

The L2A3 submachine gun was in service with the British army for 38 years and was finally declared obsolete in 1994 after service from Korea to the Gulf War.

AMERICAN REDUX

Sterling L2A3 Submachine Gun

Text and photos by Peter G. Kokalis

It's very rare that even the smallest quantity of transferable machine guns comes on the market. When the gun in question is a classic, impeccably presented, it's really news.

While the submachine gun genre no longer dominates the small arms inventory of the armed forces of any nation, as it did when it reached its zenith during World War II, it is still employed by numerous law enforcement agencies throughout the world. Even there it has largely been superseded by assault-type rifles; often semiautomatic-only, chambered for intermediate-size cartridges, such as the 5.56x45mm NATO round. In some instances this is a mistake, as these rifle cartridges have the very real potential for over-penetration in close quarters urban scenarios.

In my opinion, one of the finest pistol-caliber submachine guns ever fielded was the British Sterling L2A3, which was designed and manufactured by the Sterling Armament Company, Ltd., in Dagenham, Essex, England. The company experienced financial problems in 1988 and was acquired by the British government, which very quickly closed down the entire operation.

In the United States, the Sterling L2A3 was never seen except as a Pre-'86 Dealers Sample, and thus was not available to anyone except Class 3 dealers. Incredibly, the

Sterling is now available in very limited quantities as a non-restricted-transfer Title II firearm that can be purchased by anyone living in a state where it is possible to own automatic weapons.

During the early 1980s, a small quantity of L2A3 Sterling submachine guns, as well as a sound-suppressed version, designated as the L34A1, were imported as Pre-'86 Dealers Samples, as well as a semiautomatic-only variant called the Mark 6, by Lanchester U.S.A., Inc. in Dallas, Texas.

I owned one of each, but disposed of both the L2A3 and L34A1 because Pre-'86 Dealers Sample Title II firearms cannot be passed on to your direct descendants unless they are SOTs (Special Occupational Taxpayers, i.e., a Class 3 dealer).

Rick Winters, the owner of the CPS Company (Dept. SGN, P.O. Box 261, Monticello, Wis., 53570; phone: 608-274-7946; fax: 608-276-7477; website: www.SterlingL2A3.com) has painstakingly manufactured a very small quantity of Sterling L2A3 submachine guns on registered pre-'86 receiver tubes that are every bit at the same level of elegant quality as those originally produced

by the Sterling Armament Company, Ltd. and differ only with regard to the finish.

Let's examine in detail the history of the Sterling submachine gun and precisely how this rather amazing weapon was manufactured.

Sterling's first effort at manufacturing a pistol-caliber submachine gun was the stodgy, but robust cal. 9x19mm Parabellum Lanchester Mk I. An undisguised copy of Hugo Schmeisser's MP-28II, it was designed by George Herbert Lanchester, who was an engineer and designer in the British automotive industry, both prior to and after World War II. Dagenham was a center of the British auto industry, with the largest Ford plant in Europe, and Sterling later made parts for Jaguar.

Series production on his submachine gun commenced in April of 1941. Manufactured exclusively for the British navy, the Lanchester Mk I was heavy (12 pounds with a loaded 50-round magazine) and expensive to fabricate. It differed only in a few ways from the German MP-28II.

A subsequent Mk I* eliminated the semiautomatic option and appeared toward the end of the war. Before

it was completely replaced by the Sten submachine gun, 80,790 Lanchesters were produced (58,990 by Sterling, the remainder by two other manufacturers). Altogether, a total of 3,750,000 Sten submachine guns, of various Marks, were produced between 1941 and late 1945. They were never deemed totally satisfactory, and efforts to develop more reliable designs began during World War II.

In September of 1942, George William Patchett of the Sterling Armament Company, Ltd., submitted a cal. 9x19mm Parabellum submachine gun to the British army for trial. At most, a hundred of these guns were delivered before the war ended and a few may have been tested in combat.

Development of Patchett's submachine gun continued after the war, and a series of competitive trials between it and a dozen other contenders were held between 1945 and 1953. After large-scale troop trials with the Patchett design, it was finally adopted in 1953 and given the designation L2A1.

The Sterling submachine gun was, without doubt, the most expensively and finely made weapon ever produced in its class. The quality control standards to which they were held more than surpassed all possible requirements.

