

Not-the-Enfield-FAQ

No. 1 MkIII*

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compiled by <ben.sansing@chaos.lrk.ar.us> with lotsa help

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An older, shorter version of this FAQ may be obtained via internet mail from ... uh... whatever site holds the Sacred Rec.Guns FAQ. I'm not sure where that is, since I cannot directly access it myself.

Please don't ask me to send you the FAQ directly (over the Net); my mailer only accepts 200 lines at a time, and I have to hand-edit anything longer into separate messages. I just don't have time to do a lot of that. Probably the best way to get the *latest* edition of the FAQ is by either downloading it via modem at The Courts of Chaos BBS, (501)985-0059 as ENFAQ-???.LZH (higher numbers replacing the '???' denote most recent update), or if you're desperate you can send me an IBM-formatted high-density (1.4m) diskette and \$1 for postage to the PO Box listed above, and I'll send you the latest edition of ENFAQ by return (snail) mail.

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Thanks.

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 - + Lee-Enfield No.2 MkVI .22 cal. training rifles
 - + Conversion of Enfield to 7.62x39mm
 - + British issue No. 5 "Jungle Carbine" rear sights
 - + Long range volley sights for Lee-Enfield rifles
 - + Magazine cut-offs for Lee-Enfield No. 1 MkIII rifles
 - + Long range volley sights & magazine cut-offs (another source)
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 - + Surplus scope mount for Enfield #4 MkI(T)

+ Armorer's front sight adjusting tools for SMLE rifles

PART ????: Excerpts from British Firing/Training Manuals (COMING SOON?)

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Codes Used

AR = 'American Rifleman' magazine (NRA Publication)

BIB: AR's "Books in Brief" short reviews

DB: AR's "Dope Bag" section

IME: AR's "In My Experience" column (DB section)

Q&A: AR's "Questions and Answers" column (DB section)

RW: AR's "Readers Write" section

WCIG: AR's "Where Can I Get...?" column (DB section)

GA = 'Guns & Ammo' magazine

GD = 'GUN DIGEST' (Annual Journal, from DBI Books)

GI = 'GUNS ILLUSTRATED' (Annual Journal, from DBI Books)

GS = 'GunSport & Gun Collector' magazine (long defunct)

GU = 'Guns' magazine

GW = 'Gun World' magazine

SB = 'SHOOTER'S BIBLE' (Annual Journal, from Stoeger)

SN = 'Shotgun News' publication

ST = 'Shooting Times' magazine

Runic substitutions (closest 7-bit ASCII approximations I can conjure)

^ = British "broad arrow" proofmark

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Please feel free to ask questions (so I can add them and their answers

to the FAQ), provide further info (on anything relating to Enfields or

the .303 cartridge), and make comments (so I can improve the FAQ, and make it more useful, informative, and precise). Thanks!

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Part One: General Info and Wisdom

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THUMBNAIL HISTORY OF THE LEE-ENFIELD

This rifle has a long and colorful history in British service. The "Lee" in its name is for James Paris Lee, a Scottish-born American who patented the basic design of this action in 1879. "Enfield" derives from

the Royal Small Arms Factory at Enfield Lock in England, where for many years most military development work was done on arms later adopted by Great Britain.

Briefly, Lee submitted his design in the English 1887 rifle trials, where it performed best and was accepted. Enfield made some modifications, resulting in the Lee-Metford Magazine Rifle Mark I of 1888. This rifle used Metford's segmental, shallow-land rifling, and was designed for the original .303 British loading, which used a compressed charge of black powder. With the introduction of Cordite (a smokeless powder, see section on .303 British ctge. for more info) a few years later, the Metford barrels soon proved impractical, for the highly corrosive Cordite destroyed their shallow grooves in short order. Enfield rifling - actually another Metford design, but very similar to today's standard rifling - offered much deeper, somewhat wider, lands to the hot powder gases, and barrel life was considerably extended. Various improvements and modifications followed, leading to the first true Lee-Enfield, which was introduced in 1895.

This was followed by other changes, modifications and mark designations every few years or so until the Mark III was adopted in 1906, as the Short magazine Lee Enfield (SMLE) No1 MkIII.

The No1 MkIII rifle weighs about 8.9 lbs., has a 25.2" barrel and is 44.8" over-all. It has a full-length fore-end and the rear sight is mounted on the barrel.

The No4 MkI rifle weighs about 8.6 lbs., has a 25.2" barrel and is 44.4" over-all. Its fore-end extends nearly to the muzzle, and the rear sight

is mounted on the receiver bridge. It was adopted in 1941.

The No5 MkI "Jungle Carbine" weighs about 7.2 lbs., has a 20.5" barrel, and is 39.1" over-all. It has a short, sporter-type fore-end, a funnel-like flash hider on the muzzle, and a modified buttstock with a somewhat dubious "recoil pad", but is otherwise identical to the No4 rifle. It was introduced in 1941.

All Lee-Enfields were discontinued in 1954.

In England, Canada, and Australia, the Lee-Enfield has long been popular for hunting and competitive target shooting. In recent years, some Lee-Enfield No4s have been converted (successfully!) to 7.62 NATO (.308 Winchester). In fact, for a time Britain issued these converted No4s as sniper rifles! The typical conversion consists of rebarrelling, replacing (or modifying) the magazine, extractor, ejector, and clip-slot adaptor. These rifles occasionally appear in Shotgun News (in the classified ads), and normally sell for \$600 or more, as they are scarce in this country. The British consider this a safe conversion, and it probably is, but since the original .303 British cartridge is not that far, ballistically, behind a .308, there seems little point in going to all the trouble. If you want a .308, you're probably much better off starting with some rifle other than a Lee-Enfield!

NOTE: Recently, Navy Arms has been offering these .308 Lee-Enfields, in "target" configuration", for as low as \$299 (wholesale).

GENERAL SPECIFICATIONS OF THE LEE-ENFIELD TYPE: Turnbolt repeater

RECEIVER: One-piece machined steel forging with slotted main bridge. The forward part of the main bridge is built over to form a narrow bridge for the clip-charger guide.

BOLT: Two-piece, with separate non-rotating bolt head. Dual-opposed locking lugs on the rear of the bolt.

IGNITION: One-piece firing pin powered by a coil mainspring. Cocks on closing bolt.

MAGAZINE: Detachable, staggered-column, 10-round box.

TRIGGER: Non-adjustable double-stage military type pull.

SAFETY: Lever type at left rear of receiver, locks striker and bolt when swung back. Striker can also be placed in "half-cock" or "safe" position manually. (There is no good reason for the half-cock, but the British soldiery felt the rifle was unsafe without it. The "feature" was discontinued for a time, then brought back after vehement protest by the rank and file!).

EXTRACTOR: Non-rotating hook type positioned in bolt head; separate spring.

MAGAZINE CUTOFF: Cutoff provided on No1 MkIII, none on MkIII*, No4 or No5.

BOLT STOP: No separate bolt stop; extractor housing on bolt head acts as bolt stop.

EJECTOR: Stud screw threaded into left receiver wall.

STOCK FASTENING: Buttstock attached to receiver by a through-bolt.

DISASSEMBLY/REASSEMBLY

Field Stripping is quite simple with any of these rifles, and is all the "take-down" you will normally need for cleaning and maintenance. This procedure involves removing the magazine and the bolt from the receiver, and is accomplished thusly:

I> Make certain the rifle is unloaded.

II> Remove magazine by lifting up magazine latch in the trigger guard and pull magazine out of the action.

III> Remove bolt:

A> from SMLE No1 MkIII:

1> raise bolt handle and pull bolt back as far as it will go

2> rotate bolt head by lifting up on the extractor lug

3> bolt can now be pulled from action

B> from early No4 (MkI)

1> tip up rear sight

2> depress bolt head release (located behind rear receiver bridge on right side of action)

3> while holding down release, open bolt as far as it will go

4> rotate bolt head counterclockwise and pull bolt from receiver

C> from late No4 (MkI*, Mk 1/2, Mk 1/3, MkII)

1> open bolt and pull it back about 1/2", or until bolt head matches "notch" in right side of receiver

- 2> rotate bolt head out of its groove and pull bolt from receiver

Reassemble in reverse order.

To remove the buttstock, on any Lee-Enfield:

- 1> open buttplate trap
- 2> remove felt wad that covers stock bolt head (if present)
- 3> use a large, long-bladed screwdriver to unscrew stock bolt

To remove the barrelled action from the forestock & handguards:

- 1> Remove triggerguard/magazine plate
 - a> remove front and rear triggerguard screws
 - b> lift triggerguard/magazine plate out of fore-end
- 2> Remove muzzle cap & barrel bands (yes, the bands "spring" out over the wood. Be gentle, but slight bending won't damage them).
- 3> Gently pull forend away from barrel and action.

To replace bolt head on No4 or No5 (to adjust headspace):

- 1> Unscrew bolt head
- 2> From detached bolt head:
 - a> remove extractor screw
 - b> pull out extractor (spring)
- 3> Reinstall extractor (spring) & its screw in replacement bolt head
- 4> Screw new bolt head back onto bolt body

Congratulations! You just used a \$10 part to cure an "excess headspace" problem which, on a Mauser or Springfield, would have required expensive "rebarrelling" or "barrel setback" at the friendly gunsmith's (to the tune of \$100+). This is a major feature of the No4 which makes it more desirable as a shooter!

This is probably all you need to know for practical purposes. For instructions on Detail Stripping, "Sporterizing", complex descriptions of design, and other intricate matters, consult the Bibliography.

HOW TO TELL A No1 MK3 FROM A No4 ON SIGHT

In unaltered military configuration, the No1 MkIII series rifles have an open rear sight, midway along the barrel. The No4 rifles have a receiver sight built into the rear receiver bridge. There are other differences - some of them MAJOR - but simply noting the location of the rear sight is the easiest, most instant way to tell one from the other.

MARKINGS, MAKERS, MODELS

SMLE No.1 MkIII and III*

British proofs stamped on breech end of barrel, receiver ring, bolt head, bolt body.

Serial number stamped on barrel breech, receiver, stem of bolt handle.

Other markings usually stamped on right side of butt socket, including a proof mark, manufacturer, date and model designation as follows, top to bottom:

Crown with letters G.R. (for George Rex) on top.

Name or initials of manufacturer (one of the following):

ENFIELD (Royal Small Arms Factory at Enfield Lock, Middlesex,
England)

B.S.A.Co. (Birmingham Small Arms Co., Birmingham, England)

L.S.A.Co. (London Small Arms Co., of London)

ISHAPORE (Ishapore Arsenal, India)

LITHGOW (Lithgow Arsenal, Australia)

The date (year) of manufacture.

Model designation, as follows:

ShtL.E.

III (or III*)

The meanings of the model designations are as follows:

Mk III (WW1 production, w/magazine cutoff and metal disks inset in
fore-end to accept the long-range "volley" sight)

Mk III* (wartime modification to speed production, eliminating
magazine cutoff and "volley" sight disk)

The letters ShtL.E. mean "Short Lee-Enfield" (but are sometimes
pronounced "Shittley" by those who don't like the rifle!).

The abbreviation SMLE (Short, Magazine, Lee-Enfield) is also used to
describe these rifles. It is sometimes pronounced "Smellie", by fans and
detractors alike! By the way, some folks claim "Short, Magazine" means
it has a trimmer, slimmer magazine box than previous Enfields, but this
is not so. The "Short" means the rifle is shorter in length than
previous issues. The "Magazine" merely indicates, in British Armororese,
that it HAS one.

In Britain, the No1 Mk III was discontinued in favor of the No4 in the late 1930s, but LITHGOW Arsenal in Australia continued to manufacture this rifle on through the end of WW2. One possible explanation for this is that by the time the No4 became standardized, the Japanese were occupying most of the South Pacific, and there was no way to ship the tooling and specifications for the No4 to Australia. Another possible reason is that the Aussies were happy with the No1 MkIII and saw no good reason to convert to the newer rifle. If someone can provide documented reasons for the Aussies' retention of the No1 MkIII, I'll happily add it to this document.

LEE-ENFIELD No4

Adopted in about 1940, most of the No4 rifles were made under difficult wartime conditions in England, the US, and Canada. The marking systems used on these rifles were many and varied, and far too complex to be described in full detail here (see Bibliography). Most No4s were proof-marked, serial numbered, and dated, generally marked with the model designation and the name and/or place of manufacture. Proof marks were usually stamped on the barrel breech, receiver ring, bolt head and bolt body. Serial number and date (year) of manufacture were usually stamped on the left side of the butt socket, though sometimes these will be on the left side of the receiver instead. Or both. Or neither. Depends on the arsenal, the year, and who was running the stamping machine that day. Really...

The model designation was usually stamped on the left side of the

receiver, as follows:

No4 MkI (original No4 pattern)

No4 MkI* (modification w/simplified bolt removal)

No4 Mk 1/2 (cvted to Mk2: trigger pivoted in bracket brazed to butt socket)

No4 Mk 1/3 (cvted to Mk2: trigger pivoted directly to butt socket)

No4 MkII (trigger pivoted directly to butt socket, not a conversion)

If there is a (T) after the Mark designation this indicates a sniper rifle.

The No.5 carbines are marked "No.5" followed by the Mark designation.

Three firms in England made the No4 rifles. Each firm was assigned blocks of serial numbers so that no two rifles would have the same number. The number is stamped (or sometimes etched!) on the left side of the butt socket.

Manufacturers markings are as follows:

FY or ROF(F) = Royal Ordnance Factory in Fazakerly, Lancashire

M or RM or ROF(M) = Royal Ordnance Factory at maltby, Yorkshire

B or 85B or M 47 = BSA-controlled company in Shirley, near Birmingham

The word ENGLAND is often stamped on the receiver ring of these rifles.

No5 Jungle carbines were manufactured at Fazakerly exclusively. Beware of fakes!

Additionally, No4 MkI* rifles were made in Canada and the US. The Canadian rifles, made at Long Branch Arsenal near Toronto, Ontario, were marked LONGBRANCH on the left side of the receiver. Rifles made in the US by Savage Arms Co., (in the former J. Stevens Arms Co., plant in

Chicopee Falls, MA) were stamped U.S. PROPERTY on the left side of the receiver, to satisfy bureaucratic necessity under the Lend-Lease arrangement with England).

Sometimes a No4 will be found with overstamped markings, including the cryptic letters "FTR". This indicates the rifle has undergone a "Factory Through Repair", a complete Arsenal overhaul and reconditioning. Most "FTR"s were done after World War Two, and the rifles will be stamped (or over-stamped) with post-war dates. All such work was done at Fazakerly Arsenal, and included the following procedures: All rifles upgraded to MkII status (usually as MkI/2 or MkI/3), adjustable rear sights installed, rifles with less than 85% blue (black) refinished, wood replaced if necessary, barrels gauged and replaced if necessary. For collectors, these "FTR"d rifles (with a few exceptions) are not highly desired, due to the unavoidable mixing/restamping of parts, but from a shooter's point of view, these "FTR" rifles are exceptional values. Most bores will be *mint*, headspace will be within spec, and fitting of parts will be first-rate. If you are shopping for a good shooting Enfield, look for an "FTR"d rifle!

PRODUCTION FIGURES

These are hard to estimate for the Lee-Enfield, but here are some rough figures, for some of the makers:

SMLE No1 MkIII - Enfield Lock: 2,000,000+ (1914 to 1918 alone)

- BSA: 10,000/wk during WW1

- Lithgow: 640,000+

No4 MkI,I*,etc - BSA: 1,250,000

Long Branch: 1,000,000+ (including 1000 sniper rifles)

Savage: 1,000,000+

Estimated total production, SMLE & No4, from all makers: 10,000,000+!

COMMON IMPORTS - THE GOOD, THE BAD, AND THE UGLY

In the 1950s and 60s, before the 1968 Gun Control Act, hundreds of thousands of Lee-Enfields were imported as surplus and sold to American sportsmen and collectors. The supply dried up after the import restrictions of GCA '68, but then in 1986, with the passage of the Gun Owners' Protection Act and its omnibus attachments, import restrictions were relaxed and the floodgates opened again! Almost overnight, the "good old days" of cheap military rifles had returned. Prevalent among these new imports were Lee-Enfields of several types, and now it's rare to turn a page in Shotgun News without seeing at least one variation of Enfield being offered at a "giveaway" price, often with accessories and/or ammo, by a major importer or distributor. The questions naturally arise -

ANSWERS TO FREQUENTLY ASKED QUESTIONS...

ARE THESE RIFLES ANY GOOD?

Most of them, yes. In good (or better) condition, these are rugged, reliable, and (reasonably) accurate rifles which will serve you well for years to come.

I HAVE HEARD THE ENFIELD DESIGN IS VERY POOR. IS THIS TRUE?

Opinions vary, but the general consensus among rifle experts and military folk is that the Lee-Enfield is one of the better turnbolt

rifles FOR MILITARY PURPOSES. Military criteria differs somewhat from sporting rifle criteria, and the lee-Enfield lacks some of the "aesthetic" features which the sporting folk cherish.

SUCH AS?

Some people don't like the rear-locking action, claiming it is "inferior" to the Mauser-style front-locking action, but this is mostly a matter of personal opinion. Certainly, it is strong enough for the .303 (and even the .308, as recent British match rifle conversions have shown), and very smooth in operation, and has proven extremely reliable over the years.

Likewise, some folks think the "cock-on-closing" feature is inferior to the M98 Mauser's "cock-on-opening" design. This, too, is a matter of personal opinion. The M98 needs extra force to lift the bolt handle, as it is cocking the action at the same time. The Enfield's bolt comes up smartly - another aid to its speed of operation. Some folks are disturbed by the extra force needed to ram the bolt home and close it, for it is cocking the striker at this time, but once you get used to it, it's not at all awkward. It all boils down to what you get used to.

The two-stage military trigger is often criticized (for sporting use) - but this is a feature of virtually all military rifles, not just the Enfields. Many of these two-stage triggers - on Mausers and whatnot - ARE quite awful, but most Lee-Enfields have a rather nice, even crisp second-stage pull. You'll soon get used to "taking up the slack" with the first stage, knowing the second stage will be short, sweet, and to-

the-point.

The protruding 10-round magazine box is also considered aesthetically abominable by "sportsmen" - though, naturally, it was a major asset to the military. The rifle balances ahead of the box, so it doesn't interfere with carrying... and you have ten shots on tap, and can reload either with single rounds or stripper clips (through the top of the action) or with spare magazines, just like a modern semi-auto battle rifle. Most plinkers and practical outdoorsmen don't mind the 10-shot magazine at all.

WHAT ABOUT THE P-14 ENFIELD?

