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SERVICE RIFLE SCANDAL

NEW U.S. M11 SERVICE PISTOL

BRITISH SMG'S

BROADSWORDS

MAUSER K98K RIFLE

BERETTA BATTLE PISTOLS

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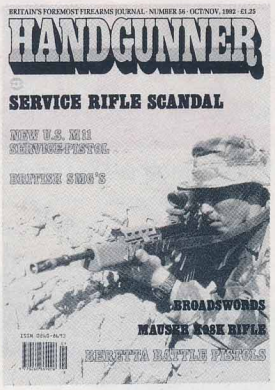

COVER

"How fares the SA80?," we ask ourselves from time to time, feeling an obligation to bring a bit of light and truth to bear on the rifle which for six years has been our emblem, appearing on this masthead in every issue since No. 36. As those of you who have been the route know, we have not shirked that duty. With this issue, our coverage of the SA80 to date reaches 61 published pages and constitutes a contemporary record unrivalled for any other small arm, and one that has assumed particular importance these past few weeks. Fleet Street, you may have noticed, has discovered that the SA80 performed badly in the Gulf: it does not cope with sand. The MoD has known this for years. The rifle resolutely refused to pass the sand tests prior to adoption. And post-adoption, it was sent off to Oman with the Royal Marines as part of Operation Swift Sword, a massive, multi-arm desert warfare exercise: a dry run for Granby. Shown here are men of 40 Commando taking defensive positions on the island of Masirah. Photo courtesy the Royal Navy.

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by Jan A. Stevenson

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RITISH
b-Machine Guns
Part 2
From Sten to Sterling

As soon as his Mark I was debugged, adopted and in production, George Lanchester turned his attention to designing a lighter, cheaper, all-metal replacement for it. But by this time Shepherd and Turpin at Enfield were well advanced on the Sten, the name of which was an acronym composed of the first letters of their last names and the first two letters of Enfield.

Major Reginald Vernon Shepherd, who had retired from the service in the mid-1930's to become a director of BSA, was recalled at the outset of the War to head the Design Department's Small Arms Group, which consisted initally of the RSAF Enfield design team, soon expanded to cope with wartime requirements and augmented by teams of émigré designers, principally from Poland and Belgium. The Small Arms Group was based at Cheshunt throughout the War; Major Shepherd was in due course promoted to Colonel and appointed to General Staff. One of his senior assistants was S.S.C. Mitchell, a naval officer, who had been head of the Enfield design team.

One may wonder how much time Colonel Shepherd's administrative duties left him, but he had always been a hands-on designer and there is nothing to indicate that he did not remain so. During the 1930's at BSA, he was involved with the development of machine gun feed systems, and was co-patentee with H. A. Faulkner of link belts and with J. W. Shivlock of a double column magazine. The Sten patents are jointly among Shepherd, H. J. Turpin and G. Temple, who sadly did not get his initial into the name or, in any event, the "T" has always been ascribed to Turpin.

Harold John Turpin was an Enfield employee who has generally been credited, no doubt rightly, for the major part of the Sten's design. He spent the rest of the War designing the gun meant to replace it, and was involved after the War with work on a medium or general purpose machine gun.

The imminence of German invasion concentrated minds wonderfully. The first Lanchester prototypes were function fired, as we have seen, on the 8th of November, 1940; Turpin had Sten prototypes ready by the beginning of January, 1941, and they were demonstrated at Enfield on the 10th and at the School of Musketry at Hythe on the 21st. Cyclic rate, it was recorded, was 530 rounds per minute, and the gun gobbled its way through a 5,000-round endurance test, with lashings of sand and mud, in a satsifactory manner. Trials continued at a cracking pace and on the 31st of January, the decision was taken to adopt the Sten as standard for the Army and RAF and to reserve the Lanchester for the Navy.

First deliveries of the Mark I Sten came in June, 1941, and more than 100,000 of it and the Mark I* were made before both were superceded by the Mark II later that year. The Mark II is the "standard" Sten, if you like: the classic, the one most people remember. More than two million were made and at peak, during 1943-44, ROF Fazackerly, near Liverpool, was turning out 20,000 of them a month.