The Sterling submachine gun was manufactured by methods approximating British battleship engineering. Stamped sheet metal pressings and welding processes were minimized to the greatest extent possible and limited to components such as the folding stock and magazine body.

The bolt was machined, not cast, out of ordnance steel. Sixty-three separate machine operations were required. The steel tube used as the main component of the L2A3's receiver body was supplied to the factory with the 76 cooling holes already pierced. After some preliminary machining, the magazine well, trigger assembly housing, front sight guard and front barrel support were attached to the receiver tube by induction-brazing using silver solder.

Since brazing the magazine well onto the receiver body would cause the tube to warp, the receiver tube was first bent to a corrective angle in the opposite direction. By the use of induction and electro-gas brazing techniques—in lieu of welding—machine operations on the main casing were cut to a mere 150 steps (!).

After the receiver's interior was deburred and sized by hand reaming, it was subsequently hand-lapped to insure that the bolt could slide freely within it. After the gun was moved over to the second assembly line, another 425 machine operations took place. Every bolt was checked and gauged by the assistant inspector, and every barrel was checked, gauged and then stamped by the chief inspector (who took his inspection stamp home with him every night).

Anyone blasé enough to merely shrug off the above as antiquarian and unnecessary need only examine the L2A3 closely—one of the world's most expensive, but reliable submachine guns, purchased by more than 120 countries in the world, and of those 90 used it in quantities of 1,000 or more. It was also manufactured under license in Canada and India. More than 1.7 million L2A3 submachine guns were eventually produced.

The L2A1 submachine gun as originally adopted included certain components designed to ease disassembly. The grip screw and retracting handle were combined to form an Allen key for removal of the barrel screws and, in addition, the spring block at the rear of the bolt included a drift punch for removing the extractor pin.

Although the basic Sterling was never changed, improvements were made in production techniques and two distinct variants can be noted. The L2A2 incorporated



The overall length is only 19.375 inches folded, but British army regulations specified that the stock was to be extended at all times while in a combat zone.



The side-loading magazine may seem odd for those used to a Thompson, but it permits the lowest possible prone firing position, a vital advantage in combat.

improvements gleaned from field experience.

The chamber was modified for enhanced feeding, the folding stock strengthened, the disassembly tools integral with the L2A1 eliminated. Both the L2A1 and L2A2 were referred to as the Mark 3 by the Sterling Company.

The L2A3 (Sterling's Mark 4) was swiftly adopted in 1954 and remained essentially the same throughout the 38 years of its series production cycle. Components used in the last years of production can be installed in any Mark 4 ever produced.

The L2A3 differs from its predecessors in the following ways. The buttstock was again redesigned, the trigger guard was made removable for winter use, the front sight was made adjustable, the chamber modified to NATO standards and minor changes were made on other components.

The Sterling submachine gun is unlocked blowback-operated and fires from the open bolt position. The bolt has a fixed firing pin and rounds are fired by means of the method referred to as advanced primer ignition. In other words, the firing pin strikes the primer just before the cartridge case is fully seated in the chamber.

The bolt is unique and its design was used in the Commonwealth version of the FN FAL battle rifle. The bolt

body has four transverse ribs machined from its sides. The sharp edges of these ribs cut away fouling and debris as the bolt reciprocates within the receiver tube. Material picked up by this process is gradually removed via an open notch cut below the barrel's chamber face and a hole at the bottom of the receiver's end cap.

A spring-loaded pin, located inside the bolt body, prevents misassembly of the weapon. This is because the retracting handle cannot be reinserted until this pin



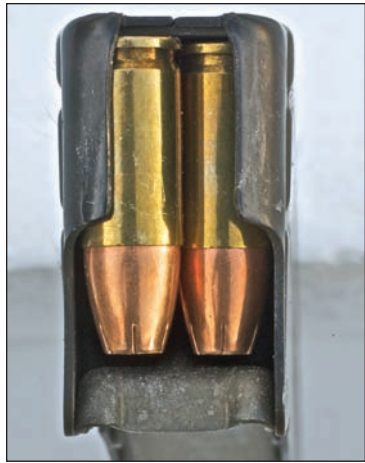
Kokalis says the L2A3's balance characteristics are excellent, the grip itself is both the correct size and shape and the grip-to-frame angle is perfect.