Nice rifle. Modified Mauser action. Not covered in this FAQ though, since it's not a *Lee* Enfield. I had to draw the line somewhere, and sticking to the British Lee design seemed prudent. Otherwise, if I covered the P-14, I'd almost have to cover its variant, the M1917 .30-06, and that would lead us into the Springfield M1903, and the .30-06 cartridge, and other stuff of that nature. So, the P-14 will be covered in a separate FAQ.

OH, THE P-14'S GOT ITS OWN FAQ?

Right. 14FAQ, coming Real Soon Now to a net server near you (but don't hold your breath).

OKAY, THEN WHICH *LEE* ENFIELD IS BEST?

The No4s are probably better values than the No1 MkIIIs, where actual

shooting and continued use is concerned.

Note: That's what I opined in '93. Since then, I've acquired a No1 MkIII* (made at Enfield in 1918), and I must confess, I like it just a bit *better* than the No4s. Balance is superb for offhand shooting, chamber is *not* oversized, headspace is fine, and accuracy is definitely superior to the "average" No4, and on par with my Blessed Longbranch No4 (the standard by which all others are judged).

WHAT MAKES THE No4 SUPERIOR?

Most (if not all) of the SMLEs (No1 MkIIIs) being imported these days are Australian LITHGOW-made rifles. In a way, this is good. These rifles were mostly built during WW2, so they have the advantage of better steel, and fewer years of wear. On the other hand, The Aussies used the HELL out of them. Even the "reconditioned" ones are often in less than terrific condition. Also, the No1 MkIII action is somewhat more complicated, and less rugged (and weaker) than the No4, in general. There is also the possible "excessive headspace" problem, which I'll cover later on.

Note: Generally, the headspace "problem" has been over-emphasized.

The No4 action was an improvement in many, many ways over the No1 MkIII. Efficiency of manufacture was only one benefit of the new design. The bridge was made higher, the thumb slot (for clip loading) in the left receiver wall was made shallower, thus strengthening the action. The bolt head was altered, both for ease of manufacture and to facilitate

the "quick headspace remedy" (which I'll get to - be patient!). The gas-escape system was improved, to better protect the shooter from hot gas in the event of a failed cartridge case head or pierced primer. The sights were improved 100% - from the old "open rear sight on the barrel" to a thoroughly modern, *MICROMETER-ADJUSTABLE* receiver sight on the rear of the action. Are these "bargains" any good? Are they ALL good, or just some of them? Which ones? What do I need to look for in selecting a decent Enfield?

Note: The No4's rear sight is adjustable for elevation only. Windage is a matter of applying Mister Brass Punch and his associate, Mister Hammer, to the front sight in a brusque and imprecise fashion. Yes, that's right - with typical British brilliance - the sublime elevation adjustments are combined with ridiculous crudity in windage whacking. Not to worry... once windage is on, it's *on*, at least for practical sporting use.

WHAT'S THIS ABOUT A "QUICK HEADSPACE REMEDY" THING?

Headspace is the term for the space between the face of the bolt and the barrel face, or the rear of the chamber. Proper headspace allows the cartridge to chamber properly and be held in place by the bolt face. Cartridges are said to "headspace" on the case mouth, the shoulder, the belt, or the case rim, depending on their design, but the relationship of the bolt face to the cartridge base plays a large part in it, too. If there is too much room between the base of the cartridge and the bolt face, the cartridge has a tendency to "set back" against the bolt face upon ignition, which may cause a portion of the case to be unsupported by the chamber walls, resulting in a ruptured cartridge, or in lesser

cases the primer may back out of the case. Either condition is unpleasant, as hot gas comes pouring out of the ruptured case &/or primer pocket, and will catch you square in the face if not diverted (thus demonstrating the importance of well-designed gas escape channels in a rifle's action!), and in extreme cases may even cause the stock to shatter and/or the receiver walls to be "sprung" and the action ruined (Heck, with really horrible excess headspace, the rifle may even blow up, but this is rare).

Note: This whole section is overdone. I have learned much since I wrote it. To reassure the readership, here's a couple of points:

- 1> Primers will almost invariably "back out" a little upon firing of a new commercial factory round in a No4. This is due to the case "fire-forming" to fit the oversized chamber. It is NOT an indication of excess headspace. Sometimes it will do it in a No1 as well - the No1s don't have *grossly* oversized chambers, but they *are* a bit generous, so again a minor primer back-out is nothing serious.
- 2> The Lee-Enfield action (the No4 at least) handles escaping gas superbly. Last year I got a bad lot of .303 ammo and fired it (not knowing it had pressure problems) in my Blessed Longbranch No4. After shooting 15 rounds or so, I happened to notice that one of the fired cases had a hole in the primer. Yep - fifteen blown primers, hot gas coursing back through the action each time, and yet the action diverted the gas so well I didn't even NOTICE. So -
- if you fire an Enfield that *does* have excess headspace, not much is (probably) going to happen, except your fired cases will either have primers backed WAY out, or (in extreme cases) you'll

get a rupture around the case head, but in either case, the action (No4, at least) can handle it without undue weirdness. Note that all disclaimers apply, and with any "suspect" rifle you want to check, firing it remotely via a string and so forth is a very good idea...

This "excessive headspace" condition is possible in all rifles, and when found is usually due to either an improperly installed or poorly chambered barrel (Spanish Mausers are infamous in this regard) or just the wear and tear of many years of rough use, as in most older military rifles.

The cure, in most cases, is complicated and expensive. Rebarrelling can cure it, or redoing the original barrel by removing it, turning a "little bit" off the back, and reinstalling it (perhaps along with rechambering to compensate) in a "cut and try" process. The machine work and labor alone might well cost over \$100 (though if you have a friend with a lathe, a vise, a wrench, a micrometer, and lots of free time...). With some rifles (03 Springfields, or M98 Mausers being rebuilt into custom sporters), this involved process might be worthwhile, but on a \$49 bargain plinker? No way, Jose'! Better to just hang it on the wall or make a lamp out of it, and cut your losses.

Many of the currently-imported military rifles, including about half of the Lee-Enfields floating around (pot luck!), will exhibit an excess headspace condition. With a No1 MkIII, you are SOL. With a No4, though, you are looking at the purchase of a \$10 part, and about five minutes of labor to remedy the condition and put the rifle in first-rate shooting condition.

The Brits put a lot of "smarts" into the No4's design. Among other things, they introduced a new headspacing system. It was simple, made possible by the two-piece bolt with separate bolt head. It consisted of making a set of four bolt heads of different, specified lengths, and making them available to armorors in the field. These bolt heads were numbered from '0' to '3'. #0 was the shortest, #1 was .003" longer than #0, #2 and #3 were each .003" longer than the next lower number. During factory assembly, a bolt head was fitted which gave normal headspace of .064" to .074" (minimum and maximum allowable headspace). If, after much use, headspace increased, a new, longer bolt head could be installed to correct for it.

Bolt heads on the No4 are marked with the qualifying number on the extractor lug. Most imported No4s I've seen have the #0 or #1 bolt head installed. All four lengths of bolt head are available from SPRINGFIELD SPORTERS, and cost around \$10 each. You got excess headspace on a No4? Get on the phone, order the part, and FIX it yourself - then act smug when your buddies come whining about how their "vastly superior" M98 Mauser surplus rifle keeps blowing primers. Har har. Rule Britannia!

ARE ENFIELD SIGHTS ADJUSTABLE?

Yes.

Both the open rear sight (No1 MkIII) and micrometer receiver sight (No4) are adjustable only for elevation. On both rifles, windage is adjusted by tapping the dovetailed front sight from side to side. The front sight

is protected by two enormous metal "ears", which prevent it from being knocked askew accidentally. The more exposed, and thus vulnerable, rear sight was spared the extra adjustments that would have been required for windage, and everybody was happy, for in military use, the front sight would be zeroed ONCE, for the service load, and the backsight elevated as needed.

Note: Early No1 MkIIIs and MkIII*s have a windage knob on the rear sight. My 1918 MkIII* does, and it's very convenient! These sights are probably available from parts dealers, and it would behoove the owner of a later MkIII* (Lithgow) to "upgrade" the rear sight.

Both models of Lee-Enfields incorporate a similar, and interchangeable, front sight. Seven different heights were provided, allowing initial elevation as well as windage adjustment to be performed using the front sight and the "battle sight" setting of the rear sight. Once this combination was sighted in, the elevation adjustments of the rear sight were correct for their specified (marked on the sight) ranges with service ammo. These seven heights of front sight are available from Springfield Sporters, if you want to resight your rifle for a particular load - or you can just adjust the windage and use the backsight to adjust elevation.

WHAT'S THIS ABOUT MICROMETER-ADJUSTABLE SIGHTS?

Another of the *MAJOR* innovations in the No4 over its predecessors was in the matter of sights. Previous Enfields had employed the traditional open rear sight with tangential elevator, mated with a "barleycorn" front sight. Crude, but typical of the vast majority of bolt action military

rifles in the arsenals of the world's armies. Adequate for "volley fire", where massed ranks of infantry fired on command against massed ranks of enemy troops doing the same thing a few hundred yards distant, but lousy for precision shots at selected targets, such as often occurred in WW1 and became SOP during WW2.

Note: In actual practice, I find the sights on my No1 MkIII* easier to adjust and use than those of the No4s. In fact, I must confess I generally just use the "battle sight" on the Blessed Longbranch, out to 350 yards or so (the maximum length of our rifle range), while I *do* adjust the rear elevator of the MkIII* according to the range. "Crudity" was over-emphasized. The MkIII*'s sights are very, very good!

Back in WW1, the P14 "Enfield" had been equipped with a receiver sight, and this had given a good account of itself. Efforts were made to adapt a similar sight to the Lee-Enfield, and the Brits came up with a doozy. Built onto the rear receiver bridge, the new rear sight offered both a fixed "battle sight" (almost a "ghost ring", with an enormous aperture) and a flip-up sight, adjustable in micrometer "clicks" just like the finest target sights. Impressive? Yes. Accurate? Yes. Reliable? Yes.

Note: Elevation-only? Yes!

A few of the late-issue, British-made No4s were equipped with only a crude, two-position "L"-shaped rear sight, which offered two elevations of battle sight set for different ranges. Your mail-order Enfield may arrive with this setup, but don't sweat it. The micrometer sights are widely available, from Springfield Sporters and elsewhere, for about \$10

to \$15, and they are "drop-in" replacements to the "L"-sight.

WHAT OTHER ADVANTAGES DOES THE No4 OFFER?

No4s weigh a bit less than the SMLE, most people consider No4s less "clunky", they are more likely to be found with decent (even *mint*) bores than the LITHGOW No1s, and less likely to be "beat all to shit", as noted.

Note: But the MkIII has (for me, at least) vastly superior balance.

WHAT ABOUT THE No5 JUNGLE CARBINE?

They are comparatively scarce, and seldom advertised. Usually even "average" No5s sell for over \$200. They are very lightweight and "sportier" looking, but they will kick you out from under your hat! In all other respects, they are just like No4s. If you find a nice one at a bargain price, go for it.

Note that several companies are offering "conversion kits" to make a No4 into a "replica" No5. These are fine for making handy utility rifles, but don't get suckered into paying collector prices for a No5 that is really just a converted No4! A real No5 will be stamped No5, with markings indicating manufacture at Fazakerly (ROF-F) in England.

WHAT'S THE DIFFERENCE BETWEEN A No4 MKI AND A No4 MKII?

The MkII offers a minor improvement over the MkI, in that the trigger is pinned to the receiver instead of to the triggerguard. In actual use,

there's not much difference between the two. MkIIs usually have a bit less "slack" in the first stage of the trigger pull than MkIs. The second stage pull will be about the same in either Mark.

Many of the rifles advertised as "MkIIs" are actually MkIs which were upgraded after WW2 by the British. These rifles will be over stamped with the designation Mk 1/2 or Mk 1/3, indicating a conversion. Functionally, they are identical to MkIIs.

IS IT WORTHWHILE TO PAY A PREMIUM FOR A MKII?

Not in my opinion. Both rifles work equally well. My personal No4 is a MkI*, made at LONGBRANCH in 1942, and I'm entirely satisfied with it. I'd probably be equally happy with a MkII.

WHAT ABOUT BARRELS? I HEARD THOSE 2-GROOVE BARRELS ARE NO GOOD.

Lee-Enfield barrels have a left-hand rifling twist of one turn in 10 inches; bore (land) diameter is .303"; groove diameter is about .314". Most barrels have 5 grooves, although some late-manufactured No4 rifles may have 2-groove barrels. The No4 rifles made by Savage usually have 6-groove barrels. They all seem to shoot pretty good. Some people have even claimed that the 2-groove barrels shoot BETTER than the others, but I cannot confirm this. Many 03A3 Springfields had 2-groove barrels, and were very accurate. I'd advise you not to worry about how many grooves the barrel has. If the bore is bright and the rifling is sharp, expect good accuracy. If the bore is dark and pitted, it's time to start gathering hardware for that floor lamp you always wanted.

WHAT CONDITION ARE THESE ENFIELDS IN?

Conditions run the gamut, from "mint" to "beat to shit". Most of the No4s are pretty decent. Most of the No1 MkIIIs are not.

Your best bet, in buying any surplus rifle, is to avoid a "pig in a poke". Go to a gun show, or a dealer, where you can examine the rifles and make a selection based on something more than the hype in a Shotgun News ad.

WHAT KIND OF PRICES ARE THEY GOING FOR?

That depends a lot on model, condition, quantities on hand at the individual distributor's warehouse, and how badly they want to get rid of them. Here's an informal survey, based on prices found in the SHOTGUN NEWS of March 1, 1993:

CENTURY INTERNATIONAL ARMS, INC.

Lee-Enfield No1 MkIII (LITHGOW), condition "good": \$69.95

12 or more (each): \$49.50, plus 600 rounds of FREE ammo

Lee-Enfield No4 MkI (England, Canada), condition "good": \$59.87

[You play "pot luck" with makers - you might get anything]

Lee-Enfield No4 MkII (UK-made), condition "Good to Very Good": \$89.87

["UK-made" may be misleading. Rifles converted from MkI to MkII (Mk 1/2 & Mk 1/3) might have been made anywhere, but the conversions were all done in England and the rifles overstamped]

J&G SALES

No4 MkI Enfield, made in USA by Savage, "about good*": \$62.50

"good": \$79.50

"good/very good": \$89.50

"select": \$109.50

No4 MkI Enfield, made in Canada (LONGBRANCH), "about good": \$49.95

"good": \$58.50

"good/very good": \$78.50

"select": \$89.00

J&G is playing the "brand loyalty" game, pricing Savage-made rifles higher than their Canadian cousins. Bear in mind, both Savage and LongBranch made over 1,000,000 No4s each, and almost all of the current imports have been back through one of the British Arsenals, restamped, parts mixed... they have *NO* real collector value - but if you want to pay \$12-20 extra just to get a gun stamped "US Property", they'll happily let you do so.

* "about good" = "beat to shit" (aka "lampstand special")

RON SHIRK'S SHOOTERS SUPPLIES

British Enfield No4, NRA Very Good to Excellent w/excellent bores:

\$72.95

Spike bayonet, \$3.95, Blade bayonet \$4.95

Australian Lee-Enfield Rifle No1 MkIII

1A - Good condition, 60-70% Finish, Bores - slight wear, no rust, no

pitting. \$49.95, 5 or more \$47.95

2A - VG-Excellent Condition, 75-85% Finish, Excellent bore.

SPECIAL \$64.95, 5 or more \$59.95

3A - Like New, 90% Finish, Bores Like New, Little Use

\$199.95

4A - New, 100% Finish, Perfect Bores, Slight Marks on Wood.

\$274.95, Extra magazines \$9.95

SOUTHERN OHIO GUN (SOG) INTERNATIONAL, INC.

Enfield Rifles!!

Australian Lithgow No1 MkIII .303 Cal.

Now selling at the lowest price ever!

Only \$49.95 each. Add \$10 for hand-picked.

Bayonet and scabbard ONLY \$18.95 each.

Enfield No4 MkI .303 Cal.

Solid reliable rifles!

Good to very good condition

Only \$59.95 ea. Add \$10 for hand-picked.

Bayonet and scabbard ONLY \$6.95 each.

KIMEL INDUSTRIES

Enfield No1 MkIII .303 Cal. rifles, \$58.95

Enfield No4 .303 Cal. rifles, \$79.95

select grade with free bayonet

Standard grade w/ bayonet, \$54.95

Standard grade w/o bayonet, \$49.95

Begin to get the picture? Everybody and his dog is selling Enfields, prices vary a little, but not much, and on the whole it is VERY difficult to determine just what you're getting until it arrives.

What is "select grade"? This might very well mean they "select" one at random out of a big bin. How about "hand-picked"? This could mean somebody did "eenie-meanie-miney-moe" with their HAND in front of the big bin. "NRA" grades are standardized to a degree, but there is a lenient degree of interpretation. Still, I'd trust "NRA" grades before I'd trust someone's homegrown grading system, like "peachy" or "swell" (Yes, I've seen this done) or... whatever.

I recommend (and will probably do so several times throughout this document) that you browse at a gun show or a gun shop, where you can examine your prospective purchase before laying out \$\$\$\$. You may pay a little more (or you may not!) but at least you won't be playing "lampstand roulette".

WHAT ABOUT THE .303 CARTRIDGE?

Well, what about it?

HOW POWERFUL IS IT?

The standard .303 British military ball loading (as adopted in 1910) used a 174-gr. pointed FMJ bullet at a muzzle velocity of 2440 fps. This works out to 2300 ft/lbs of muzzle energy. Sporting ammunition tends to

be somewhat more powerful.

The cartridge is in the same power range as .300 Savage or .30-40 Krag, and only about 100-150 ft/lbs behind .308 Winchester in the same bullet weights.

HOW MUCH DOES IT KICK?

Calculating the free recoil energy (relatively meaningless, except in arbitrary comparison to other guns & loads), the military ball loading, fired in an 8.6 lb. SMLE generates 8.2 ft/lbs. recoil. In a 7.2 lb. No5 Jungle Carbine, it generates 9.8 ft/lbs.

Felt recoil varies from shooter to shooter. I find most loads (including the military stuff) to be very mild out of my (nearly) 9 lb. No4. Your mileage may vary.

IS SURPLUS AMMO ALL CORROSIVE?

Mostly. That's why it's so cheap. Some of it is also in rather poor condition, especially the "British issue, 1940s" stuff. We're talking "genuine relic of WW2" here, and probably been around the world several times, donated to a third world country, swapped to another third world country, stored in a humid warehouse, and finally bought by some enterprising importer for a song. Expect occasional misfires and hangfires, even with the best-quality surplus stuff.

WILL CORROSIVE AMMO HURT MY RIFLE?

Generally no, providing you clean it thoroughly as soon as possible after firing. Ammunition loaded with Cordite (as all British surplus stuff, and most other surplus stuff, is) burns very HOT, and in time will erode your barrel all by itself. Cleaning can't do diddly about Cordite erosion.

