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The Cowie Line: a Second World War 'stop line' west of Stonehaven, Aberdeenshire

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ABSTRACT

The Cowie stop line, running west from the town of Stonehaven, the county town of the historical county of Kincardineshire, some 19km south of Aberdeen, has been recognized for some time as a well-preserved example of a Second World War anti-tank obstacle, but has not hitherto been described in detail. Its purpose was to stop any German force landing in the north-east penetrating into Angus and further south. To work effectively the line was extended to the west, by defences at the Bridge of Dye (on the Strachan–Fettercairn road) and the Devil's Elbow (on the Braemar–Blairgowrie road) and planned demolitions on the Inverness–Perth road and railway. It originally comprised a dozen pillboxes,[1] over 5km of anti-tank barrier, eight small and one large groups of anti-tank cubes[2] and other defensive features. This paper outlines the strategic background, how the Cowie Line fitted into it, how the Line was constructed, and how its intended function changed over time. The results of the first complete survey of the surviving remains are also presented.

INTRODUCTION

Elements of the Cowie Line – which runs inland from Stonehaven, the county town of the historical county of Kincardineshire (illus 1 & 2) – were first formally recorded in 1985 with the publication of Henry Wills's pioneering account *Pillboxes: a Study of UK Defences 1940*.[3] Wills gathered much of his information from local correspondents; information on the Cowie sites was provided by Mr David Leslie of Banchory (D Leslie, pers comm). Historic Scotland commissioned John Guy to undertake a rapid survey of Scotland's 20th-century defences between 1992 and 1999:[4] Guy recorded six of the Cowie Line pillboxes. The Defence of Britain Project, the collation of information about defences, now available as an online database,[5] also contains records related to the Cowie Line. Redfern notes that, while most of Scotland's stop lines were based on river systems, Defence of Britian Project fieldwork showed 'some of these check lines, most notably the River Cowie, were developed as full anti-tank lines (with pillboxes and anti-tank obstacles)'.[6] Graham Tuley, the Forest District Manager of the Forestry Commission between 1984 and 1990, was the first to recognize the nature and extent of the revetted earthwork anti-tank barrier that is the main feature of the Line, and which survives particularly well on Forestry Commission land.

In 1996, all the pillboxes actually on the Cowie Water were proposed (by the author) for scheduling as ancient monuments, followed in 2000 by those at the Bridge of Dye.[7] Information from Graham Tuley and the fieldwork for the scheduling suggested that there would be value in documenting the Cowie Line in much greater detail than had been possible in the national surveys. It also seemed possible that approaches more normally used in traditional archaeological

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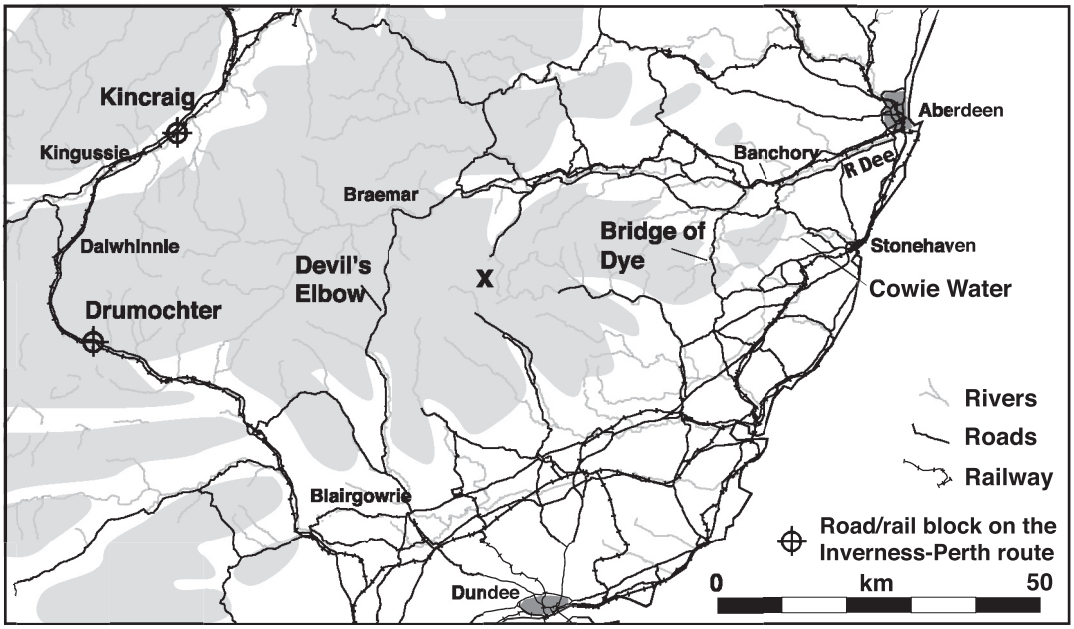


ILLUS 1 Map of North-East Scotland showing the main road network, the rail network in 1940, the locations of the blocks on the Inverness–Perth route, the Devil's Elbow, the Bridge of Dye and the Cowie Water. 'X' marks the apparently undefended track over the hills between Glen Muick and Glen Clova. The toned area shows land over 300m

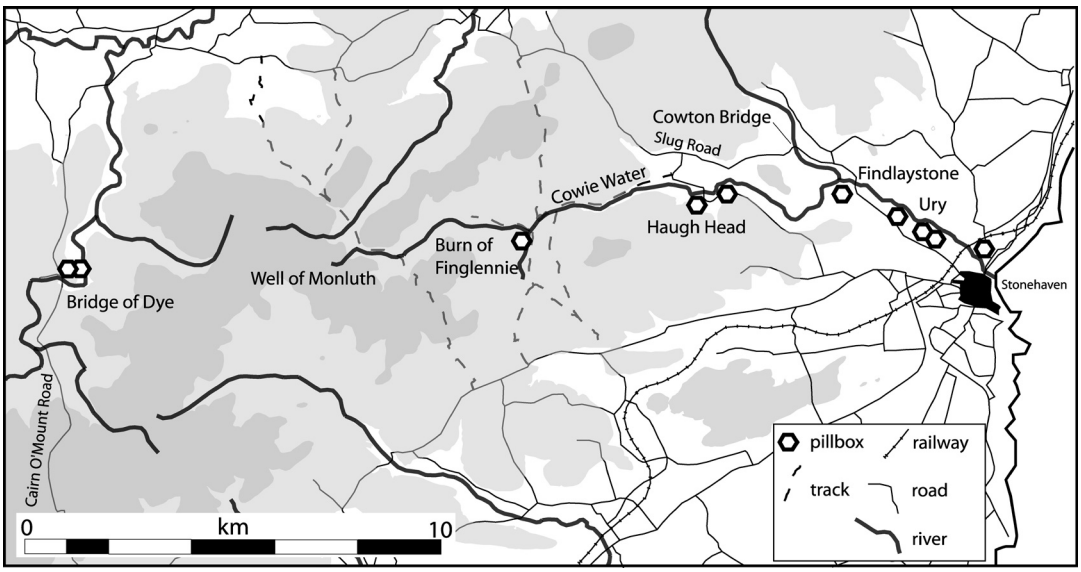
field survey could be usefully applied, and that publication of the results in the main national archaeological journal could convey the results of the work, and the importance of the remains, to a readership beyond specialists in the archaeology of fortification.

SOURCES OF INFORMATION & PROJECT ARCHIVE

By the time I started my research, most of the information contained in Wills's 1985 list, Guy's list for Historic Scotland, the Defence of Britain database and the Historic Scotland scheduling proposals had been incorporated into the National Monuments Record of Scotland. English Heritage's Monument Protection Programme had begun to explore the large numbers of contemporary War Office documents held in the National Archives at Kew, but was not resourced to permit intensive examination. Nor had the study of Second World War defensive systems in Scotland involved detailed analysis of more than a small part of the immediately post-war RAF vertical aerial photography. My study of the Cowie Line has included the first detailed survey of the whole length of the defensive system, a deeper examination of relevant contemporary documents, and close examination of a very clear series of 1946 vertical aerial photographs, on which extensive parts of the Cowie Line are visible.

By an extraordinary coincidence, Lance-Corporal Thomas Tuley, the father of Graham Tuley, mentioned above, had been involved in building the Line, as a member of 217 Pioneer Company. As a consequence I am very fortunate to have his eye-witness account of the construction of the Line (Appendix 1).

The archive of the project, including geographical information system layers, geo-referenced aerial photographs and War Office maps, copies of documents and photographs has



ILLUS 2 The defences at Bridge of Dye and along the Cowie Line to the coast. The lighter toned area is land over 150m; the darker tone, over 300m

been deposited with Aberdeenshire Archaeology Service and the National Monuments Record of Scotland. The Redfern and Guy publications and the 1946 RAF vertical aerial photographs are available for consultation at RCAHMS.

THE STRATEGIC THREAT

The official history of the defence of the United Kingdom provides the wider context.[8] Germany invaded Norway on 9 April 1940, in part to 'give our Navy and Air Force a wider start line against Britain'.[9] The struggle was effectively over by 3 May, when King Haakon left the country, although the last allied troops did not leave Narvik until 8 June and the Norwegian armed forces surrendered on the 10th. On 10 May, Germany also invaded the Netherlands (surrendered 15 May), Belgium (28 May) and France (22 June). Between 27 May and 4 June, a quarter of a million men of the British Expeditionary Force were evacuated from Dunkirk, leaving behind most of the army's heavy equipment: over 600 tanks, more than a thousand field guns and 850 anti-tank guns.[10] The situation was even worse than these figures suggest because the Divisions left at home had been partly stripped of these classes of weapon to supply the Expeditionary Force, retaining only about a sixth of the field and anti-tank guns to which they were entitled.[11] In the face of what was believed to be an imminent German invasion of the south coast, a priority was given to the construction of defences to protect the UK.[12] The Battle of Britain, interpreted as the preliminary bombardment for the invasion, lasted from 10 July to 31 October 1940.[13]

The Home Defence Executive had been set up on 10 May to plan the defence of the UK; the first commanding officer was General Ironside. The forces at his disposal were 'not only ill-equipped; they also lacked mobility'.[14] In the absence of 'strong mobile forces deeply imbued with the offensive spirit, Ironside came to the conclusion that his best chance lay in combining his few mobile columns with static defences deployed over a wide area'.[15] His highest priority was the construction of the 'coastal crust' beach defences but complex stop

lines, intended to slow down enemy formations or to contain a mobile invasion force in one part of the country, were also planned. The overall pattern of the defences has been described in a number of publications.[16] Some parts of the defences have been described in detail; others are little-known. The main backbone of the defence was the GHQ (General Headquarters) Line, intended to run from southern England to central Scotland, but there were also Command and Corps lines, planned and built by area Commands and Divisions, respectively.

While the south coast of England was the likeliest target for the main invasion, there was believed to be a high risk of diversionary attacks elsewhere, to pin down reserves or to weaken Britain's naval strength by an attack on fleet bases. Defences therefore had to be built around most of the east coast and inland (illus 3). The Cowie Line, an anti-tank stop line constructed in 1940, was a Command Line as its construction was set in train by Scottish Command. The main Scottish 'Command Line', comprising an anti-tank barrier (including anti-tank walls and the adaptation of rail embankments), pillboxes and anti-tank cubes, was intended to run from Dysart in Fife to Loch Tummel in Perth & Kinross.[17] Its purpose was to protect the industrial capacity of central Scotland from an invasion on the north-east or east coast.

Army records indicate that the construction of the Cowie Line was undertaken by units attached to 9th (Highland) and later 51st (Highland) Divisions; the Pioneer Companies involved were also under the umbrella of a regional Pioneer organization – '30 Group';[18] to judge from the pattern elsewhere, local contractors and/or local government works departments may have played a role, although there is no mention of this for the Cowie Line in the relevant files.

A day after the Home Defence Executive was created, on 11 May 1940, plans were being made in Scottish Command for suitable bridge demolitions etc to be prepared for – officers were asked to identify suitable places, and estimate the cost and amount of explosives necessary.[19]

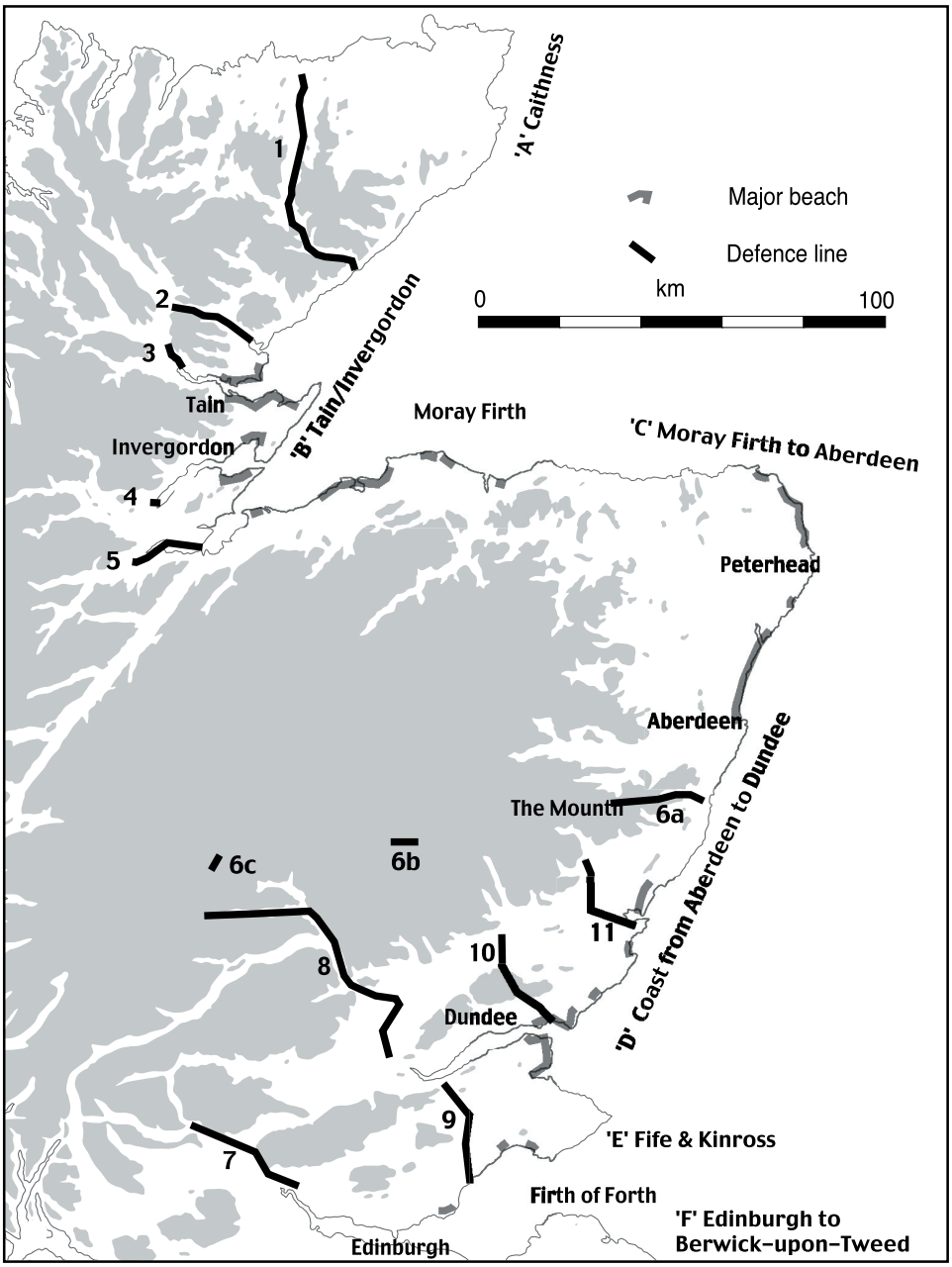
An appreciation of the defence of Scotland was prepared by the Lieutenant-General Commanding-in-Chief, Scottish Command for GHQ, Home Forces, on 9 June 1940.[20] He compared the limited risks faced by Scotland prior to the fall of Norway – small-scale raids on the coast or naval facilities – with the increased risks after the fall of Norway, as Scotland was now within reach of enemy air bases. He identified six vulnerable areas, the locations of which are shown on illus 3: A – Caithness; B – Tain–Invergordon; C – the coast of the Moray Firth from Inverness to (and including) Aberdeen, noted as having many aerodromes and open spaces suitable for landing, and ports such as Aberdeen and Peterhead, through which (if captured intact) an invasion force could be supplied; D – the coast from south of Aberdeen to Dundee; E – Fife and Kinross; F – the coast between Edinburgh and Berwick-upon-Tweed.

