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CLIFFORD'S FORT AND THE DEFENCE OF THE TYNE

David Kear

Early fortifications at the mouth of the Tyne

A fortification has stood at the entrance to the Tyne since at least the 11th century when the promontory site of Tynemouth Priory was known to have been defended. Following Edward I's licence to crenellate in 1296, the prior and convent built a curtain wall of stone incorporating a gatehouse and towers. The question of who should exercise authority was disputed between the crown and the prior but the defences continued to be maintained and replaced as required, and thus the site retained its fortified character.¹

After the dissolution of the priory, the castle was still considered to have strategic significance despite the fact that the increasing effectiveness of artillery was leading to a reappraisal of defended structures that had been erected before the extensive use of gunpowder. In 1545 Sir Richard Lee reviewed the Tynemouth defences and produced a design for their modification; this was influenced by accompanying Italian engineers whose ideas on the principles of fortification were considered to be most advanced. Lee's plans included additional works (Spanish Battery), positioned on a lower promontory just to the south of the castle, and closer to the Tyne entrance.² Two lighthouses had recently been completed at North Shields and as they were built in the form of embattled stone towers, they also provided some military capability.³

Throughout the 16th century foreign navies continued to grow. Their potential menace, either as an invasion force or as a threat to water-borne trade, demanded a much more critical look at the coastal and river approaches to the major towns and ports. By the 17th century attention was increasingly directed towards the decayed state of the defences at Tynemouth and the limited protection they gave to shipping to and from Newcastle. A letter from Bishop Neile of Durham to the Lord President in 1626 clearly indicates that by this time the building of a *new* fort near Tynemouth was being considered. Also a suggestion that the bishop and the mayor of Newcastle, jointly charged with the direction of the enterprise, should take the advice of "one old Thomas, an engineer" or of Sir Wm. Bowyer, "the old soldier and Captain of Berwick", hints at the rather *ad hoc* procedure to be adopted for such a scheme.⁴ In these circumstances it is hardly surprising to find that neither

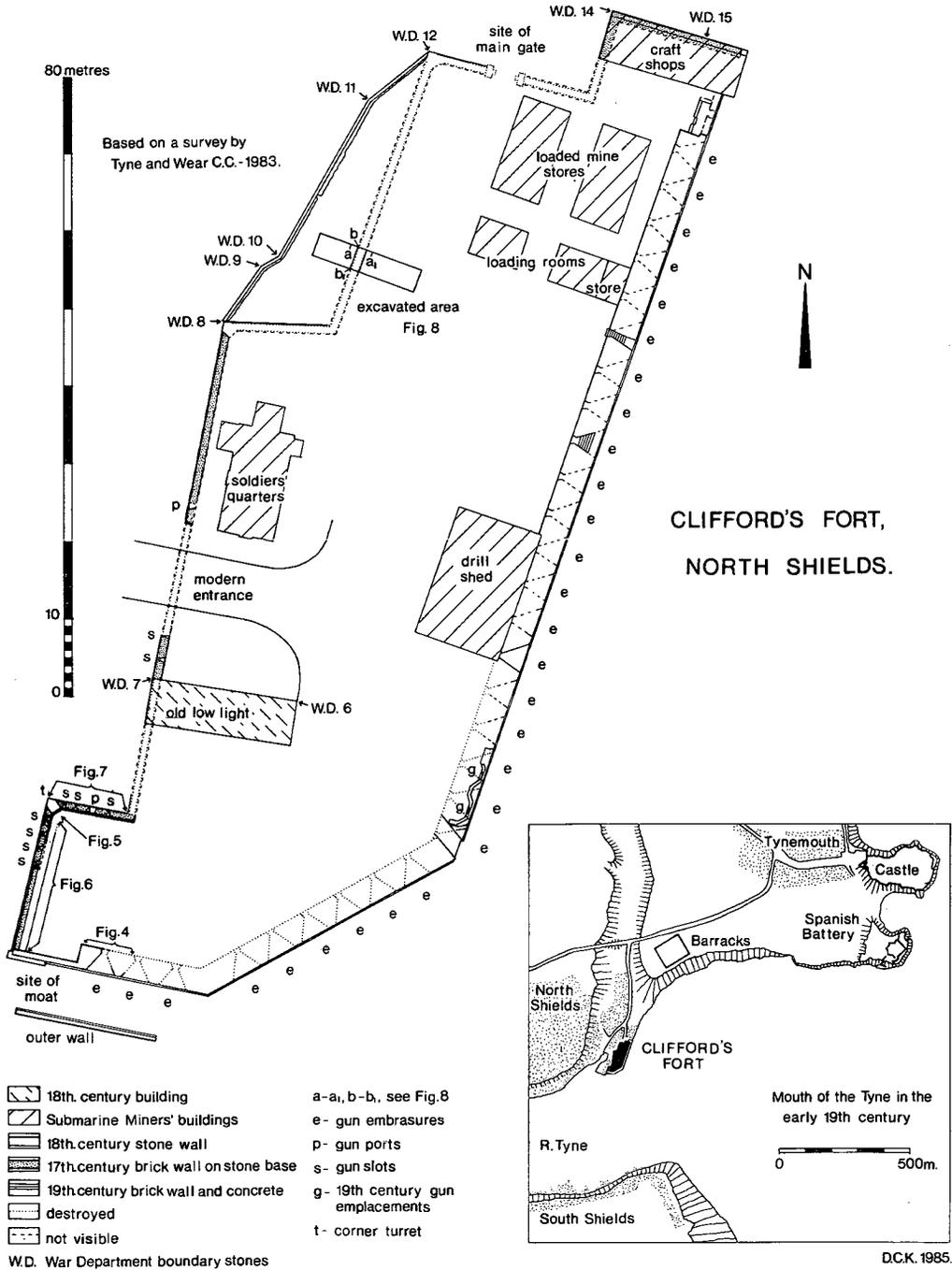


Fig. 1

D.C.K. 1985.

the building of this fort, nor an alternative plan for renovating the castle and utilising the Spanish Battery, was executed.

The changing conditions and requirements were usefully summed up in a report to the Privy Council in 1636.⁵ It stated that Tynemouth Castle stood at such a great height at the mouth of the Tyne that even furnished with ordnance it would offer little hindrance to the passage of ships into the river. However, near its entrance to the sea, the Tyne narrowed to such a degree that there was barely room for two ships abreast, and if the wind was unfavourable vessels had to tack three or four times. If a blockhouse was built at the high-water mark on either side at this point, then with a few good pieces of ordnance they would have complete control over the river. The Lords of the Admiralty agreed with this analysis; a suggestion from them that Tynemouth Castle be demolished and a blockhouse built on the river below is recorded as having received the king's assent.⁶ Again there was no immediate action: nor was it forthcoming in 1638 when a Council of War re-iterated the same programme,⁷ or when the king instructed Sir John Astley, Sergeant-Major of the Field, to view the castle at Tynemouth and a piece of ground at Shields where a sconce was to be raised.⁸

The 'little fort' was finally built in 1642 under the direction of William Cavendish, Marquis of Newcastle, in an attempt to bolster the defences of Newcastle and the Tyne against the Scots.⁹ On inspection, he found Tynemouth Castle too ruinous to be repaired quickly, and so a fort was erected at North Shields, complemented by another south of the river. The superstructure was built of gabions, baskets filled with sand and mortar; these had guns resting between them.¹⁰ They may have surmounted foundations of stone and mortar if observations made after the river damage of October 1811 were accurately interpreted.¹¹ Although there are now no visible remains of the works and its exact location is not known, the area most affected by this river erosion, just to the north of the later fort, coincides with Brand's general description of its position.¹² Despite the fact that repairs and improvements were made to Tynemouth Castle and Spanish Battery in 1643, the small fort was captured in October the following year; after a day long battle during which it changed hands three times, the Scots eventually triumphed.¹³

Towards the middle of the 17th century tension increased between England and the newly independent United Dutch Provinces: disputes over trade and herring fisheries in the North Sea eventually led to war in 1652. Though peace was secured in 1654, commercial rivalry, especially over trade with the colonies, was still intense, and by 1665 the two nations were at war again. One factor in the increasing tendency towards aggression and combat at sea had been the expansion of the English fleet under the ambitious ship-building campaign of the Commonwealth. The momentum was maintained after the Restoration as the king and his advisers took a keen interest in maritime affairs. The result was an increased ability to challenge the Dutch and their enhanced control over sea trade. Continuing conflict at sea seemed almost inevitable, but in 1667 De Ruyter brought the hostilities closer to home when he led eighty Dutch ships up the Thames in a surprise attack, advancing on Chatham and destroying warships on the Medway.

What the Dutch had demonstrated was that even a large and powerful navy still required the support and protection of a coastal defence system. The necessity for the rebuilding programme that the Office of Ordnance had already commenced was re-affirmed:¹⁴ a large citadel was built at Plymouth, defences were strengthened at Portsmouth and designs were drawn up for new fortifications at Hull. As a consequence of the attack up the Medway redoubts were built at Gillingham and Cookham Wood, the fort at Sheerness was completed, and an elaborate new fortification was begun at Tilbury on the Thames. It was in this context that a new work was also being constructed on the Tyne during the first year of the third Dutch war (1672–4).

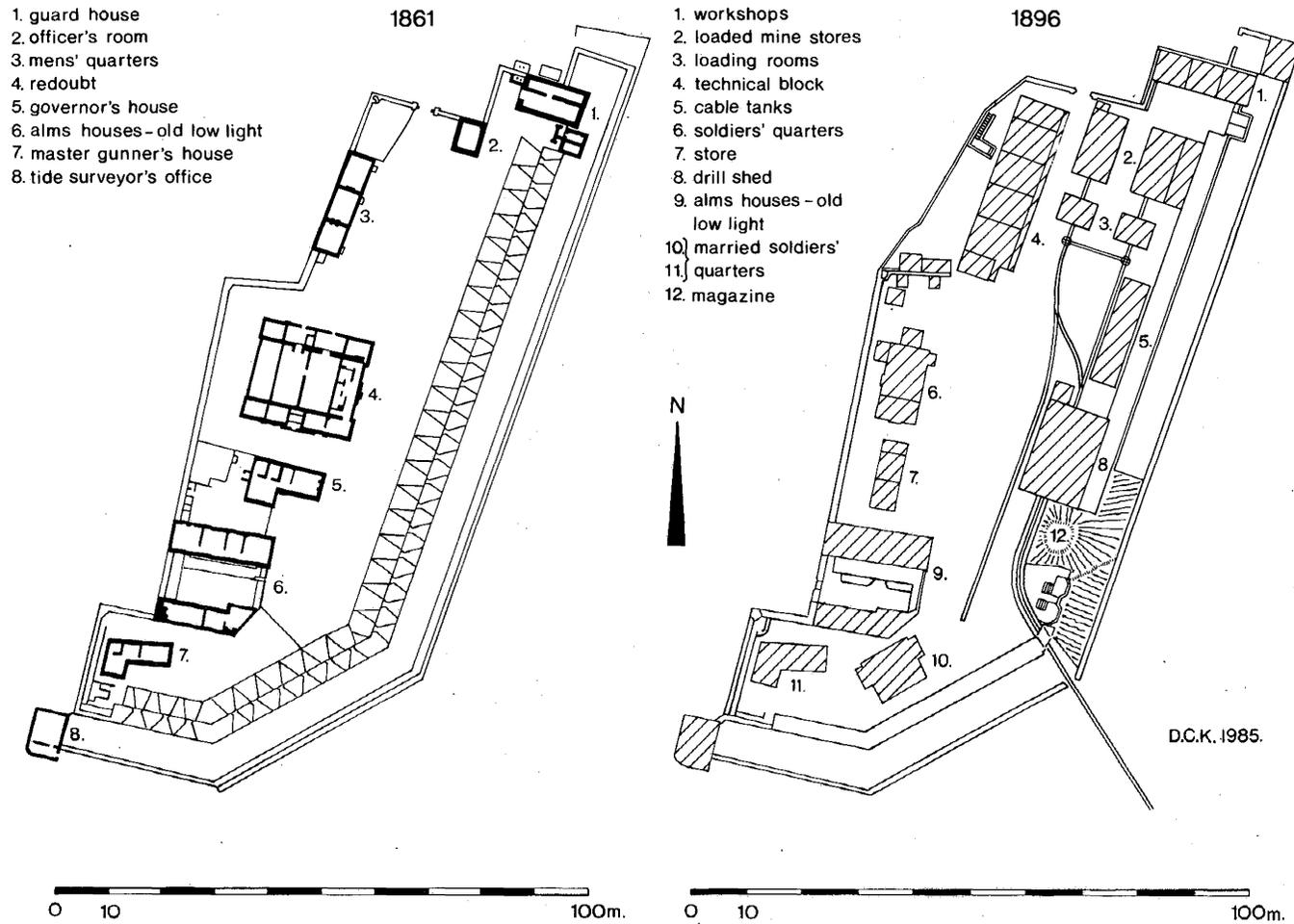
Clifford's Fort

The new platform at North Shields may have been called Clifford's Fort from its conception: it was certainly given that title in an illustration of the mouth of the Tyne drawn by Edmund Custis and engraved by Wenceslaus Hollar in 1673.¹⁵ It was probably named after Thomas Clifford, who had been actively engaged against the Dutch in earlier campaigns and as a royalist with Catholic sympathies bore an extreme enmity for the Dutch republic.¹⁶ He became Charles II's Lord High Treasurer and was an influential member of the Cabal: it is far more likely that *he* was celebrated in the fort's name than Henry, Lord Clifford, the fifth Earl of Cumberland, who was Lord Lieutenant of the Northern Counties at an earlier period (1636–9) when the subject of the new fort on the Tyne was under consideration.¹⁷

Clifford's Fort was designed by Martin Beckman (d. 1702), a Swedish engineer and topographical draughtsman. He was originally employed by Charles II as a royal engineer, succeeding to the position formerly held by his brother under Charles I.¹⁸ Beckman rose from third engineer of Great Britain, and a nominee to the Office of Ordnance in 1670, to become the Chief Engineer on the death of Sir Bernard de Gomme in 1685. Responsibility for specific projects in the earlier stages of his career (e.g. the construction and command of the new works at Hull) was later superseded by a more general role of inspecting coastal defences. Involved with several royal firework displays, he developed particular skills in pyrotechnics: the benefit of this expertise he offered the king after the Medway raid, claiming to have perfected a method of firing ships. Beckman's artistic abilities were also noteworthy;¹⁹ following in the tradition of topographical art pioneered by Hollar (1607–77), his well-executed, tinted drawings include a titled and signed set of four delineating Clifford's Fort.²⁰

Whether Beckman's illustrations give an entirely accurate representation of the fort as originally built is difficult to establish. Later alterations to the fort's structure have removed much of the physical evidence and an interpretation of the function of these drawings rests on an assessment of the author's intentions. If they were designs, then it is possible that ideas may have been modified as construction proceeded. Alternatively, if they are an illustrative presentation of the completed works, as the caption to the ground plan suggests ("built 1672"), then there is

CLIFFORD'S FORT – based on 1st. and 2nd. edition Ordnance Survey maps.



