



Hartlepool at War

**World War II Defences at
High Throston and Cemetery Crossroads**

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Funded by Bellway Homes Ltd.

Text prepared by Peter Rowe

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Preface

The hurriedly constructed defences of World War II are now recognised as an important part of our heritage. They represent the country's response to the threat of a German invasion in the early years of the War.

Our beaches, roads and railways were protected by numerous pillboxes, road blocks and minefields, as were our towns and villages. Many of these defences were cleared after the War but many remained, hidden in hedgerows or buried in sand dunes.

These defences are now at threat, largely from coastal erosion or urbanisation. This booklet has been produced to raise the profile of these often neglected monuments.

Particular reference is made to a group of pillboxes, built to defend the road network on the western side of Hartlepool, at Cemetery Crossroads and High Throston.

The Coming of War

In the early hours of 1st September 1939, Germany invaded Poland. They had previously annexed Austria and occupied Czechoslovakia. At 9.00am Britain and France issued an ultimatum to Germany to withdraw her troops. This ultimatum was ignored and on Sunday, 3rd September 1939, Britain and France declared war on Germany.



Bomb damage to houses in Brenda Road, Hartlepool (August 1940)

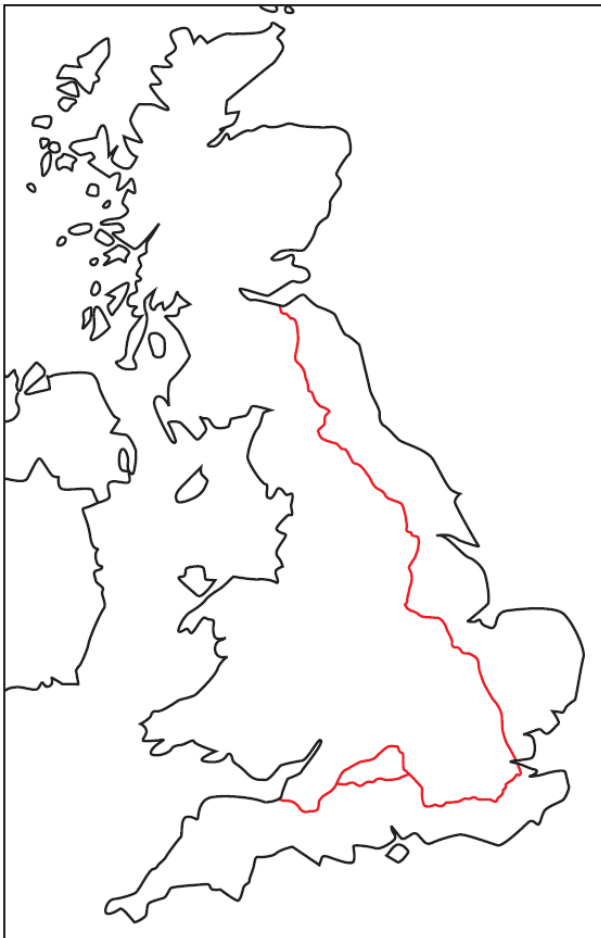
By May 1940 Germany had blitzed through the Low Countries and France driving the British Expeditionary Force back across the Channel. Although over 300,000 British and French troops were successfully evacuated from Dunkirk they arrived back in England exhausted and disorganised. To make matters worse, a huge amount of equipment had to be left behind including rifles, machine guns, artillery and tanks.

Germany made plans to continue its 'Blitzkrieg' across to British soil under the cover name of 'Operation Sealion'. A German invasion was expected to take place within weeks.

Britain prepares for Invasion

Following the evacuation of Dunkirk, only fifteen under-strength trained infantry divisions and two poorly equipped armoured divisions protected Britain. In May 1940 General Ironside was appointed as Commander-in-Chief of the Home Forces. His first task was to develop a strategy to defend the nation against a German invasion.

A key part of this strategy was to defend the coast against seaborne landings. A General Headquarters (GHQ) line running the length of the country was positioned inland to provide an anti-tank barrier around London and the industrial Midlands. Mobile reserves would be stationed behind the GHQ line ready to reinforce static defences where needed.



Ironside's planned GHQ Line

The area between the coast and the GHQ line was most vulnerable and was split into smaller units defined by stop-lines, based around natural anti-tank features such as rivers and valleys.

These were reinforced by additional defences designed to limit the German advance and confine any breakouts from the coast.

Defending the Nation

The fortification of the nation began to take place in earnest in the summer of 1940. Earlier fortifications were often re-used such as the Heugh Gun Battery at Hartlepool. This



battery was the only one in the country to have directly engaged the enemy in World War I during the bombardments of Hartlepool, Whitby and Scarborough in 1914.

left – Heugh Battery



In addition, large numbers of concrete pillboxes and anti-tank obstacles were hurriedly constructed, particularly along the coast. Key points inland such as road junctions, railway bridges and river crossings were also defended to slow down or halt advancing troops.

left - Anti-tank obstacles at Hart Warren

The Origins of the Pillbox

In the late 19th century there were significant developments in the manufacture and use of concrete. The military were quick to utilise this versatile material for defensive structures. The development of reinforced concrete made the material even more useful as this improved its resistance to shelling. The Russians are said to have developed the first concrete defences in the Russo-Japanese War of 1904-05. The term 'pillbox' is first recorded in English in World War I and is a direct reference to the squat circular shape of the early examples. A number were built on the south-east coast in World War I and over 400 were built by the British Expeditionary Force in Flanders at the start of World War II.