The defence of Orkney and the fleet base at Scapa Flow had already been identified as a very high priority and, with Shetland, was being dealt with separately from the general defence of mainland Scotland.

The most probable object of an attack on eastern Scotland was seen to be the provision of bases for air attack on other parts of the UK, with subsidiary objectives being the fleet anchorages and naval installations at Invergordon and the Firth of Forth. Area C – the North-East – was seen as one of the likelier target areas.

Because of the insufficient numbers and scattered distribution of troops in the Command area, their role was to interfere with and delay any landing, cover communication for reinforcements and effect static defence of vulnerable points, such as aerodromes and ports: 'The degree of resistance of such detachments must be to the last man'.[21]

The 'Appreciation' paper of 9 June 1940 made specific reference to the success of parachute troops in Norway, Holland and Belgium,[22] noting that an airfield captured by



ILLUS 3 Vulnerable beaches on the east coast and planned/executed inland defensive lines, as listed in Appendix A to *9th Division Operational Instruction No 27*, dated 7 July 1940 (WO166/619). The lines are: 1, Helmsdale–Melvich; 2, Loch Fleet–Lairg; 3, Bonar Bridge–Inveran; 4, Dingwall; 5, Kessock–Kilmorach; 6a, Cowie Line; 6b, Cowie Line extension Devil's Elbow; 6c, Cowie Line extension Drumochter; 7, Alloa–Callander (the planned northern extension of the GHQ line); 8, the planned 'Curtis' or Scottish Command Line, northern section; 9, the 'Curtis' or Scottish Command Line, southern section; 10, Kirriemuir Line; 11, Montrose–North Esk. The areas defined in the 9 June 1940 'Appreciation' (file WO199/568) are marked 'A' Caithness, 'B' Tain/Invergordon etc

paratroops could then be used to fly in up to 3000 infantrymen an hour.[23] It was at first considered unlikely that such troops could be reinforced by armoured fighting vehicles '… so long as the Fleet is operating in Northern waters'. However, on 6 July 1940 Scottish Command Intelligence, in *Weekly Intelligence Summary No 42*,[24] considered what tanks could be brought by the largest cargo-carrying planes in *Luftwaffe* service – the Junkers Ju90 'Condor' or the Dornier Do26 flying boat. These were thought to be capable only of lifting captured Polish TK, TKF and TKS types (all *c* 2.5 tons), the obsolescent PzKW I (5.7 tons), armoured cars, or a (hypothetical) special tank made of light metal. The Appreciation concluded that PzKW II (9 tons) or Czech TNHP (8.5 tons) or LTL (7 tons) tanks could not be carried. However, by 12 July, Command Intelligence had revised its conclusions, accepting that a Ju90 could carry one or more tanks up to a total weight of 9–10 tons.[25] Bernard Lowry (pers comm) notes that this intelligence was defective: not only was the 'Condor' misidentified (the Condor was the Focke Wulf FW200), but neither plane listed could carry a tank: a tank-carrying capacity appeared only with the development of the Messerchmidt Me381 glider.

By 28 June 1940, vulnerable Scottish beaches had been identified, although it was noted that there were insufficient troops to provide close defence of these.[26] The north-eastern corner of Scotland has long stretches of vulnerable beach separated by sea cliffs, especially in the area north of Aberdeen (illus 3); many of the beaches still have extensive remains of the defences.

THE STRATEGIC RESPONSE – THE PLACE OF THE COWIE LINE

The 'Appreciation' paper of 9 June 1940 noted an intention to reconnoitre suitable lines for 'demolition belts' to delay the enemy's advance from their landing point(s) in one of the six areas listed above.

As already noted, the 9 June 'Appreciation' of Area C – the North-East – was that it 'was so extensive and so open and has so many roads that all the local troops could do would be to prevent the enemy from penetrating southwards into Area D (Angus)'. Crucially, it was recognized that:

> There is a bottle-neck at STONEHAVEN. To make defence in this locality fully effective, there would have to be subsidiary posts on the road BRAEMAR–DEVIL'S ELBOW and in the area KINGUSSIE–DALWHINNIE to prevent an enemy turning movement to the west.[27]

To understand the importance of the defile, the geography must be briefly described. Between Aberdeen and Stonehaven, the foothills of the Grampian Mountains closely approach the sea – the geographical feature called the Mounth (illus 3). Except in a narrow corridor at the sea, passage to or from the north-east of Scotland from the south is through narrow passes: the 'Slug Road' (now the A957, illus 2), between Crathes and Stonehaven; the Cairn o'Mount road (the B974, illus 2), between Strachan and Fettercairn; the Glenshee road, between Braemar and Blairgowrie (the A93, illus 1). The line chosen for defence – the Cowie Line – lies in the southern part of the Mounth. Illustrations 1 and 3 graphically demonstrate both the topography and restricted number of roads across the Mounth.

Area C, seen as particularly vulnerable because of its proximity to Norway, was under the control of 9th (Highland) Division. Already, by 24 May, the Division's General Staff War Diary was full of mentions of defensive work, noting on that date 'a number of defences begun and wire obstacles erected'.[28] On 26 May, 'greatly increased powers' were given to the (Divisional) Commander Royal Engineer (CRE) and deputies.[29] Each Division had its Royal Engineers. The 9th Division Royal Engineers at various times consisted of 274 and 276 Field Companies,[30] 275 and 276 Field Companies,[31]

and 275 and 276 Field Companies reinforced by 277 Field Park Company.[32]

On 14 June 1940, *9th Division Operational Instruction No 8* made provision for the use of the anti-tank guns in the Divisional Reserve in a range of circumstances, for example, in opposing beach landings.[33] The first option was to:

> Strengthen the defence of the line STONEHAVEN–COWIE WATER in the event of an enemy tank-landing North of that line in MORAY or ABERDEENSHIRE with no landing South of it.

On 19 June, the War Diary of 9th Division General Staff noted that 'Arrangements begun for a number of Shellproof Anti-Tank Pillboxes to be estimated for, according to local requirements, priority being given to dock defences'.[34] No specific instructions have yet been found for the construction of fixed fortifications on the Cowie Line, but Tuley's account (Appendix 1, below) gives the clear impression that the pillboxes were being built by the Royal Engineers while he was working on the Line, in September–November 1940.

Scottish Command's *Progress Report No 2 … on Preparation for Defence*, of 21 June 1940, provides information on progress on beach and landing-ground defences, and also on planned demolitions. On Sheet 51 (covering the study area) of the War Office Ordnance Survey 1:63,360 map, six planned demolitions are listed (Table 1).[35]

On 16 July, Colonel Everleigh, Deputy Chief Engineer, Scottish Command, wrote to the General Officer Commanding-in-Chief (GOC-in-C) Scotland noting the shortage of troops, Royal Engineer officers, contractors, tools, materials, accommodation and civilian and military labour for the construction of defences.[36]

Table 1
Demolitions listed in Scottish Command's *Progress Report No 2 … on Preparation for Defence*, dated 21 June 1940, compared with demolitions and road-blocks listed in *51st Division Operational Instruction No 13*, 22 September 1940. The first three columns are in the original document; the fourth and fifth are my interpretations

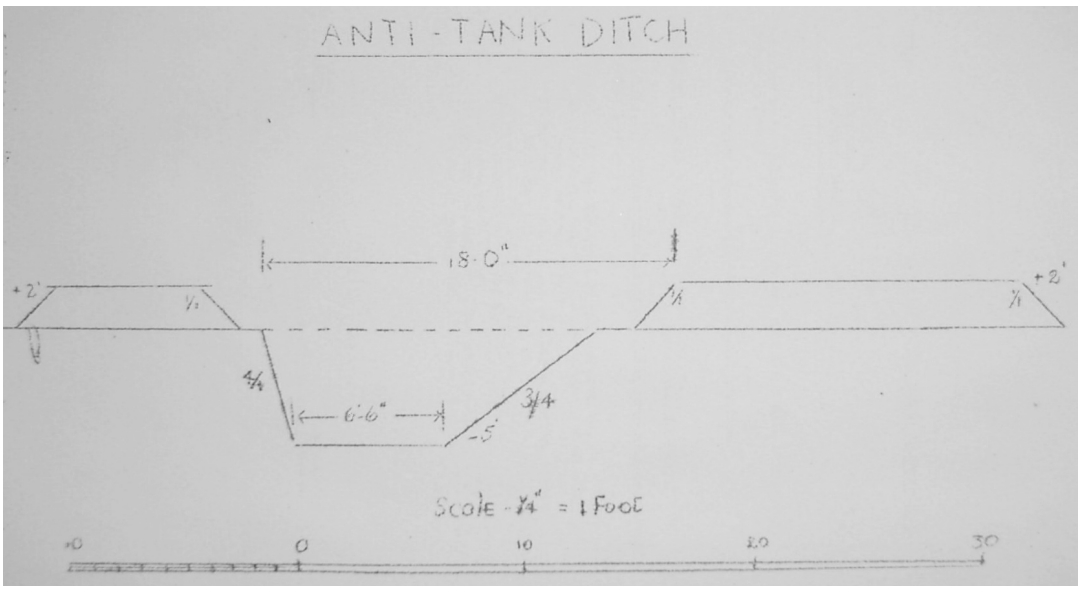
Name and planned action: 21 June 1940	*War Office grid reference*	*Planned action: 22 September 1940*	*Name on map*	*National Grid references estimated on GIS*
Main road bridge: demolition	385072	Roadblock	Cowie Bridge, at the northern edge of Stonehaven	NO 8737 8630
Road bridge: demolition	355094	Demolition	Findlaystone Bridge	NO 8427 8836
Road bridge: demolition	340102	Demolition	Cowton Bridge	NO 8281 8939
Road bridge: demolition	318098	Demolition	Haugh Head Bridge	NO 8067 8829
Main line railway bridge: demolition	384080	No longer on list	Bridge over the Megray Burn	NO 8730 8715
Road bridge, Bridge of Dye: demolition	163073	Roadblock	Bridge of Dye	NO 6510 8607
Not on June list	381079	Block	Glen Ury rail viaduct	

On the same day, General Ironside was superseded as GOC-in-C Home Forces by General Brooke, GOC-in-C Southern Command, and an immediate change in defence policy, towards a more mobile counter-attacking form of defence, was instituted: 'henceforth the stop-lines would take second place'.[37] Brooke opposed concrete roadblocks because they would impede the mobility of defenders.[38] As the immediate crisis of the summer of 1940 passed, and other priorities faced the beleaguered country, a decision was promulgated on 7 August 1940 that the 'absolute priority' enjoyed by defence works henceforth could no longer be maintained.[39] That there was still a role for fixed defences within the more mobile strategy is made clear in a letter dated 30 August from Churchill to General Ismay (his Chief-of-Staff) noting:

> Now that the coast there (Dover) is finished there is no reason why we should not develop these lines, which in no way detracts from the principle of vehement counter-attack.[40]

However, as will be shown below, the construction of the Cowie Line, probably begun in June 1940, continued for a year. Even in June 1941 the Chiefs-of-Staff still believed that a high standard of anti-invasion preparation was needed.[41] However, the War Diary of Scottish Command's Royal Engineers notes that 'Orders were given on 20th February 1941 that no further pillboxes were to be built'.[42]

In June 1940, *9th Division Location Reports* show how very stretched the Division was after Dunkirk. Three brigades with nine battalions of infantry (with a further battalion of non-Divisional troops) – probably 5–10,000 men – covered the entire east coast – a coastline over 600km long – from Alness, north of Inverness, to Grangemouth, on the south shore of the Firth of Forth.[43] The situation was even worse than this might suggest. On 25 May 1940, the Lieutenant-General Commanding-in-Chief complained to GOC-in-C Home Forces that he was unable to meet all the commitments assigned to him: of the nine battalions of 9th Division, two were in Orkney



Illus 4 The 'ideal' anti-tank ditch (War Office file WO166/115)

and Shetland; three were protecting the fleet at Invergordon; three were in Fife to protect Rosyth; and the other was dispersed to protect vulnerable points. There were no troops to defend beaches.[44]

On 7 August 1940, 9th Division (which had been formed in 1938 as a second-line 'duplicate division' for the 51st)[45] was redesignated as the 51st, after the main body of the 51st Division had been captured at St Valery.[46]

HOW DEFENCES WERE INTENDED TO BE CONSTRUCTED

In the spring and summer of 1940, advice was provided by various levels of the Royal Engineers, GHQ Home Forces in London and Scottish Command as to how defences were to be constructed. For example, a minute of 13 June 1940 to all Commands set out instructions on 'Tank Obstacles'.[47] They are explicitly based on an assessment that forces will be facing medium tanks and stress that constructing defences is a waste of resources unless there are the men to cover them with gunfire. The instruction also notes that, 'A vertical face of five feet (*c* 1.5m) is the minimum required to ensure an efficient tank stop'. The exact specification of an anti-tank ditch is set out in an appendix and drawing (reproduced as illus 4). This can be summarized as: minimum 5ft deep; minimum 18ft (*c* 5.5m) across at ground surface 'from the point at which an attacking tank would start over-balancing to the top of the opposite face of the ditch'; maximum width at bottom 6ft 6in, 'the tank must be made to tip downwards into the ditch'; height of bank of excavated soil on the enemy side not to exceed 2ft (0.6m) (to avoid giving cover to enemy troops); forward slope sloped as steeply as possible; revetment (of back face of ditch) must be completed as soon as possible, especially in areas where soil is wet; uprights of revetment should be at close intervals and all should be anchored back; brushwood hurdling of revetment probably the least vulnerable.