CLIFFORD'S FORT AND THE DEFENCE OF THE TYNE

Fig. 2

little reason to suppose that this engineer and artist would have produced anything other than a faithful reproduction. Secondary sources differ in their opinion of the dating of these drawings²¹ and although Beckman is recorded as having visited Clifford's Fort in 1672, he also made subsequent visits to the north to inspect defences.²² Following the earlier example of the presentation of Beckman's plan of Tangier to the Duke of York, it is quite possible that this attractively coloured series was intentionally produced for a gift. In this case the final product may have been composed at a slightly later date but using original sketches and plans as source material.

These illustrations (a ground plan, a profile and two views) show an irregular-shaped fort of just over half a hectare in area, occupying the tip of a spit of sand lying at the confluence of the Tyne and Pow Burn. The 370 m perimeter has a long north-south axis allowing the eastern, riverside flank to support a heavily equipped gun battery, but it also enclosed the pre-existing Trinity House low light. Although the site was near perfect for cannons to rake enemy vessels entering the mouth of the Tyne and attempting to negotiate a course through the Narrows, the proximity of commanding hills to the north and west left the fort vulnerable at the rear. Perhaps with this weakness in mind, Beckman used two levels within the fort; the low riverside gun battery was protected at its back by built-up ground and a high retaining wall. This higher ground, which formed a much larger proportion of the interior, was then dominated by a central, three-storey redoubt of almost square plan. A principal gateway in the northern perimeter wall, another through the retaining wall to connect the two levels, and a casemate at either end of the battery, completed the lay-out. The simplicity of the design enabled construction to proceed very quickly:²³ with guns already arriving by March,²⁴ the added security the completed new work would give was eagerly anticipated.²⁵

There was a notable contrast between the North Shields fort and the one being built at Tilbury at the same time.²⁶ It too was positioned at the site of an earlier fortification and at a point where the river narrowed; its construction was likewise intended to control the passage of vessels along the river. The design and details of its structure though could scarcely have been more dissimilar. Planned by the king's Chief Engineer and Surveyor General of the Ordnance, Sir Bernard de Gomme, it was sixteen years before this expensive project was concluded. The design employed a symmetrical bastion trace and included a sophisticated system of landward defences across the marshy ground. If the strength of Clifford's Fort lay in its plain but effective river gun battery, this was Tilbury's greatest weakness. The choice of a bastion design incorporated a fundamental limitation on frontal firepower, a deficiency that was further magnified by a failure to complete the critical water bastion which would have provided a platform for guns directed down river. Criticism was also made of the choice of site, and the considerable cost of the defences was further inflated by the ornately sculpted water gate, again in marked contrast to Beckman's simple north gate at Clifford's Fort.²⁷

Although corroborative evidence confirms that the Tyne fort was constructed in all its essential components according to Beckman's illustrations,²⁸ there are

nonetheless one or two anomalies concerning his drawn detail. The first of these involves the quantity and disposition of the ordnance. Beckman has shown no artillery on the landward side of the fort and his ground plan has forty-five dots, interpreted as cannon positions, overlooking the river. Four of these, shown enclosed within structures at the flanks of the battery, may be explained as the guns that were mounted within the casemates. But all references to the fort's ordnance in its early years were consistent in noting forty guns (or forty-four including those in the casemates).²⁹ Where further information was given, the total was said to be made up of thirty culverins (c. 18 pdrs.) and either ten demi-culverins (c. 9 pdrs.)³⁰ or ten 24 pdrs.³¹ It may have been the case that all the guns were normally mounted on the platform, but at the same time provision had been made to defend the landward walls when necessary. In 1757 a report records that nine 9 pdrs. faced towards land with eighteen 18 pdrs. commanding the river,³² and plans of the later 18th century show the platforms for the smaller guns.³³

Lack of certainty about the original quantity, calibre and arrangement of the guns is linked with a further problem, *viz.* Beckman's portrayal of the fort walls. The circuit surrounding the higher ground is represented with shallow embrasures and built entirely of stone; at least this may be presumed from the large patchwork of rectangular blocks shown in one or two areas. The corner turrets though look very similar to those shown in later illustrations,³⁴ suggesting that the stone and brick wall, which survives in part today, is the original 1672 construction. Apart from some restoration work in 1681–2,³⁵ there is no firm evidence of modifications or improvements to the landward walls before the end of the 19th century. However, a letter from Trinity House to the Master General of the Ordnance in 1744 complained of damage sustained by the light house and caused by,

“... the late alterations made in Cliffords Fort, by the placing of the Guns towards the Land, ...”³⁶

Whether these alterations merely involved a repositioning of the guns, or also included changes to the fabric of the wall to accommodate them, is not clearly stated. The story is complicated further by the 1757 description of the walls that records “only *Crenaux* and a few Portholes” for defence.³⁷ The usual interpretation of *crenaux* as describing crenellations would support Beckman's representations, whilst a less common use of the word could be taken to refer to the musket loops. There are no indications around the gun ports or musket loops that still survive that they were later insertions, nor any obvious sign that the wall was once topped with merlons and embrasures.

There is no longer anything visible above ground of the partition wall but a short stretch of masonry was revealed below ground when an area of land close to the gun battery wall was recently prepared for the foundations of new buildings. Although a length of only 2.35 m was fully visible, the position, orientation and the width of the wall matched that shown on Beckman's scaled ground plan. The upper courses of roughly-shaped, sandstone blocks, the lower section of large rounded stones, the gently battered face and the depth (bottom 3.28 O.D.) all compared well

with the landward wall. There was no supporting evidence from deposits alongside the wall because of a total absence of artifacts, but land immediately to the east was made up with a rubble mixture of mortared bricks and concreted groups of rounded stones. The bricks, with their sandy buff mortar, were very similar to those used on the west wall of the fort and may have been deposited here when a brick upper section of the partition wall was demolished.

Inside the defended walls the only structure that was certainly built in the earliest phase of the fort was the commanding redoubt. Beckman's drawings show a spinal wall subdividing each floor of the three-storey building. Its outer walls were reputedly five feet thick, and the combined use of brickwork for the upper storeys and "freestone and seashore flints" for the foundations, repeats the style of construction chosen for the land walls.³⁸ The vaulting above the ground floor was particularly strong: it was presumably designed to keep the powder magazines and stores safe, either from an external attack or from the possibility of accidental ignition caused by activity from the floor above. The upper storeys were timber-floored with two round-headed windows in each wall face: externally, string courses ran across at two-thirds window height.³⁹ A wide central chimney with four flues serviced the first and second floors which may have originally provided space and protection for the garrison: this area was certainly being used as a barracks by a Company of Invalids at a slightly later date.⁴⁰ Above the roof line the chimney was protected by an enclosing rectangular structure, with both the corners of this and the corners of the main walls being topped by pinnacles.

A later profile differs from Beckman's representation in showing a sloping roof with an absence of pinnacles and chimney surround.⁴¹ This probably shows the redoubt after repairs were made in 1681-2.⁴² The existence of the initials "G.R." that were noted on the rainwater heads when the building was demolished in 1893⁴³ suggests that further modifications were necessary, perhaps to the system of water collection and drainage. Fresh water was obviously a vital requirement, and the report of 1757 reveals that the nearest spring was at North Shields: Clifford's Fort, like Tilbury, had to rely on the collection of rainwater. This was held in cisterns within the redoubt that had a total capacity of 1,152 gallons.

By the mid 18th century it appears that more space had been provided by adding to the sides of the building and its eastern entrance porch. Rooms for three officers, one for a master gunner, a cooperage, a store room, a stable and a "black hole" are now listed, in addition to the barracks for forty men and the magazines that were holding 388 barrels of cannon powder and 93 half barrels of fine powder. The end-product of these extensions can be seen on the 1861 Ordnance Survey map where the central magazine is now surrounded by an engine house, a hospital, a master gunner's store, a sponge room and several others whose function is not stated.

The command of Clifford's Fort was given to the Governor of Tynemouth Castle, Col. Edward Villiers,⁴⁴ and although no record has been found of any active engagement with the Dutch in the 1672-4 war, this may nevertheless be regarded as a measure of the success of the new works in defending the river. The size and power of its battery would have presented a formidable deterrent to any enemy

considering interference with the Tyne shipping. This was of more than just immediate importance as there was a persistent threat to the colliery trade from any nation that acquired the power to dominate the ports and waters across the North Sea.

The damage that the fort suffered in its early years was not the result of attacks by an enemy. On 2nd November 1680 a section of the battlements of the redoubt was blown down, breaking through the roof of the north aisle of the armoury. An itemised list of repairs, undertaken before 23 March 1682, mentions that the brickwork of the fort wall, the coping of the gun battery wall and the casemates, and the flagging of the gun platform, also received some attention.⁴⁵ Some of the brickwork of the landward wall seems to have succumbed to the pressure exerted by a large gathering of people who attended a visit by "his Royal highness", presumably James, Duke of York. The stones used in the coping of the gun battery wall had not been large enough and had probably become dislodged by inquisitive people scrambling up onto the platform: a ditch that had been dug outside the wall to prevent such activity was obviously in need of re-excavation, having filled up with sand. Although the flagged surface of the gun platform may have had constructional advantages over the oak platforms being employed elsewhere at this time,⁴⁶ the stones were too thin and small and consequently broke or were displaced under the carriage wheels.

In 1684-5 Martin Beckman was called upon to produce a report on the northern garrisons suggesting what improvements or additional fortifications might be required. He concluded,

"It is very necessary that Newcastle be secured with a Citadell on the Gateside where the church stands from whence not only the harbour and bridge but the whole town is commanded."⁴⁷

Beckman considered that Tynemouth Castle did not deserve the presence of a garrison but suggested that if,

"... there be a line of communication from the castle to the black mundings [middens] it will then be a place of great importance for commanding the mouth of the River."

The castle was in fact in a very sorry state. In 1687 there was a royal warrant to remove all the ordnance, arms, ammunition and stores of war from it and transfer them to other forts and garrisons.⁴⁸ But in the following year the Governor of Tynemouth was forced to borrow four small guns from Clifford's Fort because he had been left so defenceless:⁴⁹ these were almost certainly the minions from the casemates, the smallest class of gun mounted at the fort. A little later, an order to compile a list of ordnance, carriages, shot, powder, arms and other stores of war at forty-two fortifications throughout the country, noted 44 iron guns, 130 "hand granadoes" and a single mortar at Clifford's Fort.⁵⁰ Interestingly, the columns under the headings muskets, carbines, pistols, pikes and armour were blank.

Clifford's Fort was surpassed by Tilbury six times in cannon power: the major problem though was not the quantity of guns available but the manner in which

they had been installed. The governor remarked that the battery was placed not “four foot high”,⁵¹ and a report from the Duke of Newcastle to the Earl of Sunderland described the fort as being “much out of repair”.⁵² The Spanish were now threatening the commercial activity of the river, and in 1693 the Governor of Tynemouth was ordered by the Privy Council to take care of the river and port of Tyne.⁵³ In the following year the Deputy Lieutenants and the Justices of the Peace of the Bishopric of Durham and County of Northumberland, expressed the fear that their ships, sometimes numbering 600, might all be burnt in the harbour.⁵⁴ They were partly placated by the provision of a guard-boat to attend the garrison of Tynemouth, but concern was still being expressed on the state of fortifications at both Clifford’s Fort and the castle. Certain repairs were costed by Lord Romney at £145.⁵⁵

By 1702 the French had become the threat and anxiety was once more increasing for the safety of the vessels on the North East’s rivers. The ship’s masters of Sunderland appealed to the Governor of Tynemouth for guns and ammunition to ward off privateers, whilst those of North and South Shields were apprehensively contemplating the French possession of the ports of Flanders. They were alarmed because,

“The guns of Clifford’s Fort are almost buried with sand, and besides they lie so naked that no gunner would be able to stand to load them after being once fired. One gun at the Spanish Works will be more serviceable than three at Clifford’s Fort; but not that both will be very necessary. We hope your Majesty will take care of us.”⁵⁶

At the same time the Governor of Tynemouth was appealing for a new guard-boat, the previous one having “gone to decay”. It seems likely that the monarch’s response was sympathetic because it is recorded that,

“Her Majesty thinks that a guard boat as asked may be useful.”⁵⁷

Modifications and additions to the fort

It was clear that Beckman’s original design for Clifford’s Fort had been flawed in at least two important respects. Firstly, in order to provide a substantial defence of raised land to the rear, he had sited the gun platform too low down. To have placed the ordnance at a more elevated level and yet maintained the relative difference in height with the fort interior would have necessitated extra time and expense being spent on raising the latter even further. When the Tyne’s unpredictable shoals started to shift, banks of sand accumulated in front of the battery eventually impeding its use. This phenomenon had also created difficulties in attempting to maintain an alignment between the high and low lighthouses and the safest entry into the river:⁵⁸ when the sands moved, the orientation of the shipping channel changed as well. The other major fault in Beckman’s design was to leave the gunners too exposed to a return of fire. His drawings show the barrels of the guns resting on top of a low parapet wall. If this was the gunner’s only protection, then their guns were indeed “lying naked”.