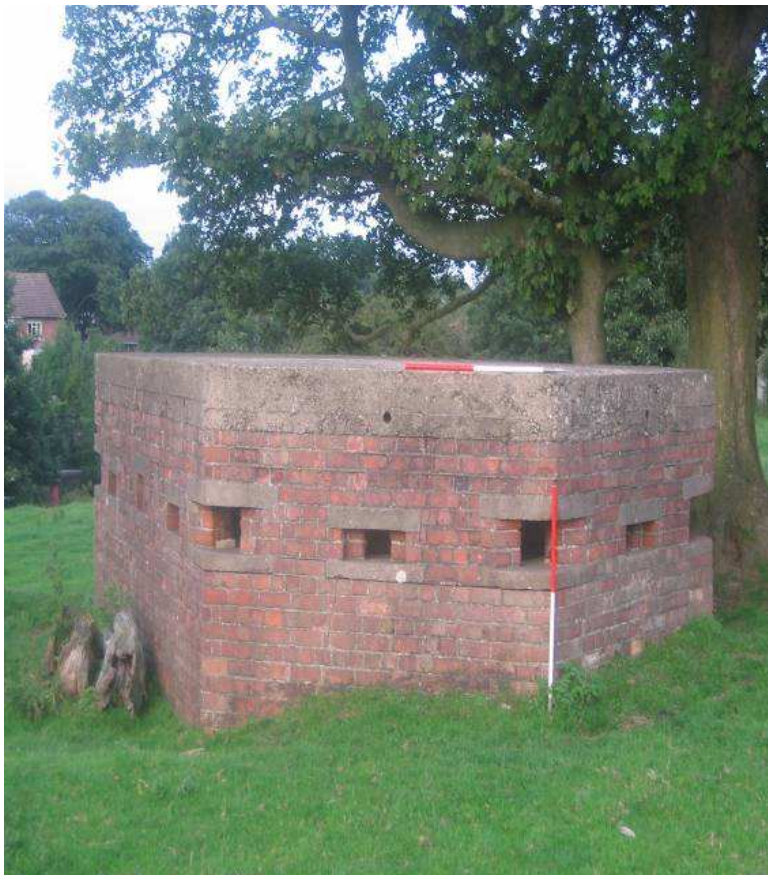
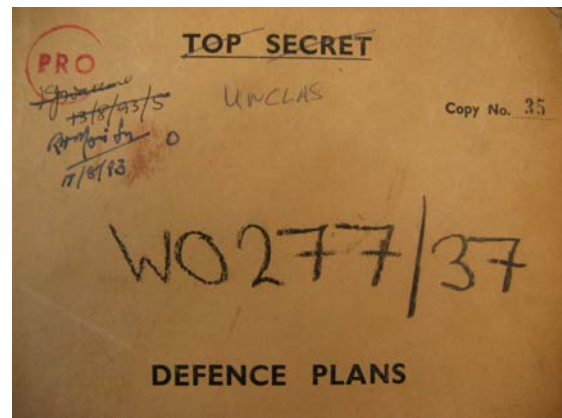


'1940' graffiti carved into the drying concrete of a pillbox at Leven Bridge, Yarm.

It wasn't until 1940 that pillboxes became a standard form of defence on English soil.

The Directorate of Fortifications and Works (FW3)

