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Lochailort, Highland: Archaeological Metal Detecting Survey

Post-Excavation Archive Report

Report No. 1932

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1. INTRODUCTION

1.1 Background

Archaeological fieldwork was carried out by CFA Archaeology Ltd (CFA) in March 2011 at land to the east of the Inn at Lochailort (NGR: NM 767 817; Fig 1; Hills 2011). The work was carried out in advance of development of a Salmon Smolt Recirculation Unit and was commissioned by Marine Harvest (Scotland) Ltd.

The site was established as a military training camp in 1940, and in 1942 it was taken over as a naval training establishment. After the war, the camp was returned to the Inverailort Estate, and was later used as a Roman Catholic youth training camp until the 1960s. Latterly the camp reverted to agricultural and fish farming use (Thornber 2010, 1–2).

The metal detector survey was carried out by CFA and members of the Scottish Detector Club. A series of 30m by 30m grids was established over the area and detecting took place on a grid by grid basis. Each grid was detected in parallel transects, typically c.2m apart, to ensure that the whole area was covered. All metal finds were bagged according to grid and were retained for recording by a finds specialist. The survey resulted in an assemblage of almost 300 objects.

The entire assemblage of metal finds was assessed for any material related to firearms by Jonathan Ferguson, Curator of Firearms at the Royal Armouries Museum, Leeds, and these are reported in Section 2. Material not picked out during this assessment is reported in Section 3. Catalogues of the finds are included in the Appendices.

1.2 Acknowledgements

Jonathan Ferguson would like to thank to Harry Clyne, site owner, and Anthony Edwards and Norman Bonney, independent scholars in the fields of small arms ammunition and military explosives respectively.

1.3 Archive

The paper and digital archive will be deposited with RCAHMS. The finds will be allocated according to Scots Law via the Treasure Trove system.

2. THE SMALL ARMS-RELATED ASSEMBLAGE

by Jonathan Ferguson, Curator of Firearms, Royal Armouries Museum

2.1 Introduction

Relevant material is predominantly small arms ammunition, i.e. fired and unfired cartridge cases of the calibres listed below and described in detail in Appendix 1. Some live primers and small quantities of propellant were found, but in general primers have been successfully struck by a weapon's firing pin or striker, and no propellant is visible. Most of these brass cases, after c. 70 years in the ground, consist in large part of the reddish-brown corrosion product cuprite, though the more recent material is in visibly better condition, in some cases retaining greenish malachite content. For this reason it has not been possible to read all headstamps, or in some cases even to verify that a given case has been stamped (not all cases are headstamped). There are also several bullets, i.e. the projectile fired from said cartridge case, or in one case, a pre-self-contained cartridge era lead ball.

2.2 Calibres and likely weapons identified (Table 1)

2.2.1 A note on 'calibre'

Note that calibre names adhere to a number of different systems of measurement. In its most basic sense, 'calibre' simply means the diameter of the interior (bore) of a gun barrel. The term 'bore' or 'gauge' used with muzzleloading weapons and modern shotguns is based upon an archaic weight-based system, being indicated by the number of balls of a given size that add up to a pound of lead! e.g. 12 balls of lead of 0.729 inches or 18.53mm diameter = '12 bore'. This is relevant only to the single musket ball listed below.

The later systems are based upon the straightforward diameter of the bore in either Imperial or Metric systems of measurement, eg .45 inch or 9mm, and applies to many of the objects listed here. A metric-only development of this system has been devised to differentiate between calibres that would otherwise appear identical on paper. For example there are three '7.62mm' calibres listed below that in fact are quite different from one another.

Under this system, where names appear in the format '7.62x51mm', for example, the first measurement is the nominal calibre of the bullet, whilst the second is the length of the cartridge case. The following are listed in size order.

2.2.2 6.5x54mm Mannlicher-Schönauer (6 examples)

Designed for the Steyr-Mannlicher military rifle in 1903, but later favoured by civilians as a hunting round. Not to be confused with the better known Mannlicher-Carcano, also a 6.5mm calibre (can be differentiated by case length, amongst other methods). One of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued. Maker featured in this group is Kynoch (see below). Case is bottle-necked and rimless, originally carrying a long, round-nosed bullet but loaded with all manner of pointed bullet designs by sporting ammunition manufacturers and civilian hand-loaders.

Calibre	Headstamp	No.	Grid refs	Notes
6.5mm MS	IMPERIAL 6.5 M Sch.	1	C1	
6.5mm MS	KYNOCH 6.5m/m MS	3	B3, D2	
6.5mm MS	None/none visible	2	C5, D3	
.270 Winchester	NORMA .270 W	2	C1, E3	
.303	DA?	1	F1	
.303	B VI Z	2	E1, F1	
.303	R /| L 32 VII	1	A2	
.303	R /| L 1940 VII	1	D3	
.303	R /| L 1941 VII	5	D3, D4, E4	
.303	R /| L 1944 VII	2	D4, Z2	*1x tentative*
.303	R /| L 19_0 VII	1	A3	
.303	R /| L 194_ VII	1	A1	
.303	R /| L 1941 B V Z	1	A3	
.303	/| 1940 VII	1	A3	
.303	/| 1941	1	F1	
.303	/| VII	1	A3	
.303	/| R VII	1	F1	
.303	1941 VII	1	D4	
.303	__44 VII	1	Z2	
.303	Z	1	Z2	
.303	/| B VI	1	E1	
.303	R VII	1	D3	
.303	VII	5	A4, D4	
.303	1944 VIII Z	1	A3	
.303	SR 43 VIIIZ	1	Z2	
.303	SR 44 VIIIZ	1	Z2	
.303	WRA 1941 303	9	A3, B3, D3,	
.303	WRA 19__ 303	1	A3	
.303	WRA 19_1 _03	1	D4	
.303	WRA 1941	2	A3, D3	
.303	WRA	2	D3	
.303	W	1	D4	
.303	1941	2	A3, F1	
.303	None/none visible, *staked primer*	2	D3, E3	*1x Bren-fired*
.303	None/none visible, *ringed primer*	13	A3, C2, D3, D4, D5, E1, E3, E4, F4, Z2	*2x Bren-fired*
.303	None/none visible, *pressed primer*	1	A3	
.303	None/none visible, primer type not visible	2	A3, Z2	
.303	N/A (wad)	1	F1	
.303	N/A (bullet, Mk.VII)	2	C2, D3	
7.62x51mm	RG 79 L13A1	1	A1	
7.62x51mm/.308	None/none visible	1	B1	
7.62x54R Soviet	None/none visible	1	D4	
7.62x25mm	None/none visible	1	B3	
.38	N/A (bullet)	1	F1	
.55 Boys	K.40 W.I.	5	A2, A3, B3, C1	
7x57mm Mauser	KYNOCH 7mm	1	C2	
Unident. (.303/450?)	None/none visible	1	D4	

Table 1. Ammunition identified

2.2.3 .270 Winchester, aka 6.5x65mm (1 example)

A design of the US-based Winchester Repeating Arms company for their Model 54 sporting rifle of 1925. It remained a popular sporting cartridge throughout the 20th century,

particularly for deer hunting. Case is bottle-necked and rimless, and designed for modern pointed, boat-tailed 'spitzer' type bullets of various designs.

2.2.4 .303 'British' (71 examples)

The standard British and Commonwealth infantry rifle and light-medium machine-gun calibre from 1888 until 1957 (Labett & Mead 1988; Edwards 2011). Case is bottle-necked and rimmed. Most common, notably through the era of the World Wars and well-represented in this group, is the Mk.VII ball round, approved in 1910 and manufactured until 1973 (primarily for cadet use). It carries a pointed, flat-based lead bullet with aluminium plug at the front, enveloped in a cupro-nickel jacket, two examples of which were found here (C2, D3). Mk.VIII was the final major iteration of the round, featuring increased propellant charge for more power and a redesigned, boat-tailed bullet for greater range and accuracy. There are four examples of incendiary ammunition, designed for air service and forbidden for land use by the Hague Convention of 1907, though as these are truncated, it is possible that they are simply re-used rejected cases made up as blanks for realistic training scenarios. Indeed there are also three intact examples of .303 blank with the characteristic crimping at the neck.

Unless otherwise indicated (by headstamp mark number other than simply 'VII'), propellant is the standard cordite, a cluster of spaghetti-like rods still to be seen intact in two of the objects listed. The other main form of propellant used, nitrocellulose powder, is indicated by the headstamp letter 'Z' as in 'VII Z', as well as examples from overseas manufacturers.

.303 is most likely to indicate the use of the Lee-Enfield family of bolt-action rifles. At the period of known military occupation, this includes the Short, Magazine, Lee-Enfield (SMLE) or Rifle, No.1, the improved Rifle, No.4 (from 1941), and the Pattern 1914 rifle. The latter was most famously issued to the Local Defence Volunteers and Home Guard, but was also issued to Commando trainees in Scotland, as a photograph in the collection of the National War Museum shows. The only certain weapon identification possible for .303 is the Bren light machine gun, which leaves a distinctive sub-rectangular impression upon the cartridge's primer (documented in Appendix 1 in three instances).

2.2.5 7.62x51mm NATO (2 examples)

The post-1957 successor to the .303 round, made to NATO standard and still in manufacture and service around the world today, notably still with the British military – though no longer as the primary infantry rifle round. It is distinguished from .303 by its so-called 'rimless' type, meaning that there is no rim protruding beyond the line of the case, merely a groove for the extractor of the weapon to pull it from the breech after firing. It is visibly different than some of the other calibres represented here (and indeed .303) by its greater diameter. Its sporting equivalent is technically another distinct calibre (.308 Winchester), which is dimensionally identical but subject to different propellant and bullet loadings and specifications.

In a British military context, this cartridge is associated with the L1A1 Self-Loading Rifle (SLR), L7 General Purpose Machine-Gun, and calibre-converted L4 Bren LMG, all introduced 1957/8. This calibre makes little sense in the context of Lochailort, as the site was handed back to the civilian owners in 1945. However, 7.62x51/.308 Winchester subsequently became a popular sporting/hunting cartridge, which together with a lack of (visible) military

headstamps would neatly explain its presence at this site: were it not for a single blank round for which it is hard to think of a legitimate sporting use!

2.2.6 7.62x54R Soviet (1 example)

Introduced in 1891 for the Russian/Soviet Mosin-Nagant bolt-action rifle and used through both World Wars and indeed to the present day in a number of other former Warsaw Pact weapons. This round was made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 7.62mm Mk.I' to design IDW 3402, but never issued. It too found use in the civilian world as 'military surplus' for recreational and sporting use.

2.2.7 7.62x25mm Tokarev (1 example)

Designed for the Tokarev series of self-loading pistols, notably the TT33 pistol of 1930, the standard Soviet military pistol of the Second World War and still in use elsewhere today. It was based upon the German 7.63mm Mauser round, but is easily distinguished dimensionally.

2.2.8 .38 unknown (1 example)

A single pistol bullet appears below, of an unknown variant of (nominal) .38 calibre. The possible candidate cited is .38 Smith & Wesson, a revolver cartridge in British military use during the Second World War.