By 1707 it appears that these deficiencies had been corrected; a report by Thomas

Ayres to the Office of her Majesties Ordnance gave an account of the state of defences at Tynemouth and added,

"... and about half a mile higher up the harbour is Clifford's Fort which needs no report having been lately rebuilt with stone and well performed."⁵⁹

Although details of the nature of this reconstruction work are not disclosed here, later sources can perhaps be used to fill in the picture. At the inspection and survey of 1757 the river wall was,

"... 12 and in some places 14 feet high, being but 3 feet thick at the top at the Batterys & affording but 5ft. 6in. Cover to the Men and the Guns."

An earlier plan of Tynemouth is consistent with this description showing for the first time a substantial river wall on the east, south-east and south sides of Clifford's Fort: guns were now mounted behind embrasures, twenty, seven and three in each length respectively.⁶⁰

An interpretation of the changes made before 1707 based on these later documents is not without problems. The inspection of 1757 by Captain Smelt, an officer engaged by the Office of Ordnance, was part of a review of all of the defensive facilities at the mouth of the Tyne. In his report he wrote,

"Cliffords Fort in its ancient state had Its Battery about 5 feet lower than at present & had a high Wall at the Back of It with Creneauxs; the Sand formed so high a Ridge before the Battery as to Interrupt the Command of the Guns, therefore about 20 Years ago (as I am informed) the Battery was raised, but the Covering Wall was forgot."

Smelt's informant may have been more precise in his recall of events than in his dating of them. On the other hand it may be the case that further alterations were made to the fort in the 1730s and that the separate events had become conflated in his memory. It is possible that the river wall described in this report ("3 feet thick at the top"), was later incorporated into the present structure. During recent building work in the SE area of the fort interior, part of the wall below the present embrasures was exposed. Although over 3 m in width, it was found to have been constructed in two phases: the outer portion of 1 m width had both inner and outer faces, but this was later thickened by the addition of more than 2 m of stone rubble retained behind a new ashlar face.⁶¹

There are similar difficulties of interpretation concerning the Tynemouth plan as this cannot be dated with any accuracy. Titled "Tinmouth Town and Castle and Clifford Fort, scituate at the Entrance of the River Tyne", an early date is supported by its similarity to Beckman's ground plan. Within the *enceinte* are the same small group of structures: a casemate at either end of the gun platform, a central redoubt, a building on the site of the old low light (presumably the pre-1727 lighthouse) with another annexed to it on its south side. Even the buildings outside the main gate are comparable in plan. A key labels "Mr. Villers house" and the "Light House belonging to Mr. Villers" at Tynemouth. The house is clearly the new one that was built by Col. Edward Villiers in 1674-6⁶² because "The House formerly belonging to the Governor, gone to ruin", is also marked. But the "Mr. Villers" referred to

on the manuscript may well be Mr. Henry Villiers: the third and final member of the family to command Tynemouth, he was the only one to be titled in this manner; Col. Edward later became Sir Edward and his son Capt. Henry became Hon. Col. Villiers.⁶³ Mr. Henry Villiers was Lieutenant-Governor of Tynemouth between 1713 and 1753 but the survey for the map probably pre-dates important building operations within the fort in 1726–7.⁶⁴ A date of *c.* 1720 would agree with that given by the author of the “British Museum Catalogue of Manuscript Maps, Charts and Plans of Topographical Drawings” (1844), based presumably on cartographic criteria. If this date for the plan is accepted, then the illustration of Clifford’s Fort which shows a river wall of considerably less width than on any of the plans of the second half of the 18th century, could be claimed to be a representation of the fort after the pre-1707 rebuilding.

Although the crown had been very brisk and efficient in erecting the fort in 1672, their payment for the land on which it was built was more tardy. The financial remuneration was not settled until 1708, by which time the former land owner Ralph Milbourne had died. His widow Winnefred was eventually paid £150 on the procurement of a suitable conveyance.⁶⁵ On acquiring the site the crown respected the lighthouse that was already standing there: it was enveloped by the fort walls but retained its own separate entrance. Trinity House had purchased “Pow-Pans”, where their low light stood, in 1634⁶⁶ and it was the disputed title to the ground that was one source of friction between them and the Office of Ordnance. The Governor of Tynemouth was also unhappy about an ancillary building constructed up against the fort wall,⁶⁷ and it was becoming obvious by the early 1720s that both the high and low lights would soon need replacing. The low light was barely visible to ships in high winds and rough seas,⁶⁸ but when Trinity House obtained the bricks to build a new lighthouse in 1726, they were initially baulked by the Office of Ordnance who may have been trying to prevent its erection within the fort.⁶⁹

Another factor influencing the decision to rebuild the lighthouse was the construction of a new fort building within the walls. A petition was received by Trinity House bearing the names of ninety-seven ship’s masters involved in trade to and from Newcastle: one of their complaints was,

“... The board of Ordnance haveing sent down there Surveyor this Summer who has built an home in Cliffords Fortt for the officers which Obstructs the Light House ...”⁷⁰

The offending building was almost certainly the governor’s house which appears on later plans of the fort as an L-shaped structure situated between the redoubt and the low light. It was brick built and its principal features were two windows, one large and round-headed, the other small and semi-circular, both facing towards the river.⁷¹ The brethren were understandably upset because the governor’s new building had been positioned,

“... Right opposite to the Low Lights being higher Obstructs the Light thatt Itt cannott be of aney use till Raised higher, which will be a great Charge upon this house: ...”⁷²

After seeking legal advice however Trinity House reached an agreement with the Office of Ordnance and in 1727 the new low light was built on approximately the same spot that the old one had occupied.

Smelt informs us that by 1757 the number of cannon employed at Clifford's Fort has been reduced in number to eighteen 18 pdrs. at right angles to the river, nine 18 pdrs. facing the Gut (the Pow Burn/Tyne confluence), and nine 9 pdrs. facing the land. A 1757 plan of the mouth of the Tyne gives little detail of the fort but does show a structure positioned at one of the SE angles.⁷³ It may represent an enlarged version of the feature shown on the *c.* 1720 lay-out, although located in the other SE angle. A further plan, undated but perhaps *c.* 1780, shows the expanded form but in the *c.* 1720 position: it also reveals another construction on the wall, adjacent to the northern casemate.⁷⁴ It is likely that the building and the enlargement of these structures would account for the loss of three gun positions on the river sides of the fort.

The nine gun positions on the landward side are shown on the same *c.* 1780 manuscript as platforms inside the wall. They are located, from north to south: one either side of the main gate, two on the adjacent stretch of wall, one on the short piece running east-west, three on the length leading towards the low light and finally one that still survives intact nearest the SW corner. Seven of the nine positions are confirmed on another plan of 1784 which marks both the platforms and the gun ports in the wall.⁷⁵ If there was a tenth gun position in the original arrangement then it may have been located near the low light. A painting of Clifford's Fort, mounted above the entrance to the banqueting hall at Trinity House, Newcastle, gives a view of the fort from the west, probably in the second half of the 18th century. The sequence and pattern of musket loops and gun ports along the west wall stands out clearly, but the stretch of wall near the 1727 lighthouse is blank. It is conceivable that the building of the low light or its western extension demanded the sacrifice of a gun position. The proximity of the cannon positions on the landward side still created problems though. A series of letters in 1744 from Trinity House to Capt. Thomas Middleton of Clifford's Fort, Mr. Gatton the engineer, and Walter Blackett Esq. and James Carr Esq., complained of damage done to the timber-framed glass light case when the guns were fired to celebrate the king's coronation day.⁷⁶

Capt. Smelt's recommendations for improving the strength of Clifford's Fort included raising the merlons and thickening the walls on the river side. Additional protection would be provided by an excavated ditch encircling the whole fort together with a counterscarp wall and *glacis*. On the vulnerable landward side defence was to be improved by constructing fortified barracks on the hills overlooking the site to the north and to the west. These twin barracks, which would also defend each other, were to be built on a square plan, the sides nearest the cliffs to be equipped with further firepower against enemy craft whilst the other sides accommodated four or five companies. Thus, when required, a complete regiment could be maintained within the two barracks.

Messrs. Ligonier, Frederick and Earle, officers of his majesties ordnance, who had appointed Smelt to his task, and the Duke of Marlborough, the Master General

of the Ordnance, who had instigated the report, were all impressed by its contents and conclusions. It was forwarded to the Earl of Holderness, a Principal Secretary of State, with their endorsement. In practice the action taken was something of a compromise. Modifications were certainly made to the riverside embrasures because the wall is shown greatly thickened in all the subsequent detailed plans. The ditch and counterscarp wall were built, but only around the east, south-east and south sides of the fort. The fortified barracks, to be modelled on those recently built at Plymouth, were the major items of expenditure in the estimates, accounting for over £7,800 of the total of nearly £8,800. It was perhaps because of the scale of this projected expense that only one of the two barracks was eventually built.

Smelt took personal charge of the new work and on arriving at North Shields in March 1758 posted advertisements announcing that all persons interested in making contracts for building materials should propose their terms immediately.⁷⁷ The barracks were built to the NW of the fort, on a high spot adjacent to the Duke of Northumberland's windmill: thus in their early days they took the name Mill Hill barracks.⁷⁸ The *c.* 1780 map shows the finished plan with the other barracks, a similar bastion trace around the Spanish works and a ditch around Clifford's Fort all still in the "proposed" form. The intention may have been to complete the full programme of improvements, with this scheme having to be abandoned later in favour of the more modest measures. The Mill Hill barracks were later known as the Tynemouth barracks but they did not maintain their military function for very long. After the Napoleonic wars, the soldier's quarters were converted into houses, with those commanding the better views in demand as summer cottages. At the SE angle there was an inn and the centre of the square was cultivated.⁷⁹ When the Newcastle (Manors station) to North Shields railway was extended to Oxford Street, Tynemouth Village, in 1847, the route clipped the NW corner off Percy Square, as the old barracks area was now known. At the same time there was continual erosion on the river side which eventually led to some buildings being carried away on landslips down the cliff face.

The moat or ditch around the east and south flanks of Clifford's Fort was dug sometime after the construction of the barracks but it is shown on the 1772-3 plan.⁸⁰ It is probable that all the work in this area, the thickening of the fort wall, the raising of the merlons, the construction of the counterscarp wall and *glacis*, together with the excavation of the ditch, were undertaken simultaneously. A small battery, *en barbette*, was established on the riverside just outside the fort and this may have provided temporary defence while the changes were being made: its ordnance of four guns had been removed by 1784.⁸¹ A drawing that included an illustrated section across the proposed ditch and counterscarp wall shows that the flat bottom of the moat was intended to be twenty feet wide, some sixteen feet or more below the top of the fort wall and with an internal buttress supporting the counterscarp wall. The *glacis*, sloping down towards the river from the outer face of this wall, was designed to leave only one-third of the wall visible above ground. High and low tide lines are also marked, and these lay above and below the level of the bottom of the ditch.⁸²

In recent times the ditch has been filled in and a large proportion of the area it once occupied has now been built over: one section of the counterscarp wall has survived however, and this presently subdivides the ground plot of the premises of a small business. It is not possible to state with certainty that this particular piece of masonry belongs to the period of Smelt's modifications because the river wall was repaired on several occasions (see below). The extant length has been constructed with a battered inner face and a vertical outer face and topped by a single course of dressed stones that span the wall width and have chamfered upper angles. It has been finished with a row of barbed, iron spikes projecting upwards from the centre line.

This major reorganization of the riverside elements had been prompted by Smelt's condemnation of the fort's defensive capabilities. Below the gun battery,

"The foot of this Wall is nowhere properly Flanked."

And,

"... at the N.E. Angle It hath no Defence at all being closed up by a Small Building which hath a Window towards the Sea."

The reason for this may have been that when the battery was raised before 1707, the casemates lost some of their effectiveness in providing elevated flanking cover. At the time no other alternative was provided, and now with these further alterations, the casemates became functionally redundant. By 1784 at the latest, the northern one had been converted into a guard house;⁸³ the southern one, which Smelt does not mention, had probably disappeared well before then.

In 1772 the Tyne defences were once more giving cause for concern. Colonel Bruce of the Engineers was dispatched to report on the state of the fortifications, and an officer of Invalids and two other men were sent to Clifford's Fort to train the troops in the use of guns and put the place into a good state of order.⁸⁴ Lord Townsend at the Ordnance Office did not seem to be familiar with the area or its defences; and the plan in his hands, showing the 1757 proposals, was out of date. He thought the two barracks with "Bastions and Bastionets" had been traced "very absurdly". In a letter to Bruce he asked for an opinion on the Duke of Northumberland's suggestion of placing hulks at the entrance to the river. The intention may have been to form an obstruction to enemy vessels, but another possibility is that a floating pontoon was under consideration, to transfer men and equipment from one side of the river to the other. This type of operation was performed successfully as an exercise in 1801 when the 1st Regiment of the Royal Lancashire Militia, accompanied by field pieces and ammunition wagons crossed from Tynemouth barracks to Herd Sands. During a mock battle guns were fired from the north side of the river.⁸⁵

Two more buildings had been erected within the fort by the end of the 18th century. In the SW corner an L-shaped structure is visible on the 1772-3 plan; this is labelled the "master gunner's house" on the 1861 Ordnance Survey map. The date of its construction is not known: Mr. Gatton the engineer at the fort was

apparently considering building on this spot in 1744,⁸⁶ but Smelt's report informs us that the master gunner had a room in the redoubt in 1757. This was the only early building to survive the reorganization at the end of the 19th century; it was known as "Stone Cottage" when it featured in a local newspaper in 1933.⁸⁷ By then, it was reputedly of "a ripe old age" and characterized by its unusual shape and stone walls of great thickness. Architecturally, its features included vertical sash windows and a door behind a round-arched opening that had protruding springers and keystone.