In July of 1941, BSA was asked to undertake Sten production and moreover to have guns ready in five weeks. The firm made space for the Sten team in the rifle factory at Shirley where they were able to "borrow" some machines. By dint of working round the clock, they had the first twenty-five guns made, tested and delivered by the end of August. Meanwhile, a proper home for Sten production was being set up at BSA Tyseley, and the job was moved there in September. By July of 1942, BSA had built more than 100,000 Stens, production had passed the 20,000-per-month mark, to peak above 25,000 by the end of the year. By the end of the contract, BSA had supplied more than 400,000 complete Stens as well as 350,000 spare barrels.

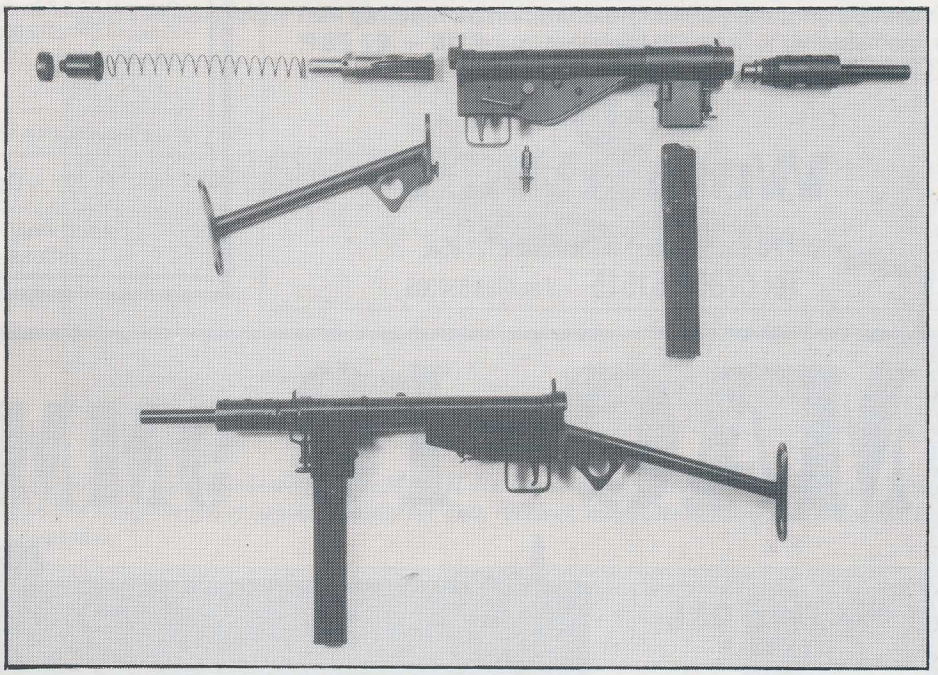
The Mark II was also made in quantity at Long Branch Arsenal in Canada and, appropriately, their first combat use was during the Combined Operations raid

The Sten was made for the most part by women, many of whom lived in Ministry of Supply hostels near the works. A surprising number were refugees: Belgian, Polish, German, Hungarian, Czech, Austrian, even Greek names abound. Shown here is the final assembly line with a stack of finished Mk. II's in the foreground.Work was fed onto the line from the fitting benches to the right and the manufacturing area to the left, with assembly's progressing as the receivers moved up the central conveyor. The two ladies nearest the camera are fitting the stocks on.

on Dieppe on 19 August, 1942, where Canadian troops fought so heroically.

There were also Marks III, IV, V and VI. The Mark III, which was likewise built at Long Branch, was developed in 1943 by Lines Bros., whose peacetime trade was, appropriately, as toy manufacturers. It had a pressed rather than tube-steel receiver, and the rivetted and welded join formed something resembling a full-length rib along the top, which is the main identification point for this model. The Mark IV was never put into manufacture, while the Mark V, introduced in 1944 and widely used by British forces in Europe after D-Day, was an effort to take the gun upmarket. Paradoxically, at

Miss Alice Haslett and Miss Vera Walshe, fitting Mk. II sear assemblies.



The Mark II, readily distinguishable by its single-strut buttstock with the awful pseudo-pistol grip in the form of a plow blade, was the "standard" Sten—the one we made millions of. It may not have been pretty, but it worked, and was well machined where it had to be. It was also easy to strip and maintain. The magazine housing rotated to vertical for racking or transport, and to seal the feed and ejection ports against dust and debris, but fed, of course, from lateral position. Some Mk. II's had twin-strut skeleton stocks, and most had two-groove barrels.

