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The Fortification of the Firth of Forth 1880–1977

'The most powerful naval fortress in the British Empire'

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Chapter 6

MUCH ADO ABOUT NOTHING, 1919–38

6.1 Stasis, 1919–29

In the months following the end of the war, the naval establishment in the Forth began to wind down. On 30 January 1919, the Admiralty decided that in view of the urgent necessity to demobilise as many ranks and ratings as possible at Scapa Flow, Cromarty and the Firth of Forth, all coast and harbour defence measures including booms could be suspended. However, some guns and searchlights were to be kept fully manned. In the Firth of Forth, the two 6-inch guns on Inchcolm and their searchlights were to continue in operation. In May 1919, it was agreed by the Navy and Army that the coast defences of the Forth could be stood down. In June 1919, the boom defence establishment was closing.[1] Dobinson notes that in England some coast defence projects were unfinished, and these, in general, were allowed to go on to completion.[2]

The history of coast defence from 1918 to 1931 was set out in the latter year by Lt Col Sir Maurice Hankey as the first paper presented to a sub-committee of the Committee of Imperial Defence, established under the chairmanship of Sir Stanley Baldwin to examine the 'whole coast defence situation'. Hankey's paper provided a useful summary of developments in thinking (although rarely of any action) in those 13 years.[3]

On 1 July 1919, the Annual Returns recorded the defence of the Forth as unchanged from the Armistice, although the list records that the 12-pdr (18cwt) Naval guns had been approved for the fitting of auto-sights and 'rigid mountings', suitable for their coast defence role – a little late one would think. The Coastguard, Hound Point and Downing Point batteries were also listed as having had their personnel withdrawn. Interestingly, the Forth is recorded in the same document as having two 12-pdr (12cwt) guns at Leith Fort for drill purposes (no longer listed in 1922) and a 64-pdr smooth-bore gun on Inchkeith for signalling purposes.[4]

A year after the Armistice, on 1 November 1919, the War Office wrote to the Home Ports Defence Committee to inform it that it intended that the coast defences would be reduced to care and maintenance. The defences had served their purpose in the late war and would be 'sufficient and adequate until the further advance of scientific mechanical invention has resulted in a considerable change in the methods of attack and defence of coastal areas'. Consequently, the Army Council did not propose 'to effect any alterations whatsoever in the existing Coast and Harbour Defence of the United Kingdom'. There were, however, plans to regularise the ownership of batteries built on land held under the Defence of the Realm Act, including Cramond Battery, Inchmickery and Inchcolm of the Middle Defences, and Leith Docks and Pettycur in the Outer.[5]

In August 1919, the Government, at the insistence of the Chancellor of the Exchequer Winston Churchill, promulgated the rolling 'Ten Year Rule', which meant that the armed forces should prepare their annual estimates 'on the assumption that the British Empire would not be involved in a great war' for the following ten years. The application of the rule led to major cuts in defence spending and to a lack of long-term investment. It was finally abandoned in 1932.

A Joint Committee of the Home and Overseas Defence Committees was set up in March 1920 to consider the future needs of coast defence. During the next decade, this Committee produced a series of reports, starting with basic principles, in 'Forms of Attack and Forms of Defence', finalised December 1922.[6] Starting in February 1923, and completed in eight reports between 1924 and 1931, the Joint Committee reviewed the defences of individual ports on the basis of these principles. At the time of writing his summary in 1931, however, Hankey could report that although plans had been drawn up for the revision of almost all the coast defences of the Empire, none had been implemented: 'For practical purposes the coast defences, which were out of date at the end of the War, are still in the same state. They are armed with guns … outranged by modern cruisers and battleships, and not provided with up-to-date shell.'[7]

Although the Forth could be described in 1918 by General Scott-Moncrieff (Director, Fortifications & Works, War Office, from 1911 to 1918) as 'probably the most important Naval base in the United Kingdom',[8] the strategic importance of the North Sea diminished rapidly, as the German and Russian

navies were negligible forces. France and her large bomber force became the likeliest threat and consequently southern bases again became the focus of interest.