2.2.9 .55 Boys (5 examples)

Designed for the large and heavy bolt-action Boys rifle, introduced in 1937 for intended use against armoured vehicles. The cartridge case has a distinctive 'belted' base intended to accommodate the high pressures generated by this very powerful round of ammunition. There is clear evidence (see below) of informal armour penetration testing and target practice being carried out on site using the PIAT light anti-tank weapon and the Boys rifle. The holes made by .55 Boys bullets were clearly visible (Plate 1; Highland Council 2010, Image 79). Interestingly, however, none of the .55 cartridge cases within this group of finds has been fired.

2.2.10 Not present

Calibres that one might expect to find at this site due to associations with Combined Operations, the Commandos, and the Special Operations Executive, but not represented in this group include: 9mm Parabellum as chambered in the Lanchester and STEN sub-machine guns, .45 ACP as used with the Thompson sub-machine gun purchased/leased from the US and especially favoured by the Commandos, and indeed the Colt 1911 self-loading pistol. SOE also made use of the Colt Pocket Hammerless pistol (Seaman 2006, 28), chambered in .380 ACP. Though not found during this survey, all of these rounds as well as .38 S&W (a revolver round) were represented in an assemblage acquired from the site of the present Cliff Cottage by the National War Museum of Scotland in 2007 (see Section 4.1).

Plate 1. Steel plate previously found on site. Note three holes on reinforcing strip of plate © Harry Clyne.

2.3 Manufacturers identified (Table 1)

Kynoch: Established in 1862 in Witton, Birmingham. Merged into Imperial Chemical Industries in 1926, but the name was retained for the ammunition side of the business.

Norma: A Swedish company founded in 1902, still in business today.

Royal Laboratory: One of the Royal Ordnance Factories, established in the 1850s at the Royal Laboratory (itself founded in 1696) at Woolwich arsenal. Closed in 1967.

Radway Green: Another of the Royal Ordnance Factories, and the only one still in operation today. Built near Alsager in Cheshire, it was the last facility to produce .303 ammunition, production of which ceased in 1973.

Spennymoor: A Royal Ordnance Factory, smaller than the Royal Laboratory or Radway Green, established in County Durham in 1913 and closed in 1945.

Winchester Repeating Arms Company: Sited in New Haven, Connecticut, this was one of two main US companies to supply .303 ammunition to Britain and the Commonwealth for both World Wars.

Western Cartridge Company: Based in East Alton, Illinois. The second of the major US suppliers of .303 ammunition to Britain during the Second World War.

2.4 Site users/phases of occupation

The broad date range in the headstamps analysed (1932–1944) embraces all military users of the site and of course provides only *terminus post quem* dating opportunities. The earliest .303 case in the assemblage (1932) actually pre-dates any known military phase of

occupation, but clearly could have been fired at any time after that date. However, with reference to the site users we can discount certain dated cases. Phases of occupation are:

1. The Military Intelligence (R)/Combined Operations-run 'Special Training Centre' (May 1940–1942). Includes Special Operations Executive activity prior to relocation to Arisaig in 1941 (Allan 2007, 171).
2. The Royal Navy's 'HMS Lochailort' (August 1942–1945) (Slee 2011).

We can therefore discount any association between post-1942 dated cases and activity under STC auspices.

2.5 Pre 20th-century firearms-related finds

The musket ball (F6) and pistol sideplate fragment, though not relevant to the 20th-century occupation of the site for which it is historically known, are nonetheless of interest. Despite reports in the press, the musket ball is unlikely to date to c. 1745, instead suggesting some British military presence later in the century or in the first half of the 19th century. However, the pistol sideplate is probably military and does indeed date to the period c. 1740 (Bailey 1986), though clearly this need have no direct connection to the '45 Jacobite Rising.

2.6 Distribution

Table 2 and Fig 2 show the distribution of ammunition by type and grid square.

Square	**.303**	**.55 Boys**	**6.5mm MS**	**.270 W**	**7x57mm Mauser**	**7.62x51 NATO**	**7.62x54R Soviet**	**7.62x25 Tokarev**	**Unk .38 pistol**	**.303/450?**	***Total***
A1	1					*1*					*2*
A2	1	1									*2*
A3	13	1									*14*
A4	1										*1*
B1						1					*1*
B2											*0*
B3	1	2	1					1			*5*
C1		1	1	1							*3*
C2	2				1						*3*
C4											*0*
C5			1								*1*
D2			2								*2*
D3	16		1								*17*
D4	12						1			1	*14*
D5	1										*1*
E1	3										*3*
E3	2			1							*3*
E4	3										*3*
F1	6								1		*7*
F4	1										*1*
F6											*1*
Z2	8										*8*
Totals	*71*	*5*	*6*	*2*	*1*	*2*	*1*	*1*	*1*	*1*	*92*

Table 2. Distribution of ammunition by grid square

3. OTHER FINDS

3.1 Introduction

Following the initial assessment for firearms evidence, the remaining assemblage of 185 objects was identified and catalogued. Table 1 summaries the quantities of finds by category and material.

Category	Ae	Ae/Fe	Ae/Pb	Ag	Al	Fe	Pb	Total
Buildings/Services	5	1				11	3	19
Household objects	2				3	1	1	7
Weights							2	2
Coins	4							4
Dress accessories	8			1				9
Personal objects		1				1		2
Equestrian objects	1					4		5
Misc fittings	22	1	1		3	43	5	75
Waste							26	26
Unidentified	5				3	20	7	35
Total	*47*	*3*	*1*	*1*	*9*	*80*	*44*	*185*

Table 3. Finds by category and material

Material: Ae – copper alloy; Fe – iron; Pb – lead; Al – aluminium; Ag – silver

3.2 Buildings and Services (BS)

Nineteen objects were recorded in this category, which generally includes fixtures and fittings from structures. They comprised seven nails, three bolts, three short segments of lead pipe, a fragment of cast iron drainpipe, a fragment of ?radiator pipe with valve and nut, a bayonet light fitting, a brass light switch, a copper alloy swivel window latch with a ceramic knob, a brass door knob, and a bath plug hole surround.

3.3 Household objects (HO)

These objects are portable items which are normally associated with a domestic environment. The seven objects from this site were a small brass key, two spoon bowls (one iron and one pewter), two aluminium bottle caps (one from a milk bottle and the other from a ?whisky bottle), a small brush end for a vaccuum cleaner, and a large wire curtain ring.

3.4 Weights (WM)

Two possible weights were recovered. One, from D5, was a small cylindrical object, 13mm diameter and 13mm high, with a slightly hollowed out base and a shallow cross ?deliberately incised or moulded on the top. The other, from E6, was a large pyramidal weight with a central hole for suspension. These are likely to be of post-medieval date, although such crudely manufactured objects are similar from the Roman period onwards.

Plate 2. Fragment of a Victorian silver brooch with punched decoration.

Plate 3. Buckles.

3.5 Coins (CTJ)

Four coins were recovered, all of which post-dated the wartime use of the site. They were a George VI two shilling dated 1948 (C2), an Elizabeth II penny of 1964 (B1), and two decimal coins (1971 halfpenny in B3, 1979 twopence in W1).

3.6 Dress accessories and personal objects (DA & PO)

A fragment of a sheet silver ?annular brooch with punched decoration was found in C4 (Plate 2). It has the remains of the clasp, comprising an oval raised setting, on the back of the brooch. This type of brooch was common in the Highlands in the Victorian period.

Four buckles were found, all of which are likely to be of 20th-century date. They comprise a subrectangular frame (28 x 20mm) with holes for a central bar (A4), a stamped sheet buckle (32 x 25mm) with the remains of a strap on the central bar (A4), and two D-shaped buckles (45 x 35mm in C3, 34 x 33mm in D3; Plate 3 right). The D-shaped buckles may have been used for straps on, for example. kit bags or horse tack rather than being from belts or other dress items.

Two metal shirt buttons with four holes, one stamped with the maker's name 'KENWORTH', were found in B3 and C4. A button back, perhaps the setting for a glass bead or stone, was found in E5. Buttons of these types were in use from the 19th century onwards.

A clasp knife with a stainless steel blade and a saw-type blade, ferrous metal fittings and possibly composite grip panels was found in D6 (identified by J Ferguson). It has no visible markings.

A fragment of a watch, comprising the back plate and part of the inner workings, was found in B3. It is probably of 20th-century date.

3.7 Equestrian objects (EO)

A harness buckle, oval with a raised central bar, was found in C2 (Plate 3 left). These buckles were used from the later 19th century onwards. Three horseshoes were collected from B2, B4 and C2; all were post-medieval or modern types. A hoof scraper, comprising a hook with a loop handle, was found in A3, and is likely to be post-medieval or modern.

3.8 Miscellaneous fittings (MF)

Seventy-five objects were recorded in this category. They include possible handle backplates, binding rings, eyelets from canvas or tarpaulin, a lamp base, a large handle from a tin bath or similar vessel, a small pulley, washers and roves, and terminals/finials of uncertain function. Two pieces of iron wire were possibly spokes from the wheels of motorcycles or cars. An aluminium fitting, part of a circular frame, was possibly a frame from a dashboard dial or similar. None of these items is closely dateable but all are likely to be post-medieval or modern.

3.9 Waste (IW)

Twenty-six fragments of lead sheet, strip and melt waste were recovered. Some sheet pieces had nail holes and may have been used to patch a lead roof or wooden vessel. Some of the strips may have been used as solder. None of these finds is closely datable, although some of the less corroded fragments are probably modern.

3.10 Unidentified (UN)

Thirty-five objects were unidentified, the majority being iron blocks, bars, sheet fragments or wire.

3.11 Distribution

Table 4 shows the distribution of finds by category and grid square.

Square	BS	HO	WM	CTJ	DA	PO	EO	MF	IW	UN	Total
A1								1	1	1	3
A2								3		4	7
A3					1		1	3			5
A4					2			1		1	4
B1				1					1	1	3
B2	1						1		2	2	6
B3		1		1	1	1		8	3	3	18
B4	2	1					1		2	1	7
B5								1		1	2
C1								1		1	2
C2	2			1			2	3		4	12
C3	2				1			1		1	5
C4					2			3		2	7
C5								1			1
D1		1									1
D2	1							2		2	5
D3					1			3		1	5
D4	2	1						1	2	2	8
D5			1					3			4
D6	1					1		11	2	2	17
E2	1							2	1	1	5
E3		1							1		2
E4								1	2		3
E5	1	2			1			1		1	6
E6			1					2	2		5
E7								1			1
F1								2		2	4
F2								3	3		6
F3	1							1	1		3
F4	1							1			2
F5								1		1	2
F6								2		1	3
F7								2			2
W1	1			1				3			5
W2								2	2		4
X2	2	1						2			5
X3								3	1		4
Z2	1										1

Table 4. Distribution of non-firearm material by grid and find category.

The distribution pattern is shown in Fig 3. The greatest numbers of finds were recovered from squares B3, C2 and D6, with a generally higher concentration in the area to the centre and west of the main grid. The grid area to the west (W1–Z2) produced only small quantities of non-firearms material. The concentration of finds in D6 is largely due to the presence of six washers and three roves which are identical in size, though not in form, and may be from a single piece of machinery.