It also shot. Mrs. Gladys Martin, who spent the war testfiring Stens, here brandishes a five-shot group. It was fired from the shoulder, from a benchrest with padded support for the elbows and forward hand, and bespeaks a practised trigger finger: there was no selector lever, but the cyclic rate of 550 rpm made single shots relatively easy to achieve.No information as to distance.

the same time, the Germans were putting a copy of the Mark II into production for the *Volkssturm*. It had taken the Red Army's pounding at the gates to force them that far downmarket.

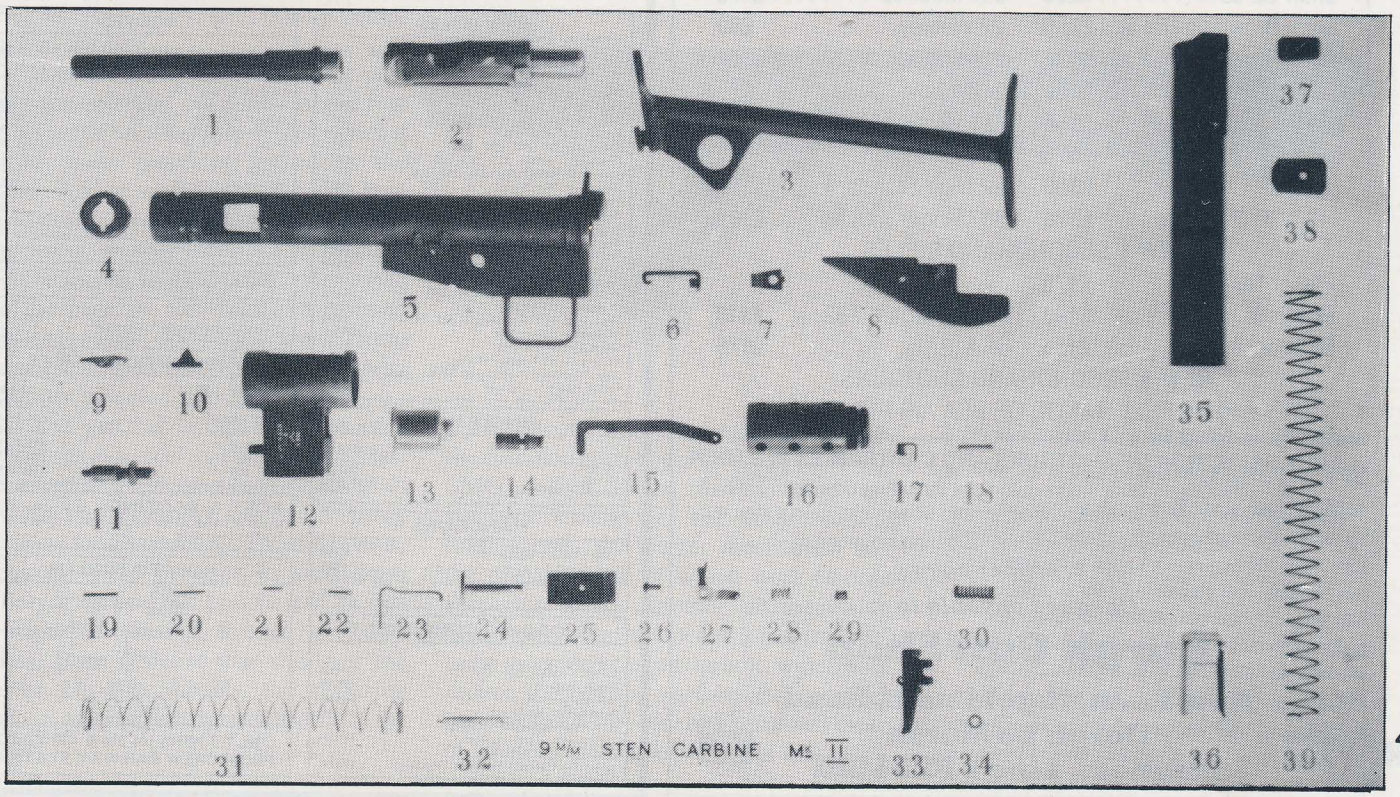
And that was what the Sten was really for—for an otherwise defenseless people braced against invasion. In 1941, it was the right gun at the right moment. But it was over-produced—more than three million were made—and it was never really popular with the troops, many of whom were keenly aware that the Crown was sending them off to fight, and very likely die, with £3 worth of scrap metal for a weapon. That was what the Mark II cost; the Canadian version cost $13.55; the Mark V cost £5 and, incidentally, remained in service until the mid or late-1950's. Our limited experience of Mark V's is that quality varies a great deal. A well-made Mark V is quite a satisfactory and satisfying weapon of the type, while one of the cruder examples leaves you feeling about £4 out of pocket.

