

American Battlefield Protection Program

Site Identification and Documentation: *Siege and Battle of Saybrook Fort*

Technical Report: (GA-2255-12-011)



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This report is dedicated to the memory of Anne E. Sweet (1920 – 2014)
A Cherished Friend and Colleague.

Contributors:

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I Introduction

This Technical Report summarizes the research, methods and results of the National Park Service American Battlefield Protection Program (NPS ABPP) grant “Siege and Battle of Saybrook Fort” Site Identification Grant (GA-2255-12-011) awarded to the Mashantucket Pequot Museum and Research Center (MPMRC) in July 2012. The purpose of the grant was to document the fort and settlement at Saybrook Point and the actions that took place during the seven month Pequot siege of Saybrook from September 1636 through March 1637. During the siege the Pequot conducted at least 24 attacks on English settlers, soldiers and traders at Saybrook Point and adjacent areas along the lower Connecticut River. When the siege was finally lifted following the arrival of 20 Massachusetts Bay soldiers, over 30 English soldiers and settlers had been killed. The actions and engagements associated with the Siege and Battle of Saybrook Fort constitute the first phase of the larger Pequot War (August 1636 and August 1637).

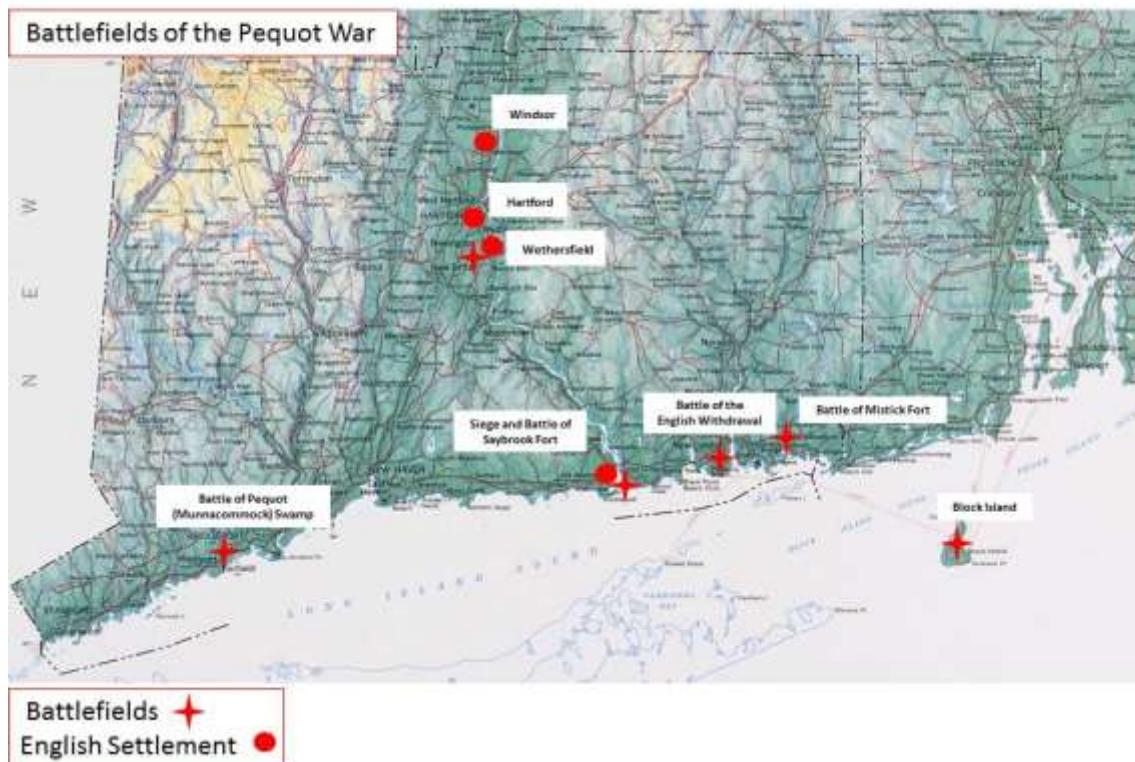


Figure 1. Battlefields of the Pequot War.

The “Siege and Battle of Saybrook Fort” project consisted of a thorough analysis of primary sources to identify the nature and locations of military actions, sites, and battlefield terrain associated with the siege (Figure 1). The fieldwork that followed consisted of archeological testing in the form of systematic metal detector surveys and limited excavations in selected areas of Saybrook Point. These surveys recovered more than 6,434 architectural, domestic, and military objects of which 646 were determined to be associated with the siege. When the archaeological evidence was analyzed within the context of the historical record, five loci were identified at Saybrook Point (Figure 2):

- **Site 106-35 Locus A** “Siege Combat Actions” – the site of one or more combat actions and skirmishes on the low ground east of the fort.
- **Site 106-35 Locus B** “Saybrook Neck Fight” – At least 100 Pequot ambushed Gardiner and ten men at the western extremity of Saybrook Neck approximately one mile west of Saybrook Fort
- **Site 106-35 Locus C** “March 9, 1637 Parley” – Two of the fort’s cannon fired hail shot (cartridges of musket balls) at a small hill approximately 100 yards west of Saybrook Fort which the Pequot used for cover and concealment following a well-documented parley with Gardiner.
- **Site 106-35 Locus D** “Saybrook Fort Site” – the site of Saybrook Fort and associated structures and activities within the interior of the fort palisade.
- **Site 106-35 Locus E** “Warehouse and Wharf Site” – the site of the trading warehouse owned by William Pynchon and John Winthrop Jr., and a concentration of European ballast flint east of the warehouse along the river believed to be the site of a Pequot War era wharf.

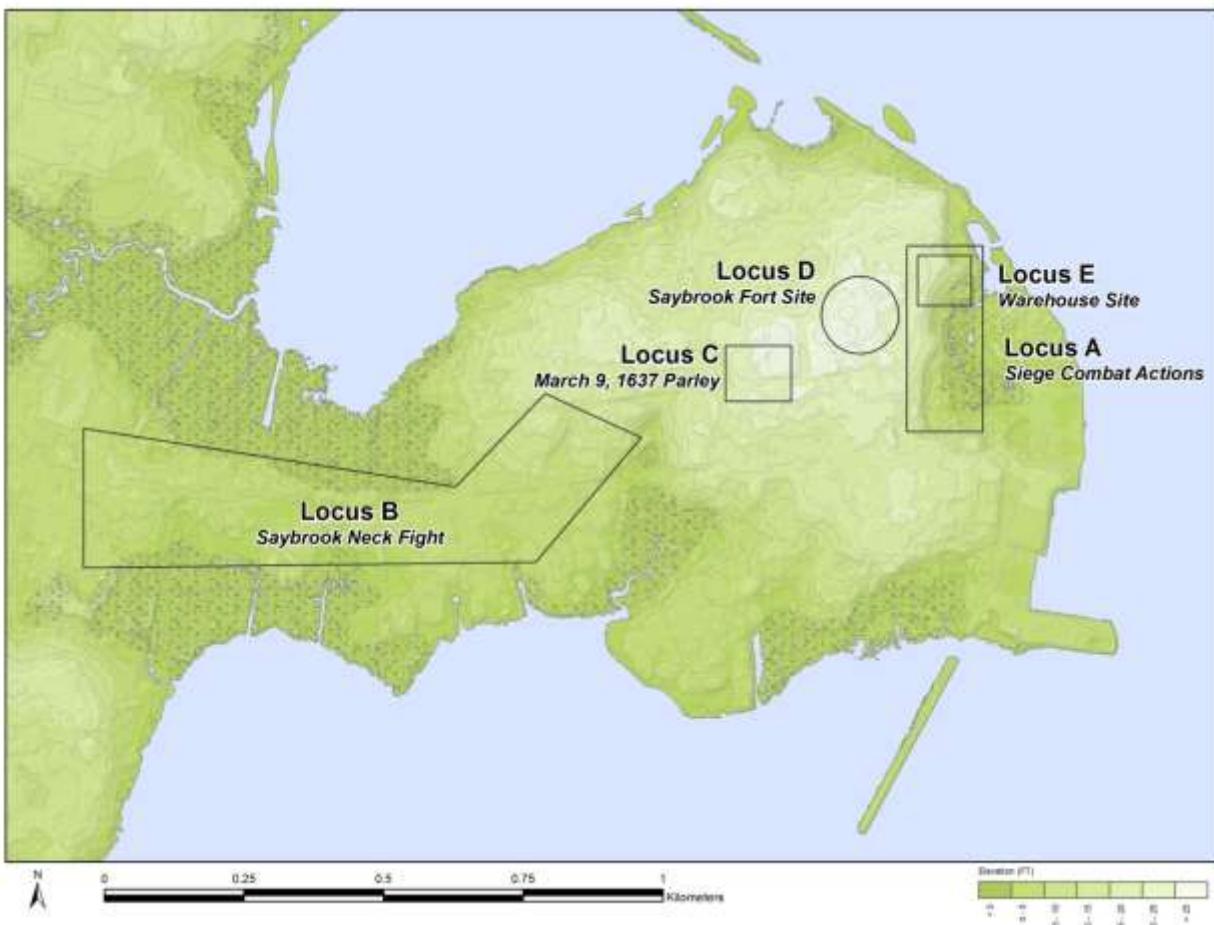


Figure 2. Saybrook Fort Core Area (106-35), Loci A – E.

The purpose of the project is to research, document and ultimately protect surviving battlefield and ancillary sites associated with the Pequot War. This multifaceted research project pursues several avenues of historical and archeological research including a survey of all known primary and secondary materials, land-use history associated with the various battlefields, genealogical research, oral traditions, historical memory and comparative material culture studies.

The “Siege and Battle of Saybrook Fort” is one component of the larger *Battlefields of the Pequot War* project the MPMRC has embarked on since 2007. To date, the MPMRC has received seven NPS ABPP grants (including the current “Siege and Battle of Saybrook Fort”) to study and document the battlefields of the Pequot War:

- 2007-2008 “Battle of Mistick Fort Planning Grant” (GA-2255-07-011)

- 2009-2011 “Battle of Mistick Fort Site Identification Grant” (GA-2255-09-017)
- 2010-2012 “Siege and Battle of Saybrook Fort Planning Grant” (GA-2255-10-012)
- 2011-2013 “Preserving the Memory and Legacy of the Pequot War Education Grant” (GA-2255-11-010)
- 2011-2013 “Battle of Mistick Fort: English Withdrawal Retreat and Pequot Counterattack I Site Identification Grant” (GA-2255-11-011)
- 2013-2015 “Battle of Mistick Fort: English Withdrawal and Pequot Counterattack II Site Identification Grant” (GA-2287-13-014).

An important goal of the *Battlefields of the Pequot War* project is to increase public awareness and appreciation of the significance of the Pequot War and to serve as an educational outlet where students, academics, MPMRC visitors, landowners and the general public can participate in educational programming and outreach as a means of promoting historical knowledge and historical preservation. This is accomplished through regularly held public lectures, MPMRC programs and educational events, and through the creation of an educational website (www.Pequotwar.org).

There were many organizations and people that contributed to the ultimate success of the Siege and battle of Saybrook Fort project. First and foremost the many landowners on Saybrook Point and the Town of Old Saybrook graciously granted permission to conduct surveys on their lands. Landowners provided valuable information on disturbances on their properties, land use and landscape activities. Without the patience, support and participation of the landowners the battlefield survey would not have been possible. The members of the Old Saybrook Historical Society were valuable partners for the duration of the project and continue to be. They assisted with outreach, development of temporary exhibits, programming and outreach and in obtaining landowner permissions. The historical society also provided valuable assistance in the research phase of the project and gave battlefield researchers unlimited access to their archives and research materials, and willingly shared their knowledge, experience and perspectives from years of researching the history of Old Saybrook. Furthermore, the historical society assisted with logistics and provided space for a field lab and storage of field equipment.

Secondly, the participation and experience of members of the Yankee Territory Coinshooters (YTC) metal detecting club was crucial in discriminating and recovering potential

battle-related artifacts from some of the most challenging landscapes we have yet encountered in battlefield archeology projects. The YTC members were tireless in their efforts to continually revise their methods, techniques and technologies, and adapt them to the challenges the cultural and physical landscape presented on Saybrook Point. YTC members also served as mentors to crew members who greatly valued their experience and knowledge. YTC members were very knowledgeable in many aspects of the historic period material culture from their many years of detecting, and provided important real time perspectives on recovered objects that informed field decisions regarding where best to focus future efforts.

Finally, the facilities of the Conservation Department of the Mashantucket Pequot Museum and Research Center with the expertise of Head Conservator Douglas Currie were instrumental in identifying many of the battle-related artifacts recovered from the project area. Currie culled through dozens of images of potential battle-related ferrous objects brought in from the field using radiography (X-Ray technology) to see through the accumulated oxides masking the object's nature, form and details. The final step was the battlefield staff's growing expertise during the ongoing process of the identification and analysis of late seventeenth century military and domestic material culture presented.

National Park Service American Battlefield Protection Program

The NPS ABPP promotes the preservation of significant historic battlefields associated with wars on American soil. The purpose of the program is to assist citizens, public and private institutions, and governments at all levels in planning, interpreting and protecting sites where historic battles were fought on American soil during armed conflicts that shaped the growth and development of the United States. This is done so that present and future generations may learn and gain inspiration from the ground where Americans made their ultimate sacrifice. The goals of the program are: 1) to protect battlefields and sites associated with armed conflicts that influenced the course of American history, 2) to encourage and assist all Americans in planning for the preservation, management and interpretation of these sites, and 3) to raise awareness of the importance of preserving battlefields and related sites for future generations.

Preservation of Battlefield Sites

Battlefield surveys are an important aspect of historic preservation as many significant battlefield sites are destroyed or negatively impacted through ignorance of their location and significance. Many battlefields might be preserved if the property owner or the community were aware of their existence, and were informed of the significance of the battlefield and its contribution to a broader understanding and appreciation of history. Preserved battlefields and related historic sites can add to a community's sense of identity and foster a greater interest in history and preservation efforts. The identification, documentation, and mapping of a battlefield's historic and cultural resources are an essential first step for battlefield preservation efforts. The long-term preservation goal of the *Battlefields of the Pequot War* project is to educate the public on the importance of battlefield preservation through community based preservation initiatives and by nominating significant battlefield sites to the National Register of Historic Places.

Documenting Battlefield Sites

The first step in documenting battlefields is to delineate the scope, evolution and extent of the battlefield based on the nature and distribution of battle-related objects (e.g. musket balls, brass arrow points, firearms/firearm parts, dropped and broken equipment), relevant cultural features (e.g. forts, roads, bridges, towns) and their relation to the Key Terrain features on the battlefield landscape such as hills, swamps and rivers which influenced the outcome of the battle. This process requires establishing boundaries around the battlefield that encompass all relevant artifacts and cultural and physical features into an appropriately scaled topographic base map using Geographic Information Systems (GIS). The boundaries must be defensible based on historical and archeological evidence (i.e. documents, field survey, terrain analysis and archeological surveys) and encompass legitimate historic resources.

The NPS ABPP has developed an approach to research, document and map battlefields that has proven to be highly successful.¹ These methods were originally developed for Civil War

¹ American Battlefield Protection Program. *Battlefield Survey Manual* (Washington, DC: National Park Service, 2007).

era battlefields and later applied to many Revolutionary War battlefields.² Documenting seventeenth century battlefields presents unique challenges for battlefield archeologists given the imprecise and often contradictory nature of seventeenth century sources, and the relatively low density and frequency of battle-related artifacts associated with seventeenth century battlefields. The Saybrook Fort battlefield project presented some additional challenges as Saybrook Point has been continuously occupied since 1635, most intensively in the seventeenth /early eighteenth and mid-twentieth centuries. Dozens of seventeenth and eighteenth century domestic sites, warehouses and other structures were located on the eastern tip of Saybrook Point, each contributing hundreds of objects to the archeological record. The challenge in the field and laboratory was to distinguish early seventeenth century Pequot War era artifacts and features from the later seventeenth and eighteenth century archeological record. Nonetheless, the methods outlined in Chapter II were very successful in documenting the nature and extent of the actions and sites associated with the “Siege and Battle of Saybrook Fort.” Archeological and metal detecting surveys eventually identified five loci or discrete concentrations of early seventeenth century artifacts that represent three battle actions and two sites (including Saybrook Fort). The definition and interpretation of these loci in Chapter VI are the focus of this report.

Study Area and Core Areas and Areas of Integrity

Defining Study and Core Areas is a critical part of the battlefield documentation process.³ The Study Area of a battlefield is defined as the maximum delineation of the historical site and contains all the actions, places and sites related to or contributing to the battle event including where troops maneuvered, deployed and fought immediately before, during and after combat. The Study Area functions as the tactical context and visual setting of the battlefield. The natural features and contours placed on relevant USGS 7 ½' minute quadrangle maps are used to outline a Study Area and include all those locations that directly contributed to the development and conclusion of the battle. The Study Area should include the following:

- Core Areas of combat (see Core Area below);
- Approach and withdrawal routes of the combatants;

² Douglas Scott, Lawrence Babits & Charles Haecker, Eds. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War* (Washington, DC: Potomac Books, 2009).

³ ABPP. *Battlefield Survey Manual*. P. 28-29.

- Locations of all deployed units of the combatants on the field, including reserves;
- Areas where preliminary skirmishing occurred if it led directly to the battle; and
- Logistical areas of the armies (supply trains, hospitals, ammunition dumps, etc.).

The Core Area of a battlefield is defined as the area of direct combat and includes the terrain where the opposing forces engaged and incurred casualties. More than one Core Area can be defined but they should all fall within the boundaries of the Study Area. The natural features and contours (battlefield terrain) depicted on the USGS 7 ½ minute quadrangle maps are used to define a Core Area. Natural barriers, such as rivers, creeks, swamps, and hills can restrain or enhance the movements of combatants as well as provide cover and concealment. Study Areas can generally be reasonably well defined in Revolutionary and Civil War battlefields based on better documentation and maps compared to Pequot War battlefields. There are no maps associated with any of the Pequot War battlefields and the documentation associated with any particular battle is ambiguous with respect to battle events and locations.

The boundaries of the Study and Core Areas for the Siege and Battle of Saybrook Fort as originally defined in the “Battle of Mystic Fort Documentation Plan” grant (GA-2255-07-011) were changed following new research conducted for the “Siege and Battle of Saybrook Fort Documentation Plan” grant (GA-2255-10-012) which included additional land record research, historic map research, walkover surveys, a more thorough analysis of the primary sources associated with the siege and actions, and archaeological surveys and excavations. The revised boundaries more accurately reflect the actions and sites associated with the siege (Figures 3 & 4).



Siege and Battle of Saybrook Fort Study Area

0 0.375 0.75 1.5 2.25 3 Kilometers

Middlesex County, USGS 7.5-Minute Topographic Maps, Essex and Old Lyme Map Sheets, 1997

Figure 3. Revised Siege and Battle Saybrook Fort Study and Core Areas

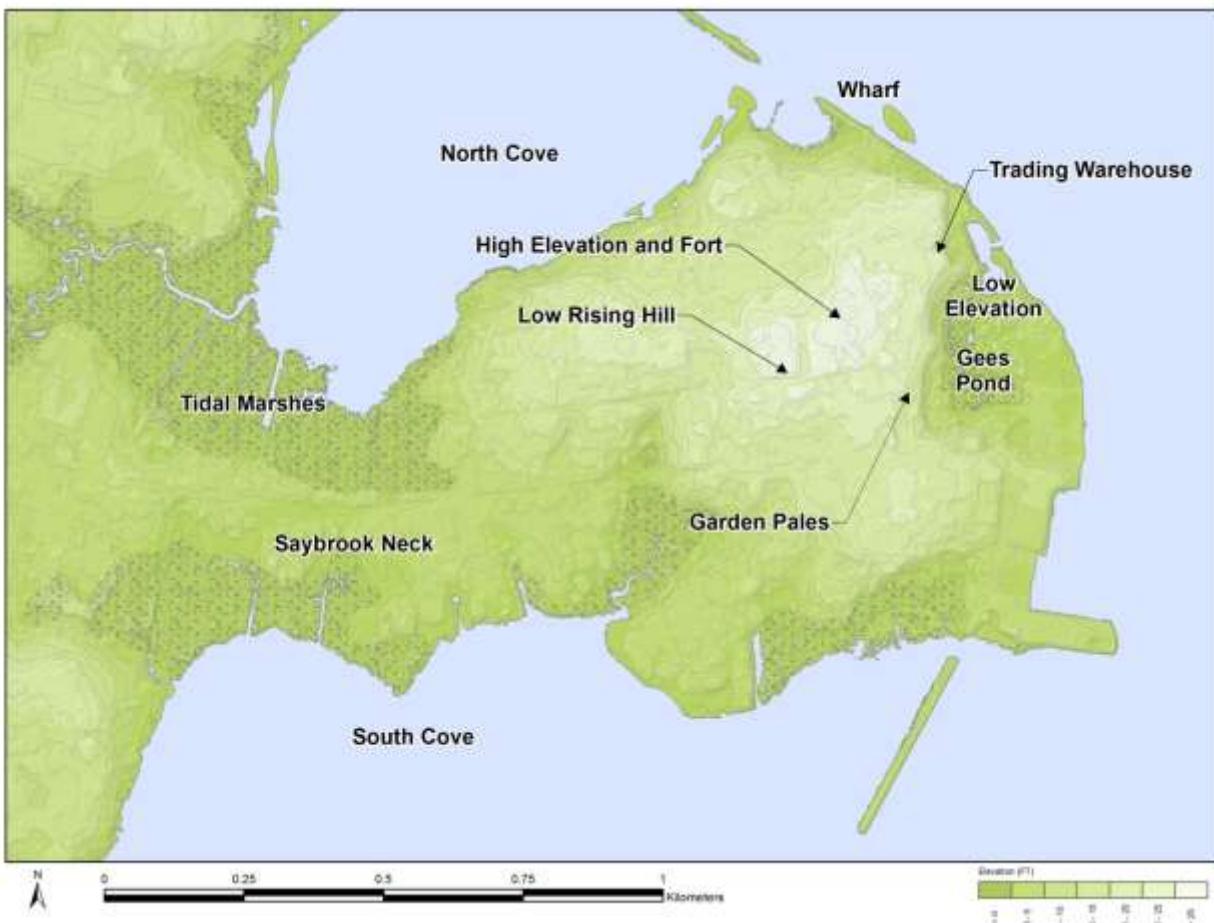


Figure 4. Saybrook Fort Core Area Key Terrain Features.

Areas of Integrity

The Areas of Integrity delineate portions of the historic battlefield landscape that still convey a sense of the historic scene (visual and physical integrity) and can still be preserved. If the Core Areas have been impacted or otherwise compromised by modern development, erosion or other destructive forces, and can no longer provide a feeling of the historic setting and terrain associated with the battlefield, they are not considered to retain integrity. However, some battlefields in suburban areas (such as Saybrook Point) may still retain integrity and significance if some or all of the artifacts and features are intact and retain their spatial and cultural associations. The Saybrook Fort Core Area was found to retain a moderate degree of physical and archaeological integrity and can still provide important information on the sites and actions associated with the siege. The Warehouse Point Core Area has been significantly impacted by

modern development and is considered to have poor integrity and is unlikely to yield any additional information.

Siege and Battle of Saybrook Fort Study Area

The “Siege and Battle of Saybrook Fort” Study Area comprises 6,533 acres (2,644 hectares) of land encompassing the mouth of the Connecticut River, Saybrook, Warehouse and Fenwick Points, and various islands within the Connecticut River (Figure 3). The Study Area is bounded on the north by the Warehouse Point Core Area, on the south by Fenwick Point and Long Island Sound, on the east by the Connecticut River, and on the west by marshes and waterways used by the Pequot on their landward approaches to Saybrook and Warehouse Points (Figure 3).

The Study Area was delineated based on an analysis of primary sources associated with the siege that identified the locations of key terrain features, actions, sites, and avenues of approach associated with the siege between early September 1636 and mid-March 1637. The battlefield landscape of the “Siege and Battle of Saybrook Fort Study” Area consists of the three primary peninsulas of Saybrook, Warehouse and Cornfield Points. These areas contained actions and associated sites as well as physical features and terrain such as the elevated ground where the fort was located, the marshes and wetlands that provided cover and concealment for the Pequot, and the islands and other points along the river were where the Pequot conducted ambushes and gathered prior to conducting attacks at Saybrook and elsewhere. Only the Saybrook Fort Core Area was found to retain sufficient integrity to contribute to our understanding of the “Siege and Battle of Saybrook Fort.”

Saybrook Fort Core Area

The Saybrook Fort Core Area encompasses 256.5 acres (103 hectares) which includes all of Saybrook Point as defined by the actions, sites, movements and Key Terrain features within the physical boundaries of the point. The Core Area is bounded on the north by North Cove, on the east by the Connecticut River, on the south by South Cove and on the west by the western extremity of Saybrook Neck where it connects to the mainland (Figure 4). The Saybrook Fort Core Area includes three combat actions that have been identified within the Core Area: Locus A, Siege Combat Actions consisting of one or more skirmishes along the low ground east of the

fort; Locus B, the Neck Fight where Lion Gardiner's command was ambushed on February 22, 1637; and Locus C, March 9, 1637 Parley whose signature includes hail-shot loads fired from the fort's cannon southwest towards a low rising hill used by the Pequot for cover and concealment (Figure 2, 4). The Saybrook Fort Core Area also contains the site of Saybrook Fort (Locus D, including the Great Hall) along with the location of related structures such as the Great House (Locus E, trading warehouse), wharf, and garden pales (small defensive fortification near the fort's garden) (Figure 2, 4). A number of Key Terrain features are also located within the Core Area including the marshes along the north and south sides of Saybrook Point Neck, a low rising hill centrally located on the point and southwest of the fort, and a hill south of the fort and low ground to the southeast, all of which provided additional cover and concealment for Pequot forces and served as an avenue of approach in which to attack the fort (Figure 2, 4).

The Saybrook Fort Core Area still retains physical elements and view sheds that convey a sense of the historic scene of the battlefield terrain in spite of the suburban nature of the battlefield. Although twentieth century houses and roads have significantly impacted portions of the battlefield, the original terrain and geomorphology has not been greatly affected, and still provides a sense of the landscape at the time of the siege (Figures 5-7). Moderate to significant impacts to the battlefield have resulted from more than 375 years of post-Pequot War land use and settlement associated with the construction and use of domestic sites, farming, industry associated with shipbuilding, military activities during the Revolutionary War and War of 1812, and particularly twentieth century residential development. These activities result in thousands of Post-Pequot War objects deposited on the battlefield landscape making the identification of battle and non-battle related objects more challenging, but did not significantly affect the integrity of the battlefield.



Figure 5. Saybrook Point, Locus A: Low Ground East of the Fort. View North to South.



Figure 6. Saybrook Point, Locus E: View east toward Great House Site.



Figure 7. Saybrook Point, Locus D: Saybrook Fort Area.

Warehouse Point Core Area

The Warehouse Core Area encompasses (125.5 acres / 50 hectares) and is defined by the topography of the point which contained the many trading warehouses burned by the Pequot in the fall of 1636. The Warehouse Point Core Area is bounded on the north and east by the Connecticut River, on the south by tidal marshes, and on the west by tidal marshes and a narrow neck of land that connects it to the mainland (Figure 3). A visual inspection and metal detector survey of the Core Area indicated the area had no integrity as it had been significantly impacted by modern construction and extensive twentieth century land modifications. This was particularly true along the river where large areas of the river bank were removed for the construction of marinas and three bridges over the Connecticut River.

II Siege and Battle of Saybrook Fort Documentation Plan

The documentation plan developed for the “Siege and Battle of Saybrook Fort” project consisted of the following components:

1. Analyze primary sources to identify the nature, potential locations, and archeological signatures of battle-related actions, structures, and key terrain features
2. Develop locational models (scenarios) of actions and sites and their relationships to each other and key terrain features
3. Conduct KOCOA analysis (military terrain analysis) to identify and assess the effects key terrain features had on the movements of combatants and their influence(s) on the nature and outcome of battles and actions
4. Conduct systematic archeological surveys, excavations and metal detector surveys in potential battle and structure locations to identify and recover military, domestic, and architectural artifacts and features within potential locations of actions and sites associated with the siege, determine boundaries, and assess integrity
5. Conduct laboratory analysis of recovered lithic, ceramic, glass, metal (brass, lead, iron), and faunal and botanical remains to identify period of manufacture, function, and use
6. Correlate battle-related military, domestic, and architectural objects with the actions, sites and key terrain features identified in primary sources, particularly with respect to the location of the fort
7. Conduct a spatial analysis of military artifacts within identified battle-related loci to reconstruct the weaponry, tactics and movements related to identified combat actions
8. Conduct an analysis of the nature and distribution of domestic, architectural, and military objects and archeological evidence (i.e. features) associated with fort and other structures to identify the nature of activities associated with each structure, assessment of boundaries and integrity, and their relationship to key terrain features

9. Integrate all of the confirmed battle-related structures and actions to reconstruct the actions and events associated with the “Siege and Battle of Saybrook Fort” in relation to the battlefield terrain.

Project Scope and Objectives: Siege and Battle of Saybrook Fort

An important aspect of the battlefield survey was to identify and map the battlefield landscape through military terrain analysis. This process is known by the acronym KOCOA which stands for **K**ey **T**errain, **O**bserveration, **C**over and **C**oncealment, **O**bstacles, and **A**venues of approach. Key Terrain features are the defining cultural and natural features of the battlefield landscape that influenced the nature, progression and outcome of the battle (see Chapter V; Figure 4). KOCOA features were mapped using GPS and GIS technology.

The primary objective of field work was to identify the locations, based on projected archeological signatures, of the battle actions and structures described in the primary accounts. Lieutenant Lion Gardiner, commander of Saybrook Fort, mentioned a number of structures (e.g. fort, garden pales, great house, home, redoubt, battery, great hall), terrain features (low rising hill, the hill behind the fort), and several combat actions in his narrative but does not provide sufficient information to determine their precise locations. However, Gardiner does provide information on the spatial relationships between various structures, actions, and terrain features. If one or two of these could be anchored in real space it would be possible to determine the locations of the remaining sites and actions. In this respect identifying the location of the fort (Locus D) was crucial to identify the locations of two actions (Loci A & C) and one structure (Locus E, Great House/trading warehouse) (Figure 3).

One particularly good example of utilizing primary accounts to determine special relationships can be found in the following passage from Lieutenant Gardiner’s narrative in which he provides important clues regarding the nature and relationships of fort structures, and actions in and around the fort (italics added and brackets):

...there came a troupe of Indians *within Musket shot* [of the fort] laying themselves and their arm down *behind a little rising hill*...which I perceiving called the Carpenter...to charge and level a gun [cannon] & y^t he could put **2** Cartridges of musket bullets into **2** Sakers guns y^t lay about and we *leveled against the place*, and I told him yt he must look towards me, and when he saw me wave my hat above my head he should give fire to both the guns, then presnt^{ly}

came 3 Indians creeping out and calling to us to speak with us...and I sent 6 men down by the garden pales, to look y^t none should cum under the hill behind us...I with my sword pistol & carbine went 10 or 12 pole [35-65 yards) without y^e gate to parley with them. And when y^e six men came to y^e garden pales at y^e corner they found a great number of Indians *creeping behind ye fort or betwixt us and home*, but they ran away... *Then I pointed to our great house and bid him tell them there lay 20 pieces of trucking cloth of Mr. Pynchons with hoes, hatchets, and all manner of trade...* So they came forth calling us nearer to them & we those nearer to us. Then when *they came to y^e place from whence they came I waved my hat about my head, and y^e 2 great guns went off.*⁴

This passage describes four of the five loci that were identified archaeologically at Saybrook Point: Locus A (Siege Combat Actions) “under the hill behind us;” Locus C (March 9, 1637 Parley) “behind a little rising hill... leveled against the place ye...2 great guns went off;” Locus D (Saybrook Fort) “went 10 or 12 pole (35-65 yards) without ye gate;” Locus E (Wharf and Warehouse) “creeping behind ye fort or betwixt us and home...*Then I pointed to our great house.*” The process of deciphering these spatial relationships and identifying the locations of each locus based on battle-related objects and their relationship to key terrain features is discussed in Chapter VI. The key to eventually deciphering the locational clues and placing the structures in space was the parley that took place between Gardiner and the Pequot where the fort’s carpenter fired “cartridges of musket balls” at a group of Pequot hiding behind a “low rising hill.” The archeological signature for this action (Locus C) consisted of eight “hail-shot” projectiles recovered behind a small hill 100 yards (90 meters) southwest of the suspected location of the fort (See Chapter VI: Battlefield Results and Synthesis).⁵

There has been considerable debate regarding the location of the Pequot War era fort at Saybrook Point. The first Saybrook Fort, and the subject of this investigation, was constructed and used from Late April 1635(the first mention of a ‘fort’ at Saybrook Point) until it burned in the winter of 1647.⁶ The fort was in such a state of disrepair by 1644 that Connecticut was already planning to relocate the fort closer to the river. The military commanders in the colony

⁴ Lion Gardiner. *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardener* (Hartford: Case, Lockwood & Brainard Company for the Acorn Club of Connecticut, 1901). Pp. 15-16.

⁵ “Hail-Shot” is a common seventeenth century term to describe a cartridge used in heavy ordnance which consists of multiple of lead shot, stones, nails, etc. When hail-shot was discharged from a cannon the cartridge would break apart and spread during flight across a wide space, much like “small-shot” being fired from a musket.

⁶ Winthrop, John. “John Winthrop’s letter to the King,” Doc. 110. MS Rawl A. 175. Bodleian Library, Oxford, England; Nathaniel B. Shurtleff, Ed. *Records of the Governor and Company of the Massachusetts Bay in New England*, Vol. II 1642-1649 (Boston: From the Press of William White, 1853). P. 269.

(including Mason) realized there was little need to defend the landward approaches to Saybrook Point following the defeat of the Pequot but recognized an increasing need to defend against (Dutch) naval attacks. The second Saybrook Fort was constructed along the Connecticut River in 1648 on a natural platform that was modified over the years to increase the size and height of the natural earthen feature. The second fort, often referred to as “Fort Fenwick” was used through the War of 1812. The second fort was destroyed in 1877 when the earthen mound was removed to construct a causeway for the railroad across North Cove.

Since the nineteenth century the first Saybrook Fort was believed to be located in the southeastern quadrant of Saybrook Point where the Lieutenant Lion Gardiner monument was erected in 1930. In the late 1980’s a Fort Saybrook Monument Park was constructed immediately east of the Gardiner Monument to commemorate the first fort at Saybrook. In the 1980’s several archeological surveys were conducted in this area by Connecticut College archaeologist Dr. Harold Juli specifically to determine (and confirm) the fort’s location.⁷ Juli did not find evidence of the fort (although he did recover a few seventeenth century artifacts) and concluded that the first fort had been destroyed when the railroad and a turnstile were constructed in this area in 1877. Juli’s excavations were also limited to the town lands that would become the present-day Saybrook Fort Memorial Park.

For a number of reasons, the MPMRC research team believed the first fort was not located in the area of the Fort Saybrook Monument Park as commonly believed, but was more likely located several hundred meters north on the highest elevation on Saybrook Point. Given Lion Gardiner’s experience as a Military Engineer on the staff of the Prince of Orange during the Thirty Years War, it seemed obvious that Gardiner would locate the fort on the 26’-28’ contour interval, the highest elevation on Saybrook Point with commanding views of the Connecticut River to the east and much of Saybrook Point to the west (Figures 8, 9, 10). The Fort Saybrook Monument Park site is located between the 10’-15’ elevation which would place the fort on a lower elevation with an insufficient field of fire to cover most of Saybrook Point to the west (Figure 8). Several period sketches, watercolors and early photographs of views of the Lady Fenwick Monument (present Saybrook Fort Monument Park site) and Fort Fenwick (second

⁷ Harold Juli. *Archaeological Investigations at Saybrook Point, Old Saybrook, CT* (1980 Season, Report No. 1 1980); Harold Juli. *Archaeological Investigations at Saybrook Point. Old Saybrook, CT: Summary of the 1981 Excavations and Proposal for Continuing Archaeological, Historical and Site Development Work* (Report No. 5 1981).

Fort) also convey the lower elevation of the southeast corner of Saybrook Point in comparison to the highest elevation to the immediate north (Figure 9).

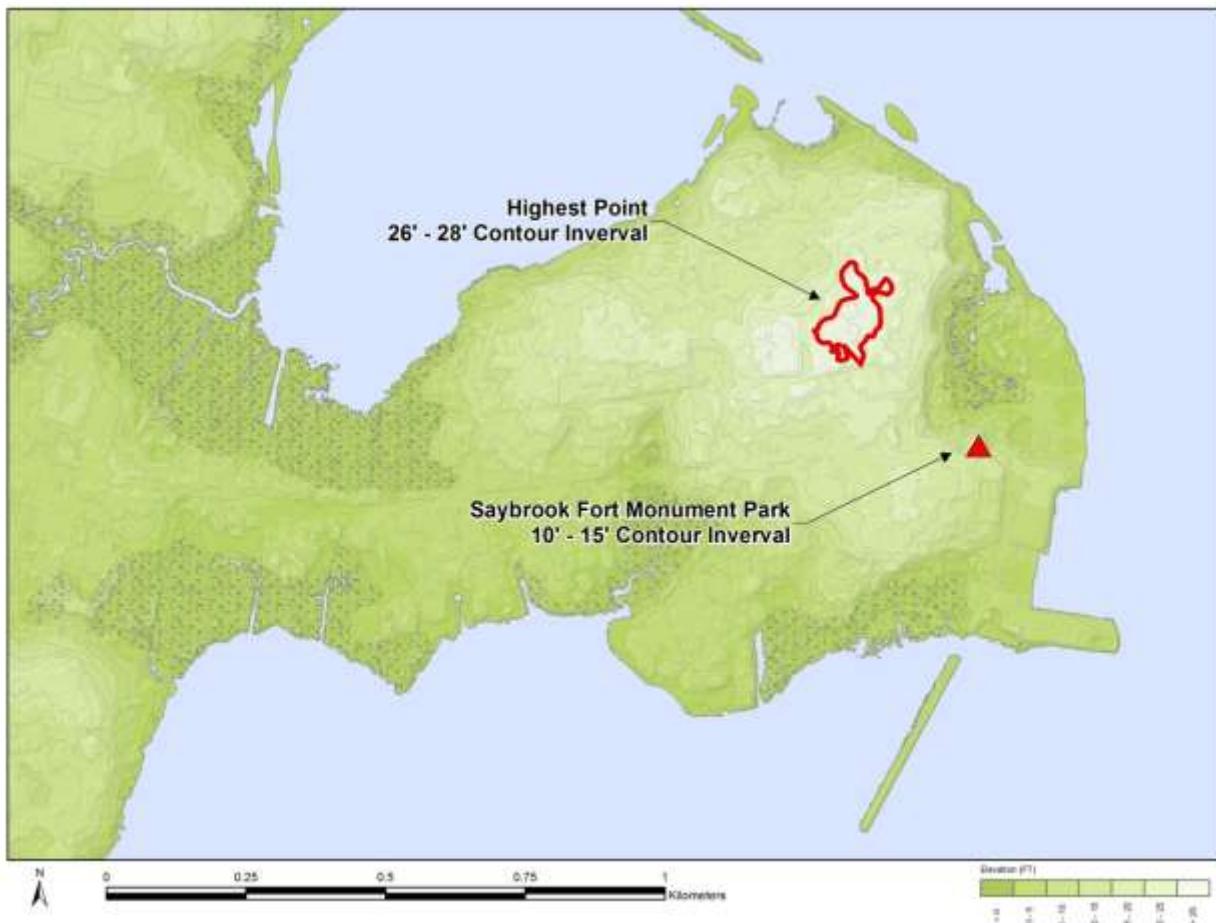


Figure 8. Saybrook Point – Highest Elevations & Saybrook Fort Monument Park.

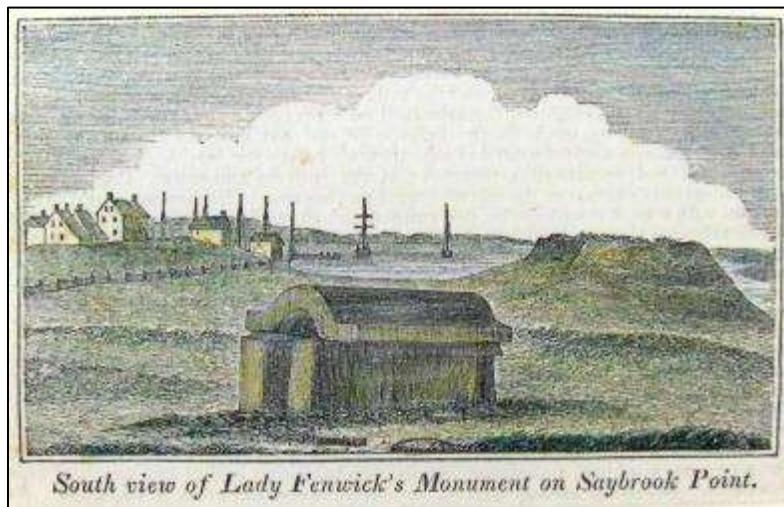


Figure 9. Ca. 1834 Sketch of Lady Fenwick gravesite by John Warner Barber.