4. DISCUSSION

4.1 **Firearms-related material**, by Jonathan Ferguson

Given the use that the site was put to during the Second World War, we would expect one or more firing ranges to have been set up on site or nearby. Indeed there is evidence for the establishment of two ranges for pistol-calibre weapons. The current owner Mr Harry Clyne reports that this was initially used as a classroom before being converted into a 'kill house' style firing range for reaction-shooting with pistol caliber arms (H Clyne, pers comm 2011). Clyne estimates c. 335,000 rounds fired (many in automatic mode as he suggests) at this location, which is somewhat removed from the military camp proper, though a second 'range' is referred to by Thornber (2010, 1) and marked to the SW of the site on a map drawn by Mr Clyne (Highland Council 2010, 190098.pdf). There are also two buildings to the far NE of the hutted camp (buildings 7 and 8 noted by Thornber 2010, 14) thought to have been used for ammunition storage (Highland Council 2010). Together with a safe separation distance of perhaps 90m (100 yards), these do appear to respect the location of the range as identified by Clyne.

Clyne also suggests (pers comm 2011) that a series of rifle ranges did exist 'from the farm buildings in (the) west over (the) next two fields', and has collected a substantial quantity of ammunition from this location. He also reports that one range is still in use for 'testing stalking rifles'; an activity which might explain some of the more unusual rifle calibres identified above (though the single military 7.62 x 51 blank case is an anomaly – possibly the result of a later army exercise?). Clyne identifies the road bounding the camp to the south and running east to west as the location of the firing points for these ranges. The finding of substantial quantities of rifle-caliber ammunition in this survey as well as the geography and topography of the site would support these observations, however the distribution of finds in this instance (see Table 2 and Fig 2) does not.

If fire were directed from Clyne's suggested points toward the hillside to the south, we might expect a concentration of fired cases (.303 and .55 Boys particularly) in a linear arrangement through grid squares B5, C5, D6, E6, E7 and F7. In fact only one fired case was recovered from these squares, and it is of non-standard or civilian calibre. The preponderance of fired cases are located where, if anything, fired bullets might be expected. Note that the two rifle bullets that have been recovered do not show signs of having been fired. A concentration, not corresponding with any inferred firing point, does exist along the NE–SW field boundary (A1–A4, possibly to include B3). Even more finds were recovered outfield of this location, including a large concentration in the centre (D3, D4). We also see none of the consistency of manufacturers and dates within grid locations that we might expect from a range firing point (ammunition being fired in homogenous batches), though clearly over a period of several years, such a range of headstamps might well accumulate.

This is not as unexpected or contradictory as it may appear, as this was by its nature an unconventional military site. Live-fire practice and training exercises took place both on range (though quite possibly outside of traditional linear arrangements) and in the site environs (Allan 2007, 52; Highland Council 2010). This would no doubt result in a more widespread and varied distribution of finds than might be the case at the typical military range. The presence of blank .303 ammunition is unsurprising in an environment such as this, though at Lochailort and other special facilities, live rounds were also fired over the heads of students (Allan 2007, 44)! The disposal of fired cases and unfired rounds from both range-

based and off-camp activities is also likely to have affected the final disposition of finds. Disposal would have been an ongoing practice, and the site of the range makes sense as a focus for this, no doubt with a more formal final disposal of ammunition-related waste at the closure of the camp in 1945. The second concentration of finds, for example, might have accumulated for this reason, perhaps in the form of a shallow excavated pit.

4.2 Other finds

Grid squares W1–Z1 were located to the north of the area formerly occupied by the camp's cook house. Buildings in the area included the Sergeants' Mess and the Seargeants' latrine (Highland Council 2010, 190098.pdf). The finds from this area included a light switch and another possible electrical fitting, a radiator pipe, a bath plug hole, a doorknob and some backplates. Although not closely datable to the period in question, it seems likely that these fragments came from the structures formerly located on this part of the site.

Grid Squares A1–F7 were beyond the area occupied by the camp in an agricultural field. Most of the finds from this area were not closely datable, although some, such as the lamp base in A2 and the clasp knife in D6, may be related to the military camp. Others are clearly later (such as the coins and the cream bottle top) or much earlier (such as the Victorian brooch and the lead weights). Whilst some of the objects may have reached the field during casual firearms practice, it seems likely that the majority are related to the dispersal of rubbish via manuring, or through casual loss in th19th and 20th centuries.

5. BIBLIOGRAPHY

Allan, S 2007 *Commando Country*. Edinburgh: NMS Enterprises Ltd.

Bailey, D W 1986 *British Military Longarms 1715–1865*. London: Arms and Armour Press.

Edwards, A O 2011 *Headstamps and Markings on .303 inch British Service Ammunition*, Solo Publications, Canterbury.

Highland Council 2010 'Environment Record MHG36636'. http://her.highland.gov.uk/SingleResult.aspx?uid=MHG36636. Last accessed 22nd July 2011.

Hills, C 2011 *Lochailort, Highland: Archaeological Metal Detecting Survey*. CFA Report no. 1885, CFA Archaeology Ltd, Unpublished.

Labbett, P & Mead, P J F 1988 *303 inch: a history of the .303 cartridge in British Service.* Privately published.

Seaman, M 2006 *Special Operations Executive: a New Instrument of War*. London: Routledge.

Slee, G 2011 *Combined Ops Training Establishments. 2. HMS Lochailort*. http://www.combinedops.com/Training EST UK.htm#HMS Lochailort. Last accessed 21st July 2011.

Thornber, I 2010 *The Former Military Camp at Lochailort. A Photographic Record*. http://her.highland.gov.uk/hbsmrgatewayhighland/DataFiles/LibraryLinkFiles/208088.pdf. Last accessed 21st July 2011.

APPENDIX 1: Finds catalogue: firearm-related material, by Jonathan Ferguson

SQ	**A1**
 	1. **Description** .303 cartridge case, largely complete, primer fired and of ringed-in type. Headstamp 'R /| L), VII 194_', with the last date digit not discernible. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich.
 	2. **Description** Rimless rifle calibre cartridge case, complete, less degraded than majority of group. Struck primer of apparently pressed-in type. Headstamp reads 'RG 79 L13A1'. **Interpretation** 7.62x51mm NATO blank round (for training use) of L13A1 type ('L' for 'Land service', 'A' for 'alteration' or Mark), made at the Radway Green factory in 1979. Primer is actually crimped in place.

SQ A2	
 	1. **Description** .303 cartridge case, largely complete, degraded cuprite, with unfired ringed-in type primer. Headstamp reads 'R /|\ L 32 VII'. **Interpretation** A round of Mk.VII .303 ball ammunition manufactured by the Royal Laboratory at Woolwich in 1932 (note the earlier style of date stamp). A relatively early example for this group of finds.
 	2. **Description** .55 Boys cartridge case, truncated, with unfired ringed-in primer (cap) and clear headstamp of 'K.40 W.I.'. **Interpretation** Headstamp reads as the manufacturer, 'Kynoch', date of manufacture '1940', 'W' denoting armour piercing construction, and the mark 'I'. This is therefore a round of what is formally described as 'Cartridge, Small Arms, Armour Piercing, .55 inch, W. Mk.I', for the Boys anti-tank rifle of the Second World War.

3.

Description
A ferrous tube of tapering section, snapped in half and lightly corroded, containing a length of two-ply cord.

Interpretation
This is the weighted end of a standard 20th century British military ‘pull-through’ cleaning tool. It would have been supplied with a much greater length of cord than survives here, looped at the opposite end for a cleaning swab and designed to be inserted into the open breech and pulled through from the muzzle end of the rifle. Stored in a compartment in the butt in the case of the Lee-Enfield rifles, but also part of the cleaning kit for Bren, Lewis and Vickers machine-guns and STEN sub-machine guns. Traditionally brass, this example is of the wartime expedient steel pattern.

SQ A3	
 	1. **Description** .303 cartridge with crimped end, degraded but largely intact with some loss to crimping. Unfired primer of pressed-in type. Headstamp reads 'R /| L 1941 B V Z'. **Interpretation** This is a blank round for training purposes, in this case made using a reject case intended for loading as a nitrocellulose-propelled variant of the 'Cartridge, Incendiary, .303 inch, B Mk.V.'
 	2. **Description** .303 cartridge case with crimped end, degraded but intact. Double-struck primer of pressed-in type. Headstamp, possibly partial, reads '/| VII'. **Interpretation** This is a blank round for training purposes. The twice-struck primer likely indicates a failure to fire necessitating a second attempt (manual cocking without working the bolt). The broad arrow mark indicates manufacture at the Royal Ordnance Factory, Radway Green, Cheshire, prior to 1942 when the mark was changed.

3.

Description

.303 cartridge case, truncated, degraded cuprite, accreted/corroded at base. Headstamp not visible.

Interpretation

No further possible.

4.

Description

.303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Headstamp is ‘WRA 1941’, with the typical ‘303’ mark at the 6 o’clock position present but indistinct. Remains of a bluish-purple lacquer around primer and unfired powder grains inside case.

Interpretation

WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant; still in evidence in this instance as short rod-like grains. Purple annulus denotes ball ammunition in British service.

 	5. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in unfired primer. Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.
 	6. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in unfired primer. Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	7. **Description** .303 cartridge case, truncated, degraded cuprite, unfired pressed-in primer. No visible headstamp, but blue lacquer remaining around primer. **Interpretation** Despite lack of surviving markings, a blue primer annulus (and pressed type primer) indicates that this was a round of Mk.VII incendiary ammunition.
 	8. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in type primer. Headstamp reads '<indistinct> 1944 VIII Z'. **Interpretation** A rare (within this group of finds) instance of the Mk.VIII nitrocellulose (hence Z) loaded .303 ball round, made in 1944 by an unknown manufacturer. The Mk.VIII differed in being loaded with a new more aerodynamic boat-tailed form of pointed bullet.

 	9. **Description** .303 cartridge case, severely truncated, degraded cuprite, with staked-in primer (unfired). Partial headstamp is '<indistinct> 1941'. **Interpretation** Full headstamp would read 'WRA 1941 303', as in Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.
 	10. **Description** .303 cartridge case, truncated, degraded cuprite, with ringed-in primer exhibiting unusual firing pin mark. Headstamp is not visible. **Interpretation** Type is uncertain, though it is likely to be Mk.VII ball. Sub-rectangular firing pin mark is evidence of fire not from the Lee-Enfield infantry rifle but the Bren light machine gun, which has a firing pin tip of this section.

 	11. **Description** .303 cartridge case, truncated, degraded cuprite. Ringed-in Primer. Headstamp reads 'R /| L 19_0 VII'. **Interpretation** Year of manufacture is indistinct. The 'broad arrow' is the property mark of the War Department, and together with 'R L' denotes manufacture at the Royal Laboratory, Woolwich.
 	12. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (unfired). Partial headstamp is 'WRA 19__ 303'. **Interpretation** Date is uncertain, though likely 1941. WRA represents the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	13. **Description** .303 cartridge case, largely complete, degraded cuprite, with pressed-in type primer (fired). Headstamp reads '/| 1940 VII', though the roman numerals indicating mark are indistinct. **Interpretation** A broad arrow mark on its own indicates manufacture at the Royal Ordnance Factory at Radway Green, Cheshire.
 	14. **Description** .55 Boys cartridge case, truncated, with unfired ringed-in primer (cap) and clear headstamp of 'K.40 W.I.'. **Interpretation** Headstamp reads as the manufacturer, 'Kynoch', date of manufacture '1940', 'W' denoting armour piercing construction, and the mark 'I'. Hence this a round of what is formally described as 'Cartridge, Small Arms, Armour Piercing, .55 inch, W. Mk.I', for the Boys anti-tank rifle of the Second World War.