HOW DO I CLEAN A RIFLE AFTER FIRING CORROSIVE AMMO?

Corrosive ammo deposits salts in the bore, which attract moisture, which generates rust. Water neutralizes the salts, thus water is a key ingredient in proper cleaning.

There are two main methods of cleaning. Both work. I use No2, mostly.

1> The "old-fashioned way"

- a> With the bolt removed (of course), stick the rifle's muzzle in a bucket of hot, soapy water
- b> pump a tight-fitting patch up and down the bore a few dozen times.
- c> then run some dry patches through the bore
- d> after its thoroughly dry, run an oiled patch down the bore (if desired)

2> The "new-fashioned" way

- a> With the bolt removed, run a wet (does not have to be hot) patch down the bore
- b> run a dry patch down the bore
- c> run a patch soaked in Hoppe's #9 or a similar solvent down the

bore

d> run a brass brush through the bore 10-15 times

e> repeat step "c" and "d"

f> repeat step "c"

g> rest the rifle, muzzle down on newspaper, until the next day

h> repeat steps "c" thru "g"

i> repeat steps "c" thru "f"

j> run dry patches through the bore until it is dry

k> oil the bore (if desired)

WHAT IS MERCURIC AMMO?

Ammunition which uses mercuric priming compounds. These are somewhat cheaper than the lead styphnate compounds used in modern ammunition, hence is still being used for military ammo. These Mercuric compounds will not hurt the rifle in any way. You don't even have to take pains cleaning the gun after shooting mercuric ammo. BUT, Mercuric compounds WILL attack the brass ctge. case, making it brittle and thus DANGEROUS to reload.

Not to worry. Most mercuric primed ammo is also Berdan-primed. You can't easily reload that stuff anyway.

BERDAN?

Oy, how we travel far afield in search of definitive Enfield answers!

If you look inside a fired ctge. case, and it has one central flash hole in the bottom, it's a Boxer-primed case. The primer's anvil is part of

the primer cup in these, and the ctge. can be reloaded on standard American loading tools using standard components. If there are two or more offset flash holes, the case is Berdan-primed. The anvil is part of the case. It's a bitch to reload, and in a calibre like .303, for which Boxer-primed brass is plentiful and cheap, don't bother!

IS .303 AMMO IN CURRENT PRODUCTION ANYWHERE, OR AM I STUCK WITH SURPLUS STUFF?

The .303 British is nowhere near extinct. Remington, Winchester, Federal, Hansen (yuck!), Norma, and (probably) PMC all offer loads for it. Most common is the 180-gr. soft-point bullet at 2460 fps (muzzle), giving 2418 ft/lbs. of muzzle energy. There is also a 150-gr. load, giving 2685 fps (muzzle), for 2401 ft/lbs. muzzle energy.

Remington, Winchester, and Federal ammunition is all quite excellent in this calibre, and Norma is nothing short of superb.

Hansen ammunition is of rather dubious quality, thus the "Yuck" in the above paragraph. Soft primers combined with hot loadings are not uncommon. Be thankful your Enfield handles escaping gas well, if you shoot much Hansen stuff!

HOW ABOUT RELOADING?

Winchester, Remington, and Norma all offer new, unprimed .303 British cases for the reloader.

Lee, RCBS, Lyman, and everybody else offer reloading dies.

The .303 uses standard Boxer-primed cases taking large rifle primers.

Every available loading manual (Lyman, Speer, Sierra, etc) lists a wide variety of loads for .303 British.

The recommended bullet diameter is .311-.313, and bullets designed specifically for .303 are offered by Remington, Speer, Sierra, & Hornady, at prices comparable to "regular" .308-diameter bullets. A good selection is available, ranging from 215-gr. soft points down through 180, 150, 123 (Hornday's .310-diameter bullets intended for 7.62x39mm work fine in .303 British!), and even 100-gr. if you care to shoot .312 diameter JHP pistol bullets.

In addition, any of the commercially-cast bullets designed for the .32-20 or .32 H&R Magnum may be used with reduced loads. I personally prefer about 8.5 gr. of Unique with a 113-gr. flatnose bullet. I pay \$28/1000 for these little guys, and they shoot great, providing a fun, "kickless" plinking load.

DOESN'T THE REAR-LOCKING ACTION CAUSE CASES TO STRETCH?

Not necessarily. The Lee-Enfield's rear-locking action has been much-maligned over the years, yet Remington saw fit to introduce a rear-locking action (the 788, now sadly discontinued) only a few years back, and it was widely heralded for accuracy and precision. Stretched cases in the Lee-Enfield are more often due to the somewhat oversized chambers employed for military use.

OVERSIZED CHAMBERS?

The .303 British cartridge headspaces on its rim, so the shoulder dimensions can be quite sloppy without undue problems. The Lee-Enfield No1 MkIIIs tend to have "maximum" chambers, and the No4s may be even more oversized. This was an asset for reliability under adverse conditions in military service, but it *can* be a hindrance for reloaders. If you full-length resize your brass after every firing, it will wear out quickly. Full case head separations are not uncommon after as few as five loadings.

The solution is very simple. DON'T FULL-LENGTH RESIZE YOUR BRASS! If the ammo is to be shot in one rifle exclusively, just neck-size it. This is easily accomplished by "backing out" the sizing die until it contacts ONLY the neck portion of the cartridge case. The body is left alone, and remains "fire-formed" to fit your chamber, no matter HOW oversized it may be. One side benefit of neck-sizing is that cartridges no longer need to be lubricated before sizing. Make sure you have properly adjusted the sizing die to contact only the case neck before trying to size w/o lube, of course - otherwise you risk a case stuck in the die!

IS .303 ANY GOOD FOR HUNTING?

.303 British has long been a favorite of British, Canadian, and Australian hunters for game ranging from dik-dik (a tiny African antelope) up through elephant! Lee-Enfields were once distributed in great numbers to settlers in the wilder British colonies, which may have something to do with it, for truly the .303 has been Britain's answer to

America's Winchester .30-30 as a utility gun. But the old .303 has also been Britain's answer to the American .30-06 as an all-around hunting rifle, and has enjoyed a tremendous following among serious hunters, for deer, bear, moose, and elk, as well as African antelope and similar critters.

In the United States, it's still quite popular, mostly in surplus rifles which arrived here in the 50s and 60s, as well as the more recent imports. Here in my home state of Arkansas, it's about the fourth or fifth most popular cartridge for deer hunting, mostly in use by serious "meat" hunters who need more power than the .30-30 allows without investing hundreds of dollars in an expensive sporter.

The .303 is an excellent round for deer and black bear, and can hold its own with any other non-magnum .30 for larger game, especially when used with 215-gr. bullets. A lot of old Canadian moose hunters swear by it!

WHAT'S THE MAXIMUM RANGE OF THE CARTRIDGE?

That depends. Fired at a high angle, the bullet will travel several miles. Maximum effective range, for military use (in machine guns or in "volley" fire) is probably about 1200 yards. Maximum practical range for target shooting is about 400-500 yards, under ideal conditions. Maximum practical range for hunting may be considered 400 yards (the 150-gr. factory load retains 1064 ft/lbs. at this distance, thus is still theoretically quite capable of killing a deer), but to claim it's a 400-yard cartridge is stretching credibility quite a bit. With the issue sights, the Lee-Enfield is a good 150-225 yard hunting rifle. You could stretch the yardage by 50-75 yards with a scope, if you're a good shot.

CAN I SHOOT .303 SAVAGE IN THE LEE-ENFIELD?

NO! .303 Savage is a much smaller cartridge, and is NOT in any way interchangeable with .303 British. Don't try it!

WHAT ABOUT ACCESSORIES FOR THE ENFIELD?

What about them?

WHAT'S AVAILABLE?

Spare parts in profusion. Bayonets. Slings. Muzzle covers. Breech (action) covers. British-issue manuals. Grenade-launching attachments (but no grenades, sorry). "Volley" sights (for WW1 SMLEs). Surplus ammunition of varying quality.

WHAT KINDS OF BAYONETS ARE AVAILABLE?

The SMLE accepts a variety of bayonets, including the popular and picturesque M1907 16" sword bayonet. All SMLE bayonets will also fit the P14 and M1917 American-made "Enfield" rifles.

The No4 accepts two bayonets.

There's a "spike" bayonet which was a real economy measure for the Brits. Just a short metal rod with a semi-sharp end. They've been offered for as low as 50 cents on the surplus market, and were once a

popular item at military surplus stores, which sold them as "tent stakes".

The other No4 bayonet is a short blade with a "Bowie" hook along the backside. These are not uncommon, and normally sell for about \$5 to \$15.

No4 bayonets will also fit the STEN sub-machine gun.

The No5, due to its oversized flash hider, will only accept its own special bayonet. I've never seen one, nor seen any offered for sale, so you're on your own there.

HOW ABOUT SLINGS?

Original British military slings can sometimes be found.

Sometimes Enfield rifles are offered "complete with sling and bayonet". This sounds real cool, but don't be hasty to pay EXTRA for a rifle with these options. The "spike" bayonet is what is usually supplied, and often the sling is in sad, sad shape.

WHAT OTHER ACCESSORIES WOULD BE USEFUL?

British Army manuals are useful, informative, and often entertaining. A few spare parts (extractor, bolt heads, etc) are handy, but not mandatory. Other than that, it depends on what you think would be neat and fun to have.

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Part Two: History and Chronology (ENFAQ-02.MSG)

Most of this section was written by <ron.melson@chaos.lrk.ar.us>

Thanks, Ron!

Contents, Table of, MkI

- The British .303 and Variations
 - * The Lee Metford Rifles and Carbines
 - * Lee Enfield Rifles and Carbines
 - * Variations On A Theme (P14, sniper rifles, etc)

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THE LEE METFORD RIFLES AND CARBINES

Rifle, Magazine, Lee Metford Mark I.

Adopted in December 1888, it was the first British production Lee. Chambered for the original black-powder loaded .303 cartridge, it could hold eight rounds in the magazine and had a full length cleaning rod.

Rifle, Magazine, Lee Metford Mark I*.

Adopted in January of 1892, this rifle was a conversion of the orginial Mark I. The sights were changed from the "Lewes" and "Welsh"

pattern to the barleycorn front and v-notched rear sight.

Rifle, Magazine, Lee Metford Mark II.

Adopted in April 1892, it was the first to be fitted with the ten round magazine. The bolt was modified and the outside contour of the barrel was changed. A half length cleaning rod was fitted and the brass marking disk on the buttstock was omitted.

Carbine, Magazine, Lee Meford Mark I.

Adopted in 1894.

Rifle, Magazine, Lee Metford Mark II*.

Adopted in 1895, these rifles had the safety catch added to the bolt. The Mark I Lee Metford had safety catch mounted at left side of receiver. The Mark I* and Mark II Lee Metfords had no safety.

Historical Perspective.

Much like the Snider and Martini-Henry rifles that were in British service, the Lee rifle had its design antecedents in the United States.

James Paris Lee was a naturalized American citizen whose parents came from Scotland and settled in Canada in 1835 when Lee was four years old. He followed his father's occupation of watchmaking while maintaining an interest in firearms. Eventually, Lee moved to Wisconsin and took up gun design on a full time basis. Lee did not originally conceive the concept of the box magazine, however, he did improve up on it. A bolt action repeater of his own design was tested by both the Army and Navy. The "Remington-Lee" was to soon catch the attention of the British and in

1880, the Lee rifle was soon to enter into the British service trials. The first of these rifles were chambered for drawn brass .577-450 "Gatling" versions of the British service round and fitted with Martini-Henry barrels. The combination proved successful. Originally, the British were considering adopting .402 as their service caliber, but, the efficiency of the .303-caliber cartridge as designed by Swiss Col. Eduard Rubin caused the eventual scrapping of the .402 and experiments with the .303 instead. Finally, in 1888, prototype Lees with barrels featuring seven groove rifling by William Metford, were tested (in .303 caliber). In December of the same year, the first Lee magazine rifle was accepted as the British main service rifle.

LEE ENFIELD RIFLES AND CARBINES

Rifle, Magazine, Lee Enfield Mark I.

Adopted in November 1895, this rifle was the first to introduce the deep Enfield rifling rather than the shallower Metford rifling. This rifle also had modified sights.

Rifle, Magazine, Lee Enfield Mark I*.

Adopted in 1899, this Enfield lacked the cleaning rod found in stocks of earlier Lee's.

Carbine, Magazine, Lee Enfield Mark I.

Adopted in 1896, it was the same as the Lee Metford carbine except for the deeper rifling.

Carbine, Magazine, Lee Enfield Mark I*.

Same as the Mark I carbine but without the cleaning rod or the sling bar on the left side of the buttstock.

Carbine, Magazine, Lee Enfield, RIC Model.

Adopted in 1905, when 10,000 Lee Enfield carbines were modified. The carbine nose cap was removed and the stock cut back and slimmed down to take an upper band with bayonet stud to fit the Pattern 88 knife bayonet. These carbines were made up for the Royal Irish Constabulary-RIC, which was disbanded in 1922.

Rifle No. 1, Short Magazine, Lee Enfield Mark I.

Adopted in December of 1902, this was the first of the short rifles(SMLE). This rifle was stocked to the muzzle and first to allow charger loading. The right side charger guide is on the bolt head, and the left charger guide is on the receiver. It has a v-notch rear sight with adjustable windage and a barleycorn front sight. This was the first of what is commonly referred to as the No. 1 rifle, nicknamed "Smellie".

Rifle No. 1, Short Magazine, Lee Enfield Mark II (COND).

Essentially the same as the SMLE No. 1 Mark I, but was converted from the earlier Mark II and Mark II* Lee Metfords and Long Lee Enfields.

Rifle No. 1, Short Magazine, Lee Enfield Mark I*.

A minor variant of the SMLE No.1 Mark I.

Rifle No.1, Short Magazine, Lee Enfield Mark II*.

A minor variant of the No. 1 Mark II SMLE.

Rifle No.1, Short Magazine, Lee Enfield Mark III.

Adopted in January 1907, this was the main battle rifle of the British forces in World War I, and used extensively in World War II. Versions of this rifle have been found in use as recently as the Afghanistan War when Afghan rebels fought against the Russians (the Afghan rebels also created crude copies of this rifle).

Rifle No. 1, Short Magazine, Lee Enfield Mark IV (COND).

Adopted in 1907, it was basically the same as the No. 1 Mark III but created from Long Lee's and Long Lee-Metford rifles.

Rifle, Charger Loading, Long Lee Metford Mark II.

This rifle is a converted Lee Metford Mark II that allowed use of a charger. The initial conversion was made in 1907 for the Territorial Army and were converted again in 1909 to a Lee Enfield Mark I*. Few of these rifles were made.

Rifle, Charger Loading, Long Lee Enfield Mark I.

Another 1907 conversion that involved early marks of the Long Lee Enfield to charger loading. The Mark I* version is the most common and a large number of them were used by the British in the opening days of World War I.

Rifle No. 1, Short Magazine, Lee Enfield Mark III*.

Adopted in World War I, these rifles were made in large quantities and are still in use around the world today. This version lacked the long range sights of early Mark III's and does not have a

magazine cut off.

The Royal Ordnance Small Arms Factory at Enfield Lock made over 2 million of this model and the No. 1 Mark III during World War I. At the same time, B.S.A. made 1.6 million and L.S.A. made several hundred thousand. The rifle was last manufactured in Britain in 1943 by B.S.A. while the Australian arsenal at Lithgow and Indian plant at Ishapore manufactured the Mark III* after the adoption of the No. 4 by the Brits. Lithgow went on to produce 415,800 Mark III* rifles from 1939 to 1955 when production was switched to the FN.

Rifle No. 1, Short Magazine, Lee Enfield Mark V.

This rifle appeared somewhere around 1922. The rear sight is mounted on the receiver bridge and an additional stock band is mounted to the rear of the nose cap.

Rifle No. 1, Short Magazine, Lee Enfield Mark VI.

This rifle was developed between 1924-1930 and was the forerunner of the No. 4 rifles. It possessed the sight on the receiver bridge, had a lighter nose cap, heavier barrel, and smaller bolt head than the earlier marks. It had the cut-off and the left receiver wall was cut low as on the Mark III.

Rifle No. 4 Mark 1I.

This rifle originally appeared in 1931. Of excellent quality for a service arm, it was generally similar to the No. 1 Mark VI except it had a heavier receiver. In 1939, the No. 4 Mark 1 was redesigned to allow for mass production and became, with the No. 4 Mark 1*, the British workhorse of World War II. Stamped bands were used and various

manufacturing shortcuts were taken to increase production (hence, rifles after 1939 lack the quality of the earlier No. 4 Mark 1's). Three different sights were used on these rifles, ranging from a finely machined adjustable leaf type to a simple L-shaped peep sight. Many of these rifles can be found still in service in the British Commonwealth and in former British Territories.

Rifle No. 4 Mark 1*.

This was the North American production version of the No. 4 Mark 1 rifle. The principle difference was that the bolt head catch, which was situated behind the receiver bridge on the No. 4 Mark 1 (and earlier marks) was eliminated on the No. 4 Mark 1*, and a cutout on the bolt head track was used for bolt removal. Over 5 million No. 4 rifles were made during World War II in the UK, Canada (Long Branch Arsenal) and the United States (Savage/Stevens). Australia did not adopt the No. 4 and continued with the production of the No. 1 Mark III* at Lithgow.

Rifle No. 4 Mark I* (light weight).

Produced at the Long Branch arsenal in Canada in prototype form, this weapon had a one piece stock and the trigger pinned to the receiver. It weighed in at 6 3/4 pounds. The barrel was 23 inches in length with an overall length of 42 1/2 inches. The receiver wall was cut down and the stock inletted to reduce weight. The buttplate was a sporting type unit made of rubber. Micrometer sights with a peep battle sight was adjustable in clicks (100 yard steps) from 100-1300 yards. It could also be used for grenade launching. One other feature of the rifle was the Mauser type trigger.

Rifle No. 4 Mark 2.

This rifle was developed at the end of World War II and differed from early marks by having the trigger pinned to the receiver rather than the trigger guard.

Rifle No. 4 Mark 1(T) adn No. 4 Mark 1*(T).

These are the sniper versions of the No. 4 rifle. They are fitted with scope mounts on the left side of the receiver and have a wooden cheek rest screwed to the butt. The No. 32 telescope is used on these weapons. There are also sniper versions of the No. 1 and No. 3 rifles (Pattern 14). The Canadians also used the No. 4 Mark 1*(T) with the Telescope C No. 67 Mark 1.

Rifle No. 4 Mark 1/2 and Rifle No. 4 Mark 1/3.