In 1922, the last year for which traditional annual returns of Fixed Armament were published, all the Inchkeith 9.2-inch and 6-inch guns were in care and maintenance, as were the 6-inch guns at Pettycur. The Kinghorn 9.2-inch and 6-inch guns and the 6-inch guns at Leith Docks were for 'Training and Practice'. All the guns of the Middle Defences were in care and maintenance, apart from Coastguard (by this date included in the Middle Line), for Training and Practice; the 12-pdr guns and carriages on Cramond and on Inchcolm were noted as 'deficient'.[9]

The Washington Treaty (ratified in 1923) limited the relative sizes of the fleets of the main naval Powers (Britain, the USA, Japan, France and Italy), the maximum sizes of ships, and a maximum armament of 16-inch guns. The effect of the limitations on the Royal Navy meant that, should Britain be at war with Japan, the fleet left at home would barely be equal to that of France.[10] While the British Battle Fleet was expecting to face France in the Mediterranean, its cruisers would be stationed nearer home to protect shipping; but a concentration of modern French cruisers in Home Waters might cause problems for the Royal Navy; these were of 10,000 tons displacement, with eight 8-inch guns, and their modern gunnery control could ensure that 70% of shells would fall within 100 yards (*c* 91.4m) of their target.[11] Despite this, coast defence was not considered a priority for spending.

In 1925, a Joint Committee paper confirmed that, 'The North Sea [had] ceased to be the most important strategic area in Home Waters, and the fleet anchorages employed in the late war [were] no longer suitable'. Scapa Flow was to be replaced as the fleet anchorage by Berehaven (Co Cork), which would provide a base for operations in the Channel and in the Atlantic, and was out of range of French air attacks.[12]

Rosyth, beyond the range of French land-based air attack, was initially to continue in use as a naval docking and repair port but the Committee of Imperial Defence decided that Rosyth should be placed in care and maintenance in October 1925.[13]

Although Rosyth had diminished in strategic significance, Largo Bay in the Forth was selected in the mid-1920s as the main convoy assembly point on the east coast. In any war with France, all British trade through the English Channel would immediately be rerouted around the north coast. Largo Bay was chosen because of its capacity, its accessibility by rail, its location (allowing the reduction of transit times for cargoes travelling via the north of Scotland) and its reasonable protection from the weather.[14]

This convoy anchorage required defence. It was to be able to accommodate up to 130 vessels and, despite its distance from France, 'this anchorage offers so promising an object of attack to any hostile cruiser which had penetrated into the North Sea that the provision of defences to meet a heavy scale of cruiser attack is essential'. Largo Bay was seen as vulnerable to bombardment by ships of the line, minelaying, bombardment by submarines and attacks by coastal motor boats (CMB).[15] The convoy anchorage could not, however, easily be made secure, as it was outside the existing outer line of the Forth defences. Separate anti-torpedo defences for the naval and convoy anchorages would cost between £600,000 and £700,000, and it was considered more economical to concentrate the defence in one line at the May Island. The provision of an anti-submarine boom across the estuary there (eight miles (12.9km) long in difficult waters), 20 anti-submarine patrol vessels and a controlled minefield 11.3 miles long (*c* 18.2km), as well as over 200 miles (*c* 322km) of detector loop, would cost £297,500.

A wholesale move of the Forth defences eastwards was proposed by the Naval Staff in July 1925 to meet possible French attacks by armoured cruisers, destroyers or submarines: the Inchcolm Fire Command would be completely disarmed, and the few remaining guns at the bridge would be replaced by a 6-pdr twin gun, once such a weapon was available. Inchkeith would lose all but two of its 6-inch guns. The most significant proposals were the addition of a single 9.2-inch gun at both Caiplie (Fife) and Gin Head[16] (Lothian) to cover the May Island minefield, along with a further eight 6-inch guns at these two sites, on the May Island and at 'Lady's Folly', on Greenside Hill, south-east of Cockburnspath, capable of firing into the southern approaches to the May Line. The provision of guns on this outermost line (using only 6-inch guns at Caiplie, on the May Island and at Gin Head) was again discussed in 1927.[17]

In April 1930, the 'approved scheme' for the defence of the Forth provided for 'Outer Defences on the Line FIFENESS – MAY ISLAND – CAM HEAD [that is, Gin Head]; Defences on the Line KINGHORN – INCHKEITH – LEITH DOCKS and a single battery of twin 6-pdrs at INCHGARVIE Battery' but ominously, 'it will be some considerable time before any work is likely to be commenced on the installation of the new armament' … 'The Military Authorities are therefore working on an Interim Defence Scheme utilising the existing Guns and Lights …'.[18] This Interim Defence Scheme would form the basis of the defence until the Second World War, and is set out in Table 14.