The War Diary of Scottish CRE contains many advisory documents. For example, *Scottish Command Engineer Instruction No 8*, of 23 June 1940, provides advice on a wide range of defences, including pillboxes.[48] Pillbox walls 18in (0.45m) thick of brick and mortar were taken to be bulletproof, although 22.5in (0.57m) was better. Further Scottish CRE instructions dated 20 August 1940 noted that tank-gunproof pillboxes had to have walls 3ft 6in (1.06m) thick, of reinforced concrete, with a 12in (30cm) reinforced concrete roof. Bulletproof pillboxes were to have walls 15in (0.38m) thick (concrete) and a roof 12in thick.[49] (The Cowie Line pillboxes had granite walls 1.05m thick and roofs 30cm thick and therefore conform to the shellproof specification.) The designs to be used included:

- FW3 Drawing No 24 for Bren Guns where only bulletproof protection is required.
- Chief Engineer, Scottish Command, Drawing No 2865 for Bren Guns where tank-gunproof protection is required.
- FW3 Drawing No 27 for one Vickers machine gun, giving tank-gunproof protection.

FW3/Type 24 is a very numerous class of hexagonal pillboxes (including in the North-East, for example, in the coastal crust defences at Rattray), where one wall (the rear with the entrance) was longer than the others. It is interesting that FW3/Type 22, the most numerous type in Britain[50] – a hexagonal bulletproof or less frequently shellproof type with walls of equal length – is not mentioned. The Cowie Line pillboxes are Type 22 in shape, and are all tank-gunproof. Are they perhaps the 'Scottish Command Drawing No 2865' type? As yet no documents providing more information have been found.

TABLE 2
Transcript of the summary War Diary of 217 Pioneer Company

26/9/40	Arrived Stonehaven. Joined 30 Group.
September–November	In private billets at Stonehaven. HQ at Alexandra Hotel. Engaged in constructing Cowie Line and defences at Milton Ness, Inverbervie, Cataline [Catterline] and Braidon Bay. Cooperated with Home Guard in Defence Schemes.
16/11/40	Left Stonehaven.

THE CONSTRUCTION OF THE COWIE LINE

As noted in the previous section, defensive lines of this kind were intended to provide a continuous anti-tank barrier. In this case, the Cowie Water itself was adapted to provide it.

THE TROOPS

The War Office files provide incomplete information about the construction work and, indeed, the locally organized nature of much of this sort of construction effort would limit the amount of documentation. For example, agreements were made between Royal Engineer Liaison Officers and landowners for access and materials. An example is attached as Appendix 2 – these do not seem to have found their way onto the surviving War Office files I have consulted.

We know from the personal memoir of Lance-Corporal Tuley, of 217 Pioneer Company (Appendix 1), that that unit was involved in the construction work from September to November 1940. Unfortunately, the unit's War Diary was improperly kept, and the period 19 September 1940 (unit formed) to 17 November 1940 (unit moved from Stonehaven to London) was covered by a single summary sheet (Table 2).[51]

Lance-Corporal Tuley's account may be read to imply that the pillboxes were being built by Royal Engineers at the same time as the Pioneers were working (Appendix 1 below). We know from the War Diary of 274 Field Company Royal Engineers (attached to 9th Division) that that unit had returned from a posting in Orkney on 1 July 1940, with one section moving immediately to Stonehaven under Second Lieutenant R M Taylor, who was replaced by Second Lieutenant W D Brown on 7 July. A 9th Division *Location Statement* confirms that 274 Field Company was in full strength, less one section, in Stonehaven on 5 July 1940.[52] On 18 July, half a section returned from Stonehaven to Craigallechie. The *Location Statement* for 9th Division dated 30 July 1940 confirms that most of 274 Field Company Royal Engineers had moved to Craigallechie, leaving only half a section in Stonehaven.[53] Divisional location statements for 28 August and 5 September 1940 confirm this.[54] The Field Company War Diary notes that the Stonehaven detachment returned to Craigallechie on 11 September 1940.[55] The implication is that the 274 Field Company Royal Engineers and 217 Pioneer Company did not overlap.

The War Diary of 276 Field Company Royal Engineers, the other Royal Engineer unit attached to 9th/51st Division notes, for the period 9–30 September 1940:

> The STONEHAVEN detachment was taken over by this unit from 274 Fd Coy on 11/9/40 and 2/Lt Peppiette (i/c detachment) posted to this Company (on 7/9/40). Duties of the detachment include preparation of the COWIE

TABLE 3
War diary of 98 Pioneer Company

January 1941, Stonehaven	11/16 Work at Stonehaven on Defence Line, trenches, tank traps, revetting and wiring & along the coast defences.
	16/31 Work on defence lines, coast defences as above.
	Weather throughout month very cold with snow and frost hampering work.
February 1941	1/14 Work on Coast defences & defence line. Trenches, digging, and wiring.
	14/28 Work in coast & defence line as above and Home Guard defences.
	Weather conditions very bad throughout month.
March 1941	1/31 At Stonehaven work on Cowie Defences and Home Guard Defences.
	Work greatly impeded during this month by continuous snow.
April 1941	1/30 Work at Stonehaven on Cowie Defences & Home Guard Defences.
May 1941	1/30 Work on Home Guard Defences Stonehaven and Cowie Line Defences.
June 1941	1/15 Work on Home Guard Defences and Cowie Line Defences.
	16 June moved to Port Ellen, Islay.

> LINE and manning the demolitions of three bridges across R COWIE (presumably Haugh Head, Findlaystone and Cowton – Table 1) and BRIDGE OF DYE.[56]

The War Diary of 30 Group Pioneer Corps notes the arrival of 98 Pioneer Company in Stonehaven on 27 November 1940. Unlike the diary of 217 Pioneer Company, 98 Pioneers' is more detailed (Table 3).[57]

In summary, the Cowie Line seems to have been built by 274 Field Company Royal Engineers from 1 July to 11 September 1940, superseded by 276 Field Company Royal Engineers on that date. They were assisted by 217 Pioneer Company from 26 September to 16 November 1940, replaced by 98 Pioneer Company on 27 November, who worked on the Line until June 1941. The presumed tedium of the work was relieved for 98 Company in April 1941 when a Mr Thomson of the Petroleum (Warfare) Department included 98 Pioneer Company in his lecture tour of the north, listed as 'Stonehaven on the Cowie Line'.[58]

The amount of work necessary to fortify Britain meant that much of it was undertaken by private contractors[59] on the basis of oral instructions (on sites chosen by the local army command or by CRE officers) and with 'very limited' Royal Engineer supervision.[60] The same document states that 'unit and formation commanders are responsible for seeing that the work is being carried out in accordance with their intention'. It may be, however, that the Cowie Line was built solely by Royal Engineer and Pioneer Company troops, as there is no mention of the involvement of contractors or Kincardineshire County Council employees. Unfortunately, no Council files for this period survive.

When 9th Division was redesignated as the 51st on 7 August 1940, the Royal Engineer Field Companies retained their numbers but '27 Infantry Brigade', which had been responsible for the Aberdeen sector (including the Cowie Line), was renumbered to 153 Infantry Brigade.[61]

A clue as to how the Cowie Line was considered is provided by a briefing associated with a complex Royal Engineer training course in North-East Scotland in April 1941.[62] In the description of the area, the briefing notes:

TABLE 4a

Extract from Appendix A of *9th Division Operational Instruction No 27* (WO166/434) summarizing the purpose of the Line and the troops responsible for reconnoitring, constructing and manning it

Description of Line (a)	*Object (b)*	*Commander responsible*		*Occupation*		*Troops in support*
		For recce (c)	*For construction of posts, and plan of demolitions (d)*	*At what phase (e)*	*By what troops (f)*	
6(a) Incl STONEHAVEN K30–COWIE WATER K20–BRIDGE OF DYE K10–DEVIL'S ELBOW O69	To prevent Southward movements from MORAY or ABERDEEN and turning movement from NW	Comd ANGUS Sector	Comd ABERDEEN Sector	In case of landing MORAY or ABERDEEN	LDV	From tps in ANGUS Sector
(b) Excl DEVIL'S ELBOW O69–incl LEATHAD AN TAOBHAIN* J30	To prevent Southward movements from MORAY or ABERDEEN and turning movement from NW	Comd ANGUS Sector	Comd ANGUS Sector	In case of landing MORAY or ABERDEEN	Tps in ANGUS SEctor	Tps in ANGUS Sector
(c) Excl LEATHAD AN TAOBHAIN J30–	To prevent Southward	Comd HIGHLAND Area	Comd HIGHLAND Area	In case of landing	Detailed by HIGHLAND Area	Detailed by Comd HIGHLAND Area

* Leathad an Taobhain is a mountain 900m high at NN 8138 8566 clearly marking some sort of intersectoral boundary: it has no defence role.

TABLE 4b

Extract of Appendix B of *9th Division Operational Instruction 27* (WO166/434) setting out responsibilities for ordering the manning of the Lines and for charging and blowing demolitions and closing roadblocks

Serial	*Line (b)*	*Responsible authy for ordering manning*		*Troops (e)*	*Responsible auth for demolition and rd blocks*			*RE Dets (i)*
		Initial (c)	*Subsequent (d)*		*Charging (f)*	*Blowing (g)*	*Closing (h)*	
6	(a) Incl STONEHAVEN K30–BRIDGE OF DYE K10–DEVIL'S ELBOW O69	Comd Aberdeen Sector for RE and LDV only. Any additional tps considered necessary by CRA to be detailed by CRA	Comd ANGUS Sector	RE Dets & LDV. Later from mob colms ANGUS Sector	Comd ANGUS Sector	Comd ANGUS Sector	Comd ANGUS Sector	Detailed by CRE from ABERDEEN
	(b) Excl DEVIL'S ELBOW 069–incl LEATHAD AN TAOBHAIN J30	Comd ANGUS Sector	Comd ANGUS Sector	From tps in ANGUS Sector	Comd ANGUS Sector	Comd ANGUS Sector	Comd ANGUS Sector	
	(c) Excl LEATHAD AN TAOBHAIN J30–DRUMOCHTER PASS O19	Comd HIGHLAND Area	Comd HIGHLAND Area	Detailed by Comd HIGHLAND Area	Comd HIGHLAND Area	Comd HIGHLAND Area	Comd HIGHLAND Area	

'The Southern portion contains the strong obstacle of the COWIE WATER' and describes the Line as:

> COWIE WATER Small stream converted to efficient tank obstacle facing North by revetting of bank to 7' and provision of cubes in some places. Average width 60'. Water depth 1', bottom gravel not reliable for considerable traffic. Banks where not revetted about 4'.

HOW THE COWIE LINE WAS TO BE MANNED AND USED

The *9th Division Operational Instruction No 7* seems to have been a core document relating to the defence of the Division Area; unfortunately I cannot locate a copy in any of the files examined. Fortunately, later amendments provide clues: *9th Division Operational Instruction No 9* concerns the use of divisional reserve anti-tank units in the strengthening of static defences.[63] They are 'probably' expected to carry out one of seven possible roles, depending on the nature and source of a threat. The first option is to:

> Strengthen the defence of the line STONEHAVEN–COWIE WATER in the event of an enemy tank-landing North of that line in MORAY or ABERDEENSHIRE with no landing South of it.

We must presume that the 'line' had few fixed defences at this early stage.

On 7 July 1940, *9th Division Operational Instruction No 27* incorporates revised versions of the appendices attached to *Instruction No 7*. This provides considerable useful detail.[64] Appendix A – 'RECONNAISSANCE AND PREPARATION OF DEFENCE LINES' – replaces the list of lines included in the *Operational Instruction No 7*: line numbers 1–5 lie in the northern mainland [illus 3: 1, Helmsdale–Melvich; 2, Loch Fleet–Lairg; 3, Bonar Bridge–Inveran; 4, Dingwall; 5, Kessock–Kilnopack]; line 6 is the Cowie Line; lines 7–11 lie in the southern part of the Divisional Area [7, Alloa–Callander (transferred to 46th Division); 8/9, 'Curtis' Line (another name for the Command Line – transferred to 5th Division); 10, Barnhill–Kirriemuir; 11, Montrose–North Esk]. The approximate locations of the proposed lines are marked on illus 3; not all were built or completed. Table 4a is an extract from Appendix A, usefully summarizing the purpose of the Line and the troops responsible for reconnoitring, constructing and manning it.

We see that Angus Sector was responsible for the reconnaissance of the Cowie Line, but that Aberdeen was responsible for construction of most of the Line, apart from Devil's Elbow, where Angus troops were responsible, and Drumochter, where Highland Area troops were responsible. In the event of a landing in Moray or Aberdeenshire, the main part of the Line, actually on the Cowie Water, was to be manned by the Local Defence Volunteers (to become the Home Guard), while troops from Angus were to man the Devil's Elbow and troops from Highland Area the blocks at Drumochter.

Appendix B of the same document sets out responsibilities for ordering the manning of the Lines and for charging and blowing demolitions and closing roadblocks (Table 4b).

On the night of 7 September 1940, the invasion warning 'CROMWELL' was issued. Although the warning was issued only to Southern and Eastern Commands, and supposedly copied to other Commands 'for information', the warning seems to have been acted upon seriously in parts of Scottish Command, and church bells sounded in Stonehaven.[65] War Diaries of relevant units mention the warning but say little about reacting. However, 153 Infantry Brigade, and especially 276 Field Company Royal Engineers, acted more vigorously:

> Inlying piquet posted and Mobile Column party of 1 NCO, 12 Sprs (Sappers – RE troops). With equipment in 2 vehicles ready to move off by 22.00 hours. Orders received at 22.45 hours that OC was to report personally to HQ, 153 Bde as

> soon as Unit was ready to move. This report was made by Major Lambert at 01.50 hrs. At 04.00 2/Lt Cooper and 7 Sprs left by MT (motor transport) to man the demolitions at DEVIL'S ELBOW.[66]

Issued a week later, *51st Division Operational Instruction No 1* (13 September 1940)[67] contains instructions in the event of the codeword 'Cromwell' ('invasion imminent') being received. The duties include manning of demolitions in the Aberdeen sector: the Devil's Elbow; Findlaystone Bridge; Cowton Bridge; and Haugh Head Bridge, the last three to be manned by 276 Field Company Royal Engineers. Charges were to be taken to site but not placed unless ordered by the Sector Commanders.