These are conversions of the No. 4 Mark 1 and No. 4 Mark 1* that have been modified to the pattern of the No. 4 Mark 2. These rifles are still in use and are possibly being held as reserve weapons in the UK.

Rifle No. 5 Mark 1.

The famous "jungle carbine", this rifle appeared at the end of World War II. It possessed a lightened and shortened barrel that has been fitted with a flash hider. The fore-end has been cut back and rounded, making the jungle carbine look more like a sporting rifle. A rubber pad was fitted to the buttstock to reduce recoil. Only 250,000 were made.

[BEN: At one time, plans were to convert all No.4s in British inventory to No.5 pattern and make the No.5 the standard British infantry rifle. But, continued "zeroing" problems with the No.5 (it would not stay

"sighted in"), coupled with protests from the ranks that this light rifle's recoil was objectionable, caused this project to be scrapped.]

Rifle No. 6 (Australia).

It appeared only as a prototype, an 18 inch barreled version of the No. 1. It was developed at Lithgow.

Historical Perspective.

The original Lee Metford was a fine service arm until the introduction of Cordite Powders. It was found out quickly that Cordite burned much hotter and faster than black powder and that the new corrosive powders were eating away the bores of the rifles. The experts put their heads together to try and come up with a solution to the problem. It was resolved by experts at the Royal Ordnance Factory at Enfield Lock (hence the name Lee Enfield). Their solution was to create a barrel with a deeper, five groove rifling that was more resistant to the corrosive effects of Cordite.

On November 11, 1895, the legend was approved and a year later, rifles produced at Enfield, Sparkbrook, L.S.A., and B.S.A., went into service. Externally, the Lee Enfield was identical to the Lee Metford. It was this gun and its modified version, the Mark I*, that the British used against Mausers for the first time during the Boer War. During this war, several shortcomings were found with the new Lee Enfield rifle. Problem with the sights and the lack of quick charging came to the front and once more the experts got together to find a solution.

The charging problem was quickly resolved as was the sighting problem. In the process, a shorter length was added to the equation so the rifle would be easier to handle by both infantry and cavalry. The result was introduced in 1902 as the Mark I SMLE. More improvements were made and in January of 1907, the Mark III was introduced, a rifle that was to become a legend. As with any war, World War I brought manufacturing short cuts to the Mark III. These included the elimination of the cutoff, dial sights, rear sight wind gauge, and identification discs. This rifle was known as the Mark III*.

In 1926, the nomenclature of service rifles was changed. The Mark III became known as the No. 1 Mark III and the experimental Mark VI became known as the No.1 Mark VI. After several modifications, the No.1 Mark VI emerged in 1931 as the No.4 Mark 1. With impending hostilities mounting in Europe, the development program on the No. 4 Mark 1 was stepped up and in 1939, the rifle was accepted as the standard service arm.

The No. 4 was 44 1/2 inches overall with a 25 inch barrel. The action was beefier than the Mark III and the screw aperture adjustable rear sights (if installed) were graduated from 200 - 1300 yards. The barrel extends past the forestock a good three inches, allowing for the easy fitting of both a bayonet or grenade launcher. A variant, the No. 4 Mark 1* was built in Canada at the Long Branch facility and in the United States by Savage (at the former Savage Arms plant in Chicopee Falls). The No. 4 Mark 1* is easily recognized by its simpler bolt head release. There was a cut-out in the receiver which allowed the bolt to be pulled back and the bolt head rotated in order to achieve extraction of the bolt. Both Marks were later fitted with an L-shaped flip up aperture

that had two ranges, 300 and 600 yards. Last, but not least, of the original .303 Lee Enfields was the famous No. 5 Mark 1 "Jungle Carbine". This rifle had a barrel of 20 1/2 inches and featured a cone-shaped flash hider. The fore end and hand guard were cut down to expose more of the barrel and the base of the foresight assembly contained a lug that mounted a unique Bowie-bladed knife bayonet. Weight was reduced by 2 pounds which increased recoil, a big problem with this little gun. The right side of the butt was equipped with a sling loop, much like the old Lee Metford carbine. Although introduced too late in the war to see any real service, the jungle carbine did well enough, save for the wandering zero problem that never has been resolved.

VARIATIONS ON A THEME

Pattern 13 (P-13).

Tested in 1913, the P-13 was nothing more than a modified Mauser action (cocking on the forward stroke of the bolt), and was chambered for the large .276 caliber cartridge. The cartridge itself was remarkably similiar to the Canadian .280 caliber Ross cartridge. The rifle was made in very small numbers for field trials in .303 caliber.

Pattern 14 (P-14).

The P-14 was the production model of the P-13. Initially it was built in .303 caliber here in the United States for Great Britain during World War I. Save for its use as a sniping weapon, the P-14 was classed as a limited standard rifle and few were used. However, when the United States entered World War I, the P-14 was changed from .303 caliber to

U.S. Cal. .30 (.30-06) and was designated the M1917, though it was known as the Enfield. Between World Wars, the British changed the nomenclature to Rifle No. 3 Mark I.

Pattern 14 Sniper Rifles.

During World War I, the P-14 was used extensively as a sniper rifle. There were two basic patterns, the P-14 (T) and the P-14 (T) A. The former has a Pattern 1918 telescope adjustable scope and the latter had an Aldis telescope. In 1926, when the British went to number designations, these weapons were renamed the Rifle No. 3 Mark I* (T) and the Rifle No. 3 Mark I* (T) A.

[BEN: I need to add specs and commentary for the WW2 DeLisle carbine, a No.1 MkIII* rebarrelled to .45 ACP with an integral suppressor, used by Commando units.]

Sniper Rifle L4A1.

Developed from the commercial version of the No. 4 Mark 1 rifle, the Enfield Envoy, which was originally cut down and modified for target use. The rifle featured a cut down stock and rebarrelled to fire the .308 NATO cartridge. A further number were converted in similar fashion by the Royal Arms Factory (Enfield) and fitted with sights which are a modified version of the original No. 32 telescopic sight. Though superseded by the Accuracy International L96A1, some of the .308 Enfields (L4A1) still remain in the British Army's inventory.

[BEN: I have seen and handled one of these .308 conversions, but did not have the opportunity to fire it. Some have cast doubt on the ability of the old rear-locking Lee-Enfield action to safely handle the .308

ctge., but the rifle I handled, at least, had seen thousands of rounds without problem, and was in fact being used successfully in High Power target competition, so I guess the conversion works!]

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Part Three: General Information For Shooters (ENFAQ-03.MSG)

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- Handloading the .303 British, by C.E. Harris
- Don't Overlook the Lee-Enfield, by C.E. Harris
- * Table One: How The .303s Did
- * Table Two: Loads for the .303 British

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HANDLOADING THE .303 BRITISH, by C.E. Harris

(excerpted from AR, "From the Loading Bench", Mar93, p16)

Handloading .303 British ammunition can be frustrating because of the wide variations in barrel dimensions and chambering found on Lee-Enfield service rifles. The rear-locking Lee-Enfield action is springier than actions like the Mauser or Springfield that have their locking lugs at the front of the bolt directly behind the chamber.

The Lee-Enfield's rear-locking feature is often blamed for poor case life by handloaders who experience difficulty in trying to reload for the .303. Actually, the Lee-Enfield action is entirely adequate for the usual working pressures of .303 factory loads, generally around 40-45,000 c.u.p., and poor case life is commonly a result of excessive cold-working of the brass in resizing.

The cold working occurs because military .303 chambers feature a clearance of about 1/16" between the cartridge case shoulder and the rifle chamber, put there to ensure the rifles would function with dirty ammunition under harsh combat conditions that could include mud, sand, and dust. Because the .303 British headspaces on the case rim, rather than the shoulder like the .30-06, this shoulder clearance is inconsequential to headspacing.

But this clearance does result in the .303's case shoulder being blown forward upon firing. If fired cases are then full-length resized in the usual way (with the die adjusted so as to contact the shell holder), excessive cold working of the case shoulder eventually weakens the brass, with resulting casehead separations.

Satisfactory case life requires that .303 British cases be *neck-sized only*, or if full-length resizing dies are used, they must be carefully adjusted so as *not* to set back the case shoulder. (This is the same procedure used by knowledgeable handloaders when reloading belted magnum cases).

Nominal barrel dimensions for .303 British rifles are .302" bores and .312" groove diameter, but many wartime rifles have groove diameters as large as .316" [BEN: The biggest I've personally seen was a #4 Fazakerly that slugged out at a whopping .3185" - Yow!]. The flat-based 174-gr. MkVII service bullet has a soft gilding metal jacket and lead core that readily upsets to provide reasonable accuracy, even in worn bores. The stiffer jacketed MkVIIIz boattail bullet upsets less easily and often gives poor accuracy in rifles with barrel throats eroded from excessive use of cordite ammunition.

Because many of the rifles now entering the U.S. have seen long use, it is highly recommended that any Lee-Enfield showing considerable use be examined by a competent gunsmith prior to firing. There have been instances in the United Kingdom of stress sorrosion cracking causing barrel failures in .303 Lee-Enfield rifles having severe bore erosion (November 1988, p65).

New rifles and arsenal reworked ones with unworn bores are generally satisfactory. If the throat and/or rifling origin in a used rifle appear noticeably worn, the bore should be cleaned and the area immediately forward of the chamber carefully examined with an optical bore scope. Any barrel showing significant heat cracking or crazing under close optical inspection should be scrapped. As an alternative, where the service is available, suspect barrels may be examined by magnetic particle inspection using the wet method with full circular continuous magnetization.

Common .30 cal. jacketed bullets of .308-.309" diameter in the .303 British give poor accuracy in worn bores, but satisfactory results can usually be obtained in new barrels with bore diameters close to minimum, particularly with target-grade bullets of 160 grs. or more. I experienced gratifying results in the 1960s using pulled GI 173-gr. .30 cal. Match bullets with 42 grs. of surplus 4895, or with 190-gr. .30 cal. Match bullets with 40 grs. of the same powder. These charges should be reduced a full grain when using a current canister of 4895. Pulled GI match bullets are worth trying in the .303 if you happen to have some going around unused.

[BEN: Harris is real hung-up on this "using .30 cal. bullets in .303 British" stuff. Then he'll turn around and rant about "oversized bores" being inaccurate with .311" bullets. I sure wish he'd make up his mind...]

Successful use of .30 cal. bullets in the .303 requires a tighter neck-sizing die to obtain satisfactory neck tension. I use a Jones-type neck sizer with .332" sizing ring for my rifles.

[BEN: I use Lee's .303 British rifle dies with the .312" expander pin removed and the .308" (.307"?) pin, from a set of .308 Win. dies I wasn't using, substituted. I made this mod when I wanted to use Hornady's .310" 125gr spitzers and found them loose in the neck when the regular expander was used. Now I use the .308" expander exclusively, just as I set my 7.62x39mm Lee dies up with the .308" expander and put the .312" away. Lee will send you a .308" expander for your .303 British dies (for a nominal fee) if you write and ask them. I wish they'd see fit to provide two expanders (.308" and .312") with their .303 dies, the way they do for 7.62x39mm]

Jacketed bullets used in arsenal and factory sporting .303 ammunition are generally .311-.312", and U.S. component bullets for handloading are similarly dimensioned. New barrels with unworn throats will give good accuracy and a flat trajectory with 150-gr. bullets at velocities around 2600 fps with 40 grs. of IMR 3031, 41 grs. of IMR 4895, 42 grs. of IMR 4064, 43 grs. of Win. 748, or 48 grs. of IMR 4350.

If the throat is not noticeably worn, jacketed 123-125gr. bullets

intended for the 7.62x39mm will give good accuracy on varmints at up to 100 yards with 23 grs. of Hercules 2400, 30 grs. of IMR 4198, or 31 grs. of Reloder 7 to approximate 7.62x39mm velocities.

[BEN: In my Long Branch #4 MkI*, Hornady's 125-gr. spitzer over 40 grs. IMR 3031 is accurate and effective at longer ranges, and ballistically more impressive than Harris' recommended loads for this class of bullet.]

Worn throats almost always require the heavier 174-180gr bullets for best grouping. With these bullet weights, a charge of 45gr of 4350, 46gr of Win. 760, or 47gr of 4831 will approximate factory ballistics.

I prefer a somewhat lower velocity load of 30gr Reloder 7, which provides 2000 fps with a 180-gr. bullet. This load has lighter recoil than factory loads. It is also accurate and entirely adequate for woods use on deer or similar game.

[BEN: That is, of course, providing the bullet - which was designed to expand at higher velocities - manages to mushroom after hitting at 2/3 relative speed]

Many .303 rifles give better accuracy with cast bullets than with jacketed because this is the only way to provide satisfactory bullet fit in rifles with the larger bores. I recommend the use of cast bullets for the casual shooter who wants to enjoy his piece of history. None of the following cast bullet loads are maximum for the .303 British. These charges can be safely used in other .30 cal rifles of similar case

capacity, such as the .30-40 Krag, 7.65 Argentine, 7.7 Jap, and 7.62x54R Russian. For small game and plinking the 162gr NEI No. 52A or any other similar weight bullet of .312" or larger can be cast soft, tumbled in Lee Liquid Alox, and shot unsized without the gas check.

[BEN: I buy commercially-cast bullets designed for .32 H&R magnum, instead of casting my own. These are 100gr SWC style with a good wide forepart (ahead of the bearing surface) of about bore (.302-303") diameter. These puppies shoot GOOD in my .303s!]

Charges for such loads are 6-7gr of Bullseye, Win. 231, Green Dot, Red Dot, or 700-X. You may also use 7-8gr of Unique, PB, Herco, SR-7625, or SR-4756. The 7.62x39mm 123gr, 100gr .32-20 or .32 H&R Mag. jacketed handgun bullets will also work well in new barrels with these charges.

[BEN: Ummm... I've been known to use Speer's 100gr JHP (.312", for .32 Mag) bullet over 40gr of 3031 for a "2-liter load" (2-liter plastic Coke bottles, filled with water). At 50 yards, this load is dead-on with the battle sight of my Long Branch #4 Mk1*, and boy does it make a mess out of those bottles!]

Inert fiber fillers to take up the air space in the case are neither necessary nor recommended.

Rimmed cases like the .303 do not suffer shortening from primer blast shoving the shoulder forward, as often happens when reduced loads are fired in rimless cases like the .30-06. Rimmed cases are a better choice for very light small game loads. The best grouping with light gallery loads and plain-base cast bullets is usually found at velocities

approaching that of .22 Long Rifle ammunition, perhaps 1300-1400 fps.

Charges used for light jacketed pistol bullet loads may have to be increased up to a grain from those given earlier for pistol and shotgun powders to give the best accuracy. If economy, low recoil, and low noise are your concerns, you can save the price of gas checks if you keep velocities below 1200 fps and use a soft-cast bullet of standard weight for the calibre.

My favorite load, and the most accurate, is 15-16gr of Hercules 2400 with a 170-200gr cast bullet such as the NEI No. 58 or Lyman 314299. This charge is also suitable for the light 100-125gr jacketed bullets if you want a bit snappier small game or practice load. An advantage here with Hercules 2400 is that it is not particularly position sensitive and requires no fiber fillers to ensure uniform results.

[BEN: I thought he said *none* of the light loads needed fillers?]

If you don't have Hercules 2400, you can use 17-18grs of IMR or H4227, 18-20grs of 4198, or 21-24grs of Reloder 7. These cast bullet loads work better with softer alloys than with harder ones like Taracorp Magnum, Lyman No. 2 or Linotype. This is because these cast loads generally produce less than 30,000 cup, and harder alloys are neither required nor desirable.

[BEN: I don't see how that "because" draws a valid conclusion...???)

With cast bullets, it is crucial in the .303 British that the bullet

have a large forepart that will engage the rifling. Most cast bullets designed for U.S. .30 cal. barrels of nominal .300" bore and .308" groove dimensions will give poor accuracy in the .303 British because the forepart ahead of the driving bands is too small to receive any guidance from the lands because most .303 barrels have larger bore diameters [Ben: because, because, because... of the wonderful things he does?]. As an easy way to check proper fit of a cast bullet forepart, insert the nose [BEN: of the bullet?] into the muzzle. If it enters easily up to the front driving band without engraving, accuracy will seldom be satisfactory.

The diameter of the bore-riding portion should be .3035" or larger for most .303 rifles. The best off-the-shelf cast bullet for the .303 British is the Lyman 314299 originally designed for this cartridge. The NEI No. 21A I designed for the 7.62x39mm (January 1992, p51) is also satisfactory for those wanting a lighter bullet (NEI suspended business in 1992. The Eds.).

This design can be obtained from Lead Bullet Technology, HCR62, Box 145, Moyie Springs, Idaho 83845, and from Donald V. Eagan, PO Box 196, Benton, PA 17814.

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DON'T OVERLOOK THE LEE-ENFIELD, by C.E. Harris

This dependable piece of history is still a great buy for the practical shooter on a budget.

(excerpted from AR, Jul93, p46)

Surplus Lee-Enfield rifles and ammunition are cheap and plentiful again. For those whose lives and enthusiasm for firearms predate the 1968 Gun

Control Act that ended the golden age of surplus rifles, Lee-Enfield rifles offer few surprises. But, for many of today's shooters, this is the first time the "workhorses of the British Empire" have been available in large numbers and, more importantly, at low prices.

Some questions those unfamiliar with these rifles often ask are: Are the .303 Enfields a good choice for a rough-duty hunting or plinking rifle? Are they a decent buy for the money? How do they compare in performance with other surplus rifles on the market, like the Springfield, Mauser, or Garand? What can I expect in terms of accuracy? And how much will handloads or tinkering improve things?

It is interesting to compare the three most common .303 British rifles to their familiar U.S. .30-06 contemporaries, the M1903 and the '03-A3 Springfields or the M1917 U.S. Enfield. This should interest potential users who are not collectors and help them understand why the .303 Enfields are some of history's most-used and significant military rifles.

The first British .303s, the Lee-Metford long rifles and carbines, derived from the American-designed Remington Lee .45-70 repeater, were adopted when "Soldiers of the Queen" still faced superior numbers of opponents in its [sic] far-flung colonies. In changing from a blackpowder single-shot to what was then a "modern" small-bore magazine rifle, British military planners insisted that the service rifle be utterly reliable under harsh service conditions and capable of a high volume of aimed fire.

They wanted all the opening force of the bolt to be used for primary extraction, believing that cock-on-opening would detract from extraction leverage. Lee-Enfield bolt-actions cock in the final closing motion of the bolt *before* its rotation into the locked position.

The intention was to use the inertia imparted by the rifleman's rapid hand movement to aid the process. A Springfield bolt, like some Mausers, cocks on the *raising* motion of the bolt handle.

