

Great War British & Empire Sniping Equipment (part 1)

by Roger Payne

It would be impossible to state with any absolute certainty the origin of the term 'sniping,' or from where came the verb 'to snipe,' although it is generally supposed that it came about from use in eighteenth and early nineteenth century British India referring to the hunting of the game bird the snipe. The snipe is a wily and agile bird and therefore difficult to shoot; consequently success at hunting the snipe implied a degree of marksmanship skill, the individuals concerned being referred to as 'snipers'¹.

The subject of this article is the equipment used by British and Empire troops during The Great War in the sniping battle to dominate No Man's Land. However, whilst the 1914-1918 war saw the rise of sniping as an organised discipline, there are a number of earlier instances where specialised marksmen were used to cause casualties to, and general disruption of, an enemy. Examples include the lucky escape of George Washington in 1777 during the American War of Independence, when he owed his life to British officer Patrick Ferguson who considered it ungentlemanly to shoot a man who had his back to him. Additionally, rifled arms fitted with early telescopic sights were utilised during the US Civil War by several groups, most notably by Berdan's Sharpshooters¹. It is also worthy of note that up until the Great War, marksmen and their rifles were generally referred to exactly thus, and it was only during the course of the war that the term 'sniper' became ubiquitous. Indeed it is a cause for reflection that that the term is now both universally used and abused in the modern mass media.

The British Army emerged from the Second Boer War of 1899 - 1902 with a keen appreciation of the marksmanship skills of the Boer commandos. In fact the British discovered the Boers' skill with a bolt action rifle very much to their cost, and this sharp lesson precipitated changes in musketry training within the British Army. These changes (although it could not

have been realised fully at the time), were to pay great dividends only a few years later, particularly during the early actions on the Western Front. Here the high standard of British marksmanship helped to offset to some degree the small size of the British Expeditionary Force (BEF). Changes included fairly straightforward modifications to equipment such as improvements to sights; the adoption of a single intermediate length rifle for all arms (dispensing with a 'Long' rifle for the infantry and a 'carbine' for almost everybody else), and more wide-ranging changes to recruitment and training both in the regular army and in the new territorial forces. The resulting marksmanship 'bible' appeared as the 'Musketry Regulations 1909'² which, with modifications and amendments, formed the basis for the training of British and Empire troops throughout the 1914 - 1918 conflict.

To satisfy marksmanship requirements, a British recruit was required to produce fifteen aimed shots per minute, though many could achieve rather higher than this, and a figure of 38 aimed shots per minute attained by a sergeant Snoxall is said to have been achieved³. This spirit of rapid aimed fire is perpetuated even today in shooting competitions such as the Bisley 'Mad Minute'.

Whilst the general standard of shooting was excellent in the small highly professional BEF of 1914, there was little interest, at least initially, in fielding a dedicated marksman's (sniper's) rifle. However, the 'Race to the Sea' ended in stalemate and by the end of October 1914 the front lines were settling down into the familiar system that would not change substantially through nearly four years of siege warfare, and which would stretch as a solid barrier extending four hundred and fifty miles from the North Sea coast to the Swiss frontier. In this environment distances between the opposing forces were measured in tens, or at most a few hundreds of yards; far less than in the combat conditions encountered only fifteen years earlier on the veldt of South Africa. In this new war riflemen and machine gunners would be engaging a similarly equipped

and defended enemy by firing through gaps in or over sand bags, and through specially made armoured plates fitted with loop holes. And of course, the combatants of all nations would be fighting a universally hated and ever present enemy.....mud.

As in other fields of both tactics and weaponry it perhaps should come as no surprise that, at least initially, the Germans were the more prepared and so took the lead in the sniping war⁴. Static warfare lent itself readily to the use of snipers with dedicated optically sighted rifles. The German army from the outset, being much larger and based upon a conscripted soldiery, contained many Forest Guards who were familiar with using scoped hunting rifles to good effect, as well as being possessed of the skills of fieldcraft and concealment⁵. Additionally, upon the outbreak of hostilities it is said that the Duke of Ratibor sent out a request across the Reich for the donation of suitable scoped rifles for the national cause. It is stated that as many as 20,000 rifles were donated, though it is not at all clear how many of these actually saw front line service as ammunition and spare parts supply would have posed a logistical nightmare. But regardless of this, there was no doubt that the German army had grasped the nettle early on, and this was soon understood by the British who recognised that the high numbers of head wounds sustained in late 1914 were almost certainly not due to chance⁶, but were the result of accurate aimed fire by marksmen often using dedicated rifles.

Fortunately the penny dropped fairly quickly that the high proportion of head wounds was linked to the use of dedicated marksman's rifles by the enemy. This suspicion was confirmed following the capture of such equipments during trench raids. By using snipers the Germans were able to dominate No Man's Land very effectively, making life most uncomfortable for Tommy Atkins (the name traditionally applied to the common British soldier). Having rapidly assimilated all this, the British now had to formulate a response. The response of the British military authorities was perhaps predictable. In early 1915 there was a tremendous effort by military buyers who circulated within the UK gun trade, to buy up almost any remotely suitable telescopic sight that could be fitted to the MkIII SMLE service rifle⁷. It was finally accepted that British soldiers must have access to equivalent equipment to that being issued to His Majesty's enemies. Of course, the wheels of officialdom never turn fast enough, and many enterprising individuals (usually officers, such as Hesketh- and, for example) chose to take their own hunting rifles to the front⁸. Some of these included big game rifles that found an additional use in the penetrating of German armoured loopholes that were otherwise impervious to .303" Mk VII ball ammunition. Such activities became known as 'loophole busting'. Indeed the War Office even placed limited contracts for big game cartridges, including in .500" Nitro Express calibre in full jacketed form specifically for this task. Other big game calibres thought to have been used include .416" Rigby and .333⁹.