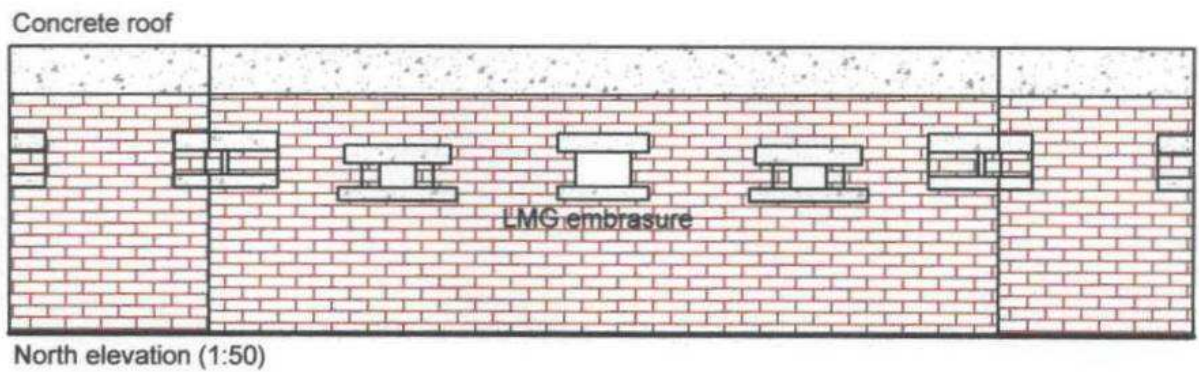
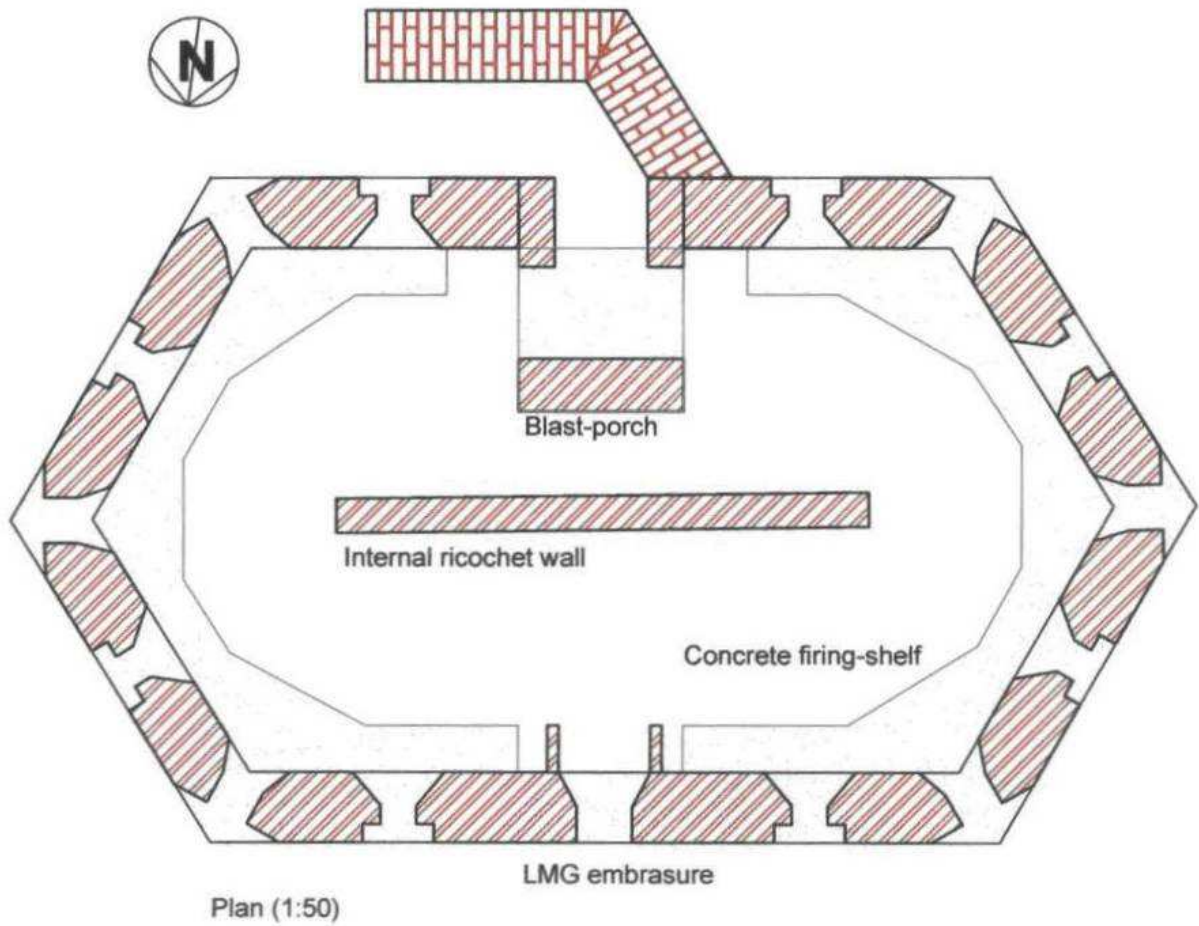
Branch FW3 of the Directorate of Fortifications and Works (part of the War Office) were responsible for the design of pillboxes in World War II. These were standardised to allow rapid mass production.



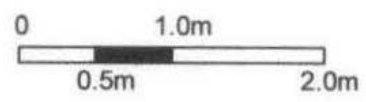
Each design was given a Type number, for example Type FW/22 was a hexagonal shaped pillbox with five embrasures (or openings) for rifle fire with an internal blast wall and a single entrance.

*left – FW/22 variation
at Elwick*

There were over a dozen standard types and it is clear that there were many local variations depending on tactical requirements and the availability of building materials.