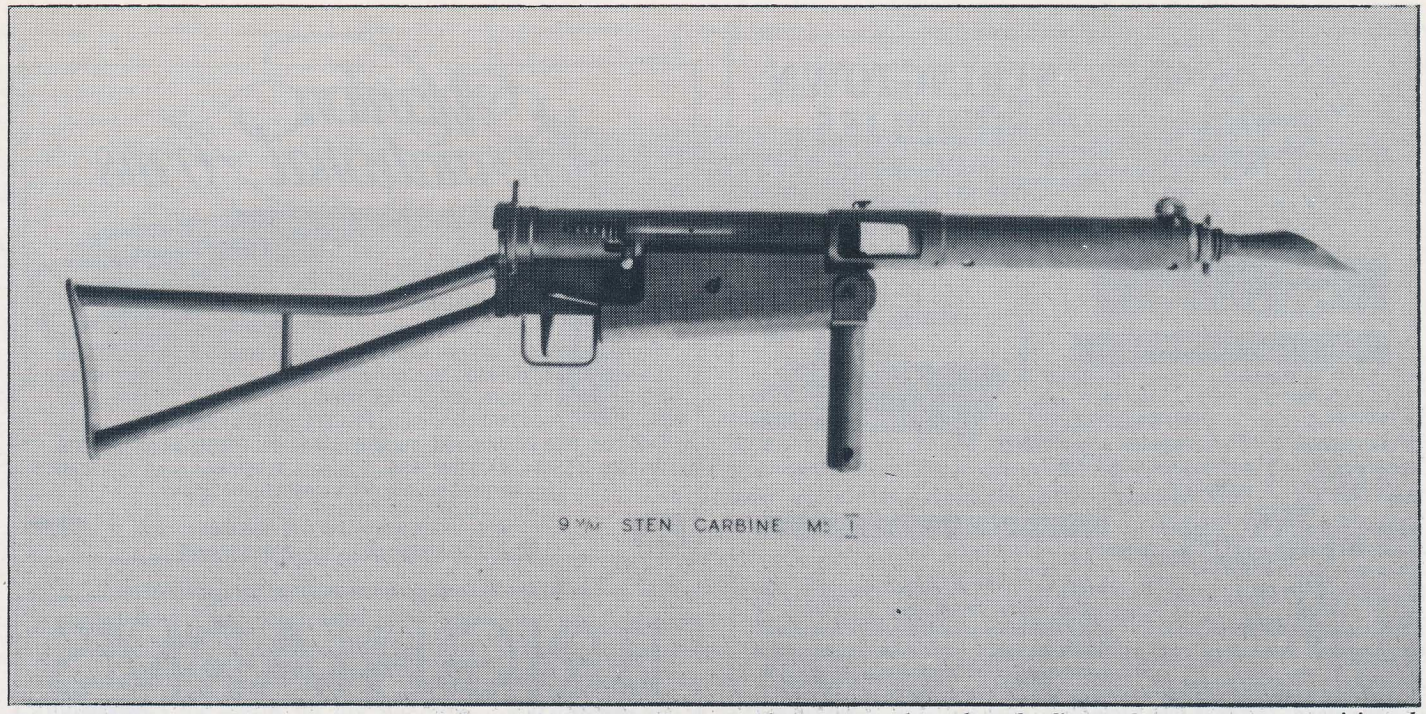
Britain during the war was a hive of submachine gun development and indeed of small arms development of all sorts—Saive, Laloux and their colleagues from Liège, for example, were comfortably installed working on the rifle designs that FN would exploit with such tremendous success for the rest of the century. On the SMG front, and leaving wildcat designers pretty well out of consideration, there were very productive

From top: Stens Mark I, II, III and V. Mark IV was not produced. There was also a Mark I that deleted the flash hider, wooden fore-end and folding forward pistol grip. The Mark III used a stamped rather than a tubular receiver, and was spot welded along the sighting rib where the tabs at either end of the blanking met.*

The Mark II, all £3 worth, with its bayonet—gruesome in more ways than one—which slid over the barrel and was secured by a spring tab that snapped into one of the barrel jacket vent holes.