The decade closed with the publication of the *Manual of Coast Defence (Provisional)* in 1930, superseding the edition of 1914. The greatest difference from the earlier version was the addition of defence against aerial attack and co-operation between guns and spotting aircraft.[19]

In December 1931, the politician Sir Stanley Baldwin, who had been prime minister in 1923–4 and 1924–9 and would be again in 1935–7, was appointed by the Prime Minister of the National Government, Ramsay MacDonald, to chair a small sub-committee of the Committee of Imperial Defence,

Table 14
Table showing both the 'Interim Defence Scheme' of April 1930 and the detailed armament table of 1934 (WO 192/252 1931-1955). A further document suggests that only four of Inchkeith's 6-inch guns were to be employed: A1, A2, L2 and M1 (WO 192/251)

	Interim Defence Scheme of April 1930		**Armament Table June 1934**	
Battery	**Guns**	**Notes**	**Gun Group**	**Armament**
Outer Defences				
Leith Docks	2 x 6-inch Mk VII 2 x DELs	Covering the channel between Inchkeith and Leith	'X'1 and 'X'2	2 x 6-inch Mk VII
Inchkeith South	2 x 6-inch Mk VII 2 x DELs		'A'1 and 'A'2	2 x 6-inch Mk VII
Inchkeith	3 x 9.2-inch Mk X	Covering the east and west of Inchkeith	'B'1, 'F'1 and 'H'1	3 x 9.2-inch Mk X
Inchkeith North	4 x 6-inch MK VII 2 x DELs	Covering the channel between Inchkeith and Kinghorn	'L'1 and 'L'2 'M'1 'O'1	2 x 6-inch Mk VII 1 x 6-inch Mk VII 1 x 6-inch Mk VII
Pettycur	2 x 6-inch Mk VII		'S'1 and 'S'2	2 x 6-inch Mk VII
Kinghorn	2 x 6-inch Mk VII 3 x DELs	Covering sea area east of Kinghorn	'Q'1 and 'Q'2	2 x 6-inch Mk VII
Kinghorn	1 x 9.2-inch Mk X		'R'1	1 x 9.2-inch Mk X
Inner Defences				
Coastguard	2 x 12-pdr QF 2 x DELs	In defence of North Channel under Forth Bridge	'H'1 and 'H'2	2 x 12-pdr QF
Inchgarvie	4 x DELs			

on coast defence. Baldwin had been chairman of the CID for much of the previous decade.[20] The new committee's remit was:

> to examine the whole coast defence situation, in particular developments resulting from the introduction of air forces, with a view to making recommendations for improving the security of the defended ports throughout the Empire.[21]

It was for this small committee that Sir Maurice Hankey (the sub-committee's secretary) produced its first paper, the summary of developments between 1918 and 1931, mentioned at the beginning of Chapter 6.[22]

A key issue in earlier discussions had been the extent to which enemy capital ships would be risked in attacking coastal targets; now, the development of powerful cruisers, whose loss would not seriously damage an enemy's fleet, was believed actually to have *increased* the possibility of an attack by bombardment.

The sub-committee oversaw a bitter argument over the asserted superiority of aeroplanes over fixed artillery for coast defence. The controversy had been sparked off in January 1925, when the Joint Committee had been considering the defences required for the proposed naval base at Singapore, a key element in British naval strategy in the Far East.[23] The Chief of the Air Staff pressed hard for this to be undertaken by torpedo aircraft, which had a range of 150–200 miles, rather than 'locking up the valuable resources represented by six or eight 15-inch guns'. The claims by the Air Staff as to the anti-ship capacity of aircraft were, to put it mildly, optimistic. The Naval and Military Staffs responded with concerns about 'the unproved power of aircraft to achieve decisive results against modern ships … and to the poor results that have hitherto characterised bomb-dropping experiments against mobile targets'. They were also worried that the Chief of the Air Staff relied on moving air assets when an emergency arose, rather than basing them at any port, and that aircraft were ineffective at night and in poor weather.

Although the Baldwin Committee eventually decided in favour of co-operation between the services rather than the wholesale replacement of guns by aircraft, 'the whole question of revision of Coast defence in the Dominions was brought to a standstill'.[24]

6.2 Developments affecting the Forth, 1930–8

In 1928 and again in 1932, the area between Canty Bay on the East Lothian coast, and the Bass Rock was used to test new developments in controlled mining. No controlled minefield or detector loop had apparently been laid since the end of the war, and the officers and ratings had little practical experience. The 1928 trials of detector loops and controlled mines were only moderately successful but, by the end of 1931, sufficient