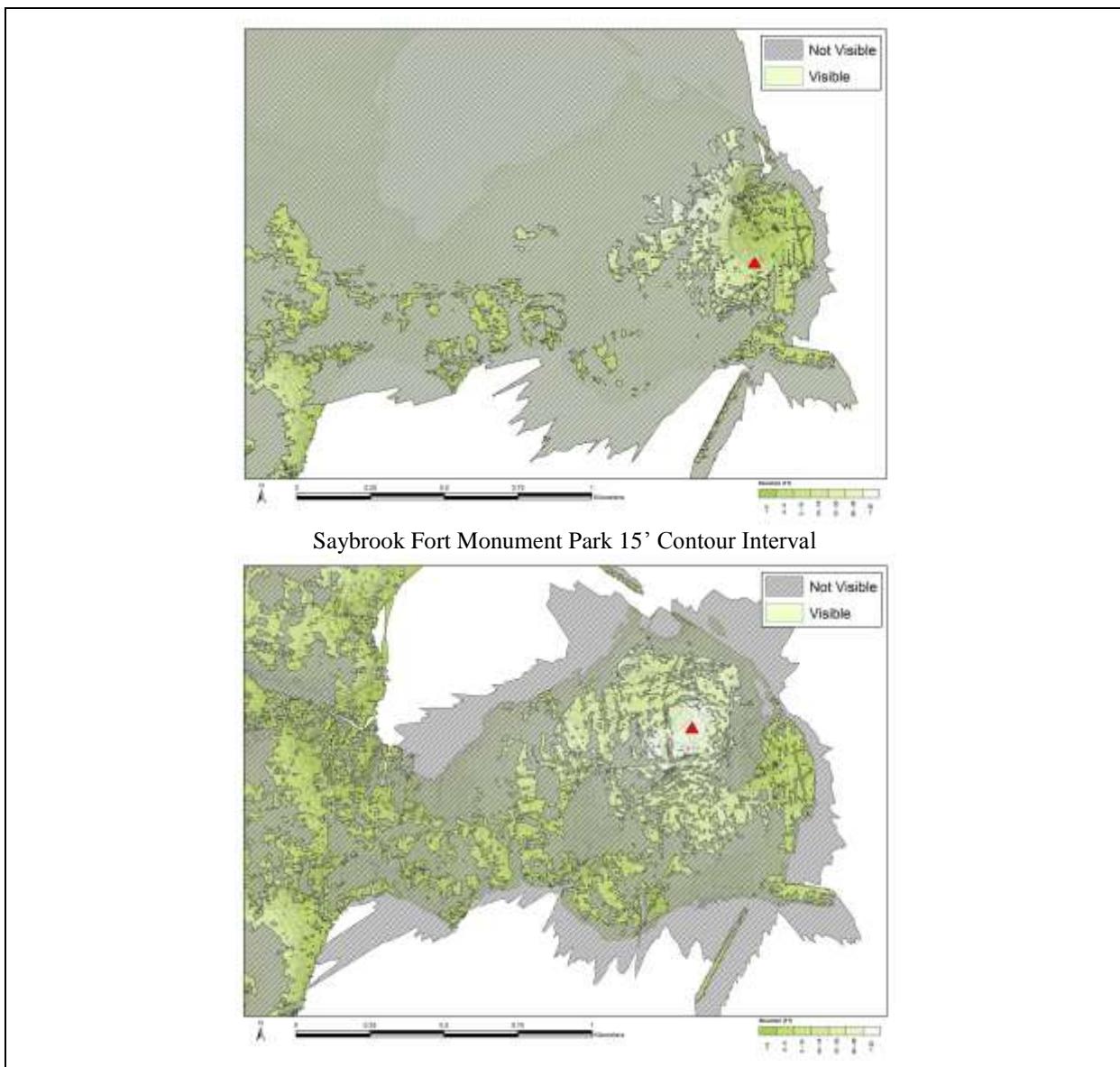


Figure 10. Saybrook Point Viewsheds

Several locational models were developed based on historical research, land use history, and the few clues Gardiner provided in his *Relation of the Pequot Warres*. The locational models were designed to test various scenarios for the location of the fort including the 15' elevation at the site of the Lion Gardiner Monument and Saybrook Fort Monument Park, a 20' elevation to the southwest of the monument, and the highest elevation on the point at the 28' elevation. In the final analysis the best fit for the fort's location within the context of the locational models was the highest elevation in the east-central area of Saybrook Point (Figures 8, 10). Nevertheless the precise location of the fort could not be determined until archeological and metal detector

surveys could confirm the location of at least one of the key actions or structures in relation to the fort as described by Gardiner.

Systematic metal detector surveys were conducted in a number of areas on Saybrook Point to test the validity of the locational models. Of particular importance was the identification of concentrations of early seventeenth century military, domestic and architectural artifacts that indicated the location(s) of relevant structures and actions. Locus D (Prospective Fort Site) yielded hundreds of seventeenth century domestic, military and architectural artifacts in contexts that strongly suggested the location of the fort was on the 26'-28' contour interval. However, given the number of seventeenth century domestic sites in that area of the point, additional archeological information was needed to confirm the fort's location. Unfortunately, the area was badly disturbed in the 1960s-80's by road and house construction. As a result, much of the remaining intact land surfaces were buried under 18"-24" of overburden from foundation excavation ejecta and subsequently covered by topsoil, which was removed prior to road and house foundation excavations and then replaced around house lots (Figure 11).

Early seventeenth century artifacts were recovered from both topsoil layers, but unfortunately the artifacts within the lower topsoil layer were too deep to be identified by metal detectors. Archeological excavations designed to remove overburden and reach depths sufficient to identify and recover artifacts and features from intact soils potentially associated with the fort (such as the fort's palisade trench) had to be used sparingly, as they would cause extensive damage to lawns. Nonetheless, a significant number of battle-related objects were recovered within both layers that provided important insights into the potential location(s) of structures later confirmed by locational analysis.



Figure 11. Typical stratigraphy in Locus D: Fort Area. Strata A—redeposited top soil; Strata B—foundation ejecta; Strata C—original topsoil and subsoil

III Historical Context

Brief History of the Pequot War (September 1636 - July 1637)

The Pequot War was the first major conflict between Native Americans and Europeans in northeastern North America. The war lasted eleven months and involved thousands of Native and English combatants who fought several battles over an area encompassing thousands of square miles. In the first seven months of the war, most of the engagements between the Pequot and the English occurred during the Siege and Battle of Saybrook Fort (September 1636-March 1637) in which English sources document more than a dozen Pequot attacks on English soldiers, settlers and traders. The most significant battle of the war took place during the Mistick Campaign (May 18-26) when a force of 77 English and 250 Native allies attacked and burned the Pequot fortified village at Mistick and then fought an eight hour, six mile running battle to reach the safety of their ships in the Pequot (Thames) River. The final actions of the war occurred during the Quinnipiac Campaign (July 7-14, 1637) the last battle of the war.

On the eve of the Pequot War, the Pequot numbered approximately 4,000 people, reduced from a population of 8,000 after the smallpox epidemic of 1633-34. One English source estimated the Pequot had up to 1,000 men for war.⁸ The Pequot inhabited 250 square miles in what is now southeastern Connecticut residing in 26 villages (communities) of varying sizes (50-300 people) along the estuaries of the Thames, Mystic and Pawcatuck Rivers, and the tidal marshes of Long Island Sound. Each village was led by a sachem (mostly male) whose influence within the tribe was based on the size of his village (perhaps measured by the number of men residing in the village) as well as his personal and leadership (including military) qualities. Pequot leadership and settlements were hierarchical. Sassacus, the chief sachem of the Pequot resided at the fortified village at Weinshauks on Fort Hill in Groton and Momoho, whereas another principal sachem of the tribe resided at the fortified village at Mistick on Pequot Hill $\frac{1}{4}$ -mile west of the Mystic River. The two fortified villages were located 2 $\frac{1}{2}$ miles apart and situated on the largest and most defensible hill tops in the area in view of one another, presumably for mutual support.

⁸ John Winthrop. *Winthrop Papers*, Volume 3 (Boston, MA: Massachusetts Historical Society, 1943). P. 404.

Within a decade after the arrival of the Dutch in 1611, the Pequot positioned themselves to control the fur and wampum trade through coercion, warfare and alliance building. Warfare and subjugation were the primary means by which the Pequot gained control over key territory and resources, particularly in the wampum producing areas of Long Island Sound and the Connecticut River Valley, the major conduit by which furs were transported from the north. The timing, nature and geographic extent of the initial acquisition of tributary territory by the Pequot appears to correlate with increased demand for wampum by the Dutch in the early 1620's and Pequot attempted to control the wampum producing areas of Long Island Sound along the Connecticut and eastern Long Island coastlines. In the early 1630's, the Pequot also moved to control the middle Connecticut River Valley by making war upon and subjugating the tribes of the middle valley including the Wangunk, Podunk, Poquonnock and others.

By the 1630's the Pequot were the most powerful tribe in southern New England and controlled thousands of square miles of territory largely acquired by conquest and subjugation. The Pequot could field a thousand men for battle not including their allies and tributaries. The Pequot military was well organized and highly experienced after decades of warfare with their Native neighbors, and a brief war with the Dutch in 1634. The Pequot sold the Dutch a piece of conquered land in what is known as Hartford, Connecticut to build a fortified trading house, called the Huys de Hoope (House of Hope), along the Connecticut River. When English traders and settlers began to arrive in the Connecticut Valley in 1633, the Dutch-Pequot monopoly in the fur and wampum trade was effectively broken. The balance of power began to shift to the English as Pequot tributaries sought to free themselves from Pequot subjugation and ally themselves with the English. Pequot efforts to maintain control over the trade and their tributaries and allies were important factors leading to the outbreak of the Pequot War.

The murders of Captain Stone and eight other English traders in early January of 1634 are cited by most historians as the primary cause leading to the Pequot War.⁹ The Pequot admitted to killing Stone and his crew, but their motivations are not at all clear. The Pequot offered two, seemingly inconsistent, explanations. On one occasion the Pequot explained that "Capt. Stone, coming into their river, took two of their men and bound them, and made them show him the way up the river, which when they had done, he with two others and the two

⁹ See Alfred Cave, *The Pequot War* (Amherst: University of Massachusetts Press, 1996); Jennings, *Invasion of America* (Chapel Hill: University of North Carolina, 2010); Vaughan, *New England Frontier* (Norman: University of Oklahoma Press, 1995).

Indians, (their hands still bound,) went on shore, and nine of their men watched them, and when they were on sleep in the night, they killed them.”¹⁰ On another occasion the Pequot claimed it was a mistake of mistaken identity and that Stone was killed in retaliation for the murder of their sachem at the hands of the Dutch claiming “for we distinguish not betweene the Dutch and English, but tooke them to be one Nation, and therefore we doe not conceive that we wronged you.”¹¹

Regardless of Pequot motives, the incident may have led to a conflict with the Dutch in 1634. Stone was not well liked by the English at Massachusetts Bay or Plymouth and he was characterized as pirate, smuggler and fornicator. However, he was highly regarded by the Dutch in New Amsterdam, including the Dutch governor.¹² Stone entered the Connecticut River with the intention of sailing to the Dutch trading post where he was likely known to the Dutch at the post and could anticipate a warm welcome. John Winthrop Sr. noted Stone’s murder in his journal in January 1634 “putting in at the mouth of Connecticut...where the Pequot inhabit, was there cut off by them, with all his company, being eight.”¹³ Winthrop Sr. received the news of Stone’s death from Governor Bradford of Plymouth whose source was William Holmes, commander of the Plymouth trading post at Windsor located just a few miles upriver from the Dutch post. Bradford provides more details of the incident:

[Stone] with one Captain Norton and some others; and, I know not for what occasion, they would needs goe up Connecticut River; and how they carried themselves I know not, but the Indeans knocked him on the head...And having killed the men, they made prey of what they had, and chafered away some of their things to the Dutch that lived there. But it was not long before a quarrel fell between the Dutch and them, and they would have cutt of their bark; but they slue the chief sachem with the shot of a murderer.¹⁴

The quarrel between the Dutch and Pequot may be in reference to the Pequot-Dutch War which began sometime after January of 1634 and continued through November of 1634. Winthrop Sr.’s journal entry of November 6, 1634 recorded that the Pequot “were now in war with the

¹⁰ John Winthrop Sr. in James Kendall Hosmer, Ed. *Winthrop's Journal "History of New England" 1630-1649* (New York, NY: C. Scribner's Sons, 1908). P. 139.

¹¹ John Underhill. *Newes From America*. (London: Peter Cole, 1638). P. 10.

¹² Cave. *The Pequot War*. Pp. 59-60; William Bradford. *History of Plymouth Plantation 1620-1647*, Vol. II (New York, NY: Russell & Russell, 1968). P. 190; David Pietersz de Vries in J. Franklin Jameson, Ed. *Narratives of New Netherland 1609-1664* (New York, NY: Charles Scribner's Sons, 1909). Pp. 191-192; Hosmer, Ed. *Winthrop's Journal*. P. 118.

¹³ Hosmer, Ed. *Winthrop's Journal*. P. 119.

¹⁴ Bradford. *History of Plymouth Plantation*. II: Pp. 267-268.

Narragansetts, whom, till this year, they had kept under, and likewise with the Dutch.”¹⁵ Contrary to the opinion of most contemporary historians, the two conflicts were not related.¹⁶ The war with the Narragansett was a renewal of a decades old conflict between the Narragansett and the Pequot. As early as 1614 Adrien Block mentioned the “Pequatoos were enemies of the Wapanoos.”¹⁷ In this context Wapanoo is roughly translated as “easterner” and refers to the Narragansett of Narragansett Bay just to the east of the Pequot, not the Wampanoag of Cape Cod. Block’s 1614 figurative map depicts the Pequot (Pequats) in what is now southeastern Connecticut between the Thames and Pawcatuck Rivers and the Wapanoos (Narragansett) to their east along Narragansett Bay, traditional territory of the Narragansett (Figure 11).¹⁸ The 1634 war between the Narragansett and Pequot was probably fought over the Misquamicut area of southeastern Rhode Island just east of the Pawcatuck River. The Narragansett hired a Pequot captain to lead their forces and they were victorious laying claim to the easternmost area of Pequot territory. Massachusetts Bay brokered a peace between the Pequot and Narragansett in the fall of 1634, but it apparently did not last long as the two tribes were at war again just before the Pequot War.¹⁹



Figure 11. Adrien Block’s 1614 Figurative Map.

¹⁵ Hosmer, Ed. *Winthrop’s Journal*. Pp. 138-139.

¹⁶ See Cave, *The Pequot War*; Jennings, *Invasion of America*; Vaughan, *New England Frontier*.

¹⁷ Johan De Laet in J. Franklin Jameson, Ed. *Narratives of New Netherland 1609-1664* (New York, NY: Charles Scribner’s Sons, 1909).

¹⁸ Adrien Block in The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Print Collection, The New York Public Library. “The figurative map of Adriaen Block,” *The New York Public Library Digital Collections*. 1614. <http://digitalcollections.nypl.org/items/510d47d9-7bf7-a3d9-e040-e00a18064a99>

¹⁹ See John Romeyn Broadhead. *Documents relative to the colonial history of the state of New-York*. (Albany, NY: Weed, Parsons, and Company, 1856); Bradford. *History of Plymouth Plantation*.

During the Pequot-Dutch War the Pequot likely fought a contingent of 70 Dutch Marines who were known to have been stationed at the Dutch trading post in December of 1633.²⁰ A brief but significant piece of information on the conduct of the Pequot-Dutch War was related by Governor John Winthrop Sr. of Massachusetts Bay, who commented on the skirmish that occurred early in the Pequot War in which the Pequot men retreated out of musket range and attempted to lure the English into an ambush. Winthrop Sr. reported “He [Captain Endicott commander of the expedition] marched after them [Pequot], supposing they would have stood to it awhile, as they did to the Dutch.”²¹ Winthrop Sr.’s comment speaks volumes about what the Pequot learned from their first encounters with European battle formations and military technology during the Pequot-Dutch War, and the subsequent tactical adjustments they made two years later against the English.

In the fall of 1634 the Pequot were at war with the Dutch and the Narragansett, and like tribes throughout the northeast, were reeling from the smallpox epidemic of 1633-34. The Pequot, interested in both avoiding another war and identifying another source of European trade goods, pursued a truce with the English. In late October 1634, the Chief Pequot Sachem Sassacus sent a messenger to Massachusetts Bay “to desire our friendship” and trade.²² After receiving their gifts, the Deputy Governor of Massachusetts Bay asked for a higher level emissary and sent them away. Soon after two other Pequot emissaries arrived to negotiate peace but the English had specific demands including that they “must first deliver up those who were guilty of his death.”²³ The Pequot explained that Captain Stone had kidnapped two Pequot to guide them upriver to the Dutch post, but during a rescue attempt Stone and his crew were killed and the ship blew up. Winthrop Sr. noted “This was related with such gravity, as, having no means to contradict it, we inclined to believe it.”²⁴ According to Winthrop Sr., the Pequot offered the English their rights (by conquest) of the Connecticut Valley, 400 fathom of wampum (approximately 120,000 beads some of which were given to the Narragansett to broker a peace treaty) and 40 beaver and 30 otter skins. In return the English agreed to “send a pinnace with cloth to trade with them, and so be at peace with them” if the

²⁰ Kevin McBride. “War and Trade in Eastern New Netherland,” Pp. 271-284. In *A Beautiful and Fruitful Place*. Margriet Lacy, Ed. New Netherland Institute, Albany.

²¹ Hosmer, Ed. *Winthrop’s Journal*. P. 189.

²² Hosmer, Ed. *Winthrop’s Journal*. P. 138.

²³ Hosmer, Ed. *Winthrop’s Journal*. P. 139.

²⁴ Hosmer, Ed. *Winthrop’s Journal*. P. 139.

Pequot agreed “to deliver us the two men, who were guilty of Stone’s death.”²⁵

The Pequot never delivered the alleged murderers of Captain Stone to the English. In the 18 months following the peace agreement, the English traded with Native groups throughout Long Island Sound and the Connecticut River, putting them in direct competition with the Dutch and undermining Pequot control of the region. Tensions continued to grow between the Dutch, English, Pequot and other Native tribes throughout region, further exasperated by the Mohegan sachem Uncas’ self-serving reports about Pequot treachery to Jonathan Brewster, commander of the Plymouth Trading post at Windsor.

Uncas is best described as an ambitious Mohegan patriot who sought to wrest the Mohegan from Pequot subjugation. Contrary to popular belief the Mohegan were never part of the Pequot Tribe, but were always a separate social and political group although closely related socially and politically to the Pequot. Although the Mohegan and Pequot were closely related by marriage and alliance, the Pequot vanquished the Mohegan a few years before the Pequot War, banishing five Mohegan sachems to Narragansett country. The Pequot sachems also banished Uncas five times, presumably because of his efforts to regain some degree of Mohegan autonomy. At times he sought refuge among the Narragansett, but on the eve of the Pequot War he was living among the Wangunk in the middle Connecticut River Valley “in great secrecy.”²⁶ Uncas sought to ally himself with the English by providing “intelligence” of Pequot treachery including their intention to attack the English.

In mid-June 1636, Uncas reported the Pequot plotted to cut off a Plymouth bark that came to trade with the Pequot the year before “and out of desperate madness doe threaten shortly to sett both upon Indians, and English.” Uncas also reported that the Chief Pequot Sachem Sassacus and his brother Sacowaein “upon consultation with their own men, was an actor in the death of Stone...his Brotheer Sacowauen with another of his men [were] cheife actors in the Death of the 2 [English traders] last upon the island [Long Island].”²⁷ It is not clear if the accusations were true, but in frustration Massachusetts Bay officials summoned the Pequot to a meeting at Saybrook Fort with John Winthrop Jr. in early July to discuss these and the Stone incidents. Winthrop Jr. was instructed to allow the Pequot to:

clear themselves of these matters...but if they shall not give you satisfaction

²⁵ Hosmer, Ed. *Winthrop’s Journal*. Pp. 138-139.

²⁶ Winthrop. *Winthrop Papers*. III: P. 270.

²⁷ Winthrop. *Winthrop Papers*. III: P. 270.

according to these our instructions or shall be found guilty of any of the sayd murders and will not deliver the actors in them into our hands, that then, (as before you are directed) you return them the present [furs and wampum presented to the English in October 1634] and declare to them that we hold ourselves free from any league or peace with them and shall revenge the blood of our Countrymen as occasion shall serve.²⁸

It is not known what transpired at the meeting, if it even took place, but apparently the English and Pequot did not come to an agreement as Gardiner reported “the present [was] returned, but full sore against my will.”²⁹ War seemed imminent, but Massachusetts Bay officials still held out hope for a peaceful resolution of the issues.

An incident transpired in late July that brought the two sides to the brink of war when English trader John Oldham was murdered in his boat off the north coast of Block Island. The Pequot were initially accused of the murder but it quickly became clear that Oldham was killed by the Manisses of Block Island at the request of some lesser Narragansett sachems “because he [Oldham] went to make peace, and trade with the Pekods last year.”³⁰ In response, Massachusetts Bay sent a force of 90 soldiers under the command of Colonel Endicott to Block Island and the Pequot (Thames) River with orders to put to death the men of Block Island and carry away the women and children as prisoners “and from thence to go to the Pequods to demand the murderers of Captain Stone and the other English, and one thousand fathom of wampum for damages, etc., and some of their children as hostages, which if they should refuse, they were to obtain it by force.”³¹ The sharp contrast in Endicott’s orders regarding how to deal with the Pequot and Manisses indicates that even at this late date Massachusetts Bay continued to hold out hope for a peaceful resolution with the Pequot. Nonetheless they were prepared to resolve the issue by force if necessary.

The English landed on Block Island and after a brief fight on the shoreline the Manisses hid themselves in swamps in the interior of the island. The English searched for the Manisses over the next two days but without success. After burning several villages and destroying the Manisses corn the expedition sailed to Saybrook in preparation for a confrontation with the Pequot. When they arrived Gardiner immediately understood the consequences if the expedition confronted the Pequot:

²⁸ Winthrop. *Winthrop Papers*. III: P. 285.

²⁹ Gardiner. *Relation*. P. 7.

³⁰ Hosmer, Ed. *Winthrop’s Journal*. P. 185.

³¹ Hosmer, Ed. *Winthrop’s Journal*. P. 186.

...and suddenly after came Capt Endecott, Capt Turner, & Capt Vndrill with a company of Soldiers well fitted to Seabrook and made yt place their rendezvous or seat of war and yt to my great grief for said I you come hither to raise these wasps about my ears.³²

The English chose to disembark only 20 soldiers on the east side of Thames River (plus a dozen of Gardiner's men who intended to gather Pequot corn), a further indication they still hoped to negotiate a peaceful resolution to the impasse and avoid war. The Pequot believed the killings were justified and stalled for time to avoid turning over anyone to the English. After nine hours of unsuccessful negotiations, in frustration the expeditionary force attacked and killed several Pequot and burned two villages "and thus began the war between the Indians and us (English) in these parts."³³

The Pequot viewed this action as unprovoked (as did the colonies of Connecticut and Plymouth) and for the next six months (September 1636 – March 1637) the Pequot laid siege to the fort and settlement at Saybrook in retaliation. During that period over 30 English settlers, traders and soldiers were killed, including half of the fort's garrison.³⁴ The Pequot attacked any English who ventured too far from the fort and repeatedly lured them into ambushes. They also destroyed English provisions and livestock, burned trading warehouses and disrupted all river traffic to the upriver colonies of Windsor, Wethersfield and Hartford. Pequot successes were achieved without firearms and withstood the best efforts of Lieutenant Lion Gardiner to counter Pequot tactics. During this period the Pequot did not lose a single engagement against the English, proving themselves superior to the English on the battlefield. In the Saybrook Neck Engagement on February 22, 1637 the Pequot laid an ambush and killed five of the ten men Gardiner led to the neck, ironically to burn the reeds to prevent such an ambush. Gardiner and the remaining men, all of whom were wounded, fought a running battle to reach the safety of the fort. Pequot successes and English defeats in the actions around Saybrook greatly influenced the English battle plan for the attack on the Pequot fortified village at Mistick on May 26, 1637.

³² Gardiner. *Relation*. P. 9.

³³ Gardiner. *Relation*. P. 11.

³⁴ All of the following dates used to reconstruct the Mistick Campaign are based on times, dates, and references to the "Sabbath" which are found throughout the relevant primary Pequot War narratives. Recorded dates were in the Julian calendar, generally used by most European countries during the seventeenth century. The Julian calendar year consists of 365 days divided into twelve months with a leap year occurring every four years. The Gregorian calendar superseded the Julian calendar and in 1752, the British Empire adopted the new system. Even so, the Julian calendar remained in use in the Americas well into the early nineteenth century.

In mid-March 1637, Massachusetts Bay sent twenty soldiers under the command of Captain John Underhill to relieve the siege at Saybrook Fort. Underhill was an experienced soldier and veteran of the European Thirty Years War (1618-1648), as well as the actions at Block Island and the Thames River. Underhill and Gardiner were beginning to understand how best to counter Pequot attacks and adapt European tactics to New World enemies and terrain:

I would not have the world wonder at the great number of Commanders to so few men, but know that the Indians fight fare differs from the Christian practice, for they most commonly divide themselves into small bodies, so that we are forced to neglect our usual way and to subdivide our divisions to answer theirs, and not thinking it any disparagement, to any Captain to go forth against an Enemy with a squadron of men taking the ground from the old & ancient practice when they chose Captains of hundreds and Captains of thousands, Captains of fifties and Captains of tens: We conceive a Captain signifieth the chief in way of Command of any body committed to his charge for the time being whether of more or less, it makes no matter in power though in honor it doth.³⁵

Just before Underhill arrived the Pequot tried to negotiate a de-escalation of the conflict with Lion Gardiner from a position of strength. Only a week after the neck fight a large group of Pequot approached the fort to parley with Gardiner and asked him “have you fought enough” to which he replied “we know not yet.” The Pequot then asked “if we did use to kill women and children” to which Gardiner replied [you] should see hereafter.” Gardiner’s response enraged the Pequot who replied “we are Pequot and have killed Englishmen and can kill them as mosquitoes, and we will go to Connecticut and kill men women and children and we will take away ye horses cows and hogs.”³⁶ Six weeks later on April 23, 1637 a force of 100 Pequot attacked English settlers at Wethersfield on their way to their fields in the Great Meadow along the Connecticut River. The Pequot killed nine men and two women in their first attack of the war on an English settlement, and the first time women and children were killed. Until the parley with Gardiner the Pequot had focused their attacks on the military installation at Saybrook Fort and chose not to attack English settlements. The parley may have been the most significant moment of the war. If Gardiner had not angered the Pequot, they may not have attacked Wethersfield and the English would not have immediately declared war on the Pequot on May 1, 1637.

³⁵ Underhill. *Newes From America*. Pp. 3-4.

³⁶ Gardiner. *Relation*. P. 15.

The Pequot attack raised a great fear among the Connecticut colonists of a coordinated attack on their settlements by the Pequot and their allies, such as happened in Virginia in 1622 when on a single day the Powhatan confederacy killed over 350 English. The English also feared that Native tribes currently neutral or allied with the English would turn against them and join the Pequot confederacy. Connecticut believed that the only course of action was to attack the Pequot in their homeland and thereby send a strong message to all the other Natives in the region that they had the means and the will to bring the war to the Pequot:

now the eyes of all the Indians in the country are upon the English, to see what they will do; and All may be assured of this, that if some serious and very speedy course be not taken to tame the pride and take down the insolence of these now-insulting Pequots though with charge and loss and damage for the present, we are like to have all the Indians in the country about our ears, and then there will be work enough, etc.³⁷

Though we feel neither the time nor our strength fit for such a service, yet the Indians here our friends were so importunate with us to make war presently that unless we had attempted something we had delivered our persons unto contempt of base fear and cowardice, and caused them to turn enemy against us.³⁸

On May 1st the Connecticut General Court ordered “there shall be an offensive war against the Pequot, and that there shall be 90 men levied out of the 3 Plantations, Hartford, Wethersfield & Windsor.”³⁹ The General Court appointed Captain John Mason as commander of the expedition and “in case of death or sickness under the command of Robert Seeley, Lieutenant, and the oldest Sergeant or military officer surviving.”⁴⁰ The Connecticut Court planned for a lengthy campaign against the Pequot as the expedition was ordered to carry a sufficient quantity of arms, ammunition, food and supplies to keep the army in the field for six weeks. Each soldier was ordered to “carry wth him 1 lb of powder, 4 lb of shott, [and] 20 bulletts.”⁴¹

³⁷ Letter of John Higginson at Saybrook Fort to John Winthrop, Governor of Massachusetts Bay, early May, 1637. *Winthrop Papers*, 1943, Vol. III: P. 405.

³⁸ Letter of Thomas Hooker, founder of Connecticut to John Winthrop, Governor of Massachusetts Bay, early May, 1637. *Winthrop Papers*. III: P. 408.

³⁹ J. Hammond Trumbull, *Public Records of the Colony of Connecticut, Prior to the Union with New Haven Colony* (Hartford, CT: Brown & Parsons, 1850). I: P. 9.

⁴⁰ Trumbull. *Public Records of the Colony of Connecticut*. I: P. 9.

⁴¹ Trumbull. *Public Records of the Colony of Connecticut*. I: P. 10.

Mistick Campaign

The Mistick Campaign lasted from May 18 to May 28, 1637 and consisted of two major battles on the day of May 26, 1637; the “Battle of Mistick Fort” and the “English Withdrawal and Pequot Counterattack.” These battles were fought over a sixteen hour period and were the longest and most intense engagements of the war. The expedition, consisting of 77 English and 60 to 80 “River Indian” allies (warriors from Mohegan, Wangunk, Podunk, Poquonock, Sukiaug communities among others) left Hartford on May 12 and arrived at Saybrook on May 16, 1637. Mason’s orders from the General Court were to conduct a frontal assault on the Pequot “limiting us to land our Men in Pequot River.”⁴² When Mason showed Gardiner and Underhill his commission from the General Court they refused to help unless Mason altered the battle plan:

But when Captain Underhill and I had seen their [Mason’s] commission, we both said they were not fitted for such a design and we said to Mason we wondered he would venture himself being no better fitted and he said the Magistrates could not or would not fend better, then we said that none of our men would go with them neither should they go unless we that were bred soldiers from our youth could see some likelihood to do better than the bay men [Massachusetts Bay] with their strong commission last year [i.e. Endicott Expedition to Pequot River the previous September].⁴³

Unlike Mason, Underhill and Gardiner had experience fighting the Pequot and understood that European battle formations and tactics were ineffective against the Pequot in spite of English fire superiority. Knowing that a frontal assault against the Pequot had no chance of succeeding, the English commanders devised a new plan based on surprise and containment to attack the fortified villages at night. Mason explained the key elements in their decision to forgo a direct frontal attack:

First, the Pequots our Enemies, kept a continual Guard upon the River Night and Day. Secondly, their Numbers far exceeded ours; having sixteen Guns with Powder and Shot...Thirdly, They were on Land, and being swift on Foot, might much impede our Landing, and possibly dishearten our Men; we being expected only by Land, there being no other Place to go on Shore but in that River, nearer than Narragansett. Fourthly, By Narragansett we should come upon their Backs and possibly might surprise them unaware, at worst we should be on firm Land as well as they.⁴⁴

⁴² John Mason in Thomas Prince, Ed. *Brief History of the Pequot War* (Boston: S. Kneeland & T. Green, 1736) P. 3.

⁴³ Gardiner. *Relation*. P. 19.

⁴⁴ Mason. *Brief History of the Pequot War*. Pp. 2-3.

The expedition sailed the 75 miles from Saybrook to Narragansett Bay on May 18th in full view of the Pequot coast to deceive the Pequot into thinking the English were afraid to land. The ruse worked as Mason later reported “They seeing our Pinnaces sail by them some Days before, concluded we were afraid of them and durst not come near them.”⁴⁵ The English were delayed several days in Narragansett country due to bad weather and the need to negotiate with the Narragansett to seek their help against the Pequot. The expedition left Narragansett on May 24th and marched 35 miles west to the Mistick River. Arriving the evening of May 25, they rested a few hours at Porter’s Rocks, only two miles from Mistick Fort. The English allied force rose just after midnight and arrived at Pequot Hill around 3:30 A.M., just before dawn. The Pequot fort was located at the summit of Pequot Hill and consisted of a circular palisade 220 feet (70 meters) in diameter. The English surrounded the fort and after firing an initial volley entered the fort intending to “destroy them by the sword and save the plunder.”⁴⁶

Of the 17 men who entered the fort with Mason, 60 percent were killed or wounded within 15 minutes. Mason expected approximately 75 Pequot defenders inside the fort, the normal complement of men in a village of that size. Unknown to the English the Pequot had reinforced the fort the night before:

And here we may see the just Judgment of GOD, in sending even the very Night before this Assault, One hundred and fifty Men from their other Fort, to join with them of that Place, who were designed as some of themselves reported to go forth against the English, at that very Instant when this heavy Stroak came upon them.⁴⁷

Instead the English found themselves fighting approximately 225 Pequot men in the close confines of the fort “strained for room because of the wigwams.”⁴⁸ The English were in danger of losing the battle and Mason declared “We should never kill them after that manner: The Captain also said, WE MUST BURN THEM” and ordered his men to set fire to the wigwams inside the fort. Once “the fort was thoroughly fired, command was given, that all should fall off and surround the Fort; which was readily attended by all.”⁴⁹ English and Native allied forces reinforced their lines around the fort and killed or captured all who tried to escape. The battle was over in an hour and around 400 Pequot lay dead, half of them burned to death and a dozen or

⁴⁵ Mason. *Brief History of the Pequot War*. Pp. 6-7.

⁴⁶ Mason. *Brief History of the Pequot War*. P. 8.

⁴⁷ Mason. *Brief History of the Pequot War*. P. 10.

⁴⁸ Philip Vincent. *A True Relation of the Late Battell Fought in New England Between the English, and the Salvages* (London: M.P. for Nathanael Butter and John Bellamie, 1637). P. 9.

⁴⁹ Mason. *Brief History of the Pequot War*. P. 8.

so were captured by Native allies.⁵⁰ The English-Native allied attackers suffered minimal casualties. Two English were killed outright and 24 English others were wounded, four or five English were so severely wounded that they had to be carried on improvised stretchers.⁵¹ At least two Narragansett were killed during the fighting and around 40 were wounded.⁵² The English were also low on ammunition and had to march eight miles through Pequot country to rendezvous with their ships in the Pequot (Thames) River:

And thereupon grew many Difficulties : Our Provision and Munition near spent; we in the Enemies Country, who did far exceed us in Number, being much enraged: all our Indians, except ONKOS, deserting us; our Pinnaces at a great distance from us, and when they would come we were uncertain.⁵³

The route of withdrawal crossed a very challenging terrain with extreme changes in topography, interspersed with glaciated boulder trains and wetlands that were extremely difficult for the English allied column to traverse with their wounded, and provided excellent cover for the Pequot. The Pequot attacked the English allied column on their flanks, front and rear throughout the day and set ambushes from thickets, swamps and commanding positions. The Pequot abandoned the tactics that had previously been so effective against the English in their rage over Mystic:

⁵⁰ **Pequot Casualties:** Vincent cites “betwixt three and foure hundred of them were killed.” Vincent. *A True Relation.* P. 12; Underhill estimated that “it is reported by themselves, that there were about foure hundred soules in this Fort.” Underhill, *Newes from America.* P. 39; The Mason account in Mather claims that “five or six hundred, as hath been confessed by the Pequots who escaped. There were seven taken captive and eight escaped.” Mather, Mason, *A Relation.* P. 33; The Mason narrative in Hubbard only mentions “about “an hundred and forty” dead outside the fort. Hubbard, *Narrative of the Trouble with the Indians.* P. 127; The Mason account in Prince states that “six or seven hundred, as some of themselves confessed. There were only seven taken captive and about seven escaped.” Mason, *History of the Pequot War.* P. 10; Winthrop Sr. wrote that the English “slew wherein two chief sachems, and one hundred and fifty fighting men, and about one hundred and fifty old men, women, and children.” Winthrop, *Winthrop’s Journal.* P. 220.

⁵¹ **English Casualties:** Vincent wrote that “of the English onely two, one of them by our owne Muskets, as it is thought.” Vincent. *A True Relation.* P. 12; Underhill stated that the English lost two men and had “neere” twenty wounded. Underhill, *Newes from America.* P. 39; The Mason narrative in Mather states “of the English there were two slain outright, and above twenty wounded.” Mather, Mason, *A Relation.* P. 33; The Mason narrative in Hubbard states “having two of our men slain, and sixteen wounded.” Hubbard, *Narrative of the Trouble with the Indians.* P. 127; The Mason account in Prince details “two were Slain outright, and about twenty Wounded.” Mason, *History of the Pequot War.* P. 10; Roger Williams states that the Narragansett reported “that the English were all safe but the first 3 slaine at the Fort.” LaFantasie, *Correspondence of Roger Williams.* Vol. I. Pp. 83-84; Winthrop Sr. wrote that the battle ended with “the loss of two English, whereof but one was killed by the enemy.” Winthrop, *Winthrop’s Journal.* P. 220.

⁵² **Narragansett Casualties:** Roger Williams states that the Narragansett said that they lost two men during the attack. LaFantasie, *Correspondence of Roger Williams.* Vol. I. Pp. 83-84; “Anonymous” states that forty Narragansett were wounded. Mather, “Anonymous,” *A Relation.* P. 47; Winthrop Sr. wrote that “Divers of the Indian friends were hurt by the English, because they had not some mark to distinguish them from the Pequods, as some of them had.” Winthrop, *Winthrop’s Journal.* P. 220..

⁵³ Mason. *Brief History of the Pequot War.* P. 10.

...the Enemy coming up to the Place where the Fort was, and beholding what was done, stamped and tore the Hair from their Heads: And after a little space, came mounting down the Hill upon us, in a full career, as if they would over run us; But when they came within Shot, the Rear faced about, giving Fire upon them.⁵⁴

Some Indians have related that the English by that means killed more men of war in their marching away, than in the fight at the fort.⁵⁵

By the end of the day the Pequot may have lost half of their fighting men and ceased to be an effective military force. Over the next few weeks the remaining Pequot communities fled their country seeking refuge with other Native groups throughout southern New England.

Quinnipiac Campaign

In late June 1637, the English organized the final campaign against the remaining Pequot. The English pursued the main body of Pequot under Sassacus west along the Connecticut coast towards present-day Fairfield. At Quinnipiac (New Haven), the English crossed the Housatonic River and advanced towards Poquonock (Stratford, Bridgeport) and encountered a group of Pequot encamped with the Sasqua at Sasquanikut (Southport). The Pequot and Sasqua fled into a swamp, and were immediately surrounded by the English. After allowing eighty women and children to surrender, a 24 hour battle ensued as the English forced the remaining defenders into an ever tightening circle within the swamp. Dozens of Pequot-allied defenders were killed but the majority escaped in the early morning fog the next day. The Fairfield Swamp Fight proved to be the last battle of the Pequot War.

Sassacus was not present at the Fairfield Swamp Fight, as he had been warned of the approaching English at Quinnipiac and fled north up the Housatonic River Valley with a group of 20 men including six sachems to seek the aid of the Mohawk against the English. The group was attacked by a group of Mahican and Mohawk at Paquiag west of present-day Danbury, Connecticut. Sassacus and several sachems were killed and their severed heads and hands were sent to Hartford and then Boston. With the death of Sassacus the English considered the Pequot War to be over.

⁵⁴ Mason. *Brief History of the Pequot War*. P. 11.

⁵⁵ Anonymous in Increase Mather. *A Relation of the Troubles which have hapned in New-England by Reason of the Indians there: from the Year 1614 to the Year 1675*. (Boston: John Foster, 1677). P. 169.

The Fort and Settlement at Saybrook

In the early 1630's a group of puritans in England led by Lords Viscount Saye and Sele, and others formed the Saybrook Company to establish a fort and colony in the Connecticut River Valley. These men were politically and religiously opposed to King Charles I and the Church of England, and sought to establish a refuge and settlement along the Connecticut River should they be forced to flee England. In 1632 Lords Saye and Sele were granted a patent by the Earl of Warwick (the "Warwick Patent") for land between Narragansett Bay and the Hudson River. Governor John Winthrop Sr. of Massachusetts Bay instructed his son, John Winthrop, Jr. to meet with the proprietors of the Saybrook Company in London to discuss opportunities for settlement in the Connecticut Valley. An agreement was reached between Winthrop Jr. and the proprietors in July 1635 and he was appointed:

Governor of the river Connecticut in New England and of the harbors and places adjoining for the space of one whole year... and he shall endeavor to provide able men to the number of fifty at the least for making of fortifications and building of houses at the River Connecticut and the harbor adjoining first for their own present accommodation and then such houses as may receive men of quality which latter houses we would have to be built within the fort.⁵⁶

Gardiner mentioned that the Pequot (Thames) River was also considered as a location for the settlement which would have been an interesting choice given the rising tensions between the English and the Pequot at that time.

The principle agents for the proprietors were George Fenwick and Hugh Peters. Hugh Peters was a military man and chaplain during the Thirty Years War in the Netherlands who recruited Lion Gardiner for the Saybrook venture for "the drawing, ordering, & Making of a City, Townes, or forts of defense" at Saybrook. Gardiner, with his wife, servant, and "work master" William Jope left England in September aboard the *Bachelor* and arrived in Massachusetts Bay in November 1635. Aboard were provisions, tools, ingots of iron and lead, cloth, blankets, and beds as well as all the iron work necessary for the construction of two draw bridges.⁵⁷ Although the Saybrook proprietors promised Gardiner sufficient men and funds to build a sizeable fortification and houses suitable for gentlemen, for reasons that remain unclear they never materialized. The promised support may not have been forthcoming because the Saybrook proprietors were under intense scrutiny in England regarding their plans to emigrate

⁵⁶ Winthrop, *Winthrop Papers*. III: P. 198.