SQ A4	
 	1. **Description** .303 cartridge case, partly truncated, degraded cuprite, containing significant quantity of unfired cordite propellant. Unfired primer of ringed-in type. Partial headstamp is 'VII'. **Interpretation** Likely to be standard .303 Mk.VII Ball.

SQ B1	
 	1. **Description** Rimless rifle calibre cartridge case, complete, less degraded than majority of group. Struck primer ringed in place. Headstamp not visible. **Interpretation** Either an early British or overseas 7.62x51mm NATO round or a civilian .308 Winchester, which is dimensionally identical.
	2. **Description** Disc of white metal, threaded and slotted for a screwdriver. Stamped ‘WD Z C’. **Interpretation** A filler plug for a No.36 ‘Mills bomb’ hand grenade. Metal is ‘Mazak’, a British variant of Zamak, itself a zinc-aluminium alloy. This is indicated by the 'Z' stamp. ‘WDC’ represents the manufacturer of the plug, the Wolverhampton Die Casting Company. We would also expect the manufacturer of the grenade body and the year of assembly to be present on the lower half, but these if present are not visible. (This information Pers. Comm. Norman Bonney, 2011).

SQ B2	
	1. **Description** Fragment of curved ferrous metal strip with decorative swollen and lobated terminal. Presumably that described in initial report as 'Fe object (decorative)'. **Interpretation** This is the 'tail' portion of a sideplate, a decorative strip of (in this case cast) metal securing the lock of a firearm from the opposite side (in fact it appears upside-down in the photograph left). It has fractured at the point of the rearmost 'sidenail' (securing bolt). It conforms to no formal military pattern, but as with the 1738 Pattern Land Service pistol and other arms, is directly inspired by the plate in use on the Long Land Pattern musket and especially its pre-pattern antecedents c1715, which used iron furniture. It is a close match in form and size to that fitted to a pistol in the Royal Armouries collection date 1742 and thought to have been produced for the light cavalry. Though we would expect copper alloy to be used, as indeed is the case in the example referred to, patterns for military pistols seem to have been rather loose at this time, with some discretion available to the colonel of a regiment as to how his men would be equipped. There is also the possibility of a privately purchased pistol, though we might expect an officer to opt for something a little more refined. It is not possible to discount a commercially-made pistol of similar type, however.

SQ B3	
 	1. **Description** .55 Boys cartridge case, truncated, with unfired ringed-in primer (cap) and clear headstamp of 'K.40 W.I.'. **Interpretation** Headstamp reads as the manufacturer, 'Kynoch', date of manufacture '1940', 'W' denoting armour piercing construction, and the mark 'I'. Hence this a round of what is formally described as 'Cartridge, Small Arms, Armour Piercing, .55 inch, W. Mk.I', for the Boys anti-tank rifle of the Second World War.
 	2. **Description** As item 1. i.e. .55 Boys cartridge case, truncated, with unfired ringed-in cap (primer) and headstamp of 'K.40 W.I.'. **Interpretation** Headstamp reads as the manufacturer, 'Kynoch', date of manufacture '1940', 'W' denoting armour piercing construction, and the mark 'I'. Hence this is a round of what is formally described as 'Cartridge, Small Arms, Armour Piercing, .55 inch, W. Mk.I', for the Boys anti-tank rifle of the Second World War.

 	3. **Description** Rimless Berdan-primed case, intact but corroded, for rifle calibre ammunition. Headstamp is 'KYNOCH 6.5m/m MS'. **Interpretation** Headstamp reads as Kynoch-made 6.5mm Mannlicher-Schönauer, one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued and in any case marked with a different Kynoch headstamp. This is therefore civilian hunting/sporting, or unofficially military in origin, e.g. a hunting or target type rifle belonging to an officer.
 	4. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	5. **Description** Rimless bottlenecked pistol cartridge case, intact but degraded. Primer struck, of pressed-in type. No visible headstamp. 23.20mm o/a length, 9.23mm in diameter, 7.56mm diameter at neck, 1.54mm extractor groove width, 0.99mm rim width. **Interpretation** Based upon form and dimensions, this is a 7.62x25mm ammunition for the Tokarev TT33 self-loading pistol of 1930, the standard Soviet military pistol of the Second World War. One might speculate on informal trials of an allied weapon system, or post-war firing of a wartime arm brought back by military personnel.

SQ C1	
 	1. **Description** Rimless Berdan-primed (pressed-in primer) case for rifle calibre ammunition, intact but lightly corroded and flattened proximally. Headstamp is 'IMPERIAL 6.5 M Sch.'. **Interpretation** Headstamp clearly identifies as 6.5mm Mannlicher-Schönauer manufactured by Imperial, the commercial arm of Canadian Industries Ltd. (later Industries Valcartier Inc.) of Montreal, Quebec. Date is 1940s – 1970s. 6.5mm MS was one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued. This is civilian or unofficially military in origin, likely a hunting or target type rifle belonging to an officer.
 	2. **Description** Rimless rifle calibre cartridge case, largely complete, degraded cuprite with green patch of corrosion. Ringed-in primer (fired). Headstamp reads 'NORMA .270 W'. **Interpretation** Headstamp reveals this to be .270 Winchester ammunition, a design of the U.S.-based Winchester Repeating Arms company. Manufacturer Norma were (and are) a Swedish company founded in 1902. This is one of several examples of commercial hunting/sporting ammunition from this group of finds, and was a common deer-hunting calibre in the 20th century. Date unknown.

3.

Description
.55 Boys cartridge case, truncated, with unfired ringed-in primer (cap) and clear headstamp of ‘K.40 W.I.’.

Interpretation
Headstamp reads as the manufacturer, ‘Kynoch’, date of manufacture ‘1940’, ‘W’ denoting armour piercing construction, and the mark ‘I’. This is therefore a round of what is formally described as ‘Cartridge, Small Arms, Armour Piercing, .55 inch, W. Mk.I’, for the Boys anti-tank rifle of the Second World War.

SQ C2	
	1. **Description** 7.9mm or .311 inch pointed or 'spitzer' type full metal jacketed bullet with groove (cannelure) towards the base. The jacket has a black layer that has largely given way to a ferrous metal corrosion product underneath. **Interpretation** This is the standard Mk.VII .303 ball bullet, consisting of a lead antimony core behind an aluminium nose, all enveloped (save the base) in a jacket of what in this case is either cupro-nickel clad steel or gilding metal clad steel. The position of the cannelure shows that this is early production (and therefore more likely cupro-nickel clad steel). As there is no evidence of rifling marks, the bullet has been pulled or otherwise detached from its case rather than been fired.
 	2. **Description** .303 cartridge case, truncated, degraded cuprite, with ringed-in primer exhibiting unusual sub-rectangular firing pin mark. Headstamp is not visible. **Interpretation** Type is likely to be Mk.VII ball. Sub-rectangular firing pin mark is evidence of fire not from the Lee-Enfield infantry rifle but the Bren light machine gun, which has a firing pin tip of this section.

3.

Description
Rimless rifle-calibre cartridge case, intact but degraded to cuprite. Remains of purple lacquer around struck primer. Headstamp is ‘KYNOCH 7mm’.

Interpretation
Headstamp denotes 7x57mm Mauser (aka 7.92mm Mauser) ammunition made by Kynoch. This was the standard Imperial and Nazi German infantry rifle and machine-gun round of both world wars, though this is domestic UK commercial production of what was also a popular sporting cartridge. As such it is likely evidence of civilian hunting/sporting use or similar unofficial military activity e.g. privately-owned hunting rifle.

Primer appears pressed in place but is likely crimped.

SQ C5

1.

Description
Stamped ferrous metal strip upturned and pointed at one end and with central spike projection and concave depression to rear.

Interpretation
Unknown vane-like component, possibly from a firearm or artillery piece sighting system (see object F4–2 for another example).

SQ D1	
 	1. **Description** Rimless case, intact but corroded, for rifle calibre ammunition. 54mm in length, 11.2mm diameter, 7.8mm neck diameter. Headstamp not visible. **Interpretation** Based upon dimensions this is from a round of 6.5mm Mannlicher-Schönauer, one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued. This is therefore civilian hunting/sporting or unofficially military in origin, e.g. a hunting or target type rifle belonging to an officer.

SQ D2	
 	1. **Description** Rimless Berdan-primed case, intact but corroded, for rifle calibre ammunition. Headstamp is 'KYNOCH 6.5m/m MS'. **Interpretation** Headstamp reads as Kynoch-made 6.5mm Mannlicher-Schönauer, one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued and in any case marked with a different Kynoch headstamp. This is therefore civilian hunting/sporting, or unofficially military in origin, e.g. a hunting or target type rifle belonging to an officer.
 	2. **Description** Rimless Berdan-primed case, intact but corroded, for rifle calibre ammunition. Headstamp is 'KYNOCH 6.5m/m MS'. **Interpretation** Headstamp reads as Kynoch-made 6.5mm Mannlicher-Schönauer, one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued and in any case marked with a different Kynoch headstamp. This is therefore civilian hunting/sporting, or unofficially military in origin, e.g. a hunting or target type rifle belonging to an officer.

SQ D3	
 	1. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.
 	2. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

3.

Description
.303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Partial headstamp is ‘WRA’.

Interpretation
WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

4.

Description
.303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads ‘R /|\ L 1941 VII’.

Interpretation
Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.

 	5. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1940 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1940.
 	6. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	7. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired) bearing unusual sub-rectangular firing pin mark. Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant. In this case the round has been fired in a Bren light machine gun rather than the Lee-Enfield rifle or other weapon system.
 	8. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Partial headstamp is 'WRA'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	9. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Partial headstamp is 'WRA 1941'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant. This round manufactured 1941.
 	10. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Partial headstamp reads 'R VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich, date unknown.

 	11. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1941 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.
 	12. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1944 (tentative) VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich.

 	13. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1941 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.
 	14. **Description** .303 cartridge case, partially truncated, degraded cuprite, fired ringed-in primer. Headstamp illegible save for '303' at 6 o'clock position. Remains of purple lacquer around primer. **Interpretation** Uncertain, but annulus suggests Mk.VII ball or equivalent. '303' mark suggests U.S. contract or Lend-Lease production, as per objects with WRA or WCC headstamps.