It is not as easily opened when liberally doused with sand or mud, or when washed clean of lubricant, unless the cocking piece is first cocked. It may be argued that a fouled breech, aggravated by the Lee-Enfield's cock-on-closure, resists bolt closure. But in retrospect, the British solution was both simple and effective.

The Lee-Enfield's rear-locking, two-lug bolt leaves both the cartridge stop surface (rim seat of the barrel) and the receiver locking recesses readily accessible for cleaning. The long right locking lug serves as a bolt guide rib and rides between the two halves of the split rear receiver bridge.

This prevents the cramping tendency familiar in Mauser-type actions. Rear-locking also permits a shorter bolt throw for rapid bolt manipulation from the shoulder without changing head position on the stock.

Experiences in the Boer War (1899-1902) recommended a common-length short rifle for both foot and mounted troops. The Short, Magazine Lee-Enfield (abbreviated SMLE and pronounced "smelly") was first adopted in

1903.

The U.S. used similar logic in adopting the M1903 Springfield. The SMLE MkIII was an improvement made in 1907 and was renamed the No. 1 MkIII in 1926. It is recognized by its strong, solid bridge for the charging guides, contrasted with earlier conversions having one half of the charging guide on the left sidewall of the receiver and the other half on the bolt head.

In 1916, the No. 1 MkIII* rifle, one of the most commonly seen surplus today, eliminated the magazine cutoff and long range, indirect-fire sights (used to direct plunging volley fire at troop formations in defilade) and changed to a stamped cocking piece.

It has been said about the Great War (1914-1918) that the Americans had the best "target" rifle, the Germans the best "hunting" rifle, and the British the best "battle" rifle. This is a fair assessment of the SMLE.

[BEN: Ah, but the French had the best "lampstand" rifle! The Lebel's tube magazine makes it *easy* to conceal the cord from the socket to the base.]

Its fast charger reloading, short bolt throw and 10-shot magazine - twice the capacity of its contemporaries - enabled the Lee-Enfield to deliver an effective volley of fire "accurate enough" for combat.

First experiencing the receiving end of Britain's "contemptible little army" (in which an infantryman was expected to fire 15 aimed shots in

one minute, dubbed the "mad minute") in 1914, German Gen. Von Kluck thought his troops were being cut to ribbons by massed machine guns.

[BEN: Recent discussion (1994) on Usenet's 'rec.guns' group has revealed that the "14 shots per minute" figure may be somewhat *low*. Well-trained shooters, according to some of the Brit, Aussie, and Kiwi (NZ) folk thereabouts, insist that firing speeds up to 20 shots per minute (including reloading time) were not unusual. Hmmm...]

The rapidity of fire possible with the Lee-Enfield is more a function of its greater magazine capacity - simply not having to reload as often - than its ease of bolt operation.

The short bolt throw of the Lee-Enfield bolt could be an advantage for hastily-trained troops prone to "short-stroke" the bolt, but with a trained bolt-gunner, the advantage is more theoretical than real. An SMLE is less accurate than an '03 or M1, and maintaining a high rate of fire requires a bit more effort.

However, for around \$100 or less you get a reliable, 10-shot repeating rifle as accurate as your average SKS, but firing a much more effective deer load, equal to the .300 Savage or .30-40 Krag.

Enfield sights are adequate for military use but not as precise as the U.S. Springfield's or Garand's. They are, after all, battle sights. The open sights on No. 1 MkIII rifles were adjustable for both windage and elevation, though some Australian imports lack the windage screw and are adjustable for elevation only.

[BEN: Sure enough, the Lithgows (I checked several) tend not to have windage adjustments on the back sight. The front sight *can* be drifted side-to-side for windage adjustments, but since you have to remove the rifle's nosecap assembly to do this, it's not very practical for sighting in on the range. Best solution for Lithgow owners whose windage is "off" might be a replacement (earlier vintage) rear sight, readily available from a variety of surplus suppliers - see "Short Bits" section for addresses.]

The No. 1 MkIII's light barrel heats rapidly in sustained fire, and accuracy suffers. While this is not [an] important concern in a hunting rifle, it may be a problem if you fire more than a magazine-load without letting the barrel cool. The two-stage military trigger pull is a bit heavy, but is easy to get used to. After the initial slack is taken up, the letoff is controlled by applying the last few pounds after reaching the well-defined second stage.

Another common Lee-Enfield is the No. 4 MkI, identified by its receiver sight and protruding, heavier barrel. It was adopted in 1939 to simplify manufacture and provide a more accurate rifle while preserving the SMLE's desirable features. Most No. 4s are not as nicely made as earlier SMLEs, but are rugged, serviceable rifles. They possess better combat sights and are better battle rifles than the SMLE.

[BEN: Look out! The above is fodder for religious wars worse than Glock vs. Sig!]

My biggest criticism of British-made No. 4s is the sloppy manufacture of

many wartime barrels, which often have groove diameters over .316". There is little hope of getting any common jacketed bullet to group better than about 4 moa in so large a bore, because the usual .311-.312" jacketed bullets are so greatly undersized.

I have found Canadian Long Branch Arsenal and U.S.-made Savage bores seldom exceed the normal .303"-.304" bore and .313"-.314" groove diameters. The two-groove Long Branch barrels will give normal accuracy with ".30 cal." bullets, but oversized wartime five-groove barrels may just about stay in your hat at 100 yards.

[BEN: Here he goes again with his "shooting .30 cal. bullets in .303" fetish. Has no-one informed Harris of the plethora of .311-.313" bullets available on today's market? Jeez, what a maroon!]

Though not seen as often, the No. 3 Mark I (or Pattern 14 (P14) Enfields are also available and are well worth considering. Early experimental versions were issued for troop trials in 1913 using a .276 rimless cartridge with a 165gr bullet producing a muzzle velocity of 2785 fps.

With the outbreak of World War I, the idea of rearming with a new calibre was abandoned, and orders were placed with Remington and Winchester to produce the new rifle chambered for .303 British. After the U.S. entered the war, the P14 tooling was changed to produce .30-06 rifles. These became the U.S. Rifle Cal. .30 Model 1917, known as the "U.S. Enfield", and were the most widely used U.S. rifles during World War I.

The P14 and M1917 are very similar in exterior appearance and

demonstrate the Lee-Enfield's influence in stock design, sight protection, and the cock-on-closing action.

Its additional half-inch bolt throw over the Springfield, together with a longer and heavier mainspring, make it slower and more difficult to operate from the shoulder. The Pattern 14 does not feed rimmed cartridges particularly well, but if you carefully load individual rounds so that the rim of the cartridge on top is always ahead of the round below it, it works like a champ. Doing this rapidly with stripper clips is not a sure thing.

The P14 never saw much action in British hands, but it was extensively used as a sniper rifle in both World Wars. It continued in the sniper role until 1942, when it was replaced by the No. 4 MkI(T), and was then used to arm Home Guard units throughout World War II.

[BEN: There used to be a British TeeVee comedy series, called, "Dad's Army", which focused on a Home Guard unit, and featured P14s being lugged around. I used to watch it on (American) PBS, and was impressed with the technical authenticity as well as the humor].

The P14 also enjoyed an excellent reputation for accuracy among British NRA target shooters. Experienced UK marksmen regard the P14 as "the most accurate British service rifle ever to grace a target range". After World War II, most P14s were unceremoniously dumped and carelessly stored, making it difficult to find a pristine specimen today. Even those that can be found in good condition show considerable use.

The first .303-inch Small Arms Ball MkI cartridge, adopted Feb. 20, 1889, used a 71.5gr compressed blackpowder pellet behind a 215gr cupro-nickel jacketed bullet developing a velocity of 1850 fps. The MkI cordite (smokeless) load, adopted in 1891, proved highly erosive to barrels, prompting a change from the rounded "Metford" rifling back to "Enfield" rifling - with five sharp lands and grooves of equal width - that has been standard in British service rifles since the 1850s. Pressure-wise, the .303 cordite loads the British used probably pushed the design limits of those early actions.

In 1914, the flat-based, spitzer MkVII Ball cartridge was adopted. The most common .303 ammunition, it remained in service until replaced by the 7.62mm NATO in 1957. The MkVII Ball 174gr bullet had a gilding-metal jacket, lead core, and an aluminum nose filler. The lighter point increased the gyrodynamic overturning movement of the bullet so that it tumbled readily upon impact. All pointed FMJ spitzer bullets tumble to some extent in soft-target impacts, but the .303 MkVII cartridge was particularly effective and was noted for its lethality, despite its modest muzzle velocity of 2440 fps.

A rimmed cartridge like the .303 can maintain positive headspace and permit sufficient clearance between the cartridge case shoulder and the rifle chamber even with dirty ammunition. Comparing a fired .303 case to an unfired arsenal round, it will be noticed that the shoulder moves forward noticeably upon firing.

While not desirable from a handloader's standpoint, this shoulder clearance does permit reliable functioning under adverse conditions. Case life for reloading is enhanced when cases are neck-sized only,

avoiding excessive cold working from repeatedly blowing the shoulder forward upon firing and sizing it back again. Full-length resizing dies should be backed off about 1/4 to 1/3 of a turn so as *not* to set back the shoulder.

The largest off-the-shelf cast bullet design suitable for the .303 British is the Lyman No. 314299, which drops at a nominal .303" on the bore-riding nose and .314" on the driving bands. It remains one of the best cast bullet designs for this cartridge.

The Lee .312-185R also works well, and on special order Lee can supply molds to produce bullets of my design (formerly available from NEI as the popular No. 52A). Custom molds fitted to your rifle from a chamber cast or upset throat slug are also available from LBT (HCR62, Box 145, Moyie Springs, ID 83845).

Lubricator-sizer dies are not commonly available for sizes above .314" until you get to those intended for the .32-40 and 8mm. These are too large. Best cast bullet accuracy with many .303s requires bullet diameters of .315"=.316". Custom sizer dies for Lyman, RCBS, or Saeco-Redding sizers, honed up from your undersized die, are available from MKL Service Co. (610 S. Troy St., Royal Oak, MI 48068-8904).

Realistically speaking, the common issue-grade No. 4 or SMLE, with ordinary MkVII cordite service ammunition, in my opinion is at best a 3.5 minute grouper. Of several 10-shot groups fired at 300 yds. with the ROF (Royal Ordnance Factory) Fazakerly No. 4, the best was just over 10" and the largest 14". This is about what you can expect with the surplus

rifles and ammunition on the market.

[BEN: It must be borne in mind that most, if not all, of this .303 surplus ammunition is *old*. Some of it dates back to WW2, or even earlier. It has been in storage for years, often under adverse conditions. Often, it has passed through the warehouses of three or four nations before falling into the hands of American importers. Resultantly, it's not always the most consistent stuff for shooting. Powder strength, primer strength, and bullet/case neck tightness will vary (You can sometimes tell when it goes off: BOOM! then 'boom' then BOOM! again then 'Pow'... with slightly different felt-recoil sensations). For all that, it shoots surprisingly well. Ten inches at 300 yards = just 3.3" at 100 yards (14" = 4.6"). That's still tolerable "combat" accuracy... but it ain't match-grade stuff! See Table One, where Harris' heavy-barrelled target rifle in .303, wearing a 10x Unertl scope, was unable to outperform the Lee-Enfields when shooting surplus ammo! Harris invalidates his own conclusions all over the place, but he just can't get organized enough to realize it.]

I found the No. 4 to be more accurate "out of the box" with MkVII ball than the No. 1 MkIII, nearly comparable to the front-locking P14 rifle. When the handguards on both rifles were properly relieved of contact with the barrel, and a Parker-Hale 5A receiver sight added. the No. 1 MkIII outshot the No. 4!

At 100 yards, 10-shot groups shot with Greek surplus ball headstamped HXP 69 or UK MkVII cordite ball made by Greenwood and Batley, Ltd., in 1948, were double what we would expect from a Springfield or U.S. M1917 firing .30-06 Ball M2. I attribute this to the two-piece Lee-Enfield

stock, but vertical stringing caused by variations in bolt thrust with the rear lockup system it employs may be a contributing factor.

[BEN: I attribute it to Harris' prejudice toward American rifles, as well as the age and decrepitude of the surplus .303 ammo he was using. Yes, a *match-tuned* Springfield with *match* ammo will usually outshoot a surplus Enfield with 40-50 year old surplus ammo. On the other hand, if we take an as-issued, surplus '03-A3 Springfield (one of the recent re-imports from overseas), stoke it with 40-year-old surplus .30-06 ammo that's been laying around the docks of Kafiristan since the end of WW2, and shoot it under conditions identical to those used for Harris' Lee-Enfield tests, how well would *it* do? Probably about 14" at 300 yards, if we're lucky. Meanwhile, my Long Branch #4, with most of my various reload recipes, will consistently shoot 1.5" to 2" groups (5-shot) at 100 meters "if I do my part". Oh, and as for the "rear lockup" stuff - Remington's (discontinued) 788 rifle, considered by many to be a superbly accurate critter, employed a rear-locking bolt action.]

Commonwealth competitors using the SMLÉ were always careful to dry the rifles' chambers with mineral spirits or acetone after cleaning.

Otherwise the cartridge case would not grip the chamber walls upon firing. Additional backthrust against the bolt face caused by a lubed chamber would spring the barrelled action with respect to the vertical backplate, causing vertical stringing on the target.

In my experience, the first group fired after cleaning, wiping out the chamber with only a dry patch or two, may string vertically, often 5-6"

and sometimes as much as 8" at 100 yards! The second string will usually settle into a round group, but if you don't let the barrel cool to "blood warm" before continuing, the mirage rising from the hot barrel and wooden handguards makes aiming difficult. Spraying the chamber with Outer's Crud Cutter prior to pushing the last dry patch through produced consistently round groups during my testing.

The Australian No. 1 MkIII* Lithgow I tested was like new, built in 1940, and underwent a Factory-Through-Repair (FTR) in 1950. The No.4 MkI was built in 1943 at Fazakerly in the United Kingdom and reworked in 1974. The No. 1 Lithgow rifle was received from Natchez [Shooter's Supply], the No.4 from Interarms, with new wood simply bolted onto the action and handguards tight against the barrels.

Grouping improved about 30% when the handguards and forestock of the No. 1 MkIII* were relieved so the only barrel contact with wood was under the chamber and at the spring-tensioned V-block behind the nose cap.

After World War II, Bisley and British Commonwealth competitors became adept at bedding the No.4 rifle for target shooting. Best results come when solidly bedded under the chamber, with barrel free of contact except for upward pressure at its midpoint near the lower band, and either completely free floating from the lower band to the muzzle, or with 4-6 lbs. of up-pressure at the nose cap.

After firing the rifles "out of the box", I rebedded them as described and shot them again. It took only about 10 minutes to relieve the handguards with a scraper and to cut linseed oil-saturated, cardboard shims from a cartridge box. While groups shrunk noticeably, I never got

the nice 2", 10-shot clusters I am used to with the Springfield.

[BEN: Of course, he never tried .303 match ammo - or even commercial factory loads - either.]

When I was a kid, I owned a Long Branch No.4 MkI* Lee-Enfield that gave good groups with pulled .30-cal. match bullets. Knowing the wide lands of the two-groove barrels support even undersized bullets well, I tested one to see if my high school memories were accurate.

[BEN: Ah, now we see where his ".30-cal. bullets in .303" fetish comes from. A high school memory... traumatic, perhaps? Hmmm...]

The much-used Canadian Long Branch No. 4 MkI* I received from Sarco had been a "Drill-Purpose" rifle, and was restored to shooting condition prior to importation. While beat up on the outside, the stock was sound, and its barrel was like new. After a good scrubbing with Murphy's Oil Soap, steaming out the worst of the dents, scouring with steel wool, and applying a couple coats of boiled linseed oil, the old beast looked downright respectable.

Mercifully, the New Zealanders who deactivated the rifle for cadet use did not drill holes through the chamber, as was the British practice. Installation of a new bolthead and firing pin provided the importer with bargain-priced tightly headspaced rifles with a "good" exterior and bright bores. The Long Branch proved accurate without any tinkering, and my faith in teenage memories was restored.

The Fazakerly No.4 MkI received from Interarms approached 4" groups after adjusting, despite its generous .3166" groove diameter. The open-sighted Lithgow No. 1 MkIII* from Natchez had a pristine barrel with a .3123" groove diameter and hung around 4.5".

When I used a Parker-Hale 5A receiver sight on the Lithgow, it outshot the British No.4 and rivalled a borrowed No.4 MkI(T) sniper rifle. While not up to Camp Perry standards, the groups we got with the Lee-Enfield are certainly adequate for hunting and casual shooting.

Realize that 10-shot groups run about 1.3 times larger than five-shot groups. A rifle that averages 4" 10-shot groups averages 3" for five-shot groups. That's the .303 Lee-Enfield!

Lee-Enfields share traits with many of the other surplus rifles available today. They are rugged, simple, they work, and they speak to us of history. I guess that's why I like old military rifles. What shiny, new, commercial rifle can top that?

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Table One: How The .303s Did

Groups are the average of five consecutive 10-shot groups at 100 yds., bench rest with issue sights.