Scottish Command's *Operational Instruction No 59* includes, *inter alia*, instructions for the defence of the 'STONEHAVEN DEFILE':

> On receipt of the code word 'Cromwell' 5 Division will despatch one battalion to secure the crossings over Cowie Water K.40.[68]

The *51st Division Operational Instruction No 13* is dated 22 September 1940;[69] it includes (as Appendix A) a revised list of demolitions, including Findlaystone, Cowton and Haugh Head bridges, and the Devil's Elbow. It also has (as Appendix B) a list of roadblocks. The latter includes roadblocks at Cowie Bridge in Stonehaven itself and the Bridge of Dye (instead of the demolitions intended on 21 June 1940) (Table 1), and both road and railway blocks at the Drumochter Pass (no grid reference supplied). Also to be blocked is the Glenury Rail Viaduct, which would otherwise have provided an easily graded crossing of the Cowie Water along the main railway line from Aberdeen to Dundee; this presumably replaces the 21 June 1940 (Table 1) demolition planned for the small railway bridge a little way to the north. The change from a demolition to a railway block may reflect the change of defence policy to a more mobile counter-attacking approach brought in by Brooke in July.

On 30 October 1940, a Location Report has 153 Infantry Brigade HQ at Banchory (illus 1), the Brigade Royal Engineers being 276 Field Company.[70]

On 30 December 1940, the *Aberdeen Sub-Area Defence Scheme* was promulgated.[71] The policy sets out the course of action in the face of sea- or airborne invasion. While Local Defence Units and Home Guard units were to defend important localities and to destroy or localize the invaders, elements of 51st Division were to destroy any enemy who had lodged themselves in spite of the local regular and Home Guard action. Finally, elements of 52nd (Lowland) Division based in Angus were to take up 'positions in the fortified area WEST of STONEHAVEN'. Demolitions at Findlaystone, Cowton and Haugh Head bridges were also planned, as before.

Amendments were made to the defence scheme on 28 March 1941, when responsibility for patrols on the railway north of Stonehaven, on roads and railway south and west of Stonehaven, and 'on defensive line inland' and maintaining a mobile reserve in Stonehaven, was allocated to 98th Company of the Pioneer Corps who were still involved in building the Line. The Home Guard was charged with 'manning road blocks and pillboxes'.[72]

Three days later, Scottish Command's *Standing Operational Instructions 1941* were promulgated. The General Policy section makes it clear that field formations would be retained for offensive action, while second-line (eg Pioneer Corps) and Home Guard units would man fixed defences which would act as 'pivots of resistance'.

On 12 October 1941, the *Stonehaven Defence Scheme* was published.[73] This was a Home Guard-based scheme, with a range of defended localities around the town, including the roadblock at the Cowie Bridge, on the north edge of Stonehaven. Interestingly, the scheme included 'Outposts', two of which appear to coincide with pillbox complexes on the Line – Findlaystone Bridge and Haugh Head – and

a third with the demolition at Cowton Bridge. It appears, therefore, that these parts of the Line were now the responsibility of the Home Guard.

Scottish Command issued a document in February 1942 about demolitions, breaking them down into categories.[74] Three Cowie Line demolitions are included: Findlaystone; Cowton; 'Haugh Road' (Haugh Head) as 'Local deferred Demolitions', only to be blown under authority of Divisional Commanders during active operations 'where it is necessary to strengthen a defensive line which the Formation is holding against enemy attack', because 'Success will depend on the mobility of our forces, and action likely to prejudice that mobility is to be avoided'.

The War Diary of Scottish Command for March 1942 notes the replacement of 51st by 52nd Division in the North-East. The order contains the text:

> … with the departure of 51 Div, Polish 10 Cav Bde and 157 Inf Bde Gp from their present localities, Districts and Indep(endent) Areas concerned will assume responsibility for any static defence works, including minefields, hitherto constructed and/or manned by these formations. They will make what arrangement they think fit for the future upkeep and manning of these defences by District or Indep(endent) Area t(roo)ps or Home Guard, and for the patrolling of the coast.[75]

It is interesting to note that, in the Home Guard Defence Scheme for the Aberdeen area (the file is dated July 1942 to 1944), the Cowie Line is not mentioned at all. The Cowie Line fell into the area of the 3rd South Aberdeenshire & Kincardineshire Battalion Home Guard – the valley of the Dee from the Devil's Elbow to Culter, and the whole of Kincardineshire south of the Aberdeen Garrison Area.[76]

Scottish Command's 'G' War Diary for 1943 gives insights into home defence later in the war. There was seen to be no immediate threat of either sea- or airborne invasion; preparation was instead to face small-scale sea- or airborne raids and defence was mobile.[77] Stonehaven now had a garrison of a battalion of regular troops, at first the 6th Cameronians (31 April) and, later in the year, the 6/7 and then the 7/9 Royal Scots.

Despite the emphasis on mobile defence, the Scottish Command *Standing Operational Instructions* for 1943 do include instructions on fixed defences, which may reflect the formalization of earlier practice. For example (with abbreviations – eg grns=garrisons) written out in full:

> The garrisons of pillboxes will not exceed the number required to man the weapons simultaneously. These garrisons will be provided with alternative positions, either in fieldworks or behind natural cover. Some portions of the garrison or a neighbouring post will be sited in slit trenches away from the pillbox so as to cover the outside of the pillbox and in particular its entrance.[78]

The *Standing Instructions* also include a list of 'Check Lines', including the Cowie Line, which were to be used by the police to control civilian traffic in the event of operations. There are also instructions on camouflage and on the recording of defence works (railway blocks; pillboxes; wiring; roadblocks; flame blocks; anti-tank obstacles; minefields) on a one inch to one mile map.[79]

On 6 May 1943, *Home Security Circular 78/1943* stated that 'The possibility of invasion of this country has not vanished and may again become imminent'.[80] The most interesting feature of this document is Section XII of the *Standing Instructions* accompanying the *Circular*, relating to the defence of 'Vulnerable Points' – these include the 'railway embankment' at the Devil's Elbow: the nearest railways are about 30km away!

THE PHYSICAL REMAINS

The documents setting out the strategic background make it clear that the aim – to close off the North-East – was to be achieved

by blocking off all possible routes. The actual barrier provided by the Cowie Water extends only about 18km inland from Stonehaven but, as noted above, three passes further to the west were also part of the system (Tables 4a & 4b; illus 1 & 2).

The line of the anti-tank barrier has been plotted off the 1946 vertical aerial photographs. In most places, this line has been checked on the ground, except where the post-war forestry plantation was too dense to be easily penetrable.

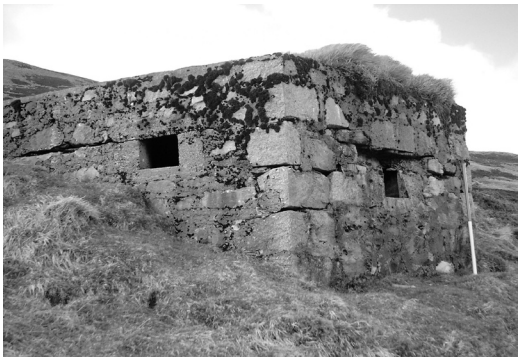
THE INVERNESS–PERTH ROAD

The westernmost defence was to be mounted on the main Inverness–Perth road (now the A9) and railway line where they run close together through one of the narrow passes (illus 1). The 9 June 1940 'Appreciation' refers to the need for 'subordinate posts' in 'the area KINGUSSIE–DALWHINNIE'. Fifty-first Division *Operational Instruction No 13* of 22 September 1940 provided for demolitions of the road and railway at Dalwhinnie. Later in 1940, the Aberdeen sub-area War Diary mentions that 'Constructional works for static defence have been erected … (iii) defended localities along the R Cowie between STONEHAVEN and DRUMOCHTER'. No fixed defences have yet been identified at Drumochter or Dalwhinnie, and inspection of 1946 vertical aerial photographs shows no trace of anti-tank cubes or pillboxes. It may be that the narrowness of the pass and the roughness of the ground at Drumochter made fixed fortifications unnecessary.

The *North Highland Area Defence Scheme* (22 December 1940) notes a rail block at 'Drumochter', military grid reference 332263 (actually at NGR: NN 818 042 between Kingussie and Kincraig, some miles north-east of Drumochter);[81] this reference is repeated as 43/332263 in a later Scottish Command document.[82] In the second half of 1941, the War Diary of Scottish Command 'G' notes a railway block at Drumochter (military grid 48/200939, NGR: NN 690 716) – a far better-chosen spot where the pass is very narrow.[83]

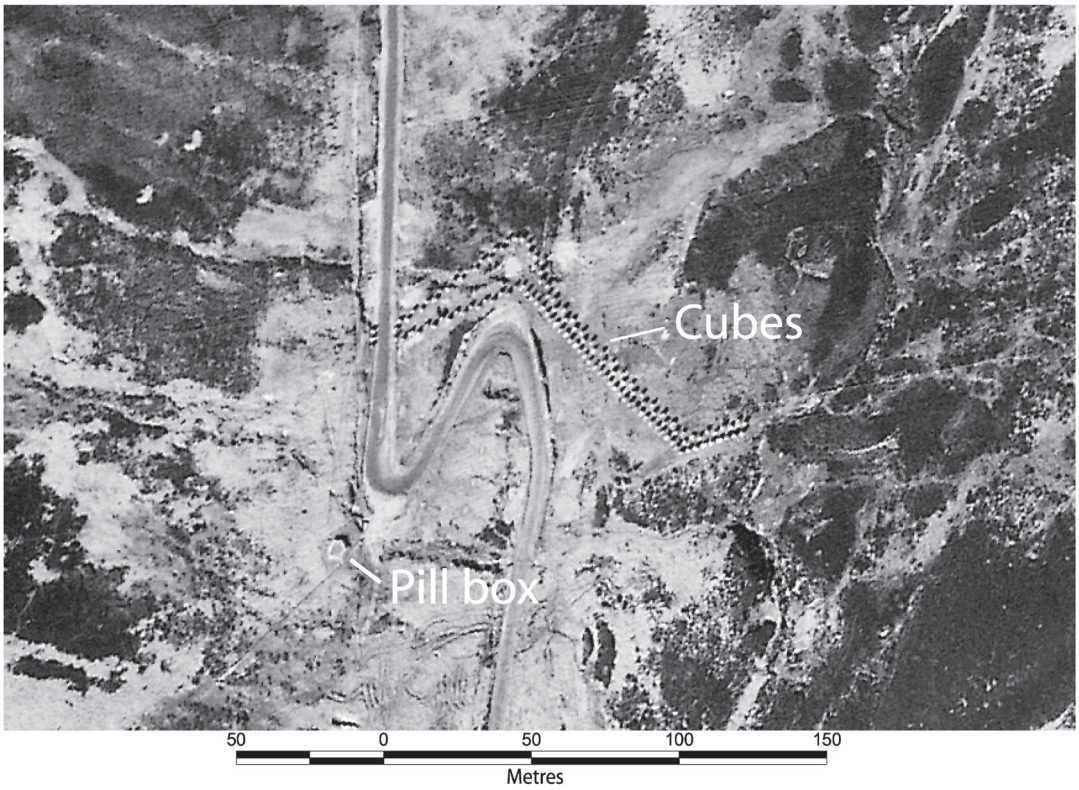
GLENSHEE: THE DEVIL'S ELBOW

The next pass, 51km to the east, is Glenshee, on the trunk road (now the A93) from Braemar to Blairgowrie (illus 1). The road climbs steeply up from Braemar to the pass, which is flat and relatively broad (now the site of the Glenshee ski complex). At the southern edge of the pass, at NGR: NO 1417 7730, the road drops down steeply into the valley of the Allt a'Choire Sheiridh. This point is covered by a five-sided pillbox designed to sit on the steep western slope of the pass (NMRS no: NO17NW 22) (illus 5). The western, rear side of the roof (the longest side, 5m long) is flush with the hillslope at the edge of the old military road. The walls at right angles are 1.8m long, the southern having the entrance, down seven external steps. The eastern wall roughly parallel to the main road is 2m long with a single firing loop. To north and south are two angled walls 3.1m long; that facing north towards Glen Shee has two firing loops; that facing south towards the Devil's Elbow (see below) has one.



ILLUS 5 The surviving, northern, Devil's Elbow pillbox, from the south-east

There is an internal brick ricochet wall facing the entrance and a firing step below the south-eastern loop. The walls are 45–50cm thick of



ILLUS 6 Detail of RAF vertical aerial photograph RAF-106g-scot-uk57-4024, 8 May 1946, showing the blocks and the southern (now destroyed) pillbox

granite and concrete, and the roof is 50cm-thick concrete, without corrugated iron shuttering.

Until major post-war improvements, this road had, south of the pass, a notorious double hairpin bend known as the Devil's Elbow (at NGR: NO 142 766). A 1946 RAF aerial photograph shows a double line of anti-tank cubes just north of the Elbow, with a pillbox covering the first of the double bends (NMRS no: NO17NW 23.01) (illus 6).[84] The aerial photograph seems to show it as six-sided, probably a Type 22.

The improvements to the road here have caused a great deal of damage; however, more than half of the anti-tank cubes survive, although the pillbox has been swept away.

The unusually tall anti-tank cubes are arranged in two roughly parallel lines, 2–3m apart. From the bottom, next to the burn, two lines of nine cubes run WSW. The front (northern) rank is arranged as one block parallel to the line, the next set at 45 degrees to the line and set slightly back, the next parallel, and so on. The cubes of the rear (southern) rank are all set parallel to the line. The cubes in the line are about 1m apart (illus 7).

The two lines turn north-west; the arrangement of the lines is such that the defence is three cubes thick at the corner. The next segment of the rear line was originally 32 cubes long, once again in a straight line with the sides of the cubes parallel to the line. The forward line runs for about 37 cubes, in the same alternating arrangement, overshooting the rear line by about 15m.

Both lines turn south-west. The last segment of the rear line consists of 16 or 17

ILLUS 7 The surviving anti-tank cubes at the Devil's Elbow, from the east

cubes, ending at the road just above the hairpin bend. Here, the cubes are set at 45 degrees to the line, alternately set slightly forward, and slightly back. The front line has about 20 cubes running to the road. The final element of the arrangement is a set of three or four cubes on the west side of the road.

In 2005, the arrangements of cubes were intact up to about the 20th block of the second segment; at this point a track has been forced through the barrier. To the west of this point, the majority of cubes survive only as stumps, to the point where they have been swept away by the road improvements.