Location: Elwick village, Hartlepool

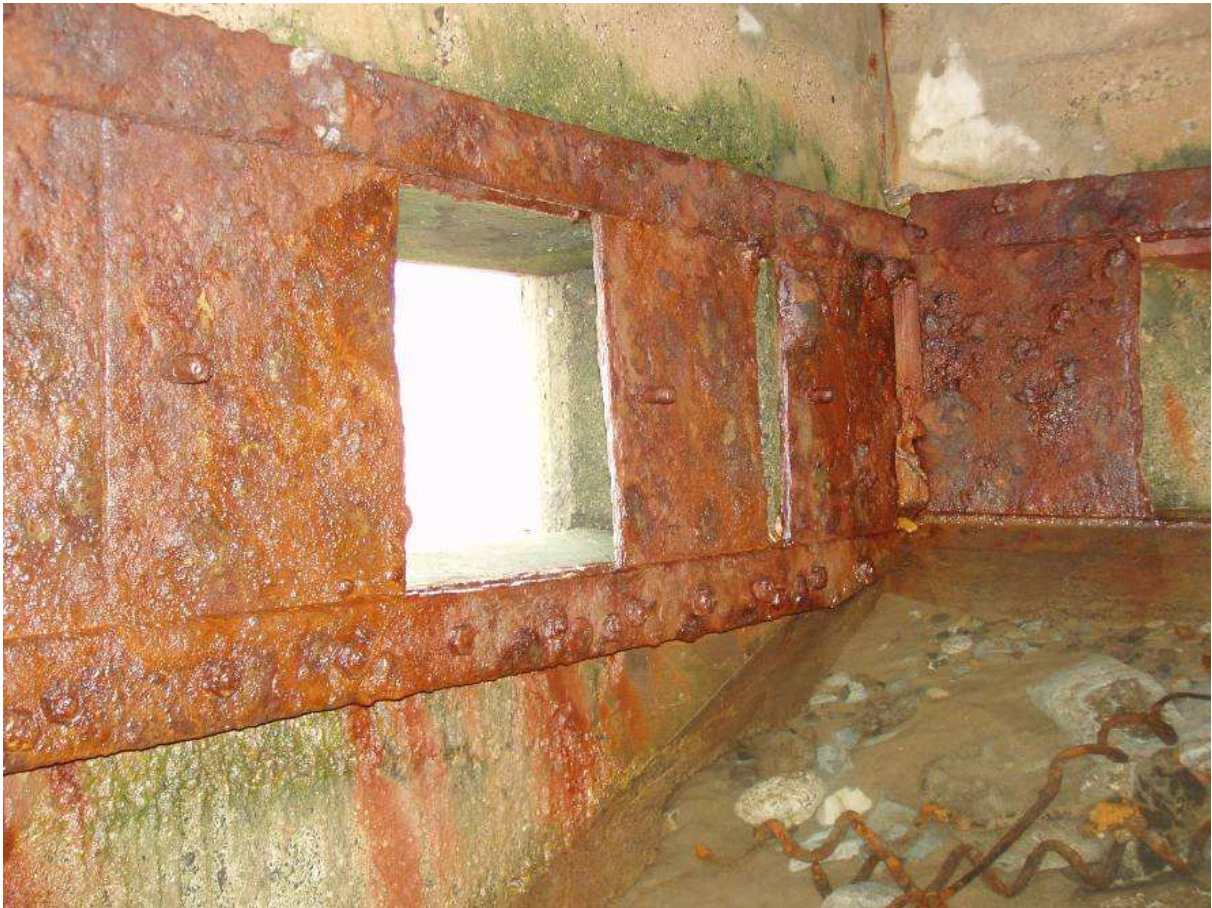


Type: FW/22 variation

Plan and elevation of the Elwick village pillbox (drawn by S. Wilkie)

General Features of Pillboxes

Pillboxes were usually constructed in concrete or brick. Walls were normally at least 12 inches (300mm) thick. They were always roofed for overhead protection. All pillboxes had a number of embrasures to allow weapons to be fired from the structure.



Pillbox embrasure with sliding metal shutter

Embrasures were as small as possible to prevent enemy fire from entering the pillbox. Some embrasures had metal shutters which could be manipulated to control the field of fire. Internal features usually consisted of gun mounts or shelves which varied in design depending on the type of weapon. Most pillboxes had internal blast walls to protect the occupants from explosions. Blast porches or blast walls were often added to defend the entrance.

Pillboxes were made by pouring concrete into a mould, usually formed from timber plank shuttering. The lines left by the timber planks are often visible, as are pour lines. Other materials were often used as shuttering including corrugated iron or brick.



Imprints from wooden plank (top) and corrugated iron shuttering (below)



Each pillbox would have displayed an information board detailing the weapons used and the ammunition requirements. There would also have been range cards giving distances to obvious landscape features. Other instructions may have been posted including locations of latrines, rations and water, and first-aid instructions. Mustard gas detectors were also required for each pillbox.

Camouflage

Pillboxes presented an obvious target to the enemy and most Army Corps had a Camouflage Officer. Pillboxes were often partly buried to provide additional blast protection but this would also reduce visibility. Landscape features such as existing hedges and walls would also be used to conceal defences.

Netting was often used to disguise the hard lines of the concrete and guidance was drawn up for the painting of pillboxes with flowing camouflage patterns.

In other cases pillboxes might be clad to look like sheds or disguised as Victorian follies.



Pillbox at Leven Bridge, Yarm with chicken shed disguise?

Supporting defences

Pillboxes were not isolated features and were used in conjunction with other anti-invasion defences. Barbed wire would be used extensively in the vicinity of the pillboxes to slow the enemy advance. Wire fences were normally established at 40 yards and 60 yards to restrict the threat of flamethrowers and other close range weaponry. Associated defences might include anti-tank ditches, anti-tank scaffolding, earthwork or sandbagged infantry posts, roadblocks and spigot mortar posts.

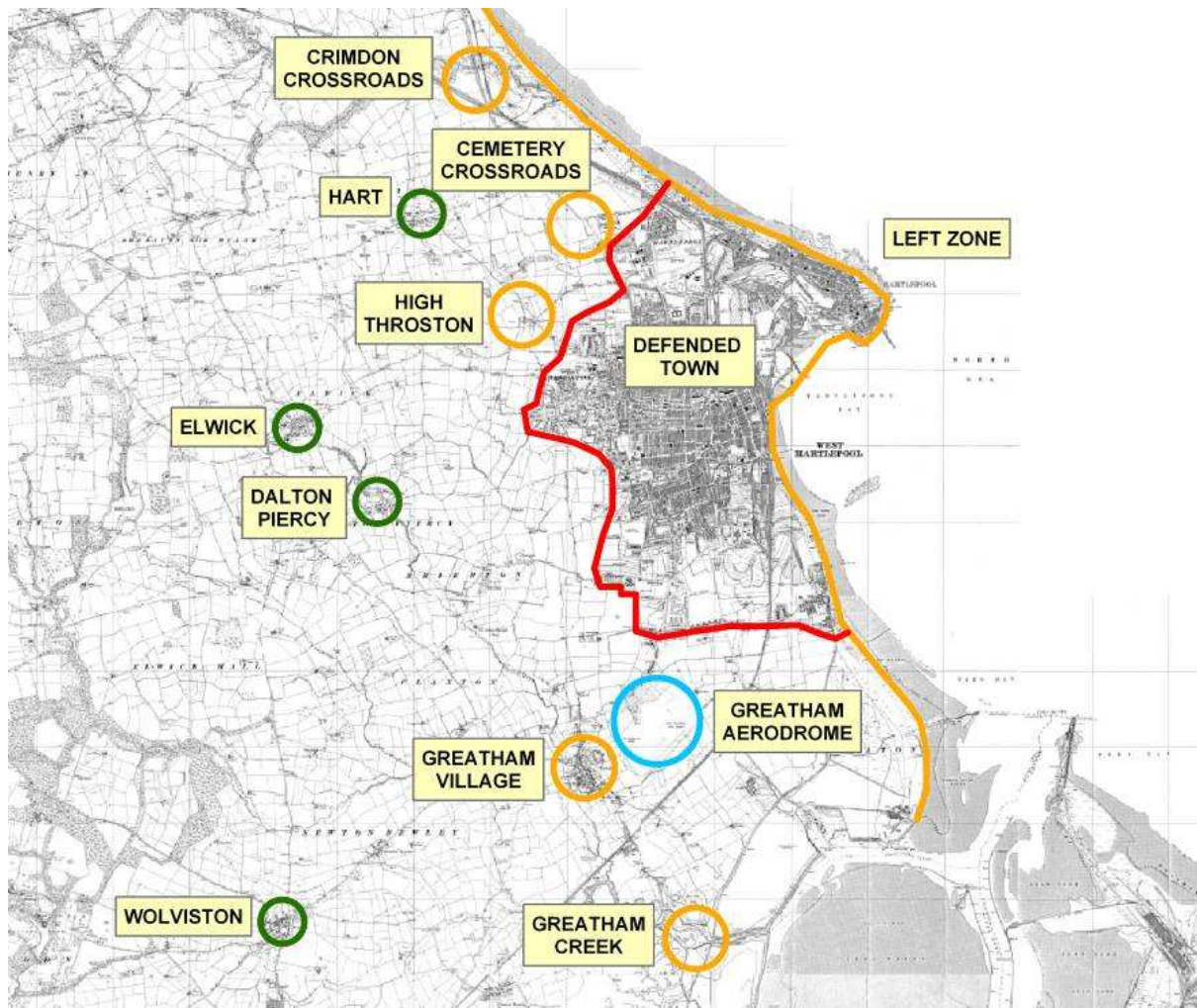
More visible today are the lines of concrete anti-tank cubes that were particularly used along the coast and at other possible landing points.