Eddystone-Remington Armory (ERA) P14, (1915)

Issue receiver peep

Bore .3032"x.3161"

Smallest Largest Average

	(inches)	(inches)	(inches)
Greek MkVII Ball, HXP-69	3.90	4.89	4.40
UK MkVII Ball, GB-7-48	not tested in this rifle		
Hansen Yugo. (nny) Ball, MkVIIIz	3.70	5.37	4.56
190 Speer HPBT .308", 42.0 grs. Scot 4351	5.01	7.80	5.68**
205-gr. GC, No. 314299, 18.8gr H4198	3.10	5.0	4.06
166-gr. GC. NEI 52A, 18.8gr H4198	2.60	3.60	2.98

Lithgow (Australia), No. 1 MkIII*, (1940)

U-notch tangent ramp

Bore .3023"x.3127"

	Smallest	Largest	Average
	(inches)	(inches)	(inches)
Greek MkVII Ball, HXP-69	3.94	4.97	4.54
UK MkVII Ball, GB-7-48	4.50	6.0	5.36
Hansen Yugo. (nny) Ball, MkVIIIz	3.36	5.10	3.94
190 Speer HPBT .308", 42.0 grs. Scot 4351	3.70	4.95	4.43**
205-gr. GC, No. 314299, 18.8gr H4198	3.68	5.75	4.45
166-gr. GC. NEI 52A, 18.8gr H4198	2.76	3.39	3.07

ROF Fazakerley (UK) No. 4 MkI .303 (1943)

Issue receiver peep

Bore .3038"x.3166"

	Smallest	Largest	Average
	(inches)	(inches)	(inches)
Greek MkVII Ball, HXP-69	4.50	6.0	5.26

UK MkVII Ball, GB-7-48	3.79	4.55	4.12
Hansen Yugo. (nny) Ball, MkVIIIz	4.40	5.32	4.87
190 Speer HPBT .308", 42.0 grs. Scot 4351	6.1	10.6	8.0 **
205-gr. GC, No. 314299, 18.8gr H4198	3.09	5.40	4.03
166-gr. GC. NEI 52A, 18.8gr H4198	2.73	5.74	4.42

Long Branch Arsenal (Canada) No. 4 MkI* (1942)

Issue receiver peep

Bore .3023"x.3133"

	Smallest	Largest	Average
	(inches)	(inches)	(inches)
Greek MkVII Ball, HXP-69	3.99	4.80	4.33
UK MkVII Ball, GB-7-48	3.80	4.45	4.23
Hansen Yugo. (nny) Ball, MkVIIIz	3.71	4.70	4.02
190 Speer HPBT .308", 42.0 grs. Scot 4351	3.29	3.61	3.40**
205-gr. GC, No. 314299, 18.8gr H4198	3.05	3.80	3.51
166-gr. GC. NEI 52A, 18.8gr H4198	2.20	3.20	2.71

Obermeyer 26" heavy test barrel on Ruger No. 3 Action

10x Unertl scope

(No bore dimensions given)

	Smallest	Largest	Average
	(inches)	(inches)	(inches)
Greek MkVII Ball, HXP-69	2.61	3.76	3.11
UK MkVII Ball, GB-7-48	4.0	5.40	4.58
Hansen Yugo. (nny) Ball, MkVIIIz	2.05	3.29	2.67
190 Speer HPBT .308", 42.0 grs. Scot 4351	1.09	1.69	1.22**

205-gr. GC, No. 314299, 18.8gr H4198	not tested in this rifle
166-gr. GC. NEI 52A, 18.8gr H4198	1.49 2.09 1.45

Series identified with double asterisks (**) use .30-cal. (.308") diameter bullets to show the effect of increasing bore and groove diameters upon accuracy. Typical five-groove .303 cal. bores show no improvement with .30 cal. match bullets, when compared to service ammunition. The largest .303 bores produce groups with .308" bullets that are twice those expected of ordinary ball ammunition. Two-groove barrels provide better guidance to undersized bullets and may provide some accuracy improvement, but this must be determined by testing on a case-by-case basis. To assess the accuracy potential of the .303 ammunition, a heavy Obermeyer test barrel on a single-shot rifle action with target scope was used to provide a comparison. Service ammunition fired in it showed little improvement from results obtained with the SMLs.

Abbreviations: HPBT - hollow-point boattail

GC - gas check

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Table Two: Loads For The .303 British

Bullet	Powder		Velocity	Remarks
Weight	Bullet	Charge	Powder	Approx.
(grs.)	Type	(grs.)	Type	(f.p.s)
85-100	JHP	10.0	Win. 231	1300 Small game loads with .32
		12.0	Unique	Approx. H&R Mag. or .32-20 bullets

123-125	SPFB	23.0	Herc 2400	2300	7.62x39mm bullet loads
		25.0	H/IMR4227	Approx.	Approximates 7.62x39mm
		28.0	H/IMR4198		velocities
		32.0	ReLoder-7		
150	SPFB	40.0	IMR3031	2600	Good open country deer
		41.0	H/IMR4895	Approx.	loads for new barrels
		42.0	IMR4064		
		43.0	Win. 748		
		48.0	H/IMR4350		
162-180	Cast	7.0	Bullseye	1050	Small game loads with
		8.0	SR7625	Approx.	plain-base cast bullet
		9.0	Unique		
162-180	Cast	13.0	Red Dot	1600	These cast bullet loads
		16.0	Herc 2400	1600	all require a gas-checked
		18.0	H/IMR4227	1450	bullet for best target
		18.0	H/IMR4198		accuracy. All are good
		24.0	ReLoder-7	1800	target loads, for NEI No.
					52A or 58, Lee 312185R, or
180-205	Cast	20.0	H/IMR4198	1700	Lyman No. 314299.
		23.0	ReLoder-7	1750	
		26.0	H/IMR4895	1750	
173	FMJBT	42.0	H/IMR4895	2400	Pulled GI Match bullet
174-180	SPFB	30.0	ReLoder-7	2000	Lighter recoil than factory

174-180	SPFB	45.0	H/IMR4350	2400	Approx. MkVII velocity
		46.0	Win. 748		
		47.0	IMR4831		

190	HPBT	40.0	H/IMR4895	2300	
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Standard .308" diameter .30-cal. bullets give normal accuracy in two-groove .303 barrels of .313" maximum groove diameter.

Abbreviations: JHP - jacketed hollow point
 SPFB - soft point, flat base
 H - Hodgdon
 IMR - Improved Military Rifle (DuPont)
 FMJBT - full-metal-jacket boattail
 HPBT - hollow-point boattail
 Herc - Hercules

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Part Four: SHORT BITS (ENFAQ-04.MSG)

Assorted paragraphs and short articles gleaned from here and there, not sorted into any coherent order.

Contents, Table of, MkI

* SHORT BITS

- Oversized .303 Chambers
- Cosmoline Removal
- Removing Dents in Wood

- Young's Country Stock Finish
- Removing Lee-Enfield Stock
- Muzzle Brake Installation (P.O. Ackley raves and spews)
- "Enfield Collector's Digest", info on quarterly publication
- Undersized surplus bullets vs. American components
- Bores With Odd Grooves (How to slug/mike 5-groove Enfield bores)
- "The Lee Enfield Number 1 Rifles", book review
- "The Lee-Enfield Story", book review
- Paper Patching .303 (reloading w/undersized bullets)
- Rimless .303?
- .303 Mark IV Tracer (ammo I.D.)
- "British .22RF Training Rifles", book review (incl. Enfield .22s)
- Lee-Enfield Stripper Clips (how to load/use them)
- Surplus "Enfield" Warning (throat erosion & blowups)
- .303 Buff (about hot loads and black powder loads)
- Enfield Carbine Bayonet (source for)
- MkIII Enfield Scope Mount (source for)
- Bolt-On Scope Mount (B-Square)
- Ten Rounds in Ten Seconds (WW2 anecdote)
- The .303 British (as a big-game cartridge)
- Enfield Bolt Creep (a harmless, but startling phenomenon)
- No.4 Rifle Loop (ahead of magazine)
- Double F Marked SMLE
- Austrian Enfield
- Surplus Surprises:
 - * Cyprus Police No.5
 - * Ishapore Arsenal No.1 MkIII in 7.62 NATO <shudder>

Codes Used

AR = 'American Rifleman' magazine (NRA Publication)

BIB: AR's "Books in Brief" short reviews

DB: AR's "Dope Bag" section

IME: AR's "In My Experience" column (DB section)

Q&A: AR's "Questions and Answers" column (DB section)

RW: AR's "Readers Write" section

WCIG: AR's "Where Can I Get...?" column (DB section)

GA = 'Guns & Ammo' magazine

GD = 'GUN DIGEST' (Annual Journal, from DBI Books)

GI = 'GUNS ILLUSTRATED' (Annual Journal, from DBI Books)

GS = 'GunSport & Gun Collector' magazine (long defunct)

GU = 'Guns' magazine

GW = 'Gun World' magazine

SB = 'SHOOTER'S BIBLE' (Annual Journal, from Stoeger)

SN = 'Shotgun News' publication

ST = 'Shooting Times' magazine

Runic substitutions (closest 7-bit ASCII approximations I can conjure)

^ = British "broad arrow" proofmark

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SHORT BITS begin...

OVERSIZED .303 CHAMBERS

(from AR, IME, Oct93, pp64-65)

Editor:

C.E. Harris was right about oversized chambers in .303 British being the cause of short case life (March 1993, p. 16). However, his explanation of "work-hardening" is what led member Philip Valentini (June 1993, p. 86) to misunderstand the actual process and refute it.

Since the headspace on a rimmed cartridge is controlled by the rim and not the base-shoulder dimensions, it was common practice on early rimmed, bottlenecked rounds to make chambers with plenty of "windage" for functioning with dented, bent, corroded, or muddy rounds.

Examination will show major differences in shoulder location/angle between Winchester, Remington, and Hansen cases, just as there are differences between various Lee-Enfield, Lee-Enfield, Ross, and Pattern 14 chambers.

Tight chambers support the brass better and make the cases last longer for reloaders, but countries adopting Berdan priming didn't want to reload and worried less about potential case life than easy feeding and extraction.

When a case is fired in an enlarged or "trench" chamber, it is like firing a .300 H&H in a .300 Wby. Mag. chamber, then full-length sizing it back to .300 H&H dimensions. The initial fireforming won't separate the head, and you may get three to five fire/resize cycles, but repeated stretch will cause failure.

The key to case longevity for the .303 British is not to oversize it, just as Harris stated. If your cases fail by body splits because of an oversized chamber, use a tape wrap in front of the rims to center sound

cases in the chamber and make expansion concentric instead of bulged all on one side, then neck size for the longest case life. It's the *repeated* working of the shoulder that thins and work-hardens the head area.

Oversized chambers plague military rifles in general. I've even seen bulges on .30-06 cases fired in Mausers chambered for that round. For .303s, a local shooter advocates using .30-40 Krag brass [Note: NEW, unfired brass, *not* loaded .30-40 ammo, or pre-fired cases!] to make .303 cases for No.4 and No.5 rifles, because he says the bigger head fits the large chamber better.

I hope this helps - member Valentini wasn't wrong - he just didn't have what Harris meant by "cold-working" explained to him well enough. Repeated blow-forward is the culprit, because working the shoulder, paradoxically, weakens and embrittles the head area.

James T. Farmer, Jr.

Dayton, Ohio

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COSMOLINE REMOVAL

(from AR, Q&A, Oct93, p62)

Q: I plan on purchasing a couple of surplus Mauser bolt-action rifles soon. Those that my friends have purchased have been coated with a heavy Cosmoline-type grease. Is there any way to remove that grease and clean the rifle without using dangerous chemicals or flammable solvents?

A: After disassembling the rifle, wipe off as much of the grease as possible with disposable rags, newspapers, or paper towels. Next mix laundry detergent and boiling water in a bucket and scrub the parts in this solution with an old toothbrush.

Following this, rinse the individual parts with clean boiling water. This will remove any remaining grease as well as any residual traces of detergent. After drying the parts, apply a good quality gun oil and reassemble the rifle.

[BEN: I've tried this method, and it works great - on metal. I'm not sure about using it for wood, but it did a great job in cutting through a *thick* layer of ancient, half-hardened Cosmoline on the metal parts of a couple of Lithgow No1 MkIII*s I acquired a while back. For "detergent", I used dish washing detergent (the kind in the squeeze bottle, Lemon Pledge maybe). It "cuts grease", you bet!]

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REMOVING DENTS IN WOOD

(from GA, GunSmith column (Roger Renner), Jan87, p72)

Q: I have heard that there is a way of removing dents from wood. Can you describe the process? I have a rifle that has several deep dents in the butt area that I would like to remove, if possible. Thanks for the help.

Jack Cruz

Tucson, AZ

A: The process you are referring to is called "steaming" and is a simple

on in which steam is injected into the wood, thereby swelling the wood fibers and lifting the dent. This process is easily performed with a steam iron and cloth. Simply wet the wood in the area of the dent, then apply a wet cloth over the dent. Application of heat from the iron will drive the water vapor into the wood and the dent will pop out as if by magic. If the wood fibers have been cut or badly mashed, the process may have to be repeated until the fibers are raised. Be careful not to scorch the wood. Practicing on a piece of scrap wood before attempting this on the gun stock would be a good idea. After the dent has been lifted, you simply sand the surface lightly and refinish. Oil-finished wood responds well to this treatment, and refinishing can usually be confined to the repaired area. Other finishes, such as today's synthetics, may require complete refinishing of the stock for satisfactory results. Good luck.

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YOUNG'S COUNTRY STOCK FINISH

(from GA, Gun Room column (Garry James), Jan87, p28)

Q: I read an article in the April, 1985 G&A about stock finishing. You mentioned a product called Young's Country Wood Lube 103. I would like to know how it worked and the address of the company. Thanks for the help.

Bernard A. Slay, Bulgar, PA

A: Yes, Young's Country stock finish works quite well, especially when you are trying to restore some of the highlights on antique or vintage arms without going through a value-destroying complete

refinishing job. You can get 103 Wood Lube from Young's Country, Box 3615, Simi Valley, CA 93063. The firm also offers other products, including bullet lube and leather treatment. Write them for further info.

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REMOVING LEE-ENFIELD STOCK

(from AR, Q&A, Feb73 pp72-73)

Q: I have obtained a spare buttstock to replace the damaged one on my .303 No1 MkIII Lee-Enfield rifle. But even with a large screwdriver I can't turn out the through stock bolt. It moves a trifle so I know it is not frozen, but I dare not force it any farther lest I damage something. What do I do now?

A: Because of experience of buttstocks loosening in early trials, No1 Lee-Enfield rifles for many years were provided with a positive lock for the stock bolt.

This was accomplished by squaring the end of the stock bolt and making it long enough to protrude through the butt socket in the receiver, where it was held against turning by a keeper plate fitting in the rear of the fore-end. In assembly the buttstock was installed first, tightening the stock bolt to a final position with its end square with the receiver. Then the fore-end was installed, a square notch in the keeper plate fitting over the end of the stock bolt and securing it positively against turning.

So to turn the stock bolt to remove the buttstock of these No1 rifles, you must first remove the fore-end. -- F.deH.

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MUZZLE BRAKE INSTALLATION

(from ST, Gunsmith (P.O. Ackley), Mar72, p79)

Q: Where can I obtain a Herters muzzle brake and what size should I order for my .303 jungle carbine? What is the best way to install it?

A: A number of different muzzle brakes can be obtained from Herters, Waseca, Minn.

Some people leave the flash hider on because of the outlandish appearance it gives. It should be removed and so should the bayonet stud. I can't imagine anyone needing a bayonet on his rifle for hunting.

Installation should be done by following the instructions furnished with the brake, and you may use either a band-type or screw-on ramp front sight.

Some muzzle brakes make the rifle unpleasant to shoot by sharpening the report. It is best to try one before buying.

You would actually be better off to obtain a M98 Mauser for a few dollars more, instead of spending money on the Lee-Enfield which does not make as nice a sporter.

[BEN: Yes, I realize Herter's is long out of business - but thought the readership might enjoy the grand old man's raving and spewing,

regarding the Lee-Enfield, its sinister bayonet stud, etc. The last paragraph's insult is a classic. Yeah, P.O.? Well, you're ugly and your mother dresses you funny. Nyah nyah nyah.]

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"Enfield Collector's Digest"

(from AR, RW, Nov93 p31)

Editor:

I was pleased to find C.E. Harris' article "Don't Overlook the Lee-Enfield" in your July issue. As a collector and longtime Lee-Enfield shooter, I never seem to be able to find enough written about them. Once[sic] source I've found that's been extremely informative and interesting is the "Enfield Collector's Digest" published by Greg Young at Box 34337, Juneau, AK 99803. For \$10 a year, you get quarterly issues that feature articles on collecting and shooting, as well as an "Ask the Experts" column featuring Alan Petrillo and a free "for sale/want ad" service for subscribers.

Jeff Davis

Alaska

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UNDERSIZED SURPLUS BULLETS

(from AR, RW, Nov93 p31)

Editor:

July's article on the Lee-Enfield was like water to the desert. I, too, am an Enfield lover (I have six), and I feel that the .303 cartridge is

often ignored as a sporting round. I was pleased to learn of Lee's new 160-gr. bullet mold, and I intend to pick one up soon. I am, however, disturbed that C.E. Harris made one glowing mistake. He did not include one single round of U.S. commercial ammo in his testing.

He also left out such firms as Sierra, Speer, and Hornady who make .311"/.312" bullets for reloading. I, too, have experienced 5" to 7" groups with Greek Ball HXP-69 and HXP-75, but don't blame "rear locking lugs" or "variations in bolt thrust". Instead, blame undersize .310" diameter bullets. The same gun (No.4 MkII) achieves 2 to 2.5" groups with Winchester of Federal ammo, so I pulled about 10 bullets from the Greek stuff, and they miked just .310".

Bill Brownfield

Texas

[Ben: My Long Branch No.4 MkI* groups about 2" at 100 yards with handloads using Hornady's .310" 123-gr. spitzer (intended for the SKS), so I don't think Mr. Brownfield's conclusion is definitive. I think one big problem that everybody overlooks is that old military surplus ammo is often just that - OLD! The powder doesn't always ignite consistently, and the bullets are made to typical "milspec" tolerances. It works, and it's good enough for volley fire into ranked enemy troops, but it's *not* match ammo by any stretch of the imagination. Your mileage may vary.]

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Bores With Odd Grooves

(from AR, Q&A, Aug80, p64)

Q: What is the proper method for measuring the bore and groove diameters of barrels having odd numbers of lands and grooves? With even numbers of lands and grooves, it's easy to simply slug the barrel and mike it, but with Smith & Wesson revolvers or British Enfields with five-groove rifling, this doesn't work.

A: First you must determine the bore diameter using ball gauges of the largest size which will enter the bore, adjusting the expansion carefully, then miking it. An alternative method is to take a soft lead slug or bullet only somewhat over bore size, press it into the muzzle, then turn it with the fingers to cut off the groove extrusions. Measure the short cylindrical section turned off to bore diameter. Next, take a soft lead slug or bullet, and upset it to somewhat over groove diameter. With the bore lightly lubricated, drive it through the barrel with a solid brass rod and mallet. Measure its diameter over a land-to-groove cross section, and subtract the bore diameter measurement to get the depth of rifling remaining. Double this figure and add it to the bore diameter to get the groove diameter of the barrel. -- R.F.D.

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"The Lee Enfield Number 1 Rifles"

(from AR, BIB, Mar93, p74)

Author: Alan M. Petrillo

Available from: Excalibur Publications

PO Box 36

Latham, NY 12110

Softbound -- 64pp. \$10.95 + \$2 shipping.

This second book in a series on British firearms ends where THE LEE ENFIELD NUMBER 4 RIFLES (August 1992, p61) began. The Short, Magazine Lee-Enfield or Rifle No.1 as it was redesignated in 1926, served the British soldier well from 1902 until World War II. Thirteen different No. 1 rifles, from the MkI through MkIV, are listed chronologically, with the variations between the models clearly described.

While little attention is given to makers and markings, the new Enfield owner or beginning collector will find the identification and background information quite useful.

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"The Lee-Enfield Story"

(from AR, BIB, Apr93, p57)

Author: Iam Skennerton

Available from: I.D.S.A. Books

PO Box 1457

Piqua, Ohio 45356

Hardbound -- 504pp. \$59.95 + \$2.75 shipping.

