspective. .50 is not the largest caliber openly available to consumers: the “Nitro-Express” safari hunting cartridges in .577, .600, and .700 are all larger, and the latter two actually have heavier projectiles than any .50 BMG projectile. A .500 Nitro-Express safari cartridge also exists, and would be effectively criminalized by S.505. A common 12 gauge shotgun (for which rifled slugs weighing as much as .50 BMG projectiles are widely available) has a much larger bore than the rifles affected by S.505 - .729 - and a 10 gauge shotgun is fully .775.

.50 BMG rifles are built and used extensively by a large and diverse community of specialty manufacturers and sportsmen in formal organized competitions across the country and in other countries. In fact, the technical innovations of this community have directly benefited the United States military, enhancing national defense readiness. On the other hand, the military origins of the .50 BMG cartridge have no possible significance from a policy perspective: two of the most common deer hunting calibers, .308 Winchester and 30-06 Springfield, also have strictly military origins. Of course, all firearms have a military origin, historically.

.50 BMG rifles are subject to the same stringent commerce regulations as other firearms: they cannot be shipped interstate except to a national license holder (18 USC §922(a)(2)), they cannot be manufactured for sale or transfer except by national license holders (18 USC §922(a)(1)), they are subject to significant national excise taxes (26 USC §4181), and they cannot be possessed by a felon or adjudicated mental incompetent (or by those with various other disqualifications, under 18 USC §922(g), and as further articulated by provincial laws), etc. The provisions of 26 USC §5801 *et seq.* as interpreted by the Department of the Treasury, which S.505 seeks to impose on .50 BMG rifles, in fact constitute an effective criminalization because of the Certified Law Enforcement Officer certification requirement. The Department has repeatedly and explicitly encouraged these certifiers to refuse, on a blanket and causeless basis, to certify applicants. In any case, gun criminalization - effective or explicit - is no more effective at keeping illicit weapons out of criminal hands, than are the current drug laws at keeping illicit drugs out of criminal hands.

Proponents of .50 caliber criminalization hope to enlist the knee-jerk support of the public by relentlessly repeating the sensational epithet “sniper rifle”, even including the term in bill titles. This is simply a bold-faced ruse, since there is no difference between a quality deer rifle and a “sniper rifle”. The Remington 700 is among the most popular deer rifles of the twentieth century, and is the heart of the US Army’s M24 and the US Marine Corps’ M40A1, the standard high power sniper weapon systems of the respective service branches.

Proponents of .50 caliber criminalization make much of the .50 BMG cartridge’s armor-defeating capabilities. .50 BMG has somewhat more energy on impact than do other common rifle cartridges (see detailed results below, in Appendix A), but this is of little practical import. All rifle cartridges commonly in use for hunting deer and larger game, or for competitive shooting at ranges of 600 yards or greater, are capable of defeating any flexible body armor currently available to soldiers and law enforcement agents - even if simple unjacketed cast lead bullets are used. If one maintains that this capability is sufficient to justify effective criminalization of .50 caliber rifles, then consistency demands that one support effective criminalization of nearly all rifles (only .22 rimfire and a few similar lightweight cartridges would be spared). In practice, of course, this vulnerability has no rational policy consequences, since the laws of this country are not applicable to this country’s prospective battlefield opponents, and since criminals seldom carry rifles (since they do not lend themselves to concealment) and in any case by definition do not obey the law.

In seeking to effectively criminalize .50 BMG rifles, the supporters of S.505 and similar bills purport to rely on the “sporting purpose” standard pursued ardently by the Department of the Treasury and referenced variously in relevant portions of Title 18 and 26 of the US Code. This standard has no domestic origin, but rather, is imported from Europe (specifically, from Germany). In fact, it is completely unsupported by the US constitution. Where the first amendment of the constitution recognizes “the right of the people peaceably to assemble”, where the second amend-

ment recognizes “the right of the people to keep and bear arms”, and where the fourth amendment recognizes “The right of the people to be secure in their persons, houses, papers, and effects”, the same “people” are at issue - and the rights recognized are individual (because otherwise meaningless, a legally untenable conclusion). Moreover, the arms at issue in the second amendment, the ones specifically contemplated by the Framers of the constitution (as they articulated with great specificity in their contemporary writings), are technologically current military arms. The Framers recognized that national security (continuity of government) is powerfully and unavoidably dependent on the continued possession by the common citizenry of current military weapons. On the other hand, the Framers were relatively unconcerned (at least in terms of policy) with the sports of hunting and competitive shooting, as these have relatively little political significance.

