

Barrel Manufacture & Alignment

By: Peter Laidler

www.milsurps.com

The mystery of the Circled 'D'

First, a bit of a history lesson. The actual manufacture of the No1 and No4 barrels is well documented. In short, it was manufactured as you see and one of the last but crucially important operations was to machine the indexed thread. This is important because if the indexed thread is not exact, then it'll be impossible to align the knock form and subsequently, the sights and extractor way. This was the cause of many thousands of barrels being rejected. There was nothing that could be done economically to save an incorrectly indexed threaded barrel and an answer was urgently sought. At first, it was thought that a new chamber end could be shrunk on, similar to that of the already obsolete tube type Mk2 barrel. But if that was obsolete, then why try the same trick again?

It was decided that the barrels would be partially turned and threaded in one hit regardless of where the thread aligned but instead of cutting the foresight and bayonet columns, they'd be left as two complete rings around the barrel. The same applied to the knock form, the breeching-up flat at the reinforce. Now you have a complete barrel. Bored, rifled, chambered and machined (almost) to the exact contour of the finished article. What happened then was the threaded end was put into a milling machine headstock and automatically positioned into its correct 18 degree underturn position. This WILL automatically mean that the thread is indexed to any subsequent operations. Then another two sets of cutters would simply mill away the surplus material leaving two perfect sets of lugs for the foresight block band and the bayonet. Another cammed cutter would swiftly come over and scallop the rear of the longer bayonet locking cam segment

At the same time, another horizontal rotary milling cutter would slice across the knock form, leaving the flat. A space in the milling machine headstock allowed a cutter to slice away the extractor groove. Simple isn't it? Further to this, it is said that the extractor way is narrower for a reason that I cannot quite understand, on the basis that it's either aligned ... or it's not!

From this, you can see that the non essentials (...well, they're all essential of course but not to ultimate alignment) were done but the very last operation was the critical one of aligning the foresight block band and bayonet lugs, knock form and extractor way with the existing breeching up thread THAT WAS ALREADY INDEXED IN THE MILLING HEAD, just as it will later be, in the body of the rifle.

In, hand tight, tweak it to 18 degrees underturn and tighten with the cramp. This applied to all barrels, including the No5 and No8 too of course that were indexed

This was a major departure from the Enfield and Ministry of Supply specification and as such these barrels, manufactured using this method were marked with a distinct letter D, readily identifiable, on the knox form.

This information has been passed to me by a former Army liaison AIA. The initial D does not mean anything in itself except that the barrel was manufactured using a different method. Incidentally, this was a faster method of barrel production too. There, has that answered the question? I did ask about the No5 barrel with the scalloped reinforce but that was before the AIA's time as an inspector. However, this would be a similar operation to the extractor way, although not an important one

As a matter of interest, this was a Fazakerley method of manufacture only and SHOULD indicate a Fazakerley barrel.