The Sterling L2A3's flip rear peep sight has apertures for 100 and 200 meters, while the blade front sight can be turned in or out to regulate elevation zero.

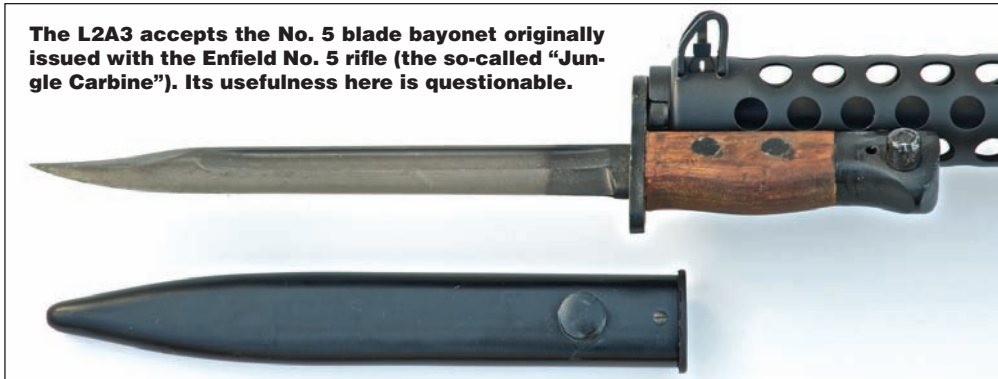


The three selector positions on the CPS L2A3 are marked "S" for safe, "R" for the British term "Repetition" or semiautomatic fire and "A" for full-auto.



The L2A3 submachine gun will reliably feed a substantial number of projectile configurations, including hollow-points, such as these Hornady TAP rounds.

Instead of the usual sheet metal platform, the 34-round magazine's follower is composed of two offset roller bearings that help make feeding unusually smooth.



The L2A3 accepts the No. 5 blade bayonet originally issued with the Enfield No. 5 rifle (the so-called "Jungle Carbine"). Its usefulness here is questionable.



After some preliminary machining, the magazine well is attached to the receiver tube by induction brazing using silver solder. This yields a durable joint.

has been pushed forward by the center pin on the recoil spring assembly. This ensures the retracting handle's passage through a hole in the center pin, firmly tying the bolt and recoil spring assembly together.

The L2A3's recoil spring assembly consists of four components: the previously mentioned center pin, an inner and outer recoil spring and a middle housing, which connects the two springs. This arrangement, although expensive, increases reliability with all types of ammunition. The outer spring absorbs most of the recoil produced by soft to medium loads, while the inner spring compresses fully only when really hot ammunition is fired.

The extruded steel, ventilated receiver tube has two finger guards mounted on the right side, one just forward of the ejection port and one aft of the muzzle. Useful additions, as sliding the hand rearward over the ejection port

produced many stoppages with the Sten and moving the supporting hand forward, past the muzzle could result in serious injury to the operator.

As previously mentioned, the magazine well was carefully oven brass-brazed to the left side of the receiver tube. The 34-round, staggered-column, curved magazine is of the more reliable two-position-feed-type. Easy to load by hand, no special loading tool was ever issued or required. The magazine's forward lip serves as a feed ramp. Sterling Armament's magazine body was constructed from four pieces of spot-welded sheet metal, while that fabricated at the Royal Ordnance Factory at Fazackerly was a two-piece unit.

The magazine follower of both is unique. Instead of the usual sheet metal platform, the follower is composed of two offset roller bearings. Once again, it was quite expensive to produce, but it provided another keen edge in reliability. The heavy, reliable magazine follower spring is a circular coil rather than the usual rectangular configuration.

Magazines for the Canadian C1 submachine gun (a slight modification of the L2A3 that was made by Canadian Arsenals, Ltd.), hold only 30 rounds and employed a conventional magazine follower. The Canadian C1 magazine can be fired in the Sterling L2A3, as can the 34-round Australian F1 submachine gun magazine.

Contrary to the advice provided by *Jane's Infantry Weapons* during that time, the 32-round Sten and 50-round Lanchester magazines, which will fit in the Sterling magazine well, should not be used. Their angle of feed is incorrect and premature detonation is possible, especially in the full-auto mode.