⁵⁷ Winthrop, *Winthrop Papers*. III: P. 201-204.

and they “did not care to move any further in sending up of men for feare of increasing the reports.”⁵⁸ It was clear that Winthrop, Jr. and Gardiner would have to make do with the resources at hand. Gardiner’s disappointment and sense of betrayal is expressed in his narrative:

The aforesaid Mr. Winthrop had sent before one Lieutenant Gibbons [and] Sergeant Willard with some carpenters to take possession of ye rivers mouth, where they began to build houses against the Spring, we expecting according to promise yt there would have come from England to us 300 able men whereof 200 should attend fortification, 50 to till ye ground & 50 to build houses...but] I had but 24 in all men women & boys & girls, and not food for 2 months.⁵⁹

Nonetheless, John Winthrop Jr. and Gardiner were under constant pressure in the first year of the settlement to build suitable housing for the proprietors, perhaps at the expense of a more substantial fortification even though, with the exception of George Fenwick, none of the proprietors ever immigrated to Saybrook. As early as September 1636, Winthrop Jr. received a letter from Sir Arthur Haselrig stating “our request is, that (with what speede possible may be) fit houses be builded” to accommodate the needs of the proprietors should they remove to New England.⁶⁰

John Winthrop Jr. arrived in Massachusetts Bay from London in early October “with commission from the Lord Say, Lord Brook, and diverse other great persons in England to begin a plantation in Connecticut, and to be governor there.”⁶¹ Winthrop Jr. wasted little time establishing Saybrook Colony and on November 3, 1635 he “sent a bark of thirty tons, and about twenty men, with all needful provisions, to take possession of the mouth of the Connecticut, and to begin some building” under the direction of Lieutenant Edward Gibbons and Sergeant Willard.⁶² This company of soldiers and carpenters may have been intended as the vanguard by the Saybrook Proprietors to establish a colony and fort they envisioned at Saybrook, but in fact were the only men to arrive at Saybrook for that purpose.

News of English intentions to establish a settlement at Saybrook reached Dutch Governor Wouter Van Twiller in New Amsterdam and in early December he sent an armed expedition to Saybrook (called Kievet’s Hook by the Dutch) to prevent the English from landing or to force

⁵⁸ Winthrop. *Winthrop Papers*. III: P. 211.

⁵⁹ Gardiner. *Relation*. Pp. 5-7.

⁶⁰ Winthrop. *Winthrop Papers*. P. III:209

⁶¹ Hosmer, Ed. *Winthrop’s Journal*. P. I:161.

⁶² Hosmer, Ed. *Winthrop’s Journal*. P. I:165; Gardiner, *Relation*, P. 7; Gilman Gates. *Saybrook at the Mouth of the Connecticut: The First One Hundred Years*. New Haven: Wilson H. Lee Co., 1935). P. 5.

them to abandon the settlement. The English managed to get two pieces of ordinance ashore from the *Rebecca* which had run aground at the mouth of the river “and would not suffer them to land.”⁶³ This incident underscored the increasing tensions between the Dutch and English over control of the Connecticut River Valley.

Gardiner’s service as a ‘Master of Fortifications’ in the Thirty Years’ War gave him the necessary experience to establish a fortified settlement at Saybrook and prepare for what appeared to be an impending war with the Pequot. Gardiner’s instructions were to “choose a place both for the conveniencey of a good harbor and also for capableness and fitness for fortification.”⁶⁴ On April 1, 1636 John Winthrop, Jr, Lt. Lion Gardiner, and others in Gardiner’s party arrived at Pasbeshauke (Saybrook Point) and were greeted by Gibbons who had begun the preparations for the construction of the fort. When the 20 men under Gibbons arrived at Saybrook in early November their first task was probably to fell and dress timber to construct shelters for themselves, and to stockpile the necessary materials to begin construction of the fort when Gardiner arrived in early April. William Job, Gardiner’s “workmaster,” did not arrive at the fort until early April, with Gardiner suggesting construction of the fort did not begin in earnest until Gardiner’s arrival.⁶⁵ Gardiner’s narrative suggests that he was not aware he would only have a small company of men to construct the fortifications until he got to Saybrook. As the “300 able men” promised by the Saybrook Proprietors never materialized, Gardiner was faced with some hard decisions regarding the design and construction of the fort and other structures with only 20 men to perform the labor.

While it is possible the palisade trench was begun before Gardiner’s arrival it is unlikely as the winter was so severe that as early as December the Connecticut River was frozen for twenty miles upriver and the frost was probably deep in the ground.⁶⁶ In addition Gibbons’ priority was to construct shelters for him and his men against the impending winter. As such it is more likely that construction of the re-designed fort only began in earnest when Gardiner arrived and he had a chance to assess the situation. If fort construction did not begin until early April with Gardiner’s arrival, and was largely completed one month later, it is reasonable to assume that the finished fort was a much scaled-down version of the original design.

⁶³ Winthrop. *Winthrop Papers*. P. III: 166.

⁶⁴ Gardiner. *Relation*, P. 5.

⁶⁵ Winthrop. *Winthrop Papers*. P. III: 203.

⁶⁶ Hosmer, Ed. *Winthrop’s Journal*. P. II: 166.

Circumstantial evidence also suggests the original design of the fort was altered in response to the shortages in manpower. The “iron worke for two draw bridges” consisting of “62 Staples, 40 Staple hooks for a portcullis, 4 Chaines, 10 Boult, 4 Plates, 8 Chaine Claspes, 4 under hinges” were never used as they were sold with the fort to Connecticut by the Saybrook Proprietors in 1644.⁶⁷ Gardiner also mentions “3 great doors of 10 foot long and 4 broad” with spikes driven through that were used to deter the Pequot from sneaking around the fort. Several gates may have been included in the original plan of the fort (as were the two draw bridges) but it may be that only one door was used. The reference to a door ten feet high suggests the height of the fort walls were in excess of 12’ high.

The only reference to the fort’s construction and architecture is reflected in a November 1643 letter by George Fenwick, to the Saybrook Proprietors arguing that the sale of Saybrook Fort to Connecticut:

cannot be long delayed for the housing and fortification being made of a spungie kind of tymber called a red oak rots very suddenly. All the pallasadoes [fence or wall made from tree trunks] w^{ch} were whole trees set in the ground are so rotten that on may push most of them over and so need a present repaire.⁶⁸

Fenwick made a clear reference to a palisade trench and large upright posts set in the trench to construct the palisade. The palisade and other structures at Saybrook Point were likely constructed of Red Oak, presumably because it was the most abundant species of tree at Saybrook Point and easily transportable by water to the fort area. As noted by Fenwick Red Oak rots very quickly and within eight years the palisade was in a severe state of disrepair.

Upon his arrival at Saybrook Gardiner determined the location of the fort and oversaw the design and construction of a palisade that incorporated at least two ‘redoubts’ or ‘batteries’ (bastions) to mount cannons, a Great Hall within the palisade, as well as outbuildings and other structures including a trading warehouse, wharf, and a blockhouse on Cornfield Point south of Saybrook Point to protect the English cornfields.

The first possible reference to the fort was in an April 30, 1636 letter from Jonathan Brewster addressed to “John Winthrop Governour of the Foorte in Connitecutt.”⁶⁹ The fort is next referenced in a May 21st letter from Governor Vane to John Winthrop Jr. who seems to

⁶⁷ Winthrop. *Winthrop Papers*. P. III:202

⁶⁸ CHS, MS Fenwick, George, P. 8.

⁶⁹ Winthrop. *Winthrop Papers*. III: P. 257.

acknowledge some of the issues confronting Winthrop Jr. with respect to the design and construction of the fort: “I shall only let you know that your resolution to keepe the fort intire within itself [torn] necessary [torn] you must not care though it be displeasing to some.”⁷⁰ It is unclear what Vane’s letter refers to but it is evident that Gardiner was making some changes to the original design of the fort and settlement which was “displeasing” to some of the Saybrook Proprietors. Vane’s note was attached to a letter from George Fenwick, one of the Saybrook Proprietors who had arrived in Boston three days earlier, whose note also seems to indicate some disagreement between the Proprietors and Winthrop Jr.:

I arrived heare three dayes ago, where I shall rest myself awhile and then intend to take my journey towardes you...in the meantime I would entreat you to goe on with the worke yow have in hand in as frugall a way as can stande with securing the place, and for the intimation you give of your uncertaintye of continuance, if it can stand with your owne occasions it will be much desired for my cominge shall not dissolve your commission, neither will I appear other than a stranger therefore I pray you proceed to procure what shall be for your comfortable continuance there, and if in anything I can contribute to it I will not be a wanting.⁷¹

As Saybrook Fort neared completion, Winthrop Jr. received two petitions from John Haynes of Hartford and Israel Stoughton of Windsor requesting permission to build warehouses “in somme convenient place neare the Reiver and forte” along with people to watch over the goods and plant nearby fields.⁷² While we don’t know if the request was granted, although presumably it was, it suggests there were many more people and structures at Saybrook Point during the siege than the 24 men, women, and children Gardiner mentioned upon his arrival. In addition, servants and hired men were sent by a number of upriver settlers and traders to clear land and construct warehouses, and traders made frequent stops at the fort to deliver or remove goods from their trading warehouses. Several settlers also kept their cattle at Saybrook Point and would periodically check on them and gather hay from the islands and marshes in the vicinity of the fort for fodder.

⁷⁰ Winthrop. *Winthrop Papers*. III: P. 262; For a detailed analysis of possible configurations for Saybrook Fort, see “Saybrook Fort Analysis” Appendix II.

⁷¹ Winthrop. *Winthrop Papers*. III: P. 261-262.

⁷² Winthrop. *Winthrop Papers*. III: P. 263-264.

Saybrook under Siege

The Siege of Saybrook Fort Began around September 7, 1636 within a day or two after Endicott's Expedition against the Pequot on the Thames River, and continued until the arrival of a contingent of 20 Massachusetts Bay soldiers under the command of Captain John Underhill in early March. While the term "siege" is used to reflect the continuation of Pequot attacks in and around Saybrook during that seven month period, in reality the Pequot never completely cut off communication, travel or commerce between Saybrook Fort and the Connecticut River towns of Wethersfield, Hartford and Windsor, or Massachusetts Bay colony. During this time there was a period from late February/early March until the arrival of Captain Underhill in April when the Pequot may have tightened their grip around Saybrook – akin to a true siege. Excerpts of an Anonymous account of the Pequot War was published in Increase Mather's *A Relation Of the Troubles which have hapned in New-England* and relates that after the February 22, 1637 ambush at Saybrook Neck where Gardiner lost five men to a Pequot "the Indians kept Leaguer [siege or surrounded] before Saybrook Fort."⁷³ There was also a period from early to mid-November to the February 22nd incident when "they [Pequot] went quite away, and were no more seen at Saybrook for the greatest part of that winter" because of a renewal of hostilities with the Narragansett.⁷⁴

Although Gardiner was doing his best to put Saybrook Fort and settlement in a position to defend against Native and European threats, he did not expect to participate in a war so soon after his arrival. On August 25, 1636 the Endicott expedition arrived unannounced at Saybrook Fort after their assault on Block Island, where according to Gardiner, they "made y^t place th^r rendevow or seat of war and y^t to my great grieve."⁷⁵ He was angry that Endicott had orders that might result in an attack on the Pequot as he realized that his small garrison would be the ones to face Pequot reprisals. Gardiner accused Massachusetts Bay commanders of coming to Connecticut to "raise thes wasps about my eares, and then you will take wing and flee away."⁷⁶ Endicott insisted that he must follow his commission, and Gardiner had little choice but to prepare for the worst. Gardiner suspected that war was inevitable and that the settlements' corn

⁷³ Mather. *A Relation*. P. 165.

⁷⁴ Mather. *A Relation*. P. 163.

⁷⁵ Gardiner. *Relation*, P. 9.

⁷⁶ Gardiner. *Relation*, P. 9.

fields were at risk, so he ordered 20 of his men to accompany Endicott to gather as much Pequot corn as possible during the raid.⁷⁷

On August 29, 1636 Massachusetts Bay forces sailed to Pequot Harbor (present-day New London) and “the next morning they [Pequot] sent aboard an Ambassador, a grave Senior, a man of good understanding, portly carriage [a stately or dignified appearance and manner], grave, and majesticall in his expressions” to inquire why the English had come.⁷⁸ Endicott responded that the “Governors of the Bay sent us to demand the heads of those persons that had slaine Captaine Norton, and Captaine Stone, and the rest of their company” and demanded to see the Chief Pequot Sachem Sassacus.⁷⁹ The Pequot ambassador delayed the English for over six hours by claiming that Sasscus was on Long Island but the sachem Mononotto would meet them shortly. After waiting nearly nine hours, a Pequot messenger brought word “the Sachem” would meet if the English disarmed for a parley. English commanders refused and instead ordered an attack. The Pequot retreated out of musket range attempting to lure the English into an ambush. In response the English:

chose to beat up the Drum and bid them battell, marching into a champion field we displayed our colours, but none would come neere us, but standing remotely off did laugh at us for our patience, wee suddenly set upon our march, and gave fire to as many as we could come neere, firing their Wigwams, spoyleing their corne, and many other necessaries that they had buried in the ground.⁸⁰

After burning the Pequot village and destroying food stores the English returned to their vessels for the night. The following morning they disembarked on the Niantic (west) side of the Pequot River where they “burnt and spoyled” what they could find.⁸¹ During this time Gardiner’s men loaded what corn they could find aboard their two shallops.

When Massachusetts Bay forces were satisfied with the destruction of Niantic homes and corn stockpiles, they boarded their vessels and embarked without notifying the Saybrook men who were still gathering corn. Gardiner later accused Massachusetts Bay of abandoning his men at Niantic and wrote that Endicott’s “armie went abord leaving my men ashore Which ought to have marched abord first” and that they “set saile and my men were pursued by the Indeans, and

⁷⁷ Hosmer, Ed. *Winthrop's Journal*. I: P. 188; Underhill. *Newes From America*. P. 5; Gardiner. *Relation*, P. 10.

⁷⁸ Underhill. *Newes From America*. Pp. 5, 14; Gardiner. *Relation*, P. 8.

⁷⁹ Underhill. *Newes From America*. Pp. 5, 14; Gardiner. *Relation*, PP. 8-9.

⁸⁰ Underhill. *Newes From America*. Pp. 5, 14; Gardiner. *Relation*, P. 13.

⁸¹ Hosmer, Ed. *Winthrop's Journal*. Pp. I:188-189; Underhill. *Newes From America*. Pp. 5, 14; Gardiner. *Relation*, P. 10.

they hurt sum of the Indeans, and two of th^m came home wounded.”⁸² John Winthrop Sr. described the engagement with Gardiner’s men in great detail:

...having loaded themselves, the Indians set upon them. So they laid down their corn and gave fire upon them, and the Indians shot arrows at them. The place was open for the distance of musket shot, and the Indians kept the covert, save when they came forth, about ten at a time, and discharged their arrows. The English put themselves into a single file, and some ten only (who had pieces which could reach them) shot; the others stood ready to keep them from breaking in upon our men. So they continued the most part of the afternoon. Our men killed some of them, as they supposed, and hurt others; and they shot only one of ours, and he was armed, all the rest being without arms. He was shot through the leg. Their arrows were all shot compass, so as our men, standing single, could easily see and avoid them; and one was employed to gather up their arrows. At last they emptied their sacks, and retired safe to their boat.⁸³

Winthrop Sr.’s account of the event provides several unique insights into English and Pequot tactics during the early stages of the war and the manner in which both sides moved to counter the other’s tactics. As soon as Endicott’s men embarked, the Pequot attacked the Saybrook men. The Saybrook soldiers formed a defensive skirmish line and the men armed with longer firearms (full muskets, fowlers, etc.) fired on the Pequot, keeping them at a distance while those armed with carbines, pistols or edged weapons stood at the ready to engage the Pequot at close range should they rush the English formation. The Pequot advanced in groups of ten, fired a volley of arrows at compass (high angle) in order to remain out of musket range, and then scattered for cover while presumably another group of ten Pequot took their place. The English easily avoided the incoming arrows and only one man was wounded.

John Winthrop, Sr. later received intelligence from the Narragansett that “thirteen of the Pequods were killed, and forty wounded, and but one of Block Island killed.” Underhill was less certain but thought the Pequot had “certaine numbers of theirs slaine, and many wounded.”⁸⁴ Gardiner’s related “the bay men kild not a man save y^t one kichomiquin an Indean Sachem of y^e bay kild a pequit, and thus began the wars between the Indeans and us in thes p^rts.”⁸⁵ The Pequot were well aware that Saybrook men were with the forces that had attacked them and stole their corn, and that the ships that carried the Bay men were anchored at Saybrook for nearly a

⁸² Underhill. *Newes From America*. Pp. 5, 14; Gardiner. *Relation*, P. 10.

⁸³ Hosmer. Ed. *Winthrop’s Journal*. I: P. 191-192.

⁸⁴ Hosmer, Ed. *Winthrop’s Journal*. Pp. I:189-190; Underhill. *Newes From America*. P.15.

⁸⁵ Gardiner. *Relation*, P. 11.

week. Pequot reprisals started the very next day. An anonymous account reported “The next day some of the fort going to the river to fetch hay, the Pequots privily [stealthy] came upon them took one man and afterward roasted him alive, another shot with five arrows lived fourteen weeks and dyed, the rest escaped with much danger.”⁸⁶

The soldiers, settlers and traders at Saybrook would become the first English in New England to fully experience Native warfare. Although the war began with an unprovoked attack on the Pequot by Massachusetts Bay, the undermanned Saybrook Colony took the full force of Pequot retaliation for the next seven months. During that time Lion Gardiner proved himself to be a very capable commander concerning himself with the “3 footed stool [of warfare] men, victuals & munition.”⁸⁷ Gardiner anticipated better than anyone that his garrison at Saybrook would take the brunt of Pequot attacks and he would be left to his own devices to maintain the safety and welfare of colony:

...and though you Say he [John Winthrop Jr.] shall return, yet I know if you make war with these pequits he will not come hither again, for I know you will keep yourselves against Captain hunger and let fortification alone awhile, safe as you think in the bay but myself with these few you will leave at the stake to be roasted or for hunger to be starved.⁸⁸

Gardiner’s first concern was food. He learned in the first few months of his command that Winthrop Jr. and the Saybrook Proprietors either did not have or were unable to provide the resources necessary to support the colony. These shortages affected all the residents at Saybrook, at least those connected to the Saybrook Proprietor’s venture. Saybrook Fort had been scarcely provisioned even prior to the outbreak of hostilities. As early as July, 1636 the servants at Saybrook wrote a letter to George Fenwick and Hugh Peters, agents for the Saybrook Proprietors, complaining among other things “as for our diet our bread that is taken away our breakfast and our beer so most of our diet is pea porridge.”⁸⁹ The fort’s inhabitants faced continual food shortages and were always on the verge of starvation or at least malnutrition. Gardiner’s frequent references to food shortages and the need to acquire food supplies is a common theme in his writings:

Since your [John Winthrop Jr.] and Mr. Fenwick’s departure there hathe beene noe provison sent but on the contrary people to eate up that small store that we

⁸⁶ Anonymous in Mather *Relations of the Indian Wars*, P. 163.

⁸⁷ Gardiner. *Relation*, P. 7.

⁸⁸ Gardiner. *Relation*, P. 7.

⁸⁹ Winthrop. *Winthrop Papers*. III: P. 281.

had. Heare hath come many vessels with provison to goe up to the plantations but none for us it seems that wee have neither masters or owners but are left like so many servants whose masters are willing to be quit of them.⁹⁰

I hear that the Bachelor is to bring us provison I pray you forget us not when she comes from the Bermudas with some potatoes for heare hath beene some Virginians that have taught us to plant them after another way and I have put in practice and found it good.⁹¹

...the Pequots gave us alarm ...before we could finish our short supper, for we had little to eat.⁹²

One of Gardiner's first actions upon his arrival at Saybrook was to plant corn at Cornfield Point, almost two miles across the south cove from the fort, guarded by a small blockhouse. Why he chose a location so far from the fort is unclear, but it is likely Cornfield Point had already been cleared by the Western Niantics when they lived in the area and before they sold Saybrook to John Winthrop, Jr.

Within days after the first attack, Gardiner "left 5 lustie men in y^e strong hous with long guns, which house I had built for the defence of the corn" and planned to return the next day.⁹³ Against orders three of the men stationed at the block house left the protection of the blockhouse to go fouling nearly a mile away. The Pequot laid an ambush for them as they were returning to the blockhouse killing two. According to the Anonymous account, although wounded a soldier "did with his naked Sword escape through them to the house, relating to the Company the sad Event, and that one of those English that were taken did first kill two Indians."⁹⁴ The Pequot captured the two men who did not run, along with their firearms, and later killed the men.⁹⁵ The next day Gardiner sent the shallop to evacuate the surviving soldiers, and gathered what corn they could. As they rowed back to the fort across South Cove, the Pequots burned the blockhouse.⁹⁶

⁹⁰ Winthrop. *Winthrop Papers*, III: P. 319.

⁹¹ Winthrop. *Winthrop Papers*. III: P. 320.

⁹² Gardiner. *Relation*, P. 32.

⁹³ Gardiner. *Relation*, P. 11.

⁹⁴ Mather. "Anonymous" P. 45.

⁹⁵ Hosmer, Ed. *Winthrop's Journal*. I: P. 192.

⁹⁶ Gardiner. *Relation*, P. 11.

Soon after the Pequot burned “some outhouses and haystacks within a bow-shot of the fort, and killed a cow, and shot divers others; but they all came home with the arrows in them.”⁹⁷ Gardiner had not only lost his cornfields but the Pequot continued to target the English livestock knowing how much the English relied upon them for food. Shortly after the attack at Cornfield Point, John Higginson, Surgeon Thomas Pell, and four soldiers ventured north to Warehouse Point to take inventory of the contents of one of the warehouses in order to remove them to the fort. Gardiner stated that “y^e verie next day after I had taken the goods out before the sun was quit down And we all togeath^r in y^e great Haule, all them houses weare on fier in one Instant the Indians ran away but I would not follow them.”⁹⁸ Days later, several men sent by Matthew Mitchel to gather hay at Six Mile Island were ambushed and killed by the Pequot. Mitchel’s brother was captured and reportedly roasted alive.⁹⁹

In late October Governor Vane invited Miantonomi to Boston to solidify a peace with the Narragansett and agree upon an alliance against the Pequot. Miantonomi declared that “They would continue in war with the Pequods and their confederates, till they were subdued” and also desired that the English would commit to the same end.¹⁰⁰ Massachusetts Bay and the Narragansett were now allied against the Pequot. Roger Williams received the copy of the agreement and returned a letter a few days later in which he informed Winthrop Sr. that “the Pequots and [Western] Nayantaquits resolve to live and die togeather and not to yeald up one.”¹⁰¹

It is difficult to assess the veracity of the chronology of the Anonymous narrative as there are times where the chronology differs from Lieutenant Gardiner’s narrative. In another example of early siege actions, Gardiner described how two soldiers, Robert Chapman and John Bagley avoided a near ambush. This event may have happened in October or November as samp (beaten dried corn kernels to break the coat) only takes four to six weeks to dry after harvest:

...you, Robert Chapman, you know, y^t w you and John Bagley weare beating samp at ye garden pales, the sentenells called you to run in for theare was a number of pequits creeping to you to catch you I hearing it went up to y^e redout and put two cross bar shot into the 2 guns y^t lay above and leveld them at ye trees in ye middle of ye limbs and boughs and gave order to John frend and his man to stand with handspickes to turn them this or y^t way, as they should heare the Indians shout, for they should know my shout from theirs for it should be verie

⁹⁷ Hosmer, Ed. *Winthrop's Journal*. I: P.192

⁹⁸ Gardiner. *Relation*, P. 18.

⁹⁹ Gardiner. *Relation*, Pp. 12-13.

¹⁰⁰ Hosmer, Ed. *Winthrop's Journal*. I: P. 193.

¹⁰¹ Winthrop. *Winthrop Papers*. III: Pp. 314-318.

short, then I cald 6 men and the doggs and went out running to y^e place, and keeping all abreast in sight, close togeath^r, and when I saw my time I said stand, and called all to mee saying looke on me and when I should up my hand then shout as loud as you can, and when I hould downe my hand then leave and so they, did then the Indians began a long Shout, & then went off y^e 2 great guns and toare the limbs of ye trees about th^r ears so y^t divers of them weare hurt as may yet appear...¹⁰²

Although the Pequot often used ruses and ambushes to attack the English, this incident is one of several occasions where the Pequot boldly attempted to attack the fort and its immediate environs:

I sent 6 men down by the garden pales, to look yt none should cum under the hill behind us...I with my sword pistol & carbine went 10 or 12 pole [35 – 65 yards] without ye gate to parley with them. And when ye six men came to ye garden pales at ye corner they found a great number of Indians creeping behind ye fort or betwixt us and home, but they ran away.¹⁰³

On another occasion in November the “Anonymous” narrative describes how the Pequot “made towards the Fort as if they would have done some great matter; but a great Gun being discharged at them, they went quite away, and were no more seen at Say-brook for the greatest part of that winter.”¹⁰⁴ There were no recorded Pequot attacks from early to mid-November until late February, presumably because the Narragansett had renewed their war with the Pequot and had invaded their country.

Both food shortages and constant siege conditions affected the morale of the Saybrook settlers. The Saybrook garrison and travelers along the river were threatened by Pequot attacks almost on a daily basis and undoubtedly it affected their lives and daily routines. In almost every attack against the English the Pequot were able to capture at least one Englishman who was ultimately tortured. The colonists at Saybrook, as well as the upriver settlements lived in constant fear of Pequot attacks. John Higginson, minister for Saybrook Fort, wrote to Governor Winthrop Sr. in May 1637 to apprise him of conditions at Saybrook during the siege:

For if that our condition here, to haue 10 lustie men out of so little a number as ours is so cruelly slayne, others crying and roaring out through extremitie of the paine of wounds, others gasping and dying and breathing out their last, our selves

¹⁰² Gardiner. *Relation*. P. 32.

¹⁰³ Gardiner. *Relation*. P. 14.

¹⁰⁴ Mather. “Anonymous” P. 45.

beleaguerd by the same blood thirstie, and hemmed in by those who daily seek our lives, etc.¹⁰⁵

Gardiner was not immune from these fears either, and after enduring Pequot attacks for almost seven months he wrote to John Winthrop Jr. in late March “we watch every other night never putting off our Clothes for the Indians show themselves in troupes aboute vs every day.”¹⁰⁶ These fears were echoed by colonists upriver in Wethersfield and Windsor settlers as well. A young boy who lived in Wethersfield during the war years later recounted:

Y^e first meeting house was solid mayde to withstand y^e wicked onsaults of y^e Red Skins...its walls were truly laid in y^e feare y^e Indians, for many and grate was y^e terrors of them...every man kept his musket nighe to his hands.¹⁰⁷

Analysis of the primary sources associated with the siege identified no fewer than twenty-two actions or events over the seven month siege that directly or indirectly threatened the inhabitants of Saybrook.¹⁰⁸ Table 1 lists all of the actions and events related to the war that occurred at Saybrook during the siege. This information was gleaned from four principal sources: letters sent to Winthrop Sr. and Jr. from Gardiner published in the *Winthrop Papers*, Gardiner’s *Relation of the Pequot Warres*, the “Anonymous Account” published by Increase Mather in 1677, and Winthrop Sr.’s *Journal*. Winthrop Sr.’s journal entries for Saybrook were likely drawn from letters or reports received from Gardiner and others at Saybrook and reflect the occurrence of events within weeks and sometimes days, so there is a more immediate feel to the events. Although the chroniclers of the siege recorded only the more noteworthy occurrences, nonetheless these accounts provide a valuable perspective of what the settlers regularly experienced during the siege.

Table 1. Events and Actions during Siege of Saybrook

Date	Month	Event	Outcome	Source
5(?)	September	Twenty Saybrook men accompany Endicott Expedition and were wind bound while gathering corn and attacked by the Pequot.	Two English wounded.	Winthrop's Journal 191 Mather 162
7 (?)	September	Five Saybrook men go four miles upriver to gather hay. Attacked by 100 Pequot.	One English taken and tortured to death (Butterfield), one	Winthrop's Journal 192 Mather 163

¹⁰⁵ Winthrop. *Winthrop Papers*. III: P. 405.

¹⁰⁶ Winthrop. *Winthrop Papers*. III: P. 382.

¹⁰⁷ Helen Evertson Smith. *Colonial Days & Ways as Gathered from Family Papers*. (New York: The Century Co, 1900). Pp. 49-50

¹⁰⁸ See Winthrop. *Winthrop Papers*; Gardiner. *Relation*; Mather. *Anonymous*.

			wounded with five arrows later died	
10(?)	September	Pequot come near fort and “destroyed many” English cattle	No casualties.	Mather 163
15(?)	September	Three Saybrook men at Cornfield Point attacked by 100 Pequot.	One English wounded, two taken and tortured to death, two guns taken & block house burned. Outbuildings, hay stacks burned near fort, one cow killed several others shot.	Winthrop’s Journal 192 Mather 163 Gardiner 11
16(?)	September	Pequot attack four of “Mr. Mitchell’s” men from Saybrook six miles upriver as they gathered hay.	Three English killed and one tortured to death	Gardiner 11-12
16(?)	September	Pequot burn blockhouse at Cornfield Point	No casualties.	Winthrop’s Journal 192
16/17(?)	September	Pequot burn two warehouses at Warehouse Point	No casualties.	Mather 163
18-20(?)	September	Pequot come near fort and burn outhouses and hay stack near fort	One cow killed many others shot	Winthrop’s Journal 192
	October-November	Pequot forces on both sides of the Connecticut River shoot at ships travelling along river		Winthrop Papers 321
15(?)	October	John Tilley and one other man are attacked by Pequot forces three miles upriver form Saybrook.	One English killed, one captured (Tilley) and tortured to death. One firearm taken.	Winthrop’s Journal 194
25	October	Pequot kill one goat and “all the great swine.”	Four English soldiers from fort drive Pequot away and save cows	Winthrop Papers 319
U/A	October (?)	“Goodman Robinson & John Charles” possibly attacked by Pequot might be incident relayed by Gardiner. Two men killed at Six-mile island. The body of one was recovered as it floated downriver.	Two English killed and one firearm taken.	Winthrop Papers 320-321 Gardiner 12
15(?)	November	Pequot threaten to attack fort & retreat after cannon fire	Pequot retreat after fort’s cannon fires and are not seen around fort remainder of winter.	Mather 163
22	February	Gardiner and ten men attacked by 50 Pequot at Saybrook Neck.	Five English killed while Gardiner and two others are wounded.	Mather 165
22-?	February-March	Pequot surround and lay siege to fort	No casualties.	Mather 164
9	March	200-300 Pequot approach within musket shot of fort. A “great number” try to sneak behind fort	Pequot retreat after two of the fort’s cannons fire hail	Mather 166

		under a hill	shot. Six men sent to garden pales Pequot retreat	
U/A	March/April	Underhill reports scouting Saybrook for Pequot and seeing them on a number of occasions lying in ambush	The English being well armed the Pequot do not attack	Underhill 15
10(?)	April	Three of Mr. Mitchell's men coming downriver in a shallop attacked by Pequot	One English killed, two tortured to death	Mather 166 Gardiner 17
12(?)	April	Captain John Underhill with nineteen Massachusetts Bay soldiers arrive and lift the siege.	No casualties.	Winthrop's Journal 212
23	April	Pequot attack Wethersfield	Nine killed (including two women) and two girls captured	Winthrop's Journal 213
24/25(?)	April	Pequot in "many canoes" were seen across the river coming from Wethersfield	Two "sackers" fired at canoes taking off the prow off one.	Gardiner 17
U/A	U/A	Pequot approach fort "and give us alarm to draw us out 3 times" while Gardiner and men at dinner	No casualties.	Gardiner 32
U/A	U/A	"a number of Pequot creeping" to Chapman and Bagley "beating samp by garden pales"	Six men and dogs sent to pales and two cross bar shot fired from two of fort's cannon at tree line above Pequot.	Gardiner 32
U/A	U/A	Pequot would often creep to fort to fire redoubts and fort	Pequot stepped on "3 great doors...full of nails" placed where Pequot approached	Gardiner 33
U/A	U/A	Pequot would creep to fort at night and fire at sentinels	Pequot stepped on "3 great doors...full of nails" placed where Pequot approached	Gardiner 33

Writing in early November to Winthrop, Jr., Gardiner detailed some of his experiences over the past month when warned that "the Indians are many hundreds of both sides the river and shoote at our Pinaces as they goe up and downe."¹⁰⁹ Gardiner also detailed to Winthrop, Jr. how Pequot forces have "come many times" to Saybrook Fort "and shoot our owne pieces at us" and to prove his point the Lieutenant then lists the known firearms captured by Pequot forces from the English: "they have 3 from us already, 5 of Capt: Stones one of Charles his etc."¹¹⁰ In addition to the intermittent skirmishing that occurred throughout the fall, the Pequot continued to concentrate their efforts on destroying English livestock. Gardiner described the situation in his

¹⁰⁹ Winthrop. *Winthrop Papers*. III: Pp. 319-321.

¹¹⁰ Winthrop. *Winthrop Papers*. III: Pp. 319-321.

November 6, 1636 field report to Winthrop Jr. in which he stated that “a ram goate was brought from the Manatos but the Enemie got him and all the greate swine 22 in one day and had gotten all the sheep and Cowes likewise had we not sallid out it was one the Saboath day and there was 4 men with the Cowes with firelocks.”¹¹¹

Gardiner wrote to John Winthrop, Jr. on November 6, 1636 in which he voiced his frustrations to his superiors at Boston. He had recently learned that Winthrop Jr. had no intention of returning to Saybrook Fort that year and was told to send his servants back to Boston. Gardiner complained that he had received no order, supplies or provisions and likened his situation to being “neather masters nor owners but are left like soe many seruaunts whose masters are willing to be quit of them.”¹¹² He again argued against starting a war with the Pequot and accused Winthrop, Jr., Peters, and Fenwick of “by your wills and likeings put into a warlike Condicion.”¹¹³ Gardiner warned that “if I see that there be not such care for us that owr lives be preserved, then must I be forced to shift as the Lord shall direct.”¹¹⁴ He described the rescue of cattle, oxen and goates from the Pequot which were sent upriver for protection but complained of the lack of support from the English River towns during the siege: “they up the river when I went to them how it stood with us and in what need we weare did jeare or mocke us.”¹¹⁵ Finally, Gardiner advised that “I thinke it would be good if no vessels may be suffred to come, but the men knowne & fitted with armes suitable, charg’d not to goe ashore, for they venture not onely their owne lives but wrong others.”¹¹⁶

After receiving Gardiner’s report Lt. Gibbons was sent to Saybrook Fort to deliver provisions and supplies and to report, on the conditions of the garrison. Gibbons sent a brief report to Winthrop Jr. but admitted that “I can givf you but letel lite intew thinges, and that in my o[w]ne judgment will not bee much benifetiall to the o[w]ners thereof.”¹¹⁷ He described the fortifications as “strong enuf, with good wall and direction, to put many Indians to the worst” and of Gardiner he wrote that “Mr. Gardenor is carefull so far as I am abel to judge; but work gowes heavily of hand; and the work that was begun when you were here looks old for want of

¹¹¹ Winthrop. *Winthrop Papers*. III: P. 319.

¹¹² Winthrop. *Winthrop Papers*. III: Pp. 319-321.

¹¹³ Winthrop. *Winthrop Papers*. III: Pp. 319-321.

¹¹⁴ Winthrop. *Winthrop Papers*. III: Pp. 319-320.

¹¹⁵ Winthrop. *Winthrop Papers*. III: P. 323.

¹¹⁶ Winthrop. *Winthrop Papers*. III: Pp. 320-321.

¹¹⁷ Winthrop. *Winthrop Papers*. III: P. 323.

finishing.”¹¹⁸ Gibbons feared that the defensive efforts at Saybrook Fort were of enough expense that “if sum speedy course bee not taken the burden will bee so heavy that I know not how it will bee borne.”¹¹⁹ In a worst case scenario, should the fort be abandoned “and if it should bee castt up we must cast up the hole river, and keep our houses if we can here; for the Indeans are very insolent.”¹²⁰ Gibbons seemed to imply that Saybrook Fort was worth the cost to finish and maintain if the English hoped to settle the Connecticut River. Gibbons may have remained at Saybrook Fort for the duration of the siege.

During the siege the Pequot pursued other political and military objectives as well. Within a few weeks after the war began, the Pequot made peace overtures to their traditional enemy the Narragansett, who they had been at war with periodically over the past decade. The Pequot may have been aware that Massachusetts Bay was pursuing an alliance with the Narragansett which was made official in late October. In the weeks after the War began, Pequot approached the Narragansett to join with them in alliance against the English. Ultimately the effort failed, in part because Roger Williams helped to persuade the Narragansett from joining the Pequot but also because of recent hostilities between them. The Narragansett recalled “how much wrong they had received from the Pequents, and what an opportunitie they now had by the help of the English to right themselves, revenge was so sweete unto them, as it prevailed above all the rest.”¹²¹ Edward Johnson reported that the Narragansett also considered

the English were advantaged by their weapons of War, and especially their Guns, which were of great terror to his people, and also he had heard they came of a more populous Nation by far than all the Indians were, could they be joyn'd together.¹²²

From mid-November through late February there were no Pequot attacks on the Saybrook or river travelers. The relative calm lasted until February 22, 1637 when Gardiner “went out with 10 men and 3 doggs half a mile from the house” with plans to burn reeds around the neck to easier roll the timber to the water side.¹²³ Before long, the flames spread along the marsh grass and forced a group of four Pequot out of the reeds. Gardiner called for his men to leave the

¹¹⁸ Winthrop. *Winthrop Papers*. III: P. 323.

¹¹⁹ Winthrop. *Winthrop Papers*. III: P. 323.

¹²⁰ Winthrop. *Winthrop Papers*. III: P. 323.

¹²¹ Bradford. *History of Plimmoth Plantation*. II: P. 247.

¹²² Edward Johnson. *Wonder Working Providence of Sions Saviour in New England* (Delmar: Scholars' Facsimiles & Reprints, 1974). P. 110.

¹²³ Gardiner. *Relation*, Pp. 12-13.

marsh just as his two sentries posted at the “small of y^e Neck” called out to Gardiner to warn him that a number of Pequot warriors had rushed out of the other side of the marsh.¹²⁴ Gardiner wrote that “there rushed out of the woods 2 severall ways a great Company of Indians” while the Anonymous account estimated that Gardiner’s command was “beset with about seventy Indians.”¹²⁵ Gardiner gathered his men close to him and rushed to engage the oncoming Pequot forces before they could reach the woods and cut the English off, but Hurlbut “cried out to me y^t sum of the men did not follow me, for Tho Rumble & Arthur branch threw downe th^r 2 guns and ran away.”¹²⁶ The English “gave fire upon” their oncoming attackers but Gardiner’s men soon gave way as they found that “yet they run one to the very mussels of our pieces and soe shott 3 men downe in the place” as they attempted to reload.¹²⁷ Gardiner ordered his men to draw their swords and soon noticed that the Pequot “Sought to get between us & home but durst not cum before us, but kept us in a halfe moone, we retreating, & exchanging a many a shot.”¹²⁸

This attack was unlike other the English had engaged in the past in which Native bowmen engaged English soldiers just beyond effective musket range. Elements of the Pequot force closely pressed Gardiner’s men to keep them from loading or forming a battle line. This detail was not lost on Winthrop Sr. who noted in his journal that “The Indians were so hardy, as they came close up to them, notwithstanding their pieces,” something the English had yet to encounter.¹²⁹ In a report to Winthrop, Jr. written days after the attack, Gardiner recalled the intensity of the combat and his attempt to maintain a battle line as they withdrew. He described how he was “sometime shouttinge and sometime restraightinge keeping them of our sword.”¹³⁰ Pequot forces attempted to prevent the English from reaching the safety of the fort, and in trying to encompass them the English line was bent backwards “in a halfe moone” formation as Native bowmen rapidly fired at them. Anonymous described how the Pequot forces “let fly their Arrows very fiercely; the English retreated” and Gardiner’s men began to fall.¹³¹ Writing some twenty years after the event Gardiner vividly recalled the casualties beginning with the first two men who “the Indeans shot...in the reeds,” followed by Hurlbut who “was shot almost through the

¹²⁴ Gardiner. *Relation*, Pp. 12-13.

¹²⁵ Winthrop. *Winthrop Papers*. III: Pp. 381-382; Mather, “Anonymous” P. 45.

¹²⁶ Gardiner. *Relation*, P. 13.

¹²⁷ Winthrop. *Winthrop Papers*. III: Pp. 381-382.

¹²⁸ Gardiner. *Relation*, P. 13.

¹²⁹ Hosmer, Ed. *Winthrop’s Journal*. I: P. 208.

¹³⁰ Winthrop. *Winthrop Papers*. III: P. 382.

¹³¹ Mather. “Anonymous” P. 45.

thigh," and John Spencer who was hit "in the back into his kidneys."¹³² Soon after Gardiner himself was shot in the thigh while "2 more weare shot dead" around him. The fate of the "3 doggs" is unknown but it is presumed that they were killed during the opening moments of the attack as they are never mentioned again. The Anonymous narrative provides the most detailed account of those Saybrook soldiers who were killed during the retreat:

One man presently was shot in the neck and then did they lay hands on him, he drew his Sword, but that was taken from him; Then would he (as the Indians afterwards testified) have killed himself with his own knife, but that also did the Indians deprive him of and cut off his nose and hands, and put him to a cruel death; They shot down another English man with three Arrows, and a third had one of his ribs cleft with an Arrow, so that he died immediately.¹³³

Within a matter of minutes Gardiner's company of ten was reduced to four men, three of which were seriously wounded, including the Lieutenant who had been "Shott with many arrows...but my buff Coate p'r served mee; only one hurt mee."¹³⁴ Gardiner, Hurlbut, Spencer and Chapman all fought for their lives and managed to reach "a bayre place of the ground" which Gardiner had ordered cleared earlier in the winter anticipating such an attack. The Pequot ended their pursuit once the wounded English soldiers reached the cover of the fort's cannon. The wounded were cared for as best as possible, presumably by the surgeon Pell, but as related by both Gardiner and Anonymous, one of the men died later that night.¹³⁵ Gardiner recovered well enough to venture outside the fort a few days after the attack with a small group of men to hunt for fowl. While walking the battlefield he recovered the two muskets dropped by the deserters as well as the body of one of his men who died from an arrow through his body. The arrow was later removed from the dead man, cleaned, and sent to Massachusetts Bay "becaus they had said y^t y^e arrows of y^e Indeans weare of no force."¹³⁶

Two weeks later a large group of Pequot, emboldened by their recent victory at the neck, attempted to encircle the fort under the ruse of a parley. Gardiner and Anonymous recall "a troupe of Indeans" who "came within musket shot of the Fort."¹³⁷ Anonymous estimated that the

¹³² Mather. "Anonymous" P. 45.