Anti-tank cubes at the North Gare

Command Areas

In 1940 Britain was divided into Command Areas, with Hartlepool falling within Northern Command which was covered by 59 Division. The Hartlepool area specifically fell within the Left Sub-Sector of 59 Division which was under the responsibility of 176 Infantry Brigade in 1940. This area included North Gare, Seaton Carew and Hartlepool.



Map of Left Sub Sector

The 59 Division Left Sub-Sector was further divided into coastal-crust defences (orange line), coastal defended localities (orange circles), vulnerable points (blue circle) and inland defended localities (green circles).

Defending the Beaches of Left Zone

Much of Left Zone was suitable for beach landings, particularly at Hart Warren, North Sands and Seaton Carew. These locations allowed direct access to the town's road network, the port of Hartlepool and the airfield at Greatham. The coastal crust was heavily defended with pillboxes, anti-tank ditches, obstacles and minefields.



Type FW/23 pillbox at Seaton Snook Jetty

The beach defences of the coastal crust of Left Zone were begun on 9th June 1940 by 510 Field Company Royal Engineers. The first pillbox was completed on 22nd June and all were complete by the end of July. These pillboxes were manned by 6 Argyle & Sutherland Highlanders and 6 North Staffs, with anti-tank support from 68 Anti-Tank Regiment Royal Artillery.

Coastal Defended Localities

To the rear of the coastal crust defences were a number of Coastal Defended Localities. These were key defensive areas up to five miles from the coast and intended to add depth to the beach defences. Amongst the priority Coastal Defended Localities were *High Throston* and *Hartlepool Cemetery Crossroads*. These directly protected highway links to the port and protected against flanking attacks from Crimdon beach or airborne troops. There was a roadblock and four pillboxes at High Throston manned by 6 North Staffs, and a roadblock and two pillboxes at Hartlepool Cemetery Crossroads manned by 18 Home Guard.