The "gunners barrack block", later described as the "mens quarters" building,⁸⁸ was built up against the wall in the NW part of the fort. Its long rectangular form first appears on two plans by John Fryer (1780)⁸⁹ and Elias Durnford (1784);⁹⁰ its absence on all the earlier surveys, including another by Fryer of 1772-3, suggests that it was erected at about this period. The fact that its construction reduced the landward ordnance by a further two cannons may point to the diminished importance of the latter after the building of the barracks.

Between 1806 and 1810 both the high and low lights were replaced by new structures on an improved alignment: as a consequence, the new low light was built outside the fort, on the south side. The former lighthouse and its annexe were now converted into almshouses. The threat of invasion though meant that coastal fortifications acquired increased importance during the Napoleonic period. The buildings within the fort; as well as the defences, were maintained in a state of readiness. Annual accounts of the expenses incurred between 1794 and 1816 record the cost of this preparedness:⁹¹ the large sum of £1,000 spent in 1813 suggests a major operation, and it perhaps involved repairs to damage caused by the river.

Most of the peacetime problems of the fort were in fact created by the natural elements, the combination of high tides and strong winds being a particularly potent mixture. In October 1811, high seas washed away nearly the whole of two slips used for shipbuilding together with much of the adjoining land near the fort gate. Twelve months later, a very high tide destroyed about sixty feet of the outer river wall of the fort.⁹² To counter the force of the high tides, the rebuilt wall was protected by a row of piles driven into the river bed around the NE corner: cross members bridging the gap between the piles helped reduce the damaging effects on the wall foundations caused by the undertow of the current.

Initially these extra measures seemed to have been successful, but then in February 1825 the problem recurred elsewhere: hurricane force winds followed by a high tide once again made a breach in the outer wall.⁹³ Major Thomson of the Royal Engineers, impressed by the additional strength the piling had produced, suggested extending the line by a further sixty yards along the east flank of the river wall. At the same time he proposed the establishment of a buttressed groyne, angled out into the river from the NE corner, and thus breaking the force of the waves. An estimate of the cost of these works by James Baker, Clerk of the Works at the Newcastle Royal Engineers Office, was put at £258 1s. 1¼. In his letter to General Mann, the Inspector General of Fortifications, Thomson stressed the need for prompt action in order to save the rest of the wall. General Mann accepted the urgency of the

situation and despite the lack of readily available funds recommended immediate action: this request was approved.⁹⁴

Nevertheless the power of the river at its entrance into the sea could only be temporarily restrained. In 1852, one hundred feet of wall was washed away in a North East gale,⁹⁵ and in 1881, another fifty feet were lost.⁹⁶ Richard Welford also remarked that by this time a stout Board of Ordnance wall, which had been constructed along the river bank between the Low Lights and Tynemouth, was untraceable.⁹⁷

Lying inside the line of the ditch, the wall supporting the gun battery was safe from the incursions of the river. It is not known whether there were any further modifications after the 1757 proposals had been concluded, but by 1816 at the latest, the embrasures had taken their final form.⁹⁸ The gun positions then numbered twenty, six and three on the east, south-east and south sides respectively; the embrasures piercing stone walls of considerable thickness (3·10–3·70 m). The vertical face of the merlons and the battered lower portion of the wall meet at a rounded string and the whole outer face is composed of coursed ashlar blocks. Between the embrasures the walling is built around triangular voids: when a damaged piece of wall was examined during recent building work one of these cavities was found to contain a small quantity of sand together with a few small stones. If this material had been the original fill then it would have added shock-absorbing properties to a structure that would also have been relatively quick and economic to construct.

Building work at this time also exposed a length of the gun platform which lies below present day ground level. Extending 4·60 m behind the rear face of the wall, the solid construction of large rounded stones set in mortar was broken by triangular areas between the gun positions that had a loose fill of small stones and sand. In parallel with the wall it may have been designed to absorb percussive shock. The top of the platform was finished with courses of closely-set sandstone blocks, a single stone deep, flanked by cobbled areas of rounded stones. The smooth upper surface had a slight fall towards stone sinks with drains that were sited below each embrasure opening. These drains were connected to channels passing through the wall and gently sloping towards the outer face. Each gun would have required a run-off for water if it needed to be swabbed when in use.

Measures taken to strengthen the corners of the fort wall are apparent at the SW angle, although later buildings constructed against the outer face of the wall partly obscure them from view. On approaching the corner from the west side, the batter on the lower stone wall becomes more pronounced; whilst on the south side, the base of the wall thickens with chamfered offsets on successive courses. At the corner itself the angle is buttressed with additional thickening.

Decline of the fort

In 1848 Shields harbour was constituted an independent customs port and the River Tyne Improvement Act, passed in July 1850, took the control of the conservancy of the river away from the corporation of Newcastle and vested it in a commission

CLIFFORD'S FORT.

SECTION ACROSS THE WALLS

D.C.K. 1985.

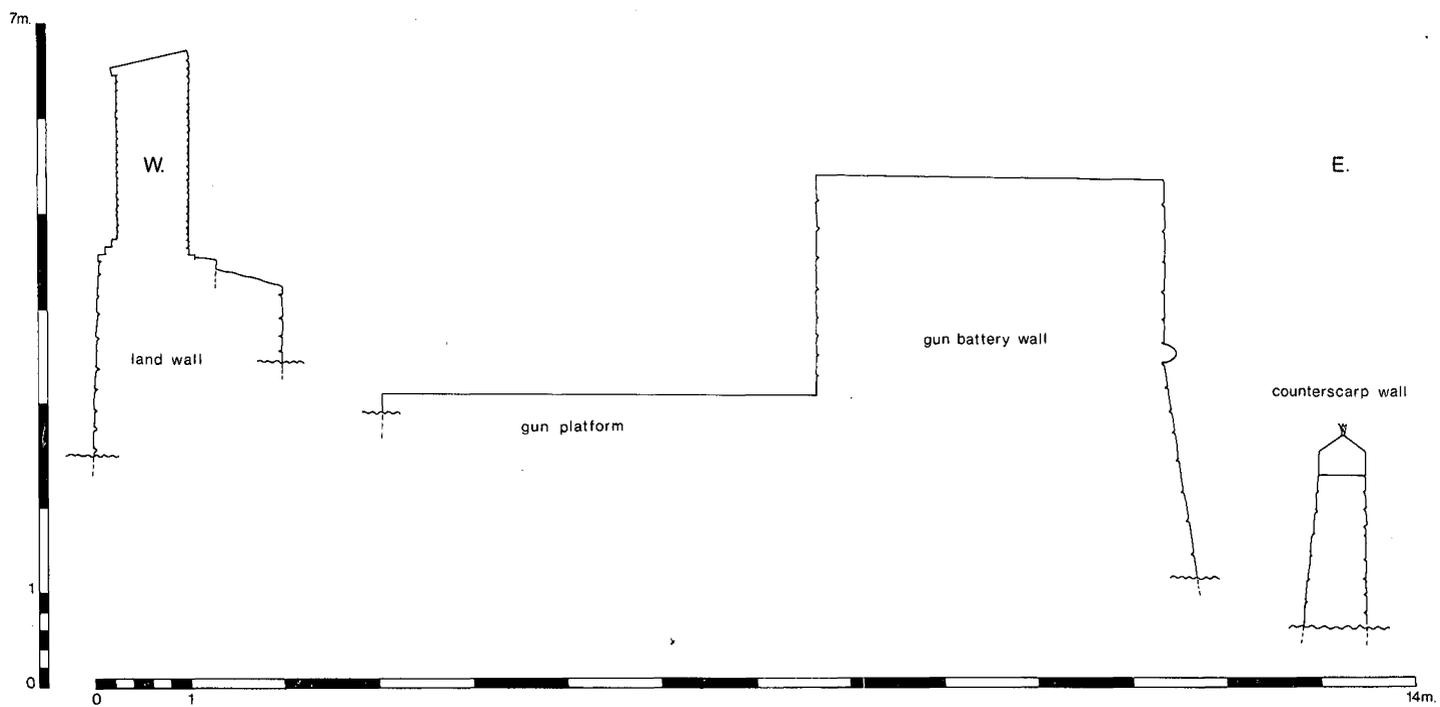
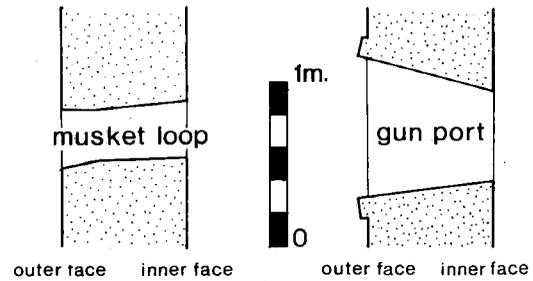


Fig. 3

CLIFFORD'S FORT DETAILS OF WALLS



PLAN OF SOUTHERN GUN BATTERY WALL

VERTICAL SECTIONS THROUGH LAND WALL

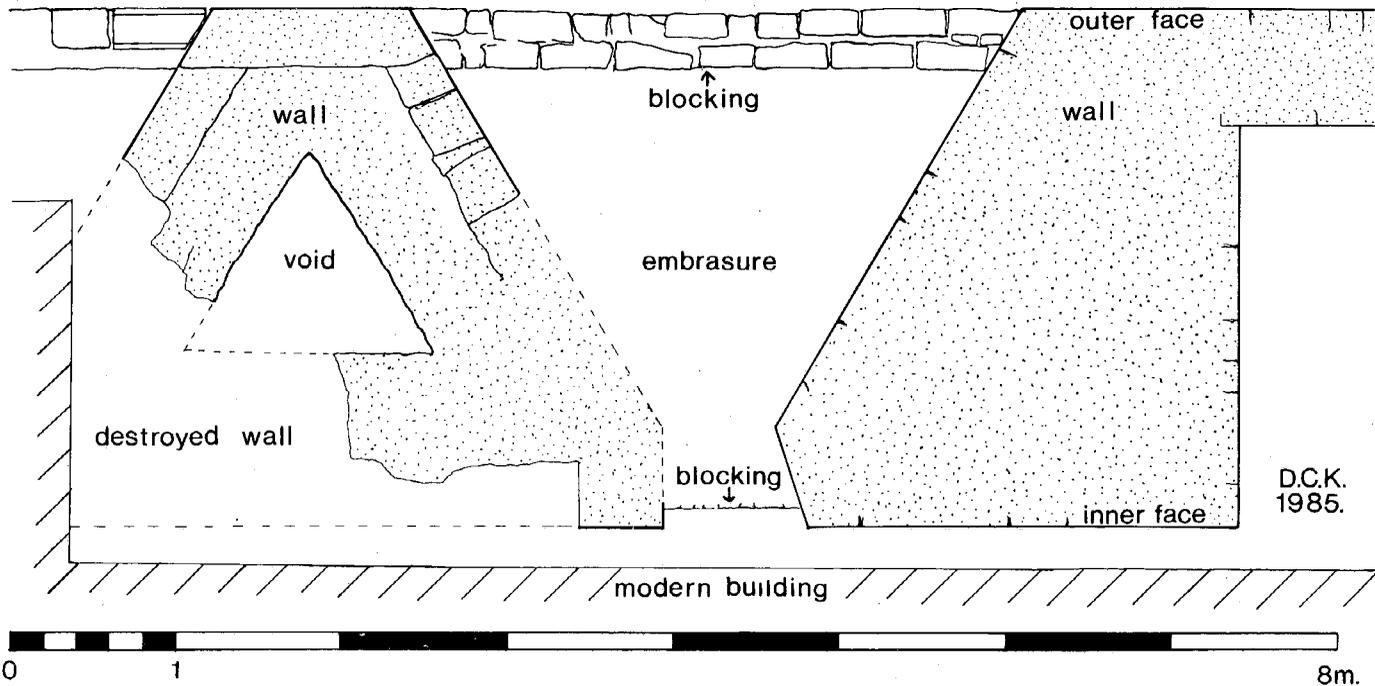


Fig. 4

of fourteen. Amongst the limitations of the 1852 Tyne Improvement Act was clause 48 which stated that no part of the act,

“... shall authorize the said Commissioners to interfere or prejudice the defence of Cliffords Fort ... without the consent of the principal officers of Her Majesty’s Ordnance ...”

But following the proposal of a new dock at the Low Lights, the Board of Ordnance were obliged to enter into negotiations with the Tynemouth Docks Committee. In 1852, a letter to the Secretary of the Board reported that measures were being sought, and the sanction of Parliament about to be obtained, for constructing a dock in front of Clifford’s Fort. The Board, presumably appreciating a growing demand for the commercial development of the area, produced valuations of alternative property in *lieu* of the fort; an 1853 estimate totalled £11,360, or £17,040 including an added 50 per cent for a forced sale. A series of other calculations were made involving the inclusions or exclusion of certain buildings.⁹⁹ An alternative site may have been an attractive proposition: there had been a dramatic transformation in the range and power of artillery in the 19th century which meant that Clifford’s Fort was no longer ideally positioned. Also, the industrial, commercial and residential growth in the environs of the fort was likely to continue, perhaps presenting future problems that were beyond the control or authority of the Board of Ordnance.