Such was the desperation to source suitable sniping rifles at the outset of 1915 that equipments bearing a host of different telescopes and mounting systems were accepted into service, and often in very small quantities. This may have improved availability, but as

with the Duke of Ratibor's efforts, must also have posed a Quartermaster's nightmare. Many of the early scopes impressed into service from the domestic trade were of German or Austrian origin; certainly scopes by Goerz, Fuess, Voigtlander, and Kahles have been noted by the author with evidence of British use, and there may have been others.

Another attempt to arm the men at the front with an optically equipped rifle in some quantity and in a very short time led to the acceptance of 'Galilean' or 'optical' sights. These were very simple telescopes that did not possess a conventional metal telescope tube connecting the lens arrangements, but simply had the lenses attached to the fore and rear sights of a rifle so as to give a magnified image of the target. There were a number of types that had been developed as a target shooting aid before the war, and several different patterns were adopted by the War Office.

Not only was procurement haphazard in the early days, but initial attempts to counter the German sniper menace were often ill conceived and disorganised. Hesketh-Prichard¹⁰ describes checking telescopes and talking to men to whom they had been issued. He often found that the men had little or no training in the use and care of these delicate instruments, and that consequently the telescopes had often lost their zero¹¹ to their weapon and so were quite useless. Perhaps this should not be surprising as the new sniper's rifles were at first issued as trench stores¹² (along with picks and shovels, and such like), and were passed from one unit to the next as they were relieved in the line; hardly conducive to the extreme care required for the operation and maintenance of such sensitive pieces of precision equipment.

By the spring of 1915 the demand for scoped rifles had been acknowledged and was starting to be addressed. In view of the urgency of the situation a wide variety of rifle, scope and mount combinations were accepted into service (indeed even some rifles of non-service type and calibre), including some thousands of several different patterns of Galilean sights. However, over the following months the situation slowly started to improve and three different patterns of telescope became pre-eminent as the preferred types to be fitted to the MkIII and MkIII* service rifles. Even so, these telescopes were fitted to their rifles by a number of different mounting systems, but which shared one feature in common; all telescopes were mounted offset to the left of the bore. It is not clear why this was insisted upon, although Hesketh-Prichard indicates it was so that rifles could still be charger-loaded with the telescope in situ. This practice persisted until the last year of the war when the Periscopic Prism Company set up the Model 1918 telescope on the Pattern 1914 sniper's rifle using over bore claw mounts. At about the same time it also set up a quantity of Aldis scopes on to the SMLE rifle using adapted but similar claw mounts.

Some idea of the numbers and variety of scopes fitted can be gained from study of the surviving (though incomplete) contract details⁴. These show various scopes fitted in small numbers, sometimes even just as one-offs. The list includes scopes such as the Fuess Helios 3 types (later to emerge with some modifications as the Periscopic Prism Company telescope), Fijland, Stanley, Evans and Watts. Most of the 'small contract' sniping equipments date from this early period of