 	15. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Partial headstamp is illegible. Ball powder remains adhering to inside. **Interpretation** Staked primer denotes U.S. production by either Winchester Repeating Arms Company or the Western Cartridge Company. Round would be equivalent to standard VII ball, but with nitrocellulose propellant, as is apparent in this case. This round manufactured 1941.
 	16. **Description** Rimless case, intact but corroded, for rifle calibre ammunition. 54mm in length, 11.2mm diameter, 7.8mm neck diameter. Headstamp not visible but purple lacquer remaining around fired primer. **Interpretation** Based upon dimensions this is from a round of 6.5mm Mannlicher-Schönauer, one of the foreign calibres made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 6.5mm Mk.I' to design IDW 3411, but never issued. This is therefore civilian hunting/sporting or unofficially military in origin, e.g. a hunting or target type rifle belonging to an officer.

17.

Description
7.9mm or .311 inch pointed or ‘spitzer’ type full metal jacketed bullet with groove (cannelure) towards the base. The jacket has traces of a black layer that has given way to a ferrous metal corrosion product underneath. Small whitish spheres remain adhering to base of bullet.

Interpretation
This is the standard Mk.VII .303 ball bullet, consisting of a lead antimony core behind an aluminium nose, all enveloped (save the base) in a jacket of what in this case is either cupro-nickel clad steel or gilding metal clad steel. The position of the cannelure shows that this is early production (and therefore more likely cupro-nickel clad steel).

As there is no evidence of rifling marks, the bullet has been pulled or otherwise detached from its case rather than been fired. Spheres are likely to be grains of nitrocelloluse powder.

SQ D4	
 	1. **Description** .303 cartridge case, truncated, degraded cuprite, with double-struck primer of pressed-in type. Partial headstamp is 'VII'. **Interpretation** Mk.VII ammunition, type uncertain but possibly blank based upon primer. The twice-struck primer likely indicates a failure to fire necessitating a second attempt (manual cocking without working the bolt).
 	2. **Description** .303 cartridge case, truncated, degraded cuprite, two patches of active corrosion. Staked primer (fired). Headstamp is 'WRA 1941 303'. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	3. **Description** .303 cartridge case, truncated, degraded cuprite, with staked primer (fired). Headstamp is ‘WRA 1941 303’. **Interpretation** WRA is the Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ball ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.
 	4. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer. Partial headstamp is ‘1941 VII’. **Interpretation** As per headstamp, Mk.VII ammunition. Ringed primers, intended to more securely hold the cap in place, are found on all .303 ball rounds post-1915, but also some other types, making definitive ID impossible.

 	5. **Description** Rimmed rifle calibre cartridge case, truncated, degraded cuprite, fired ringed-in primer. No visible headstamp. Rim diameter is 14.5mm. **Interpretation** Not British service ammunition. Dimensions and form match Soviet 7.62x54R ammunition introduced in 1891 for the Mosin-Nagant rifle and used through both world wars and to date. This round was made in Britain for allied armies in the First World War and allocated service nomenclature of 'Cartridge, SA Ball, 7.62mm Mk.I' to design IDW 3402, but never issued. Again, informal testing of allied weapons using commercially or otherwise procured ammunition is one possibility for a find of this sort, depending upon any available dating evidence.
 	6. **Description** Apparently rimmed rifle calibre cartridge case, truncated, extremely degraded cuprite, fired pressed-in primer. No visible headstamp. **Interpretation** Unidentified, but likely to be a 'big bore' commercial hunting/sporting round such as Kynoch's .450 Nitro. This round was the basis of a 1930s military armour-piercing round (.450/303), used during and after the Second World War to test types of armour plate. This is itself a possibility given the context (special operations occupation of site, finds of Boys .55, and piece of armour plate recovered from environs in past), but impossible to confirm.

 	7. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. No visible headstamp, but purple lacquer remaining surrounding primer. **Interpretation** Despite a lack of surviving markings, a purple primer annulus denotes Mk.VII ball ammunition manufactured post-1920, and appears to have survived in only some examples within this group of finds.
 	8. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1941 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.

 	9. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer with offset firing pin mark. Headstamp reads 'R /| L 1941 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.
 	10. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). Partial headstamp is 'W'. **Interpretation** Full headstamp would read 'WRA' as in Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	11. **Description** .303 cartridge case, severely truncated, degraded cuprite, two patches of active corrosion. Struck primer of ringed-in type. Partial headstamp is 'VII'. **Interpretation** Likely to be standard .303 Mk.VII Ball.
 	12. **Description** .303 cartridge case, truncated, degraded cuprite, containing significant quantity of unfired cordite propellant. Unfired primer of ringed-in type. Partial headstamp is 'VII'. **Interpretation** Likely to be standard .303 Mk.VII Ball.

	
 	13. **Description** .303 cartridge case, base only, degraded cuprite with green corrosion patches. Staked-in primer (fired). Partial headstamp is 'WRA 19_1 _03'. **Interpretation** Full headstamp would read 'WRA 1941 303' as in Winchester Repeating Arms Company, one of the U.S. companies to supply .303 ammunition to Britain and the Commonwealth in the Second World War.. Round is equivalent to standard VII ball, but with nitrocellulose propellant.

 	14. **Description** .303 cartridge case, truncated, degraded cuprite. Unfired primer of ringed-in type. Partial headstamp is 'VII'. **Interpretation** Likely to be standard .303 Mk.VII Ball.

SQ D5	
 	1. **Description** .303 rifle cartridge case, truncated, degraded to cuprite. Primer ringed in place. Headstamp illegible. **Interpretation** Likely Mk.VII ball.

SQ E1	
 	1. **Description** .303 rifle cartridge case, degraded to cuprite and severely corroded. Primer ringed in place. Headstamp illegible. **Interpretation** Likely Mk.VII ball.
 	2. **Description** .303 cartridge case, intact though some loss to neck area. Struck primer of ringed-in type. Headstamp '/|\ B VI'. **Interpretation** Headstamp denotes incendiary ammunition, Mark VI, with a standard cordite propellant loading, produced from 1939 to 1942 in this case at the Royal Laboratory, Woolwich. Note however that factory reject cases with various headstamps were used to make blank ammunition.

3.

Description
.303 cartridge case, truncated, degraded cuprite, with ringed-in primer exhibiting unusual firing pin mark. Headstamp is not visible.

Interpretation
Type is uncertain, though it is likely to be Mk.VII ball. Sub-rectangular firing pin mark is evidence of fire not from the Lee-Enfield infantry rifle but the Bren light machine gun, which has a firing pin tip of this section.

SQ E3	
 	1. **Description** .303 cartridge case, severely truncated, degraded cuprite. Struck primer of ringed-in type. No visible headstamp. **Interpretation** Likely to be standard .303 Mk.VII Ball.
 	2. **Description** .303 cartridge case, truncated, degraded cuprite, with staked-in primer (fired). No visible headstamp. **Interpretation** Headstamp would likely read ‘WRA’ as in Winchester Repeating Arms Company or possibly WCC for Western Cartridge Company. Round would be equivalent to standard VII ball, but with nitrocellulose propellant.

3.

Description
Rimless rifle calibre cartridge case, partly truncated, degraded cuprite with surviving finish on primer. Ringed-in primer (fired). Headstamp reads 'NORMA .270 W'.

Interpretation
Headstamp reveals this to be .270 Winchester ammunition, a design of the U.S.-based Winchester Repeating Arms company. Manufacturer Norma were (and are) a Swedish company founded in 1902. This is one of several examples of commercial hunting/sporting ammunition from this group of finds, and was a common deer-hunting calibre in the 20th century. Date unknown. Primer finish is likely nickel plate, a common anti-corrosive measure.

SQ E4	
 	1. **Description** .303 cartridge case, severely truncated, degraded cuprite. Struck primer of ringed-in type. No apparent headstamp. **Interpretation** Likely to be standard .303 Mk.VII Ball.
 	2. **Description** .303 cartridge case, truncated, degraded cuprite. Struck primer of ringed-in type. No apparent headstamp. **Interpretation** Likely to be standard .303 Mk.VII Ball.

 	3. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in primer. Headstamp reads 'R /| L 1941 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1941.

SQ F1	
 	1. **Description** .303 cartridge, truncated, degraded and consisting of cuprite corrosion product. Struck primer (cap in British service parlance) of pressed-in type. Too degraded for definitive headstamp reading. Appears to read ‘DA’. **Interpretation** DA, if correct, would signify the Dominion Arsenal, Quebec Canada, which used this stamp on .303 ammunition prior to 1940 and post-1945 only. Mark cannot be definitively determined but is likely Mk.VII.
 	2. **Description** .303 cartridge case, intact though some loss to neck area. Struck primer of (apparently) ringed-in type. Headstamp ‘B VI Z’. **Interpretation** Headstamp denotes incendiary ammunition, Mark VI, with a nitrocellulose propellant loading, produced from 1939 to 1942. Note however that factory reject cases with various headstamps were used to make blank ammunition.

 	3. **Description** As #2, save total lack of visible markings, i.e. a .303 cartridge case, intact though some loss to neck area. Struck primer of pressed-in type. Headstamp 'B VI Z'. **Interpretation** Headstamp denotes incendiary ammunition, Mark VI, with a nitrocellulose propellant loading, produced from 1939 to 1942. Note however that factory reject cases with various headstamps were used to make blank ammunition.
 	4. **Description** .303 cartridge case, truncated, slightly less degraded, retaining some malachite. Struck primer of pressed-in type. Very faint partial headstamp of vertically arranged arrow and '1941'. **Interpretation** 1941 represents the year of manufacture, whilst the 'broad arrow' is the property mark of the War Department. This is a partial stamp, but nonetheless confirms manufacture at the Royal Ordnance Factory, Radway Green, prior to 1942 when the mark was changed.

 	5. **Description** .303 cartridge case, truncated, primer unfired and apparently of pressed-in type. Headstamp consists of barely discernable broad arrow mark (henceforth noted as /|\), letter 'R', and 'VII'. **Interpretation** A letter 'R' on its own could indicate a blank cartridge intended for rifle grenade use. It is not possible to rule out a partial stamp for a standard Mk.VII ball round made at the Royal Laboratory between 1910 and 1954.
  	6. **Description** Cardboard disc 7.21mm in diameter, delaminating. **Interpretation** This appears to be the standard glazeboard disc fitted to all .303 ball ammunition.

7.

Description
Unjacketed lead bullet bullet weighing 84 grains (5.5g), 9.07mm in diameter and 15mm in length. It bears six rifling marks which describe a ‘right-hand’ twist.

Interpretation
Without doubt a bullet fired from a round of .38 calibre pistol ammunition, but the specific cartridge and weapon cannot be determined. The closest match is the .38 Smith & Wesson revolver cartridge, which features a similarly elongated, tapered profile. However, the pattern of rifling does not correspond with the standard-issue Webley Mk.IV and Enfield No.2 Mk.1 service revolvers, which have seven-groove rifling, nor the five groove bore of the Smith & Wesson Model 10 revolver, acquired in numbers from the United States under the Lend-Lease programme.

In addition, the the .38 S&W in British service was loaded with a much heavier copper-jacketed bullet of 200 grains, and even U.S. loadings are over 100gr in weight.

This is therefore commercial or hand-load ammunition for use in a civilian or private-purchase military revolver (see also non-service rifle ammunition listed below).

SQ F4	
 	**Description** .303 cartridge case, truncated, degraded cuprite. Fired primer of ringed-in type. No headstamp visible. **Interpretation** Likely to be standard .303 Mk.VII Ball.