Clifford’s Fort was neither sold nor exchanged however, and estimates for repair and maintenance continued to be produced – £166 16s. 3d. in 1855.¹⁰⁰ In 1858 Major Jervois produced a memorandum regarding the protection of dockyards and the defences of the country against invasion. The French had started to produce iron-clad battleships and rifled cannons, and their military success in Italy in 1859 and the commencement of the Suez Canal under the ambitious Napoleon III appeared to present a threat to Britain. Consequently, a Royal Commission was established to investigate the defences of the U.K.

In 1861 a statement by Lieut.-Col. Westmacott R.E. proposed measures to be taken at the various ports, harbours and coastal towns to resist any attack by ship. It also stated what requirements would be necessary in the case of war. Trade on the Tyne was reported as exceeding 4,000,000 tons and this was considered ample justification for the cost of measures to be taken to increase its security. As the principal place for the export of coal, and containing the works for iron ship-building, it had become a port of specific military interest. Measures required for its defence included a heavy, long-range armament mounted on the sea front of the Tynemouth Castle promontory, and the strengthening of its land front with the provision of a battery at Cullercoats to protect it from a *coup de main*. Spanish Battery, usefully situated to command the entrance to the river, was to be heavily armed and flanked by improved scarps to resist assault. But Clifford’s Fort,

“... within the river mouth, which, though well placed to bear on the entrance and channel, is now surrounded by houses, and will, probably, be further obstructed or absorbed by the projected new dock works on the north of the Tyne, and, in *lieu* of this, to establish a new defensible battery or small fort, heavily armed to seaward, on the point of the high shore at South Shields opposite. This work will equally well cover the entrance and the river, and

will at the same time command the foreshore and secure the south of the Tyne against a boat landing, to which it is at present exposed."¹⁰¹

The potential of the two piers that were currently under construction at the river mouth was also appreciated. They could provide an excellent advanced position for towers carrying heavy guns at the pier heads. In total, the provision of about forty well-dispersed guns was planned, manned for the most part by volunteers. This was considered a small cost to bear to protect the third most important port in the U.K., and the largest contributor to the revenues of the kingdom.

In 1861 the necessary powers were obtained for the construction of a dock at the Low Lights, but although the foundation stone was laid in 1864 the development was eventually abandoned. In the meantime, the commissioners of the Tyne Improvement Scheme had begun to change the shape of the river, the characteristic that had initially given the site of Clifford's Fort its significance. Dredging operations removed the sand bar at Tynemouth and the channel through the Narrows was both widened and deepened.¹⁰² The development of artillery, particularly that carried on ships, continued with great rapidity after the 1870s; and as the battleships became more powerful, so the armament of coastal forts had to improve to meet the threat.

By 1880 the defences at the mouth of the Tyne had completed a full circle. A call for a further Royal Commission into the defences of mercantile ports of the U.K. was rejected by the Secretary of State in favour of an investigation by a sub-committee of the Defence Committee. Their report, published in February 1881 after an inspection of the fortifications at the mouth of the Tyne, declared that Spanish Battery, Clifford's Fort and the light open battery of two guns constructed on the high ground of the Lawe were all obsolete. The range and accuracy of rifled guns had restored the elevated and dominating position of Tynemouth Castle to its former pre-eminence. Clifford's Fort which,

"... at one time mounted 21 guns behind brick parapets now mounts 6 S.B. [smooth bore] guns; its armament is therefore, obsolete. In times of smaller ships and shorter ranges, and before the harbour works were undertaken, it occupied a very important position in the defence of the river, but its day has gone by; it would however, serve as a good position for submarine mining purposes. It is close to the water's edge, with a very good public pier beside it."¹⁰³

An enquiry by the Inspector-General of Fortifications and Director of Works at the War Office in 1878 suggested that a submarine mining and signalling corps might be established on the Tyne, and in 1882 the Committee of Lord Morley, the Under Secretary of War, recommended that Clifford's Fort should be used for such an establishment. Definite proposals were presented in 1883 and on their acceptance, the Volunteer Submarine Mining Company was created from the 1st. Newcastle and Durham (Volunteers) Royal Engineers in the following year. A staff of twenty-six under a commander and titled the Coast Battalion, Royal Engineers took responsibility for both the maintenance of submarine mine defence and the instruction of volunteer submarine mining companies at the ports.

Submarine mining establishment and the Tyne Electrical Engineers

In 1888 Clifford's Fort became the headquarters of the Tyne Division Royal Engineers (Volunteers) Submarine Miners, the three companies being made up of 9 officers and 180 other ranks.¹⁰⁴ New buildings were soon being erected and the rather restricted enclosed area was enlarged on the NW side by the inclusion of an extra 300 sq m behind a new retaining wall. Most of the former fort buildings were now inappropriate for the new tasks to be performed: as they were demolished a collection of new structures took their place, ranged around a central parade ground. Mines were transported from their stores on a narrow gauge track (rails 1 in wide and set 18 in apart), through a new gateway at the SE angle of the fort, and thence to a boat moored at the head of the pier.

The new gateway was defended by a pair of guns mounted on concrete bases; they were provided with a magazine alongside, and the portion of ditch immediately adjacent was filled in to form a *glacis*.¹⁰⁵ Armaments at the fort now consisted of two 6 pdr. Q.F. (quick firing) and two machine guns.¹⁰⁶ At the same time military jurisdiction was re-emphasised by marking the outer line of the defences with War Department Boundary Stones and heightening the low section of the wall near the SW corner. The old low light and its annexe building were excluded from this circuit but the pumping station of the North Shields Corporation Water Works, established in the NE corner of the ditch, fell within it.

At this time all the mines laid in the river were fired electrically from on-shore positions using connecting cables. Their effectiveness obviously depended on the proximity of the enemy vessel at the moment of firing, and this had to be judged either by observation or a contact detection device. At Clifford's Fort the principal observation position was on top of a two-storey technical block on the NW side. The extra land enclosed within the new wall adjacent to this building provided for an underground test room. A length of the earlier fort wall was now redundant and probably an obstruction: it seems likely that this was promptly levelled.

The importance and the specialist nature of the work being done at the submarine mining establishment resulted in a demand for detachments to be sent to other parts of the country. As a consequence numbers had to be continually expanded and by 1903 there were seven companies consisting of 30 officers and 457 other ranks. However, in 1904 a decision was reached by the Committee of Imperial Defence that had an important effect on the organization of Clifford's Fort. All mine defences were to be transferred to the Royal Navy, and the volunteers were henceforth to direct their full attention to the electric light duties which had already come to play an increasingly important part of their service. The first searchlight used on the Tyne had been installed at Clifford's Fort in 1895 to illuminate the mine field, and the submarine miners had operated the coastal defence lights for the first time in 1900.

Between 1905 and 1907 the submarine mining service was run down; most of the stores at Clifford's Fort, including all the electrical plant, were either broken up or sold by public auction. From 1907 the renamed Tyne Division Royal Engineers (Volunteers) Electrical Engineers took their place in Haldane's reformed Territorial

Forces. Individual units were now either "works companies" or "electric light companies" in 1908 saw the formation of the Electric Light Company, Durham Fortress R.E. (T.F.). To have headquarters in a War Department establishment such as Clifford's Fort was at this time rather unusual and not entirely advantageous. The new resolution that all territorial forces should be raised locally caused problems because extra companies had been raised on the Tyne to provide for requirements elsewhere. It was decided eventually that the surplus should be utilized to counteract a deficiency in the Portsmouth and Isle of Wight region. In 1911 there was a reunification of all the companies raised on the Tyne under the common title of the Tyne Electrical Engineers R.E.

On 29th July 1914 the British Government declared a state of national emergency: at Clifford's Fort, which remained the office headquarters and recruiting centre for the Tyne Electrical Engineers throughout the war, the special service personnel amongst the 15 officers and 353 other ranks were mobilized immediately. In the early days of the war, with a constant stream of men passing through the fort gates to enlist, accommodation became a matter of some difficulty and living huts had to be erected on the parade ground. After the bombardment of Scarborough, Whitby and Hartlepool by an enemy fleet and the sinking of many British ships by submarines, a movable boom was constructed across the Narrows. In November of the same year, a party of Royal Marines landed at Clifford's Fort and erected a three-gun battery on the outside to cover the minefield jointly laid by the Royal Navy and the Tyne Electrical Engineers. The "made ground" proved to be too unstable for the timber framework supporting the guns and concrete foundations had to be provided.

It soon became clear that the expertise of the volunteer submarine miners was being sorely missed, and early in 1915 a new unit titled the Royal Marine Submarine Miners was formed with headquarters at Clifford's Fort. Many of the old submarine mining officers were now recalled and the organization covered all the important ports and anchorages on the east and south coasts, excepting Portsmouth and Plymouth. Clifford's Fort was both a recruiting centre and an instruction establishment; the marines were involved with testing, position finding and firing whilst the navy took responsibility for the water work. This meant that the marines played a critical role in the development of new and important mining and detection techniques, vital in reducing the threat of the U-boats.

The Zeppelin air raids started in January 1915 and this necessitated the hurried installation of anti-aircraft searchlights. It was the depot headquarters at Haslar, Gosport that experienced the real expansion in numbers of Tyne Electrical Engineers; the companies increased from four to sixty in four and a half years. When hostilities ceased the coastal defences were not immediately relaxed but by the time depot headquarters had returned from Gosport in April 1919 there was only a small administrative staff remaining at Clifford's Fort.

In January 1921 the re-established territorial force was entitled the Tyne Electrical (Fortress) Royal Engineers (T.F.) and consisted of a works company with 145 men and 11 officers and an electric light company of 39 men with 4 officers. The

Territorial and Militia Act of 1921 converted the Territorial Force into the Territorial Army. Clifford's Fort was now considered unsuitable for headquarters because of the lack of space and its general inaccessibility. In fact, in this year the drill hall at Ratcliffe Avenue, Whitley Bay was acquired. Tynemouth Corporation were eager to obtain the site of Clifford's Fort so that the fish quay businesses could expand. After lengthy negotiations it was agreed that the War Office should release the site in return for a 8,530 sq yd plot near Tynemouth railway station and £12,000 in cash. Building on the new land started in June 1927 with the carved stone bearing the crest of the unit being transferred from the fort gateway to the completed drill hall. The official "marching out" from Clifford's fort took place on 12th May 1928.

Later history of the fort

The story of Clifford's Fort in recent times is largely one of adapting to accommodate new uses: this process was interrupted briefly during the 1939–45 war when a military role was re-established as an Emergency Coast Battery. Two 12 pdr. Q.F. guns with searchlights were installed in the same position from which the 1914–18 battery had operated, and overhead cover for these guns was completed by November 1940. In 1942 the fort was garrisoned by two officers and fifty-four men, but by November 1943 the battery had become non-operational and in May 1944 it was dismantled.¹⁰⁷

Since 1928 the site of the fort and the area immediately around it have become increasingly dominated by businesses concerned with the processing and sale of fish. A preliminary proposal to level all the buildings that lay within the fort walls was not adopted however, and conversion, demolition, and the erection of new structures has proceeded on a piecemeal basis.¹⁰⁸

The old wall placed some restrictions on the regeneration of the land within the fort, but these difficulties were eased in 1929 when another access to the interior was provided from the western side.¹⁰⁹ In 1970 a considerable portion of the western wall was required to be demolished because of its extremely doubtful stability,¹¹⁰ and in 1983 another length of wall and the c. 1888 painter's shop and store were removed to widen the road. The northern gateway has also disappeared but the more substantial eastern, south-eastern and southern parts of the *enceinte* survive because they still retain the made-up ground of the fort interior, and this lies at a considerable height above the ground surface outside. In the 1970s the old master gunner's house and the c. 1888 married soldiers' quarters were demolished to make way for fish processing and cold store facilities:¹¹¹ these new buildings and their recent conversion and extension have caused more damage to the inside of the fort wall, but the embrasures further along the eastern flank still survive intact with their c. 1888 brick blocking.¹¹² Outside the wall, the moat was filled in, and most of the counterscarp wall was demolished: by the end of the 1930s much of the moat was built over, partly obscuring the view of the impressive old gun battery wall.¹¹³

Buildings not already mentioned have experienced varied fates. The old low light, at present unused, is still structurally sound although the south facade, including the attractive plaques and sundial, is badly decayed. By 1928, the c. 1888 cable tank building had disappeared and before 1937 the quarters building constructed alongside

it, probably in the 1914–18 war, had also gone.¹¹⁴ The area is now occupied by a fish curing factory belonging to Messrs. Horn, erected some time after September 1965.¹¹⁵ By 1937 the test room and the whole of the area to the west of the technical block was being fully utilised: the building itself was, at that time, described as a gutting premises and a fish and net drying store.¹¹⁶ It suffered two bad fires before it was pulled down in 1984.

The loaded mine stores still survive; proposals to convert them into fish curing premises were made in 1929, and currently they are being restored, together with the old mine loading rooms. In the NE corner of the fort, the craft shops were also converted for fish curing, and more recently for cold storage. The *c.* 1888 drill shed, described in 1939 as a store,¹¹⁷ was the subject of proposals to extend it both northwards and westwards in 1947 when it was occupied by Northern Herring Industries Ltd.¹¹⁸ This expansion never took place however, and having been used by Messrs. Lindsays since the 1950s, it was demolished in 1985 to make way for more new fish processing units. Finally, the soldiers' quarters and canteen, erected 1893–6 after the demolition of the redoubt, was the subject of proposed alterations by Messrs. T. D. and T. T. Irvin in the 1930s, and by Messrs. Carnie and Croan in the 1960s, and is still occupied by J. Southern, Electrical Engineers, today.