¹³³ Mather. "Anonymous" P. 45.

¹³⁴ Gardiner. *Relation*, P. 15.

¹³⁵ The wounded man who later died was never named but by process of elimination it appears to have been John Spencer. Winthrop. *Winthrop Papers*. III: Pp. 381-382; Mather, "Anonymous" P. 45.

¹³⁶ Gardiner. *Relation*, P. 13.

¹³⁷ Gardiner. *Relation*, P. 14.

Pequot Allied forces consisted of “two or three hundred” men and Gardiner described how he noticed “a troupe of Indeans within Musket shot” of the fort “laying themselves and th^r armes downe behind a little rising hill & 2 great trees.”¹³⁸ Anticipating an attack Gardiner ordered his carpenter, John Friend, who was cross-trained as a gunner, to ready the fort’s “two great Gunns” which were described as “Sakers.” Gardiner ordered him load the cannon with “Cartridges of musket bullets,” a type of ammunition referred to as a case or canister shot as it consisted often of a wooden, leather, or metallic canister filled with lead or iron balls. The sakers were aimed towards the “little rising hill” and Friend was ordered by Gardiner to hold his fire until “he saw me wave my hat above my head.”¹³⁹ Three Pequot “creeping out and calling to vs to speake with vs” Gardiner and interpreter John Stanton left the fort gate and walked “10 or 12 poale” to meet with the Pequot. At the same time “a great numb^r of Indeans [were] creeping behind y^e fort,” by the garden pales and attempted to get “betwixt us and home.” Gardiner sent six men to the garden pales and as soon as the Pequot were discovered they retreated.

Gardiner and Stanton agreed not to give the Pequot any direct answers because he did not want to speak on behalf of Winthrop, Jr. or Massachusetts Bay. The English and Pequot called to one another to come nearer and eventually Gardiner and Stanton advanced to the “great stump of a tree” and a discussion ensued between the two groups with Stanton serving as the primary interpreter. The Native men recognized Stanton but believed Gardiner to be dead as he had been hit with many arrows weeks earlier. Once Gardiner spoke one of the Pequot men recognized his voice because he “had dwelt 3 moneths with us” at Saybrook Fort but disappeared when Endicott’s expedition had arrived.¹⁴⁰ The Pequots asked if the English would fight the Niantic, to which Gardiner replied that “we knew not the Indeans one from anoth^r and therefore would trade with none.” They then taunted the English and asked Gardiner “have you fought enough, we said we knew not yet.” The Pequot then questioned the English to whether “we did use to kill women & childre” and Gardiner replied that “they should see y^t heraft.”¹⁴¹ Gardiner’s final retort as translated by Stanton seemed to strike a particular cord among the Pequot men. As he watched the Native men and waited for the next exchange Gardiner recalled what he observed years later in his *Relation of the Pequot Warres*:

¹³⁸ Mather. “Anonymous” P. 46; Gardiner. *Relation*, P. 14.

¹³⁹ Gardiner. *Relation*, Pp. 14, 32.

¹⁴⁰ Gardiner. *Relation*, P. 15.

¹⁴¹ Gardiner. *Relation*, P. 15.

So they weare silent a small space and then they said we are pequits and have killed Englishmen and can kill them as musketoes, & we will goe to conetcott and kill men women & children and ewe will take away y^e horses Cowes & hogs.

¹⁴²

Thomas Stanton became enraged and “praid” Gardiner to “shoot y^e Rouge” who made the statement and pointed to the English jackets all the Pequot men wore and said that the man “Saith y^t he hath killed 3” Englishmen himself. Gardiner ordered Stanton not to fire as it was “not the manner of a parlee” but it was clear that the dialogue had broken down and Stanton “could get no oth^r answer but this last.” Gardner then taunted the Pequot men one last time and told them not to bother with the English upriver but “poynted to our great hous: and bid him tell them there lay 20 pieces of truking cloath of M^r pinsions with howes hatchets and all manner of trade, they were bett^r fight still with us and so get all y^t & goe up the river after they had killed all us.” With this the parley ended and as the Pequot returned to their men “they came to y^e place from whence they came I waved my hatt about my head, and y^e 2 great guns went off, So y^t there was a great hubbub amongst them.”¹⁴³ Following the discharge of the cannon the Pequot force left the fort.

This exchange was on March 9, 1637 as recorded by Anonymous and was the last time the Pequot directly confronted Saybrook Fort. The account described “A body of Indians, consisting (as we conjectured) of two or three hundred came within musket shot of the Fort, challenging the English to come out and fight” and that the Pequot “upbraiding them with such words as the English used when by them tortured to death, and bragged that they could kill English men *all one flyes.*”¹⁴⁴ Anonymous described how “two great Gunns loaden with Carthages of musket bullets” were discharged at the Pequot who left the vicinity soon after. This version of events also states that the Pequot did not return, once “hearing that the Narragansetts were invading their country, they visited Seybrook no more.”¹⁴⁵ This assertion supported by a March 21, 1637 entry in Winthrop Sr.’s journal in which he noted that twenty six Narragansett were sent to Boston by Miantonomi “with four fathom of wampum and a Pequod’s hand” and in

¹⁴² Gardiner. *Relation*, P. 16.

¹⁴³ Gardiner. *Relation*. P. 16.

¹⁴⁴ Mather. *Troubles in New England*. P. 46.

¹⁴⁵ Mather *Troubles in New England*. P. 46.

return the English gave the leaders of the company English coats and sent additional gifts later on “according to their manner.”¹⁴⁶

Two days after this encounter the Connecticut River towns sent a company of twenty men under the command of Captain John Mason to reinforce the depleted fort garrison. During their time at Saybrook, Mason commented that “there did not one Pequot appear in view for one Month Space.” The presence of English reinforcements may have deterred the Pequots but it is more likely the lull in the siege was the result of the Narragansett offensive.¹⁴⁷ Although the Narragansett invasion along the Pequot frontier may have drawn many of the Pequot besiegers from Saybrook Fort, the Pequot were planning more attacks on the English along the Connecticut River. John Winthrop Sr. and the magistrates of Massachusetts Bay received letters from the leaders in the Connecticut River towns who made it clear they expected “a further prosecution of the war” by the Bay men and offered to send men as well.¹⁴⁸ In the face of Pequot successes on the battlefield, and the depletion of Gardiner’s garrison it was clear that Massachusetts Bay could not delay any longer. In mid-March Governor Winthrop Sr. sent Captain John Underhill and a company of twenty well-armed soldiers to the mouth of the Connecticut River “to keep the fort, both in respect of the Indians, and especially of the Dutch, who, by their speeches and supplies out of Holland, gave cause of suspicion that they had some design up it.”¹⁴⁹ Although Winthrop Sr. mentioned the Dutch threat, they posed no real military threat at this time. Underhill’s explanation may have been a more candid assessment of why Massachusetts Bay rushed reinforcements to Saybrook for fear that “assuredly without supply suddenly came in reason all would be lost, and fall into the hands of the enemy; This was the trouble and perplexity that lay upon the spirits of the poore garrisons.”¹⁵⁰

On the morning of April 23, 1637 a large force of Pequot warriors attacked unsuspecting English settlers at Wethersfield who were at work in their fields at the Great Meadow along the Connecticut River. The Pequot killed nine settlers, including women and children, and took two daughters of Anthony Swaine captive.¹⁵¹ A day or two after the attack on Wethersfield the Pequot came back down the river “in three Canoes with about one hundred men” and in order to

¹⁴⁶ Hosmer, Ed. *Winthrop’s Journal*. I: P. 212.

¹⁴⁷ Mason. *A Brief History*. P. IX; Gardiner. *Relation*. P. 16.

¹⁴⁸ Hosmer, Ed. *Winthrop’s Journal*. I: P. 212.

¹⁴⁹ Hosmer, Ed. *Winthrop’s Journal*. I: P .212; Philip Vincent. *A True Relation New England*. P. 7.

¹⁵⁰ Underhill. *Newes from America*. Pp. 16-17.

¹⁵¹ Mather. “Anonymous” P. 46; Johnson, *Wonder-working Providence*. Pp. 115-116.

avoid direct fire from Saybrook Fort the Pequot took their canoes “downe the crik beyond y^e Marsh before the fort.”¹⁵² Both Gardiner and Mason noticed that many of the Pequot wore “white shirts” of the slain Wethersfield settlers and the men “concluded they had been acting some Mischeif against us” and decided to fire on the Pequot vessels.¹⁵³ Gardiner commanded his gunners to level great guns to put in 2 round shot into y^e 2 sackers and we leveled them at a certaine place, and I stood to bid him give fire w I thought the canoe would meet the bullet.” When the Pequot canoes emerged from the river behind the great marsh almost three quarters of a mile away, Gardiner “bid him give fire w I though the canoe would meet the bullet, and one of them tooke off y^e nose of a great Canoe.”¹⁵⁴ Mason described how the shot “beat off the Beak head of one of their Canoes” and that “it was at a very great distance.”¹⁵⁵ Both men were later informed that the captured Wethersfield girls were in the canoe at the time which led Underhill to later remark that “it was a special providence of God it did not hit them.”¹⁵⁶ The startled Pequot quickly dragged their canoes across the sandbar at the river’s mouth and paddled out of the range of the forts cannon.¹⁵⁷

The attack at Wethersfield caught the English by surprise and the unprepared river towns feared further attacks. The Connecticut English fortified their fledgling towns as best they could and debated a response. In the meantime the Pequot paraded their captives through their Pequot country for two weeks and “carried them from place to place, and shewed them their Forts, and curious Wigwams, and houses, and encouraged them to be merry.”¹⁵⁸ In one of the more interesting accounts of this incident Edward Johnson reported that the Pequot “questioned them with such broken English, as some of them could speak, to know whether they could make Gunpowder.”¹⁵⁹ The same Dutch vessel that was forbidden to trade with the Pequot offered to rescue the two girls. They sailed to Pequot harbor and lured seven Pequot on board under the pretense of trading with them. The Dutch took the Pequot prisoner and released them in exchange for the two girls. The girls arrived at Saybrook at the same time as Mason and the Connecticut forces and were interviewed by Gardiner, Mason, and Underhill on their experiences

¹⁵² Mason. *Brief History of the Pequot War*. P. X; Gardiner, *Relation*. P. 16.

¹⁵³ Mason. *Brief History of the Pequot War*. P. X; Gardiner. *Relation*. P. 16.

¹⁵⁴ Gardiner. *Relation*, P. 16.

¹⁵⁵ Mason. *Brief History of the Pequot War*. P. X.

¹⁵⁶ Underhill. *Newes from America*. P. 18.

¹⁵⁷ Mason. *Brief History of the Pequot War*. P. X.

¹⁵⁸ Underhill. *Newes from America*. P. 29; Johnson, *Wonder-working Providence*. P. 115.

¹⁵⁹ Johnson. *Wonder Working Providence*. P. 149.

in Pequot country. The girls provided important information on the disposition of Pequot forts and settlements, and claimed that they counted sixteen firearms in possession of Pequot forces.

The English at Saybrook suffered one final loss in the closing days of April when John Tilley sailed up the Connecticut River on his way to Hartford. When he anchored at Saybrook Fort before sailing upriver he argued with Lieutenant Gardiner's orders that "noe boat or barke should pass y^e fort" without an inspection to make sure that the crew was well armed and that no vessel should stop until they reached the safety of Wethersfield. On his return from Hartford, Tilley anchored his ship north of Saybrook Fort and "went on shore in a canoe three miles above the fort to kill fowl" with one of the crew members but "the Indians hearing the Report of their Guns, came upon them."¹⁶⁰ According to the Anonymous narrative "Those two English fought to save their lives by paddling, but the Indians pursued them with another Canoo shot at them and wounded one in the head, who fell overboard, the other shot stoutly at the Indians, but at last being wounded and wearied, the Indians overtook him, he with his paddle cleft one of the Indians heads, but the rest took him, and tortured him to death."¹⁶¹ Underhill also described the incident and reported the Pequot "wickedly and barbarously slew; and by relation brought him home, tied him to a stake, flayed his skin off, put hot embers betweene the flesh and the skinne, cut off his fingers and toes, and made hatbands of them."¹⁶²

Underhill took command of the fort upon his arrival and relieved Mason and his men who returned upriver to help defend the Connecticut settlements. Underhill and his men ranged around Saybrook Point hoping to draw the Pequot into battle but were never able to make contact with Pequot. According to Underhill "we sometimes fell out with a matter of twentie souldiers to see whether we could discover the enemy or no; they seeing us (lying in ambush) gave us leave to passe by them, considering we were too hot for them to meddle with us."¹⁶³ He noted that he was later informed by the enemy that "our men being compleatly armed with Corslets, Muskets, bandileeres, rests, and swords...did much daunt them."¹⁶⁴ Although Saybrook Fort was reinforced with heavily armed soldiers from Massachusetts Bay, the garrison still feared Pequot attack. The Reverend John Higginson (who was probably at Saybrook through the entire siege) wrote a letter to Winthrop, Sr. in which he gave a detailed and insightful assessment of Pequot

¹⁶⁰ Hosmer, Ed. *Winthrop's Journal*. I: P. 212; Mather. "Anonymous" P. 45.

¹⁶¹ Mather. "Anonymous." P. 45.

¹⁶² Underhill. *Newes from America*. P. 20.

¹⁶³ Underhill. *Newes from America*. P. 15.

¹⁶⁴ Underhill. *Newes from America*. P. 17.

efforts to prosecute the war and the grave danger they posed for the entire region. This passage also underscores the many Native tribes who contributed to the Pequot war effort.

The multitudes of our enimies daily encrease, by the falling of Mohigoners, Nepmets (who live not many miles from the bay) Niantucuts at Narrohigganset and their malice is not to be questioned, their cruelty diverse of ours haue felt. Their experience in warlike affaires (being men of warre from their youth) their advantages against vs, in agilitie and armes, their industrious sedulitie plying and attending the warre against the English as their mainest busines, providing retreats at long iland, fortifying vpon the maine, gathering new supplyes of forces, confederating with former enimies, giving large rewards to those amongst them, who are most skillfull to destroy, etc. (which we hear of from Plantations above, and they from Indians) doe farre exceed the preparations and provisions of the English against them.¹⁶⁵

The Saybrook garrison received news on May 1, 1637 that the General Court at Hartford ordered that there shalbe an offensiuе warr against the Pequoitt, and that there shall be 90 men levied out of the 3 Plantations, Hartford, Weathersfeild & Windsor (vizt) out of Harteford 42, Windsor 30, Weathersfeild 18 : under the Command of Captaine John Mason.

In the meantime a Dutch ship stopped at Saybrook Fort on May 8th on its return from the House of Good Hope. The Dutch captain told the English they were “bound for the Pequeat river to trade” but Gardiner and Underhill forbid them to trade with the Pequot while the English were at war with them, especially as “such commodities as might be prejudicall unto us, and advantageous to them, as kettles, or the like, which make them Arrow heads.”¹⁶⁶

Mason instructions were to conduct a frontal assault against the Pequot similar to what Endicott attempted the previous year with little success. On May 10 1637, seventy-seven English soldiers and thirteen sailors, accompanied by approximately eighty Mohegan and River Indian, departed from Hartford in “one Pink, one Pinnace, and one Shallop.”¹⁶⁷ The convoy was seriously delayed as larger English vessels “fell several times a ground, the Water being very low” and were “long detained by crosse winds.”¹⁶⁸ The English allied force arrived at Saybrook Fort Sunday, May 14th.

¹⁶⁵ Winthrop. *Winthrop Papers*. I: Pp. 404-407.

¹⁶⁶ The incident regarding the Dutch vessel is reported in great detail in the accounts of John Underhill and the “Anonymous.”; Underhill. *Newes From America*. Pp. 26-27; Mather. *A Relation*. Pp. 50-51.

¹⁶⁷ Mason. *Brief History of the Pequot War*. P. 1.

¹⁶⁸ Underhill. *Newes from America*. P. 24.

When Mason informed Gardiner and Underhill of his commission to conduct a frontal assault on the Pequot, they argued that Mason and his force “were not fitted for such a designe and we said to Major [Captain] Mason we wondred he would venture himself being not bett^r fitted.”¹⁶⁹ Gardiner and Underhill questioned how Mason’s undermanned and ill-equipped force could expect any better results against the Pequot than the Endicott expedition the previous September, and declared that none of their men would join in the campaign unless the battle plan was revised. The three commanders spent two days “consulting how and in what manner we should proceed in our Enterprize, being altogether ignorant of the Country.”¹⁷⁰ Mason began to perceive “an exceeding great Hazard” in following his original commission and formulated an alternative plan with Underhill and Gardiner. He stated that the commanders “concluded, God assisting us, for Narragansett, and so to March through their Country, which Bordered upon the Enemy; where lived a great People, it being about fifteen Leagues beyond Pequot.”¹⁷¹ The veteran soldiers believed that “at worst we should be on firm Land as well as they.”¹⁷² Twenty of Gardiner’s and Underhill’s men replaced an equal number of Mason’s men who were considered unfit, and they returned upriver in order to strengthen the guard of the river towns.¹⁷³ On Friday morning, May 19 the expedition set sail for Narragansett Bay and did not return to Saybrook until on May 26 under the command of Captain Underhill, who accompanied all the wounded soldiers and natives. Captain Mason lead the remaining forces on an overland march from Niantic (present-day New London) west, and he reported that “about sunset [the 26th] we Arrived at Connecticut River Side; being nobly Entertained by Lieutenant Gardner with many great Guns: But were forced there to Quarter that Night: On the Morrow we were all fetched over to Saybrook, receiving many Courtesies from Lieut. Gardner.”¹⁷⁴ Saybrook’s involvement in the war was essentially over.

Siege and Battle of Saybrook Fort: Combatants, Weapons, Tactics

Pequot-Allied Order of Battle

¹⁶⁹ Gardiner. *Relation*. P. 19.

¹⁷⁰ Mason. *Brief History*. P. 2.

¹⁷¹ Mason. *Brief History*. P. 2.

¹⁷² Mason. *Brief History*. Pp. 2-3.

¹⁷³ Gardiner. *Relation*. Pp. 19-20; Mason. *Brief History*. Pp. 2-3.

¹⁷⁴ Mason. *Brief History*. P. 13.

At the time of the Pequot War, the Pequot could field approximately 1,000 fighting men, not counting those of their tributaries and allies. Pequot men were drawn from the 26 Pequot villages situated between the Thames and Pawcatuck Rivers. Two of the villages, Weinstauks and Mistick, residences of the two chief Pequot sachems, were fortified and served as gathering places in times of war. The number of Pequot allied forces varied at any given time but English sources describe attacks involving anywhere from 50 to 300 men at different times. Individuals or small groups were tasked to scout the English fortifications, gather intelligence, and to wait for opportunities to strike while larger groups of upwards of 100-200 men were mobilized for larger operations or coordinated attacks. Some Pequot men were present at Saybrook Fort prior to the war possibly serving as traders, interpreters, or laborers. In one account, a Pequot named Kiswas who had lived at the fort prior to the siege was known to “speak English well” and that he left Saybrook when Captain Endicott’s Massachusetts Bay force arrived in August 1636. During the Pequot War he served with Pequot forces and was accused of being “a continual spy about the fort, informing Sassacus of what he saw or could learn.”¹⁷⁵ Kiswas was later captured by English-Allied Natives under Uncas in May 1637. The English considered him a “traitor” and executed him as he had been involved in many of the attacks along the river as well.

During the early months of the siege, English forces were spread thin trying to defend livestock and numerous locations in and around Saybrook Point including fort, trade warehouses at Warehouse Point and the blockhouse at Cornfield Point. The number of Pequot involved in individual attacks against the English varied depending on the terrain and situation. Groups of 50-300 Pequot are mentioned during the siege, and on several occasions tried to defeat the English with overwhelming numbers at the point of attack, a tactic that proved successful at the Saybrook Neck fight. The Pequot also assaulted pinnaces and shallop using dugout canoes, some of which could hold dozens of men. They targeted English cattle, pigs, sheep and goats kept around the fort. On one occasion the Pequot destroyed “many English cattle” and on another “all the greate swine 22 in one day.”¹⁷⁶ This tactic was undoubtedly part of an effort to reduce the English food supply but there may have been a symbolic or psychological intent as well. During one attack on English cattle the Pequot “killed a cow, and shot diverse others; but

¹⁷⁵ Gardiner. *Relation*. P.20; Mather. *A Relation*. P. 167.

¹⁷⁶ William Hubbard. *A Narrative of the Troubles with the Indians in New England* (Boston, MA: John Foster, 1675). P. 163; Winthrop, *Winthrop Papers*. III: P. 319

they all came home with the arrows in them.”¹⁷⁷ The Pequot had developed an effective strategy early on and were able to kill and capture English soldiers, neutralize at least one blockhouse, destroy cornfields, damage livestock and burn several warehouses. Once these targets were destroyed, the English were forced to remain close to Saybrook Fort and the Pequot consolidated their forces to tighten the siege around Saybrook and increased their attacks on English vessels on the Connecticut River.

The Pequot employed psychological warfare during the siege knowing full well the fear the English had of being taken alive and tortured by the Pequot. The Pequot submitted their enemies to torture for a variety of reasons, but certainly one was to send a symbolic and psychological message to the English. In almost every attack against the English the Pequot were able to capture at least one Englishman who was ultimately tortured (and interestingly usually only one). In a mid-October attack one trader, John Tilley, was captured and the Pequot “brought him home, tied him to a stake, flayed his skin off, put hot embers betweene the flesh and the skinne, cut off his fingers and toes, and made hatbands of them.”¹⁷⁸ One of the soldiers wounded and overtaken by the Pequot on the February 22, 1637 attack at Saybrook Neck was aware of his ultimate fate and “would have killed himself, with his own knife, but that also did the Indians deprive him of, and cut off his nose and hands, and put him to a cruel death.”¹⁷⁹ On one occasion the Pequot displayed the bodies of two men they “ripped them up from the bottom the belley to the throat” and hung them by the neck from trees along the river in full view of any boat that passed by.¹⁸⁰ On another occasion several hundred Pequot approached the fort “challenging the English to come out and fight, mocking and upbraiding them with such words as the English used when by them tortured to death.”¹⁸¹ In Underhill’s account of the encounter he said the Pequot:

...put on the English clothes, and came to the Fort jeering of them, and calling, come and fetch your English mens clothes againe; come out and fight if you dare: you dare not fight, you are all one like women, we have one amongst us that if he could kill but one of you more, he would be equall with God, and as the English mans God is, so would hee be; this blasphemous speech troubled the hearts of the souldiers, but they knew not how to remedy it in respect of their weaknesse...¹⁸²

¹⁷⁷ Hosmer, Ed. *Winthrop's Journal*. III: P. 192

¹⁷⁸ Underhill. *Newes from America*. P. 20.

¹⁷⁹ Mather. *A Relation*. P. 164.

¹⁸⁰ Mather. *A Relation*. P. 167.

¹⁸¹ Mather. *A Relation*. P. 165.

¹⁸² Underhill. *Newes From America*. P. 14.

Pequot Military Experience

Seventeenth century Indigenous warfare in southern New England is most often incorrectly characterized as a “skulking way of war,” kin based, limited in scope and intensity and consisting primarily of ambushes and raids.¹⁸³ Causes of intertribal conflicts often cited by anthropologists and historians include feuds between kin groups, vengeance and warriors seeking to acquire prestige and power and to demonstrate martial skills. Pitched battles between large numbers of indigenous combatants have been considered an anomaly by most historians. Although archeological evidence indicates that the indigenous Pre-Contact cultural landscape of southern New England was not peaceful, evidence suggests there were significant changes in Native warfare following the arrival of Europeans (initially the Dutch and later the English) in the early seventeenth century which challenge early characterizations of indigenous combat.¹⁸⁴

Dutch sources document significant changes in social, political and economic patterns as Native tribes responded to new opportunities afforded them by trade with Europeans. One response was increased conflict among Native tribes as they competed to control the fur and wampum trade. As is often the case, culture change and increasing social and political complexity are embodied in changes in the nature, organization, and complexity of a societies’ military organization and in the goals and objectives of warfare. In the two decades following the arrival of the Dutch in southern New England in 1611, Dutch sources document growing Pequot aggressions and military complexity as Pequot political and territorial objectives became increasingly regional in scope. In their efforts to control the fur and wampum trade, the Pequot expanded their territorial and political control over large areas of southern New England through warfare, diplomacy, coercion and alliance building.

Prior to the Pequot War the Pequot had been at war with Native polities in the region for at least two decades. These conflicts involved thousands of warriors from dozens of tribes and communities across southern New England. Some of these conflicts consisted of several battles over an extended period of time. By 1626, eastern Long Island was tributary to the Pequot, and by

¹⁸³ See: Patrick M. Malone, *The skulking way of war: technology and tactics among the New England Indians* (Lanham, MD: Madison Books, 1991).

¹⁸⁴ Kevin A. McBride. *War and Trade*. Pp. 271-284.

1628 "the whole north coast (of Connecticut)" was tributary to the Pequot.¹⁸⁵ In 1631, "Wahginnacut, a sagamore upon Quonehtacut (Connecticut)... was at war with the Pekoath [Pequot]" and following three battles the "river Indians" submitted to the Pequot.¹⁸⁶ Even the Mohegans, who were closely related to and allies of the Pequot, were subjugated a few years before the Pequot War.¹⁸⁷ Within a decade the Pequot effectively gained control of key wampum producing areas along the Long Island coastline, and the fur producing interior accessed through the upper Connecticut River Valley, by waging war to subjugate tribes and gain control over their territory.

The Pequot were also at war with the Narragansett for a number of years. As early as 1632 the Dutch informed John Winthrop Sr. that "many Pequins (Pequot) (who were professed enemies to the Anagansetts [Narragansetts]) had been there (Narragansett Bay) many days, and advised us to be watchful."¹⁸⁸ The Pequot were at war with the Narragansett in 1634 until a peace agreement was brokered by Massachusetts Bay. The conflict was renewed sometime before the Pequot War, as in late October 1636 the Narragansett signed a peace agreement with Massachusetts Bay and agreed "they would continue in war with the Pequods and their confederates."¹⁸⁹ The Pequot had difficulty maintain a war on two fronts and in March "hearing that the Narragansett were invading their country, they visited Saybrook no more."¹⁹⁰

The Pequot practice of sustained regional warfare for territorial and political control does not fit the model of "skulking" or tribal warfare, but suggests a much higher order of military complexity and organization, more akin to a chiefdom than a tribe. For example, in 1631 the Dutch recorded that chief sachem of the Pequot and the Wangunk of the middle Connecticut River Valley:

...agreed to meet on the field of battle with their entire forces and to engage in combat, with the condition that the victor would remain, for himself and his successors, forever lord and rightful owner of the aforesaid Fresh River. After three separate battles in open field, Meautiany, chief of the Pequatoos, held the

¹⁸⁵ Nicholaes Wassenaer. "Historisch Verhael," in J. Franklin Jameson *Narratives of New Netherland 1609-1664* (New York, NY: Charles Scribner's Sons, 1909). P. 87; Isaack De Rasieres. "Letter of Isaack De Rasieres to Samuel Bloomeart" in J. Franklin Jameson *Narratives of New Netherland 1609-1664* (New York, NY: Charles Scribner's Sons, 1909). P. 103.

¹⁸⁶ Hosmer, Ed. *Winthrop's Journal*. P. I: 52.

¹⁸⁷ "Document 67." *Connecticut Archives Collection, Towns and Lands*, Volume I. Connecticut State Library, Hartford, CT.

¹⁸⁸ Hosmer, Ed. *Winthrop's Journal*. I: P. 79.

¹⁸⁹ Hosmer, Ed. *Winthrop's Journal*. I: P. 193.

¹⁹⁰ Hosmer, Ed. *Winthrop's Journal*. I. P. 166.

field and was the victor; Sequeen [sachem of the Wangunk] was so beaten and defeated that he became the subject of the Pequatoos. This land Connittekock [Hartford] was bought from the Pequatoos as victors.¹⁹¹

Post-Contact changes in Pequot military and political patterns also include the construction of permanent fortified villages on hilltops (Mistick and Weinshauks) inhabited by the political and military elite, creation of frontiers of uninhabited space between they and their enemies, iconography and objects associated with chiefly “warrior elites,” and regional warfare for territorial control. All of these changes are generally considered by Anthropologists to indicate high levels of sustained conflict and growing sophistication and complexity of a societies’ military organization.

The Pequot were the first Native tribe in southern New England to encounter Europeans on the battlefield during the Pequot-Dutch War of 1634. The war is one of the least known events in the early Colonial history of New England, but one with far reaching effects that directly contributed to the early successes of the Pequot against the English in the first six months of the Pequot War. The causes of the Pequot-Dutch war are obscure, but the conflict began in the winter or spring of 1634 and continued at least through November of 1634. The Pequot likely fought a contingent of 70 Dutch Marines known to have been stationed at the Dutch trading post Huys de Hoope or Fort Hope near Hartford in December of 1633. A brief but significant piece of information on the conduct of the Pequot-Dutch War was related by John Winthrop Sr. Governor of Massachusetts Bay, who commented on the skirmish between 90 Massachusetts Bay soldiers of the Endicott Expedition and the Pequot along the Pequot (Thames) River in September of 1636 that began the Pequot War. As the English disembarked from their ships to move into “battalia” formation the Pequot retreated out of range of the English firearms attempting to lure the English into an ambush. Winthrop Sr. reported “He [Endicott] marched after them, supposing they [Pequot] would have stood to it awhile, as they did to the Dutch.”¹⁹² Winthrop’s comment speaks volumes about what the Pequot learned from

¹⁹¹ Verbael gehouden door de Heeren H. van Beverningk, W. Nieupoort, J. van de Perre, en A. P. Jongestal, als Gedeputeerden en Extraordinaris Ambassadeurs van de Heeren Staeten Generael der Vereenigde Nederlanden aen de Republyck van Engelandt ('sGravenhage, 1725), Pp. 606-608 (Translated by Charles T. Gehring) in Charles T. Gehring, *Annals of New Netherland: The Dutch among the People of the Long River* (New York, NY: New Netherland Institute, 1994).

¹⁹² Winthrop Journal. P. 193.

their first encounters with European battle formations and military technology, and the subsequent tactical adjustments they made.

The military successes of the Pequot against their Indian neighbors, the Dutch, and the English in the initial stages of the Pequot War were the result of the organizational and tactical experiences gained from generations of combat experience. By the early 1630's the Pequot had constructed a powerful confederacy of allied and tributary tribes that allowed them to effectively control large areas of southern New England. In 1634 they fought a brief war with the Dutch in which they learned how to counter European tactics. By the eve of the Pequot war it was generally acknowledged the Pequot were the most formidable military force in southern New England, and described by the English as "more warlike than their neighboring nations, the Narrowgansett or (Eastern) Niantic Indians; although though they exceeded them in number...stood much in feare of these Pequots."¹⁹³

Pequot Tactics and Armaments

When the Pequot War began, the Pequot had already fought a war with the Dutch in the Connecticut River Valley and were well acquainted with the capabilities of European firearms, and armor. They also understood the effectiveness of European battle formations against Native formations in the open-field. The Pequot quickly adjusted their tactics accordingly to counter the superiority of English firearms, and minimize European material advantages while maximizing their own advantages tactics and weaponry. When the Pequot War began in late 1636, the English were quickly introduced to Pequot tactics honed during the Dutch-Pequot War a year earlier that kept the Pequot out of the range of firearms and only hazarding themselves in smaller groups of ten to shoot sustained volleys of arrows rather than one large volley. The Pequot were also willing to charge the English and engage them at close quarters when the opportunity presented itself. The Pequot needed to be within twenty yards so that Pequot bowmen could not fire their arrows with enough accuracy to neutralize their opponent's armor and buff coats by aiming for the weak spots, usually the head, neck, shoulders, arms, and legs. The Pequot employed a number of strategies to bring the English close enough to mitigate their superior long-range firepower including flank and rear attacks, ruses, feints, and ambushes.

¹⁹³ Edward Johnson, *Wonder-working Providence of Sions Saviour in New England* (London, UK: Nath Brooks, 1653). P. 114.

One Pequot battle tactic employed early in the war was described by John Winthrop, Sr. from information he received from Lion Gardiner. The Saybrook men who accompanied the Endicott Expedition were abandoned by the Massachusetts Bay soldiers as they gathered Pequot corn. Winthrop Sr. described the engagement in his journal:

...having loaded themselves, the Indians set upon them. So they laid down their corn and gave fire upon them, and the Indians shot arrows at them. The place was open for the distance of musket shot, and the Indians kept the covert, save when they came forth, about ten at a time, and discharged their arrows. The English put themselves into a single file, and some ten only (who had pieces which could reach them) shot; the others stood ready to keep them from breaking in upon our men. So they continued the most part of the afternoon. Our men killed some of them, as they supposed, and hurt others; and they shot only one of ours, and he was armed, all the rest being without arms. He was shot through the leg. Their arrows were all shot compass, so as our men, standing single, could easily see and avoid them; and one was employed to gather up their arrows. At last they emptied their sacks, and retired safe to their boat.¹⁹⁴

Winthrop's account of the event provides several unique insights into English and Pequot tactics that had developed in the early stages of the war and the manner in which both sides moved to counter the other. Once Massachusetts Bay forces left, Pequot-allied forces (some of whom may have been Western Niantic and Mohegan) immediately attacked the Saybrook men. The Saybrook soldiers and a few Dutch sailors formed a defensive skirmish line, a common formation most of the men would have been familiar with. Men armed with longer firearms (full muskets, fowlers, etc.) fired on the Pequot keeping them at a distance while others armed with shorter ranged weapons such as carbines, pistols, or edged weapons stood at the ready. This tactic was designed to best utilize the weapons at hand while ensuring that half of men were always loaded and ready to meet any Pequot charge at close range. In this action, Pequot-allied forces advanced in groups of ten to maintain a steady fire and then scattered for cover while another ten men replaced them. The Pequot fired their arrows "compass" at a high angle or arc in order to remain out of musket range and were prepared to charge if the opportunity presented itself. The English were able to dodge incoming arrows and employed one man to gather the spent projectiles. Only one heavily armored man who could move so nimbly was wounded in the leg.

¹⁹⁴ Hosmer, *Winthrop's Journal*. Pp. I:191-192.

Throughout the early months of the war the Pequot relied on feints, ruses and ambushes to close with the enemy and engage English forces at approximately twenty yards. This was done in order to most accurately deliver arrow fire at point blank range with enough accuracy and power to penetrate weak spots in English armor – usually the head, neck, shoulders, arms and legs. The Pequot would also try and overwhelm the English at the point of attack with superior numbers when the opportunity presented and attacking them from the flanks and rear, and sometimes rushing “into the very muzzles of their guns.”¹⁹⁵ In the attack on Gardiner at Saybrook Neck the Pequot employed a “halfe moon” formation in a running battle as they tried to envelop the English as they retreated to the Fort.¹⁹⁶

The leadership structure and organization of the Pequot military are not well understood, but may have been built around groups of ten that were integrated into larger formations. John Underhill makes note of this military structure when he provides a rationale for reorganizing Massachusetts Bay forces to adapt to Native military tactics during the Endicott Expedition. Massachusetts Bay levied 90 men under four Captains and lesser officers including Colonel Endicott the overall commander. Seemingly top heavy with senior officers, Underhill explained:

I would not have the world wonder at the great number of Commanders to so few men, but know that the Indians fight farre differs from the Christian practise, for they most commonly divide themselves into small bodies, so that we are forced to neglect our usuall way and to subdivide our divisions to answer theirs, and not thinking it any disparagement, to any Captaine to go forth against an Enemy with a squaldron of men taking the ground from the old & ancient practise when they chose Captaines of hundreds and Captaine of thousands, Captaines of fifties and Captaines of tens: We conceive a Captaine signifieth the chiefe in way of Command of any body committed to his charge for the time being whether of more or lesse, it makes no matter in power though in honour it doth.¹⁹⁷

When groups of ten Pequot were integrated into larger units of perhaps 50-100 men (or more) they were possibly led by “Captains” or “War Sachems.” Captains were not necessarily sachems or men of high social standing, but individuals respected for their martial skills and leadership, as well as their bravery and success in battle. Sachems actively participated in military campaigns as well and some were greatly respected for their military prowess. Sassacus, chief sachem of the Pequot, was so feared by his enemies that upon hearing the English wanted

¹⁹⁵ Winthrop, *Winthrop Papers*. III: 381-382.

¹⁹⁶ Gardiner. *Relation*. P. 13.

¹⁹⁷ Underhill. *Newes From America*. Pp. 3-4.

to attack Sassacus' fort (Weinshaulks) the Narragansett "were afraid saying that Sassacus was all one God, and nobody could kill him" which suggests he may have been feared or respected for his martial leadership.¹⁹⁸ Maumanadtuck, another noted Pequot sachem, was described as "one of their biggest with great Troops" which directly references his designation as a military leader.¹⁹⁹ The "captains" or great martial leaders referenced by the English during the Pequot War may have been similar to the *Pneise* described by early Plimoth Colony settlers. Edward Winslow wrote of a special category of military men known as "Pnieeses" who served their sachems as advisors and war leaders and were groomed for military leadership from their youth:

The pnieeses are men of great courage and wisdom, and to those also the devil appeareth more familiarly than to others, and as we conceive, maketh covenant with them to preserve them from death by wounds with arrows, knives, hatchets, &c... yet they are known by their courage and boldness, by reason whereof one of them will chase almost an hundred men; for they account it death for whomsoever stand in their way. These are highly esteemed of all sorts of people, and are of the sachim's council, without whom they will not war, or undertake any weighty business. In war their sachims, for their more safety, go in the midst of them. They are commonly men of the greatest stature and strength, and such as will endure most hardness, and yet are more discreet, courteous and humane in their carriages than any amongst them, scorning theft, lying and the like base dealings, and stand as much upon their reputation as any men.²⁰⁰

Adriaen Van Der Donck, a lawyer and landowner in New Netherland, made detailed observations regarding the military organization and tactics representative of Natives in the lower Hudson River Valley. Although these observations may be relevant to some of the Native groups in southern New England, they may not accurately reflect the higher level of military organization characteristic of the Narragansett and Pequot and so must be interpreted carefully. :

The principal order, authority, and structure of command of the Indians is revealed in time of war and matters pertaining to war, but it is not so firm that they can maintain platoons, companies, and regiments whenever they wish. They march in separate files and out of step, even when in their best formation. They attack furiously, are merciless in victory, and cunning in planning an assault. If it is a dangerous one, they operate by stealth, very quietly, and under cover of darkness. They will always attempt to ambush and deceive the enemy, but face to face on a plain or water they are not particularly combative and tend to flee in

¹⁹⁸ Mather. *A Relation*. P. 170.

¹⁹⁹ Winthrop. *Winthrop Papers*. III: P. 427.

²⁰⁰ Edward Winslow, *Good Newes from New-England: a true relation of things very remarkable at the plantation of Plimoth in New England* (Bedford: Applewood Books, 1996). Pp. 62-63.

good time, unless they are besieged, when they fight stubbornly to the last man as long as they can stand up.²⁰¹

Edged and Pole Arm Weaponry: Pequot forces were also armed with a number of edged weapons. Edged weapons known or presumed to have been used by the Pequot include iron knives, iron axes, ball headed and stone celts or balls hafted in wooden handles. Edward Johnson described how “the most of them were armed also with a small Hatchet on a long handle.” He also mentioned the Pequot “had a small number of Mawhawkes, Hammers, which are made of stone, having a long pike on the one side, and a hole in the handle, which they tie about their wrists (Figure 12).”²⁰² Johnson’s reference to “a small Hatchet on a long handle” likely refers to likely European trade axes. The “Mowhawkes, Hammers” he describes are monolithic stone axes similar to the one collected in Branford, Connecticut in the 1930’s by Norris Bull and now in the collections of the Connecticut Museum of Natural History. The axe is made from Greywacke found in the Albany, New York area (Mohawk territory). Greywacke is a variety of metamorphosed sandstone characterized by its hardness, dark color, and poorly sorted angular grains. The form of the monolithic axe is derived from a hafted celt, commonly used as woodworking tools or weapons of war. A number of monolith axes have been recovered from Mississippian burial mounds, and always associated with warriors of high social status. The monolithic axe recovered from Branford, Connecticut portrays several “beings” carved into the axe including a bird of prey for the handle, an owl facing the away from the user and toward an enemy, and the image of a male/warrior facing the user. Five pieces of shell were at one time glued to each side of the axe, and two more into the eyes of the owl. The upper half of the axe was painted with vermillion, Chinese red ochre mixed with mercury, a common trade item in the seventeenth century. The vermillion indicates the objects dates to the seventeenth century, and its provenience at “sachems head” in Branford suggests it may be associated with the Pequot. If so, the axe was carried by someone of high rank or status, perhaps a sachem, war captain or pneise.²⁰³

²⁰¹ Adriaen Van der Donck. “The Representation of New Netherland, 1650,” in *Narratives of New Netherland 1609-1664*, J. Franklin Jameson, ed. (New York: Charles Scribner’s Sons, 1909). Pp. 100.

²⁰² Johnson. *Wonder-working Providence*. P. 114.