## **Conclusion**

Now is the time for legislative heroics in Congress, or judicial heroics in the Supreme Court of the United States, to decisively preempt the political mischief detailed herein. Justice would be served immediately if either body were to recognize and declare the rank unconstitutionality of the “National Firearms Act” of 1934, as written and particularly as administered, of the import restrictions of the “Gun Control Act” of 1968, of the criminalizing portions of the “Gun Owners Protection Act” of 1986, of the Department of the Treasury’s policy, since 1989, of capriciously rejecting properly filed import applications for firearms it disfavors, of the “assault weapon” criminalization provisions (the “Feinstein amendment”) of the Crime Bill of 1994, and of all similar regimes enforced at provincial levels. The odor of unconstitutional policies progressively corrupts the whole of the state.

## Appendix A - Maximum Attainable Ranges for Five Sample Cartridges

What follows are the results of precision calculations of ballistic trajectories, providing a clear and thorough quantitative demonstration of the similarity of .50 BMG to other rifle calibers. These results show not so much the inappropriateness of .50 BMG to a military role, but rather, the suitability of common hunting cartridges (indeed, of most firearms) to that role. Bear in mind that accuracy finer than one minute of arc (MOA) is not physically attainable at extreme ranges without an active onboard guidance system, even with large naval guns, because of atmospheric variation and turbulence. In the case of these ordinary small arms cartridges, the transonic boundary is traversed, causing the bullet to be buffeted by massive unpredictable turbulence, throwing the point of impact off unpredictably by dozens of yards, and usually causing it to land short of its computed maximum range.