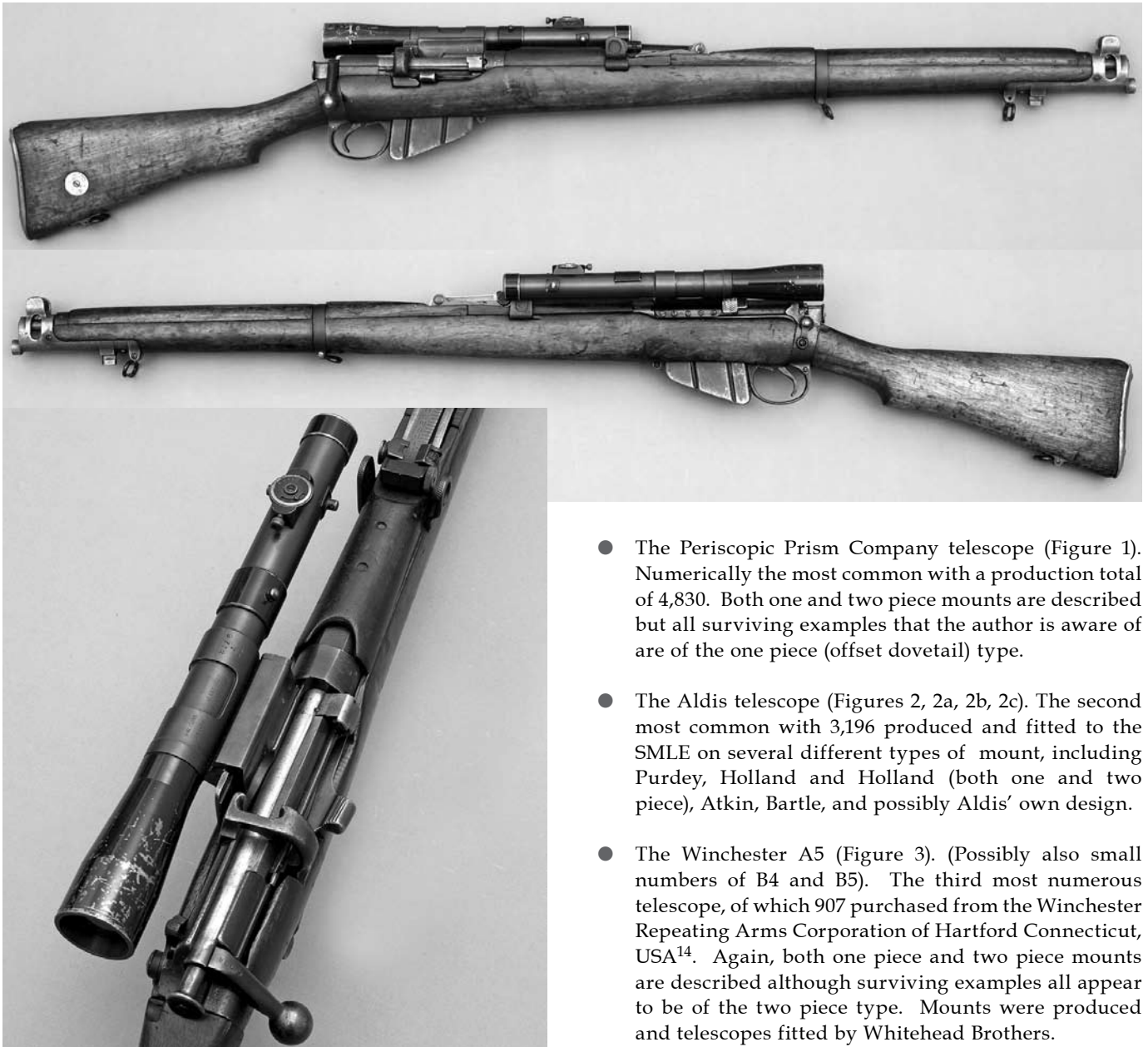


Figure 1. The Periscopic Prism Company telescope.

frenzied activity in the first half of 1915, when it seemed that almost any telescope would be deemed acceptable for service if it could be fitted to a SMLE. Indeed the very fact that so many small number equipments were produced, with such a variety of scopes and mounts employed, makes collecting so interesting for the modern day student of arms - a clear contrast with British single-mindedness in sniper rifle and telescope design and production during World War Two.

Thus was the situation in the early 'mobilisation phase' in the production & fielding of British sniping rifles that would allow Tommy Atkins to match his German opponents in the sniping war.

Mid 1915 Onwards

As indicated above by the middle of 1915 contracts were in hand and production was focussed mainly on three specific designs of telescopic sight which were to be fitted to the service rifle. Details of the numbers of scopes involved are given by Skennerton¹³.

- The Periscopic Prism Company telescope (Figure 1). Numerically the most common with a production total of 4,830. Both one and two piece mounts are described but all surviving examples that the author is aware of are of the one piece (offset dovetail) type.
- The Aldis telescope (Figures 2, 2a, 2b, 2c). The second most common with 3,196 produced and fitted to the SMLE on several different types of mount, including Purdey, Holland and Holland (both one and two piece), Atkin, Bartle, and possibly Aldis' own design.
- The Winchester A5 (Figure 3). (Possibly also small numbers of B4 and B5). The third most numerous telescope, of which 907 purchased from the Winchester Repeating Arms Corporation of Hartford Connecticut, USA¹⁴. Again, both one piece and two piece mounts are described although surviving examples all appear to be of the two piece type. Mounts were produced and telescopes fitted by Whitehead Brothers.

The usual consensus is that the Germans had stolen a considerable lead on the Franco-British forces opposing them on the Western Front, but by early 1915 British manufacturers were starting to satisfy the demand for dedicated sniping equipment to put into the hands of the front line troops. However, it was also appreciated that simply regarding a sniper's rifle as just another item of trench stores was not going to be conducive to finding a solution to the German domination of No Man's land. Specialist care and instruction in the use of this equipment had to be taught to the troops who were going to use it. Indeed, British marksmen had to be specially selected for shooting ability, observational capabilities, and psychological stoicism during times of great danger; and once selected as potential snipers they needed to undergo a dedicated sniper training programme. Eventually each of the five British armies on the Western Front had its own sniping school, the most famous of which was probably that of the First Army, if only because its commander was no less a person than the former big game hunter Hesketh Vernon Hesketh-Prichard. However, in the Summer of



1916 his was the second school of its kind to open, the Second Army school having opened theirs in December 1915. By enforcing high standards of marksmanship and fieldcraft (snipers were expected to achieve head shot hits at 400 yds in 50% of cases¹⁵) British and Empire troops gradually equalled and ultimately surpassed the skills of their German opponents, thus reversing the domination of No Man's Land. As well as Hesketh-Prichard, FM Crum¹⁶ was busy through much of the war organising sniper training and wrote the document that was eventually published as pamphlet SS.195 in late 1917, the first ever dedicated guide to British and Dominion scouting patrolling and sniping.

Whilst the SMLE was a rugged and reliable combat rifle, capable of functioning in all terrains and under nearly all weather conditions, it did not lend itself to producing the very best of sniper's weapons. That is not to say that it did not give a creditable performance against



Figure 2. Aldis scope fitted with Holland & Holland mounts.



Figure 2b. Aldis scope with Purdey mounts, detached.



Figure 2a. Aldis scope with Purdey mounts.



Figure 2c. SMLE rifle with Aldis scope and Holland & Holland mounts.



Figure 3. SMLE rifle with Winchester A5 scope in Whitehead Brothers mounts.

the Germans, but as the war went on it became accepted that there was room for improvement, certainly when compared against captured enemy rifles. In fact, trials of enemy weapons and telescopes ultimately led to the development of the SMLE's successor as a sniper's rifle, the Pattern 1914 (T).

The adoption and production of the Pattern 1914 (T) (later known in full as the Rifle No3 Mk1 W (T) and also known as P'14) is a more clear-cut story than of

the SMLE snipers of WW1. Briefly, during field trials in 1917 it was noted that P'14's fitted with a more finely adjustable rear sight (the 'F' sight) were capable of shooting with greater accuracy than a scoped SMLE. Concurrently the Hensoldt 'light' telescopic sight was being copied along with its claw mounts, and with relatively minor modifications resurfaced as the Model 1918 telescopic sight, produced and fitted to selected Winchester manufactured Pattern 1914 rifles by the Periscopic Prism Company. These rifles were set up during the course of 1918 and so field use during the course of hostilities must have been limited^{17 †}.

