

Ann Arbor Sword Club Spec Smallswords (Revision October 2024)

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Core physical elements based on 18th Century Smallswords

The sizes, weight and balance of the Club's Spec smallswords are based on the averages of those measurements taken from 12 actual 18th Century smallswords with continuous taper hollow ground blades.

Hilt elements

Smallsword hilts varied primarily by their embellishments. While they could be very ornate or fairly simple for everyday carry, they typically had a small guard (Coquille) along with vestigial quillons, annelets (rings) and a knuckle-bow. However, the "weapon" typically used for training and recreation consisted of just a simple straight handle and guard, ie. much like a modern foil.

The image shows an antique 18th century smallsword, a modern simulator, and one of the AASC's Spec smallswords. The core measurements of all three are nearly identical:

- Blade length, 32"
- Handle length, 6"
- Weight, 13 oz / 375 gm
- POB, 2.5 "



Spec Smallsword "Specifications"

- The hilt consists of a simple handle and disc guard - the handle with pommel is 6".
- The blade is a 32" sport epee blade
- The tournament model includes custom electronic circuitry:
 - The blade is wired with a standard sport epee "switch" point.
 - For strike quality and visibility, the weapon includes a LED at the tip that will light and a buzzer that will sound when a thrust strikes with sufficient force (750gm) for a sufficient duration (30ms).
- Total weight ~13 oz
- Point of balance ~ 2.5"



A note about strike “quality”

The combination of needing minimal force of 750 gm applied for a minimum of 30 ms in order to “score” serves to help differentiate a “quality” strike vs. an insufficient strike or glancing blow. It requires the strike to be a thrust with intent. “Flicks”, hits that bounce off without purchase and flat hits don’t register.

No system is perfect but we have found this arrangement to be significantly more accurate than just human judging.

While the tip switch is a standard modern Epee tip, the timings set in the modern fencing scoring apparatus did not provide for the quality we were seeking. The timing we have settled on for the required duration of the hit, 30 ms, was determined by testing using a variety of times, both shorter and longer. We also experimented with different force requirements but found that in practice the timing had a greater perceived effect. For reference, modern Foil requires a strike with a minimum duration of 14 ms at 500 gm force and modern Epee has no/zero minimum duration requirement with a travel of 1 mm at 750 gm.

The concept of a light at the tip of the sword was originally developed for the purpose of helping “spectators” see when and where a strike occurs in the typically fast game of Smallsword fencing. It also serves to help the judges in calling hits in tournaments.

For those concerned that these weapons are ahistorical

While it is true that there weren’t LEDs and integrated circuits in the 18th century, it is also true that historically people have sought out non-lethal ways to indicate good strikes in fencing including William Hope as early as the 1680s. By the mid 19th century, point d'arrêts were commonly used to help enable “scoring” of hits, as one historical example, and there are others including attempts at electrical scoring as early as the 1840s.



We certainly could use point d'arrêts but the downside is they tend to tear up an opponent's fencing jacket. So the use of our lighted swords are a less damaging alternative.