### Summary results (maximum attainable ranges)

30-06 commercial: 2.67 miles

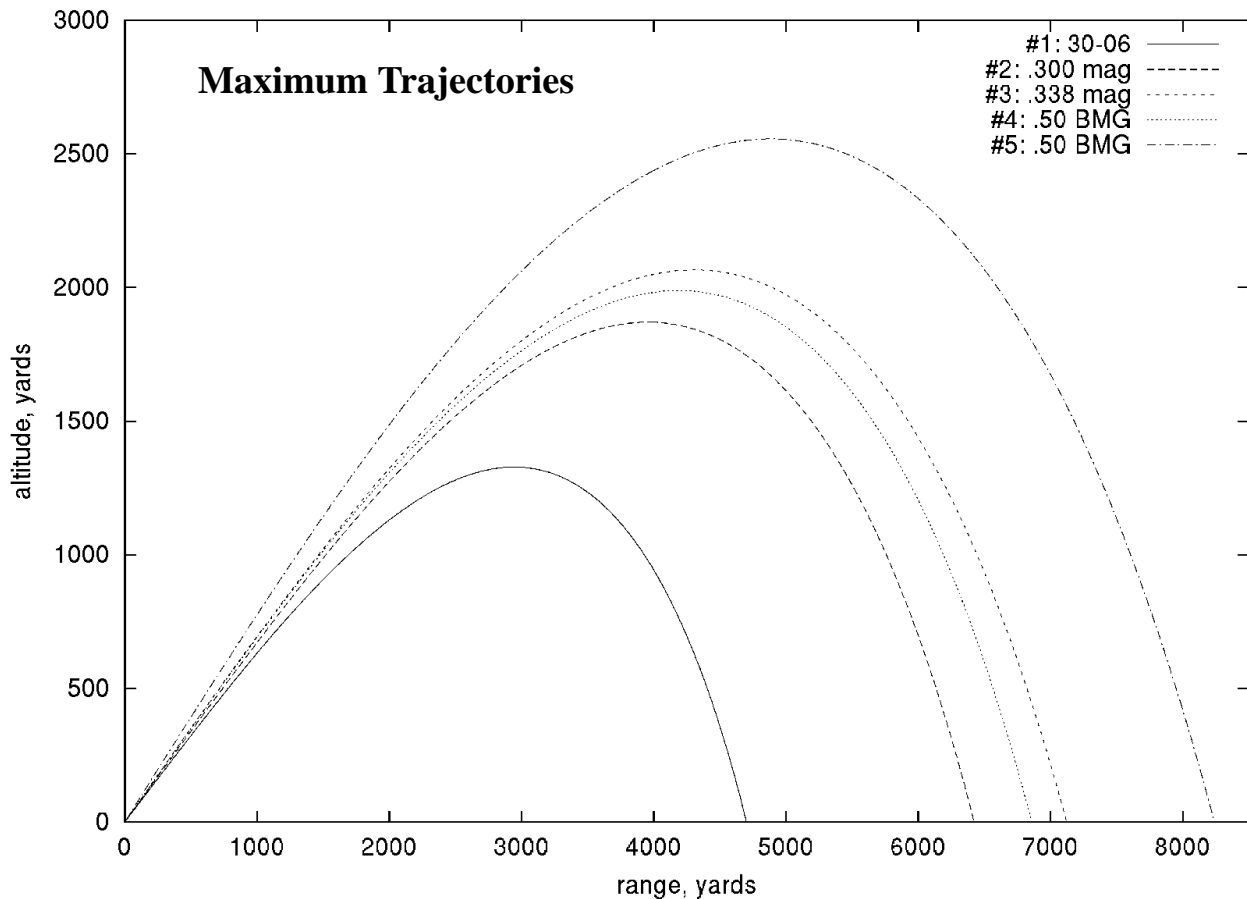
.50 BMG M8 API: 3.89 miles

.300 magnum commercial: 3.64 miles

.50 BMG commercial match: 4.68 miles

.338 Lapua magnum commercial: 4.05 miles

### Results in Detail



## Maximum Trajectory Key Parameters and Results

before impact						at impact					
cartridge number (see notes)	max diameter <i>inches</i>	muzzle speed <i>ft/sec</i>	launch angle	min speed <i>ft/sec</i> @ <i>yds</i>	max height <i>ft (mi)</i> @ <i>yds</i>	range yards <i>(miles)</i>	speed <i>ft/sec</i>	energy <i>ft-lb</i>	slope <i>in/yd</i>	flight time <i>sec</i>	size of 1 MOA <i>feet</i>
1	.308	2700	33°10'	370 @3700	3985 (.75) @2950	4702 (2.67)	442	73	-72	30.1	4.0
2	.308	3100	34°22'	440 @4900	5611 (1.06) @4000	6420 (3.64)	538	141	-70	35.5	5.6
3	.338	2825	35°19'	470 @5330	6199 (1.17) @4310	7123 (4.05)	586	228	-66	37.5	6.2
4	.510	2948	35°10'	460 @5200	5967 (1.13) @4200	6859 (3.89)	561	434	-69	37.0	6.0
5	.510	2600	38°23'	511 @5900	7669 (1.45) @4900	8240 (4.68)	660	726	-67	41.9	7.2

### Notes on Cartridges

1. Cartridge: 30-06 Springfield

Bullet: Sierra .308 168 grain HPBT Match King

Load: Federal Cartridge Co. GM3006M

Ballistic Coefficient: manufacturer data

2. Cartridge: .300 Winchester Magnum

Bullet: Sierra .308 220 grain HPBT Match King

Load: powder charge equal to factory high energy Winchester or Weatherby magnum load