²⁰³ See *Site Identification and Documentation Plan GA-2255-09-017* prepared for National Park Service American Battlefield Protection Program: Kevin McBride, David Naumec, et al., *Battle of Mistick Fort: Site Identification and Documentation Plan GA-2255-09-017* (Mashantucket, CT: 2009).

The Pequot also used spears of varying lengths during the war resembling pikes or “javelin” Vincent’s described “javelins, &c” carried by Pequot men carried which suggests a weapon thrown at the enemy.²⁰⁴ Thrusting spears are also mentioned for use in close-quarter combat and carried by “Captains,” perhaps as a sign of rank.

²⁰⁴ Vincent. *A True Relation*. P. 4.



Figure 12. Monolithic Axe collected in Branford, CT. Approximately 30cm (12 inches) Long.
Connecticut Natural History.

Projectile Weaponry: The bow, with arrows tipped with brass points fashioned from European sources such as trade kettles, was the primary weapon used by the Pequot (Figures 13

& 14). Gardiner and Underhill prevented a Dutch ship from leaving Saybrook to trade with the Pequot just before the Mistick Campaign because they:

were bound for *Pequeat* river to trade; ourselves knowing the accustome of warre, that it was not the practise in a case of this nature, to suffer others to goe and trade with them our enemies, with such commodities as might be prejudicall unto us, and advantageous to them, as kettles, or the like, which make them Arrow-heads.²⁰⁵

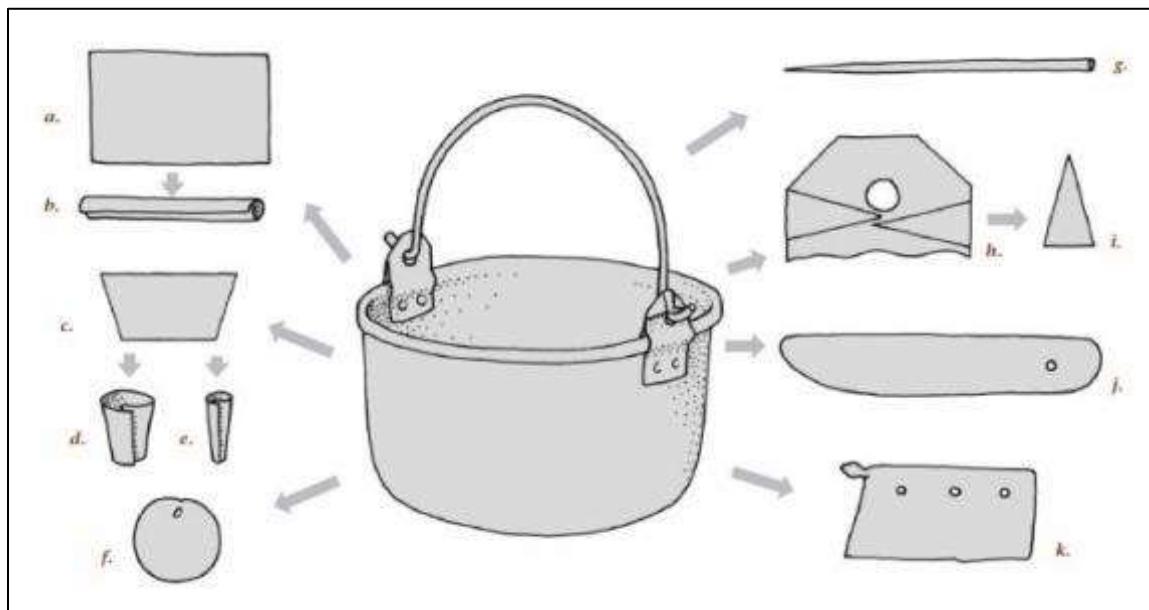


Figure 13. Reprocessed Trade Kettle. James Bradley. "Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region, 1600-1664" in *New York State Museum Bulletin 209, Volume XVII* (Albany: New York State Museum) 2006.

Brass points quickly replaced stone and bone points because they were likely easier to produce given sufficient supplies of raw materials, not because they had superior penetrating power. Several of the brass arrow points recovered from the Mistick Fort were bent from impacting English armor or buff coats (and perhaps even English heads), something that would not happen to a stone or bone/antler points although neither material would be able to penetrate iron armor or very thick buff coats (bottom two points, Figure 14). The brass arrow points used by Natives were of two types: flat, two dimensional triangular points used by the Pequot, Narragansett and Mohegan, and rolled three-dimensional conical points used by the Wangunk

²⁰⁵ Underhill. *Newes From America*. P. 26.

and Pocumtuck of the middle Connecticut River Valley. Within the flat group are many variations of triangular shape, with or without flared “barbs” at the base. The conical points were generally six inches long and rolled to a fine, needle-like point with flaring bases or barbs (Figure 14, two points at top left).



Figure 14. Conical and Flat Cuprous Points Recovered from the Mistick Fort Site.

The Algonquian bow was very effective at a distance of forty yards, and had a maximum range of 120-150 yards if shot compass at a 45 degree angle.²⁰⁶ A Native Bowman could fire up to a dozen arrows a minute. The only surviving example of a southern New England bow was acquired by William Goodnough, an English farmer in Sudbury, Massachusetts who killed the bow's owner in 1660 for ransacking Goodnough's house for plunder. The bow is now in the collections of Harvard University. The "Sudbury Bow" is made of hickory and is 67 inches long (5.6 feet).²⁰⁷ No two bows were exactly alike as each one was made to match the height of the user.

There are many English references to the penetrating power and accuracy of Native bows. During the English attack on Block Island, one English Captain "received a shot upon the breast of his Corslet, as if it had beene pushed with a pike, and if hee had not had it on, hee had lost his life."²⁰⁸ In an attack on Gardiner and some of his men during the Siege of Saybrook, Gardiner was wounded by a Native arrow through his buff coat, and "...the body of one man shot through, the arrow going in at the right side, the head sticking fast, half through a rib on the right side." Gardiner "took out and cleansed it, and presumed to send to the Bay, because they had said that the arrows of the Indians were of no force."²⁰⁹

The Pequot and other Native people in southern New England began to acquire a few firearms from the Dutch a few years before the English arrived in the Connecticut Valley. The Pequot also captured a number of firearms from soldiers and settlers they killed during attacks:

...the Indians are many hundreds of both sides the riuver and shoote at our Pinaces as they goe vp and downe; for they furnish the Indians with peeces powder and shot, and they come many times and shoot our owne pieces at vs, they haue 3 from vs already, 5 of Capt: Stones one of Charles.²¹⁰

The two Swain girls captured by the Pequot at the Wethersfield Raid and brought to Pequot territory reported that the Pequot had at least sixteen firearms. The figure may be a conservative estimate, as the girls counted only those firearms they saw during their two week stay in Pequot country. Interestingly, Edward Johnson stated the reason the Pequot took the two girls captive

²⁰⁶ National Park Service. "History of Armour and Weapons Relevant to Jamestown," Historic Jamestown, www.nps.gov/jame/historyculture/history-of-armour-and-weapons-relevant-to-jamestown.htm (Accessed January 1, 2010).

²⁰⁷ Harvard Peabody Museum of Archeology and Ethnology. Object # 95-20-10/49340.

²⁰⁸ Underhill. *Newes From America*. P. 7.

²⁰⁹ Gardiner. *Relation*. Pp. 13-14.

²¹⁰ Winthrop. *Winthrop Papers*. III: P. 321.

was in the hope they knew how to make gunpowder.²¹¹ If true, it suggests the Pequot were familiar with firearms but found it difficult to procure gunpowder.

The Pequot may have been very selective about the firearms they acquired through purchase or capture, preferring lighter flintlock carbines and muskets over heavier matchlocks, or flintlocks, i.e. “long guns.” During the February 22nd Saybrook Neck fight two men dropped their weapons and ran back to the fort. Several days later Gardiner “found y^e guns y^t weare throune away.”²¹² The Pequot held the battlefield yet failed to recover the guns and it may well be the firearms were rejected because they were unwieldy matchlock or heavy flintlocks.

A 1640’s description by Dutch colonist Adriaen Van Der Donck of the weapons used by Native men in the lower Hudson River may have relevance to the weapons used during the Pequot War, and insights into the evolution of Native arms and warfare during this period:

Their weapons used to be, always and everywhere, bow and arrow, a war club on the arm and, hanging from the shoulder, a shield big enough to cover the trunk up to the shoulders. They paint and make up their faces in such a manner that they are barely recognizable, even to those who know them well. Then they tie a strap or snakeskin around the head, fix a wolf’s or a fox’s tail upright on top, and stride imperiously like a peacock. Nowadays they make much use in their warfare of flintlock guns, which they learn to handle well, have a great liking for, and spare no money to buy in quantity at high prices from the Christians. With it they carry a light ax in place of the war club, and so they march off.²¹³

English-Allied Order of Battle

Siege and Battle of Saybrook Fort English-Allied Forces September 1637 – March 1637

Saybrook Colony –
Lieutenant Lion Gardiner & Approximately 24 personnel and non-combatants
(September 1636 – March 1637)

Connecticut Colony –
Captain John Mason, Lieutenant Robert Seely & 7 Trainband
(March – April 1637, Approximately 2 weeks)

²¹¹ Johnson. *Wonder-working Providence*. P. 117.

²¹² Gardiner. *Relation*. P. 13.

²¹³ Donck. *Narratives of New Netherland*. Pp. 100-101.

Massachusetts Bay Colony –
Captain John Underhill & 19 Trainband
(March – May 1637, Approximately 2 months)

Lion Gardiner relates that when he arrived at Saybrook in early March, 1636 he expected three hundred “able men” to plant, build houses and construct fortifications, but on the eve of the Pequot War Gardiner’s garrison at Saybrook Fort consisted of “but 24 in all men women & boyes & girls.”²¹⁴ It is clear from Gardiner’s account that his garrison was chronically understrength during the siege and as casualties mounted during the war it became difficult to maintain the fort. Gardiner’s command may have been augmented at times by the hired hands, laborers, traders and settlers who came and went from the fort but it is unlikely that his forces ever exceeded twenty-five men. The typical size of a company of soldiers at this time was around twenty soldiers and it is possible that Gardiner’s garrison also consisted of nineteen to twenty men. The “women & boyes & girls” Gardiner mentions likely included his wife and child who were both present during the siege. Winthrop, Jr. also had several of his servants stationed at the fort for some time but recalled them in November.

Gardiner’s repeated requests for military reinforcements and supplies were finally answered when Massachusetts Bay sent John Underhill and nineteen Massachusetts Bay soldiers to Saybrook in mid-March, 1637. Connecticut later sent a small detachment of nine men under Captain John Mason in late April. Both commanders were with Gardiner at the fort during the Wethersfield raid of April 23, 1637 and witnessed when Gardiner directed cannon fire at the Pequot canoes as they returned from Wethersfield with the two captured Swain girls. Mason apparently did not stay long as Underhill reported “reliefe being come, Captaine John Mason with the rest of his company returned to the Plantation againe.”²¹⁵ Underhill’s Massachusetts Bay troops remained at Saybrook Fort and participated in the Mistick Fort Campaign before returning to Massachusetts Bay in early June, 1637.

English Military Experience

The Puritans who settled Massachusetts and Connecticut in the early 1630’s relied on the ancient English tradition of trainbands, made up of able-bodied men drawn from the more desirable members of society such as yeomen, merchants, and farmers to keep and bear arms

²¹⁴ Gardiner. *Relation*. P. 7.

²¹⁵ Underhill. *Newes From America*. P.17.

only in the defense of the country and to “encounter, expulse, repel, and resist by force of arms” all enemies of the colony.²¹⁶ New England colonial trainbands were organized by a Captain who was often, but not always, from the local community and had prior military experience. The Captain was assisted by a Lieutenant, an Ensign, three Sergeants and three Corporals. The size of the trainband varied, but it typically consisted of companies of 60 and 70 men who were gathered semi-regularly to drill. The amount of time each colony required trainbands to meet for drill varied ranging from once a week to once a month depending on perceived threats. By 1631 Massachusetts Bay required all men of military age to assemble on a monthly basis in the local “traine band” and were drilled in a European fashion. Two-thirds of men in the three main Massachusetts Bay trainbands were trained as musketeers (40) and one-third as pikemen (20).²¹⁷ In practice, during the Pequot War it appears that Massachusetts Bay and Connecticut colonies generally equipped their enlisted soldiers with firearms while some officers or non-commissioned officers (Lieutenants or Sergeants) may have carried pole arms (halberd, partisan, or half-pike), both as a sign of rank and for close quarters fighting.

The Thirty Years War (1618-1648) brought about a revolution in European military systems as they underwent a series of transformations in tactics and organization in the late sixteenth and early seventeenth centuries, ushered forth by the widespread adoption of firearms by European armies. The military in England was greatly shaped by the events in Europe and reforms implemented by Charles I after his coronation in 1625 included modernization of weapons and placing veterans in the trainbands to impart their military knowledge and experience into the militia’s training.²¹⁸ English monarchs such as Charles I was increasingly willing to become involved in continental wars which continued to influence the transformation of the English military. It is estimated that between 1620 and 1642 80,000 Englishmen, or roughly two percent of the entire male population served in the lowlands.²¹⁹

Many of the soldiers who served in English regiments in the Lowlands were Puritans and bound by shared religious and political convictions that was often counter to the policies and practices of Charles I and the traditions of the Established Church of England. Many exiled English ministers and regimental chaplains formed congregations in cities throughout the

²¹⁶ Shurtleff. *Records of Massachusetts Bay*. I: P. 18.

²¹⁷ Jack S. Radabaugh, “The Militia of Colonial Massachusetts” in *Military Affairs* (Volume 18, 1954). Pp. 1-3.

²¹⁸ Kyle Zelner. *A Rabble In Arms* (New York, NY: New York University Press, 2009). P. 22.

²¹⁹ K. L. Sprunger. “Other Pilgrims in Leiden,” *Church History*, Vol. 41, 1 (Cambridge, MA: Cambridge University Press, 1972). Pp. 46-60.

Netherlands of like-minded “charges in the Army and or among the merchants.”²²⁰ Well known Puritan ministers who immigrated to New England included Massachusetts Bay’s John Davenport, Connecticut’s Thomas Hooker, Rhode Island’s Roger Williams and Saybrook’s Hugh Peters, were all army chaplains who served in English regiments in the lowlands. Hugh Peters was the agent for the Saybrook proprietors and on their behalf emigrated from Holland in 1635 to help establish the Saybrook Colony. He was well known among the merchants and military in Holland, where he recruited many of the men to settle Saybrook and Windsor. He recruited John Mason and Lion Gardiner and most of Gardiner’s men at Saybrook.

Connecticut’s victory over the Pequot was achieved by a cadre of experienced officers, non-commissioned officers and soldiers who served in the Thirty years War in the Lowlands of Europe and settled in the Connecticut River Valley between 1634 and 1636. Principal among these men were John Mason, commander of Connecticut forces during the Pequot War, John Underhill second in command to John Mason during the Mistick Campaign, and Lion Gardiner, commander of Saybrook and “Master of works of fortification in the service of the Prince of Orang in the Low Countries.”²²¹ John Mason served under Sir Thomas Fairfax during the Thirty Years War where he was commissioned as a lieutenant in 1632.²²² Mason likely met Sir Thomas Fairfax when Fairfax was first sent to the Netherlands in 1628 to train with Sir Horace Vere.²²³ Under the Prince of Orange, Vere was responsible for the four English regiments that were part of the Kommelijn, troops “constantly entrusted with the most difficult services, and as [such] constantly covered themselves with distinction.”²²⁴ Fairfax served under the Prince of Orange, as did John Mason, John Underhill and Thomas Pell at the siege of Bois-Le-Duc (Hertogenbosch) in 1629.²²⁵ Lion Gardiner was persuaded by John Davenport and Hugh Peters to be chief architect of what would become Saybrook Fort.²²⁶ Gardiner likely recruited other men

²²⁰ J. Fiske, *The Beginnings of New England or the Puritan Theocracy In Its Relation to Civil and Religious Liberty* (New York, NY: Houghton Mifflin Company, 1899). P. 74; R. P. Stearns. “The New England Way in Holland,” *The New Quarterly*, Vol. 6, No. 4 (New England Quarterly, 1933). P. 174.

²²¹ Gardiner. *Relation*. P. 5.

²²² New England Historic and Genealogical Register, *Genealogies of Connecticut Families* (Baltimore, MD: Clearfield, 2006). P. 513.

²²³ C. R. Markham *A Life of the Great Lord Fairfax Commander-in-Chief of the Army of the Parliament of England* (London: MacMillian and Co., 1870)

²²⁴ George Edmundson, “Frederick Henry, Prince of Orange,” *The English Historical Review*, Vol. 5, No. 17 (Oxford University Press, 1890), 43.

²²⁵ Mason. *Brief History of the Pequot War*; D. Plant. “Sir Thomas Fairfax,” *British Civil Wars and Commonwealth*. Retrieved from, <http://www.british-civil-wars.co.uk/biog/fairfax.htm>

²²⁶ Gardiner. *Relation*. P. 5; Pell was likely recruited by Gardiner.

he knew and trusted to join him at Saybrook, among which was Thomas Pell who rose to the rank of Lieutenant during the Siege of Maestricht and subsequently learned enough medical science to qualify as a chirurgeon, or surgeon.

As many as twenty to thirty percent of the Connecticut men that served in the Pequot War are believed to be veterans of the Thirty Years War, although most of the men who settled in the Connecticut River Valley between 1634 and 1637 had little or no military experience, and/or were physically unable to participate in the war other than for garrison duty. The Connecticut General Court acknowledged the inexperience of some of the soldiers in the months before the war, as they encouraged trainband captains to take the time necessary to train the more “unskilled” members.²²⁷ When the Connecticut forces were recruited (or impressed) for the Mistick Campaign and assembled at Saybrook Fort, twenty “insufficient” Connecticut men were sent back upriver to help defend the Connecticut settlements and were replaced by more seasoned soldiers who served under Underhill or Gardiner stationed at the fort.²²⁸ Of the twenty or so garrison troops stationed at Saybrook Fort, at least six were known to be veterans of the Thirty Years War (Table 2).

Table 2: Saybrook Fort Garrison with Military Experience

Name	Lifespan	Previous Old World Experience	Fort Task
Lion Gardiner ²²⁹	b.1599-d.1663	Military Engineer, Holland	Fort Engineer
Robert Chapman ²³⁰	b.1616-1687	Surveyor, under Lion Gardiner, Holland	Sentinel
James Rogers ²³¹	d.1689	“Soldier, traveler and scholar”	Garrison
John Spencer ²³²	b.1595-d. 1648	Gunner	Gunner
John Wood ²³³	d.1639	Ensign	Garrison
Thomas Pell ²³⁴	b.1608-d.1668	Surgeon, Lieutenant, Holland	Surgeon

²²⁷ Trumbull. *Public Records of Connecticut*. P. 4.

²²⁸ Gardiner. *Relation*. P. 20.

²²⁹ Gardiner. *Relation*. P. 3.

²³⁰ Anne Sweet, *Robert Chapman, One of Saybrook’s First Settlers*. Presented to the Saybrook Colony History Bluffs, November 29, 1995 (Unpublished); Winthrop. *Winthrop Papers*. III: P. 176.

²³¹ Letter, April 20, 1629, Calendar of State Papers Domestic, Vol. 141. 521-534

²³² Letter, July 9, 1630, Calendar of State Papers, Domestic, Vol. 170. 298-307

²³³ Letter, May 26, 1627, Calendar of State Papers, Domestic, Vol. 64, pp. 184-193

²³⁴ Ruth Alley, *Pelliana, Pell of Pelham: Thomas Pell, first Lord of the Manor of Pelham, Westchester, Col, New York* (Montpelier, VT: Privately Printed, 1962).

English Tactics and Armaments:

Throughout the siege Gardiner continually adjusted his tactics to counter Pequot advantages in terms of manpower, firepower, and tactics. Unlike many of his contemporaries Lieutenant Gardiner respected the fighting abilities of his Native opponents and constantly ordered his men to remain on high alert. Once hostilities between the English and Pequot commenced Lieutenant Gardiner's basic strategy was to arm his men with muskets or carbines and long swords at all times. Whether at work, trading, or traveling by land or water Lieutenant Gardiner ordered that at least a third to a half of the detail would always be armed and at the ready in anticipation of an ambush or a sneak attack. In combat situation the Saybrook garrison was ordered to fight "abreast" or in a single skirmish line. The basic strategy was to have about half of the men firing while the other half kept their weapons loaded or their swords at the ready to defend against any sudden rush by Native attackers who were familiar with the range of musket fire and the time it took a man to reload.

Gardiner's narrative documents his ongoing efforts, and frustrations, to understand and counter Pequot tactics during the siege. His orders to soldiers and traders regarding how best to counter Pequot attacks were often ignored, resulting in mounting casualties during the siege. The English were just as vulnerable to attack on the river as they were on land. In one incident a bark from Wethersfield was late arriving at Saybrook and Gardiner feared the worst, although the men eventually arrived safely. In a postscript to Gardiner's letter to Winthrop's Jr. describing the incident, John Higginson echoed a sentiment often expressed by Gardiner "I think it would be good if no vessels may be suffred to come but the men knowne and fitted with armes suitable charged not to goe ashore for they venture not onely their owne lives but wrong others also."²³⁵

Although Gardiner's instructions sometimes appear lengthy and a bit convoluted, they most definitely reflect his professionalism, military training, and concerns for the men under his command. His orders also reflect ongoing efforts to anticipate and counter Pequot tactics and his knowledge of the local terrain and how best to use it. One of Gardiner's strategies was to ensure that all settlers and traders were armed and that they should anticipated a Pequot attack at any time, ready to deploy themselves accordingly. Even before the outbreak of hostilities Gardiner anticipated that tensions may escalate into open conflict. Gardiner sent a shallop to the Thames River to trade with the Pequot and gave the crew very specific instructions:

²³⁵ Winthrop. *Winthrop Papers*. P. III: 321.

they should ride in ye middle of ye river & not go ashore until they had done all their trade and yt Mr Steuen Winthrop should Remain in ye hold of ye boate having their guns by them & swords by thr tides, the other 4 to be 2 in the fore Cuddie & 2 in aft being armed in like manner yt so they out of the loope holes might cleare the boat if they wear by the pequits assaulted.²³⁶

On another occasion, when four Saybrook men intended to row upriver to Six Mile Island to gather hay, Gardiner told them:

they were to few men, for his 4 men could but carrie the hay aboard and one must stay in the boat to defend them and they must have 2 more at the foot of the rocke, with their guns to keep the Indeans from running down upon them. and in the first place before they carrie any of ye cocks of hay to secure ye Meaddow with the 3 doggs to march a1 abreast from ye lower end up to ye rock, and if they found the meadow cleare, then to load their hay.²³⁷

The men ignored the instructions and did not take many defensive precautions and were attacked by Pequot lying in ambush. In the case of Six Mile Island attack, three men were killed outright and the fourth was captured and later burned alive.

Another tactic initiated by Gardiner was the use of dogs on several occasions which appear to have played an important role in protecting the English from and during Pequot attacks. When Gardiner sent twelve of his men to accompany the Endicott Expedition to the Thames River to gather Pequot corn he instructed them:

to divide the men into 3 parts, viz 2 parts to stand without the corne and to defend the other 1/3 and part that carrie the corn to ye water side, till they have loaded wt they can and ye men there in armes when the rest are aboard, &all in order goe aboard ye rest yt are aboard Shall with their armes clear the shore if ye pequits doe assault them in ye reare.²³⁸

In spite of Gardiner's best efforts his command continued to suffer combat losses from the Pequot on the battlefield. During the February 22, 1637 attack at Saybrook Neck Gardiner took every precaution from lessons learned after six months of Pequot attacks, but nevertheless lost half of his men to a well-coordinated Pequot attack:

we had felled 20 timber trees which we were to roll to ye water side to bring home every man carrying a length of Match with brimstone Matches with him to kindle the fire withall, but when we came to ye hall of ye Neck ye reeds burning, I having before this set 2 sentinels on ye small of ye Neck, I called to ye men yt

²³⁶ Gardiner. *Relation*. P. 8.

²³⁷ Gardiner. *Relation*. Pp. 11-12.

²³⁸ Gardiner. *Relation*. P. 10.

were burning the reeds to cum away, but they would not untill they had burnt up the rest of thr matches, presently there starts up 4 Indeans out of ye fierie reeds, but ran away, I calling to ye rest of our men to cum away out of ye Marsh: Then Robert Chapman and Tho Hurlbut being Sentenells called to me, Saying there came a number of Indeans out of ye other side of ye Marsh, then I went to stop them that they should not get ye woodland, but Tho Hurlbut cried out to me yt sum of the men did not follow me, for Tho Rumble & Arthur branch threw downe thr 2 guns and ran away, then the Indeans shot 2 of them yt weare in the reeds, and Sought to get between vs & home but durst not cum before vs, but kept vs in a halfe moone, we retreating, & exchanging many a hot, So yt Tho Hurlbut was shot almost through the thigh John Spencer in the back into his kidneys myself into the thigh, 2 more were shot dead; but in our retreat I kept Hurlbut and spencer still before us, we defending our Glues with our naked swords or else they had taken us all alive...²³⁹

Ultimately the only tactic that proved effective was increasing the number of soldiers at the fort. After John Underhill and nineteen well-armed Massachusetts Bay soldiers arrived at the fort in mid-March the Pequot attacks stopped. With these additional reinforcements Gardiner and Underhill were able to take a more proactive approach, and began to patrol Saybrook Point regularly thereby eliminating the threat of a Pequot surprise attack.

we sometimes fell out with a matter of twentie souldiers to see whether we could discover the enemy or no; they seeing us (lying in ambush) gave us leave to passe by them, considering we were too hot for them to meddle with us; our men being compleatly armed, with Corslets, Muskets, bandileeres, rests, and swords (as they themselves related afterward) did much daunt them.²⁴⁰

Saybrook Fort Ordnance: The English colonists who settled Plimoth Colony, Massachusetts Bay, Saybrook and Connecticut colonies provided themselves with modern European military equipment and weaponry. The organizers of the various English colonial ventures perceived threats from the Native inhabitants of the region, the Dutch based in New Netherland (who laid claim to lands as far east as Narragansett Bay), and even the English Crown as the Puritans were strongly politically and religiously opposed to the established order in England.

The earliest reference to the fort's ordinance was in July of 1636 that mentions "4 small pieces of ordinance which were bought by Mr. Lawrence and Mr. Fenwicke in Holland and 4 carriages to them" and were likely intended for the fort, but it is unclear what type of cannons

²³⁹ Gardiner. *Relation*. Pp. 13-14.

²⁴⁰ Underhill. *Newes from America*. P. 15.

they were.²⁴¹ The most detailed accounts of Saybrook Fort ordnance is derived from Lieutenant Gardiner's *Relation of the Pequot Wars* in which he repeatedly mentions the presence of a pair of cannon known as "sakers" (Figure 15). Although the term saker can be used to an array of medium sized cannon it most often refers to a specific field piece that typically has a bore of 3.5" capable of firing 5.25 pound solid projectile approximately 3,750 feet or nearly three quarters of a mile.²⁴² These cannon weighed at least 1,500 pounds (680.38 kilogram) and were typically mounted on a wheeled gun carriage for mobility, or a solid naval carriage at times when mounted on walls. Being a smooth-bore weapon it is also capable of firing other projectiles in addition to solid shot, including bar-shot and hail-shot (canister or case shot) loads, all of which are detailed by Lieutenant Gardiner. Throughout his *Relation*, Gardiner never mentions the presence of more than two "sakers" or "great guns" at any given time which suggests that Saybrook Fort was never armed with additional heavy ordnance during the war.

There is also specific reference in the Connecticut Colonial Records to Captain Mason being order to procure a "light gun" from Saybrook Fort for the Mistick Campaign which may have described an iron breech loading "murderer" or small gun on a carriage.²⁴³ Murderers were smaller iron guns that were often mounted as swivel guns on the walls of forts or the rails of ships which could fire a variety of anti-personnel projectiles (solid shot, hail shot, bar shot, stones, etc.) (Figure 15). They could be rapidly reloaded from the rear, or breech, of the gun if extra chambers (inserting a mug-shaped device pre-filled with gunpowder and projectiles) were loaded and at the ready. Both the bore size and weight of this type of ordnance varied but they typically weighted at least 100 pounds with a caliber of one inch or more. If Mason was considering taking a "light gun" on the Mistick Campaign it was likely light enough to be carried by only a couple of soldiers or on a small wheeled carriage.

There is later reference to additional ordinance present at the fort in 1644 when the instillation was transferred from George Fenwick to Connecticut Colony. It is possible that these heavy armaments were present in 1636-1637 but if so, Gardiner never mentions any cannon larger than a "sacker." As these guns were present in 1644 this has potential implications for the design of the fort and the number of bastions and redoubts as the fort may have been enlarged or modified after the war to accept more ordnance:

²⁴¹ Winthrop. *Winthrop Papers*. III. Pp. 273-274.

²⁴² Chris Henry, *English Civil War Artillery 1642-1651* (New York, NY: Osprey Publishing, 2005). Pp. 9, 36.

²⁴³ Trumbull. *Public Records Colony of CT*. I: P. 10.

Two demiculvering cast peeces, with all ye shott thereunto appertaining... Two long Saker cast peeces, with all ye shott thereunto belonging ; one Murderer, with two chambers, and two hammered peeces; two barrells of Gunpowder...and such irons as are there for a draw bridge; one sow of lead, and irons for ye carriages of ordinance...²⁴⁴

In addition to the two “sakers” repeatedly mentioned by Gardiner and the “murderer,” which could have been the light gun referred to in the Connecticut Colonial Records, the 1644 inventory also lists two demi-culverin cannons and two “hammered” guns (Figure 115). A demi-culverin is slightly larger than a saker and has a bore of 4.5 inches and could weigh between 2,500 and 3,500 pounds (1,133 and 1,587 kilograms). It is capable of firing an 8.0 lb. solid projectile up to 1,800 feet or over a third of a mile.²⁴⁵ Although the demi-culverin had a shorter range its trajectory was flatter and therefore was more accurate than a saker. The increased bore size also made the weapon even more devastating at close range. It is unclear what the “hammered peeces” referred to but could be other hand wrought smoothbore cannon or swivel guns.



Figure 15. Ordnance Possibly Employed at Saybrook Fort (Left to Right) Sacker, Demi-Culvern, Breech loading Wrought Iron “Murderer” Cannon.

Gardiner described several occasions when the fort’s cannons were fired during the siege and consistently refers specifically to the two sakers only:

...I had shewed how to charge and levell a gun & y^t he should put 2 Cartridges of musket bullets into 2 Sakers guns y^t lay about and we leveled th^m against the place...²⁴⁶

²⁴⁴ Trumbull. *Public Records Colony of CT.* I: P. 267.

²⁴⁵ Henry. *English Civil War Artillery.* P. 36.

²⁴⁶ Gardiner. *Relations.* P. 14.

...I waved my hat about my head, and y^e 2 great guns went off...²⁴⁷

...I had shewed to levell great guns to put in 2 round Shot into y^e 2 sakers and we leveled them at a certaine place, and I stood to bid him give fire w I thought the canoe would meet the bullet, and one of them took off y^e nose of a great Canoe wherein the 2 maids weare...²⁴⁸

I hearing it went vp to ye redoubt and put two cross bar shot into the 2 guns yt lay above and leveled them at ye trees in ye middle of ye limbs... then went off ye 2 great guns and toare the limbs of ye trees about their ears so yt divers of them [Pequot] were hurt as may yet apeare.²⁴⁹

The 1644 “Articles of Agreement” between Fenwick and the Colony of Connecticut list the ordnance sold to the colony along with the fort:

Two demiculvering cast peeces, with all ye shott thereunto appertaining... Two long Saker cast peeces, with all ye shott thereunto belonging ; one Murderer, with two chambers, and two hammered peeces; two barrells of Gunpowder...and such irons as are there for a draw bridge; one sow of lead, and irons for ye carriages of ordinance...²⁵⁰

Firearms: The English fort at Saybrook Point was purposely built as a military installation which was likely equipped with better ordnance and small arms than some of the Connecticut River settlements. Gardiner did receive some military equipment in the form of a few pieces of ordnance from Boston in 1636, and appears to have received a shipment of “two case of pistols, 6 carabines, and 10 half pickes” specifically chosen by George Fenwick, one of the Saybrook proprietors, in May 1636.²⁵¹ It is unclear whether the small arms and armor available at Saybrook Fort was privately purchased by Saybrook Company, supplied by the garrison soldiers themselves, or issued from public arms stores in Massachusetts Bay. Some English settlers brought with them some of the most modern weapons and armor that they could afford while others purchased more antiquated arms. To the English settler and Puritan lawmaker the definition of “completely armed” by the time of the Pequot War meant being armed with both firearm and sword. The individual settler does not seem to have been expected to provide armor but none-the-less it appears that many individuals did bring some pieces of armor with

²⁴⁷ Gardiner. *Relations*. P. 16.

²⁴⁸ Gardiner. *Relations*. P. 17.

²⁴⁹ Gardiner. *Relations*. P. 32.

²⁵⁰ Trumbull. *Public Records Colony of CT*. P. 267.

²⁵¹ Winthrop. *Winthrop Papers*. III: Pp. 260-262, 273-275.

them. The English forces from Connecticut, Massachusetts Bay and Saybrook Fort who participated in the Siege and Battle of Saybrook Fort were generally well armed and with a wide variety of weaponry and equipment, of civilian make as well as military.

Although a complete inventory of the firearms at the fort during the siege does not exist, a number of different firearm types are referred to in primary sources associated with the fort and siege including matchlocks, fowlers, carbines, muskets, and pistols. The “forty musketts, with Bandaleers and rests” identified in the fort’s inventory in 1644 when it was sold to Connecticut, are presumed to have been in the fort during the siege brought there by agents of the Saybrook proprietors in anticipation of the additional men who never arrived. Some of the muskets, whether matchlocks or snaphaunces (flintlocks), were heavy enough to require a musket rest because of the added weight from their longer barrels. These weapons may have been suitable for the more stationary defense of the fort but not for mobile field operations. Lighter and shorter barreled weapons were likely preferred in operations away from the fort as they were easier to reload and easier to carry and maneuver. It appears that both Gardiner and Underhill preferred carbines and each carried pistols, likely an adaptation to the more wooded context and a mobile Native enemy. George Fenwick, veteran of the Thirty Years War and proprietor and agent of the Saybrook Company understood the realities of New World warfare. When he was preparing for his voyage to Saybrook from London in the spring of 1636 he brought “two case [brace or pair] of pistols 6 carabines and 10 halfe pickes, which I did conceive would be of most use for travelling in the countrie.”²⁵²

Connecticut and Massachusetts Bay soldiers were supplied with two types of ammunition: round ball and “small shot.” Since all firearms in the colonies were smoothbore weapons they proved versatile enough to accept these different ammunition loads. Round ball ammunition was a single round ball bullet cast slightly smaller than the diameter of their musket bore while “small shot” consisted of small lead bullets or pellets analogous to modern day “buck shot.” Connecticut forces were ordered to carry twenty “bullets” and four pounds of shot, which would allow their musketeers effectively fire at both distance targets or at point-blank range. A trained soldier could properly load and fire his arm once or twice per minute, but fouling from black powder residue would significantly reduce loading time in combat conditions. Measures could be taken to somewhat increase the rate of musket fire by carrying round ball ammunition in a

²⁵² Winthrop. *Winthrop Papers*. II: Pp. 261-162.

soldiers mouth, by utilizing undersized ammunition to reduce friction while loading, or even avoiding use of the ramrod by dropping an undersized ball down the barrel and slamming the butt of the musket on the ground loosely seating the round. Even so, it would be difficult to fire more than two or three rounds a minute under combat conditions.

European regulations (such as those issued by the States General in 1599) claimed that muskets and calivers were designed to fire at ranges of up to 328 and 219 yards, respectively, but this likely referred to the maximum effective range of the weapons if fired at massed formation of men on an open European battlefield.²⁵³ English forces during the Pequot War did not fire at such great distances nor did they often have the chance to shoot at massed Native forces. It is unlikely that English forces accurately fired round ball ammunition out of smoothbore muskets at distances greater than 200 yards and most commonly fired at targets at about 100-130 yards. In good conditions all English smoothbore weapons, with the exception of pistols, could accurately hit a man sized target at a distance of 50-75 yards with round ball ammunition. During the Battle of Mistick Fort, Mason's company had little trouble firing point-blank (between zero and forty yards) at Pequot who attempted to escape the flaming fort. Typically English forces had no choice but to engage mobile Pequot warriors outside of smoothbore range (in excess of 100 yards) and found it difficult to find their mark.

Small-shot ammunition loads were devastating at point-blank range (between zero and forty yards) but would have become increasingly ineffective at ranges beyond fifty yards. The actual amount of projectiles contained in small-shot charge varied between individuals, but loads could range from a few carbine or pistol caliber balls (between two and three .48-.57 inch diameter balls), to ten or more smaller pellets ("small shot" or "swan-shot") (.20-.40 inch diameter balls), or any combination of shot smaller than a full sized musket ball. Captain Mason described the use of small-shot by the men under their command when he clearly stated that his men "repayed" Pequot bowmen "with our small Shot."²⁵⁴ Months later during the Quinnipiac Campaign, Mason recalled a point during the Battle of Munnacommock Swamp where "the Indians were forcing out upon us" and at that close range his men "sent them back by our small Shot."²⁵⁵

²⁵³ J. B. Kist."A Commentary" in Jacob De Gheyn, *The Exercise of Armes* (New York: McGraw-Hill Books, 1971). Pp. 29-30.

²⁵⁴ Mason. *A Brief History*. P. 9.

²⁵⁵ Mason. *A Brief History*. P. 17.

Armor: During the mid-seventeenth century European armor used in New England included an iron corslet (iron breast and backplate sometimes equipped with tassets to protect the upper legs in pikeman's armor), a leather buff-coat (a thick leather jacket which provided protection against sword slashes and Native arrow fire), or "Jacks of plate" (small iron squares sewn between canvas or leather) or helmets.²⁵⁶ The corslet was the heaviest armor and offered the most effective protection against Native arrow fire, but offered no protection against large caliber firearms and limited the wearer's maneuverability and speed. The corslet with a tasset was the armor issued to European pikemen and a complete set consisted of a breastplate, backplate, two tassets to protect the legs above the knee, a gorget to protect the neck, and a helmet.²⁵⁷ This armor was commonly used by nearly all seventeenth century European armies, was easily acquired, and accompanied many English settlers to New England. The leather buff-coat was another common form of armor worn by English forces and was optimally worn under iron armor but alone a well-made buff coat was capable of absorbing a sword cut or slowing an arrow fired by a Native Bowman. The drawback of the buff coat in Europe was its high cost due to the thickness of leather and the amount of workmanship involved in its construction.²⁵⁸ Buff coats could have been produced in New England as well. There are numerous period accounts of English forces armed with buff coats during the Pequot War which saved the lives of many of the men who wore them, including that of Lieutenant Lion Gardiner who recalled being "Shott with many arrowes and So I was but my buff Coate p'r served me."²⁵⁹

Iron helmets were commonly carried by English settlers to New England and numerous forms manufactured by various European nations were widely available. Of the examples of seventeenth century iron helmets to survive in New England, the most common forms of helmets are generally referred to as the pikeman's helmet, the trooper's helmet and the cabasset or morion. The pikeman's helmet was a standard issue piece of equipment which had a wide brim turned down on the sides, and when combined with the corslet constituted a completed set of pikeman's armor. The trooper's helmet, or horseman's helmet, consisted of an iron skull which

²⁵⁶ Harold L. Peterson. *Arms and Armor in Colonial America 1526 – 1783* (Mineola: Dover Publications Inc., 2000). Pp. 133 – 149; Beverly A. Straube, "Unfit for any modern service?" Arms and armour from James Fort" in *Post-Medieval Archaeology* Vol. 40, Issue 1 (2006). Pp. 36 – 47.

²⁵⁷ David Blackmore. *Arms & Armour of the English Civil Wars* (London: Royal Armouries, 1990). P. 63; Peterson, *Arms and Armor in Colonial America*. Pp. 143.

²⁵⁸ Blackmore. *Arms & Armour of the English Civil Wars*. P. 63; Peterson. *Arms and Armor in Colonial America*. Pp. 133-135.

²⁵⁹ Gardiner. *Relation*. P. 15.

covered most of the soldier's head, with a neck guard running off the back of the skull and a pivoted visor often equipped with a barred face guard. Finally, the cabasset or morion in its most common form was shaped as a deep bowl with an elongated comb along the crest of the helmet with a broad brim turned down to the front and back to protect from sword blows. The cabasset or morion became a popular infantry helmet and saw service in the English colonies.²⁶⁰

Edged Weaponry: It was commonplace for seventeenth century European soldiers to carry both swords and knives. All of the seventeenth century primary accounts of English forces during the Siege and Battle of Saybrook Fort described a heavy reliance of swords. A wide variety of European swords were brought to New England and they generally fall into three categories; rapiers, single-edged cutting swords, and double-edged broadswords. The main difference in the weapons is in the blade design. Daggers, knives, and early plug bayonets were likely carried by well-armed English settlers in New England. Such daggers would have been constructed with a short handle, a simple curved quillion guard, and a short triangular or quadrangular blade.²⁶¹ The dagger or knife remained a popular weapon, but by the time of the Pequot hatchets may have become a practical substitute for some edged sidearms.²⁶² It is clear that Lieutenant Gardiner considered the sword was a critical piece of equipment and ordered his men to carry a sword as a sidearm. On multiple occasions Lieutenant Gardiner credited the sword as the main reason his men were able to successfully defend themselves against Pequot attack.