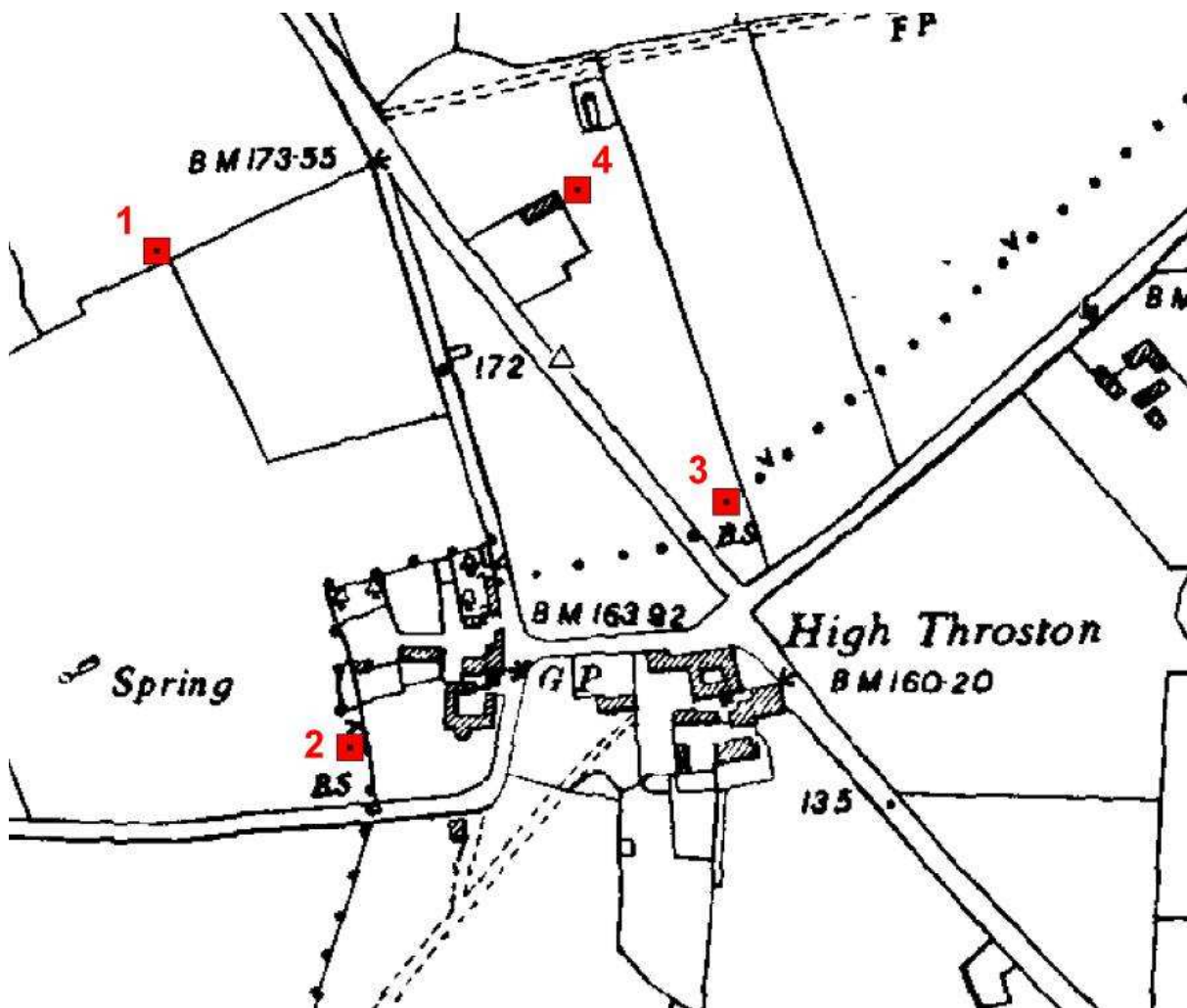


Pillbox built into an unfinished railway embankment at Greatham Creek

Other Coastal Defended Localities within Hartlepool were Greatham Creek, Greatham village and Crimdon Beck crossroads. Further inland the three villages of Hart, Elwick and Dalton Piercy were identified as nodal-points on the highway. Each had a single pillbox, supported by additional defences.

High Throston Costal Defended Locality

Four Type 23 variant pillboxes survive around the junction of Worsett Lane and Hart Lane. The Type 23 usually has an enclosed chamber for a light machine gun, with an open rear chamber for an anti-aircraft gun. At High Throston, and elsewhere on Teesside, the open rear chamber is replaced with an enclosed rifle chamber with a blast porch.



The location of the pillboxes at High Throston is shown against a map of the period

The pillboxes all lie adjacent to established hedgerows, offering some cover and camouflage.

Pillbox 1: High Throston Golf Club



Variant Type FW/23 at High Throston Golf Club with enclosed rear chamber (right half on picture) for rifle fire. In excellent condition and has a typical blast porch (right of picture).



Type FW/23s normally have an open chamber to the rear for mounting an anti-aircraft gun. This example at Hart Warren has eroded from the sand dunes.

This FW/23 at Seaton Snook Jetty retains its concrete anti-aircraft gun mount. Steps and the entrance into the pillbox can just be made out behind the mount.



Pillbox 2: High Throston Golf Club



The second type FW/23 on the golf course.

Ventilation holes in the roof were formed by iron pipes which would have helped disperse smoke and debris from machine gun fire.



Internally the pillbox retains most of its concrete gun shelf (above left) and parts of its embrasure shutters but had suffered from extensive vandalism when photographed in 2005.

Pillbox 3: South of Sea View House



This FW/23 pillbox was blocked up in 1998 when the adjacent housing estates were constructed to prevent anti-social use. The light machine gun chamber actually covers the fields to the east rather than the roads to the south and west.