Shortly after the cessation of hostilities it became clear that the new peacetime army would not require so many snipers' rifles, and so the opportunity was taken at a meeting of the Small Arms Committee in 1921 to order the stripping down for spares of all SMLE sniper's rifles. Some telescopes were sent to store against possible future need, but the majority were sold off to the trade. This procedure of the stripping down of rifles was carried out at the ordnance depot at Weedon in Northamptonshire during the 1920's. It was felt that there would be enough P'14 (T) rifles for the regular army, and the territorials could then use rifles equipped with the fine adjustment rear sight for their needs.

† The Periscopic Prism Company also made the earlier WW1 telescope that bears its name and which was fitted in offset dovetail mounts to the SMLE in 1915 and 1916. Ironically this was also an anglicised copy of another German telescope, the Fuess Helios 3¹⁸. Note however that whilst both scopes were produced by this company during the war they are entirely different designs. It should be noted that small numbers of Pattern 1914 rifles were issued for trials at the front line during 1917 bearing Aldis scopes in similar claw mounts to those ultimately utilised with the Model 1918 telescope. These might perhaps be regarded as 'pre-production' or 'trials' rifles for evaluation purposes.

Scope types and usage

The first optical aid introduced in any quantity to facilitate good marksmanship was not a conventional terrestrial telescope contained within a metal tube at all, but was a Galilean telescope as described above. Indeed there were several types of these available as they had been developed and used as shooting aids before the war. They were easy to use and relatively inexpensive, but were also rather fragile. However, contracts for several different patterns were entered into by the War Department early on¹³, as not enough conventional telescopic sights were available.

Prior to the outbreak of war in 1914 there existed several patterns of simple optical sighting devices. In principle they consisted of a set of front and rear lenses which were mounted over the existing iron sights or over the foresight and at the rear of the rifle body, thus forming a simple Galilean telescope. In some designs the original foresight was used, and in others a dot on the front lens assembly. They were fragile and prone to damage and also had a rather restricted field of view. However, they were readily available as they were much easier to produce than a conventional telescopic sight, and they were cheaper than conventional 'scopes too. Indeed Skennerton¹⁹ quotes figures in 'The British Sniper' indicating that as of 02/11/18 a total of 75,900 'Sights, Optical, for Rifles' had been procured for government use (contrast with a total of 13,464 'Sights, Telescopic, for Rifles'). This considerable total of optical sights does appear surprising, and the author wonders whether it may also include (perhaps inadvertently) other sights as well. If the figures do accurately represent the number of Galilean sights procured for the army then it is perhaps surprising that they are not encountered more often than in practice.

There is little doubt that a number of patterns of sight would have made their way to the front²⁰, probably being taken by their owners, but only three types were ever formally approved and introduced in the List of Changes²¹. These were the Lattey, the Neill, and the Martin sights.

Both the Lattey and the Neill were approved on 28th September 1915 though would have been in service from much earlier in the year. The Lattey was the most common and also the least expensive, priced at seven shillings and sixpence a set. The front lens holder may be found in both brass and steel, and in examples issued to the military a broad arrow mark may be found. The Latteys differed from the other optical sights in that they did not replace the rifle's own iron sights, but rather were used in conjunction with them. The front lens assembly fitted in front of the foresight, with the rear component astride the back sight.

The Neill sight was introduced at the same time as the Lattey, though its name was changed to 'The Barnet Sight' soon after adoption. The front lens is attached to the nose cap of the rifle, from which it projects offset to the left. A central black dot on the lens is used as the aiming point. The rear lens is attached to the rifle at the rear of the body, in the position of the volley sight aperture. Elevation adjustment was limited to 600 yards and the sight was considerably more expensive than the Lattey, at thirty five shillings. This sight is also occasionally referred to as 'The Ulster Sight' after its Belfast inventor, a Mr T Caldwell.

The last of the three officially adopted sights was 'The Martin,' patented on January 18th 1915, developed by one Alexander Martin, and mentioned in the List of Changes²¹ on 01/05/15. The Martin sight differs from the other two mentioned in that the front lens is fitted immediately behind the foresight and bears a black dot as the aiming mark positioned directly over the bore.

The rear sight is no less than a commercial BSA aperture target sight with the addition of a lens in the sight aperture. The most expensive of the three, the Martin sight was priced at two pounds and ten shillings to three pounds a set.

In addition to the three above mentioned, sights produced by other makers, notably BSA and Gibbs were used in small quantities. The use of the latter may have been limited due to its considerable expense, at five pounds five shillings a set (five guineas), though there is no doubt that the sights were superbly made, coming in a fitted wooden box, and being ultimately available to fit the SMLE, CLLE and Pattern 1914 rifles.

By the Spring of 1916 9,000 Lattey sights had been supplied to the War Office, together with 4250 Barnet sights, 695 Martin sights, approximately 100 Gibbs, and 80 BSA (the last supplied by Alex Martin). In addition to the above 225 Charger Loading Lee Enfield Rifles were set up with optical sights by the BSA Company, and sights of various designs were privately purchased by units and individuals.

The Periscopic Prism Company (ex-Fuess Helios 3), Aldis, and Winchester A5 (perhaps augmented by small numbers of the B4 and B5 model), became by far the most common 'standard' scopes fitted to the SMLE during The Great War. Having said this, the waters are muddied by the use of two different mounts for fitting the PPCo to the SMLE; possibly as many as four or five mount systems for the Aldis²²; and two for the Winchester A5. Some of these mounting systems no longer exist (so far as we know), so we can only speculate as to what they may have been like. It is known that nearly thirty different variants of World War One issue snipers' rifles were saved for the Pattern Room collection after the Armistice, but these all disappeared early in World War Two and we can only surmise that so dire was the need for service rifles that these were all stripped and reissued as standard rifles. It is not clear what the position was as regards the telescopes from these rifles, but a Watts telescope from one of them has found its way into the author's collection.