The road improvements at the Devil's Elbow have provided an unexpected dividend. Immediately below the modern road, where the anti-tank cubes would have ended, is a pile of rough concrete blocks, at least seven of which can be seen to have a shared characteristic – a square socket about 8in (0.20m) across through their whole depth (illus 8). Some of these have what appear to be their smooth upper faces showing: in these, the socket is set into a shallow rebate. These would appear to be parts of a standard roadblock, the sockets being for the insertion of steel uprights or hairpin-shaped bars (probably sections of railway line; see Lowrey 1995, fig 42; 2004, 20). The rebates were for a metal cover to prevent the sockets filling up with rubbish and to protect vehicles crossing them from damage. Scottish Command's 1943 *Standard Operational Instructions* make specific recommendations for periodic inspection of such sockets 'to ensure that the covers do not get stuck'.[85]

ILLUS 8 One of the probable roadblock sockets, now lying below the modern road at the Devil's Elbow

The northern of the two pillboxes and the cubes were noted by John Guy in his 1992–9 survey; the southern box had been destroyed by then.

GLEN MUICK–GLEN CLOVA

There is a track of sorts across the mountains, to the east of Glen Shee, linking minor roads running along the bottoms of Glen Muick (NGR: NO 3095 8514) and Glen Clova (NGR: NO 2853 7606), marked 'x' on illus 1. There is no known defence of it and we must presume that it was not seen as a practicable route for a motorized column.

BRIDGE OF DYE

The next practicable vehicle crossing of the mountains is at the Bridge of Dye, 51km to the ENE of the Devil's Elbow, which carries the Cairn o'Mount road (now the B974) from Strachan to Fettercairn (illus 1 & 2). At the point chosen for defence, the road was at that time carried over the Water of Dye by a narrow high-arched bridge. The bridge was identified for planned demolition in *Progress Report No 2 … on Preparation for Defence*[86] in June 1940 and for a roadblock in *51st Division Operational*

ILLUS 9 The western pillbox at Bridge of Dye, from the north-east

Instruction No 13 in September 1940.[87] The Bridge is defended by two pillboxes built to a non-standard design camouflaged as part of a granite wall running east from the B974 towards Bridge of Dye Farm, forming the boundary between the farm's garden and the access track to the farm. However, there is a problem: the pillboxes are north of the bridge. The purpose of the Cowie Line would probably have been achieved better by pillboxes on the steep, partly-wooded hill to the south from which a heavy fire could have been brought to bear on the bridge and its northern approach.

Both are made of coursed red granite with concrete roofs over corrugated iron shuttering. The eastern of the two (NMRS no: NO68NE 9.01) is rectangular and measures 5.1m by 3.2m externally, with an entrance to the east. The walls are 1.1m thick. It has two loops facing towards the bridge and a loop at the north-west corner facing north-west towards the junction of the farm access and the B974. There are no loops in the north wall. The loops are stepped internally, providing an internal shelf.

The western pillbox (NMRS no: NO68NE 9.02) is lobate, terminating the garden wall at the junction with the old route of the B974 (illus 9). The entrance is south of the wall, facing south-east. There is a single loop facing the north exit from the bridge, two loops face northwards along the approach road to the bridge and, tucked into the easternmost corner is a fourth, narrow, upward-facing loop, which would provide flanking cover to the eastern pillbox. This loop has a concrete shelf below it, internally.

The pillboxes seem, therefore, to be intended to function in both directions, covering the bridge to the south, but also with loops facing northwards along the approach road. It is possible that the pillboxes are an initiative of the local estate, initially unrelated to the overall defence scheme – that they are a non-standard design may support this argument, as unauthorized variants were not supposed to be permitted ('local designs to meet the wish of individual officers cannot be considered'[88]). However, the stepping of the loops and the roof structure closely resemble styles in Cowie Line Type 22 pillboxes. Bernard Lowry (pers comm) suggests that it would have been unlikely for the War Office to sanction a private effort by the estate and that the desire for camouflage was the sole reason for their unusual shape and materials; the situation of the pillboxes might suggest a desire for 'all round defence'.

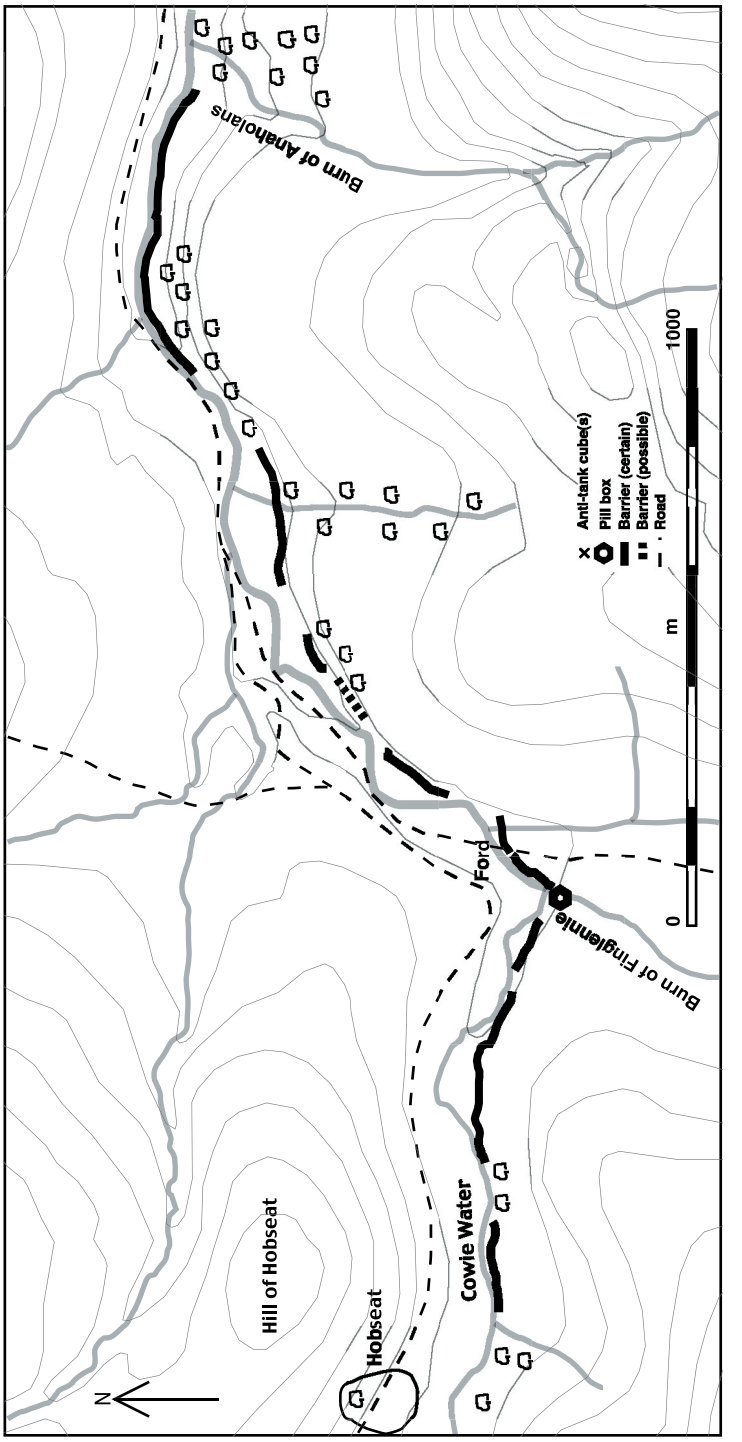
FORD NEAR WELL OF MONLUTH

The next 'road' across the Mounth is a track, 8km to the east of Bridge of Dye, marked on the second edition 1903–5 map (illus 2). Tracks leave the public road at the north at NO 6994 9163 and NO 7165 9133 and rejoin a public road at NO 7504 8348, fording the Cowie Water at NO 7331 8667.

An examination of the area (which is now heavily afforested), and of the 1946 aerial photographs, has revealed no trace of fixed fortifications. It may be that by 1940 the track had already dwindled in its northern part to a mere footpath, which is how it is mapped now, and required no fixed defence.

THE ANTI-TANK BARRIER SEGMENT 1 – HOBSEAT TO BURN OF FINGLENNIE

Some 2.5km to the ENE of the Monluth ford are the first traces of fortifications on the Cowie Water itself (NMRS no: NO78NE 10) (illus 10). At NGR: NO 7570 8738, starting just to the east of the gorge carrying an un-named northward-running tributary of the Cowie, the anti-tank barrier appears. The effect of the gorge is to cover the western flank of the barrier. The first section is 150m long, terminating at the east where the bank rises to form a natural barrier, at NGR: NO 7582 8736. Between the two points, the barrier varies in character, but has generally a vertical face up to 2m high revetted by vertical



ILLUS 10 Map of the defences between Hobseat and Burn of Anaholans, including the pillbox at Burn of Finglennie

ILLUS 11 A well-preserved section of the anti-tank barrier near its western end, with surviving upright timbers held in place at the top of the bank by loops of galvanized wire

poles over 2m tall held in place by loops of galvanized wire.[89] In front of the vertical face (in the western portion), is a ditch up to 2m wide fronted to the north by a counterscarp bank; to the east, the ditch broadens into a flat berm 5–6m wide between counterscarp bank and vertical face.

At the western end of this part of the barrier, where the riverbank rises to make a sufficient barrier on its own, there are three right-angled steel posts along the top edge of the scarp (described by Lance-Corporal Tuley as 'picket posts') probably representing surviving elements of wire entanglements: these posts turn up all along the Line, individually or in groups.[90]

As the natural escarpment drops down again, the artificial barrier resumes at NGR: NO 7580 8739 – at first there is only the vertical face close to the water, held in place by surviving posts but, as space permits, the counterscarp bank in front of the vertical face reappears. The height of the vertical barrier varies between 1m and 4m. There are significant sections of surviving timber revetment (illus 11). The barrier ends at NGR: NO 7635 8731, as the hill rises towards the pillbox at Burn of Finglennie immediately after a complex zig-zag.

This is the only part of the Line where timber revetment survived in any quantity at the time of the survey in 2004–5. Elsewhere, only the galvanized retaining wire loops survive, although occasionally in great quantities.

BURN OF FINGLENNIE

The first strongly-defended locality and the first pillbox on the Cowie Water itself, is a crossing (at NGR: NO 7649 8739) across the Cowie at its confluence with the Burn of Finglennie close to an abandoned farm know as Lady's Leys, covering the point that the Cryne Corse Road crosses the Cowie Water (NMRS no: NO78NE 10) (illus 10). The crossing is now bridged, but the aerial photographs and historical mapping suggest it was then a ford. The site (NMRS no: NO78NE 10) was first located by Graham Tuley, then Forest District Manager for the Forestry Commission, on whose land these structures lie. On the 1946 aerial photographs, the landscape is largely open; now it is heavily forested.[91]

The defences comprise a Type 22 pillbox set on a bluff above the ford (illus 12). To the front (north) is a steep slope; to the right (east) of the box there is a deep near-vertical drop to the Burn of Finglennie.

The pillbox seems to be the one surviving in its most original form on the Line. It is heavily embanked with soil, up to the level

ILLUS 12 The heavily-camouflaged pillbox at Burn of Finglennie

of the bottom of the firing loops and there is thick soil covering of the roof. Consequently, the box is almost invisible from a few metres away. The walls are about 1m thick. The roof is concrete over corrugated iron shuttering. There is a rifle loop to the left of the door in the form of a pipe through the wall (a typical Type 22 feature, but rare on the Cowie Line). There are single firing loops on the north-west, north and south-east faces, with concrete lintels, and a double loop on the north-east face, towards the ford, with a pair of steel lintels, one behind the other.

The initials 'BED' are inscribed on the internal faces of two of the lintels, on the upper surface of one loophole and on the outer face of the same loop.

THE ANTI-TANK BARRIER SEGMENT 2 – BURN OF FINGLENNIE TO BURN OF ANAHOLANS

To the east of the burn the earthwork barrier resumes immediately (illus 10). It comprises the low counterscarp bank, a 5m-wide berm and a vertical face up to 1.8m high. No timber survives but its restraining wire is present. This section ends where the riverbank rises to a sufficient height to provide an adequate barrier at NO 7653 8738.

Where it resumes to the east, the forest was extremely dense at the time of survey and the Line here could not be checked on the ground until its next terminal at NO 7715 8778. However, the Line is mainly very clear on the 1946 vertical aerial photographs,[92] as a vertical face with counterscarp, and it has been plotted off the photograph onto illus 10.[93]

From NO 7728 8789 to NO 7775 8789 the Line is clearly visible on the ground as a bank along the edge of the Cowie Water, mainly scraped up from behind. It ends just short of the Burn of Anaholans.

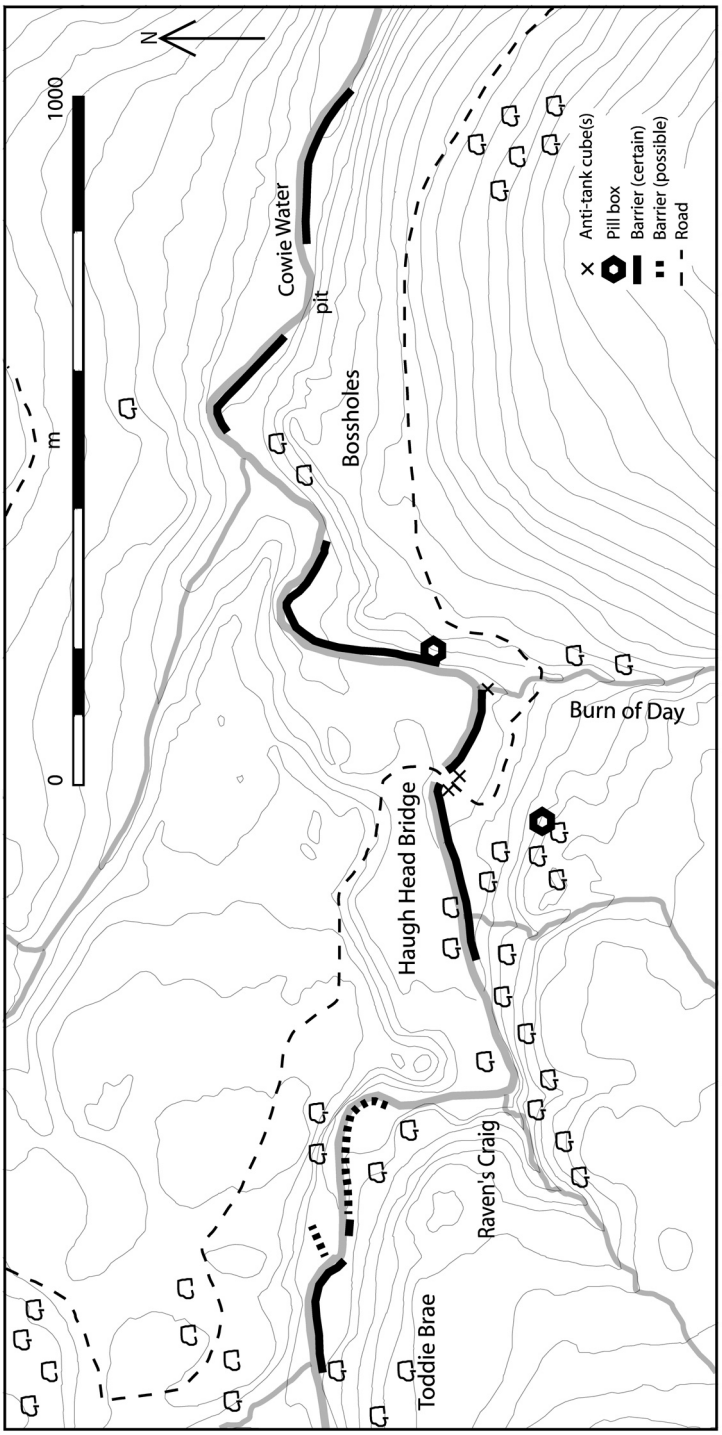
From this point, for *c* 2.25km eastwards, the natural bank is too steep to require artificial reinforcement, except perhaps for slight traces at NO 782 879, and again from NO 7880 8822 to NO 7893 8828, where there are earthworks that might be a part of the anti-tank barrier, although they could be unrelated.