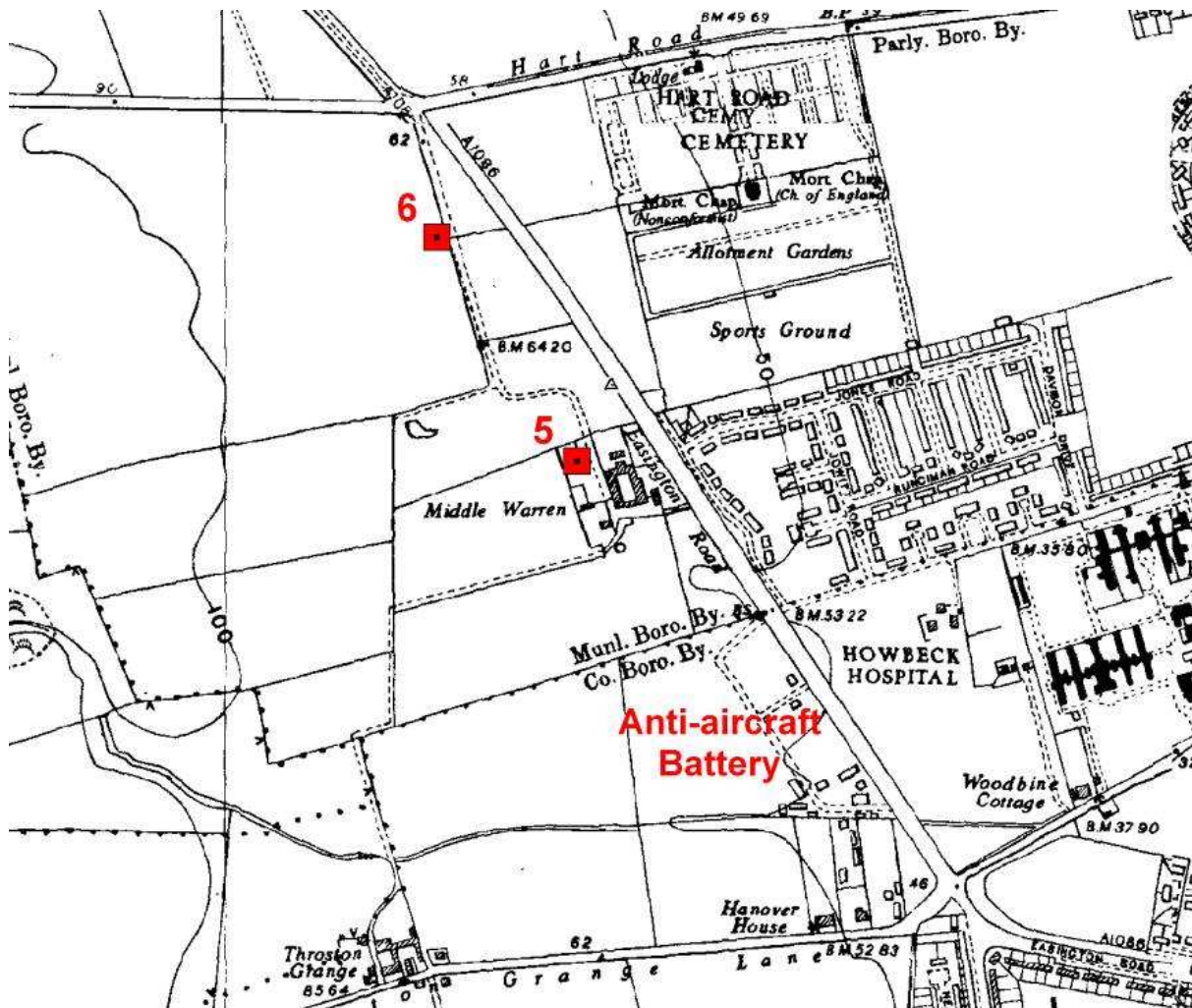
Pillbox 4: North of Sea View House



Photographed in 1998, this pillbox is now buried and only its roof remains visible. Like its partner to the south its field of fire was largely concentrated on the fields to the east rather than the road network.

Hartlepool Cemetery Crossroads Defended Locality

A pair of pillboxes of similar design to the High Throston Complex lay on the west side of Easington Road. These include the example demolished in 2012 (No. 5 on the map below).



The location of the pillboxes at Cemetery Crossroads is shown against a map of the period. A road block was also present.

Road Block at Cemetery Crossroads

Documents in the Public Record Office demonstrate that there was a road block at this location. Road blocks were often steel girders or poles that could be lifted in and out of slotted concrete blocks positioned on either side of the road.



Until recently a concrete cube was visible adjacent to the cemetery wall which may have been part of such a road block.

The mesh reinforcement and the imprint of wooden shuttering visible on the cube is typical of World War II concrete.

Left - possible remains of roadblock

Pillbox 5: Middle Warren Farm



FW/23 variant to west of Easington Road (demolished 2012). This was originally shielded from the road by Middle Warren Farm with its field of fire covering the fields to the south.

Pillbox 6: Cemetery Crossroads



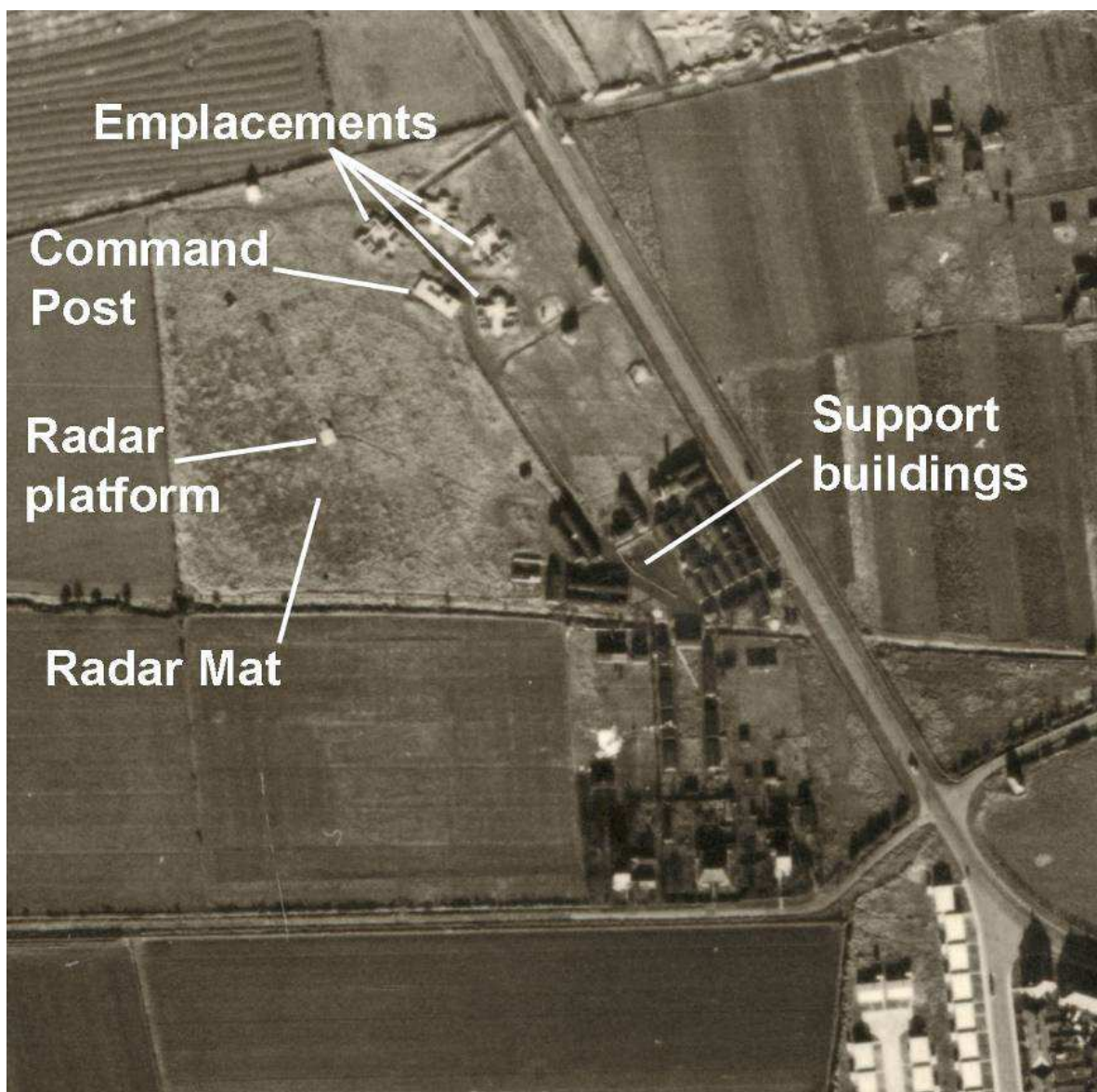
An identical partner to Middle Warren Farm.