The Periscopic Prism Company Telescope

This was the most numerous of the WW1 telescopic rifle sights with over 4,800 being produced. The instruments themselves were not marked with a serial number but bear the manufacturer's name and a rifle serial number engraved on the scope rings. It was a conventional terrestrial telescope of approximately two power derived from a German design by Fuess - the Helios 3. The German scope was modified by the 'Imperialising' of screw threads, the incorporation of minor changes to the objective housing and range drum, and most significantly, with the addition of a lateral adjustment facility by means of two capstans on either side of the scope tube. One capstan was slackened off and the other

pinched up, depending on the direction of the lateral error. There was no lateral adjustment facility on the German progenitor telescopes, lateral adjustment being catered for in the design of the mounts.

From the examination of surviving instruments it would seem that the metamorphosis from Helios 3 to Periscopic Prism Co telescopes took place over a period of time as some transitional examples do exist. Indeed the author possesses one original Helios 3 marked scope that appears to have seen British service. The transitional scopes that have been noted usually do not bear a manufacturer's mark or logo. One 'late' transitional piece complete with capstans and Purdey rings has been noted that is virtually a PPCo scope in all but name. The rings fitted are of exactly the same design as those commonly fitted by Purdey to Aldis telescopes for use on the SMLE. Some of these transitional telescopes have been noted bearing the name of Rigby, although it is quite likely that this indicates fitting rather than manufacture by Rigby. It is not confirmed who made these transitional scopes but in the author's opinion it is most likely to have been the Periscopic Prism Company.

There are references to two patterns of mounting system quoted in Pattern Room documentation, though the author has only ever encountered the one piece mounting system consisting of a female dovetail mount base fitted to the left side of the rifle body, with a corresponding male dovetail attached to the one piece scope ring. A spring operated thumb catch fitted to the mount base serves to lock the telescope in position once it has been pushed fully home. Two minor variations in the design of the mount base have been noted; some have a rounded front lower edge and some are left squared off. The 'rounded front' bases seem to be found with a deeper thumb catch that extends both above and below the attaching spring, whereas the 'squared off front' variants seem to be found with a less deep thumb catch that projects down only as far as the bottom of the spring. This is not easy to explain but is evident in Figure 4. 'Hybrid' mounts have been noted but to date all those seen by the author have been poorly assembled reproductions.

Some bases are also to be seen bearing an Enfield examiner's mark and others with the rifle serial number stamped between the second and third and third and fourth mounting screw holes (the mounts are held in position by five 5BA screws and soft solder). To date no genuine bases have been seen bearing both the rifle serial number and the examiner's mark. The author is unaware of why mount bases are so marked, but it is possible that bases that were fitted to rifles straight away were serially numbered to the corresponding weapons, and those that were not immediately needed were stamped as government property and then put into store against subsequent requirement. However this still leaves the question of whether or not on subsequent use, the bases would then have been marked with their issue rifle serial number. If this were the case one would expect to see bases bearing both an examiner's mark as well as a serial number. Clearly, with the few surviving original examples we can never be sure of what exactly came to pass.



Figure 4. Two Periscopic Prism Company rifles with scopes removed in order to show the two minor but distinct variants of mount base encountered.

Early telescopic sight rings are marked 'Pat. Appl. For' whereas those of later manufacture bear the patent date. The patentee was a Mr AB Rolfe-Martin of Kentish Town London, and his patent was registered in February (Patent Application number 3027, submitted 24/02/1915). Telescopes and rings were made by the Periscopic Prism Company at their London factory, and study of the instruments produced there reveals minor variations over the course of production. For example, two variants of range drum exist; the so called 'split' (made in two pieces) and 'solid' (one piece) types. All were generally graduated from one hundred to six hundred yards in one hundred yard increments. Many telescopes will be encountered that differ from this, but this is generally due to post-WWI civilian use. A few (presumed) very early telescopes were manufactured with a range drum saddle that entirely encompasses the three hundred and sixty degrees of the circumference of the scope tube, but these are scarce and the vast majority are of the more conventional configuration.

Whilst it is not known who carried out the work, one telescope has been noted graduated from one to six in the usual way, but for Mark VI .303" ball ammunition, rather than Mark VII. It came to a UK collection after spending many years in New Zealand, and so the graduation changes could have been effected later on. The top of the range drum is engraved 'MkVI'.

There are two variations in the shape of the ocular lens housing on PPCo telescopes, the cone shape of one having a much sharper taper than the other. Hence they are known often amongst collectors as the 'short cone' and 'long cone' variants (Figure 5). Both are quite commonly encountered and the difference in shape is more than just cosmetic in that the ocular lens securing arrangements differ between the two assemblies.