The L2A3 barrel is only 7.8 inches (198mm) in length. It has six grooves and a 1:9.84 right-hand twist (250mm), which is conventional for the 9x19mm Parabellum cartridge. The barrel is firmly seated inside the receiver housing and held in place by two 3/16" Allen head screws attached through its mounting bar at the muzzle end. It is not normally removed when field stripping.

The front blade sight is adjustable for elevation zero. The flip rear peep sight has apertures for 100 and 200 meters. The total sight radius is 16.4 inches (406.5mm).

The Sterling's trigger assembly is perfectly positioned, under and immediately to the rear of the magazine well. The balance characteristics are excellent. The reinforced, impact-resistant, one-piece, black plastic grip panels and the grip itself are both the correct size and shape. The grip-to-receiver angle is ideal, and the selector lever is easily manipulated by the thumb of the firing hand.

The three selector positions on Sterling Armament Co. L2A3 submachine guns were marked "SAFE", "I" for semiautomatic fire, and "34" for full-auto (the CPS L2A3 used in SGN's test and evaluation is marked "S" for safe, "R" for the British term "Repetition" or semiautomatic fire and "A" for full-auto). The positioning sequence is proper, as pushing the lever forward (the natural reaction) places the weapon first in the semiautomatic mode and then into full-auto.

The trigger mechanism is unitized and can be easily removed. Merely turn the trigger group retaining pin's slot head in alignment with the word "FREE" on the right side grip panel and drive out the pin with a small drift or the nose of a bullet. Pull the trigger back toward the rear, disengage it from the step in the receiver, swing outward and remove.

When the selector is set to the safe position, the disconnecter remains frozen and the bolt cannot move forward or be retracted rearward. When the selector lever is set to "A" (or "34"), its spindle is rotated forward out of contact with the disconnecter.

When the trigger is pulled, the nose of the sear is lowered off the bolt's bent and the bolt will continue to reciprocate as long as the trigger is held back and cartridges remain in the magazine. When the selector lever is set to "R" (or "I"), the selector spindle's inner arm rotates upward to meet the disconnecter. When the trigger is pulled, the sear comes down as before and the bolt flies forward. Now, however, the disconnecter rotates clockwise, causing its nose to slip off the spring-loaded sear, which rises to stop the bolt's forward travel.

The Sterling's folding stock is my only area of major criticism, as it's far too complex. And, in fact, British army regulations specified that the stock was to be extended at all times while in a combat zone. It is, however, rugged and secure, and once extended provides a firing platform second only to the wood stocks found on submachine guns of earlier vintage.

With the stock extended, the L2A3 is 27 inches (685.8mm) in overall length. This is reduced to 19.375 inches (492mm) when the stock is folded. While slightly



The CPS L2A3 submachine gun comes complete with four 34-round magazines, four-cell magazine pouch, web sling, No. 5 blade bayonet and scabbard, two different British army field manuals, and two certificates of authenticity, all of which is packed in a handmade, fitted wooden chest.



The web gear associated with the L2A3 submachine gun in British service included a sling, which has brass fittings, and a canvas four-cell magazine pouch.

longer than the Beretta M12S and the Uzi, this is still shorter than the Heckler & Koch MP5A3. The L2A3 weighs 6.5 pounds (2.9 kg), empty and 8 pounds (3.6 kg) with a full magazine of 34 rounds.

The L2A3 and other models made by the Sterling Company for commercial sales and to countries outside the British Commonwealth were exterior-finished with a tough and durable black crackle texture, wood-epoxy-resin baked enamel over phosphate. In addition to the protection it offered against wear and rust, the wrinkle finish reduced glare.

L2A3 submachine guns (as well as Enfield rifles and many other small arms) in service with the British army were given a finish called Suncorite. As it self-phosphates, pre-Parkerizing was unnecessary. Currently owned by the large German company known as Henkel, Suncorite contains at least four carcinogens and thus its importation to the United States is completely impossible.

As a consequence, the CPS L2A3 submachine guns manufactured in the United States are finished with black DuraCoat over manganese phosphate, which closely matches the appearance of the Sterling L2A3 fielded by the British army.