Survey and excavation

As a result of the considerable damage inflicted on the land wall, and because of the vulnerability of the portion that still survives, it was decided to record a stretch which stands to the full height and which retains good examples of the defensive features. The choice of wall face was determined by current accessibility. Structurally, the wall consisted of a sandstone base (up to 1.20 m thick) supporting a reduced brick upper section (*c.* 0.78 m thick) which was pierced by internally-splayed musket loops and an externally-splayed gun port. The wall was finished with a top course that sloped down and projected at the outer face. Little survived of the rectangular turret, one of three that originally projected at the external angles of the landward wall. When intact their function was to cover the area alongside the outer face of the wall with additional musket loops: they were finished off with pyramidal roofs surmounted by spherical finials.

Some further observations can be made on constructional technique. The outer face of the stone base was not ashlar but its upper part was roughly coursed with substantial blocks of stone that had either been selected for their approximate rectangular appearance or had been rudimentally fashioned. The interstices had been filled with fragments of stone, brick or tile. Lower down the courses were less regular; having been constructed from unshaped water-worn stones that projected outwards from the line of the face. In comparison to the stone base, the brick wall above was of reduced thickness; produced by steps in the bottom two or three courses of brick on the outer face and a single step at the inner face. A fairly regular system of brick-laying was adopted but the pattern of English garden wall bond at the faces and the interlocking courses of bricks within the core was not rigidly adhered to because the hand-made bricks were not of regular dimensions: occasionally

CLIFFORD'S FORT - SITE OF CORNER TURRET INNER FACE

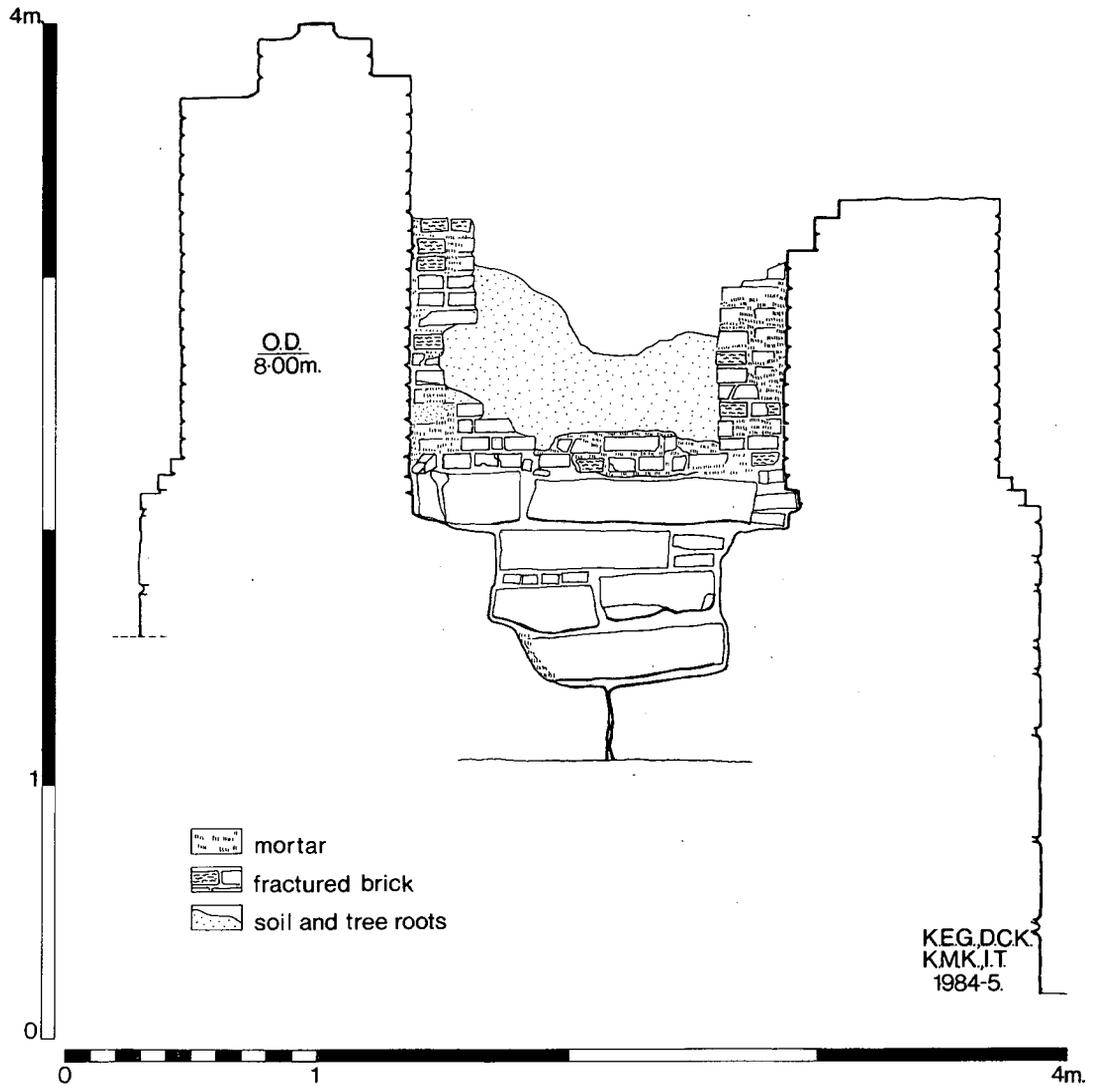


Fig. 5

a brick fragment was used to maintain a sequence. Where an angle other than a right angle occurred, for instance where the splay of a musket loop met the wall face, then the bricks were crudely fractured to follow the required line.

The wall near the SW corner of the fort is of interest and well preserved. A stretch of wall with four musket loops ends at a butt joint: the adjacent length of wall, running up to the corner, is blank, reduced in thickness, and stepped down in height below the later brick additions. A matching joint is also visible on the 1 m wide firing step immediately inside the wall. This line probably marks the position of one corner of the casemate building which no longer survives above the present ground level. On the north side of this joint a damaged portion of the firing step shows clearly that it was a secondary feature, built up against the inner face of the wall. To the south, however, no such division is apparent, and at the corner the ashlar blocks of the south wall have been built over the rubble of the firing step. In this section it seems that the firing step and the wall were built in a single operation. Although the stone and brick style of construction is identical on either side of the joint, there is a neater finish to the work on the north side indicating its precedence; small pieces of brick visible to the south of the joint have presumably been used to close the gap.

Though the casemate at the NE corner of the fort has also gone, part of the original fort wall here has been incorporated into the north and west sides of a later building. In character this masonry is similar to other sections of the land wall, changing from stone to brick at the appropriate level. The brickwork is laid in English garden wall bond, is stepped on the bottom two courses and slopes and projects at the top of the wall: the later brick wall seated on top is stepped in to a degree (0.52 m) that would only be possible if it were constructed on a base of considerable thickness (i.e. $0.52 \text{ m} + 0.23 \text{ m} = 0.75 \text{ m}$).

At the same time that the recording of part of the wall was in progress, a small trench was excavated on the land cleared after the demolition of the c. 1888 technical block. It was positioned so that any remains of the men's quarters building might be recovered, and also so that deposits from both inside and outside the earlier fort wall could be sampled.

Just below the present ground surface the lower portion of the wall survived intact, the top having been slightly remodelled, probably to provide both a secure foundation for the west wall of the technical block and a passage for the service pipes leading away from it. The almost vertical outer face was found to have been constructed of large, coursed, sub-rectangular sandstone blocks above more irregular foundations. It contrasted with the battered inner face, made of irregular unshaped stones and laid in random fashion. The crude appearance of the latter suggested it had never been intended to be visible, with the ground built up inside the wall well above the level outside the fort.

This interpretation was also supported by the evidence from the deposits. Inside the line of the old fort wall, relatively thin bands of building material or demolition rubble lay above a considerable depth of sand and ash. There were no positive indications of the men's quarters building and very few artifacts were discovered in

CLIFFORD'S FORT

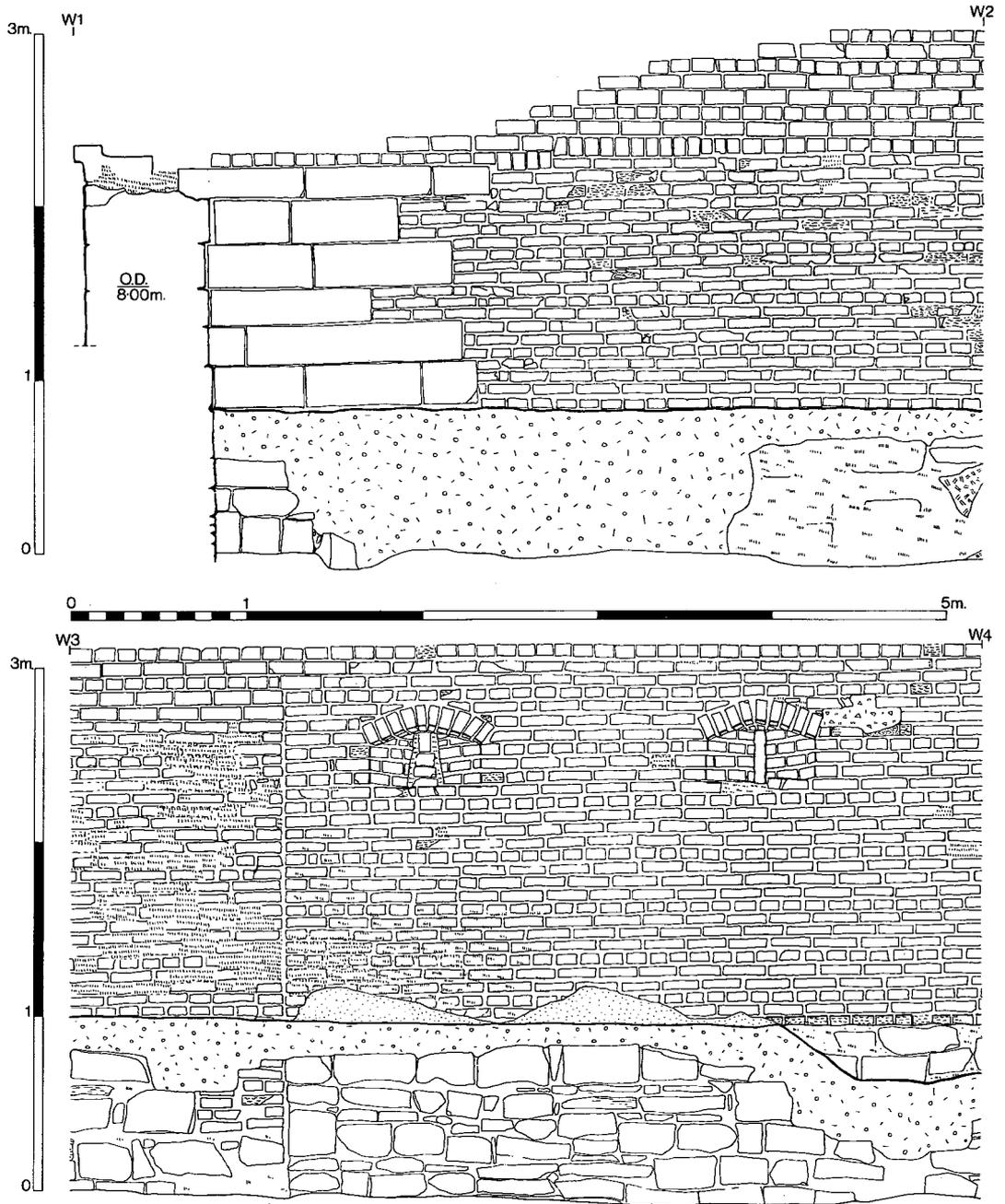


Fig. 6

WEST WALL, INNER FACE.

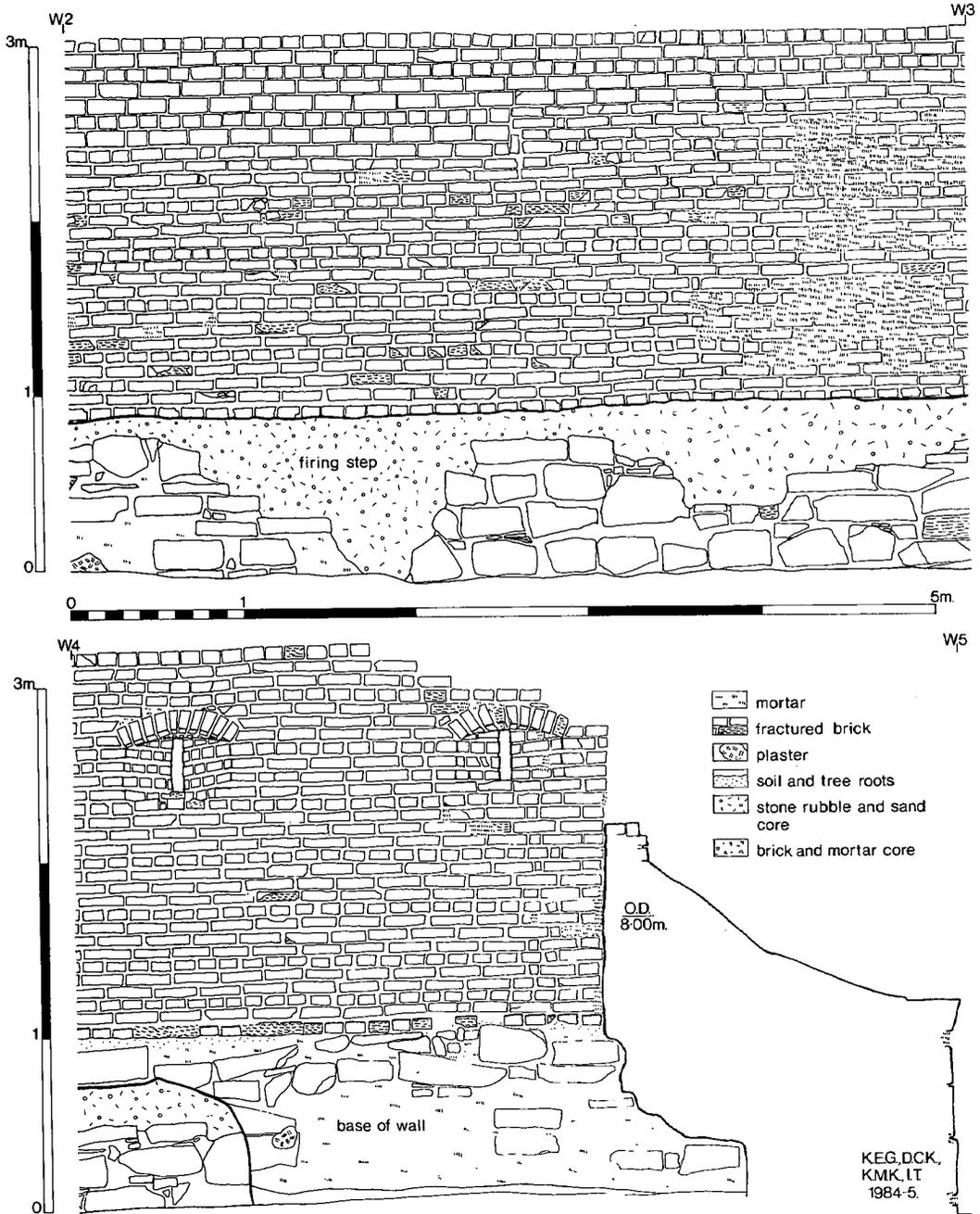


Fig. 6 (cont.)