There seems to be little variation in the leather

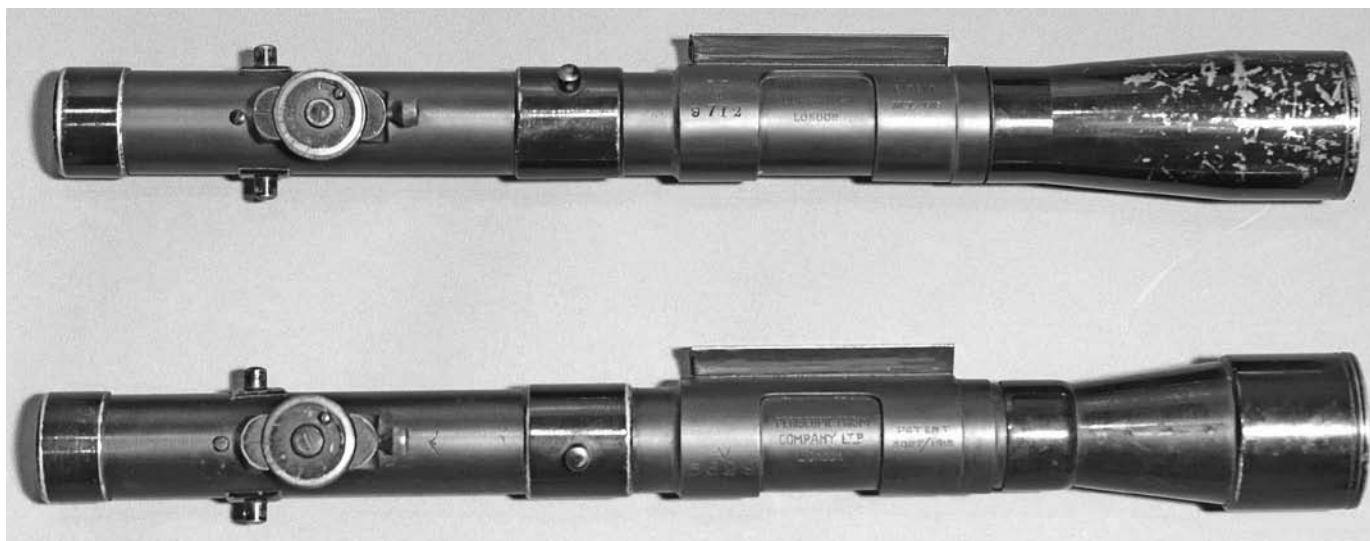


Figure 5. Periscopic Prism Company scope with long (upper) and short (lower) cone ocular housing.

telescope carrying cases for the PPCo telescope; they are more or less cylindrical, made of brown leather with baize or felt lining, and bear the issue rifle serial number stamped into the side. Finding more than one serial number on a case is quite common (and also on a telescope itself, for that matter), the first number generally being lined out. However, examples with unit markings, whilst seen occasionally, are scarce.

The Aldis Telescope

The second most numerous of all the fielded sniping telescopes in World War One, the Aldis was a conventional and well-made terrestrial telescope produced at the Aldis Brothers factory in Hall Green in Birmingham. According to existing figures 3,196 were produced for the military during the course of the Great War. Interestingly, scopes were set up on rifles, if not continuously then in batches, until the end of the war, yet all issue telescopes seen to date, bear the date 1915 or 1916. It is known though, that fourth pattern Aldis telescopes were set up on to both Pattern 1914 and SMLE sniper's rifles in over bore claw mounts until the end of the War and even into 1919. Possibly enough telescopes had been manufactured early on to last until the end. Certainly, all surviving contract details concerning rifle scope manufacture do date from the 1915 - 1916 period and it is known that in 1917 and 1918 the Aldis Brothers' plant was occupied with producing aircraft gun sights for the RFC/RAF. The last order for rifle optics is dated 20th October 1916 and was for 2,254 telescopes. This contract was for the supply of the instruments only, and so perhaps these represented enough for remaining wartime needs.

There were four main models of Aldis telescope as used by British and Empire forces. The first three are visually all very similar, with the characteristic stepped black painted brass ocular housing bearing the serial number of the telescope, the date of manufacture, and 'Aldis Brothers Birmingham'. There are relatively minor internal differences, such as in the type of knurling on the range drum, the existence of both solid and split drums as also found with the Periscopic Prism Company scope, and so on. The fourth pattern telescope is instantly recognisable from the other three types in that the ocular

end of the tube is made from steel not brass, and is part of the main scope tube itself. Unlike the earlier models it is also coned in shape rather than increasing in diameter stepwise. There are no markings on the ocular end either, but rather they are moved to the (black painted brass) objective lens and prism housing at the other end of the instrument. By the later stages of the war rifles and telescopes using claw mounted over bore systems were (rather belatedly) being developed, in itself a major advance and putting British sniping equipment on a par with most German Gewehr 98 sniping rifles. However, the claw mounts adopted possessed no means of lateral adjustment, so this had to be incorporated into the telescope itself. Hence all fourth pattern and some (modified) third pattern Aldis scopes will be found with an enlarged objective housing incorporating a lateral adjustment prism. It is therefore reasonable to assume that earlier telescopes without lateral adjustment facility were intended for the mount systems that incorporated a mechanical means of lateral adjustment within themselves, and that the later telescopes with prisms were intended for mount systems with no means of deflection adjustment such as on the Pattern 1914 (T) and the quantity of similarly set up SMLE's. Some prism-equipped telescopes are also believed to have been fitted to SMLE's bearing the typical offset female dovetail mount base of the Periscopic Prism Company system, but utilising slightly modified scope rings to accommodate the Aldis. One other feature noted on some of these lateral adjustment equipped scopes is that range drums are sometimes observed graduated from one to ten rather than one to six (hundreds of yards). The author suspects that these telescopes were destined for late war rifles equipped with claw mounts; probably both Pattern 1914's and SMLE's, and would mean that both Model 1918 and Aldis telescopes were similarly graduated up to 1,000 yards.

There is some variety in the type of mount systems used with the Aldis and the SMLE and indeed there are certain types of mounts mentioned in official documents of which today we have no knowledge. Presumably all examples have been destroyed or otherwise lost over the years. The Bartle and the Atkin mounting systems are

examples of this²³, even though some quantities were contracted for. Some advanced collectors have postulated that the PPCo type rings suitably modified for the Aldis could represent the Bartle mount, but at present this is just speculation, and we may never know for sure. Additional to the Atkin and Bartle mount enigma, it has been said that Aldis Brothers contracted to supply some of their scopes on mounts of their own design²², but again, whether they were supplied and what they might have looked like, remains unknown.