Pole Arm Weaponry: English forces utilized pole arm weaponry during most Pequot War campaigns but there are little or no references to Lieutenant Lion Gardiner's men being equipped with such arms. The three main pole arms used by Connecticut and Massachusetts Bay forces were the pike, the halberd, and the partisan. The pike was the longest of the pole arm and the typical European pike averaged between 15-18 feet in length, was made of a one-inch diameter ashwood pole which was fitted with sharp, iron pike head and an iron tip at the base. The pike

²⁶⁰ Blackmore. *Arms & Armour of the English Civil Wars*. Pp. 14-16; Peterson. *Arms and Armor in Colonial America*. Pp. 112-115,134-140.

²⁶¹ Peterson. *Arms and Armor in Colonial America*. Pp. 89-90.

²⁶² Peterson. *Arms and Armor in Colonial America*. Pp. 87-89.

head was fitted to the shaft by two long iron straps riveted to the wooded pole.²⁶³ English colonists quickly adopted the practice of cutting full pikes into half-pikes following the Mistick Campaign. As mentioned above, Saybrook proprietor George Fenwick sent “10 halfe pickes” to the fort which he believed “would be of most use for travelling in the countrie.”²⁶⁴

Both the halberd and partisan were not only effective pole weapons but were also used to signify non-commissioned ranks such as sergeants. The halberd was on average eight to eleven feet in length. It had an iron or brass cap on the base and was headed with a piece that resembled a cross between an axe head and a long pike, which was also attached with long, riveted iron straps. One primary account of the attack on Mistick Fort clearly states that one English militiaman used a halberd in combat.²⁶⁵ The partisan was of similar length with a flatter, spear shaped head, with two upturned flukes at the base of the blade which was designed to catch and cut the leather straps of a horseman’s saddle. By the time of the English Civil War, partisans were carried by lieutenants. This practice is also reflected in the records of Massachusetts Bay which indicated the existence of “2 partizans, for capten & lieftenant.”²⁶⁶ It is unknown if any partisans were carried by English forces during the Siege and Battle of Saybrook Fort.

Saybrook Fort Design Analysis

As European military technology progressed through the Middle Ages the nature of fortifications evolved as well. The advent of increasingly effective, larger, and more powerful cannon brought about the demise of the walled castle as even the strongest masonry castle could eventually be destroyed through concentrated bombardment. It was improved artillery that brought about the evolution of increasingly sophisticated fortifications. By the seventeenth century, fortifications were constructed much lower to the ground and often relied on thick walls of timber and earth in order to stop heavy ordnance and effectively making the walls “shot proof.”

Many Seventeenth Century fortifications, such as was intended in the original design of the Saybrook Fort, were often surrounded by a deep ditch or moat at the base of the wall or palisade which provided an obstacle for attacking infantry to ascend and effectively increased the

²⁶³ Kist. “A Commentary.” Pp. 28, 34; Blackmore, *Arms & Armour of the English Civil Wars*. Pp. 75-76.

²⁶⁴ Winthrop. *Winthrop Papers*. III. Pp. 261-162.

²⁶⁵ Johnson. *Wonder-working Providence*. P. 115.

²⁶⁶ Blackmore. *Arms & Armour of the English Civil Wars*. P. 78; Shurtleff, Ed., *Records of Massachusetts Bay*. I: P. 26.

height of the fort walls. The earth from the resulting ditch was thrown against the fort wall or palisade and typically used to create a sloping embankment on the other side of the ditch known as a glacis. The glacis helped to shield the fort wall against enemy cannon fire as enemy gunners were provided with even less of a target. If their shot was fired too low it might hit the glacis, and if fired at too high an elevation the shot would pass harmlessly over the main fortification. The integrated elements of a low wall or palisade, ditch, and glacis formed the bases of most European fortifications by the mid-seventeenth century (Figure 16).²⁶⁷

Many variations of these main elements were utilized on mainland Europe and were inevitably incorporated in varying degrees into colonial frontier fortifications. Other architectural elements were introduced as well including heavy timber platforms to mount artillery and angled bastions to direct small arms and artillery fire around all angles of the fort. Other features included heavy gates and smaller “sally ports” to receive troops or to launch attacks. Some fortifications included detached redoubts to protect key points and to counter the enemy’s ability to crack the forts defenses.

²⁶⁷ Sebastien LePrestre de Vauban (George A. Rothrock, Ed.). *A Manual Of Siegecraft And Fortification* (Ann Arbor, MI: University of Michigan Press, 1968). P. 4; Kathleen Deagan. “Strategies of Adjustment: Spanish Defense of the Circum-Caribbean Colonies, 1493-1600” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* (Leiden, Netherlands: Brill, 2010). Pp. 19-20.

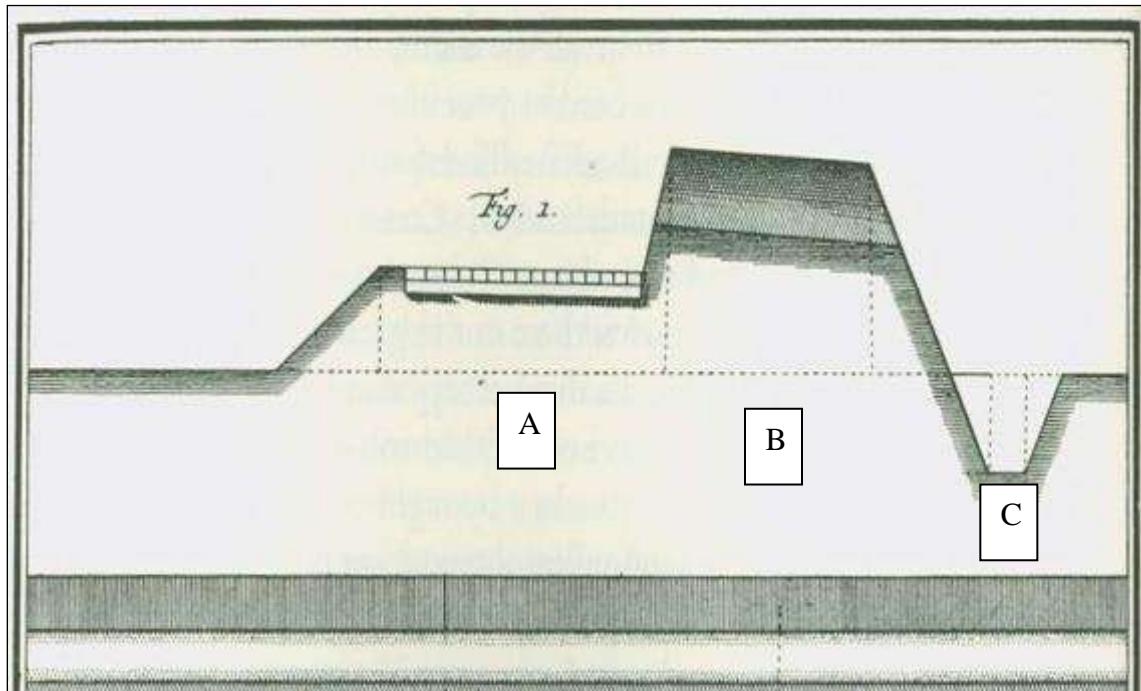


Figure 16: Cross section of a standard Seventeenth Century European fort. A) The rampart or gun platform; B) The parapet or wall; C) The Ditch and glacis.²⁶⁸

The forms of European colonial frontier forts, whether Spanish, Dutch, French, or English, largely depended on terrain and topography, available supplies and manpower, and the capabilities of the enemy. Many colonial forts were constructed of wood as they were intended to serve as a defense against an indigenous population with limited military technology and not against an attack by another European power. Steven R. Pendry, in researching seventeenth century French New World fortifications has pointed to four “imminent concerns” of French (and all European) military engineers.²⁶⁹ These include:

- 1) defense against both European artillery and indigenous peoples armed with traditional weapons;
- 2) protection of populations and structures rarely found in Europe such as trading posts, missions, and frontier settlements;
- 3) construction in a *tabula rasa* devoid of European infrastructure such as roads, quarries, and mines;

²⁶⁸ De Vauban. *A Manual of Siegecraft and Fortification*. P. 41.

²⁶⁹ Steven R. Pendry. “A Survey of French Fortifications in the New World, 1530-1650” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* (Leiden, Netherlands: Brill, 2010). Pp. 41-63.

4) perennial lack of financial resources and labor.

Although the focus of his inquiry was on a different colonizing power and region than that of the English at Saybrook Fort, the issues Pendry identifies are certainly relevant regarding the experiences of the other European colonizers as well.

Similar concerns would have been considered by the Saybrook Company's military engineer and commander of the fort, Lieutenant Lion Gardiner, and Connecticut Governor John Winthrop, Jr. whose responsibility was to design and construct a fort and settlement at the mouth of the Connecticut River.²⁷⁰ The design and placement of Saybrook Fort was intended to not only command access to the Connecticut River and provide a defense against an Indian attack, but to serve as the center of colonial settlement, governance, and trade for the Saybrook Company and the Colony of Connecticut. There were also concerns about the Dutch who "had designs" to take possession of the mouth of the river in 1635. However, by the summer of 1636 the most imminent danger facing Gardiner was not of European origin but an impending war with the Pequot.

It is clear from available primary sources that the original concept and design of Saybrook Fort was never implemented due to a shortage of manpower, time, and resources. This reality forced Gardiner to significantly alter the original design of the fort. Unfortunately there is remarkably little primary information in the surviving historical record which definitively describes the Pequot War-era (1635-1647) design and location of Saybrook Fort. In order to create the best possible model for the Saybrook Fort complex that was eventually constructed there, are three critical points of inquiry. First, it is important to understand the personal background, education, and military experience of the fort's chief architects. Secondly, document all primary references to the location and design of the fort and related structures. Thirdly, consider other fortification styles which may have influenced the fort's design and construction.

The analysis that follows will outline what is known about the planners behind the Saybrook settlement and physical structures based on surviving seventeenth century accounts, followed by a discussion of the influences European military architecture had upon the principal designers of the fortifications at Saybrook, and conclude with a discussion of several potential models for the first Saybrook Fort (1635-1647).

²⁷⁰ Winthrop. *Winthrop Papers*. II: Pp. 198-199; Gardiner. *Relation*. P. 5.

The principal men behind the design and construction of the fortifications at Saybrook Point were John Winthrop, Jr., Governor of Connecticut, Lieutenant Edward Gibbons of Massachusetts Bay and a veteran of the Low Country campaigns, Lieutenant Lion Gardiner of Woerden in the United Provinces also a veteran of the Low Country campaigns of the Thirty Years War and Military Engineer and Master of Works for the Prince of Orange, and William Jope described as Gardiner's engineer and work master. Although Gardiner was the principal architect for the design of the fort the others also contributed to the design and construction of Saybrook Fort to varying degrees. Several important clues to the form and structures associated with the fort complex appear in the primary accounts of the Winthrop Papers, Winthrop's Journal, Gardiner's *relation of the Pequot Warrs*, and Fenwick manuscripts at the Connecticut Historical Society.

Organizers & Architects

John Winthrop, Jr. gained knowledge of fortifications from his travels in Ireland, Italy, and the eastern Mediterranean and from his service in the Low Country Campaigns during the Thirty Years War. He had also traveled through most of New England and parts of New Netherland by 1635. In July of 1635 Winthrop, Jr. received a commission from the proprietors of the Saybrook Company to "begin a plantation at Connecticut, and to be governor there." Winthrop's (and Gardiner's) expectation was that the Saybrook Company proprietors would send "men and ammunition, and £2000 in money, to begin a fortification at the mouth of the river."²⁷¹ Winthrop's agreement with the Saybrook proprietors stipulated "he shall indeavour to provide able men to the number of fiftie at the least for making of fortifications and building of houses at the River Connecticut and the harbor adjoining, first for their own present accommodation and then such houses as may receive men of qualitie which latter houses we would have to be builded within the fort." The agreement also instructed "That forte such as shall plant there now in the beginning he shall take care that they plant themselves either at the harbor or neare the mouth of the river, that these places be the better strengthened for their owne saftie, and to that end, that they also sitt downe in such bodies together, as they may be the most capable of an entrenchment."²⁷² These instructions suggest both a sequence of construction

²⁷¹ Hosmer, Ed. *Winthrop's Journal*. I: P. 161.

²⁷² Winthrop. *Winthrop Papers*. III: Pp. 198-199

(fortifications and houses for the workmen followed by houses for men of quality inside the fort) as well as possible locations for the initial settlement at the harbor on the north side of Saybrook Point. Men and materials to construct the fort and settlement began to be assembled in late August when Winthrop Jr. arrived in Boston.

Prospective Fort Designs

It seems clear that given the limitations in manpower and time Gardiner had to adjust to, the original design of Saybrook fort was never realized. Gardiner states that “according to promise yt there would have come from England to us 300 able men whereof 200 should attend fortification, 50 to till ye ground & 50 to build houses.”²⁷³ A workforce of 200 men would have been sufficient to construct a formidable fortification such as depicted in Figure 17. While only a very rough approximation of what the original design of the fort was intended to be, the fort depicted in Figure 17 contains all of the elements originally intended to be included in the fort by the Saybrook Company; a ditch or moat, drawbridge, palisade, redoubt or battery, and houses fit for gentlemen.

²⁷³ Gardiner, *Relations*, P. 5.



Figure 17. Artist's Conception of Saybrook Fort.

Upon his arrival at Saybrook Gardiner found he “had but 24 in all men women & boyes & girls.²⁷⁴ With a work force consisting of twenty men, a little over five percent of the manpower he had been promised, Gardiner had to make some dramatic revisions to the original plans for the fort and settlement. Within a month after his arrival at Saybrook on April 1, 1636, Gardiner planted three acres of corn at Cornfield Point (it had likely already been cleared by the Western Niantics for their fields) and a kitchen garden at Saybrook Point, excavated a palisade trench, and constructed at least a rudimentary palisade. We do not know if the Great Hall and trading warehouse were completed by then, but likely were soon after. It is assumed that additions and improvements to the fort were ongoing until the Pequot War began in early September of 1636.

²⁷⁴ Gardiner, *Relations*. P. 7.

While we can infer that a much revised and scaled down version of the original fort design was eventually constructed, there are relatively few clues to how it was built and what it looked like. Information on the original and eventual design and construction of Saybrook Fort can be gleaned in part from some of the supplies and equipment shipped to Saybrook in 1635/36 that were never used and sold to Connecticut in 1644, Gardiner's narrative, and what modifications and concepts Gardiner may have employed based on his experiences as engineer and master of works and fortification on the Prince of Orange's staff.

The ship's manifest of the *Batchelor* recorded by Edward Hopkins and confirmed by ship's master John Webber represents the first recorded shipments of materials and supplies purchased by Winthrop, Jr. which were likely bound for Saybrook Point. The list is rather extensive and includes the following items:²⁷⁵

- 14 piggs of lead
- 80 bars of Spanish Iron
- 52 bars of English iron
- 20 hoggsheddys of meale
- 14 Barrells of pease
- A Barrell of oatemeale
- A Barrell of butter
- 4 hoggsheddys and 5 Barrells of Iron ware
- A Bundle of Sythes Containing 3 dozen
- 2 Bundles of Shovells and Spades
- A packe of linen Cloth, 320 ells of Roane Canvas for sheets, and one piece of Narrower Cloth Containing 87 ells
- 8 flocke beds, 25 rugs, and 40 blankets
- 6 grindstones
- 3 Barrells of pitch and 2 barrells of tar
- 4 scrues and one barrel of iron things that come from Holland
- 2 small cables for shallopys weighing 3 C. I Q. 6 lb. and 2 C. 0.11 lb. of lesser Cordage
- Iron worke for 2 draw bridges as follows
- 62 staples
- 40 Staple hooks for a portcullis
- 4 Chaines
- 10 Boultys
- 4 Plates
- 8 Chaine Claspes
- 4 under hingses

The materials listed under "Iron worke for 2 draw bridges" are most significant for understanding the intended plan of Saybrook fort and what was actually built. The original plan

²⁷⁵ Winthrop. *Winthrop Papers*. III: Pp. 201-206.

for Saybrook Fort was clearly modeled after the more extensive forts and fortified settlements of the period in the Netherlands as it was to include a moat or ditch with drawbridges and a portcullis (Figure 18, 19). However, as the drawbridge hardware is listed in the inventory of the fort in 1644 when George Fenwicke sold Saybrook Fort to Connecticut, it appears a moat and drawbridge were not incorporated into the final design of the fort. The 1644 Saybrook Fort inventory lists the following:

Two demiculvering cast peeces, with all y^e shott thereunto appertaining, except fifty W^{ch} are reserved for his own use'.

Two long Saker cast peeces, with all y^e shott thereunto belonging; one Murderer, with two chambers, and two hammered peeces ; two barrells of Gunpowder :

Forty musketts, with Bandaleers and rests, as allso foure carbines [carbines], swords, and such irons as are there for a drawbridge; one sow of lead, and irons for y^e carriages of ordinance ; and all y^e housing within ye Palisado.²⁷⁶



Figure 18: Examples of a Seventeenth Century Portcullis.



²⁷⁶ J. Hammond Trumbull. *Public Records of the Colony of Connecticut, Vol. I* (Hartford, CT: Brown & Parsons, 1850). P. 267.

Figure 19. Drawbridge, Gripsholme Castle, Sweden.

On September 15, 1635 a shipment of woodworking and masonry tools, and steel were shipped from London on the ship *True Love*:

“JOSHUA FOOTE'S BILL FOR IRON IMPLEMENTS
Bought of Joshua Foote 15th September 1635
1 Coopers Axe
1 Coopers Ades
1 heading knife
2 howells
2 pair Compasses
1 round shave
1 spoke shave
1 Crowes Iron
1 vise
2 brick trowels
2 tilling
trowels
2 stone Axes 19 li.
1 brick Axe
15 li. Spanish steel
16 li. fie: steel
1 doz Nayling hamers
4 Nayling steacks 43 1/2 li. at 4 1/2 d. per li.
1 Cuntry bag and Cords.”

These materials were clearly intended for Saybrook as the shipment was endorsed by Mr. Hopkins and Francis Kirby, both purchasing agents for Winthrop, Jr. and the Saybrook proprietors.²⁷⁷ The brick and tilling trowels, and stone and brick axes are standard masonry tools an indicate the original (and eventual) design of the fort and/or the dwellings for the Saybrook proprietors was intended to incorporate brick and stone in their construction, and the hammers and nails indicate constructions of wood. The reference to steel rather than iron suggests raw materials to make weapons on site as Spanish steel was considered the finest in Europe, and was often used to make swords and other weapons. The steel, as well as the shipment of 80 bars of Spanish Iron and 52 bars of English iron, indicates the presence of a blacksmith who is known to have been Thomas Hurlbutt.

²⁷⁷ Winthrop. *Winthrop Papers*. III: Pp. 208-209.

The howels, compasses, shaves, crows iron, and a vise are bit puzzling as they are specialized cooper's tools used to make barrels to store and transport foodstuffs and supplies. Either the intent was to make barrels in Massachusetts Bay and ship produce to Saybrook, or it may be that Winthrop Jr. and the Saybrook proprietors intended to eventually produce a surplus of foodstuffs to sell in the New England or the Caribbean.

Before proposing potential models for the location and design of Saybrook Fort, influences from European and Colonial fortifications and fortified settlements in the Old and New Worlds that Gardiner, Winthrop Jr. and Gardiner's work master Jope would have been familiar with must be considered.

Tudor Forts and the Irish Bawn Forts

Historians of Colonial military architecture and fortifications have long compared early colonial fortifications in British North America, particularly in Virginia, to that of the "bawn," which English colonists in Northern Ireland had adopted as their primary fortification. The "bawn" was a defended courtyard with walls usually built of stone, but sometimes of brick, clay, timber, or sod to protect the house, family, and property of the plantation's principal landlord (Figure 20). Robert Blair St. George's analysis of colonial fortifications pointed to the "bawn" influence in many colonial fortifications and stated that such fortifications served as "a metaphysical microcosm of a walled, heavenly city; as a classical guarded perfect in its nostalgic reference to the lost ancient world of



Figure 20. [Left] Bawn Model, Ulster. [Right] Bawn Ruins, Ulster.

feudal obligation and static social rank.”²⁷⁸ Eric Klingelhofer questions whether early English settlements were actually inspired by the bawn model. He cites how many “linear villages” existed in Tudor and Stuart periods and these structures would have influenced the early colonial organizers of Virginia Colony and presumably elsewhere. Klingelhofer also states the bawn settlements of Ulster that many historians site as the inspiration for English colonial fortifications were settled by London companies and guilds in the 1610’s, and therefore finds it doubtful that they could have been so influential in the settlement of Jamestown in 1609 or elsewhere. Klingelhofer argues that if the bawn fort inspired early English fort design, they would appear on Bermuda as it was settled at the same time as Jamestown, but no such fortifications exist on the island.²⁷⁹

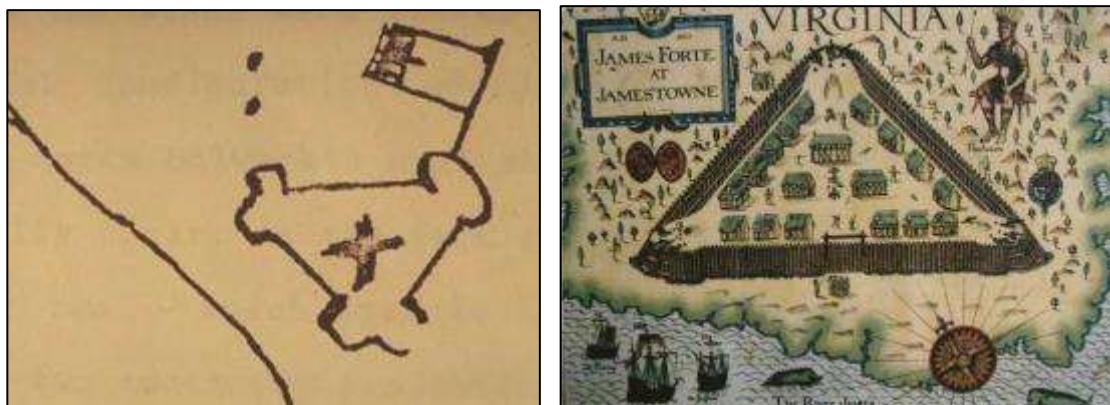


Figure 21 . [Left] Spanish (1608) and **[Right]** English (1607) Depictions of James Fort.

He also argues that early Tudor fortifications influenced early colonial engineers, as evidenced by the form of many early English fortifications in the Caribbean and Virginia. This style of fortification often included architectural elements such as square or round wall designs, and round bastions or towers, that ultimately evolved into angular bastions developed during the Italian Renaissance. There was often a masonry blockhouse or keep, and if possible the fortifications were surrounded by a ditch or moat. Klingelhofer points to English constructed

²⁷⁸ Robert St. George. “Bawns and Beliefs,” Winterthur Portfolio, Volume 25 (4) (Chicago: University of Chicago Press, 1900). P. 282.

²⁷⁹ Eric Klingelhofer. “Tudor Overseas Fortifications: A Review and Typology” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* (Leiden, Netherlands: Brill, 2010). Pp. 79-82.

forts at Monaghan, Ireland, Cabo Rojo on Puerto Rico, Fort Raleigh at Roanoke, North Carolina, and James Fort, Virginia as examples of Tudor inspired designs (Figure 21).

Within the *Winthrop Papers* are several sketches made by John Winthrop, Jr. around 1635 of plans of two English manor houses and three fortifications after the Old Netherland style (Figure 22). Winthrop's sketches are often compared to the Bawn Village model similar to those encountered in Ulster, and this is certainly a possibility as he went to Trinity College in Dublin and would have been familiar with bawn structures.²⁸⁰

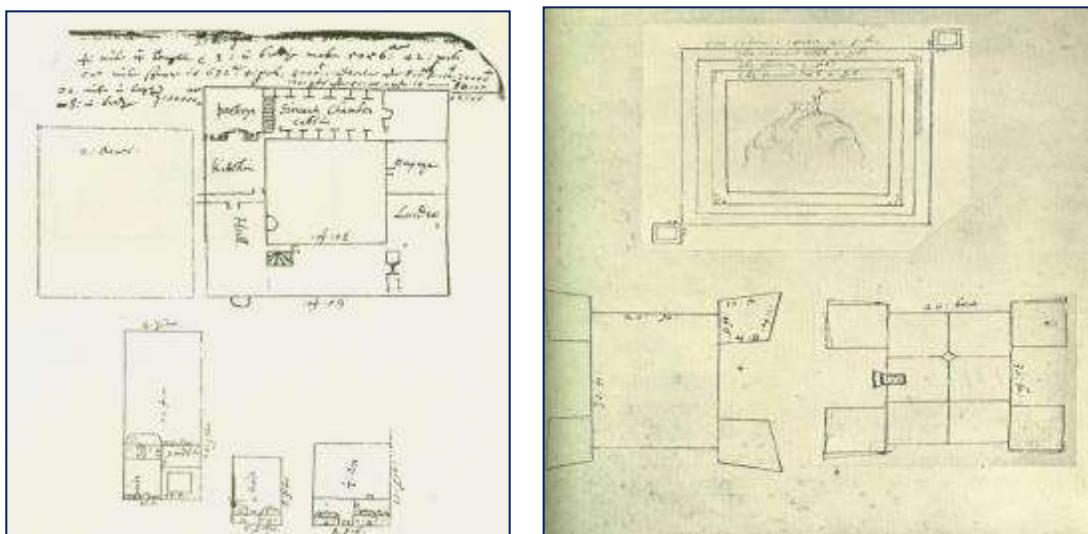


Figure 22. [Left] Winthrop, Jr.'s sketches of Manor House and Bawn style housing and [Right] what appears to be the Old Netherland Style of fortification with bastions and bridges.

Some historians have claimed that these sketches were intended as prospective plans for Saybrook Fort as the manor house and bawn structure could easily be fortified with a palisade and ditch. However, that model seems unlikely given the intended design of the fort discussed above, and given the number of men Winthrop Jr. and Gardiner anticipated for fort construction. It is more likely that Winthrop Jr. and Gardiner were originally considering one of the options depicted in Figure 16, a fortification after the old Netherland style with bastions, a ditch, and a drawbridge. Lion Gardiner was likely the principal architect of Saybrook Fort, and his knowledge was firmly rooted in his years of experiences constructing (and laying siege to) fortifications for the Dutch in the Low Countries during the Thirty Years War. Gardiner would

²⁸⁰ Anthony N. B. Garvin. *Architecture and Town Planning* (New Haven: Yale University Press, 1951). P. 39; St. George. "Bawns and Beliefs." Pp. 278-280.

also have been knowledgeable about Dutch Colonial fortifications as well, which may have served as potential models for the redesigned Saybrook Fort.

The Low Countries Experience:

By the Thirty years War, English experiences in constructing fortifications had moved beyond early Spanish and later Irish Bawn models. Dutch-trained English engineers such as Lion Gardiner were familiar with the latest Dutch and Spanish forts, sconces, battery and redoubt designs. This fortification style is noticeably different from that of the earlier Tudor period (Figure 23).



Figure 23. Fort Bourtange 1593, Netherlands.

Dutch fortifications became standardized by the early Seventeenth Century and this engineering knowledge was uniformly taught to military commanders and engineers in the Thirty Years War, particularly those on the Prince of Orange's staff. The Dutch military engineer Simon Stevin wrote a series of books between 1584 and 1620 regarding the construction of forts

and field fortifications. Stevin's designs were quickly adopted by the United Provinces and became known throughout Europe as the Dutch Style or Old Netherland System of fortifications. Stevin's designs incorporated city planning and fortifications into a separate, yet integrally connected design process. In 1604 Stevin was commissioned by Prince Maurits, Count of Nassau (later the Prince of Orange) as his key military strategist and engineering advisor and his influential designs were fully incorporated into Dutch military planning.²⁸¹ All military engineers, including Lion Gardiner, and his work master William Jope, would have received their education in the Stevin school of thought.²⁸² As Gardiner was a Military Engineer on the staff of the Prince of Orange he may well have known Stevin, or at least was trained by men who did.

This Dutch Style or Old Netherland System included a number of improvements over earlier designs including simplified bastion designs, moats with sluices to adjust water level, quadrilateral and pentagonal fort plans, and an added emphasis on utilizing natural features of the land and building fortifications uniquely suited to specific environments. The Old Netherland System was quickly adopted by other European nations and this design was exported to colonial enterprises throughout the world. Dutch Style colonial forts can be found on most continents including Africa, Asia, and the Americas (Figures 24 & 25). While many of these forts incorporate only two bastions, presumably as a cost and labor saving measure, they are nonetheless situated in a way to proving adequate angles of fire to cover the approaches to the fort and defend its flanks. Note that Winthrop, Jr.'s sketch in Figure 22 and Dutch Fort Pyl in Figure 24 incorporate the two-bastion offset design, which is considered as a potential model for Saybrook Fort. The Old Netherlands Style of fortifications continued to be used through the mid-nineteenth century and Stevin's influence can be found in most surviving colonial fortifications in North America. A wonderful example of this style of fortification can be seen today at Revolutionary War Fort Griswold at Groton Heights, in Groton, Connecticut (Figure 26).

²⁸¹ Jay B. Haviser, "The 'Old Netherlands Style' and Seventeenth-Century Dutch Fortifications of the Caribbean" in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* (Leiden, Netherlands: Brill, 2010). Pp. 167-172.

²⁸² Gardiner. *Relations*. P. 5.

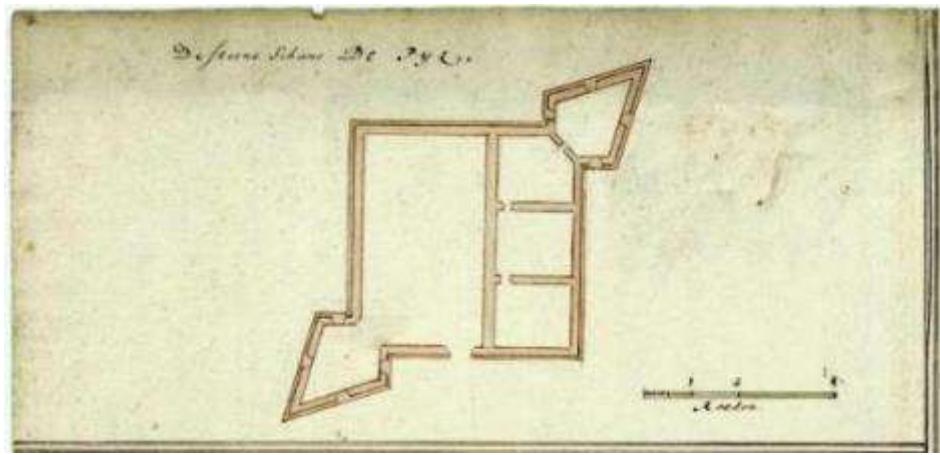


Figure 24. Fort Pyl, Seventeenth Century Dutch Fort - Sri Lanka.

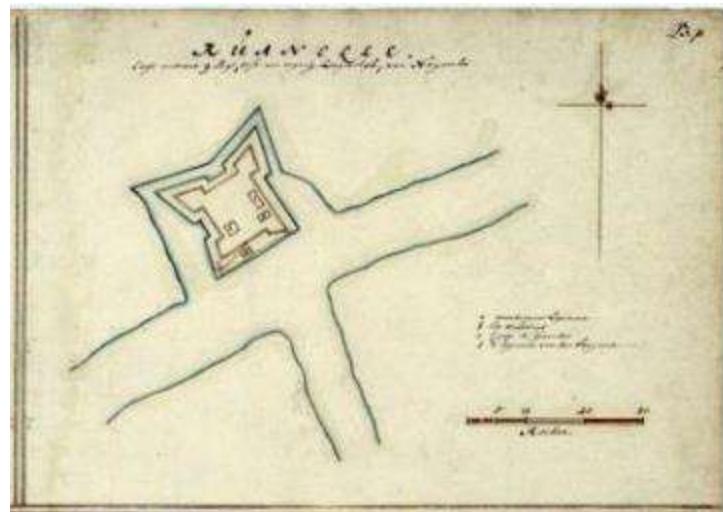


Figure 25. Fort Ruwanwella, Seventeenth Century Dutch Fort – Sri Lanka.



Figure 26. Fort Griswold, Groton, CT.

European Fortifications in the Northeast:

New Netherland: The organizers of the Dutch West India Company (WIC) established a relatively uniform colonial approach to settlements in the Caribbean and in northeastern North America (New Netherland – Narragansett Bay to the Delaware River) that included the construction of defensive fortifications. The first Dutch fort constructed in New Netherland was Fort Nassau, built by Hendrick Christiaensen around 1614 on a small island in the Hudson River near present-day Albany. The fort was constructed “in the form of a redoubt surrounded by a moat eighteen feet wide; it was mounted with two pieces of cannon and eleven pedereros [another term for a swivel gun or “murderer”], and the garrison consisted of ten or twelve men.”²⁸³ The fort was described as “58 feet wide” and the moat as “18 feet wide” with a “house” inside the fort as “36 feet long and 26 feet wide.”²⁸⁴ Fort Nassau lasted for about three years before it fell into disrepair and was abandoned.

In 1624, Fort Orange was constructed to replace Fort Nassau at the site of present-day Albany. Fort Orange was larger and better fortified than Fort Nassau, and was constructed in the standard Dutch Style of a square fortification made of earth and timber and included four bastions (Figure 27). In 1630, the fort contained “a handsome, large house with a flat roof and lattice work and eight small houses for the soldiers.” In 1643 Isaac Jogues noted that Fort Orange was constructed “of logs” and was armed with “four or five pieces of Breuil cannon, and as many pedereros.”²⁸⁵ In July of 1625, the director of New Netherland authorized the construction of another fort on or near Manhattan Island in order to control access to the Hudson River. Crijn Fredericx, a surveyor and engineer hired by the WIC, arrived later that year and began to lay out Fort Amsterdam in the classic Dutch Style which included a pentagon design with bastions, parapet with a banquette, 10 feet wide at the base, 6 feet high, and 4 feet wide at the crest.²⁸⁶ By 1628,

²⁸³ A Pederero was a small caliber swivel gun and were later referred to by the English as “murderers.” Paul R. Huey, “Dutch Colonial Forts in New Netherland” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* (Leiden, Netherlands: Brill, 2010). P. 140.

²⁸⁴ Huey. “Dutch Colonial Forts in New Netherland.” P. 140.

²⁸⁵ Huey. “Dutch Colonial Forts in New Netherland.” Pp. 143-144.

²⁸⁶ Huey. “Dutch Colonial Forts in New Netherland.” Pp. 152-153.



Figure 27. Fort Orange, ca. 1624. Present-day Albany, NY



Figure 28. Fort Amsterdam, 1626.

Fort Amsterdam was described as “having four bastions and faced outside entirely with stone” and was armed with eight pound cannons (Figure 27, 28).

In an attempt to solidify their territorial claims in New Netherland the Dutch West India Company (WIC) established a number of fortified settlements along the South (Delaware), North (Hudson), and Fresh (Connecticut) Rivers. In late December of 1630, the WIC sent thirty settlers to establish the colony of Swanendael (Valley of the Swans) and constructed Fort Oplandt at the site of present-day Lewes, Delaware. Fort Oplandt consisted of “a brickhouse” which was “well beset with palisades in place of breastworks.”²⁸⁷ A map of the fort in the National Archives of the Netherlands depicts a house surrounded by a square wall with two square bastions on opposing corners, one facing the river the other facing the forest (Figure 29). As noted above, the opposing two-bastion configuration of Fort Oplandt and other Dutch colonial forts serve as potential models for the redesigned Saybrook Fort.

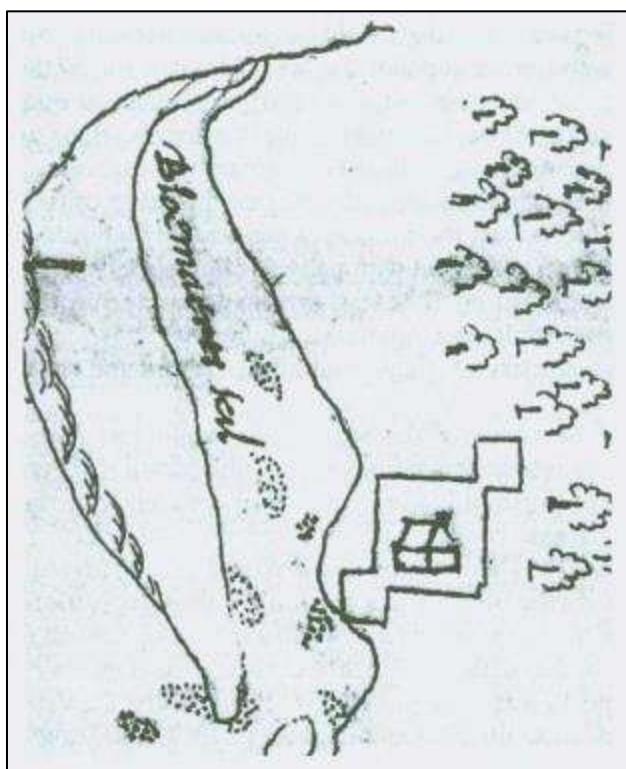


Figure 29. Fort Oplandt, Dutch, 1630.

The simpler square fort with double opposing bastion design was also used by Dutch East Indian Company engineers when they constructed fortifications in other colonial settings such as

²⁸⁷ Huey. “Dutch Colonial Forts in New Netherland.” P. 161.

Sri Lanka (Figure 24). The double bastion design may have been particularly well suited for smaller garrisons, thirty in the case of Fort Oplandt, and 25 or so in the case of Saybrook Fort. This opposing bastion design seems to have often been favored by the Dutch in coastal and riverine areas where the offset bastions could be directed towards threats from land or water, and maximize the firepower the small garrison could bear on attackers from either direction.

Finally, the one Dutch fortification that the English were most intimately familiar with was the Fort Good Hope located on the Connecticut River. Fort Good Hope was constructed in 1633 at the site of present-day Hartford. The fortified structure was referred to in both English and Dutch sources as a blockhouse or trading house. William Bradford described Good Hope somewhat disparagingly as “a slight forte” where the Dutch “planted two pieces of ordnance.”²⁸⁸ The reference to two pieces of ordnance suggests the fort incorporated two bastions similar to Fort Oplandt.

New England: When Lion Gardiner arrived in Massachusetts Bay late in November of 1635, he had an opportunity to view existing fortifications in the area and provide advice on the construction of others.²⁸⁹ Early in January of 1636, authorities in Boston “agreed y^t, for ye raysing of a new worked of fortification upon ye ffort hill, about y^t whch is there already begune” and also noted that work should start immediately “soe soone as ye weather will permitt, in regard y^t y^e engineere, Mr. Lyon Garner, who doth soe freely offer his help thereunto, hath but a short time of stay.”²⁹⁰ Gardiner would likely have assisted in the planning and construction of “a plattforme at the foote of the Fort Hill att Boston” for the mounting of up to “sixe peeces of ordinances.”²⁹¹ There is little additional information in regards to the gun platform at Fort Hill in Boston but this fortification at the base of the hill may have included a wooden or earthen redoubt with an associated palisade or redoubt built to command the heights above. Across from Boston, the inhabitants of Charlestown were given funding to “make a platform & brestworke for three peeces of ordinances, att the hill foote there” and Gardiner likely took the short trip across the Charles River to view the work in progress.²⁹² Massachusetts Bay engineers once again chose to locate their gun battery and platform at the base of one of the highest elevations (present-day Bunker Hill or Breed’s Hill) in town to command the land and

²⁸⁸ Bradford. *Of Plymouth Plantation*. P. 167.

²⁸⁹ Samuel Gardiner Drake. *History and antiquities of Boston* (Boston: Luther Stevens, 1856). Pp. 188-189.

²⁹⁰ Drake. *History and antiquities of Boston*. P. 189.

²⁹¹ Shurtleff, Ed. *Records of Massachusetts Bay*. I: P. 165.

²⁹² Shurtleff. *Records of Massachusetts Bay*. I: P.165.

harbor. The gun battery at Charleston clearly included breastworks, most likely constructed of earth and timber, which would have been designed with embrasures for ordnance.²⁹³ The battery likely incorporated a palisade or redoubt above the battery to shelter the gunners and garrison.

Conclusion – The Fort that Gardiner Built?

Saybrook Fort was situated and designed to control the mouth of the Connecticut River, defend against Dutch and Indian attacks, and serve as a safe haven for the English dissidents who constituted the Saybrook Company. Although there is little documentation to the location and final design of Saybrook, there is sufficient circumstantial information to make an educated guess regarding the fort's design, construction, and location.

Location: There is no historical evidence of precisely where on Saybrook Point the first fort was located. However, from his training and experience in the Low Countries we can assume that Gardiner sought to select a location where “Nature had done more than halfe the worke alreddie.”²⁹⁴ In this context the fort would likely be situated to command the lower reaches of the Connecticut River and the landward approaches to Saybrook Point. Local town history and oral tradition point to a piece of ground known as Burial Hill which no longer exists, as hill and area around it was removed for causeway fill in 1874 during construction of the Connecticut Valley Rail Road.²⁹⁵ The railroad later built a roundhouse on the site. Burial Hill was a low rise located at the southeastern corner of Saybrook Point which seems to have fallen on the present ten-foot contour line on current USGS topographic maps.

The name of the hill is attributed to it being the place where George Fenwick’s wife, Alice, was buried. Lady Fenwick tomb was relocated to its present location at Cypress Cemetery in 1874. Burial Hill may have also served as the fort’s burial ground at the time of the Pequot War although no other remains were documented at Burial Hill when it was removed during railroad construction (Figure 30). In 1874, a group of .69 diameter lead round ball shot was uncovered “near the Tomb of Lady Fenwick and the site of the first fort,” one of which was donated to the Connecticut Historical Society.²⁹⁶ Based on the presence of Lady Fenwick’s Tomb, and perhaps the musket balls, some authors and antiquarians surmised that Fenwick buried his wife within the

²⁹³ Embrasures are spaces between the fort’s defensive walls to shoot cannon through.