THE ANTI-TANK BARRIER SEGMENT 3 – TODDIE BRAE TO BOSSHOLES, INCLUDING THE HAUGH HEAD COMPLEX

Toddie Brae

The barrier resumes where the riverbank no longer forms an adequate barrier on its own (illus 13). For the first few metres it is doubled – a vertical face to the river, a berm and then a second vertical face; the westernmost end has, unfortunately, been damaged by a turning circle of a forestry track. As it leaves the modern forestry plantation, the anti-tank barrier takes the form of a bank, vertical to the river, the height achieved by scraping soil up from behind (the quarry for the spoil being particularly well-defined here); it is very clear for about 180m, at which point it appears to stop at a pile of very large stones (?a deliberate blocking feature). A modern fence runs along the bank's crest; however, almost every second post is a reused picket post of the type seen elsewhere on the Line and it may be that there was originally a barbed wire obstacle along its crest. Some 30m to the east, there is a short section about 25m long of what may be the barrier, and then another *c* 210m of what might *possibly* be artificially-heightened bank, ending where the river enters a steep-sided gorge. Two picket posts were noticed – opposite the point on the north side of the river where the haugh[94] ends, and a second at the point where the river enters the gorge. Just to the west of the gorge is a trench running away from the bank at an angle roofed over by closely spaced and now much overgrown timbers, now 30–40cm deep below the top and about 1m across and 2–3m long. It is not clear if this is a defence-related feature.

The 1946 vertical aerial photographs show what appears to be a deep ditch and bank, with the same characteristics as the anti-tank barrier,



ILLUS 13 Map of the defences from Toddie Brae to Bossholes

running across the haughland on the north side of the river; the Line is marked as a dashed line on illus 13. There is no trace on the ground now. This could be interpreted as a further element of the defences.

Haugh Head

The steep gorge known as Raven's Craig provides a substantial barrier until NO 8040 8823, where the artificially enhanced bank recommences as a vertical face with restraining wire but with no surviving timbers. This is one of the most heavily defended crossings of the Cowie Water. At this point, the Crathes–Stonehaven ('Slug') road – now the A957 – first approaches the Cowie Water, coming to within 750m. At NO 8011 8928, an unclassified road leaves the Slug Road, heading south to Mergie and then south-east to Kirkton of Fetteresso. It crosses the Cowie Water over a narrow bridge at Haugh Head (illus 14). To the west of the bridge are 11 anti-tank cubes (NMRS no: NO88NW 35.03), seven in their original position, four piled against them. The 1946 aerial photograph shows a double line of cubes (11 in total) parallel to the road, each cube set at 45 degrees to the lines.[95] To the east of the bridge is a deep hollow, which seems to be the southern exit from a ford, as there is a matching hollow on the northern bank. There are three cubes on the eastern side of the hollow where it leaves the Cowie Water. The overall effect of all these cubes and the hollow is to create a stretch of road 15m long on the south side of the bridge where a vehicle would not be able to turn off

Illus 14 Haugh Head Bridge showing cubes

ILLUS 15 Haugh Head south pillbox from the south; the bridge is visible immediately to the right of the pillbox

to right or left. One might speculate that there would be a roadblock closing the southern end of the 'lane'. However, the Haugh Head Bridge was to be demolished, not blocked, according to the schemes of 21 June 1940[96] and 22 September 1940[97] (Table 1).

The cubes at the bridge were covered by fire from two pillboxes. One is set high above the bridge 150m to the south (NMRS no: NO88NW 35.01) (illus 15); the other (described later) is above a high section of bank 190m to the east of the bridge. The south pillbox now stands out boldly against the horizon, but historical mapping and the 1946 vertical aerial photograph[98] show that the pillbox originally stood at the northern edge of a wood, and would have been invisible, especially as it was camouflaged by turf and chicken wire (Mr Crabb, pers comm). The pillbox is a hexagonal Type 22 with granite walls 2.8–3m long and over 1m thick, with a 30cm-deep concrete roof over corrugated iron shuttering – the same basic pattern seen along the whole Line from Fetteresso to Ury East. The only difference is that here, uniquely, the internal ricochet wall is of concrete blocks instead of bricks. The five walls other than that broken by the entrance each have a single stepped firing loop 40–45cm deep internally and *c* 25cm deep externally. The three frontward-facing loops are larger (with concrete lintels) than the rear two, which have granite lintels. The loop opposite the entrance faces the bridge, the right front faces the small group of concrete anti-tank cubes at the Burn of Day to the north-east (described below). The roof has a covering of soil and turf up to 60cm deep.

The barrier resumes immediately to the east of the Haugh Head Bridge, as a vertical face to the river with soil scraped up from behind to provide enough height. After about 140m it stops at a the point where the Burn of Day joins the Cowie Water; here, five anti-tank cubes sit

ILLUS 16 Cubes to east of Haugh Head, blocking the Burn of Day where it joins the Cowie Water

in the bottom of the burn (NMRS no: NO88NW 35.04) (illus 16). To the east, the south bank of the Cowie rises suddenly to form an effective natural barrier rising almost vertically from the river, overlooking lower haughland to the south.

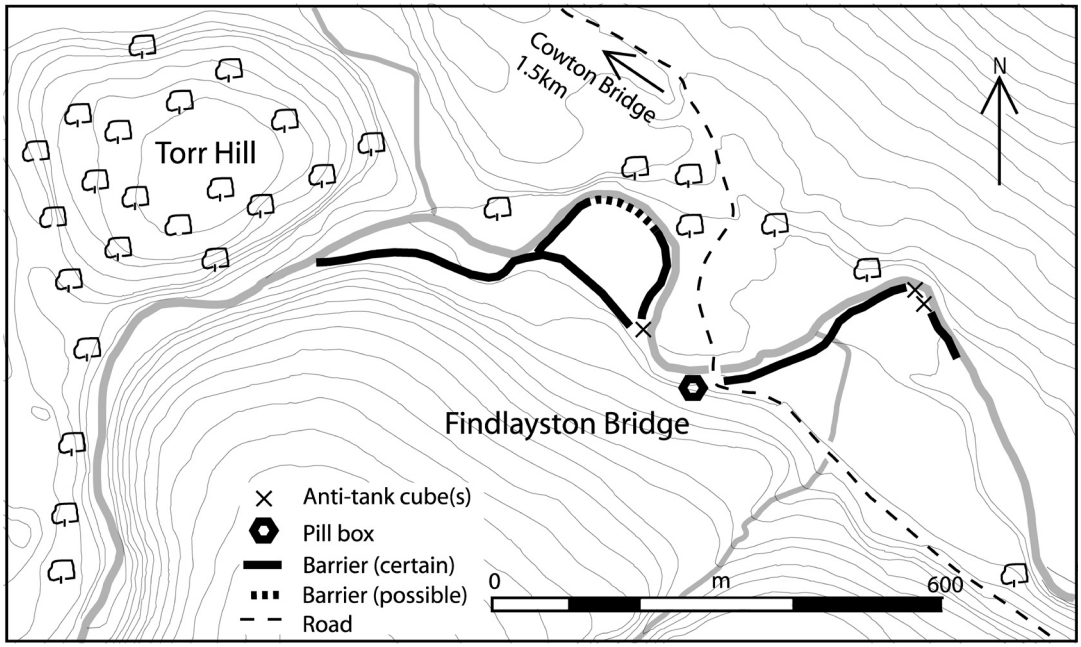
The east pillbox is dug into a shallow slope above this high, steep part of the bank (NMRS no: NO88NW 35.02). It is of similar pattern and dimensions to the south box, but has four full large loops and only one of the smaller granite-lintelled loops (on the wall clockwise from the entrance). The pillbox has soil partway up its sides – at its deepest to the bottom of the small loop. The loops cover the bridge and its approaches.

Below the pillbox, at the edge of the river, the steep drop retreats from the edge of the river (illus 13). The barrier resumes below the pillbox on the flat ground between the river and the bluff behind it, mainly taking the form of a bank 1.3–1.5m high with a ditch in front. The bank has also in part been built up from soil scraped up from behind. One picket post on the bank implies the former presence of wire. This section of barrier runs for about 370m until the bank of the river once again rises to form a natural barrier.

Bossholes

After a gap of about 220m, the barrier resumes for a further 175m. Here it presents a vertical face to the river, and there is much galvanized wire marking the former location of revetting timbers. The barrier once again stops where the riverbank rises to a sufficient height. On the high ground, at NO 81330 88468 (illus 13, point marked 'pit'), on the edge of the steep slope over the river, there is a rectangular pit now less than 1m deep. It has three picket posts along its northern edge, and one post and some galvanized wire along its rear edge (illus 17). This is interpreted as a weapon pit overlooking the haughland to the north. A similar pit was recorded at Findlaystone (below) where the picket posts still supported galvanized chicken wire, perhaps intended to hold camouflage.

ILLUS 17 Rectangular pit with picket posts set on high ground above the south bank of the river



ILLUS 18 Map of Findlaystone complex

The bank resumes 150m to the east, where the barrier has been scraped up from behind. After 245m, the riverbank rises steeply again, providing a formidable natural barrier. It is almost 3km, measured along the river, before the riverbank drops enough to require artificial enhancement again.

THE ANTI-TANK BARRIER SEGMENT 4 – FINDLAYSTONE

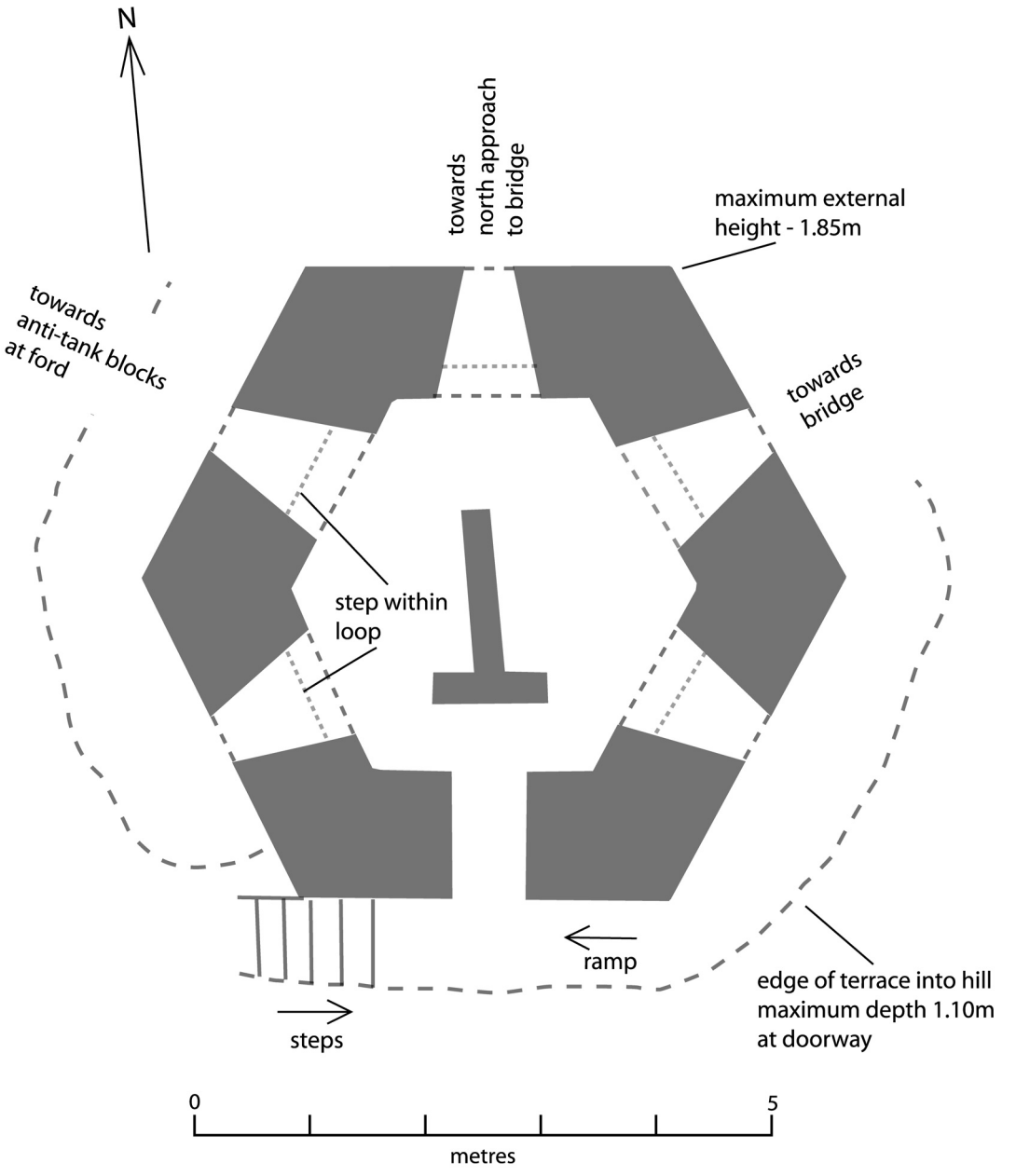
The section at Findlaystone has some of the most substantial and complex parts of the barrier (illus 18). It resumes where the haughland reappears. It takes the form of a bank up to 2m high that probably takes advantage of an existing river terrace; there are considerable quantities of galvanized wire and it appears as a relatively freshly dug feature on the 1946 vertical aerial photographs. It curves sinuously across the haugh (illus 19), turning north to a point where the bank immediately beside the river is briefly high enough to act as a natural barrier. Near its east end there is a coil of very rusty barbed wire, which may be a left-over from the war. At NO 8403 8851 the barrier bifurcates. The southern arm curves to the east, cutting off a considerable area of haugh to the north, appearing as a vertical bank with galvanized wire, eventually developing a counterscarp and, as it approaches the river again, the ditch between them becoming deep and steeply sided (illus 20); the end of this 'ditch' is closed off by three steel picket posts. It ends where the bank rises up again to become a very formidable barrier.