Probably the most commonly encountered surviving mount type found today on Aldis scopes is the Purdey mount system, of which 1,400 were ordered in contracts placed during 1915 and 1916⁴. This is a two piece system with the rear base screwed and soft soldered to the rifle receiver side wall just behind the receiver ring. A boss sticks out from the base laterally, around which the swan-necked rear ring hooks. The front mount base encompasses the barrel approximately over the front of the chamber and bears a dovetail block containing within it a tapered hole for a corresponding cone shaped downward projection on the under surface of the front ring. A roll-over catch solidifies the arrangement, locking the coned projection firmly into place. Lateral adjustment is featured on the front base by means of screws on either side which permit side to side movement of the dovetailed block. As might be expected, surviving examples vary slightly in key dimensions so there would clearly have been a degree of hand fitting in the setting up of every sniping rifle. This system is commonly associated with the Aldis telescope, but small numbers of other telescopes were also fitted to rifles using it; specifically Watts, Kahles, and Periscopic Prism Co/Fuess transitional telescopes have all been noted. Of course, there may have been others too.

A little scarcer than the Purdey mounts, Holland and Holland two piece mounts are encountered periodically. It is impossible to make definitive statements on minor variations in such systems when so few exist to be studied, but the author has noted two minor variations in the shape of the front ring. This relates to the downward and forward projection of the ring (which locates into the front mount base). At least one presumed early example in the production of this system has a front ring that projects appreciably further forward in comparison to later examples. In the presumed later (and relatively more common) examples, the front ring drops downwards with but little forward projection, to the point of attachment to the front base. Having recently rebuilt a genuine but stripped down SMLE/Aldis/Holland and Holland mount sniper's rifle, the author may have inadvertently discovered why the design of the later front scope rings was modified to project a lesser distance forward.

An 'early' H and H mounted telescope with the marked forward projection of the front ring was used for this rebuild, along with genuine bases refitted to a genuine Enfield 1916 MkIII* sniper's rifle body. The mounts were quite straight forward to fit, until the barrelled action came to be fitted back into its woodwork. There was an immediate problem with the front mount base obstructing the rear of the rifle rear sight protector. There simply was not enough room to seat the barrel

and action into the fore end because of this. The scope rings and mount bases fitted accurately, and so the author was left with no alternative but to shave off some metal from the rear surface (on each side) of the rear sight protector ears. One wonders if this was also a problem at the time, easily resolved by displacing the front mount base a little further back towards the rifle body. It would of course require a corresponding modification to the front mount ring. Perhaps this provides an explanation for this minor design change?

The one piece Holland and Holland mount system referred to in the inter-war Pattern Room Collection list is another variant that no longer exists. However, there is an unadulterated military-contract Aldis telescope bearing quite a novel one piece mount system residing in a private collection in France. One may speculate that this is the only example of the H and H one piece mount type still extant. The mount appears contemporaneous with the telescope, and the instrument is engraved up with the Holland and Holland name and does not show obvious evidence of post-war modification.

The over bore claw mount system is generally neglected in writings on Great War British and Empire sniping except for its use with the Pattern 1914 rifle and the Model 1918 (and sometimes Aldis) telescope. However, more than one variant of claw mount has been identified. Claw mounts with lateral adjustment on the rear ring have been encountered in small numbers on P'14 rifles fitted with extant Aldis telescopes, presumably in 1917, before the design characteristics of the P'14 (T) had been finalised. Subsequent refinement led to the Pattern 1914 (T) with Model 1918 telescope and mount system that lacked deflection adjustment as this was present on the scope by means of a prism assembly in the objective housing, much the same as with the later Aldis telescopes. Having described the above, the rarest of the claw mount systems is the variant developed by the Periscopic Prism Company for the fitting of later Aldis telescopes to the SMLE in 1918 - 1919 (Figure 6). It is not known how many of these sets of mounts were produced nor how many rifles were set up using them, but the writer of this article possesses a set and is aware of a handful of other sets and part sets in collections around the world. One known set of mounts is engraved upon the rear ring 'The Periscopic Prism Company, London, 1919'. The mounts are of an identical style to those produced for the Pattern 14 rifle and Model 1918 telescope, but with dimensional differences incorporated into the rear ring and base to facilitate their fitting to the SMLE. The other difference is that the rings are of one inch diameter for the Aldis telescope, rather than 7/8" diameter for the Model 1918 device. Taking into account the observed date and the great similarity between Pattern 14 and SMLE claw mount systems, plus the fact that both were produced by the same manufacturer, then the Periscopic Prism Company may even have had contemporaneous production lines running, producing both types in the last stages of the war and shortly thereafter. The exact number of these mounts produced for setting up on the SMLE is not known, but at least a small quantity was produced, with what would appear to be an example of this system referred to in the Pattern Room list dating from the inter-war period.



Figure 6. Over bore claw mount system as used with later Aldis telescopes. A similarly-sized length of mild steel rod is shown in place of a missing telescope..

Whilst their employment is by no means established fact, as touched on above, a number of military contract Aldis telescopes have come to light with range drums graduated from one to ten rather than one to six²⁴. One or two have survived with mounts intact, or at least with visible evidence of the presence of mounts, and it would seem likely that these telescopes are later production examples (with prism cells), and at least some were fitted to either SMLE's or Pattern 14 rifles in the above mentioned claw mounts.

Surviving figures suggest approximately 3,200 Aldis rifle telescopes were procured for the government during WW1¹³, although contract details are by no means complete, and military provenanced telescopes have been noted with serial numbers between 65XXX and 72XXX. Whether numbering was completely sequential or whether there were gaps is not known, but if the former it would suggest that the currently accepted total is

somewhat of an underestimate, unless serial ranges of different optical instruments became mixed, which seems unlikely.