²⁹⁴ Gardiner. *Relation*. Pp. 6-7.

²⁹⁵ Gates. *Saybrook*. P.131.

²⁹⁶ Connecticut Historical Society, *Musket Ball, 17th century*, Object Number: 1874.6.0.

confines of the fort and therefore the first fort was located at Burial Hill. There has been no other recorded evidence of fort related materials found at that location.



Figure 30. Lady Fenwick's Tomb. Looking Northeast to Location of Second Fort and Northwest to Higher Elevation and location of First Fort.

In 1913, Connecticut Society of the Colonial Dames of America erected the first monument to Saybrook Fort near the corner of College Street and Cromwell Place and to the west of where Burial Hill had been. In 1930, the Gardiner family erected a bronze statue to Lion Gardiner "Builder and Commander of Saybrook Fort, 1635-1639" on a white marble pedestal and built and graded a small plot of land just slightly east of the Colonial Dames marker (Figure 31). In the late 1970's and early 1980's there was discussion of building a "Fort Saybrook" National or State park on the site of the former railroad roundhouse site.

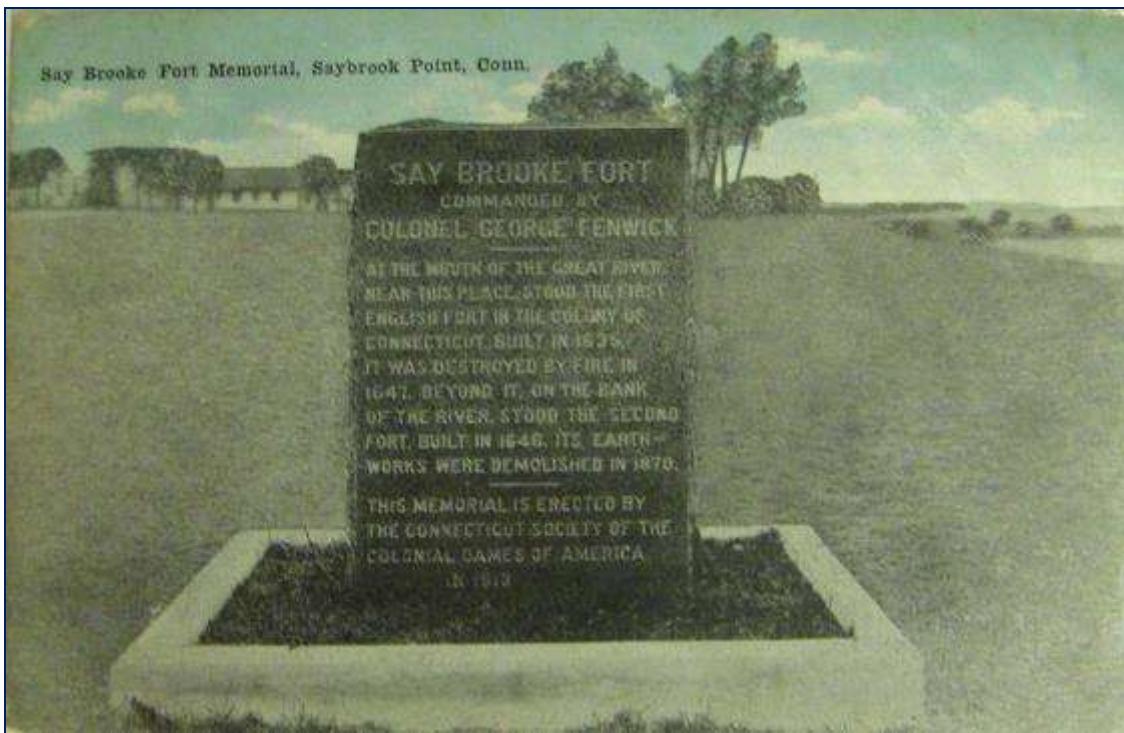


Figure 31: The earliest monument to Saybrook Fort erected by the Colonial Dames of America in 1913. “At the mouth of the Great River, near this place stood the first English Fort in the Colony of Connecticut.”

Archaeological excavations were conducted by Harold Julie of Connecticut College in the 1980s on the plot of land purchased for the proposed monument park. Julie’s excavations documented significant disturbance and fill in the area as well as the railroad turnstile. He also recovered a scatter of 17th Century objects just west of the existing Gardiner monument on town property. He did not excavate on private land further west or north because it was out of the project area.²⁹⁷ Julie concluded that Saybrook Fort was “destroyed” based primarily on traditional assumptions that the fort was located at Burial Hill and that Lady Fenwick was buried within the fort. Burial Hill may have been associated with the Saybrook Fort complex in some manner but appears to be unsuitable for several reasons. First, there are no primary sources to indicate the fort is located on the southeastern portion of Saybrook Point, which would place the fort on a ten foot contour interval, eighteen feet below the highest elevation on Saybrook Point (Figure 9, 32). This decision does not make sense for an experienced military engineer such as Gardiner. Second, the twenty-eight foot contour interval, the highest elevation on Saybrook Point

²⁹⁷ Julie. *Archaeological Investigations*.

in the east-central area of the point, is far better suited to situate the fort as it commands the Connecticut River and the landward approaches to the point from Saybrook Neck. Third, the hypothesized location of the fort based on relational analysis to other Pequot War era structures and features and viewshed analysis also suggests it was located on the 28' contour interval (Figure 10). Fourth, the sole primary source that identifies the location of the fort states the fort is located across from the meeting house lot which is located on the 28' contour interval.²⁹⁸

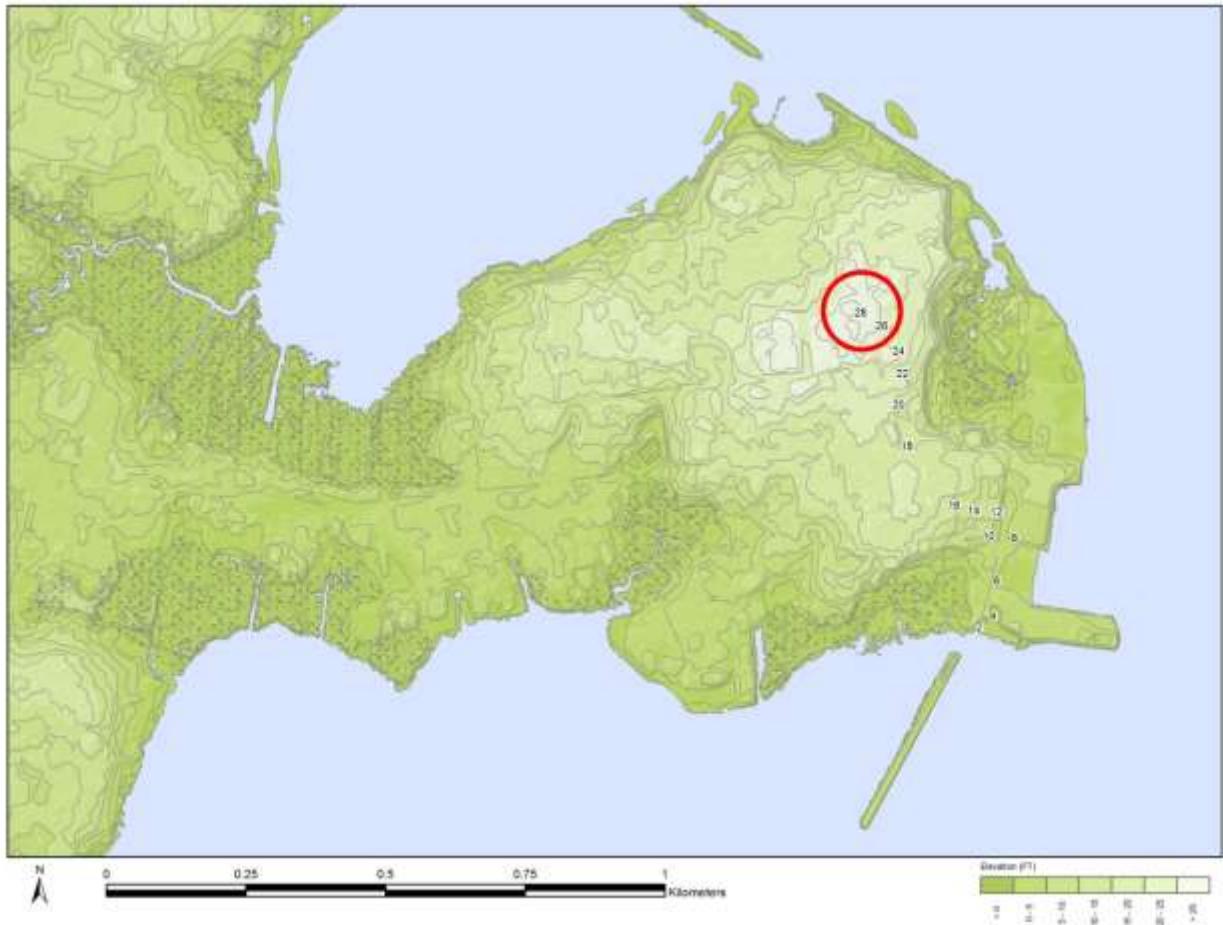


Figure 32. Hypothesized Fort Location on the 28' Contour Interval.

Design: The existing documentation provides no evidence of the shape or form that Saybrook Fort took. Was the fort square with four corner bastions, two opposing bastions, or none at all? Did Gardiner adopt a trapezoidal model similar to the Nansemond Pallizado, or was it triangular in form such as Fort Caroline or James Fort, or some other configuration? Henry

²⁹⁸ Gates. *Saybrook*. P.141.

Vane's telling note to Winthrop, Jr. in which he commented that "I shall only let you know that your resolution to keepe the fort intire within itself [torn] necessary [torn] you must not care though it be displeasing to some" suggests that Saybrook Fort may have initially consisted of a limited number of structures built within the confines of a palisade wall similar to all of the examples cited above.²⁹⁹

Available documentation indicates that Saybrook Fort was constructed during a one month period between April 1 and May 1, 1636 and consisted of a palisade of Red Oak posts placed in a ditch or trench. The short time frame and lack of manpower definitely precluded a more substantial fortification as originally planned. Several architectural features that were intended to be incorporated into the original design of the fort never were, including two drawbridges and portcullis. Gardiner's also references "3 great doares of 10 foot long & 4 foot broad" with nails driven through them and placed around the bastions or redoubts as a defensive. This suggests the original gates may have been a pair of doors making an opening 8' wide. The odd number of remaining doors suggests there may have only been one entrance and exit to the fort consisting of a single four foot wide door.

Among the fort's ordnance when it was sold to Connecticut in 1644 were two Saker and two Demi-culverin cannons and "irons for ye carriages of ordinance."³⁰⁰ Gardiner specifically mentions the Saker guns several times in his narrative but never refers to the Demi-culverins. Cannons and carriage irons were shipped separately and assembled at their destinations and then considered a single unit. Assuming four pieces of ordnance and irons for carriages were delivered to the fort when it was constructed (or after), the cannon and carriage irons would have been sold as a single unit in 1644 if they were already assembled. The reference to 'irons for ye carriages of ordinance', and the 'irons as are there for a drawbridge' indicates neither the cannon carriages nor the drawbridge were assembled. As we know there were two Sakers atop the redoubts or bastions that sat on carriages "I hearing it went vp to ye redout and put two cross bar shot into the 2 guns yt lay above...and gave order to John frend and his man to stand with handpikes to turn them this or yt way" the logical conclusion is that the Demi-culverins were never assembled and integrated into the fort's defenses. If so it suggests the fort may have had only two opposing bastions, and/or the framing for the gun platforms may not have been

²⁹⁹ Winthrop. *Winthrop Papers*. III: Pp. 261-262.

³⁰⁰ Trumbull. *Public Records of Connecticut*. I: P. 267.

substantial enough to support the Demi-Culverins. Sakers weigh approximately 1,900 pounds while Demi-Culverins weigh approximately 3,500 pounds. Circumstantial evidence suggests that the best model for Saybrook Fort's design was a fortification with two opposing bastions similar to the seventeenth century Dutch forts at Swandendael (Delaware) and Sri Lanka (Figure 33).

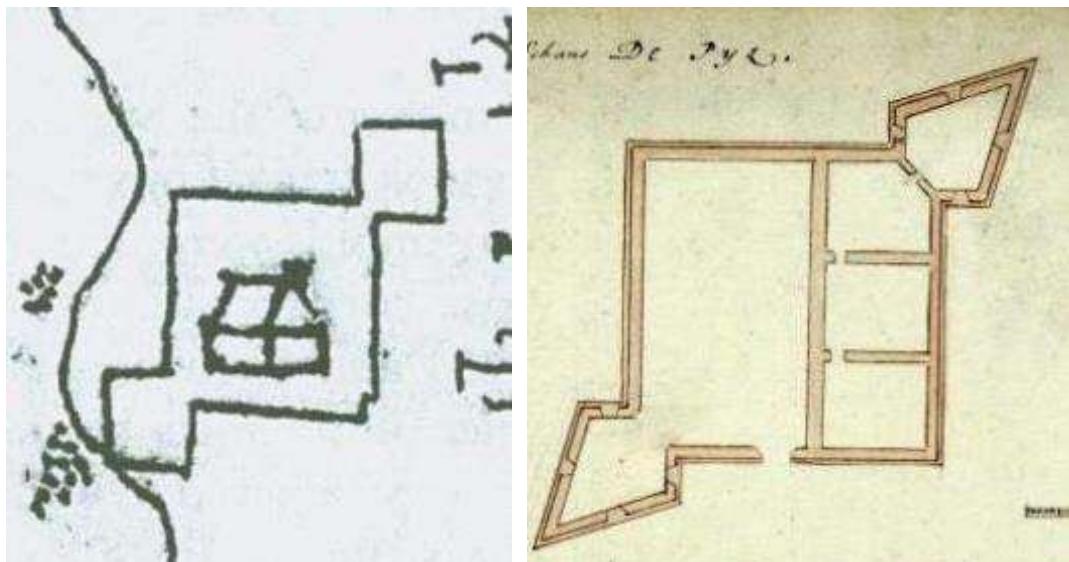


Figure 33. [Left] Fort Oplandt, Delaware. [Right] Fort Pyl, Sri Lanka.

Whatever the final design of the fort was, it was apparently “strong enuf with good watch and direction to put many Indianes to the worst.”³⁰¹ It also appears Saybrook Fort was more substantial than the Dutch fort “House of Hope”. When Dutch navigator David Peterson De Vries (also involved in the Dutch Swanendael Colony in Lewes Delaware, Figure 33) stopped at Saybrook Fort on his way upriver to the House of Hope he recorded in his journal “at the mouth of the river the English have made a strong fort” and described the House of Hope as “our little fort or redoubt.”³⁰²

The relatively small size of Gardiner’s garrison would have impacted his ability to construct the fortifications at Saybrook in two ways. First, having only twenty men at his disposal would have significantly limited the amount of work Gardiner could expect to accomplish in a month. Secondly, this small number of defenders would have out of necessity restricted the size of his fortifications, as he would not have had enough men to man long

³⁰¹ Winthrop. *Winthrop Papers*. III: P. 323

³⁰² De Vries. *Voyages from Holland to America*. Pp. 85-86.

stretches of fort walls or multiple bastions. The “soldier to wall” ratio would have been a consideration of any formally trained military engineer such as Gardiner. Such calculations appear in Robert Ward’s fortification manual *Militarie Magazine* which included information on “the most refined discipline, and Choice Experiments that these late Netherlandish and Sedish Warres have Produced.” When Ward described types of “sleight Fortification,” such as the redoubt, “used for the defence of some few men” he made sure to note that when measuring the fort walls one should allow “3 feet for each man to use his armes in.”³⁰³ Gardiner could not possibly hope to implement this European standard into his fort design because he did not have enough men and had no expectations others would be sent. All these factors undoubtedly affected the final design of Saybrook Fort.

Fort Architecture: Based on a 1643 correspondence from George Fenwick to Sir Arthur Haselrig it is clear that Saybrook Fort’s defensive wall consisted of a palisade constructed of red oak logs set upright in a trench. In the letter Fenwick describes the fort as follows: “the housing & fortification being made of a spungie kind of timber called a read oack rott very suddenly. All the pallasadoes wch were whole trees sett in the ground are soe rotten that on may push most of them over.”³⁰⁴ The manner in which the palisade was set or whether it stood alone or was part of a larger fortified wall is unclear.

In D. H. Mahan’s *Treatise on Field Fortification* he defined “palisading” as “a row of palisades set in the ground, either vertically, or slightly inclined towards the enemy” and described its construction as follows:

a trench is dug three feet deep; they are then placed about three inches asunder, with and edge towards the enemy. Each palisade is nailed to a strip of thick plank, termed a *riband*, placed horizontally about one foot below the ground; another riband is placed eighteen inches below the top. The earth is firmly packed in the trench....“The Pallizadoes are to be wrought in two foot from the top of the Worke, the great ends to be laid downewards into the Worke, so that the sharpe ends may rise upwards, they are to lye three foot into the earth, and as much out: the outside of this worke ought to be good solid earth, being digged taperwise six inches thicke at the end that should lye outmost, and some two inches the end that lyes inward; by this meanes they will not slip out, and make the worke decay; in the middest is your rubbish earth to be rammed downe.³⁰⁵

³⁰³ Robert Ward. *Anima'Dversions of Warre or, A Militarie Magazine* (London, UK: John Dawson, 1639). Pp. 85.

³⁰⁴ Connecticut Historical Society, MS Fenwick, George, 17956, Ltrr., 1643 (copies). P. 8.

³⁰⁵ Ward. *A Militarie Magazine*. P. 86.

Mahan proscribed additional means to strengthen a palisade particularly if it serves as “a primary means of defence” in the form of a banquette, or firing step, for soldiers. Mahan’s banquette specifications called for “the tread of the banquette being six feet below the top of the palisading, and four feet three inches below the upper riband.”³⁰⁶ Gardiner recalled how the Pequot often approached the fort at night and “shot at our sentenells but could not hit them for y^e boards” which indicates that Gardiner’s men may have been on watch along a firing step lining the palisade wall.³⁰⁷ The presence of “boards,” which obviously gave the soldiers added protection from Pequot arrow and potential musket fire, may reference a large plank used for the riband or additional planks nailed to the red oak palisade. Ward also wrote that “His Excellency the Prince of Orange had always these Instruments carried in his Army...for wheresoever he did incampe his Army for any time, especially if the Enemy were quartered neere, he always gave directions to have these Pallizadoes pitcht into the ground.”³⁰⁸

Gardiner often referred to a “gate” which was used to enter the fort. There is no information regarding how the “gate” was constructed although Gardiner’s reference to “3 great doares of 10 foot long & 4 foot broad” suggests the one gate may have consisted of two pairs of doors. As there were an odd number of doors remaining the fort may have had only one entrance/exit consisting of a single ten by four foot door. The height of the doors suggests the fort may have been in excess of twelve feet high. In the materials sold to Connecticut in 1644 there was no mention of a portcullis suggesting it may have been installed by then, and perhaps at the time of the Pequot War. Mahan’s description of gate or “barrier” construction is as follows:

The framework of the barrier is made like an ordinary gate, consisting of two uprights, or *stiles*, a cross-piece, or rail, at top and bottom, and a *swinging bar*, or a *diagonal brace*. Upright palisades, about seven feet long and four inches thick, are spiked to the frame about four inches apart; they are finished at top with spikes. A barrier, thus constructed, will not offer a shelter to the enemy should he attempt to cut it away. The barrier is hung on hinges like an ordinary gate. The posts of the framework should be very solidly braced to support the weight of the barrier.³⁰⁹

³⁰⁶ Mahan. *A Treatise on Field Fortification*. P. 46.

³⁰⁷ Gardiner. *Relation*. P. 33.

³⁰⁸ Ward. *A Militarie Magazine*. P. 369.

³⁰⁹ Mahan. *A Treatise on Field Fortification*. P. 61.

The Redoubt and Battery: Another clue from Gardiner's *Relation* regarding other architectural features incorporated into the fort are his references to redoubt. On one occasion he and two gunners "went up to ye redout" where he had two Sacker cannons on gun carriages. On another occasion Gardiner directed blacksmith Thomas Hurlbut to construct improvised anti-personal defenses by drilling "3 great dares of 10 foot long & 4 foot broad" and place them outside the fort walls because he was concerned that the Pequot would "come in ye Night and fire our redout or batterie and all ye place."

A "redoubt," in the European sense of the word denotes an earth and timber defensive structure generally placed outside and separated from a fort and used to support the main fort or an exposed gun battery. Redoubts are described by Robert Ward as "a kinde of sleight Fortification, used for the defence of some few men" while Mahan defines a redoubt as any "enclosed work of a polygonal form, without re-entering angles" and is often used to "fortify a position which can be attacked on all sides."³¹⁰ De Vauban defined redoubts as "square little forts built at the extremities of the guard positions, ditched all around and strengthened by parapets to protect them from the cannon...they usually contain a guard of fifty or sixty men to resist enemy sorties."³¹¹ Mahan also wrote that the "square is the most common form for a redoubt, on account of the ease with which it is constructed, and the advantage it possesses" but points to the square redoubt's one defect; "The ditches are unprotected, and there is a sector without fire in front of each salient."³¹² However, in the contexts in which Gardiner uses the term; "fire our redout or batterie and all ye place" and "up to the redoubt and put two cross bar shot into the 2 guns yt lay above" suggesting the redoubt and battery were the same structure and were integrated into the fort's architecture.³¹³

A "battery" is a term applied to a section of a fortification on which multiple pieces of ordnance are placed or more simply put; "all the positions where you emplace cannon to pound the enemy."³¹⁴ A battery can also be used to describe "the arrangements made of a parapet to enable the guns to fire over it, or through openings in it."³¹⁵ There are also two types of batteries, the barbette and embrasure battery. A barbette is a mound of earth thrown up against the interior

³¹⁰ Ward. *A Militarie Magazine*. P. 86; Mahan, *A Treatise on Field Fortification*. P. 12.

³¹¹ De Vauban. *A Manual Of Siegecraft And Fortification*. P. 155.

³¹² Mahan. *A Treatise on Field Fortification*. P. 13.

³¹³ Gardiner. *Relation*. PP. 32-33.

³¹⁴ De Vauban. *A Manual Of Siegecraft And Fortification*. P. 155.

³¹⁵ Mahan. *A Treatise on Field Fortification*. P. 52.

slope of a fort, the surface of the mound is leveled, and a ramp and platform built on top where ordnance can be mounted. These batteries are usually constructed at the salient formed by the fort walls. A barbette battery is similar in construction to the circular bulwarks built at the salients of James Fort. The embrasure battery is a section of wall, or a specific fortification, built with openings in the parapet or wall for cannon to fire through. An embrasure can be constructed at any point and does not need to be built at the salient.³¹⁶

It is unclear from Gardiner's description of "our redout or batterie" whether he is referring to one structure or two separate structures. Is the redoubt and battery the same structure or is the redoubt removed from gun battery closer to shore? Gardiner's description complicates the Saybrook Fort model as the relationship between palisade, redoubt, and battery are unclear. It is possible that when Gardiner refers to the redoubt, he is referring to the entire fort. It is also possible that the redoubt is a fortification built on the highest elevation on Saybrook point and is meant to defend the battery and any other outbuildings within musket shot. Another possibility is that the palisade wall encompasses both the redoubt and battery.

Interior Structures: It is unclear how many structures were built within the Saybrook Fort palisade following Winthrop, Jr.'s "resolution to keepe the fort intire within itself." Other than Lt. Gardiner's references to a "great haule" and post-Pequot War references to "all y^e housing within y^e Palisado" this is little indication to the number or type of structures built.³¹⁷

The "great hall" was a building in which the garrison met, ate, where orders and notices were hung, and it may have been used as a barracks and as the fort hospital during the Pequot siege. References to the structure as "great" may not only speak to the dimensions of the building, or a central meeting place, but perhaps it is a comment on the structures size compared to that of other frame structures within the palisade. A 1644 reference to "all y^e housing" indicates that there were several structures within the palisade walls by then. Other structures built within the palisade may have included a storehouse, root cellar, or well house.

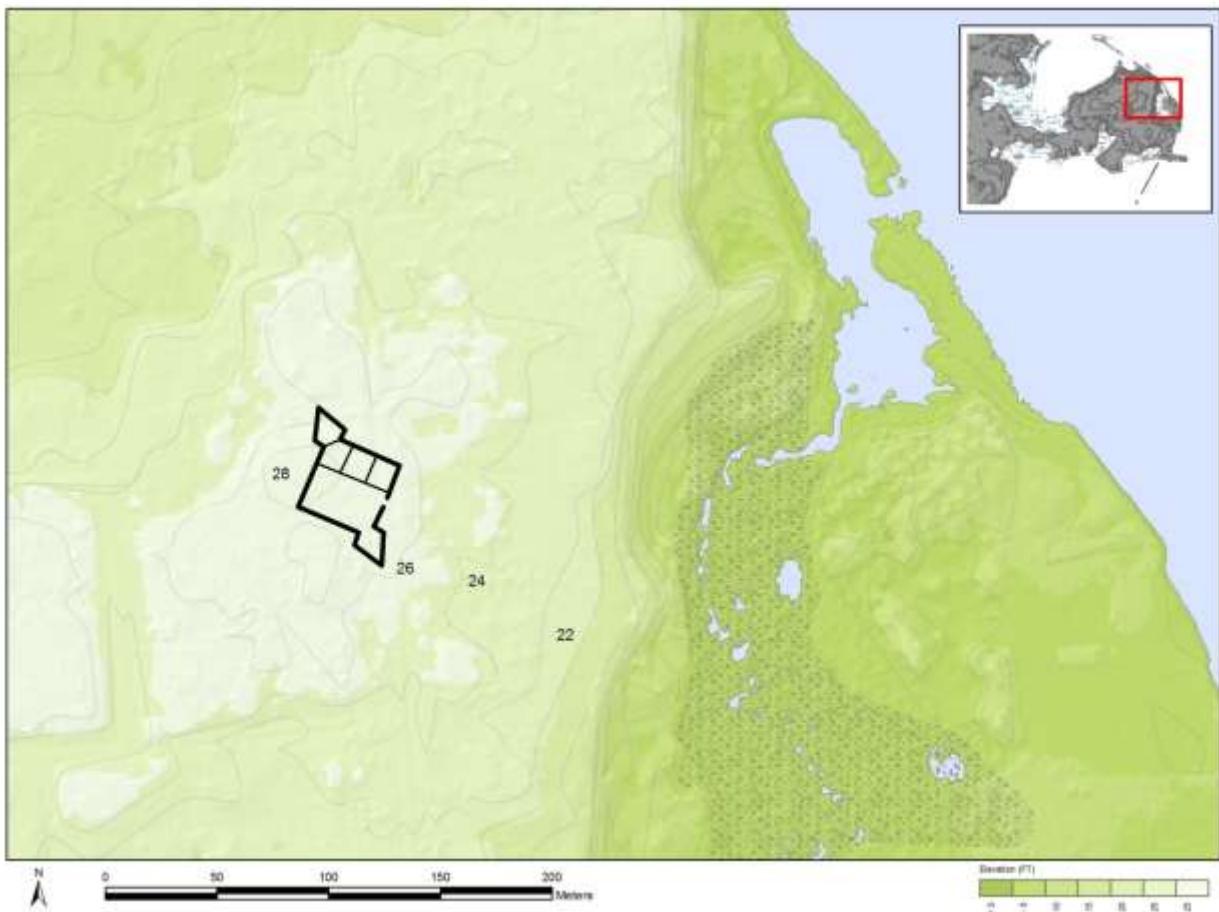
Gardiner may have also constructed a specific structure to serve as powder magazine to store powder, small arms, musket balls, and cannon balls. The magazine would have been built in a secure location to minimize exposure to flames, water, and incoming enemy fire. In smaller fortifications Mahan suggested that a powder magazine be "placed at the foot of a barbette; or, in

³¹⁶ Mahan. *A Treatise on Field Fortification*. Pp. 52-54.

³¹⁷ Gardiner. *Relations*. P. 32. Hosmer; *Winthrop's Journal*. II: P. 328.

dry soils" and that it should "be made partly underground."³¹⁸ If Gardiner was forced to construct most all of the fort's buildings within the palisade and there was a lack of space, it is possible that a magazine was incorporated into a section of a firing step, in the cellar of one of the buildings, or simply in a secured room within the fort. A number of brass nails and fasteners were recovered during metal detector surveys in the area of the fort, suggesting the possibility of such a structure within the fort as brass fasteners are commonly used in the construction of powder magazines to reduce the possibility of sparks.

In the final analysis it is reasonable to assume that Gardiner followed the Old Netherland Style of fortification used by the Dutch in Ceylon (Sri Lanka) and at Fort Oplayndt which utilized a square design with opposing bastions (Figure 33, 34). In this case the redoubt and battery may be on opposing ends of a square palisaded fort angled in such a way as to command the River and the landward approaches to Saybrook Point from Saybrook Neck.



³¹⁸ Mahan. *A Treatise on Field Fortification*. P. 58.

Figure 34. Hypothesized Orientation of Saybrook Fort.

IV. Research Design, Methods, Site Identification & Documentation

Battlefield Archeology Documentation Process

The overall goal of battlefield surveys is to identify and document the historic and geographic extent of battlefield(s) through the recovery of battle-related objects, assess site integrity (as defined in *National Register Bulletin 40: Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefields*), provide an overview of surviving resources, and assess short and long term threats to the integrity of the battlefield. Specific steps involved in this process include:

- Research the battlefield event(s);
- Identify defining natural and cultural features of the battlefield;
- Conduct a visual reconnaissance of the battlefield;
- Locate, document, and photograph relevant natural and cultural features;
- Map troop movements, positions and cultural features on a 7 ½ minute USGS topographic quadrangle;
- Define study and core engagement areas for each battlefield;
- Conduct archeological surveys to identify the nature and distribution of battle-related objects;
- Assess overall site integrity and threats

Analysis of Primary Sources

The first step in reconstructing the events and landscapes associated with the “Siege and Battle of Saybrook Fort” was to identify all primary accounts that provided information on battlefield terrain, events and sites. There are six principal accounts and narratives of the siege: Lion Gardiner’s *Relation of the Pequot War* written in 1660, John Underhill’s *News from America* written in 1638, Philip Vincent’s *A True Relation* written in 1637; John Winthrop Sr.’s journal *The History of New England Volume I* written between 1630-1649, the *Winthrop Papers* containing correspondences to Winthrop Sr. and Winthrop Jr. from men at Saybrook and the Connecticut settlements and individuals in England gathering supplies for the Saybrook settlement, and an undated and unattributed account of the Pequot War identified as Anonymous

and contained in Increase Mather's *A Relation of the Troubles Which Have Happened in New England* published 1677. Unfortunately some of the letters and narratives used or referenced by later chroniclers have since disappeared and transcriptions may have been incomplete. In the case of the Anonymous account it appears to have been heavily edited by Increase Mather in some cases and the original has not been found.

All of the accounts were analyzed and compared to assess their veracity, relevance, and content significance of the information they contained with respect to the Siege and battle of Saybrook Fort. These accounts were written either by individuals who were eyewitnesses to the events at Saybrook, spoke to individuals who participated in the events, or had access to the letters and narratives of eyewitnesses to the events. Important considerations in assessing the veracity of individual accounts included determining who the author was (battle participant or chronicler), why the account was written (e.g. field report, history, colonial records), how long following an engagement was the account written, and can the information contained in the account be corroborated by other narratives or accounts. While there is no single account or narrative that describes all of the actions and events that occurred at Saybrook during the siege, collectively these sources provide valuable insights and information to the individuals, actions, terrain, and events associated with the siege.

Battlefield Archeology

The discipline of Battlefield Archeology is concerned primarily with the identification and study of sites where conflict took place and the archeological signature of the event. This requires information gathered from historical records associated with a battlefield including troop dispositions, numbers and the order of battle as well as undocumented evidence of an action or battle gathered from oral history and archeological investigations. The nature and distribution of material culture associated with a battlefield allows battlefield archeologists to reconstruct the progress of a battle, assess the veracity of historical accounts of the battle, and fill in any gaps in the historical record. This is particularly important with respect to the "Siege and Battle of Saybrook Fort" as the historical record is often incomplete, sometimes contradictory and generally does not provide a deep description of events.

Recent developments in the discipline of Battlefield archeology seeks to move beyond simply documenting the spatial distribution of artifacts associated with a battlefield event (Gross

Pattern Analysis) toward a more dynamic interpretation of the battlefield.³¹⁹ An integral part of this process is to contextualize the battlefield and related sites in a broader cultural and historical landscape to better understand, interpret and identify battlefield events and sites. An important aspect of this analysis is the reconstruction of the historic landscape and battlefield terrain to identify the natural and cultural features present at the time of the battle, and determine how they were used by the combatants.³²⁰

The actions associated with the Siege and Battle of at Saybrook Fort were particularly challenging to place in real space because many of the locations were described in relation to the fort, and therefore could not be identified without first determining the location of the fort. In the end the locations of the actions and fort were determined through a careful analysis of the few terrain and relational clues provided by Gardiner with military terrain analysis (KOCOA).

KOCOA Evaluation

The United States military has developed a process for evaluating the military significance of the battlefield denoted by the acronym KOCOA; Key and Decisive Terrain, Observation and Fields of Fire, Cover and Concealment, Obstacles, Avenues of Approach and Retreat. The NPS ABPP requires the KOCOA approach for all documentation and implementation grants. An important aspect of KOCOA analysis is to identify defining features of the battlefield landscape – aspects of the landscape that are mentioned in battlefield accounts and influenced the nature and progress of the battle. Defining features may be natural (e.g. small rising hill, Saybrook Neck, marshes) or cultural (e.g. fort, trading warehouses, garden pales) and are assessed and evaluated to determine their effect on the progress and outcome of the battle. Critical defining features were mapped using GPS and GIS, and surveyed using remote sensing (metal detection and electrical resistivity), and archeological testing and excavation. KOCOA will be explained in greater detail in Section V: KOCOA Analysis.

Battlefield Pattern and Spatial Analysis

Traditional battlefield interpretations and reconstructions have relied primarily on historical information (battle accounts, narratives, diaries, etc.), occasionally augmented by oral

³¹⁹ Fox, Richard A. and Douglas D. Scott. "The Post-Civil War Battlefield Pattern: An Example from the Custer Battlefield" in *Historical Archaeology*, Vol. 25, No. 2 (1991). Pp. 92-103.

³²⁰ Fox and Scott. "The Post-Civil War Battlefield Pattern." Pp. 92-103.

histories and sometimes random collections of battle-related objects. In the past two decades archaeology has played an increasingly important role in battlefield reconstruction as archaeologists (and battlefield historians) have become aware of the contributions archaeology could make toward a more complete understanding of the battlefield. The discipline of Battlefield Archaeology has progressed to the point where battlefield archaeologists and historians seek to identify the material correlates or signatures of discrete battlefield events identified from the historic record and sequence them in time and space to achieve a more comprehensive reconstruction of the battlefield (Dynamic Pattern Analysis).

This approach has resulted in a far more nuanced and complex reconstruction of battlefields and battle events than those based on the historical record alone. Douglas Scott and Richard Fox developed the Post-Civil War Battlefield Pattern Approach (Dynamic Pattern Analysis) during their 1985 study of the 1876 Battle of the Little Bighorn. Their study sought to investigate the behavioral dynamics of the battlefield and test competing hypothesis regarding the nature and progress of the battle based the testimony of Native American veterans of the battle and official accounts from the U.S. Army.³²¹ In the case of the Battle of Little Bighorn this was achieved through modern forensic ballistic analysis of thousands of bullets and cartridge cases which allowed researchers to track individual firearms across the battlefield and identify the actions and movements of aggregates of individuals (i.e. military units).

Prior to this methodology, battlefield archaeologists tended to focus only on the spatial distributions of battle-related objects (Gross Pattern Analysis) which resulted in a static reconstruction of the battlefield (essentially a boundary drawn around recovered battle-related objects). Fox and Scott's Dynamic Pattern Analysis seeks to identify and isolate discrete battle "events" associated with aggregates of individuals based on their archeological signatures and integrate them into a spatial and temporal framework to identify movement across the battlefield.³²² Individual actions and movements must be viewed in the aggregate, collectively subsumed in unit actions and movements - the basic unit of analysis in Battlefield Archaeology. While individual actions can sometimes be identified on the battlefield, it is units (aggregates of individuals) and their actions which are most amenable to be integrated into a cohesive spatial

³²¹ Fox and Scott. "The Post-Civil War Battlefield Pattern." Pp. 92-103.

³²² Fox and Scott. "The Post-Civil War Battlefield Pattern." Pp. 92-103; Carl G. Carlson-Drexler, "Finding Batter Positions at Wilson's Creek, Missouri" in Eds. Douglas Scott, Lawrence Babits, and Charles Haecker. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Washington, D.C.: Potomac Books, 2009.

and temporal sequence in order to reconstruct and interpret the battlefield. This integrated model of Gross-Pattern Analysis and Dynamic-Pattern Analysis has been the paradigm for Civil War and post-Civil War battlefield archeology and analysis since 1985.

The historical record associated with the battlefield is used to construct a timeline of discrete battlefield events and identify potential material correlates or archeological signatures associated with each event. The expected archeological signatures can be used to inform and test hypotheses of unit actions and movements drawn from the historical record. It is often the case that the actual (recovered) archeological signature differs from the expected archeological signature necessitating a reevaluation or reinterpretation of the historic record and in turn the archeological record. In this way the spatial and temporal dimensions of a battle can be defined and reconstructed through the integration and continual assessment of the congruence of the historical and archeological records. In this ongoing process the historical record informs the archeological record as much as the archeological record informs the historical record and both contribute equally to the reconstruction of the battlefield.

Potential sites and battle events were identified by integrating information from primary accounts, oral history, artifact collections, land records, historical maps, aerial photographs, a visual inspection of the battlefield, and KOCOA analysis. The precise location and delineation of actions and associated sites required fieldwork in the form of walkover reconnaissance surveys, metal detector surveys, and archeological testing.

Field Methodology

Fieldwork was conducted in four phases: Orientation Phase, Inventory Phase, Recovery Phase, and Laboratory and Evaluation Phase. These phases were often conducted concurrently and fieldwork was guided by the work plans and research design outlined below.

Orientation Phase:

Landowner Permission: Landowner permissions and cooperation were the most crucial aspect of conducting fieldwork. Landowner permissions were obtained from public informational meetings, letters, phone calls and personal contacts. The strategy that proved most effective was to personally meet with landowners after initial contact was made at an informational meeting or through a letter. Reluctant landowners were encouraged to attend

informational meetings to update them on the overall progress of the project, and to discuss any ongoing concerns they still had. Many permissions were obtained through personal contact and relationship building, as conversation and communication became frequent and tangible between project staff and local residents. By the end of the field season in November of 2013, almost all of the landowners contacted at Saybrook Point granted permission to conduct fieldwork on their. Eventually, more than seventy landowner permissions were obtained which constituted 256.5 acres (107 hectares).

Visual Inspection: A windshield survey was conducted for Saybrook and Warehouse Points by using all available public streets. Landscape and cultural features were observed and correlated with historic maps and Lidar maps of existing topography and cultural features to assess areas of integrity and disturbance and to get an overall feel for the battlefield landscape. Once landowner permission was obtained visual inspection and walkover over of individual properties was conducted with the landowner present to gain information on the locations of below-ground disturbances (i.e. septic systems, utility lines, etc.), and to note landscape features that had physical and/or cultural attributes that were related to the battlefield.

Land Use Research: A land use and occupational history of Saybrook Point was conducted to identify potential battle-related landscapes and sites, and to identify post-Pequot War structures and activities. Saybrook Point was one of the most intensely settled and used seventeenth and eighteenth century landscapes in southern New England. Centuries of occupation deposited thousands of post-Pequot War domestic, architectural, and to a much lesser extent, military artifacts. Identifying where post-war structure and activities were located was important if early seventeenth century battle-related sites and actions could be distinguished from later sites. The land use study provided an important frame of reference for interpreting the varied artifacts recovered during fieldwork. Peeling back the layers of 375 years of occupation and varied land use was important to understand and predict the relevance and significance of artifact signatures and contexts, and to assess site integrity. Information for the land use study was obtained from land deeds, town records, historical newspapers, maps, photographs, local histories, books and other various periodicals, oral history and local knowledge.³²³

³²³ McBride, Kevin et al. *Siege and Battle of Saybrook Fort; September 1636 – June 1637: Documentation Plan*. GA-2255-10-012. Mashantucket, CT: 2012.

Nonetheless the recovery of hundreds of early seventeenth century battle-related military, domestic, and architectural objects in relatively undisturbed soils indicates that a significant percentage of the battlefield terrain retains moderate to good integrity; albeit the original ground surface was sometimes capped with 15" – 1 30" (30 – 80cm) of house excavation ejecta and redeposited topsoil. It is estimated that 50 – 60% of the 140 acre (56 – hectare) battlefield retains moderate to good integrity). The biggest challenge to assessing and interpreting the battlefield was distinguishing the thousands of non-battlefield related late seventeenth, eighteenth, and early nineteenth century artifacts from Pequot War-related artifacts. This process required hundreds of hours of analysis researching historic objects to identify their period of manufacture and use and function. This process was greatly facilitated by access to the MPMRC's radiography equipment.

Spatial Reference and Analysis: The first step in determining the provenience and precise geographic location of artifacts, and cultural and terrain features was establishing a conceptual grid or referencing system over the entire Core Area of Saybrook Point facilitated by GIS (Geographic Information System) to aid in the collection, maintenance, storage, analysis, and output of spatial data and information.³²⁴ The GIS database consisted of a two foot contour base map which incorporated relevant terrain features such as marshes, hydrography and soils. Through the course of the field season the GIS database was expanded to include: property information (i.e. boundaries, ownership, structures), and modern features such as roads, aerial photographs, disturbed areas, and all battle-related artifacts and features.