2.

Description
Stamped ferrous metal strip with central spike projection and concave depression to rear.

Interpretation
Unknown vane-like component, possibly from a firearm or artillery piece sighting system (see object C5-1 for more complete example).

3.

Description
Stamped ferrous metal strip with, bent at 90deg to form a handle.

Interpretation
Unidentified rotary latch of some kind, possibly small arms or artillery-related.

SQ F6	
 	1. **Description** Spherical lead ball 18mm in diameter. Flat spot on one side, apparent casting flaw on diametric opposite spot. **Interpretation** 18mm = .71 in diameter i.e. standard size for use in British military muskets of .75 inch calibre. Calibre or 'bore' was variable, but .71 is most likely to date from the period 1793 – c1855. Most likely are the India Pattern and Pattern 1842 muskets. Location of flat post and casting flaw suggest that flattening is not result of loading, but rather being dropped.

SQ Z2	
 	1. **Description** .303 cartridge case, partially truncated, degraded cuprite, fired ringed-in type primer. Headstamp reads '__44 VII'. **Interpretation** Mk.VII ammunition, likely ball, made by unknown manufacturer in 1944.
 	2. **Description** .303 cartridge case, partially truncated, degraded cuprite, fired ringed-in type primer. Headstamp illegible. **Interpretation** Likely Mk.VII .303 ball.

 	3. **Description** .303 cartridge with crimped (though opened out) end, degraded but largely intact. Unfired primer of pressed-in type. Partial headstamp reads 'Z'. **Interpretation** This is a blank round for training purposes originally charged with nitrocellulose propellant, and/or made using reject case (with therefore spurious headstamp).
	4. **Description** Fragment of .303 rifle cartridge case, degraded to cuprite with patch of green corrosion, head missing. **Interpretation** No further possible.

 	5. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in type primer. Headstamp reads 'SR 43 VIIIZ'. **Interpretation** Mk.VIII nitrocellulose (hence Z) loaded .303 ball round, made in 1943 at Spennymoor, Co. Durham. The Mk.VIII differed in being loaded with a new more aerodynamic boat-tailed form of pointed bullet.
 	6. **Description** .303 cartridge case, truncated, degraded cuprite, fired ringed-in type primer. Headstamp reads 'SR 44 VIIIZ'. **Interpretation** Mk.VIII nitrocellulose (hence Z) loaded .303 ball round, made in 1944 at Spennymoor, Co. Durham. The Mk.VIII differed in being loaded with a new more aerodynamic boat-tailed form of pointed bullet.

 	7. **Description** .303 cartridge case, truncated, degraded cuprite, fired pressed-in primer. Headstamp reads 'R /|\ L 1944 VII'. **Interpretation** Headstamp indicates .303 Mk.VII Ball manufactured at the Royal Laboratory, Woolwich in 1944.
 	8. **Description** Fragment of .303 rifle cartridge case, degraded to cuprite. Primer ringed in place. Headstamp illegible. **Interpretation** Likely Mk.VII ball.

APPENDIX 2: Finds catalogue: other material

Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
A1	Pb	IW	Sheet	1	11	rectilinear sheet offcut, folded	36	25	1		pmed-mod
A1	Fe	MF	Terminal	1	454	Square section tapered terminal, possibly from fence?	202	33	35		pmed-mod
A1	Pb?	UN		1	4	disc with curving edges - cap?				31	mod
A2	Fe	MF	Bolt/pin	1	41	circular section, screw thread at end, domed head	120				mod
A2	Ae	MF	lamp base	1	29	Large stamped and ribbed ferrous metal cap marked 'THE EFESCA BOX', 'PULL TO REMOVE' and 'HITEST CABLES'. Number of references to either found via Google Books search, dates for 'Efesca' lighting appliances e.g. lanterns from 1920s to 1950s. Only reference to both is in Light and lighting and environmental design, Vol.36, Illuminating Engineering Society, 1943.				75	mod
A2	Fe	MF	Rove	1	37	square sheet with circular hole	50	50	1.5		mod
A2	Al	UN	Sheet	2	14	frags					mod
A2	Pb?	UN		1	10	flattened sheet tube					mod
A2	Ae	UN		1	37	end of cylinder/pipe				33	mod
A3	Ae	DA	belt slide	1	1	thin sheet metal belt slide	37	15	0.5		mod
A3	Fe	EO	hoof scraper	1	46	hook with loop handle (incomplete)	147	47	5		pmed-mod
A3	Ae	MF	cap	1	19	cylindrical with stepped rim and flat end with central pimple	31			23	mod
A3	Fe	MF	peg?	1	212	L-shaped, circular section rod and short terminal	205	48		15	mod
A3	Fe	MF	ring	1	431	large, thick ring with 5 holes		10	24	110	mod
A4	Ae	DA	buckle	1	1	subrectangular, small holes for central bar	28	20	1		mod
A4	Ae/leather	DA	buckle	1	4	stamped sheet buckle with remains of strap on central bar	32	25	2		mod
A4	Fe	MF		1	381	corner fitting/foot with 3 rivet holes, thick, tapered, wear at ends	110+	55	42		mod
A4	Pb?	UN		1	2	partial disc, as A1				28+	mod
B1	Ae	CTJ	penny	1	9	Eliz II old penny				30	1964
B1	Pb	IW	offcut	1	25	roughly oval frag, folded	33	36	5		
B1	Fe	UN		1	570	large flat fragment with rounded edges	130	95	25		mod
B2	Ae	BS	light fitting	1	53	bayonet lamp fitting	44				mod
B2	Fe	EO	horseshoe	1	479		142	140	15		mod
B2	Pb	IW	strip & melt	2	175	strip offcut and small melt frag					

Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
B2	Pb	UN		1	192	thick tapered fragment with lozenge-shaped section	73+	53+	16		
B2	Ae?	UN		1	28	cylinder with screw-fitting caps at each end - JF suggests poss fuse?	55			14	mod
B3	Ae	CTJ	halfpenny	1	1	Eliz II halfpenny					1971
B3	Ae	DA	button	1	1	sheet button with 4 central holes, stamped KENWORTH				17	mod
B3	Ae	HO	key	1	6	small key with oval head and small tripartite bit	39	16	11	5	mod
B3	Pb	IW	strip & melt	3	103	2 tapered strips & melt frag					
B3	Fe	MF	peg?	1	39	similar to A3 L-shaped object but much shorter	65	40	15		mod
B3	Ae	MF	plate	1	32	fragment of handle or lock plate, screw holes in corner	41+	35	2		pmed/mod
B3	Fe	MF	rove	1	102	square thick sheet with off-centre square hole	58	53	6		pmed/mod
B3	Fe	MF	rove	1	135	as above, but with sheet fitting through hole	60	52	5		pmed/mod
B3	Fe	MF		3	109	rectangular sheet fittings					
B3	Fe	MF		1	19	wire wheel spoke from car or motorcycle	c.120			10	mod
B3	Ae/Fe	PO	watch	1	11	backplate & internal cogs				30	mod
B3	Fe	UN		1	845	solid rectangular block with U-shaped groove close to one end	118	70	16		mod
B3	Fe	UN		1	283	corroded machinery part?					mod
B3	Pb?	UN		1	38	waste frag with groove?					mod
B4	Fe	BS	nail	1	25	rectangular-section	120				19/20
B4	Pb	BS	pipe	1	272	short cylinder	81			29	pmed
B4	Fe	EO	horseshoe	1	442		160	158	7		pmed
B4	Fe	HO	spoon	1	13	bowl of serving spoon	88+	50			mod
B4	Pb	IW	waste	1	11						pmed
B4	Pb	IW	waste	1	13	melt					mod
B4	Fe	UN		1	28	subrectangular sheet frag	69	20	4		pmed/mod
B5	Fe	MF		1	41	short thick tapered object with circular pierced terminal	64	15	15		mod
B5	Fe	UN		1	17	frag of thick curving wire			8		
C1	Ae	MF		1	48	bent cylinder with circular end - poss gas burner fitting (JF)					mod
C1	Fe	UN		1	224	roughly rectangular solid block	60	35	27		mod
C2	Fe	BS	nail?	1	14	shaft frag					
C2	Fe	BS	pipe	1	358	frag of cast iron water pipe					mod
C2	Ae	CTJ	two shilling	1	9	Geo VI two shilling				28	1948

Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
C2	Ae	EO	buckle	1	26	oval with square hole and raised central bar	59	51			
C2	Fe	EO	horseshoe	1	141	one side of horseshoe					pmed/mod
C2	Fe	MF	binding ring	1	92	thin strap, handmade			21	62	pmed?
C2	Fe/ceramic	MF		1	13	early electrical fitting with nail through centre					mod
C2	Ae	MF		1	1	small domed hollow ?cover, poss button?			9	14	
C2	Fe	UN		1	105	solid roughly spherical object				34	pmed/mod
C2	Fe	UN		1	52	solid lump					
C2	Fe	UN		1	11	short solid cylinder, bent, tapered at each end	56			12	
C2	Ae	UN		1	4	oval loop, poss scissor frag?	30+	22	5		
C3	Fe	BS	nail	2	38	nails					
C3	Ae	DA	buckle	1	13	D-shaped buckle, poss incomplete (JF says poss camp-bed buckle?)	45	35	4		mod
C3	Fe	MF		1	10	wheel spoke, bent	c.92				
C3	Fe	UN		1	126	thick curving frag, abraded					
C4	Ag	DA	brooch	1	1	fragment of sheet annular brooch with punched dec - Scottish type Victorian brooch					M.19th c.
C4	Ae	DA	button	1	1	small sheet button with 4 holes (central area lost)				13	mod
C4	Pb	MF		1	28	bent strip with 5 nail holes close to long edge					
C4	Ae	MF		1	1	small rivet/stud					mod
C4	Ae	MF		1	2	rectangular cut sheet with circular piece at one corner	33	28			mod
C4	Fe	UN		1	158	sheet frag, slightly curved	156+	40+	5		
C4	Pb	UN		1	5	folded & flattened frag of sheet					
C5	Fe	MF	washer	1	32	disc with central circular hole			4	40	mod
D1	Pb	HO	spoon	1	30	pewter spoon bowl, fragmentary	70+	45+			
D2	Fe	BS	bolt	1	106	square head	81				mod
D2	Ae	MF	eyelet	1	1	eyelet for canvas/tarpaulin				26	mod
D2	Fe	MF		1	93	short cylinder with flat disc plate at one end	33	27		40	mod
D2	Fe	UN		1	1592	thick solid bar with sub-rectangular section	160+	60	28		
D2	Fe	UN		1	78	tear-shaped object (but edges broken, may originally have been a different shape)	75+	48+	7+		
D3	Ae	DA	buckle	1	8	D-shaped buckle	34	33	2		mod
D3	Ae	MF	pulley	1	10	small pulley wheel in frame	34	14	12		mod
D3	Ae?	MF		1	13	thin moulded cap with thread, bent					mod
D3	Ae	MF		1	88	thick rectangular plate with tabs on one side	108	28	3		mod
D3	Pb	UN		1	22	tube with sub-rectangular section					mod
D4	Fe	BS	bolt	1	80	bolt with hexagonal head	79				mod