CLIFFORD'S FORT

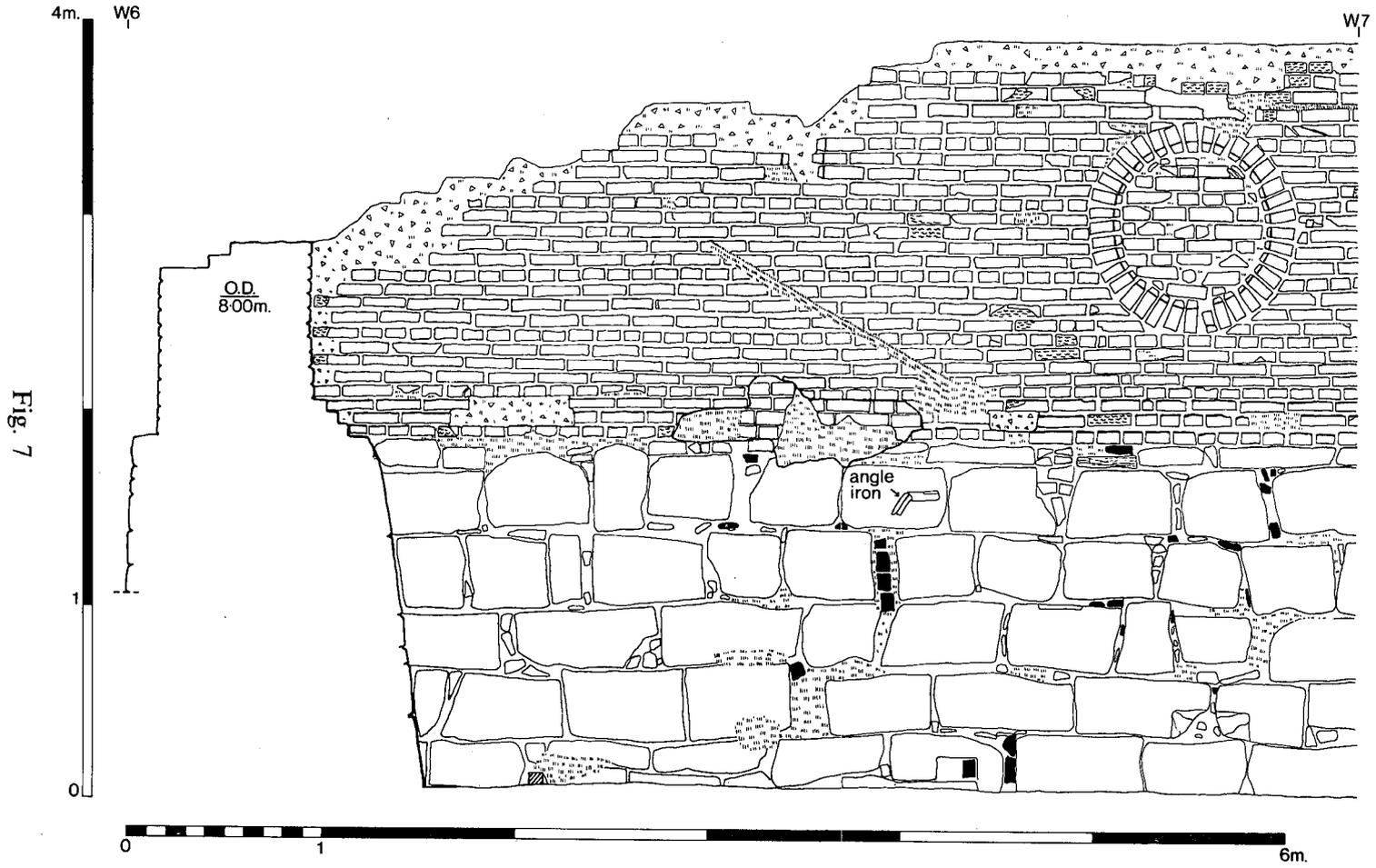


Fig. 7

WEST WALL, OUTER FACE.

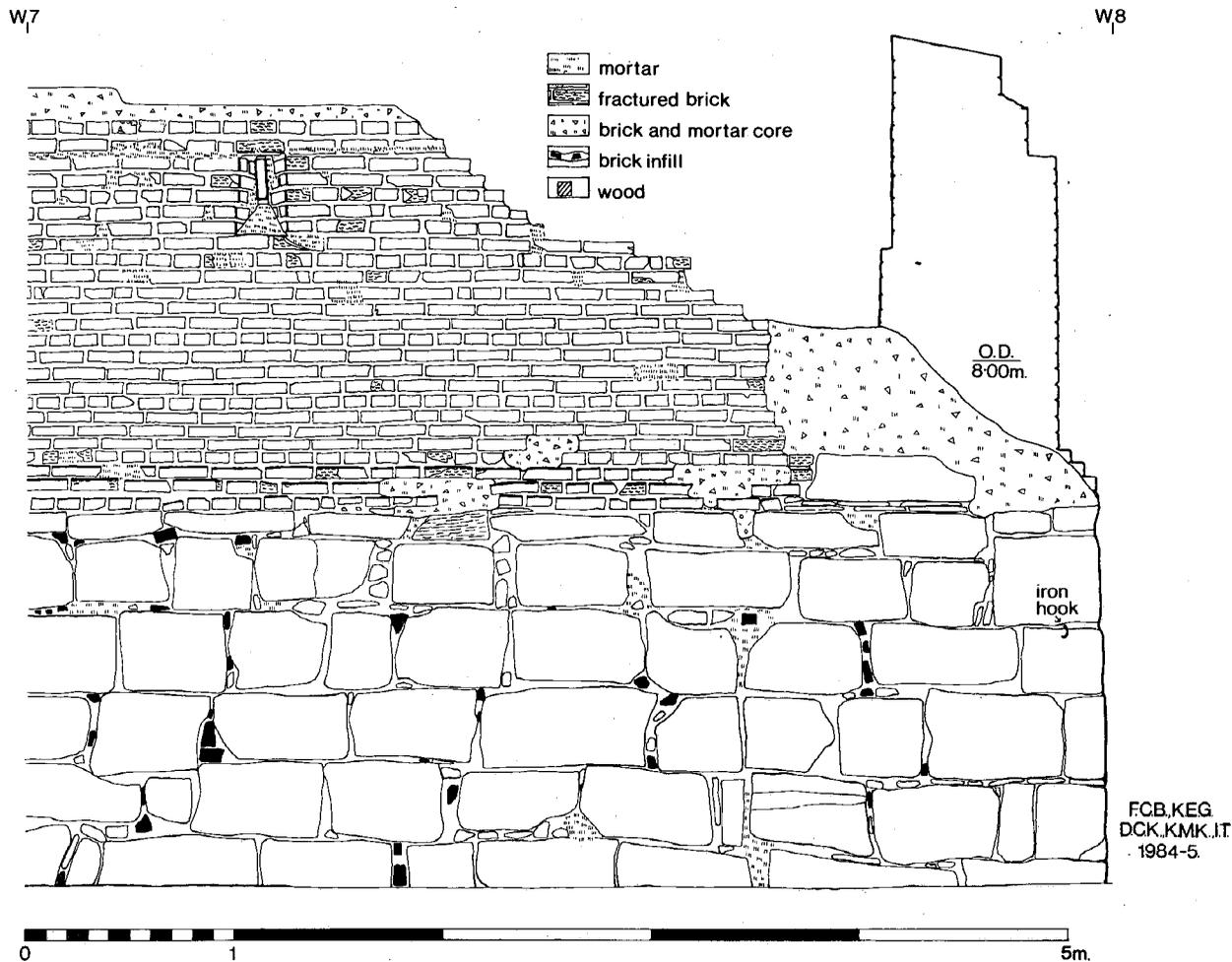


Fig. 7 (cont.)

the quantity of sand and ash excavated. However, the two sherds of pottery (from a single vessel) and the three clay pipe bowls found in these layers were all of 17th century date, and this contrasted with the groups of finds from all the other contexts, which had a high proportion of 19th century material in them.

Patches of mortar, found immediately alongside the face of the wall but not further away from it, were probably a residue from the wall building operation. Its appearance at different depths within the sand and ash deposits implies construction in stages, with the ground level being made up each time it was convenient for the masons. For the later stages some form of scaffolding must have been used, and the lumps of burnt wood found in the upper levels of sand may be the remains of this. The surviving depth of sand indicates that the ground level of the fort interior in the past was comparable with, or perhaps even exceeded, the height of the land surface today. If the foundations of the technical block had been sunk below the footings of the men's quarters building, then this would account for the failure to find any trace of the latter.

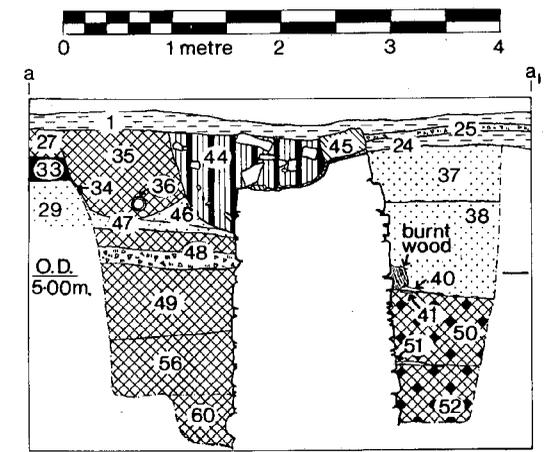
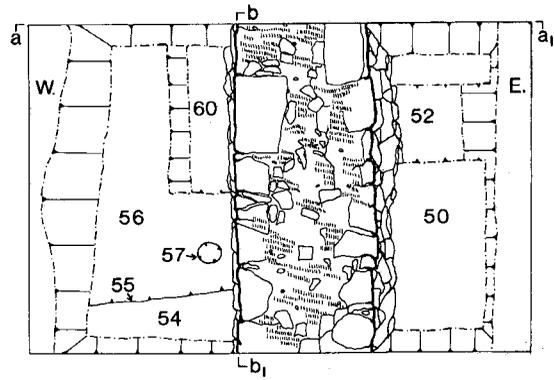
Outside the old fort wall a deep deposit of 19th century material—ash, sand and building rubble—was found. No construction trench for the wall was detected, nor were its foundations bottomed, but it does not necessarily follow that the 17th century ground level outside the fort lay somewhere below the depth that was reached. The lowest of the 19th century deposits may well have been the fill of pits cut through the 17th century horizon: this material included numerous shell fragments and a quantity of bone as well as a familiar list of building *debris* (bricks, mortar, slate etc.) and ash.

When the underground test room was exposed in the site clearance of 1984, it was found to have been built with concrete walls of 1 m thickness and to have had an equally formidable concrete roof.¹¹⁹ Mining equipment had to be tested both on land and under water before it could be accepted for use in service. At the west end of the excavated area a pair of cables were found lying at the bottom of a trench which had no additional supporting structure. The parallel cables were orientated north-south in the direction of the test room, and may have been associated with the electrically-fired test operations. A relationship with the primary use of the extra land is likely because the cable trench was stratigraphically related to, and earlier than, the laying of two ceramic pipelines, one of which serviced the technical block. The other consisted of lengths of pipe bearing the stamp of William Ingham and Sons, Leeds, a firm that was absorbed into a larger group in the 1890s.¹²⁰ Similar cables were discovered in a trench dug to provide services for new fish processing units on the east side of the fort: where these cables had split or been cut the centre was found to consist of four or six rubber-sheathed copper wires.