The other arm follows the river. At first it takes the form of the riverbank made vertical. It fades away to the west of the bend in the river, and resumes at the bend in the form of two banks with an intermediate ditch or berm. The northern bank is here steep and high and one must question the need for any artificial barrier, let alone two.

As the two arms of the barrier approach each other at the east, there is a ford across the river. The southern end of the ford has two exits: the

ILLUS 19 Westernmost portion of Findlaystone barrier

ILLUS 20 Barrier to the west of Findlaystone



ILLUS 21 Plan of the pillbox at Findlaystone

eastern is blocked by four cubes (NMRS no: NO88NW 36.02). The western now has only one cube to one side but has probably been re-opened after being blocked in 1940–1. At this point the riverbank rises to a considerable height.

To the south-west of the bridge is a well-preserved Type 22 pillbox set in a shallow hollow cut into the hillside (NMRS no: NO88NW 36.01). Its door faces south and it has five full-sized loops covering the bridge and

ILLUS 22 One of the slit trenches at Findlaystone, from the east

the cubes to the west. The plan of this entirely typical pillbox is shown in illus 21.

The Findlaystone complex is unusual in having clear surviving slit-trenches. There are two on the high ground overlooking the bridge: one looks along the bridge; the other is a little to the east (illus 22).

To the east of the bridge the riverbank is naturally high but it has still been raised artificially by up to 1m. The bank is then made vertical, up to 2m high at first, dropping to about 1.3m towards the bend in the river; there is a great deal of galvanized wire on this section. At the turn of the bend, the earthwork barrier disappears completely, but a very effective barrier is provided by 15 anti-tank cubes interspersed between large mature beech trees (NMRS no: NO88NW 36.03) (illus 23). At the eastern block, the vertical bank resumes. There are stretches faced with stone and the identification of the section east of the cubes as part of the barrier system, rather than earlier reinforcement of the bank, must remain uncertain. At NO 84597 88378, the bank rises again to form a natural barrier at the east.

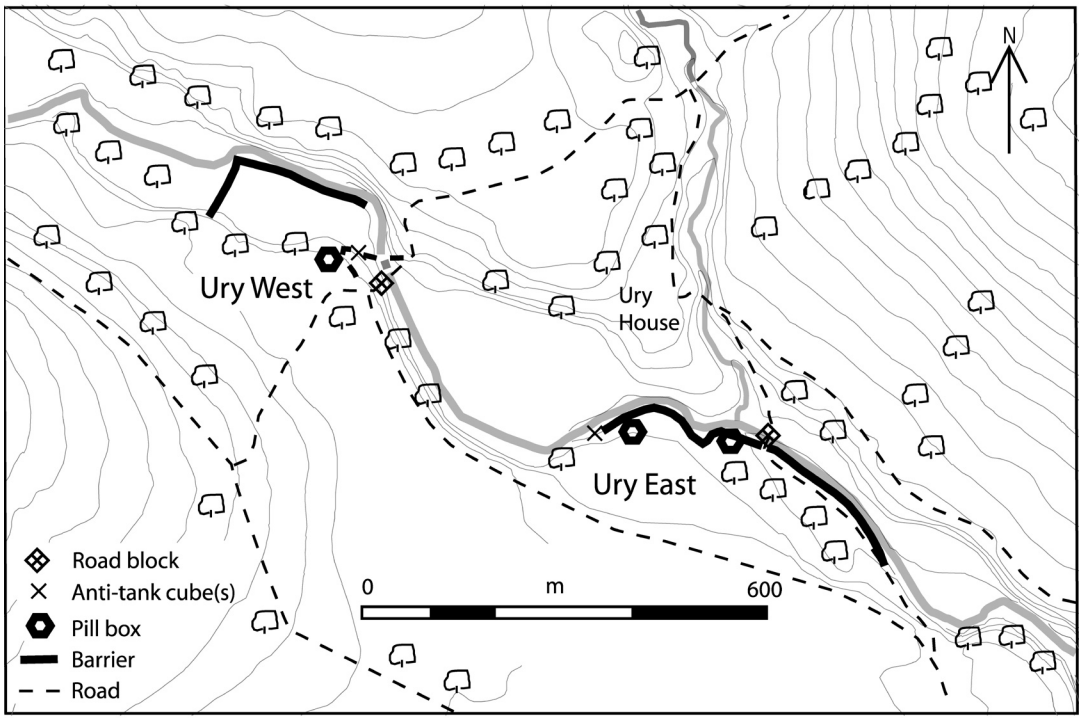
URY WEST

From the point last described to NO 8503 8802, the bank of the river is very steep and high (illus 24). At the latter point, the steep bank and the river separate, a boggy haugh lying between them; the artificial barrier begins again at

ILLUS 23 Line of 15 cubes to the north-east of Findlaystone, from the west

NO 85275 87878, closing off the eastern end of the haugh, taking advantage of a pre-existing drop. It runs north to a sharp bend in the river, where the bank is briefly high and rocky. From this point, the barrier turns sharply east and once again takes the form of a bank cut to a vertical face; there is a great deal of galvanized wire on this stretch. The barrier runs to a point close to two bridges where recent landscaping for the garden of a house has removed any trace of it. As the river approaches the two bridges, the bank becomes very steep and high again; it is partly revetted by stone, almost certainly of 19th-century date.

The western bridge, of 18th- or 19th-century date, crosses the river at a low level. The other is a high 19th-century viaduct bridging the whole width of the gorge of the Cowie. There are three anti-tank cubes at the southern end of the low bridge displaced from their original positions blocking the bridge. Just to the west of the south end of the viaduct are two massive concrete blocks, both of which have, on one side, three grooves of different lengths (illus 25). These are the surviving elements of a roadblock of a standard type. The blocks would originally have flanked the road and the grooves were intended to hold three steel beams, usually lengths of railway rail placed across the road. The presence



ILLUS 24 Map of the Ury West and Ury East complexes

ILLUS 25 Socketed concrete blocks originally forming roadblock on the Glen Ury viaduct

of a roadblock here is not listed in any files I have consulted.

Covering the whole length of barrier described and the two bridges is a pillbox perched on higher ground to the south (NMRS no: NO88NE 87). It is of the usual Cowie Line Type 22 pattern with edges about 3m long, walls just over 1m thick and a roof 30cm-thick over corrugated iron shuttering. The door is to the south and the box has single full-sized loops on all five faces. It has an internal T-shaped brick ricochet wall. There is a heavy braced iron stanchion against the east face, probably an anchor for wire.

From the viaduct at Ury West, the bank rises to over 15m in height for a distance of about 470m and there is no need for an artificial barrier.

URY EAST

The high bank running from Ury West has steel picket posts in places along its crest, implying the presence of wire along the clifftop. Where the bank once again drops in height, in front of Ury House, the artificial barrier resumes at NO 8586 8755, marked by a group of six anti-tank cubes which, unusually, have lifting loops of wire set into their tops.

The western end of the barrier here is covered by a pillbox set to the south on higher ground (NMRS no: NN88NE 88.01). It is a very formidable variant of the Type 22 pillboxes seen elsewhere on the Line; unusually, it has rifle loops on both sides of the door to protect the entrance (illus 26). It has double loops in the north-west and north-east walls. The anti-tank barrier takes the form of a single vertical face. Behind it is a modern barbed wire fence, but the considerable number of steel picket posts amongst the modern wooden ones suggests that this fence may replace an original 1940–1 obstacle. At NO 8595 8757, a modern settling tank has been inserted, damaging the barrier. At this point, the barrier becomes stronger: at the river, a vertical face 1.5m high; a broad shallow ditch; then a second bank 1.8m high; along the crest of the southern bank, the modern barbed wire fence supported by many picket posts continues. The normal single bank – here 2m high with abundant U-shaped (rather than double-looped) galvanized wire – then resumes, running to the quarry bridge.

Covering the bridge, its approaches and the barrier to its west is a second pillbox (NMRS no: NN88NE 88.02). It is the usual Type 22 with single loops in the five faces away from the south-facing door. The ricochet wall has been partly demolished. There are no rifle loops flanking the door.

The quarry bridge is now a temporary steel structure replacing an earlier bridge. As at the Ury West viaduct, there are two massive concrete blocks, now displaced into the riverbed, with

ILLUS 26 The west pillbox at Ury East, from the south

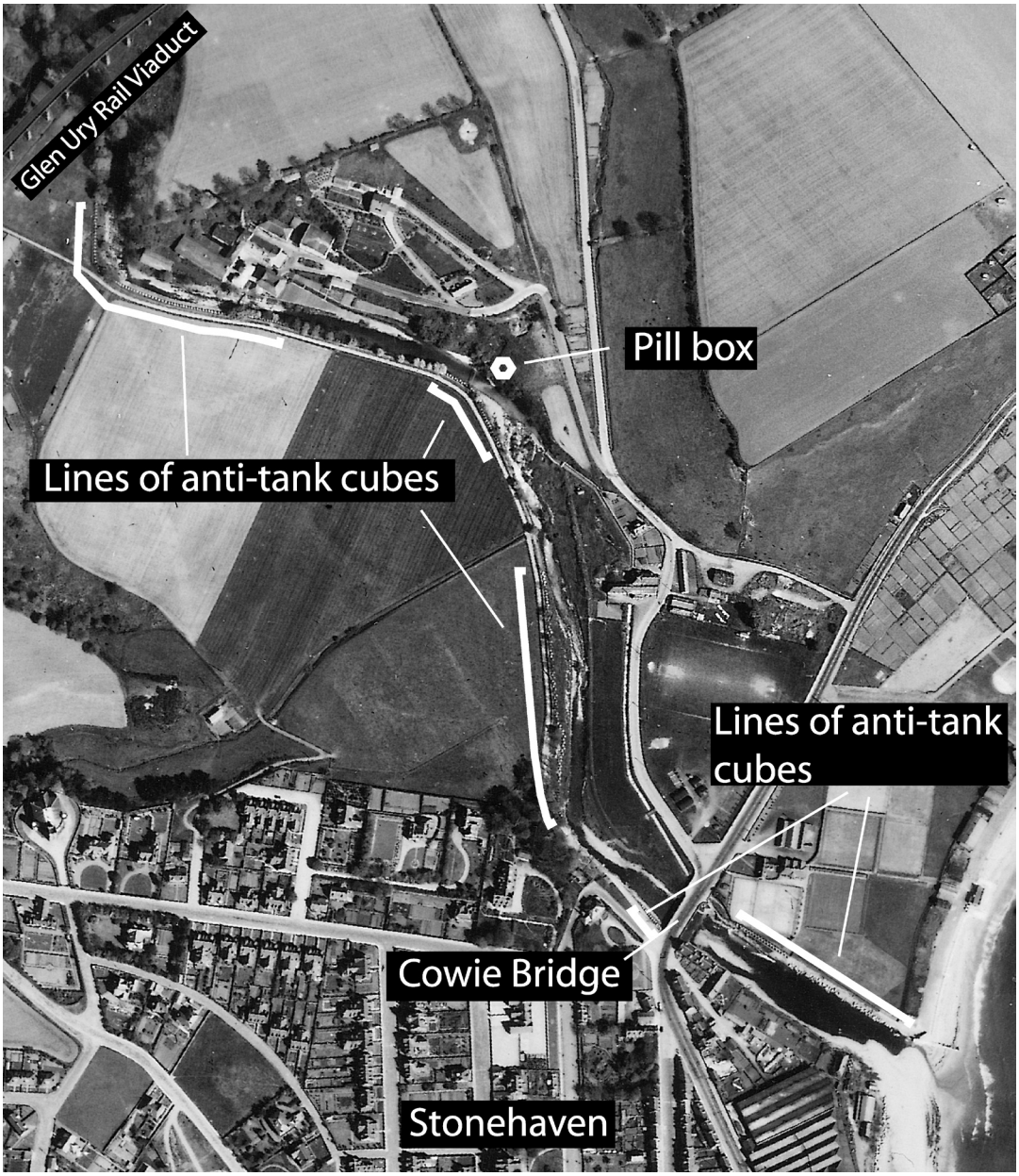
three slots to hold horizontally-set rails to form a roadblock. This roadblock is not listed in any War Office files I have consulted.

The barrier resumes immediately to the east of the bridge as a vertical face to the river with much galvanized wire. The barrier ends where the southern bank becomes a high cliff at NO 8628 8736.

STONEHAVEN: GLENURY VIADUCT TO THE SEA

The 850m-long stretch of the south bank of the Cowie Water between the Ury East complex and the Glenury rail viaduct is high and steep, and requires no reinforcement. The viaduct itself was to be the site of a railway block in the scheme of 22 September 1940 (Table 1). This superseded a planned demolition in the 21 June 1940 scheme (Table 1) at another rail bridge some 400m to the north-east. There is now no trace of a block at the south end of the viaduct – it was not possible to examine the viaduct itself as it still carries the main rail line.

Immediately to the east of the viaduct, the south bank drops suddenly to a broad floodplain. From here to the sea, defence was provided by a single row of anti-tank cubes running along the southern riverbank clearly visible on the 1946 aerial photograph (illus 27).[99] Only 12 of the cubes now survive, in a row on the southern bank immediately to the west of the Cowie Bridge in Stonehaven (NMRS no: NO88NW 312) (illus 28). All the others have disappeared; however, there is a now a raised flood bank along the southern riverbank. In a few places, concrete is visible through the turf and it is possible that some or all of the cubes survive within the bank. The riverbanks and riverbed between the Cowie Bridge and the sea have been radically remodelled since 1946 and all the cubes between Cowie Bridge and the sea visible on the aerial photograph have been removed (except one now set upon the very end of the breakwater). As has already been noted, defences were not to be built unless they could be covered by gunfire. The cubes are indeed



ILLUS 27 The northern edge of Stonehaven as illustrated on 1946 vertical aerial photograph, RAF-106g-scot-uk57-4196, 8 May 1946

covered, but by a pillbox on the north – 'enemy' – bank (NMRS no: NN88NE 311). This pillbox is set into a very steep south-facing slope (illus 29). At first, it appears to be a specially designed example, like that above Glenshee at the other end of the Cowie Line. However, it is a Type 22, albeit a variant. It has six sides but three of the sides are set into the hillside. The entrance

is on the west from a corridor running into the bank. Of the three visible faces, those facing up and down the river have double loops; that facing straight out across the river, one. There is a single internal brick ricochet wall covering the entrance. Jane Cruickshank of the local paper the *Mearns Leader* has found a 1948 photograph in that newspaper showing a temporary wooden 'wartime bridge' with two cubes in the foreground; I believe this to have stood just to the west of the pillbox.