This updated and expanded edition of THE BRITISH SERVICE LEE (September 1983, p67) is 25% larger, with new information, photographs, and a usable index. Well researched, described, and illustrated is the entire family of Lee-Enfield rifles from the Magazine, Lee-Netford MkI through the L42A1 7.62mm sniper rifle. The new chapter on manufacture, armorer, and issue markings is particularly helpful. Skennerton, the author of numerous books on British and Commonwealth small arms, tells the "story"

well.

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PAPER PATCHING .303

(from AR, IME, Dec93, p54)

Editor:

C.E. Harris' article on the Lee-Enfields now available on the market (July, p46) mentions one of the frustrating problems that can arise with these rifles, oversized bores. While custom molds will allow the shooter to make properly sized cast bullets, these are seldom adequate for hunting purposes. There is a way to adapt jacketed hunting bullets to these large bores.

A few years ago I obtained a No.4 MkI rifle in excellent condition. Unfortunately, it had a two-groove barrel that measured .318" across the grooves. Best groups with .312" bullets were 3-4". By paper patching the .308" 180-gr. Sierra boattail bullet to .318" and lubing with molybdeum disulfide spray, I achieved groups of 1.5" when propelled by 46.0 grs. of IMR 4350. Pressures are mild, and cases have been reloaded more than 10 times (neck-sized only). Paper patching is made easier if the bullet is first rolled between a steel plate and a mill bastard file to roughen the surface.

Shooters with Enfields with oversized bores should try paper-patching to achieve proper bullet diameter. With the right bullets, these rifles are capable of surprisingly fine accuracy.

P. Todd Bulkley

Ashland, Oregon

[Ben: Sounds great, but I wish he'd included more details. What thickness and kind of paper? How much of the bullet's bearing surface do you cover? How do you keep the paper in place? Glue? And how do you prevent the case mouth from ripping the paper to shreds when seating the bullet? Anybody know?]

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RIMLESS .303?

(from AR, Q&A, Dec93, p51)

Q: I have a rimless cartridge in my collection with a British military headstamp, "R^L 18". The case body is wider and the neck longer than the rimmed .303 British, but overall length and rim diameter are the same. Did the British make a rimless .303?

A: The cartridge you describe is known as a .303 Lewis or .303 Lewis Rimless. According to Fred A. Datig's CARTRIDGES FOR COLLECTORS, VOLUME I, it was developed experimentally by the British around the end of World War I to help improve the performance of the American-designed Lewis machine gun.

The Berdan-primed case body was enlarged to .503" and the neck lengthened. To make chamber conversions easier, the rim diameter and overall length were kept the same, but varied considerably in the other dimensions (see accompanying table). The propellant was Cordite and the bullet cupro-nickel covered. The Royal Laboratory, Woolwich, indicated by the "R^L", was the center of British cartridge

development during this period. -- M.A.K.

NOMINAL CARTRIDGE	.303 Lewis	.303 Mark
DIMENSIONS	Rimless	VII Ball

Overall Length	3.04"	3.04"
Case Length	2.42"	2.21"
Neck Diameter	.343"	.333"
Head Diameter	.503"	.458"
Rim Diameter	.530"	.530"
Bullet Diameter	.300"	.311"
Bullet Weight	173grs	174grs

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.303 Mark IV Tracer

(from AR, Q&A, Feb73, p69)

Q: A cartridge obtained for my collection has a rimmed case and is loaded with a pointed full-jacket bullet. The headstamp reads 1942 DC G IV Z. Can you tell me what it is?

A: This is one type of the .303 British military cartridge.

Your example was manufactured in Canada in 1942. The G in the headstamp indicates a tracer bullet, and the headstamp IV and white bullet tip identify it as the air-to-air day tracer Mark IV. Z indicates loading with nitrocellulose propellant instead of the British cordite.

That particular cartridge is now a somewhat unusual one.

A later improvement was the Mark VI, also having a white bullet tip but with the IV in the headstamp replaced by VI. -- C.R.S.

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"British .22RF Training Rifles"

(from AR, BIB, May93, p59)

Authors: Dennis Lewis and Robert Washburn

Available from: Excalibur Publications

PO Box 36

Latham, NY 12110

Softbound -- 64pp. \$10.95 + \$2 shipping.

Beginning with the .297/.230 cal. Morris Aiming Tube for Martini-Henry rifles in 1883, British and Commonwealth countries have used a host of smallbore training rifles. The third in the "British Firearms" series, this book concentrates on the .22 rimfire Lee-Metford and Lee-Enfield trainers. As most were converted service rifles, particular attention is paid to parts differences and markings. Also included are photographs and descriptions of sights and magazine conversions peculiar to the .22s.

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LEE-ENFIELD STRIPPER CLIPS

(from AR, IME, Sep93, p71)

Editor:

A friend brought his recently purchased No. 4 Lee-Enfield and surplus

ammunition to the range and couldn't get all the stripper clips to feed properly. Some worked and some jammed in the magazine, but he couldn't figure out why. After examining his stripper-loaded bandoliers, I saw the problem right away. The cartridge rims were all lined up differently.

There is only one *correct* way to arrange the rims in the clips to get them to feed reliably; three-up and two-down with the left, right, and center rounds flat against the base of the stripper.

[Ben: ASCII rendition of rims in clip: ____-____-____-____]

Another tip I picked up from a British veteran is to smooth the *inside* of the stripper clips to reduce friction. Many have a rough Parkerized finish or have become dirty over time. You can smooth them by hand or dump them in your case tumbler, if you have one.

With the cartridges arranged properly and with smooth strippers, the rounds usually glide right into the magazine with just a simple downward push of the thumb just in front of the cartridge rims.

One last thing, Enfields use "stripper" clips, not M1-style "en-bloc" clips. The clip is supposed to be removed after the rounds are "stripped" into the magazine, not go into it like the M1's.

Keith M. Alexander

Kensington, Maryland

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SURPLUS "ENFIELD" WARNING

(from AR, DB Miscellany, Nov88, p65)

The following warning came to us from the United Kingdom Liason Office, Armament Research, Development and Engineering Center, Picatenny Arsenal, N.J.

"1. In July 1987 a UK MOD ban was placed on the firing of ball rounds from .303 (cal.) No. 4 rifles in UK service as a result of two explosions which occurred in the chamber area of the weapons and resulted in burst barrels.

"2. UK MOD investigations found that the barrel explosions were as a result of severe 'craze cracking' of the two barrels which were of indeterminate age and life.

"3. UK MOD have initiated a study into why some barrels suffer craze cracking and others do not, but results of this are not expected to be complete for some time, and even then might not be conclusive.

"4. Because, in peace-time, .303 No. 4 rifles are only used in Cadet units, it has been decided that it is not cost-effective to carry out detailed examinations of all barrels, particularly as the cadets are being issued with the new L98A1 Cadet GP Rifle. The firing ban will therefore remain in force.

"5. Users of the No. 4 rifle worldwide, whether civilian or military, are strongly advised to have the weapons closely examined for signs of craze cracking and condemned accordingly. Thereafter, it is recommended

that any barrels which have passed such inspection should be examined regularly for such signs and condemned if necessary."

Owners of the .303 No. 4 rifles should certainly heed the advice in the UK safety notice to have them "closely examined" before firing them again. The examination should be conducted, preferably, with the aid of a good optical bore-scope, by an experienced gunsmith who is familiar with the signs of erosion in gun barrels. If there are any signs of roughness from erosion in the barrel immediately ahead of the chamber, or any other visible defects in the barrel or chamber walls, then the barrel should be regarded as suspect and the rifle *should not be fired* until it has been properly fitted with a new barrel.

[BEN: The above notice was the first anyone had heard of this "erosion & craze cracking" problem in Enfield barrels. Naturally, the shooting public reacted in a calm, rational manner to this news... and *panicked* as usual. Based on *two* isolated incidents, concerning the heavily used (and abused) No. 4s in Cadet service in England, this "ban" was issued, and rumors flew thick and fast in its wake. Theories ranging from "bullets stick in pitted barrels" to "poor steel in Enfield barrels" appeared, and hung around to haunt us all. The truth? Simple enough. Cordite burns HOT. It eats barrel throats as bad as hot, hi-velocity rounds like .220 Swift. And Cadet rifles used for target practice get shot and shot and shot and shot until they flat wear out, and then get shot some more. Why? Well, Britain in her great(?) wisdom made a policy a few years back of NOT "surplussing" any *new* Enfields to its Cadet schools and civilian shooters. Something to do with their "gun control" fanaticism. Instead, they stored away, destroyed, or sold overseas the No4s which remained in their inventory.

This left Cadet schools (and civilian shooters) with whatever they already had - and they've "nursed" these same poor old rifles along for close to 50 years now. Sad, huh?

The No. 4s in question probably hadn't been FTR'd (Factory Through Repair) since the late 1940s, if then. The barrels in question were *worn out*, yes (having had, in conservative estimate, about 250,000 rounds of MkVII ball ammo through each of them), and certainly overdue for scrapping and replacement. And the "craze cracking" problem is quite real, IN BARRELS WITH SEVERE THROAT EROSION. Be they Enfields or any other make and model of rifle. Further shooting, especially with more HOT-burning Cordite (service) ammo, is just asking for trouble. If your Enfield is one of the \$40 "bargain-basement" ones, with a worn-out barrel - or if you shoot mostly surplus ammo - you need to have it *frequently* checked for crazing and cracking in the throat area. On the other hand, if your "shooting Enfield" is like mine (near-mint barrel) and you shoot mostly reloads or commercial sporting ammunition... well, it wouldn't hurt (for peace of mind) to have it checked - once - but don't get in a panic over it or "retire" your .303 to the wall or closet, just because a couple of beat-to-shit UK Cadet rifles blew their barrels. Remember, the No. 4 came out in 1939, was issued in the millions throughout World War II, fought hard (and was obviously shot a lot) in every theatre of the war, then retained for service in assorted nations and carried and used through innumerable smaller wars and battles, as well as seeing heavy use in hunting fields worldwide - and yet, no "craze cracking blowup" reports until 1988. Makes me shudder to speculate what sort of hideous overall condition those "Cadet" rifles must have been in... Oy!]

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.303 BUFF

(from GA, GunSmith column (Garry James), Jun84, p24)

Q: For some unknown reason, the favorite rifle in my rack is a British .303 No. 1 MkIII. The piece shoots quite well with handloads, and is a reliable performer while hunting. I would like to experiment with some loads of higher velocity than I feel the old SMLE action can safely handle. What action would you suggest to make up an economical sporter? I'm also interested in duplicating the original black powder load. What bullet and powder do you suggest?

A: Ah, a kindred spirit. I too am a fan of the .303, and within its limitations find it an excellent round. Probably your best bet for a beefier .303 action would be a stock military Pattern 14 rifle. These Mauser-style guns were made for the British government during World War I by Remington, Remington Eddystone, and Winchester. In fact they formed the basis for the .30-06 U.S. Model 1917 "Enfield" rifle that was also used in great numbers during the conflict. The P-14 is already in .303, so it would save you the trouble of rebarrelling the action. A good second choice would be a Siamese Mauser. As the bolt is already set up for the rimmed 8mm Siamese Mauser round, conversion would be relatively simple. The gun must be rebarrelled, of course. It is impossible to duplicate the old Lee-Metford black powder round without special equipment. In fact the original load was compressed into a 75 1/2 grain pellet. The bullet weighed 215 grains. Perhaps a compressed load of FFFg black powder might be interesting to play with, however I'll bet the results will be somewhat disappointing - not to mention rather sooty. Stick to smokeless. I can't see any

advantage in dirtying up your gun to get marginal performance.

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ENFIELD CARBINE BAYONET

(from GA, GunSmith column (Garry James), Jun84, p20)

Q: I have an Enfield No. 5 MkI Jungle Carbine. It was made in December of 1945 and is marked "No. 5 MkI ROF (F)". Where was it made? Where can I find a bayonet for it?

A: Your Jungle Carbine was made at the Royal Ordnance Factory, Fazakerly. Bayonets for No. 5s are really getting hard to find. I would suggest that you write to John C. Denner Co., R.R. #1, North Lancaster, Ontario, PO Box 122, Canada. John specializes in collector bayonets and would probably be your best bet.

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MKIII ENFIELD SCOPE MOUNT

(from GA, GunRoom column (Garry James), Apr87, pp22-23)

Q: I am trying to locate a scope mount for an old Lee Enfield I own. The markings on the rifle are "MA LITHGOW S.M.L.E. III* 1941". It is in .303 British calibre and appears to have a spot for scope mounting. Any help you can give me in trying to locate this part would be appreciated. Any information about this fine rifle would also be appreciated.

Tom Morgan

Dallas, TX

A: Your Mark III* Lee Enfield was made in Australia at the Lithgow

factory in 1941. Though the British had pretty well gone over completely to the No. 4 MkI SMLE in World War II, the Aussies were still using the earlier-style Mark III. I agree with you, it's a fine military arm - one of my favorites, in fact. You can get a scope mount for the Mark III from S&K. Their #1B16R80 can be fitted to a Mark III SMLE without tapping and drilling the receiver. Write Brownell's, Inc., Route 2 Box 1, Montezuma, IA 50171 for ordering instructions. My guess is that you are mistaking the cartridge charger bar for a scope mounting area.

[BEN: I can attest to S&K's quality in design and construction of their scope mounts. I have one of their mounts on a BSA/Shirley No4 MkI, and while it puts the scope *very* high, it is solid and thoroughly reliable. Current (1994) retail for this No4 mount is about \$40.]

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BOLT-ON SCOPE MOUNT

(from GA, excerpt of article by Art Blatt, Jan84, pp56-56, contd p70)

[BEN: The bulk of the article concerns 'scoping a Winchester M94 carbine, but B-Square's entire line, which includes Enfield mounts, is mentioned and discussed. These are the sections presented here.]

Mounting telescope sights on certain firearms can be an intricate task, especially for the amateur gunsmith. But, fortunately, virtually all of today's centerfire rifles have receivers drilled and tapped at the factory for installation of standard scope mounts. But what about those obsolete or special purpose firearms that have no provision for adding a scope? With these arms, it is often required to drill and tap screw holes in barrels or receivers to accomodate a traditional scope mount.

Occasionally, it might be unavoidable to remove bits of metal here and there to achieve a perfect fit. Most of us are not able to do work of this nature, either because we lack the needed skills or we don't have the proper equipment. Also, many gun owners are adamantly opposed to altering a treasured firearm in any manner. Therefore, fitting a scope mount without doing some machine work can create a genuine problem.

[stuff omitted]

B-Square was established about 25 years ago [as of 1984] by Dan Bechtel for the manufacture of simplified tools and jigs for professional gunsmiths. The fact that his business has flourished is testimony to his success in this endeavor. The scope mount end of the business has grown immensely in the past decade. Frustrated in attempts to find reliable scope mounts for some uncommon rifles, Bechtel decided to make his own. When these early prototypes proved to work extremely well, it was only natural that he should offer them for sale to his customers. And so a whole new business was born. Presently, scope mounts account for over half of B-Square's sales volume.

All B-Square scope mounts are made from a particular high-strength aluminum alloy that is capable of withstanding repeated recoil. The use of lightweight alloy helps keep overall weight at an absolute minimum.

[BEN: And it keeps manufacturing costs down, too...]

Weight of most B-Square mounts falls in the two- to four-ounce range, depending on the shape required to fit a particular firearm. Assault

rifle mounts weigh a bit more, usually between 7 to 9 1/4 ounces.

[stuff omitted]

A limited amount of windage and elevation is built into the B-Square mount. Elevation is varied through use of an angled, elongated screw hole as the attachment point for the rear scope ring. Windage can be altered by using shims between rings and mount.

[stuff omitted]

...the Fort Worth, Texas company makes a number of mounts for firearms that are exceedingly difficult to scope. Another long gun for example, that presents scope mounting difficulties is the antiquated [BEN: Hey! Watch it!] British SMLE .303 calibre service rifle. Over the years, huge quantities of SMLEs have been distributed as surplus in this country and a large percentage of these have been converted to sporters that could benefit from the installation of a telescopic sight. Mounts have been available in the past for the SMLE, but they have generally required drilling and tapping the receiver for installation. B-Square's SMLE mount fits precisely into place on all #4 and #5 rifles [BEN: ...which, to be technical, are *not* SMLEs. Officially, "Smelly" was the designation for the No.1 Mks only!] with no gunsmithing whatsoever. Attachment procedure utilizes the ejector screw hole, with a large clamping screw that also allows for ample windage adjustment to make zeroing the scope a simple matter. The scope sits high in the SMLE mount so that the regular iron sights may be used without mount interference.

[BEN: It's the old "That's not a bug, it's a feature!" syndrome: Most

unaltered military rifles require a high mount clearance for the bolt and often for ejection, which may be more *up* than to the side. Low scope mounting for Enfields usually requires a bit more modification than can be had with a "bolt-on" mount.]

[stuff omitted]

...Should you have a particular scope mounting puzzle and cannot solve it, write to B-Square Company, PO Box 11281, Ft. Worth, TX 76109. Don't be too surprised if they come up with the right solution.

[BEN: Reports from the field, so far, indicate that B-Square mounts tend to have problems holding a zero. Mostly, the complaints of this nature I've heard have been from SKS owners. I don't know anyone who has used the B-Square Enfield mount. Feedback would be appreciated!]

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TEN ROUNDS IN TEN SECONDS

(from "Infantry At War: 1939-1945" by J.B. King & John Batchelor)

The British had introduced their first Lee-Enfield rifle in 1895, a long rifle in the same style as its contemporaries, and ... in 1903 they produced a short rifle, known as the "Short, Magazine, Lee-Enfield" and always abbreviated to SMLE by the troops. The Lee bolt action was, in theory, less efficient than the Mauser since the lugs which locked the bolt were at the rear of the bolt and not at the head; this meant that the body of the weapon had to be stronger and also that when the rifle was fired the bolt was slightly compressed backwards. This, it was averred, led to inaccuracy. It may have done, if the firer was trying to

take the pip out of the ace of hearts at a thousand yards, but for all practical battlefield purposes it made no difference.

Where the Lee-Enfield scored was in the ease of operation of the bolt, due to those same rear-end locking lugs. This came to the fore in a technique developed and taught during the Second World War for house-to-house fighting, in which the rifle was held at the hip with the thumb and forefinger of the right hand grasping the bolt and the middle finger inside the trigger guard; a quick flip of the wrist and the bolt was operated, and as the hand came to rest the middle finger fell onto the trigger and fired the rifle. It was possible to get off ten rounds in ten seconds very easily by this method; it may not have been accurate, but it kept the other man's head down until you could get close enough to throw a grenade at him.

[BEN: This "book" - really just a glorified magazine - is rife with technical inaccuracies and wild, speculative drivel throughout. I've often wondered if there was any truth to the above "quick shooting stunt". I've tried the technique, dryfiring with an empty rifle, and it *definitely* takes more than a "quick flip of the wrist" to work the bolt! Does anyone know whether the "trick" is anything more than a bit of creative fiction?]