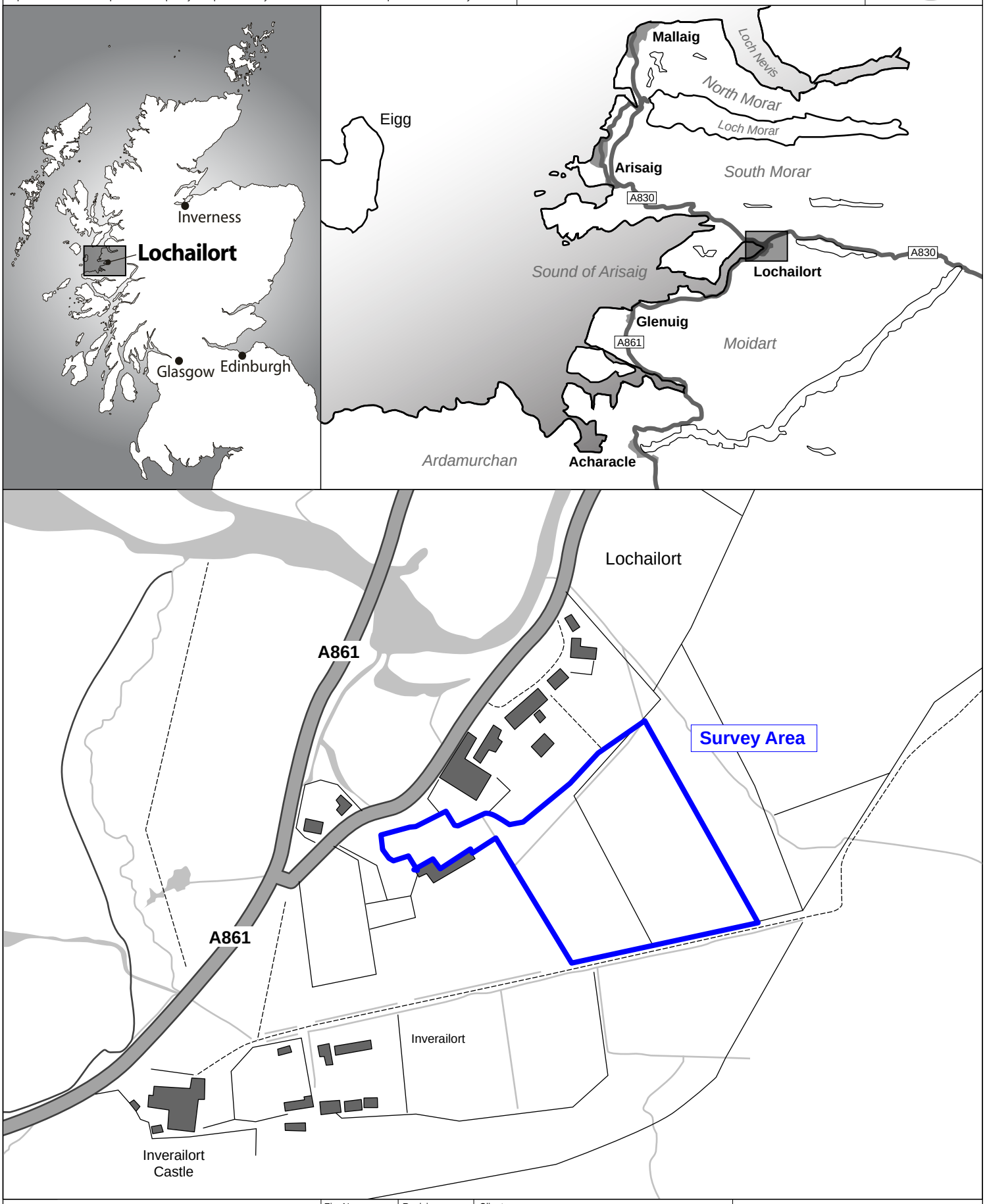
Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
D4	Fe	BS	nail	1	4						mod
D4	Al	HO	bottle cap	1	2	milk bottle top labelled 'Farmer's Wife Double Devon Cream'				45	1960s
D4	Pb	IW	sheet	2	31	cut sheet frags					mod
D4	Fe	MF		1	33	square section rod with spherical off-centre terminal	84	11	8		mod
D4	Fe	UN		1	39	curving sheet frag, laminated					
D4	Fe	UN		1	246	curved object with flange, poss horseshoe?					mod
D5	Ae	MF	finial	1	64	bell-shaped, poss from clock case?					mod
D5	Pb	MF		2	223	rectangular plates, one with 3 holes					
D5	Pb	WM	weight?	1	18	cylindrical object, hollowed out at one end, cross on other	13			13	
D6	Pb	BS	pipe	1	340	length of pipe, one end cut into 3 and folded back					
D6	Pb	IW	melt	2	41						
D6	Fe	MF	rove	2	95	square sheet roves with circular holes	49	49	2		mod
D6	Fe	MF	strap	1	70	end of strap with rivets	85+	36	6		pmed/mod
D6	Fe	MF	washer	1	13	disc with circular hole				36	mod
D6	Fe	MF	washer	6	207	circular with variable hole sizes & positions				51	mod
D6	Fe	MF		1	47	same as roves but without hole	49	49	2		mod
D6	Fe	PO	knife	1	94	Clasp knife with stainless steel blade plus extra saw-type blade, ferrous metal fittings and possibly composite grip panels. No visible markings.					mod
D6	Fe	UN		1	105	strip with triangular section	100+	31	10		pmed/mod
D6	Ae	UN		1	2	fragment of sheet object/cover	28	15+	8		
E2	Fe	BS	nail	1	8						
E2	Pb	IW	sheet	1	161	rectangular sheet offcut, folded					
E2	Fe	MF	wire	2	14	1 straight, poss long nail?					
E2	Fe	UN	bar	1	120	rectangular with triangular section	140	22	14		mod
E3	Al	HO	bottle cap	1	2	….SE DISTILLERS horse or unicorn standing left				24	mod
E3	Pb	IW	sheet	1	69	rolled sheet offcut					
E4	Pb	IW		2	20	semi-circular cut sheet & ?melt					
E4	Fe	MF		1	15	oval plate with hole - backplate or keyhole plate?	50	35	2		mod
E5	Pb	BS	pipe	1	116	short segment, one end squashed	53	27	23		
E5	Ae	DA	button	1	4	button back, loop lost				20	pmed
E5	Al/rubber	HO	brush	1	29	small brush with screw fitting, for vacuum cleaner?				33	mod
E5	Ae	HO	suspension ring	1	3	large wire ?curtain ring				38	mod

Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
E5	Ae	MF	eyelet	1	4	canvas/tarp eyelet with cover				25	mod
E5	Al	UN		1	5	short tube with closed end	34				mod
E6	Pb	IW	ingot?	1	35	strip with wide end					
E6	Pb	IW	sheet	1	22	roughly square offcut					
E6	Fe	MF	washer	2	98	2 circular washers				52	mod
E6	Pb	WM	weight	1	342	pyramidal weight, pierced	48	40	36		pmed
E7	Fe	MF	washer	1	46	circular washer				50	mod
F1	Fe	MF	washer	1	83	circular washer, heavily corroded				54	mod
F1	Fe	MF		1	332	broad flat plate with 2+ rivets, heavily corroded	120	60			mod
F1	Fe	UN		1	249	slightly curving thick fragment					
F1	Fe	UN		1	813	thick rod with T-shaped end - bolt or pin?	200			26	mod
F2	Pb	IW	sheet	3	180	offcut frags and rectangular piece with central hole					
F2	Ae	MF		1	18	hollow ring, identified as poss bearing seal by JF					mod
F2	Fe	MF		1	80	lozenge-shaped plate with elongated pierced tag, slightly curving	97	65	5		mod
F2	Al	MF		1	4	part of ring (?dial frame) with rivets					mod
F3	Ae/ceramic	BS	window latch	1	91	swivel latch with ceramic knob					mod
F3	Pb	IW	sheet	1	362	offcut, edges curled over					
F3	Pb?	MF		1	27	electrical fitting?					mod
F4	Fe	BS	bolt	1	187	hexagonal head with red paint	83				mod
F4	Ae/Pb	MF	Terminal	1	232	terminal or knob, brass base and lead top			44	40	mod
F5	Ae	MF	handle	1	281	large loop handle with figure-of-eight attachment terminals with 2 holes each - angle suggests it was attached to something with sloping sides, tin bath or similar?					mod
F5	Fe	UN		1	51	short tapered object, rectangular section	75	19	10		
F6	Pb	MF	sheet	1	276	folded square sheet with nail holes					
F6	Ae	MF		1	5	fragment of sheet object/cover, same as D6	28	17	8		mod
F6	Ae	UN		1	17	shaped thin sheet with thicker scythe-shaped piece attached	68	18	10		mod
F7	Fe	MF	washer	2	108	circular washers				49, 54	mod
W1	Ae	BS	light switch	1	29	mechanism without cover, white paint on switch					mod
W1	Ae	CTJ	twopence	1	7	Eliz II 2p				25	1979
W1	Ae	MF	backplate?	1	45	circular plate for handle? 3 screw holes and central				53	mod

Square	Material	Category	Find type	No	Wt (g)	Description	L	W	H	D	Spotdate
						hole					
W1	Ae	MF	eyelet	1	8	canvas/tarp eyelet					mod
W1	Ae	MF		1	10	rectangular with raised sides, countersunk holes at each end and 3 other holes in centre - latch?	50	13	5		mod
W2	Pb	IW	sheet	2	44	offcuts, tapered					
W2	Fe	MF		1	631	large disc with raised domed centre				132	mod
W2	Al	MF		1	15	sheet frag with holes					mod
X2	Ae	BS	pipe	1	88	radiator pipe with valve/nut					mod
X2	Ae	BS	plughole	1	173	bath plug hole surround?					mod
X2	Fe/Ae	HO	doorknob	1	167	round knob and shaft					mod
X2	Ae	MF	backplate?	1	25	circular with 2 screw holes and central cylinder					mod
X2	Al	MF		1	29	incomplete, corroded					mod
X3	Pb	IW	sheet	1	275	folded rectangular sheet					
X3	Ae	MF	binding ring	1	3	binding ring			8	17	pmed/mod
X3	Fe/Ae	MF		1	14	?electrical fitting					mod
X3	Ae	MF		1	5	pin with metal case & washer					mod
Z2	Fe	BS	nail	1	17						mod