Ballistic Coefficient: manufacturer data

3. Cartridge: .338 Lapua Magnum

Bullet: Sierra .338 300 grain HPBT Match King

Load: maximum powder charge reported by Norma

Ballistic Coefficient: manufacturer data

4. Cartridge: .50 BMG

Bullet: M8 API 622.5 grain

Load: per US Army Technical Manual 43-0001-27 "Army Ammunition Data Sheets, Small Caliber Ammunition, FSC 1305"

Ballistic Coefficient: derived from projectile dimensions

5. Cartridge: .50 BMG

Bullet: G1 approximation of 750 grain .50 BMG commercial match ammo (e.g. Hornady A-MAX, or solids from Barnes or Thunderbird)

Load: typical competition powder charge

Ballistic Coefficient: unity with G1 reference drag function (over-estimates performance)

## Appendix B - Text of S.505

Military Sniper Weapon Regulation Act of 2001 (Introduced in the Senate)

S 505 IS

107th CONGRESS

1st Session

S. 505

To amend the Internal Revenue Code of 1986 to regulate certain 50 caliber sniper weapons in the same manner as machine guns and other firearms and for other purposes.

IN THE SENATE OF THE UNITED STATES

March 9, 2001

Mrs. FEINSTEIN (for herself, Mr. SCHUMER, and Mr. KENNEDY) introduced the following bill; which was read twice and referred to the Committee on Finance

A BILL

To amend the Internal Revenue Code of 1986 to regulate certain 50 caliber sniper weapons in the same manner as machine guns and other firearms and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

SECTION 1. SHORT TITLE.

This Act may be cited as the ‘Military Sniper Weapon Regulation Act of 2001’.

SEC. 2. FINDINGS.

The Congress finds that—

- (1) certain firearms originally designed and built for use as long-range 50 caliber military sniper weapons are increasingly sold in the domestic civilian market;
- (2) the intended use of these long-range firearms, and an increasing number of models derived directly from them, is the taking of human life and the destruction of materiel, including armored vehicles and such components of the national critical infrastructure as radars and microwave transmission devices;
- (3) these firearms are neither designed nor used in any significant number for legitimate sporting or hunting purposes and are clearly distinguishable from rifles intended for sporting and hunting use;
- (4) extraordinarily destructive ammunition for these weapons, including armor-piercing and armor-piercing incendiary ammunition, is freely sold in interstate commerce; and

(5) the virtually unrestricted availability of these firearms and ammunition, given the uses intended in their design and manufacture, present a serious and substantial threat to the national security.

### SEC. 3. COVERAGE OF 50 CALIBER SNIPER WEAPONS UNDER NATIONAL FIREARMS ACT.

(a) IN GENERAL- Section 5845(a) of the Internal Revenue Code of 1986 (defining firearm) is amended by striking ‘(6) a machine gun; (7) any silencer (as defined in section 921 of title 18, United States Code); and (8) a destructive device.’ and inserting ‘(6) a 50 caliber sniper weapon; (7) a machine gun; (8) any silencer (as defined in section 921 of title 18, United States Code); and (9) a destructive device.’

(b) 50 CALIBER SNIPER WEAPON-

(1) IN GENERAL- Section 5845 of the Internal Revenue Code of 1986 is amended by redesignating subsections (d) through (m) as subsections (e) through (n), respectively, and by inserting after subsection (c) the following new subsection:

‘(d) 50 CALIBER SNIPER WEAPON- The term ‘50 caliber sniper weapon’ means a rifle capable of firing a center-fire cartridge in 50 caliber, .50 BMG caliber, any other variant of 50 caliber, or any metric equivalent of such calibers.’

(2) MODIFICATION TO DEFINITION OF RIFLE- Subsection (c) of section 5845 of such Code is amended by inserting ‘or from a bipod or other support’ after ‘shoulder’.

(3) CONFORMING AMENDMENT- Section 5811(a) of such Code is amended by striking ‘section 5845(e)’ and inserting ‘section 5845(f)’.

(c) EFFECTIVE DATE- The amendments made by this section shall take effect on the date of the enactment of this Act.