Both were cast in poor quality concrete, a result of making do with what materials were available. Slump lines can be seen in the pour where large ungraded aggregate has settled.

This pillbox was largely buried in 2012 to prevent access and anti-social use following construction of the adjacent housing.

Middle Warren Anti-Aircraft Battery

The pillboxes at Cemetery Crossroads lay a little to the north of a Heavy Anti-Aircraft Battery. This is first recorded in 1942 and is likely to be one of over 1000 such sites constructed around the country in response to the 'Blitz' attacks of the Luftwaffe. This type of battery employed large calibre guns to target high flying aircraft with some larger guns capable of achieving a range of 43,000 feet.



RAF Aerial Photograph from 1946 showing the anti-aircraft battery. Easington Road is to the east of the battery and Throston Grange Lane is to the south.

The four gun emplacements and command post are clearly visible on aerial photographs taken by the Royal Air Force shortly after the end of the war. To the south of the emplacements were the support buildings which would have included a canteen, workshops, officer's quarters and an ablutions block. The flat field to the south-west contained the site radar surrounded by a platform of chicken wire to create a false horizon; the chequerboard patterns in the grass are a tell-tale sign of a radar site.



Surviving ammunition store at former Saltholme battery

Despite the investment of labour and material in constructing the battery there is currently no evidence to indicate it was used. This was not unusual, as in 1942 just over 1000 heavy anti-aircraft batteries were recorded, however only 494 were provided with guns. To some degree it is evident that there was a genuine shortage of guns, but nevertheless the surplus sites were available to give flexibility in anti-aircraft gun deployment should a particular area come under persistent fire. The battery was demolished soon after the end of hostilities.

A Change in Tactics

General Ironside's tactics of linear defences were heavily criticised. One senior commander is quoted as saying 'we are becoming pillbox mad'. There was also criticism over the ways in which defences had been erected, with pillboxes placed in poor positions or facing in the wrong direction.



The Home Guard parade through the town

In July 1940 General Brooke replaced Ironside and developed a more offensive approach based on the rapid deployment of mobile reserves. Emphasis continued to be placed on defending the coast and reserve lines were brought forward.

The Tide Turns

In June to September 1940 the success of the Royal Air Force in the 'Battle of Britain' and the strength of the Royal Navy reduced the threat of invasion significantly. This was coupled with the German invasion of Russia in late summer 1941 which diverted their forces to the east.

Throughout this period the pillbox had fallen out of favour with the military. Criticisms included limited firing arcs, that they were highly visible to the enemy and unsuitable against 'modern' weapons. Temporary earthworks and trenches became favoured over the static and un-adaptable pillboxes and many were abandoned and even used for target practice from 1941.



Children of Grassmere Street, Hartlepool gather in their Sunday best for a VE day street party (image provided by Joan Ralton).

Thankfully none of Britain's anti-invasion defences were used in anger and many were demolished or dismantled following the end of hostilities in 1945.

Further Information

For general information on the heritage of the Hartlepool please visit our website at:-

www.teesarchaeology.com

Places to Visit

Hartlepool's Heugh Gun battery is now fully restored and is open to the public. For further information on visiting please check: -

www.heughbattery.org.uk

To find out more about Hartlepool in World War II please visit the Museum of Hartlepool:-

www.hartlepoolsmaritimeexperience.com

Many individual pillboxes, section posts and beach obstacles survive in the Hartlepool area but are usually on private land. A walk along the beach at Hart Warren (NZ 492 365) gives access to a group of defences that have eroded from the sand dunes. A number of section posts can be viewed from Greatham Creek Bridge (NZ 509 254) on the Seaton Carew Road.

Acknowledgements

The text of this booklet draws heavily on the research carried out by Steve Wilkie into World War II pillboxes across Teesside for a Masters dissertation submitted to the University of Leicester. The level of detail in the booklet would not have been possible without access to this valuable research. A number of images have also been generously supplied by Steve.

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