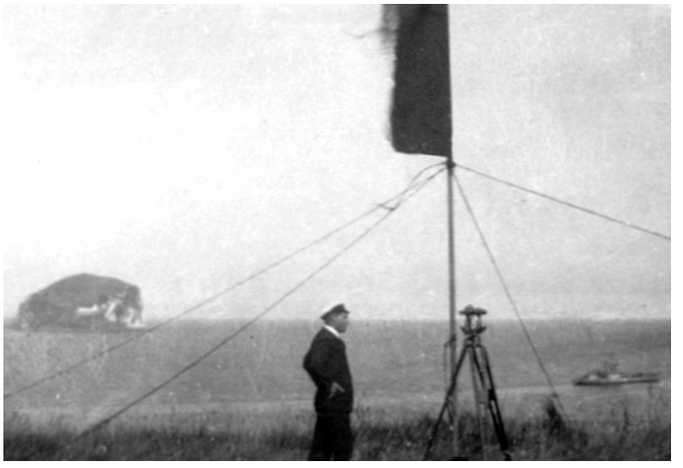

Figure 6.1
The Bass Rock viewed from the Canty Bay tented base-camp, 1932, with a range-finder visible at the left-hand edge of the image (© Trustees of the National Museum of the Royal Navy)

technological progress had been made to warrant further trials.

Two series of tests were carried out: Series 'A' was to test the use of double galvanometers to eliminate 'perturbation' problems, and to trial the 'Firing Rule', which determined when the mines would be fired in relation to a detected crossing of the loop. Series 'B' was for 'AE Units', a non-contact magnetic mine trigger sensitive to a vessel's magnetic field. (In the end AE triggers were never employed.)

The trial party was based in tents in the bay, with support facilities at Rosyth, two minelayers and two 'target' vessels, submarine L20, and an 'R' class destroyer, HMS *Skate*, which made hundreds of crossings of the test area. Six standard mine loops were laid (detector loops of the kind laid round a line of mines, although the mines were not actually laid for the tests). Two guard loops were laid in advance of the mine loops. The results showed that loops laid by trained personnel using standard equipment could obtain a high level of detecting efficiency. The tests, over nine weeks in August to October, provided a strong basis for the Admiralty's deployment of workable equipment from 1938 onwards, in the run-up to the Second World War.[25]

In a 1935 report on the state of defence of key ports, the Forth was considered likely to be attacked by cruisers, merchant cruisers and smaller vessels. Its 'Defences Required' and 'Present Provision' showed a woeful lack of preparedness. The cost of providing an A/S boom, A/T nets, two HDAs and 'hurdle' obstructions was estimated at £107,800.[26] There is a hint in a document of July 1939 that at least the cables for four detector loops and three HDAs had been laid in 1937.[27] The actual installation of a third HDA is recorded in August 1939.[28]

A list of gun ranges on a map (dated 1 April 1936) provides us with a picture of the planned heavy armament of the Forth (four 9.2-inch guns on Inchkeith and Kinghorn; 12 6-inch guns at Kinghorn, Pettycur, on Inchkeith and at Leith Docks). The map also showed the two proposed 6-inch batteries at Caiplie and 'Cam Head' (that is, Gin Head), which had been approved in 1930. Interestingly, the site of the battery built at Kincraig in 1940 is marked in pencil on the map, although the date of the amendment is not clear.[29]

Notes

1 ADM 137/1892.
2 Dobinson 2000: 48.
3 CAB 16/105. Sir Maurice Hankey (later Lord Hankey) (1877–1941). In 1931, Secretary to the Committee of Imperial Defence, former Cabinet Secretary and Royal Marine Artillery Officer. One of the great British public servants of the 20th century (Dictionary of National Biography).
4 WO 33/873; WO 33/942. We believe these two guns may have been those later recorded as being mounted for drill and practice on Inchkeith in the late 1930s.
5 CAB 13/2; CAB 12/1.
6 CAB 16/105.
7 CAB 16/105.
8 WO 32/5528.
9 WO 33/1006.
10 CAB 36/17.
11 CAB 36/17.
12 CAB 36/17. Berehaven was one of three 'Treaty Ports' retained by the UK under the terms of the Anglo-Irish Treaty of 1921. The ports were given up in 1938.
13 CAB 36/17; CAB 3/4.
14 ADM 116/2493.
15 CAB 36/17.
16 Gin Head was marked as Gun Head or Cam Head on various military maps and naval charts, leading to considerable confusion for many years.
17 CAB 36/16; CAB 36/17; CAB 36/18.
18 ADM 116/2493.
19 WO 33/1186.
20 CAB 2/5.
21 CAB 16/105.
22 CAB 16/105.
23 CAB 16/105.
24 CAB 16/105; CAB 24/231/39.
25 ADM 253/14; A1977/060 1932 (Royal Navy Submarine Museum); Cowie 1949: 103–4.
26 ADM 116/4113.
27 ADM 1/9848.
28 ADM 1/9849.
29 WO 78/5179.