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THE .303 BRITISH

(from "Peterson's Rifles & Cartridges For North American Big Game",
excerpt of 'Nostalgia in Brass' chapter by John Wooters)

The "other" .303 [besides .303 Savage] has a Cockney accent. It was 1888 when the British Empire officially adopted a pip-squeak rifle cartridge

firing a 215-grain bullet of a mere .311-inch diameter as its military rifle cartridge. The new .303 certainly seemed a pip-squeak in comparison with the .45-calibre Martini-Henry cartridge it replaced. It was a response to the changing times, just as the 8mm Mauser in Germany, 8mm Lebel in France, and 7mm Mauser in Spain all were responses to dizzying changes in tactics and weaponry - tanks, smokeless powder, machine guns, and combat airplanes, to name just a few.

The .303 British was a black-powder cartridge at first and converted to Cordite in 1892. Because the sun never set on the British Empire in those glorious days, the .303 spread 'round the world almost overnight, especially to east and southern Africa, India, Australia, and Canada. To this day, it is popular in all those areas. It caught on in the United States too, being added to the chamberings of the Winchester M1895 lever action about 1897, with sporting ammo being manufactured here by then.

Oddly, the .303 rapidly gained favor in the game fields of Africa, even for the largest and most dangerous game. One of the earliest of the professional ivory hunters to use it was a gentleman named Sutherland, and the tradition carried down at least to karamojo Bell. I've personally witnessed native Botswana hunters smoking up Cape buffalo herds with .303s, as lately as 1976, and I've had to kill buffs wounded by them. In Kenya, Uganda, Zimbabwe, and elsewhere on the Dark Continent, the .303 became one of the standard arms of the white farmer, mostly for collecting meat and controlling pests. But you should *see* some of the "varmints" in Africa!

In Canada, almost everyone who lived in the bush had a surplus Lee-

Enfield and a pocketful of .303 cartridges, and collected his winter moose, caribou, elk, bear, or whatever, with it annually. They still do. The Aussies had no native big game, but the ubiquitous .303 British round was there, too, accounting for everything from man-eating crocodiles to wombats. You can bet it still is.

In addition to all that, the rimmed .303 case has been wildcatted about as extensively in Australia as the '06 has in the States, which is saying something! I have not pinned down the original .303 military ballistics, but a 215-grain bullet today is moved at 2180 fps. Only a 180-grain softnose is currently loaded commercially in this country, and it's listed at 2460; a .308 the .303 will never quite be.

So how come those folks are going around plinking African elephants and lions and grizzly bears and moose and stuff like that with it? Simple; they'd never read the erudite evaluations of American gunwriters as to what you can and can't do with this or that calibre, bullet weight, or velocity level. They didn't happen to have their matched pair of Holland & Holland "Royal" .470s handy, so they just used what they did have. They just shot old Jumbo in the ear with a military .303 full-patch and the great bugger fell down.

In lots of out-of-the-way places in the world, they still do that. Every day. So much for the "pip-squeak" .303 British.

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ENFIELD BOLT CREEP

(from GA, Gunsmith column (Garry James), Jul84, p26)

Q: I have a No. 1 Mark III* .303 Enfield produced by BSA in 1915.

Mechanically it is in very good condition with an excellent bore. One thing, however, bothers me about the rifle. Each time I fire it, the bolt moves up slightly. It has never come unbreeched but I am concerned about this. What is the problem?

A: It is not unusual for Enfield bolts to move upward ever so slightly upon firing. If your gun moves an inordinate amount, though, I would take it to a gunsmith for a going over.

[BEN: I had never noticed this "phenonemon" until one day when I was contemplating purchase of a Savage-made No.4 Mk1/2 in a gun store, and (with permission) dry-fired the rifle to check the trigger pull. Sure enough, the bolt moved - turned, actually - ever so slightly as the firing pin fell. I commented on this to the shop owner (a fellow fan of old military rifles) and he shrugged and said, "Oh, they all do that." He proceeded to lead me down the rack of assorted Enfields - No.1 MkIIIs, No.4s, a No.5 - having me dry-fire each one and watch the bolt handle "jump" upward slightly. It kind of bothered me, discovering this peculiarity, but apparently it's nothing dangerous, just the bolt "settling" under the jarring forward movement of the firing pin. Oh, and I bought the Savage, by the way...]

=====

NO.4 RIFLE LOOP

(from AR, Q&A, May91, p58)

Q: My Enfield No.4 rifle, and all others I have seen, has a loop or staple protruding from the front of its trigger guard strap. Would you explain its use?

A: As the illustration shows [BEN: Wish I could reproduce it here], the loop is the attaching point for the leather thongs of a canvas breech-cover that is now a seldom encountered accessory for the rifle. -- A.T.

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DOUBLE F MARKED SMLE

(from AR, Q&A, Nov81, p66)

Q: I have a British Short Magazine Lee-Enfield rifle (SMLE) which is dated 1918 and was, according to its previous owner, issued in England after the Dunkirk evacuation. The buttstock is a replacement, and the original and still legible serial number has been struck through with a new number stamped above it. With the new number, on barrel and receiver ring, is a capital F superimposed on another capital F and enclosed in a circle.

After considerable research, I can find no reference to the double-F-in-a-circle marking. Can you tell me its significance?

A: When the Republic of Ireland organized its army in 1923, much of its equipment including SMLE rifles, was obtained from England. When the rifles were received, the Irish placed their own identification mark on them and crossed out the original serial numbers, replacing them with new numbers.

The mark of "FF" within a circle is the Republic of Ireland Army property mark. "F.F" signifies "Fianna Fail". "Fiana" is the name of an ancient military organization forming what then corresponded to

the standing army of the country; "Fail" means "destiny". One of the ancient names of Ireland was "Innisfail" (The Isles of Destiny) and "Fianna Fail" thus signifies the "Fianna (or army) of Destiny", or it may be rendered as "The Fianna (or army) of Ireland".

The above information was obtained from the Republic of Ireland Army.

As the British Army lost much equipment at Dunkirk, rifles were obtained anywhere they could be found, and they probably got a lot of the older dated rifles from the Irish Army. -- C.H.Y., Jr.

=====

AUSTRIAN ENFIELD

(from GA, Gunsmith column (Garry James), Jul84, p18)

Q: I have a Mark III Enfield with rather unusual markings. On the top of the barrel, at the receiver, is stamped a small eagle surrounded by the words, "OSTERR. GENDARMER". Do you have any idea what it is?

Victor E. Denzl, La Crescenta, CA

A: Well, as my readers probably know, I am something of an Enfield enthusiast, but I must admit I have never seen a Mark III with the markings that you describe. My guess would be that it would have been a post-war issue (remember Vienna was divided into Allied occupied zones) by the British to Austrian police. Other than that you've got me stumped. Can any reader help to shed a bit more light on this unusual critter?

[BEN: Anybody?]

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SURPLUS SURPRISES

Previously unknown military surplus guns are showing up in the U.S., making the collectors drool and ponder.

(excerpt from GI94, "Surplus Surprises" article, by Charles Karwan)

* Cyprus Police No.5 Conversion

A good many of the surplus surprises have been well-known military models converted into interesting previously unknown variations or even new models. One of the more intriguing is a variation of the familiar British No.5 "Jungle Carbine".

On the surface, these rifles look pretty much like a conventional No.5. However, close inspection reveals that they are actually No.4 rifles converted into the No.5 carbine configuration. On the left side of the receiver they are pantograph-engraved NO 5 CONV-CYP/NIC.

The barrel was shortened to carbine length and fitted with a No.5 flash-hider assembly. The forend and rear handguard were shortened to approximate No.5 specifications, and the buttstock was fitted with a No.5 buttpad/sling loop assembly. In the process, the cut for the No.4 sling swivel base has been plugged with a piece of wood. The net result is a Jungle Carbine with a heavier barrel and without the lightening cuts in the action.

[BEN: Or, I'll bet, the "wandering zero" problem...]

No one seems to know the exact story behind these carbines. Some

research has turned up pictures of Cyprus police carrying No.5 carbines. It was a logical choice due to the paramilitary-type operations they have had to conduct, and the fact that there has been strong British Commonwealth influence there for decades, including the U.N. peace-keeping force located there since 1964.

Considering this and the markings on these guns, I am relatively certain that these No.5-type carbines were made by or for the Nicosia police on Cyprus. They probably tried to acquire additional No.5 carbines some time after gaining independence and found that none were available. Since parts to do conversions of readily available No.4 rifles were available, that route was taken. Regardless of the reason behind these conversions, they are an interesting and previously unknown field variation.

* Ishapore Arsenal 2A & 2A1 (No.1 MkIII action) 7.62 NATO rifles

Until they were offered on the U.S. market, the Indian 2A and 2A1 rifles were almost completely unknown here. These extremely interesting rifles were made from about 1962 until at least into 1968. They are little more than a Short Magazine Lee-Enfield No.1 MkIII made at the Indian Ishapore Arsenal in 7.62mm NATO, instead of .303 British. Except for the parts changed to handle the shorter, higher-pressure and rimless NATO cartridge, the two rifles are nearly identical. The changes are the magazine, the extractor, the location of the ejector screw, the stripper clip guide, sights, and the metallurgy and heat-treatment of the bolt and receiver.

The original No.1 MkIII action is not strong enough to handle the 7.62mm NATO cartridge with a sufficient margin of safety. To gain the necessary strength, the Indians took the simple expedient of making the receiver and bolt out of a stronger alloy and gave it a more sophisticated heat-treatment.

[BEN: Considering Ishapore has been found to have made some No.1 MkIII receivers out of *cast iron*, and "Nitro Proof" some guns at some times using black powder proof loads, this "stronger alloy/sophisticated heat treatment" is not especially encouraging. It's commendable that the Indians were able to utilize the facilities they had available to produce a NATO-compatible rifle... but I wouldn't shoot one of these bombs on a bet, even with a loooong string... <shudder>]

It is a significant rifle in a variety of ways: It was the only rifle in the Lee-Enfield family that was made originally in 7.62mm NATO, rather than being a conversion; its 12-round magazine had the highest capacity ever fielded on a standard military bolt-action rifle; it was the last non-sniper military bolt-action rifle ever produced; and, finally, it was the last of the noble Lee-Enfield line of military rifles to be produced. For more information on this fascinating rifle, see my piece on it in the 1993 GUNS ILLUSTRATED.

[BEN: I'll track that one down!]

Illustration #1: Showing the rifle in profile -

Though it looks like a World War II Ishapore No.1 MkIII Lee-Enfield, the squared magazine gives it away as an Indian 2A1 in 7.62mm NATO. Made from about 1962 until at least 1968, these are the last of the

military Lee-Enfield rifle variations to be produced.

Illustration #2: Showing a close-up of the action, right side -

Typical markings on the Indian 2A1. R.F.I. stands for Rifle Factory Ishapore. Other than the magazine, the other giveaway as to its identity is the squared nose cap. All specimens seen to date are in pretty rough shape.

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Part Five: ANNOTATED RESOURCE LIST (ENFAQ-05.MSG)

Names, addresses, and notes on where to get *stuff* for your Enfield.

NOTE: For book reviews, check also "Short Bits" (ENFAQ-04.MSG).

Contents, Table of, MkI

* SOURCES (Ads & addresses of companies offering Enfield stuff)

Victoria Trading Company ("All Things British")

Monarch (Enfield Manuals & posters)

I.D.S.A. Books (Books, including Skennerton's!)

* WHERE CAN I GET? (from AR's column of that name)

+ Lee-Enfield No.2 MkVI .22 cal. training rifles

+ Conversion of Enfield to 7.62x39mm

+ British issue No. 5 "Jungle Carbine" rear sights

+ Long range volley sights for Lee-Enfield rifles

+ Magazine cut-offs for Lee-Enfield No. 1 MkIII rifles

+ Long range volley sights & magazine cut-offs (another source)

+ New production NEI bullet molds (Harris .303 bullet designs)

+ Surplus scope mount for Enfield #4 MkI(T)

+ Armorer's front sight adjusting tools for SMLE rifles

Codes Used

AR = 'American Rifleman' magazine (NRA Publication)

BIB: AR's "Books in Brief" short reviews

DB: AR's "Dope Bag" section

IME: AR's "In My Experience" column (DB section)

Q&A: AR's "Questions and Answers" column (DB section)

RW: AR's "Readers Write" section

WCIG: AR's "Where Can I Get...?" column (DB section)

GA = 'Guns & Ammo' magazine

GD = 'GUN DIGEST' (Annual Journal, from DBI Books)

GI = 'GUNS ILLUSTRATED' (Annual Journal, from DBI Books)

GU = 'Guns' magazine

GW = 'Gun World' magazine

SB = 'SHOOTER'S BIBLE' (Annual Journal, from Stoeger)

SN = 'Shotgun News' publication

ST = 'Shooting Times' magazine

Runic substitutions (closest 7-bit ASCII approximations I can conjure)

^ = British "broad arrow" proofmark

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SOURCES

ALL THINGS BRITISH

(last ad seen: SN, Apr1,94)

(J.R.'s) Victoria Trading Company

RR1, Box 1495

Newfane, VT 05345 USA

Catalog of "All Things British": \$3

Specializing in "All Things British", including a wealth of parts and accessories for the entire Lee-Enfield family.

[BEN: I ordered their \$3 catalog, and was somewhat disappointed. With my check for \$3, I enclosed a letter inquiring about certain specific parts and items. About three weeks later an oversized envelope from them arrived in the mail. Inside was **no** acknowledgement of my inquiry letter whatsoever, but only a poorly-xeroxed folded/stapled pamphlet, comprising perhaps 20 pages, filled with lists of parts for Enfields & Webleys, plus complete guns, books, and "sharp things" (as they called knives and bayonets - what pooftahs!). Parts prices were comparable with Springfield Sporters, but with "o/s" (out of stock) hand-marked next to most of the popular stuff (like #2 and #3 boltheads for No4 Enfields). Other prices were outrageous - such as the No4 MkII rifles they were offering, at **wholesale** (FFL) prices much higher than most people's RETAIL prices! This "catalog", the first page informed me, is published monthly (with a similar catalog quarterly - never did quite figure that out) and a "year's subscription" costs about \$15. Yeah, right. Also, their shipping "terms and conditions" (and charges) are quite convoluted and **not** at all favorable for someone who just needs one or two small parts. I'm told that this company makes appearances at large gun shows. Well, perhaps that's the best way to buy from them. In my case, I was **negatively** enough impressed with their ignoring my inquiry, as well as daring to ask \$3 for this cheesy

Xeroxed pamphlet, plus the inflated prices and general silliness of their ad copy ("sharp things"), that I think I'll be giving Victoria's (Secret) Trading Company the 'El Paso' from now on...]

.303 ENFIELD MANUALS

(ad seen: SN, Apr1,94)

Monarch

16845 N. 29th Ave., #203-HE

Phoenix, AZ 85023 USA

Their ad in SN, Apr1 94 issue, reads:

- * .303 Technical, identification, function manual, illustrated
.....\$4.95
- * .303 Enfield rifle operator's, maintenance.
.....\$3.95
- * .303 Large cutaway/nomenclature poster.
.....\$5.95

All Three (\$14.85 Value), Just \$12.00!

[BEN: I know *nothing* about this company, I just spotted the ad. The "cutaway/nomenclature poster" sounds neat, though. I may write them and see if they have a catalog]

SKENNERTON & MORE!

(ad seen: SN, Apr1,94)

I.D.S.A. Books

PO Box 1457

Piqua, OH 45356 USA

Phone: 513-773-4203

SMALL ARMS IDENTIFICATION SERIES (NEW!)

(neat illustrations of book covers featuring Enfields & Aussie SMGs)

WELL-ILLUSTRATED

8 1/4" X 10 3/4", 48 PAGES, PAPERBACK

S.A.I.S. NO.1 - .303 Rifle, No.1, SMLE, Mks III & III*.....\$7.50

S.A.I.S. NO.2 - .303 Rifle, No.4 Series.....\$7.50

S.A.I.S. NO.3 - 9mm AUSTEN MkI & 9mm Owen MkI Sub-Machine Guns...\$7.50

Shipping S.A.I.S. - Add \$2.00 per order.

List of Changes in British War Material,

Vol.IV, 1910-1918, 192pp, HC.....\$20.00

ALSO: Lee-Enfield Story [Skenneron], 503 pages.....\$59.95

British Sniper, 266 pages.....\$40.00

British & Commonwealth Bayonets, 404 pages.....\$40.00

VISA/MasterCard Accepted

Free Shipping

FAX: 513-778-1922

[BEN: This company has been around for quite a while, has an excellent reputation, and carries most, if not all, of the really *great* Enfield references and classics, along with military manuals and so forth. They don't mention a catalog, but I'll bet they have one! This is also the main source for Ian Skenneron's *renowned* books on British militaria, especially "The Lee-Enfield Story". Expensive, but awesome!]

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WHERE CAN I GET...???

Lee-Enfield No.2 MkVI .22 cal. training rifles

(from AR, WCIG, Feb93, p48)

Australian Military Surplus

5 Centre Market Place

New York, NY 10013

Conversion of Enfield, Carcano, Mauser rifles to 7.62x39mm

(from AR, WCIG, Feb93, p48)

Multi-Standard M-S

Rt. 1, Box 139

Butternut, WI 54514

British issue No. 5 "Jungle Carbine" rear sights

(from AR, WCIG, Nov93, p66)

Sarco, Inc.

323 Union St.

Stirling, NJ 07980

Long range volley sights for Lee-Enfield rifles

(from AR, WCIG, May93, p57)

J.R.'s Victoria Trading Co.

RR 1, Box 1495

Newfane, VT 05345

Magazine cut-offs for Lee-Enfield No. 1 MkIII rifles

(from AR, WCIG, May93, p57)

Great War Militaria

Box 552

Chambersburg, PA 17201

Long range volley sights & magazine cut-offs for Lee-Enfield rifles

(from AR, WCIG, Sep93, p70)

Alfred J. Parket, Ltd.

Armoury Works

348 Moseley Rd.

Birmingham, England B129AZ

New production NEI bullet molds (incl. C.E. Harris .303 designs)

(from AR, WCIG, Sep93, p70)

NEI Handtools Inc.

51583 Columbia River Hwy.

Scappoose, OR 97056

Surplus scope mount for Enfield #4 MkI(T)

(from AR, WCIG, May92, p68)

Springfield Sporters

RD 1

Penn Run, PA 15765

Armorer's front sight adjusting tools, or "cramps", for SMLE rifles

(from AR, WCIG, Jul87, p71)

Navy Arms Co., Inc.

669 Bergen Blvd.

Ridgefield, NJ 07657