APPENDIX 3: DISCOVERY AND EXCAVATION IN SCOTLAND ENTRY

LOCAL AUTHORITY:	Highland
PROJECT TITLE/SITE NAME:	Lochailort, Highland: Archaeological Metal Detecting Survey
PROJECT CODE:	CHAI
PARISH:	Arisaig and Moidart
NAME OF CONTRIBUTOR:	Christina Hills & Sue Anderson
NAME OF ORGANISATION:	CFA Archaeology Ltd
TYPE(S) OF PROJECT:	Metal Detector Survey
NMRS NO(S):	
SITE/MONUMENT TYPE(S):	Military Camp
SIGNIFICANT FINDS:	Bullet Assemblage
NGR (2 letters, 6 figures)	NM 767 817
START DATE (this season)	28/3/11
END DATE (this season)	31/8/11
PREVIOUS WORK (incl. *DES* ref.)	N/A
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	Marine Harvest (Scotland) Ltd are developing land to the east of the Inn at Lochailort (NM 767 817). The area was previously used as a military training camp during World War II. A metal detector survey took place in March 2011. The largest single group of objects recovered were empty bullet casings of 20th-century date from the use of the area of as a military camp. The firearms-related material was examined by Jonathan Ferguson (Royal Armouries) and found to include largely rifle and pistol ammunition, which was not concentrated in any meaningful pattern which might indicate the position of a formal rifle range. A full report is available in the archive. It is likely that many other finds are related to the military use of the site, including those relating to machinery (e.g. washers, wheel spokes), whilst others may relate to agricultural use (such as horseshoes). A few domestic objects such as light fittings, door knobs and latches were also present and could be related to the camp. Only a few items were definitely earlier than the military camp: a possible medieval lead weight or gaming piece, a fragment of a Victorian silver brooch, a pistol side-plate of mid 18th-century date, and a lead musket ball assigned to the late 18th/mid 19th-century.
PROPOSED FUTURE WORK:	
CAPTION(S) FOR ILLUSTRS:	
SPONSOR OR FUNDING BODY:	Marine Harvest (Scotland) Ltd
ADDRESS OF MAIN CONTRIBUTOR:	CFA Archaeology Ltd, Old Engine House, Eskmills Park, Musselburgh, EH21 7PQ.
EMAIL ADDRESS:	sue@cfa-archaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	Archive to be deposited in NMRS; report lodged with SMR and NMRS.



Key:

Fig. No: 1 | Revision: A | Client: Marine Harvest (Scotland) Ltd

Title: Site location map

Scale at A4: 0 — 200 m

Project: Lochailort, Highland: Archaeological Metal Detecting Survey Post-Excavation Archive Report

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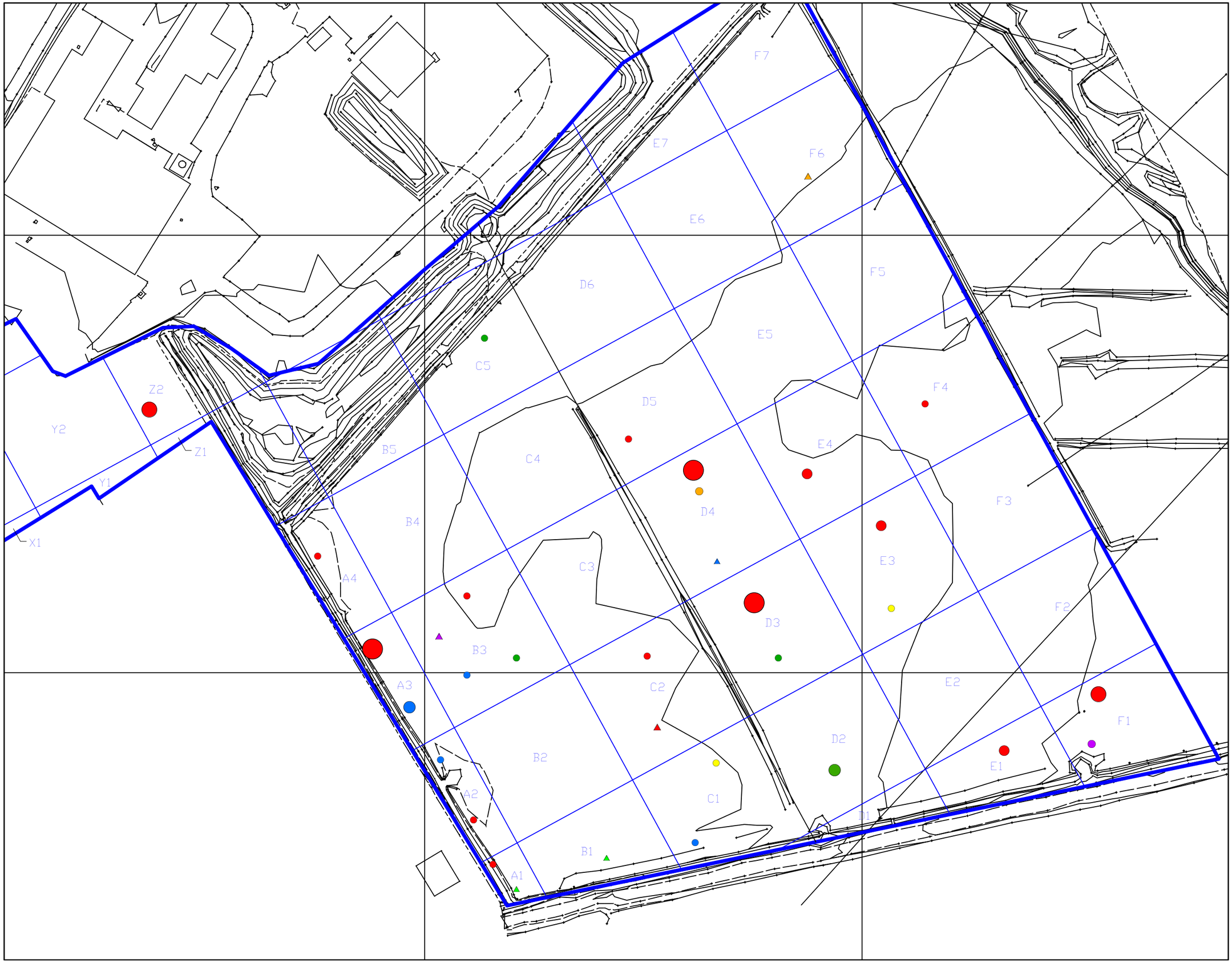
Drawn by: LW | Checked: LW | Report No: 1932



Key:

.303
- 1
- > 1
- > 5
- > 10

.55 Boys
- 1
- 2

6.5 mm MS
- 1
- 2

.270 W
- 1

7x57mm Mauser
- 1

7.62x51 NATO
- 1

7.62x54R Soviet
- 1

7.62x25 Tokarev
- 1

Unk .38 pistol
- 1

Poss .303/450
- 1

.71 Musket ball
- 1

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Fig. No:	Revision:
2	A

Title:

Fieldwalking grid showing location of ammunition finds by grid square

Project:

Lochailort, Highland: Archaeological Metal Detecting Survey Post-Excavation Archive Report

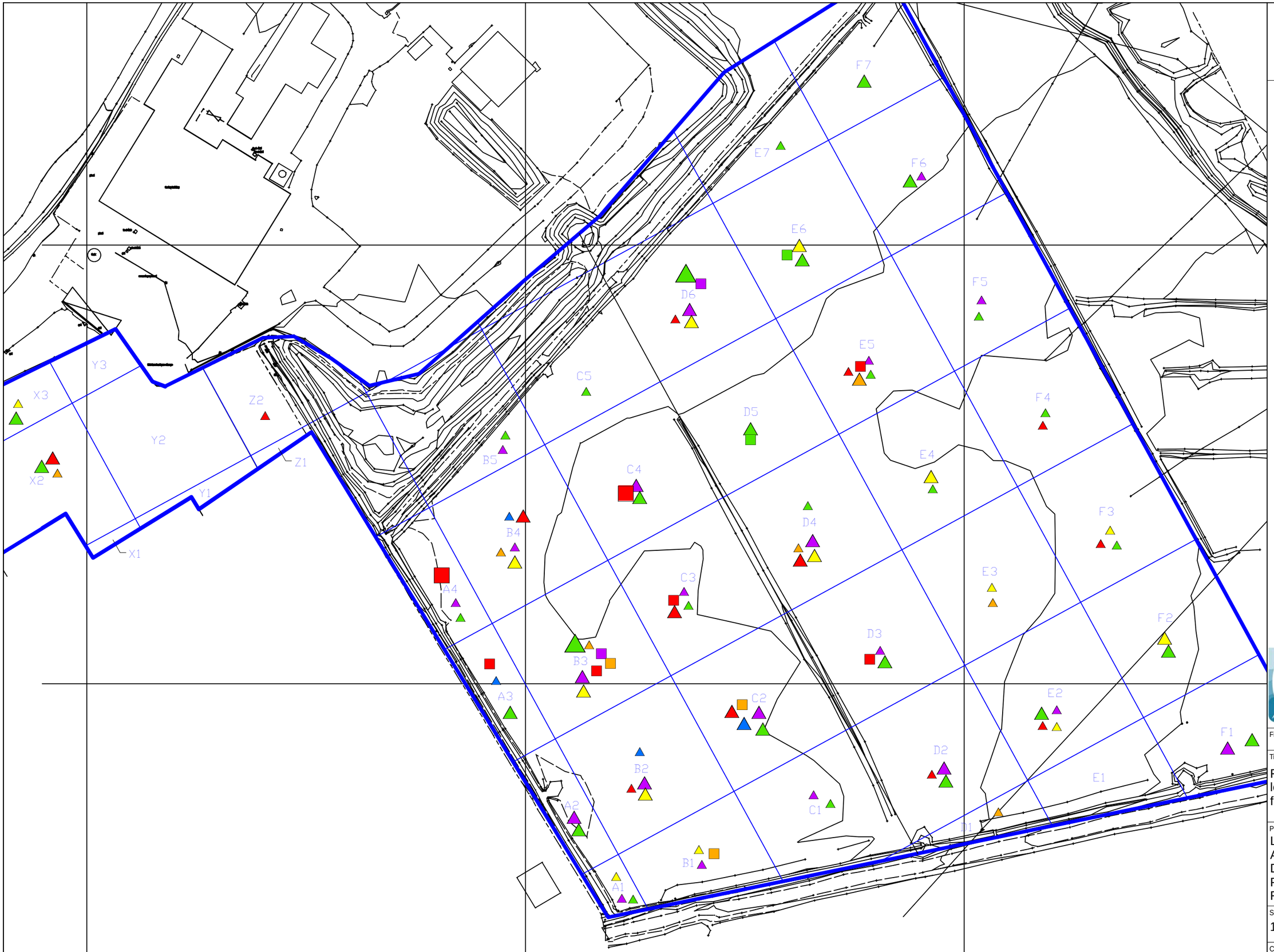
Scale at A3:

1:800

Client:

Marine Harvest (Scotland) Ltd

Drawn by:	Checked by:	Report No:
LW	LW	1932



Key:

Dress accessories
- 1
- 2

Coins
- 1

Weights
- 1

Personal objects
- 1

Waste
- 1
- 2

Equestrian object
- 1
- 2

Building & services
- 1
- 2

Household objects
- 1
- 2

Miscellaneous fittings
- 1
- >1
- >5

Unidentified
- 1
- 2

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Fig. No:	Revision:
3	A

Title:

Fieldwalking grid showing location of other significant finds by grid square

Project:

Lochailort, Highland: Archaeological Metal Detecting Survey Post-Excavation Archive Report

Scale at A3:

1:800

Client:

Marine Harvest (Scotland) Ltd

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LW	LW	1932