The L2A3 is fitted with a bayonet lug that accepts the No. 5 blade bayonet originally issued with the cal. .303 British Enfield No. 5 rifle (the so-called "Jungle Carbine"). While bayonets on submachine guns were cer-

tainly an anachronism, at least the No. 5 bayonet was better than earlier Enfield spike bayonets. It was a passable fighting knife and could also be used to open 55-gallon drums. In my opinion, the British spike bayonet was never more than a modified tent peg.

The Sterling's web sling is slightly wider than that of the Sten. The rear is attached to a non-rotating swivel on the receiver tube's end cap. Adjustment is by means of a brass buckle and a miniature Enfield-type brass loop. The non-rotating, spring-loaded brass front hook is attached through two of the receiver's vent holes to the left and rear of the front sight.

Conclusions

I have fired and observed many thousands of rounds through Sterling submachine guns and I've never witnessed a single malfunction—except as a consequence of damaged magazines or defective surplus ammunition. In the spring of 1983 I spent many days at the Sterling Company factory, talking to the engineering staff and watching the assembly of the L2A3 and L34A1 submachine guns. Much of the previously unpublished information in this article comes from this visit.

The L2A3 submachine gun's cyclic rate is approximately 550 rounds per minute; and that is the correct rate of fire for a pistol-caliber submachine gun. The L2A3 is very controllable in every firing position, accurate, and exhibits its high hit probability at the appropriate ranges. This superbly engineered, beautifully executed, rugged, reliable weapon is all one could desire in a submachine gun, and then some. Those not accustomed to the Sten or early German submachine guns with magazines positioned on the side may initially feel somewhat awkward handling it, but among other attributes this configuration permits the lowest possible prone firing position. After 38 years of service, the Ministry of Defence declared the L2A3 obsolete in 1994 and destroyed all remaining inventories, leaving only a few examples in the collection of the famous British Pattern Room.

The CPS Company's L2A3 comes complete with four 34-round magazines, four-cell magazine pouch, web sling, No. 5 blade bayonet and scabbard, two different British army field manuals, two certificates of authenticity, one personally signed by the former chief designer of the Ster-

ling Company, D. Howroyd, all of which is packed in a handmade, fitted wooden chest. The price is \$10,900 and this compares very favorably with the current prices of a number of transferrable submachine guns of far lesser merit. I purchased the specimen used in the SGN test and evaluation and I am very satisfied with it. ©

CPS L2A3 Submachine Gun SPECIFICATIONS

Caliber	9x19mm Parabellum.
Method of operation	Unlocked, pure blowback, fires from the open-bolt position. Both semiautomatic and full-auto capability.
Cyclic rate	Approximately 550 rpm.
Feed mechanism	34-round, two-position-feed, staggered-column, detachable box-type magazine with unique magazine follower consisting of two offset roller bearings.
Weight	6.5 pounds (2.9 kg), empty and 8 pounds (3.6 kg) with a full magazine of 34 rounds.
Length, overall	With the stock extended, 27 inches (685.8mm) and 19.375 inches (492mm) when the stock is folded.
Barrel length	7.8 inches (198mm).
Barrel	Six grooves with a right-hand twist of one turn in 9.84 inches (250mm).
Finish	Black Duracoat over manganese phosphate.
Furniture	Black plastic, checkered grip panels.
Sights	Front blade-type sight is adjustable for elevation zero. The rear peep sight is of the flip type, with apertures for 100 and 200 meters. The total sight radius is 16.4 inches (406.5mm).
Price	\$10,900, complete with four 34-round magazines, four-cell magazine pouch, web sling, No. 5 blade bayonet and scabbard, two different British army field manuals, two certificates of authenticity, one personally signed by the former chief designer of the Sterling Company, D. Howroyd, all of which is packed in a handmade, fitted wooden chest. This is a fully transferrable NFA weapon.
Manufacturer	CPS Company, Dept. SGN, P.O. Box 261, Monticello, Wisconsin, 53570; phone: 608-274-7946; fax: 608-276-7477; website: www.SterlingL2A3.com .
T&E summary	Very controllable in every firing position, accurate, and exhibits high hit probability at the appropriate ranges. A superbly engineered, beautifully executed, rugged, reliable weapon that is all one could desire in a submachine gun, and then some.



The L2A3 is blowback-operated and fires from the open bolt position. Note the distinctive inner and outer recoil springs, connected by the middle housing.