The town of Stonehaven itself would have been an effective defensive complex. The Cowie Bridge, then at the northern edge of the town, was to have a roadblock. It is not covered by any recorded pillbox, but cover could have been provided from loopholes in the walls of nearby houses.

We know from War Office files that Stonehaven had a specific defence scheme, published in 1941.[100] It is likely that this reflected arrangements already in existence in 1940. It is interesting to note that 98 Pioneer Company's War Diary records work not only on the Cowie Line but on Home Guard fortifications.

ILLUS 28 The anti-tank cubes beside the Cowie Bridge, from the west

CONCLUSION

The survey of the Cowie Line has shown that a surprisingly large proportion of the structures we suspect to have existed – pillboxes, cubes and the anti-tank barrier – has survived. There are hints of the other features that certainly also existed – slit trenches and weapon pits, and what was probably a continuous barbed wire barrier along much of the Cowie Water, with denser entanglements at the crossing points. The survival of over 5km of anti-tank barrier is particularly noteworthy, as most anti-tank ditches were filled in during or shortly after the war. While the Cowie Line was on a far smaller scale than the GHQ and Scottish Command Lines, it is arguably one of the most completely surviving stop lines. Contemporary War Office documents, while not giving details of the construction of the Line, provide valuable information on the units involved, the strategic background and the changing role of the Line from 1940 to 1943. However, the project demonstrates that, even where relatively full documentation still exists, traditional field survey and, where possible, oral history complement and extend the written record in many ways and provide real insights into the practical implementation of national strategies. It has also been possible to make direct connections between named individuals in the colossal construction campaign of 1940–1 and the surviving monuments of that national effort.

I believe that this paper demonstrates the value of more detailed integrated accounts of other 1940–1 linear defensive systems in Scotland. The next stage in the project will be a comparable account of the Scottish Command Line, which this author has in hand.

ILLUS 29 The pillbox on the northern bank of the Cowie to the west of the Cowie Bridge, from the west

ACKNOWLEDGEMENTS

I am very grateful for the help I have received in bringing the project to completion: Ian Shepherd and Adam Barclay provided invaluable help and support in the fieldwork; my mother provided logistical support; the owners of the scheduled portions of the Line kindly allowed access: Mr Crabb, Mr Holman-Baird, Mr Strachan and Mr Peace of the Forestry Commission. Mr Holman-Baird also provided, from his archives, a copy of the agreement between the estate and the Royal Engineers (Appendix 2). Ms Jane Cruickshank of the *Mearns Leader* kindly publicized the project and trawled her archives to locate photographs of defence-related sites in Stonehaven. I am particularly grateful to Graham Tuley, who first noted the survival of the earthwork anti-tank barrier, and through him, his father's eyewitness account of the building of the Line. Bernard Lowry, Anna Ritchie, David Easton, Graham Tuley and an anonymous referee kindly read the text and made very valuable suggestions. Ms Judith Cripps and Ms Eleanor Rowe of Aberdeen City Archive kindly searched for Kincardine County Council wartime papers, alas without result.

NOTES

1 Pillboxes are small fortifications made of concrete, brick, stone or a combination of all three, with fittings of steel and/or wood. See Wills 1985, Lowry 1995 and Ruddy 2005 for descriptions of the known types. Those on the Cowie Line were designed to protect light machine gun (Bren Gun) positions.

2 These 'cubes' are masses of concrete, often with pieces of stone and/or steel lifting loops set into their tops placed to inhibit the movement of tanks. The Cowie Line cubes are generally about 1–1.2sq m and the same high. Examples pushed

over onto their side reveal a broader concrete foot, presumably to aid stability. The Devil's Elbow cubes are much taller. See Lowry 1995, Ruddy 2003.

3 Wills 1985.
4 The two relevant volumes are Guy 1992–9a and 1992–9b.
5 http://ads.ahds.ac.uk/catalogue/specColl/dob.
6 Redfern nd *Defence Lines* 12 http://www.britarch.ac.uk/projects/dob/dl12b.html
7 www.pastmap.org.uk.
8 Collier 1957.
9 Directive for the occupation of Denmark and Norway 1 March 1940: http://www.ibiblio.org/pha/policy/1940/400301a.html.
10 Collier 1957, 127.
11 Ibid, 123.
12 Ibid, 127.
13 http://www.raf.mod.uk/bob1940/bobhome.html.
14 Collier 1957, 129.
15 Ibid, 129.
16 eg Wills 1985; Ruckley 2004; Lowry 2004; Osborne 2004. Collier 1957 is very skimpy, and possibly inaccurate (eg Map 7, opposite p 129), on the coastal and defensive systems.
17 WO166/122.
18 WO166/5459
19 WO166/115.
20 WO199/568.
21 Ibid.
22 Ibid.
23 It is interesting to note that the successful German invasion of Crete in 1941 hinged on just such a seizure and exploitation of an airfield (Stewart 1991).
24 WO166/120 Weekly Intelligence Summary No 42.
25 WO166/120 Daily Intelligence Summary No 2.
26 WO166/115 Minutes of conference 28/5/40.
27 WO199/568.
28 WO166/434.
29 Ibid.
30 WO166/115: location statement 6 January 1940.
31 Ibid: location statement 25 May 1940.
32 Ibid: location statement 30 June 1940.
33 WO166/434.
34 Ibid.
35 WO166/115.
36 WO166/122.
37 Collier 1957, 143; Lowry 2004, 13.
38 Wills 1985, 13.
39 WO166/122.
40 Wills 1985, 13.
41 WO166/5701.
42 WO166/136. In March, this order is clarified to exclude airfield pillboxes, the construction of which is to continue.
43 WO166/115: location statement 30 June 1940.
44 Ibid.
45 http:www.army.mod.uk/2div/organisation/51_scottish_brigade.htm.
46 The inadequacy of German intelligence of British dispositions is demonstrated by their belief that 9th Division still existed as a separate formation on 20 September 1940, and was manning the coast from Edinburgh to Northumberland! Collier 1957, map 18.
47 WO166/115: 13 June 1940 CRHF 1/2035/E.
48 WO166/122: Scottish Command Engineer Instruction No 8 of 23 June 1940.
49 Ibid.
50 Ruddy 2003.
51 WO166/5701.
52 WO166/3743: War Diary July 1940; WO166/434.
53 WO166/434.
54 WO166/619.
55 WO166/3743.
56 WO166/3745.
57 WO166/5583.
58 WO166/1211: April 1941.
59 Ruddy 2003, 9.
60 WO199/2657: Scottish Command 14/8/04.
61 The infantry brigades of 51st Division had been numbered 152, 153 and 154 since 1915.
62 WO166/136: April 1941.
63 WO166/434.
64 Ibid.
65 WO166/1022.
66 WO166/3745.
67 WO166/622.
68 WO166/116: 5th Division had been the Scottish Command reserve force since July, when it had moved to Stirling, after its immediately post-Dunkirk concentration at Inverurie: WO166/419.
69 WO166/619.
70 Ibid.
71 WO166/1254.
72 Ibid.
73 Ibid.
74 WO166/6035: Amendment 7 (26 February 1942) to Scottish Command Operational Instruction No 11 (16 June 1941).

75 WO166/6035: War Diary Sc Comm Operation Order 1.
76 WO199/2785.
77 WO166/10362: 28 January 1943. Scottish Command Operational Instruction No 17.
78 WO166/10362.
79 Needless to say, the marked-up copy of military sheet 52 has not yet come to light.
80 WO166/10362: 6 May 1943.
81 WO166/1211.
82 WO166/128: 18 April 1941. Scott Cmnd Standing Op Inst 1941 (18/3/41) amended (with military sheet map no).
83 WO166/129: Amendment 4 to Scottish Command Operational Instruction No 12, appendix G.
84 1946 RAF aerial photograph (106g-scot-uk57-4024).
85 WO166/10362.
86 WO166/115: 21 June 1940. Progress Report No 2 … on Preparation for Defence.
87 WO166/619: 22 September 1940. 51st Division Operational Instruction No 13.
88 WO199/2657.
89 There are two types of galvanized wire used on the Line. The most common type is made up of four braided wires, the resultant cable being 10mm in diameter. This is usually looped twice around a post. In some places an unbraided galvanized wire is used; this is usually looped once around the post.
90 The picket posts are L-shaped in section and over 5ft (1.5m) long. There is a hole for wire and a notch on both ends of the L every 6in (15cm).
91 RAF aerial photograph 106g-scot-uk57-4020 and 4021.
92 RAF aerial photograph 106g-scot-uk57-4015.
93 RAF aerial photographs 106g-scot-uk57-4019 and 4020.
94 Haugh: 'a piece of level ground, generally alluvial, on the banks of a river; river-meadow land', *Scottish National Dictionary* 1986.
95 RAF aerial photograph 106g-SCOT-UK57-4014.
96 WO166/115.
97 WO166/619.
98 RAF aerial photograph 106g-SCOT-UK57-4014.
99 RAF aerial photograph 106g-SCOT-UK57-4196.
100 WO166/1254.

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APPENDIX 1: THE BUILDING OF THE DEFENCES ALONG THE RIVER COWIE, KINCARDINESHIRE IN 1940; RECOLLECTIONS OF THOMAS HENRY TULEY IN 1993, WITH NOTES BY GRAHAM TULEY

INTRODUCTION

This account was written in 1993 by Private, then Lance Corporal, 3034118 of 217 Pioneer Company, Thomas Henry Tuley (25 April 1913 to 13 March 1995) assisted by his son Graham Tuley, Kincardine Forest District Manager, Forestry Commission 1984–90.

The 217 Pioneers were recruited to Skegness and then the Companies were formed in Bradford. The first spell of duty was in Stonehaven where the first Company Lance Corporals were created. The 217 Pioneers had a Major in charge who was supported by a Captain, two Lieutenants, two or three Second Lieutenants, a Sergeant Major and a Quartermaster Sergeant. The Company had ten sections and each section had a Sergeant, a Corporal, three Lance Corporals and 21 men.

The Pioneers were there to provide support for the Engineers. The Engineers were responsible for earth-moving and the construction of the pillboxes but the barriers were constructed by the Pioneers who had axes, sledgehammers and wire-cutters; the Pioneers were in Stonehaven from September to December 1940 [War Diary shows that they were there only until mid-November].

The Company Headquarters were in a building in the centre of Stonehaven somewhere near the bus station. Company Orders were posted up at Company Headquarters and this gave duty details for the following day. The men were taken from the Town Hall Square in lorries to where they were working, which could be up the Cowie or as far south as Inverbervie. The men were billeted in houses in Stonehaven and ate their evening meals in their billets; during the day they had army rations.

THE COWIE LINE

The men were told that the defences to be constructed were in case of an invasion along the Aberdeenshire coast. This barrier was from the sea into the hills to impede the southwards movement of an invading army.

The Cowie was a fairly natural defence line, apart from occasional weak spots, and in these cases the south side was cut back to provide a vertical face. These faces were reinforced with posts cut from the neighbouring forest, sunk into holes dug at the foot of the excavations. The brushwood was packed behind the long poles, to prevent erosion of the cut bank, before the long poles were revetted, by plain wire, to shorter posts driven into the top of the banking, thus presenting a vertical wall to anything coming south.

The wooden supports were made from trees that were felled nearby. The felling, branch removal and cutting to size may have been done by 217 Pioneers. At the site, which is now in Fetteresso Forest [the Burn of Finglennie site], the felling was done to create a clear line of fire for the pillbox.

The vertical face against which the fence was constructed had been created by the Engineers before the Pioneers arrived. It is believed that the trees were recently felled and the branches still had needles on them [Scots pine?].

The pillboxes were constructed by the Engineers with materials that were mixed up on site. Timber framing was used to support the concrete during construction.

A concrete pillbox was constructed further up the hillside (at Finglennie), and this was surrounded by three coils of Dannert Wire [Dannert Wire is barbed wire in a concertina coil], the top one being windlassed to the bottom ones and the triangular metal posts (already in position) by a single strand of barbed wire.

NOTES BY GRAHAM TULEY (1993)

I am aware of what may be excavations near the pillbox in the middle of Fetteresso Forest. One is behind the pillbox and the other is near the river; the latter has water and two picket posts (triangular steel posts) in it. When asked about these, my father said that they may the remains of tank traps which were dug out, or advance posts for the Infantry to hide in when the defence was operational.

When visiting the site in the late 1980s, my father found a picket post amongst the ground vegetation about 150m west of the pillbox in Fetteresso Forest (Finglennie). From the ease that he found it, there must be many more on the slope and a metal detector would make the job easy. I am aware of two other picket posts (see above), and there are several in the fence bordering the field to the south side of the River Cowie and south of Mergie.

APPENDIX 2: AN AGREEMENT BETWEEN THE ROYAL ENGINEERS LIAISON OFFICER AND MR ROBERTSON, FACTOR TO URY HOUSE POLICIES AND RICKARTON HOUSE POLICIES

Ref No P/CL/9

URGENT DEFENCE WORK

1. This is an agreement between Mr Robertson, Factor to Ury House Policies and to Rickarton House Policies, on the one part and the Royal Engineers Liaison Officer (hereafter called the R.E.L.O.) on the other, to facilitate urgent defence works.

2. This agreement gives right of access on to certain lands, and permission to do certain works. It does not concern or prejudice questions of compensation.

3. The R.E.L.O. or contractors and their employees authorised by him are hereby authorised to do the following works:–

(i) Enter on to the Ury Estates and the Rickarton Estates only in order to carry out the works set out below.

(ii) Remove shingle from the Stonehaven Beach at agreed points.

(iii) Construct concrete roadblocks at East and West Ury Bridges, together with holes in the road.

(iv) Excavate trenches at these and other agreed points on the banks of the Cowie Water.

(v) Cut down certain trees and branches of trees where this is necessary to clean fields of fire.

(vi) Trim the banks of the Cowie Water where necessary and revet with brushwood and other means.

(vii) Construct anti-tank blocks along the banks of Cowie Water at all cattle crossings and other places.

Signed (?) *Robertson*

Signed (?)*M Reynolds* 2nd Lt R.E., Royal Engineers Liaison Officer

POSTSCRIPT

Anecdotal evidence has come to my attention since the submission of this paper that, according to a man who was a child in the Durris area in 1940, Council workmen were involved to a significant extent in defence construction work in that area.

GJB

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