What appear to be military specification telescopes (usually of the fourth pattern), but which lack the usual evidence of military use, are often offered for sale. These tend to bear serial numbers above 100,000, and if mounts are still present, they tend to be of commercial patterns. Range drums are often graduated for hunting cartridges or are unmarked. The author is inclined to believe that these telescopes may represent the end product of residual wartime contract scopes, or parts subsequently assembled into complete instruments, by Aldis Brothers, and then sold into the domestic UK gun trade. Identification of potential ex-military scopes can sometimes be difficult as they often bear the names of gunsmiths who set them up on to sporting rifles after the war, and these same gunsmiths are also often enterprises that were intimately involved in the production of sniping equipments during the war, such as Rigby and Holland and Holland. The high serial number, commercial mounts, lack of a date on either the ocular or objective housing, and the lack of a broad arrow or SMLE or P'14 serial number engraved upon the tube, are indicators of the piece's commercial provenance.

Leather telescope carrying cases were issued with Aldis telescopic sights, and these are usually oval in section and bear the rifle serial number on the side of the body of the case. The majority are not maker-marked, though a few are, one example in the author's collection being attributed to the company of 'Brooks' and being dated 1916 (the final digit being individually stamped) on the top of the lid.

The Winchester A5 Telescope

Numerically the third most commonly employed sniping telescope during The Great War, the Winchester, as would be expected, was a US-designed target shooting type scope and is instantly recognisable by its greater length and more slender tube than typically found in contemporary British and European designs. Orders for the procurement of Winchester telescopic sights were placed in 1915 and 1916 and a total of 907¹⁴ were ultimately supplied by the Winchester Repeating Arms Company to His Majesty's government for the specific purpose of being fitted to the service rifle. The company of Whitehead Brothers was contracted to provide and fit the mounting system and to fit the telescopes to rifles provided to them by the government¹³. Known surviving information concerning this mount system is virtually non-existent, but the records of the Pattern Room inter-war collection suggest that there was both a one-piece and a two-piece mount that saw service. The author however is aware of only a few such surviving examples of rifles and mounts genuinely known to be of Great War vintage, and these seem all to be of the two piece type. This mount system used two angle-iron brackets, one of which was attached to the left side of the rear sight protector in front, and the other of which was attached to the receiver side wall to the rear. To these brackets were screwed conventional dovetail telescope mounting blocks, to which, in turn, the telescope rings were mated. Despite the fact that the front mount was

attached to the rear sight protector of the rifle (and therefore indirectly to the wooden fore end of the rifle), and that the telescope had to be pulled rearwards after each shot, it would seem that this equipment was well regarded by the troops using it.

The telescope is of five power magnification, but having a narrow diameter tube and objective glass, the field of view is consequently limited. There is no means of either vertical or horizontal adjustment on the telescope itself, as this is effected by adjusting the range and deflection adjuster knobs which are an integral part of the rear mount ('ring'). The vast majority of the telescopes supplied were indeed of the A5 pattern, but it has been reported that small numbers of the very similar looking B4 and B5 models were also used. Markings on the vast majority of telescopes observed to date tend to conform to one of two formats; some instruments simply bear a deeply marked SMLE serial number engraved into the top of the scope tube and filled with red or pink paint or 'kwickfill' type material; others are encountered bearing no rifle serial number but with a broad arrow and Enfield examiner's mark stamped into the side of the dovetail on each of the two rings (broad arrow stamped on to one of the dovetails and the examiner's mark stamped on the other).

Leather 'rifle bucket' shaped cases were issued with all telescopes and these were also generally, but not always, examiner marked. Occasionally, as with other type scope cases, end users would stamp or write identifying markings on to them; there being one example known to the author of a Winchester A5 case attributable to the 26th Battalion The Royal Fusiliers.

Old Parker Hale catalogues show one piece mounts consisting of a single lengthy dovetail block offered for general sale. These are stated in the promotional literature to have been designed for sniping use in The Great War, utilised with the A5, but whether they do truly represent the 'one piece' mount referred to in the Pattern Room collection list, or whether they are just a post WW1 commercial development, subsequently marketed with a description that is a little 'imprecisely' worded, is not known. The front end attaches to the rear sight bed, being located by the rear sight axis pin (it being necessary to remove the iron sight), and the rear bears a hardened threaded pin that projects downwards through the rail and permits it to be tensioned against the knock's form. From a design viewpoint it leaves much to be desired, yet perhaps is no worse than other Great War designs.

Whilst never officially sanctioned, small quantities of the Winchester A5 telescope are to be found which were also fitted to the Canadian Ross Model 1910 rifle. Photographs have survived of A5's fitted to such rifles using over bore conventional dovetail blocks. It also seems to have been common practice to 'sporterise' the woodwork of these rifles by cutting it back to just in front of the barrel band. It has also been stated that some A5 telescopes were fitted over bore to the Pattern 1914 rifle, though the author is not aware of any indisputably authentic examples (set up in the 1914 - 1918 era).

The above represents a brief discussion of some salient features of the most commonly encountered

scopes and scope mounting systems utilised on British and Dominion Great War SMLE (and occasionally other) service rifles. However, there were numerous additional telescopes and mounting systems employed, many on the SMLE, but also on occasions on the Long Lee Enfield, the Ross, and towards the end of hostilities, on the Pattern 1914 rifle. To attempt to describe every single variation is practically impossible; some variants were produced in very small quantities - some even as one-offs; and of course many have been lost forever due to a combination of small numbers being produced in the first place combined with War Department policy to dismantle (effectively to scrap) all SMLE sniper's rifles shortly after the end of The Great War.

Having described these major scopes, it is also true that there were other telescopes accepted and fielded in modest quantities during the war, and it is possible to describe some of these from surviving examples. Had the extensive Pattern Room collection survived the early days of WW2, the contemporary collector and student would be in a far better position to understand than they currently are. As might be expected, most of these 'small quantity' telescopes were supplied early on during hostilities, during 1915, when almost anything available was sent to the Front, as long as it could somehow be fitted to a service rifle. According to surviving figures¹³, these 'early' government purchased issue telescopes totalled 2,914 all told. A few of the smaller volume production telescopes and mounting systems will be discussed in Part 2 of this article.

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