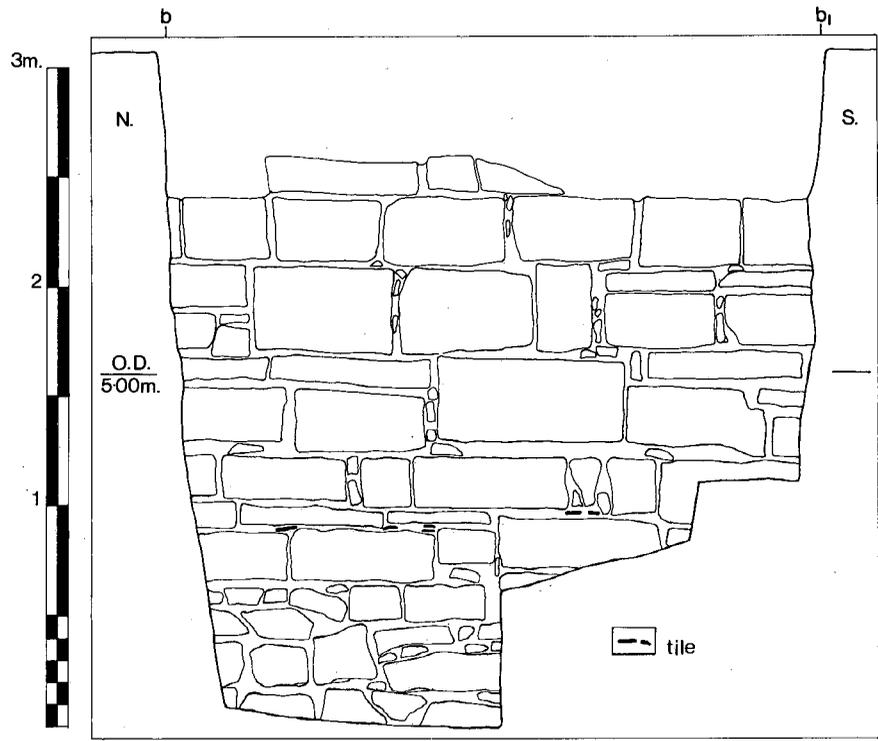
ACKNOWLEDGEMENTS

The excavation and recording work was undertaken by Karen Griffiths, Kevin Kivlehan, Ian Tapster and myself. In the course of this work, and during a subsequent watching brief when the drill shed was demolished, I was very grateful

CLIFFORD'S FORT - EXCAVATED WEST WALL.



- | | |
|--------------------|-----------------------|
| arbitrary cut | mortar |
| demolition rubble | brick & mortar rubble |
| black loam | rebuilt wall |
| sand | red & black ash |
| rubble & mixed ash | brown/black ash |



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CLIFFORD'S FORT AND THE DEFENCE OF THE TYNE

Fig. 8

for the assistance of John Barker, Francis Burton, Bob Davies, Alex Hastie, Ken Hutton, Jim McLain, Tommy Smith, Tony Smith, Katherine Wright and especially Al Hill. Sources for much of the additional material were very generously provided by Stephen Bull and Dr. Alan Guy at the National Army Museum, and further help and information was provided by Eric Cambridge, Lloyd Edwards, Richard Fraser, Mrs. A. Heap, Eric Hollerton, Mr. A. J. Lilburn, Grace McCombie, Gordon McLaughlin, John Nolan, Jenny Vaughan, and the staff of Trinity House, Newcastle, the North Tyneside Planning Department, the British Library and the Public Record Office. Any errors of interpretation of course are mine alone.

Most of all I am indebted to Tyne and Wear Planning Department who provided the finance, and Milburn Preston and Barbara Harbottle, whose interest in the past and concern over the future of Clifford's Fort has been responsible for the instigation of the project. Further development in the Low Lights area seems very likely and natural features obviously restrict the amount of space available: this could be achieved though without inflicting further damage on Clifford's Fort. Over 70 per cent of the *enceinte* is still visible, a circuit that would be more prominent if the opportunity were taken in the future to expose it more fully. It is to be hoped that what remains of this historical monument, of national as well as local importance, can be maintained in good order, and that it can continue to be an interesting feature in an improved landscape. Finally the author and the Society are greatly indebted to the former Tyne and Wear County Council which made a generous grant towards the cost of publication of this report.

NOTES

¹ H. H. E. Craster, *A History of Northumberland* vol. VIII Tynemouth (1907), 154-6.

² *ibid.*, 157.

³ *ibid.*, 274-5.

⁴ Calendar of State Papers, Domestic Series (hereafter C.S.P.D.), Charles I 1625-6 vol. XXXIII no. 39, 597.

⁵ C.S.P.D. Charles I 1636-7 vol. CCCXLI no. 65, 292.

⁶ C.S.P.D. Charles I 1635-6 vol. CCCXXVI no. 14, 555.

⁷ C.S.P.D. Charles I 1638-9 vol. CCCXCVIII no. 46, 9.

⁸ C.S.P.D. Charles I 1638-9 vol. CCCIV no. 88, 176.

⁹ Craster, *op. cit.*, 276.

¹⁰ J. Brand, *History of Newcastle II* (1789), 331 note q.

¹¹ M. A. Richardson, *The Local Historian's Table Book*, Hist. Div. III (1843), 111.

¹² Brand, *op. cit.*

¹³ C. S. Terry, "The Siege of Newcastle by the

Scots in 1644', *AA* 2 xxi, 200 quoting *The Country Messenger* no. 2 for 4-11 October 1644.

¹⁴ Howard Tomlinson, "The Ordnance Office and the King's Forts, 1660-1714", *Architectural History* 16 (1973), 6-7.

¹⁵ Laing Gallery T.W.C.M.S. J3094, 24-62.

¹⁶ Leslie Stephen and Sidney Lee ed., *Dictionary of National Biography* (hereafter D.N.B.), vol. IV (1908), 534-7.

¹⁷ *ibid.*, 520-21.

¹⁸ D.N.B. vol. XXII (Supplement), 160-62.

¹⁹ Edward Croft-Murray and Paul Hutton, *Catalogue of British Drawings, Vol. One: XVI & XVII Centuries* (1960), 200-201.

²⁰ British Museum, King's Top. Coll. xxxiii 23g 1-4.

²¹ Craster, *op. cit.*, 201; Tomlinson *op. cit.*, Fig. 5a.

²² D.N.B. *op. cit.*

²³ C.S.P.D. Charles II 1671-2 29 March 1672, 251.

²⁴ *ibid.*

- ²⁵ *ibid.*, 30 April 1672, 399.
- ²⁶ Patricia M. Wilkinson, "Excavations at Tilbury Fort, Essex", *Post-Medieval Archaeology* 17 (1983), 111-62 and A. D. Saunders, "Tilbury Fort and the Development of Artillery Fortification in the Thames Estuary", *Antiquaries Journal* 40 (1960), 152-74.
- ²⁷ O. M. Short, *The History of the Tyne Electrical Engineers, Royal Engineers* (1935), illustration facing p. 6.
- ²⁸ British Museum, King's Top. coll. xxxiii 22.
- ²⁹ 'Wayfarings of Ralph Thoresby in the North of England, 1681 and 1682' in M. A. Richardson, *Reprints of Rare Tracts* vol. ii Biog. Div. (1848), 15-16 and 24; "Journeyings in the North of England of Thomas Kirk of Cookridge, 1677" in H. A. Adamson, *Old Land Marks No. X—Cliffords Fort and the Low Lights*.
- ³⁰ Thoresby, *op. cit.*
- ³¹ William Salt Collection, Stafford, D1778/V/55.
- ³² Public Record Office (hereafter P.R.O.), SP 41/38.
- ³³ P.R.O. MPH 90 and MR 1171.
- ³⁴ Richardson (1843), *op. cit.*, 200 and Craster, *op. cit.*, 276.
- ³⁵ A. J. Lilburn, "Seventeenth Century Accounts relating to Forts on Holy Island and on the mouth of the Tyne, 1675-1681/2", *Arch Ael.* 5 xiv (1986), below.
- ³⁶ Tyne and Wear Archive Department, (hereafter T.W.A.D.), Trinity House Correspondence 659/182.
- ³⁷ P.R.O. SP 41/38.
- ³⁸ *Shields Daily News*, 15 September 1893, p. 3 col. 2.
- ³⁹ North Shields Local Studies Centre, 126-50.
- ⁴⁰ British Museum, King's Top. Coll. xxxiii 22.
- ⁴¹ *ibid.*
- ⁴² Lilburn, *op. cit.*
- ⁴³ *Shields Daily News* (1893), *op. cit.*
- ⁴⁴ Craster, *op. cit.*
- ⁴⁵ Lilburn, *op. cit.*
- ⁴⁶ M. Oppenheim, 'Maritime History', *V.C.H. Essex* ii, 290-1.
- ⁴⁷ British Museum, MS. Library Coll. 16370, MS. 334.
- ⁴⁸ C.S.P.D. James II 1686-7, no. 1683, 411.
- ⁴⁹ C.S.P.D. James II 1687-9, no. 1606, 296.
- ⁵⁰ P.R.O. SP 8/10, 281.
- ⁵¹ C.S.P.D. James II 1687-9, no. 1606, 296.
- ⁵² C.S.P.D. James II 1687-9, no. 1629, 300-1.
- ⁵³ C.S.P.D. Anne 1702-3, 23 June 1702, 431.
- ⁵⁴ *ibid.*
- ⁵⁵ C.S.P.D. William III 1696, 26 August 1696, 363.
- ⁵⁶ C.S.P.D. William III 1700-2, 27 January 1702, 495.
- ⁵⁷ C.S.P.D. Anne 1702-3, 23 June 1702, 431.
- ⁵⁸ Craster, *op. cit.*, 275.
- ⁵⁹ P.R.O. WO 55/319, 89.
- ⁶⁰ British Museum, King's Top. Coll. xxxiii 22.
- ⁶¹ Observations made by Miss R. B. Harbottle and Mr. R. Fraser, 10 July 1984.
- ⁶² Craster *op. cit.*, 201.
- ⁶³ Horatio A. Adamson, "The Villiers Family as Governors of Tynemouth Castle and the Owners of the Lighthouse", *AA* 2 xx (1898), 15-26.
- ⁶⁴ The governor's house and the new low light, T.W.A.D. 659/181 and 659/182.
- ⁶⁵ Calendar of Treasury Books vol XXII (1708), 365 and 385.
- ⁶⁶ Brand, *op. cit.*, 3.
- ⁶⁷ T.W.A.D. 659/181. Letter to the Governor of Tynemouth Castle, 6 June 1720.
- ⁶⁸ T.W.A.D. 659/182. Undated (1726?) letter from ninety-seven ships' masters to Trinity House, Newcastle.
- ⁶⁹ T.W.A.D. 659/181. Letter to Messrs. Raper and Dobson from the Office of Ordnance.
- ⁷⁰ T.W.A.D. 659/182. As note 68 above.
- ⁷¹ North Shields Local Studies Centre, 3412.
- ⁷² T.W.A.D. 659/182. Letter to Sir Challoner Ogle 28 June 1726.
- ⁷³ P.R.O. MPH 322.
- ⁷⁴ P.R.O. MPH 90.
- ⁷⁵ P.R.O. MR 1171.
- ⁷⁶ T.W.A.D. 659/182. Trinity House Correspondence, 1744.
- ⁷⁷ J. Sykes, *Local Records of Remarkable Events* vol. I (reprint 1833), 221.
- ⁷⁸ P.R.O. MPH 90.
- ⁷⁹ E. Mackenzie, *History of Northumberland II* (1825), 440.
- ⁸⁰ J. Fryer's *Survey of the Tyne*.
- ⁸¹ P.R.O. MR 1171.
- ⁸² P.R.O. MPH 90.
- ⁸³ P.R.O. MR 1171.
- ⁸⁴ P.R.O. WO 46/11, 43-4.
- ⁸⁵ Richardson (1843), *op. cit.*, 15.
- ⁸⁶ T.W.A.D. 659/182. Letter from Trinity House to the Duke of Montague, Master General of the Ordnance, 1744.

- ⁸⁷ *Shields Daily News*, 4 April 1933, p. 3, col. 3.
- ⁸⁸ Ordnance Survey 1st Edition, 1861.
- ⁸⁹ P.R.O. MPE 394.
- ⁹⁰ P.R.O. MR 1171.
- ⁹¹ P.R.O. WO 55/715.
- ⁹² Richardson (1843), op. cit., 120.
- ⁹³ *ibid.*, 306.
- ⁹⁴ P.R.O. WO 44/192.
- ⁹⁵ Short, op. cit., 6-7.
- ⁹⁶ *Shields Daily News*, 24 October 1881, p. 3, col. 4.
- ⁹⁷ Richard Welford in J. W. Carmichael, *Pictures of Tyneside or Life and Scenery on the River Tyne Sixty Years Ago* (1881), 62.
- ⁹⁸ P.R.O. WO 55/715.
- ⁹⁹ P.R.O. WO 44/196.
- ¹⁰⁰ P.R.O. WO 44/510.
- ¹⁰¹ P.R.O. WO 33/10, 772-3.
- ¹⁰² Craster, op. cit., 354.
- ¹⁰³ P.R.O. WO 33/37.
- ¹⁰⁴ The historical information in this section is provided by Short, op. cit.
- ¹⁰⁵ Ordnance Survey 2nd Edition, 1896.
- ¹⁰⁶ National Army Museum, RA/RE works committee 1895 M.O.D.
- ¹⁰⁷ P.R.O. WO 192/89, 199/954 B/I, 1169.
- ¹⁰⁸ North Shields Local Studies Centre 1193/1.
- ¹⁰⁹ *ibid.*, 1193/13.
- ¹¹⁰ Information from Milburn Preston.
- ¹¹¹ North Shields Planning Department, 6816/99/71 and 7765/1133/72.
- ¹¹² Adamson, op. cit.
- ¹¹³ North Shields Local Studies Centre 1193/20.
- ¹¹⁴ North Shields Local Studies Centre 1193/1.
- ¹¹⁵ North Shields Planning Department, 5122/380/65.
- ¹¹⁶ North Shields Local Studies Centre 1193/20.
- ¹¹⁷ *ibid.*
- ¹¹⁸ North Shields Local Studies Centre 1193/21.
- ¹¹⁹ Mr. K. Hutton, pers. comm.
- ¹²⁰ Information from Mrs. A. Heap, Local History Librarian, Leeds Central Library.