The Sten was designed for speed and economy of manufacture, and showed it. The Mark II disassembled to 39 components, none of which required a great deal in the way of machining. A few components, of course, notably the butt, receiver, magazine housing and magazine body, consisted of several pieces permanently welded together.





The Mark I Sten was a desperation measure, designed in two months to enable an unarmed people and a disarmed army to meet an anticipated invasion. Note the flash hider cum muzzle brake and the wooden fore-end, deleted on later models, as was the folding forward grip, which made rather a neat monopod. The bolt handle, which made safe by turning up on later models, turns down on the Mark I. Nor did barrels interchange with later Marks.

teams at Sterling, BSA and MoD Cheshunt.

The great figures at Sterling, of course, were George Herbert Lanchester and George William Patchett. Also working with Lanchester during the early part of the war were J. G. Remington, R. W. Buckler and A. E. Somers. Later, the firm seems to have transferred Lanchester out of small arms work, for he appears in several 1946 patents for rock drills, well boring equipment and the like.

Patchett spent most of the war perfecting the splendid machine carbine that bore his name until the mid-1950's, when it became more generally known as the Sterling. And he would appear to have kept the project very much to himself, for none of the patents that we have located mention any collaborator. But one point, at least (the use of the magazine latch shaft as a retaining dowel for the ejetor post) was borrowed from George Lanchester and A. E. Somers, who had jointly patented it in July of 1941.

The general layout consisted of a straight tube as a receiver cum barrel jacket, with a cap at the back which removed to allow the bolt assembly and recoil spring to slide out for disassembly. These elements, of course, were brought forward from the Bergmann and the Lanchester, as was the magazine housing, formed (on early models) from a sleeve that slid over the receiver. On later models, the magazine housing was induction brazed directly to the receiver.

All of this, of course, is more or less the common currency of second generation SMG design. What distinguished the Patchett/Sterling was the design of the folding butt, the trigger mechanism and the magazine, all of which were George Patchett's work. Another distinguishing feature, also one of Patchett's inspirations, is the machined ribs on the bolt, which both reduce the bearing surface and keep the boltway inside the receiver scrubbed clean of whatever debris may find its way in.

By war's end, George Patchett's machine carbine, as it was called, was a finished and battle proven design. Robust and reliable, combining simplicity and sophistication in as optimal a blend as one could very well imagine, it was obviously well placed for postwar adoption, assuming that the MoD had abandoned its pre-war prejudice against SMG's. But the Patchett was an outsider. And outsiders competing against the official candidate often find themselves insuperably handicapped.

The Mark V was an effort to take the Sten upmarket, with a wooden buttstock and pistol grip, No. 4 foresight and bayonet lugs, and generally more careful fit and finish throughout. The troops could scarcely have failed to notice how much cruder and less satisfactory the earlier Stens were than the MP40's and Berettas on the other side.

The folding butt latches securely and unobtrusively underneath the gun but deploys in an instant, providing a firm cheekrest and shoulder brace, or clamping solidly under the elbow for hip shooting. Most people soon learn how to fold it back up again as well, given a bit of tuition. It is good.

The trigger mechanism is a neat, reliable modular assembly that removes for cleaning or maintenance when a retaining dowel through the grip is turned 90 degrees. It also incorporates a three-position safety/selector lever (safe-semi-full) that lies neatly under the thumb and is absolutely ideal. The pistol grip is comfortable and raked to a natural angle, and is moreover situated near the balance point of the weapon, all aspects that contribute to making the Sterling one of the fastest, deftest and easiest guns of its type to use.

The magazine, though interchangeable with the Sten and Lanchester, is different. Designed by George Patchett, it is a highly engineered and robust, if rather ornate, construction with a double roller-bearing follower and a leaf spring on the back edge that abuts the lip of the magazine housing to maintain the magazine at a constant angle, thus eliminating variations in the direction of feed that might otherwise arise.

The Patchett was first demonstrated on 23 September, 1942, and, by the latter part of the war, was a refined design, approved for service and actually in combat use. Obviously, the postwar period would see a logistical housecleaning. And if the military wished to retain an SMG at all (as appearances suggested they would) and if they were minded to replace the Sten (which everyone seemed to assume they would, albeit that the erstwhile wartime expedient, in its Mark V guise, was manifesting pretensions to permanence) then the Patchett was clearly the gun to beat.

Continues next issue