Provenience: To establish provenience of objects, terrain features, and structural remains within the project area a combination of methods were utilized. The first step in establishing provenience was to develop a procedure so that all cultural materials and features identified within the Core Areas could be assigned a spatial reference based on Cartesian coordinates within a grid. A conceptual one meter grid was established over a two foot contour base map of Saybrook Point with the intent of physically establishing fixed points within the grid throughout Saybrook Point utilizing GPS (Global Positioning System). The placement of fixed points was often dependent on landowner permissions and/or where preliminary surveys identified possible battle-related objects or features.

³²⁴ Paul Bolstad, *GIS Fundamentals: A First Text on Geographic Information Systems*. (White Bear Lake, MN: Eider Press, 2008).

The first step in integrating GPS points into the project grid was to establish a permanent datum point in the approximate center of the project area. Numerous GPS readings were taken at this point over several days and at different times of the day to establish its precise position in real space. This datum was designated N0E0 on the Cartesian grid system and a grid was then constructed using additional GPS points and a total station in selected areas within the project area. Property boundaries were provided from geo-referenced shapefiles obtained from the Town of Old Saybrook.

Viewshed Analysis: A number of Viewshed Models were developed using elements of KOCOA and GIS in order to develop a variety of locational models to situate the prospective fort site in relation to battle-related events and sites (Figure 9, 10). A Viewshed is a raster-based map interpolated between a source point and all other cells within an elevation model to find whether or not the cell exceeds the height of the three dimensional line at that point. Therefore, the result of each calculation is either positive or negative. If the result is positive (1) then there is a direct line of sight, if it is negative (0), there is no line of sight.³²⁵ The resultant Viewshed Models illustrate locations that could be seen from elevations at different potential fort locations on Saybrook Point. The Viewshed models were very useful for conceptualizing the battlefield landscape and identifying potential fort locations and eliminating others. (See Figure 10).

Inventory Phase

The Inventory Phase consisted of three sequential steps: metal detector and archeological surveys and excavations, recovery of artifacts, and recording of artifacts. The survey phase consisted of an initial metal detector survey to identify and locate potential battle-related objects in any given area. If potential battle-related objects were recovered, a more intensive metal detector survey followed as well as possible archeological surveys and excavations. Metal detected objects were pin-flagged for subsequent recovery and initial identification (Figure 35).

Metal Detection: A metal detector is a remote sensing device designed to locate subsurface metallic items based on the differential electrical conductivity of metallic objects. All metal detectors include a handle, search coil, cable, and metal box that contains the battery, tuning apparatus, and in more recent detectors a computer that provides the ability to program the detector for certain kinds of metals, digital readouts of metal type, and possible metal depth.

³²⁵ David Wheatley and Mark Gillings. *Spatial Technology and Archaeology: The Archeological Applications of GIS* (New York, NY: Taylor & Francis, 2002).

All metal detectors work on the same general principle. An electromagnetic field produced from the search coil, when held at ground surface, penetrates the earth in a cone shape emanating downward from the coil. Coils are available in a variety of sizes designed to provide preferences with regard to depth, discrimination, and precision in pinpointing object locations. Generally, larger coils are more effective for locating deeply buried objects but less effective in discriminating between metals (i.e. brass and lead from iron).



Figure 35. MPMRC Archeologists flagging metal detected objects and conducting limited archeological excavation within the Saybrook Point Core Area (Locus A) during the Inventory Phase (2012).

Different metal detector models also vary in their operating frequency and therefore their relative effectiveness in identifying certain kinds of metals. Therefore, some metal detectors are more effective in identifying ferrous objects and others brass, silver and copper and others lead, nickel and gold.³²⁶ Different metals produce different phase responses in metal detectors, allowing the instrument to effectively discriminate among different types of metals.³²⁷ One

³²⁶ Melissa Connor & Douglas D. Scott. "Metal Detector Use in Archaeology: An Introduction." *Historical Archaeology* 32(4), 1998. Pp. 76-85; Pratt, G. Michael. "How Do You Know It's a Battlefield" in Eds. Douglas Scott, Lawrence Babits, and Charles Haecker. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. (Washington, D.C.: Potomac Books, 2009).

³²⁷ Don H. Heimer and Steven L. De Vore. *New-Surface, high resolution geophysical methods for cultural resource management and archeological investigations* (Denver, CO: U.S. Dept. of the Interior, 1995).

common manifestation of this response is the Visual Discrimination Indicator (VDI), which quantifies the phase response of each metal into a numerical category for the operator. The broadest VDI is the assignment of negative numbers for ferrous metals and positive numbers for non-ferrous metals. Generally, two different technologies characterize the various brands of metal detectors, Very Low Frequency (VLF) and Pulse Induction (PI) units. VLF units have superior discrimination capability, compared to PI units, which generally have better depth capabilities. The most effective metal detector brands utilized were Minelab and White's. Some of the units used during the inventory phase included the White's DFX, White's TDI, Minelab CTX30-30, Minelab GPX5000, Garret ATX, among others.

A number of factors influence the relative effectiveness of metal detector surveys including the experience of the operator, physical conditions, and the variable qualities of metal detecting equipment which can affect the detector's ability to discriminate between metals, detect at various depths and in different weather conditions. Electro-Magnetic Interference (EMI) effects metal detector stability and therefore the ability to detect at depth or to discriminate between metals. Interference is an important variable as well and comes from many sources including: soil oxidation, proximity to other metal detectors, approaching thunderstorms, planes flying overhead, and even the natural magnetic flux lines from the Earth's magnetic core. The variability in metal detector technology was considered an advantage during the survey and an important factor in the decision to utilize as many different brands and types of metal detectors as possible.

The metal detector operators used in the survey reflected a wide range of experience, from a few months to decades. Volunteers from the Yankee Territory Coinshooters (YTC) metal detecting club based out of East Hartford, Connecticut have played a central role in the *Battlefields of the Pequot War* project since 2009 and have been instrumental in the overall success of the project, including the "Siege and Battle of Saybrook Fort" project. Each volunteer was unique in their experience, focus, technique, equipment, availability and based on these qualities different operators and detectors were assigned to where they would best serve the project. These individuals were rotated to different sites and loci so that different levels of experience and detector capabilities maximized the strengths of each operator and detector.

The direction at which the operator approaches an object or area often influences how successful metal detector detection will be. Locating metallic objects of different shapes, sizes

and orientation in the soil requires an area to be detected from multiple angles by machines with different capabilities. Artifacts are buried at various angles in the soil, and therefore may not present a solid plane to detect depending on the angle of approach. The metal detector will best detect an artifact at its widest or broadest face. Therefore, the larger the face presented, the more likely the detector's signals will strike the artifact. For example, locating thin brass objects such as projectile points is particularly challenging especially if the point is oriented in such a way to present the smallest possible face to the detector. Approaching the point from a different direction will allow the operator read the broadest widest face of the point. Therefore, the best way to conduct a metal detector survey is to survey from multiple angles of approach.

The standard initial metal detector survey methodology employed was to divide a search area into 10m x 10m boxes further divided into 1m x 1m wide transects. Transects were oriented north-south for the first sweep and then oriented east-west for the second sweep and different operators and machines were used for each orientation.

Recovery Phase

The recovery crew (staff archeologists and metal detector operators) excavated the artifact with a shovel or trowel which had been previously marked by a pin-flag during detection. The excavation location was detected a second time to make sure there were no other metal objects present before the hole was re-filled. If the recovered object was clearly modern (e.g. aluminum foil, pull tabs, tin cans, roofing nails) the artifact was discarded and in the case of personal objects (e.g. match box cars, jewelry coins) it was given to the landowner.

If the artifact was not modern it was placed in a plastic bag with soil and left at its location marked by a pin-flag for the recording crew. The artifact was placed in a sealed plastic bag with soil according to conservation protocols that require objects be kept in an environment similar to which it had been removed until it could be brought to the archaeology and conservation labs at the MPMRC for evaluation and identification (often on a daily basis).

Standard metal detecting and archeological survey forms were used to record all relevant information about the artifact's provenience and preliminary identification as well as the date, weather and soil conditions, depth of artifact, machine type and operator and recorder. All artifacts were plotted to the nearest 50cm within a 1-meter grid that covered all of the battlefield survey areas (e.g. N230W45 SW quadrant). Non-metallic artifacts that were found during the

metal detector recovery process were also recorded and bagged (i.e. historic ceramics, prehistoric lithics). For artifacts recovered in an area outside the established grid the recording team assigned unique artifact identification numbers for each flagged object, recorded the numbers on the plastic bags holding the artifacts, as well as field excavation forms. These objects were later assigned provenience by either extending the grid or GPS.

Archeological Survey and Excavation

The archeological testing phase incorporated two types of archeological investigations; 50cm x 50cm shovel test pits placed at five meter intervals along a north-south transect and 1m x 1m excavation units and 1m x 50cm trenches. The purpose of archeological survey and excavation was to recover non-metallic battle-related objects (e.g. gunflints, ceramics, and kaolin) and to identify possible features (particularly the fort's palisade trench) in areas where metal detector or archeological testing identified a concentration of early seventeenth century artifacts.

A total of fifty four 50cm x 50cm shovel test pits, five 1m x 50cm trenches, and ten 1m x 1m units were excavated in various areas of the "Siege and Battle of Saybrook Fort" site. Test pitting was usually commenced in response to positive results generated in metal detecting to assess potential below ground features and non-metallic objects. Trenches and excavation units were also used to locate or further define features. Of particular interest was identifying structural remains associated with the fort such as the palisade trench. Unfortunately below ground explorations had to be limited in consideration of landowner's concerns of impacts to their lawns.

Laboratory and Evaluation Phase

Real-time laboratory analysis was the most important aspect of fieldwork, as the immediate (within two to three days) results of identification of metallic (primarily ferrous) artifacts determined if they were battle-related and therefore likely to determine where to focus additional fieldwork efforts. Laboratory analysis involved three sequential steps: initial examination and identification, radiography analysis if necessary, and stabilization and conservation to remove extraneous oxide. Some objects were evaluated and analyzed to further refine or clarify previous identifications.

Initial artifact examination consisted of cleaning the artifact with a soft brush to examine by eye and with a low-powered binocular microscope. In many instances, the age of the artifact could not be determined from just the initial examination. If further examination was required, the next step was to take several radiographs (X-Rays) of the object with different exposures and object orientation. The most important aspect in the identification potential battle-related artifacts was further assessment of ferrous objects through radiography (X-Ray analysis). Most recovered ferrous objects were highly degraded and not easily unidentifiable, particularly features such as holes, breaks, and pivot points that could help to identify the function of the object. X-Ray Analysis was performed as soon as possible so battlefield staff could quickly assess whether the object was hand-wrought and if it might be battle-related. These determinations often influenced decisions where to concentrate survey efforts. Radiography reveals a distinct “layering” or strata in hand wrought iron objects from being folded over so many times in the manufacturing process, very evident in the strike-a-light in Figure 36.



Figure 36: (Left): Iron “fire-steel” or “strike-a-light” prior to conservation.
(Right): X-Ray image where layering or strata is visible indicating hand-wrought iron.

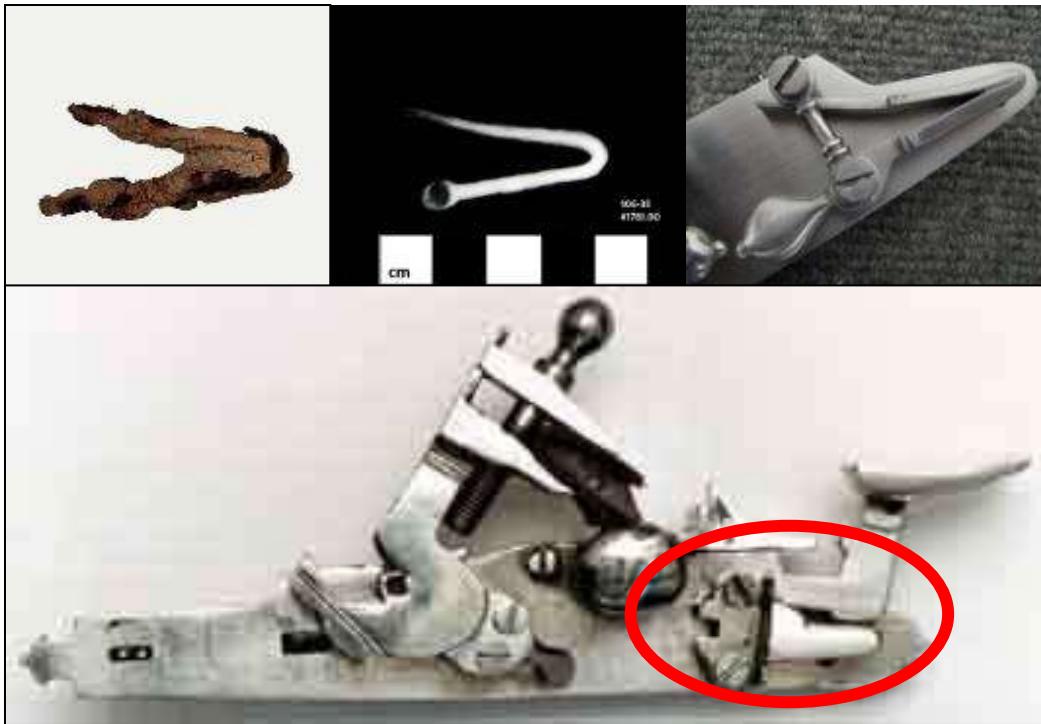


Figure 37. (Top Left) Early flintlock frizzen spring; (Top Middle) Frizzen Spring X-Ray; (Top Right) Reproduction Lock illustration spring location.

X-Ray Analysis captures the shape and form of the object which is often obscured by oxidation and can identify diagnostic features such as holes, repairs, breaks, and pivot points which help to determine the object's function. For example, the flintlock frizzen spring depicted in Figure 37 was identified based on the overall shape but particularly the pivot hole evident at one end of the object. With the exception of objects that clearly dated to the nineteenth or twentieth century, all ferrous objects were radiographed to determine if they were hand-wrought or not including over 1,500 nails. The final step in the identification process and initial step in the conservation process was the removal of extraneous oxide using air abrasion and soaking the artifact in a tannic acid bath to prevent future oxidation (Figure 38).



Figure 38. Saybrook Fort Conserved Objects - #64 door lock; #26 spike; #12 iron fragmet; #23 door pintel; #14 kettle fragment; #47 possible strike-a-light.

A wide range of reference materials were used to aid in the artifact identification process including archeological reports and objects of know date obtained from contemporaneous fort and domestic archeological sites, comparative research using museum collections, and examination of contemporaneous artifact assemblages from institutions such as Plimoth Plantation, the “Jamestown Rediscovery Project” and the Royal Armories.

V KOCOA Analysis

Terrain Analysis

Military terrain analysis is a critical aspect of battlefield surveys, so much so that the NPS ABPP require all grant recipients to use KOCOA (Key terrain, Observation, Cover and concealment, Obstacles, Avenues of approach), a military terrain model the U.S. Army developed to evaluate the military significance of terrain associated with a battlefield. By studying the battlefield terrain using KOCOA, a battlefield historian or archeologist can reconstruct the battlefield landscape, assess the veracity battle accounts, and in the case of the

Siege and Battle of Saybrook Point, identify battle-related sites and actions that are not well documented in historical accounts. KOCOA components include:

Key Terrain and Decisive Terrain: Key Terrain is any ground which, when controlled, affords a marked advantage to either combatant. Two factors can make terrain key: how a commander wants to use it, and whether his enemy can use it to defeat the commander's forces. Decisive Terrain is ground that must be controlled in order to successfully accomplish the mission. Examples of key terrain at Saybrook Point include the 28' elevation where the fort was located and the low elevation under the hill behind (east of the fort) used by the Pequot as an avenue of approach to cut off the trading warehouse from the fort.

Observation and Fields of Fire: Observation is the condition of weather and terrain that allows a force to see friendly and enemy forces, and key aspects of the terrain. Fields of Fire are areas in which a weapon or group of weapons may provide cover and give fire from a given position. The location of the fort provided cover fire to varying degrees to the south, north, and west of the fort but not the low elevation below the hill east ("under the hill behind") the fort or the garden pales (Figure 9). During the Saybrook Neck fight Gardiner and his men fought their way to "a piece of bare ground halfway which this winter I had cleared for the same use under command of our great guns."³²⁸ The fort's guns could not directly protect his men from Pequot attack "down by the garden pale" as this area was a lower elevation hidden under the hill behind the fort. Gardiner's solution was to fire bar shot from two of the fort's cannons into the tops of the trees which "tore the limbs of ye trees about their ears so yt diverse of them were hurt."³²⁹

Cover and Concealment: Cover is protection from enemy's fire (e.g. palisade, stone wall, brow of a hill, wooded swamp), and Concealment is protection from observation and surveillance (e.g. ravines, swamps, intervening hill or wood). The abrupt 10' drop in elevation below the hill behind the fort provided cover and concealment for the Pequot a number of times during the siege and they used it as an avenue of approach to cut off the trading warehouse from the fort or to attack the men at the garden pale. On at least two occasions Gardiner had to send a group of soldiers to the garden pales in order to disrupt a Pequot attack. The Pequot used the marshes along the north and south edges of Saybrook Point to approach the fort on a number of

³²⁸ Winthrop. *Winthrop Papers. Papers.* III: P. 382.

³²⁹ Gardiner. *Relation.* P. 32.

occasions. Gardiner had his men burn the reeds at Saybrook Neck to prevent the Pequot from using them as cover when they approached Saybrook Point and the fort.

Obstacles: Obstacles are any features that prevent, restrict, or delay troop movements. Obstacles can be natural, manmade, or a combination of both and fall into two categories: existing (such as swamps, rivers, dense wood, town or village) and reinforcing (placed on a battlefield through military effort). Saybrook Fort commanded most of the approaches to Saybrook Point and was an obstacle for the Pequot who had to approach Saybrook Point and the fort using the few approaches that were not in view from the fort.

Avenues of Approach and Withdrawal: An avenue of approach is the route taken by a force that leads to its objective or to key terrain in its path. An Avenue of Withdrawal is the route taken by a force to withdraw from an objective or key terrain. The Connecticut River at times functioned as both an avenue of approach for the Pequot and an avenue of withdrawal. The Pequot used the river to land men at Saybrook Point throughout the siege and to attack English canoes and small ships. After the Wethersfield Raid the Pequot in several large canoes paddled along the east bank of the Connecticut River to make their escape and return home.

KOCOA terrain analysis has helped define the Siege and Battle of Saybrook Fort Study Area and Saybrook Fort Core Area. The Siege and Battle of Saybrook Fort Study Area consists of 6,533 acres (2644 hectares) bounded generally by the Connecticut River, Warehouse Point to the north, Long Island Sound and the neck of land stretching between Cornfield Point and Lynde Point to the south, and the western bounds extend about three miles in from the river (Figure 2). The Saybrook Fort Core Area , designated as Site 106-35 includes the following Loci: Locus A - Siege Combat Actions; Locus B - February 22, 1637 Saybrook Neck Fight; Locus C - March 9, 1637 Parley; Locus D - Prospective Saybrook Fort Site; Locus E - Prospective Wharf & Warehouse Location. The Warehouse Point Core Area is also included in the Siege of Saybrook Fort Study Area although the battlefield survey ultimately determined that no evidence of these structures remained. Table 3 lists the Critical Defining Features of the Siege and Battle of Saybrook Fort (Site 106-35), Saybrook Fort Core Area based on KOCOA terrain analysis (Figure 39).

Table 3. Critical Defining Features - Siege and Battle of Saybrook Fort (Site 106-35), Saybrook Fort Core Area

Name	Location	Relevance to Battle	Field Comment	KOCOA Analysis	Integrity Assessment	Remarks
Terrain and Topographical Features						
Saybrook Point	Saybrook Point is a small peninsula of land located in Middlesex County at N41.28399° W72.35397° (NAD83).	Saybrook Fort was constructed on the northeast area of the point. Throughout the six-month siege much of the fighting occurred on or near Saybrook Point. The English accessed the point by boat at North Cove and later constructed	Moderately Wooded, High Residential Development, Moderate Commercial Development, Parks and Open Space, CT River Public Access, Public Roads.	Key terrain and cultural features, Observation, Fields of Fire, Avenues of Approach & Withdrawal, Cover & Concealment	Moderate integrity. Portions of the point still retain visual integrity and sense of siege terrain	Part of Saybrook Fort Core Area (Site 106-35). Contains Loci A-E.
High Ground at Saybrook Point	The 28' contour interval is located in the east-central portion of Saybrook Point	The highest elevation at Saybrook Point with a commanding view of the river, point, and neck	High residential development	Key Terrain. Obstacle for the Pequot as the fort was situated there.	Moderate integrity, still retains some visual integrity	Part of Saybrook Point Core Area.
Saybrook Neck	Saybrook Neck is a quarter-mile neck of land which links Saybrook Point to the mainland. It is located in Middlesex County at N41.28328° W72.36546 ° (NAD83). Located approx. 1 mile west of Saybrook Fort site.	This neck of land was the only land route connecting Saybrook Point to the mainland. It is bordered on the north and south by marshes which provide cover and concealment.	Moderately Wooded, High Residential Development, Marshes, Public Road.	Observation, Cover & Concealment, Obstacles, Avenue of Approach (Pequot-allied) & (English-allied). Key terrain Features include a skinny, hilly neck of land with marshes to the north and south.	Location, Setting, Feeling, Association, Material Culture.	Part of Saybrook Fort Core Area (Site 106-35). Contains Locus B.
Gee's Pond	Gee's Pond is a spring-fed, fresh water wetland located on the eastern end of Saybrook Point. It is situated in Middlesex County at N41.28520° W72.35312° (NAD83).	This freshwater source served as Saybrook Fort's water supply. The fort's garden and garden pales were located adjacent to the pond	Moderately Wooded, Tidal Marsh Land, Parks and Open Space.	Key Terrain, Obstacles, Avenues of Approach (English-Allied).	Location, Setting, Feeling, Association, Retains visual integrity. Material Culture.	Part of Saybrook Fort Core Area (Site 106-35)
North Cove	Body of water north of Saybrook Point.	The cove serve as Saybrook Points port as it provided some protection from coastal storms	No Residential Development. Used as a harbor to moor small private boats.	Key Terrain, Observation, Obstacles, Avenues of Approach (English-Allied).	Location, Association, Feeling. Retains visual Integrity	Used to access the point by boat.

South Cove	Very shallow body of water south of Saybrook Point.	The English garrison at Saybrook Fort either accessed their cornfields on Lynde Point on foot or by boat crossing South Cove.	No Residential Development	Key Terrain, Observation, Obstacles, Avenues of Approach (English- Allied).	Location, Association, Feeling. Retains visual Integrity	Crossed by boat in order to access Lynde Point.
Marshes	Extensive tidal marshes bordered Saybrook Neck to the north and south. Along the narrowest portion of the neck.	The marshes were used as cover and concealment by the Pequot to attack the English and to enter the point	No Residential development	Key Terrain, Observation, Obstacles, Cover and Concealment	Location, Association, Feeling. Retains Visual Integrity	
“Low Rising Hill”	Small hill between the 22’-24’ elevation located 100 yards southwest of the fort	Described as a “low rising hill” by Gardiner it was used to cover and conceal a war party of 200 Pequot	Residential development.	Key Terrain, Cover & Concealment	The hill was removed for fill in the 1960’s and has no integrity.	Hail shot was recovered 50 meters south west of where the hill would have been and is associated with cannon blasts of hail shot from the fort
Low Ground below Hill East of Fort	10’ contour elevation 100 meters east of fort and below the 20’ contour elevation	Area described by Gardiner as “under the hill behind us” a long low elevation hidden from the fort and used by the Pequot to cut off English from the fort	Very little residential development, moderately wooded	Key Terrain, Cover & Concealment, Avenue of Approach & Retreat	High physical and visual integrity, Location, Association, Feeling	Dozens of musket balls were recovered along this from several actions between the Pequot and English
Highest Elevation at Saybrook Point; 26’-28’ contour interval	The high point at Saybrook Point is located in the east-central portion of the point and affords commanding views of the point	The fort was situated on this feature which afforded commanding views of the point.	Residential development, public roads	Key Terrain; Observation & Fields of Fire	Moderate physical and visual integrity, Location, Association, Feeling	Concentrations of seventeenth century domestic, military, and architectural artifacts were recovered from this area
Fortifications & Associated Structures						
Saybrook Fort (106-35)	Located in the northeast corner of Saybrook Point	A fort engineered by Lion Gardiner to commanded the mouth	Moderately Wooded, High	Key Terrain, Observation, Cover &	Location, Association, Feeling,	Part of Saybrook Fort Core

	located on the 26'-28' contour interval. Middlesex County at approximately N41.28636° W72.3 5494° (NAD 83).	of the Connecticut River. Likely constructed in a modified New Netherland fortification style.	Residential Development.	Concealment, Obstacle, Avenue of Approach & Retreat.	Avenue of Approach (English-allied), Material Culture.	Area (Site 106-35). Locus D.
Great House / Warehouse	Situated on the easternmost high elevation point at Saybrook Point overlooking wharf and low ground.	The trading warehouse was located several hundred meters northeast of the fort. It also served as Gardiner's "home" and overlooked the wharf.	Moderately Wooded, light residential development.	Key Terrain, Observation	Low to moderate physical integrity, high visual integrity. Site has been impacted by construction of 19 th C railroad and 20 th C residence. Location, Association, Avenue of Approach (Pequot-allied), Material Culture.	Part of Saybrook Fort Core Area (Site 106-35). Locus E.
Wharf	Situated along the water at northeastern corner of Saybrook Point	The wharf served as the principle means of supply for Saybrook Fort and trading warehouses	Light residential development	Key Terrain, Avenue of Approach Withdrawal (English)	Low physical integrity, high visual integrity. Wharf area impacted by later wharf constructions.	Concentrations of European ballast flint mark the location of the 17 th C wharf

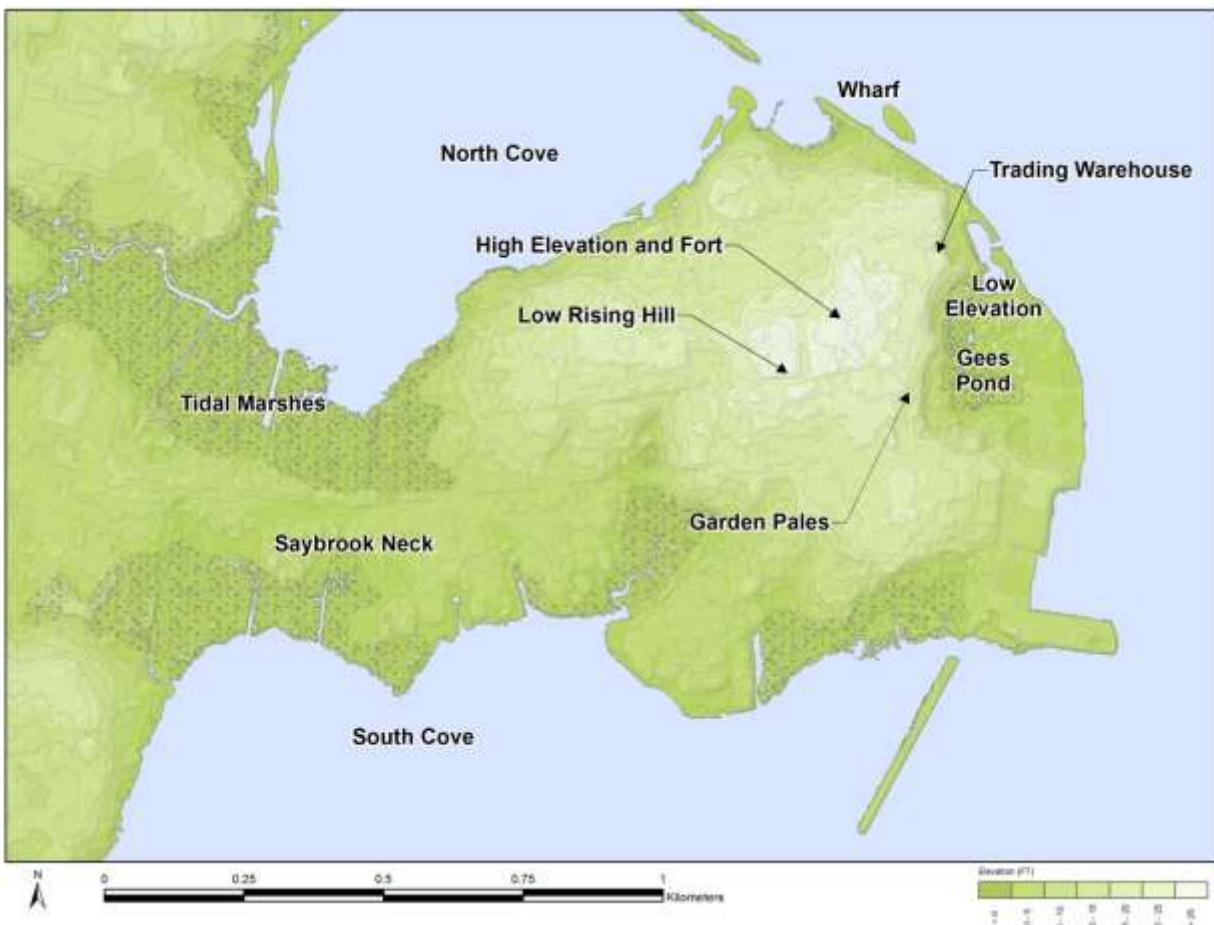


Figure 39. Key Terrain & Cultural Features Saybrook Fort Core Area.

VI Results and Battlefield Synthesis

The Siege and Battle of Saybrook Fort battlefield differs from previously documented Pequot War battlefields in that the timeline extends over six months and included several brief actions and sharp skirmishes. These multiple actions lasted an hour or less, and with the exception of the Saybrook Neck Fight the fighting involved relatively little movement. Twenty-four battlefield actions associated with the siege were identified from primary sources but only three battlefield actions (Loci A-C) were identified archeologically (Figure 40). The remaining twenty-one actions either took place elsewhere along the river or left a nearly invisible archeological signature making them difficult to both detect and distinguish from other activities at Saybrook Point. Identifying the location of the fort was most important in this respect as two actions (Loci A & C), and one structure (Locus E) were specifically described in relation to the fort (Locus D). Figure 40 illustrates the locations of Saybrook Fort Core Area Loci.

- Locus A “Siege Combat” – the site of multiple combat actions and skirmishes around the lower elevations east of Saybrook Fort and the associated outbuildings.
- Locus B “February 22, 1637 Saybrook Neck Fight” – a major Pequot ambush of Lieutenant Lion Gardiner’s command on February 22, 1637 one mile west Saybrook Fort at Saybrook Neck.
- Locus C “March 9, 1637 Parley” – a small hill approximately 100 yards west of Saybrook Fort which Pequot-allied forces often used for cover and concealment. Lieutenant Lion Gardiner documented at least one instance in early March 1637 in which he ordered the fort’s cannons to direct their fire of musket-ball cartridges on that location.
- Locus D “Prospective Saybrook Fort Site” – the site of Saybrook Fort and associated outbuildings.
- Locus E “Prospective Wharf and Warehouse Site” – the site of the fort’s wharf and nearby warehouse.

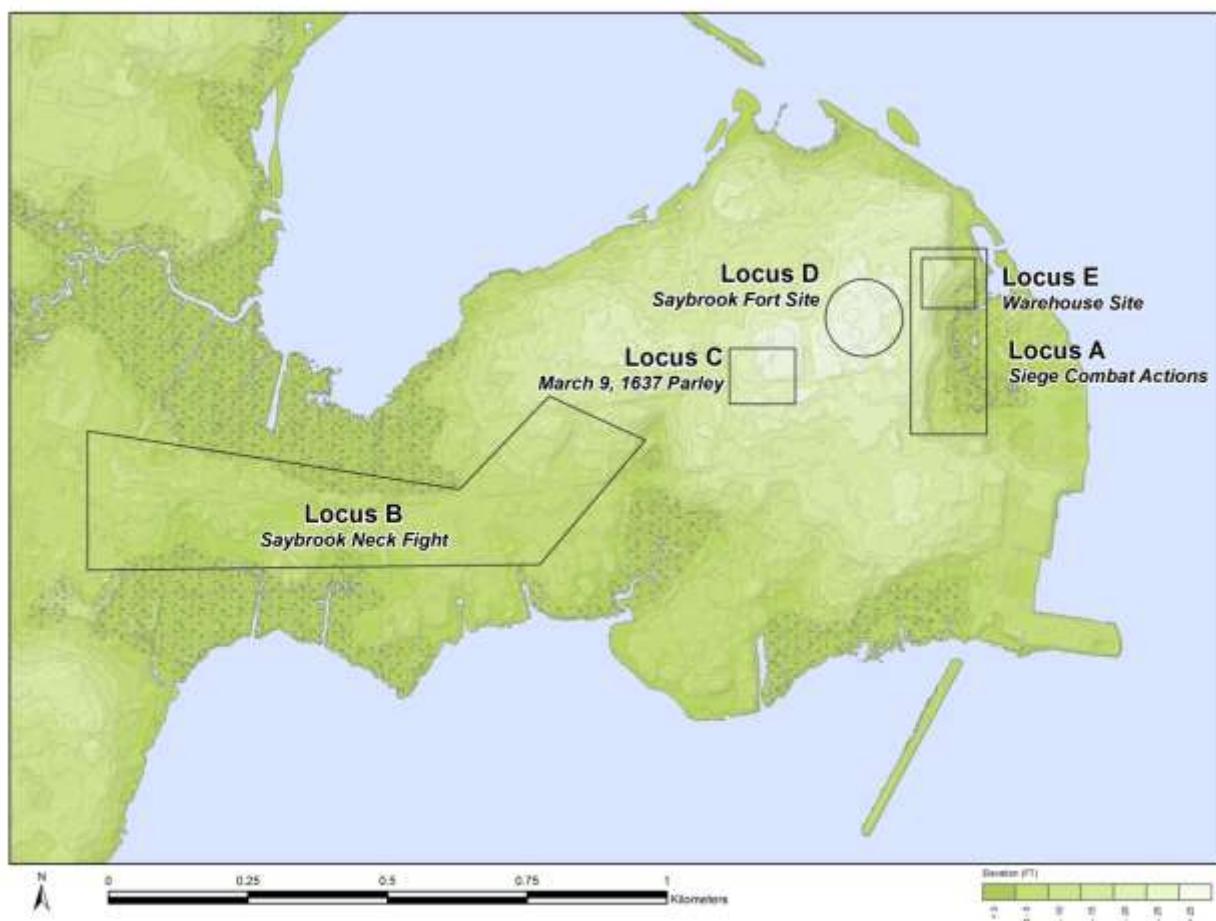


Figure 40. Saybrook Fort Core Area Battlefield Loci.

For example, the distribution of musket balls that define Locus A may represent more than one action, but there is little supporting documentation regarding the specific number and nature of encounters between the English and Pequot in this area. Locus A is defined by more than twenty-four musket balls in a north to south linear pattern distributed over a 300 meter (900 yards) distance along the low ground below the twenty foot elevation east of the fort. Locus B is the ambush and one kilometer (0.6 mile) running battle from Saybrook Neck to the protection of the fort on February 23, 1637; the longest action of the siege. While the action probably lasted less than an hour it was one of the more complex engagements between the Pequot and English during the siege. Collectively these actions provide important insights into Pequot and English tactics during the siege. Locus C appears to be associated with and the result of an action in early March, 1637 when Gardiner ordered two cannons loaded with “musketballs” to fire at two hundred Pequot hiding behind a “low rising hill” a few hundred yards in front of the fort. This incident lasted a few moments but it left an identifiable archeological signature consistent with the discharge of hail-shot. It was this discovery that confirmed the suspected location of Saybrook Fort 100 meters northeast of the hail shot distribution. Locus D is the likely site of the fort’s warehouse which is in the vicinity of the fort’s wharf or dock along the river bank. There a concentration of European honey colored (continental) ballast flint was located which is believed to be associated with early shipping.

Battlefield Timeline

The six month siege of Saybrook Fort consisted of many small combat actions, many of which were probably never recorded. A timeline of 24 combat related events, movements and actions that took place at Saybrook Point during the siege was compiled from primary accounts and presented in Table 4. Of these, only three Loci (A-C) had archaeological signatures that could be identified on the battlefield landscape and could be distinguished temporally and spatially from the many other engagements that occurred during the siege. Of the remaining twenty-one actions and engagements, primary sources did not provide sufficient clues that could be used to place these actions in time or space, and if present on Saybrook point are indistinguishable from battle-related objects distributed on Saybrook Point. The timeline of battle

events includes only those actions for which a potential archeological signature could be anticipated and potentially identified on the battlefield landscape.

Table 4. Timeline of Battle Events

Sequence	Action	Combatants	Location	Duration	Narrative	Signature
1. September 1, 1636 – April 1, 1637	Combat Actions associated with the Siege of Saybrook Fort	Approx. 20 Saybrook Garrison & 3 dogs; Approx. 60-80 Pequot Allied Forces.	Siege and Battle of Saybrook Fort Study Area; Saybrook Fort Core Area; Loci A-E. Saybrook Neck and Point.	Approx. 6 Months	09-1636 “Soon after they burnt down...some outhouses and haystacks within a bow-shot of the fort, and killed a cow, and shot divers others” ³³⁰ 11-6-1637 “...the Indians are many hundreds of both sides the river and shooe at our Pinaces as they goe up and downe; for they furnish the Indians with peeces powder and shot, and they come many times and shoot our owne pieces at us, they have 3 from us already, 5 of Capt: Stones one of Charles his etc.” ³³¹ 3-1637 “They also lay sculking about the Fort almost constantly, that the English could not go out of the Fort, but they were assaulted by the pequods...” ³³²	Moderate: Lead shot, cuprous arrow points, dropped and discarded equipment, personal effects.
2. February 22, 1637	Ambush on Saybrook Neck	Approx. 10 Saybrook Garrison & 3 dogs; Approx. 60-80 Pequot Allied Forces.	Siege and Battle of Saybrook Fort Study Area; Saybrook Fort Core Area; Locus B. Saybrook Neck and Point.	Approx. 1 Hour	2-22-1637 “[12 mo. (February) 22.] The lieutenant of Saybrook, at the mouth of Connecituct, going out with nine men, armed with swords and pieces, they started three Indians, whom they pursued till they were brought into an ambush of fifty, who came upon them, and slew four of their men, and had they not drawn their swords and retired, they had been all slain. The Indians were so hardy, as they came close up to them, notwithstanding their pieces.” ³³³	Low: Lead shot from cannon blast, cuprous arrow points, dropped and discarded equipment, personal effects.
3. March 9, 1637	Parley & Cannon Fire	Approx. 12 Saybrook Garrison; Approx. 100 Pequot Allied Forces.	Siege and Battle of Saybrook Fort Study Area; Saybrook Fort Core Area; Locus C. Saybrook Point.	Approx. 1 Hour	3-9-1637 “March 9. A body of Indians, consisting (as we conjectured) of two or three hundred came within musket shot of the Fort, challenging the English to come out and fight...But two great Gunns loaden with Carthages of musket bullets being fired at them, away they went.” ³³⁴	Low: Lead shot from musket fire, Cuprous arrow points, dropped and discarded equipment, personal items.

³³⁰ Winthrop. *Winthrop's Journal*. P. 192.

³³¹ Winthrop. *Winthrop Papers*. III: P. 321.

³³² Mather. *Troubles in New-England*. P. 25.

³³³ Winthrop. *Winthrop's Journal*. P. 208.

³³⁴ Mather. *Troubles in New England*. P. 46.

Results and Battlefield Synthesis

The primary goal of the identification and analysis of objects recovered from the battlefield landscape was to determine which artifacts were battle-related (i.e. early seventeenth century) and to correlate their location(s) and distributions with key terrain features to identify battle-related sites and actions. Approximately 6,400 artifacts and ecofacts (bone, shell) were recovered from metal detector and archeological surveys and excavations. These objects were identified to class (e.g. domestic, architectural, personal, military), type (e.g. ceramic, glass, iron, brass), and time period (e.g. pre-Contact, early or late seventeenth century, eighteenth century, etc.), and function (e.g. matchlock serpentine, cast iron kettle).

Artifacts were assigned to a particular time period based on two criteria; identification based on a temporally diagnostic attribute (e.g. maker's mark on a spoon, a pipe stem bore diameter of 6/64 or higher, a buckle or button form dating to first half of the seventeenth century), or spatial association with an assemblage of artifacts from a known time period. For example, once the location of the fort was identified and approximate boundaries determined, all seventeenth century objects within the fort's boundary were considered fort related unless they could clearly be assigned to any later time period. Distinguishing early seventeenth century assemblages from later seventeenth and early eighteenth century assemblages was challenging given the similarity in architecturally related objects such as hand wrought nails and door hardware and domestic objects such as cast iron kettles, pot hooks, knives, etc.

Fortuitously, an early eighteenth century domestic site was identified immediately adjacent to the prospective fort site and investigated with shovel test pits, excavation units and an intensive metal detector survey. Representative samples of metallic and non-metallic artifacts were recovered to compare with suspected seventeenth century assemblages. Differences in the architectural, domestic, and, military assemblages were readily apparent and helped to confirm the location of the fort just 75 meters north.

Artifact Distribution Maps (Figures 41, 42, 43, 44) depict the nature and distribution of artifacts related to the Siege and Battle of Saybrook Fort, as well as later artifact distributions to provide a comparative context to determine which periods of occupation/activity overlapped and where. In the final analysis it was the spatial association of temporally diagnostic early seventeenth century objects such as Jesuit rings, buttons, buckles, pipe stems, spoons and concentrations of military related objects such as gun parts, molten lead, musket balls, etc. that

confirmed the locations of the fort and trading warehouse. The most difficult and important identifications were those that distinguished between early seventeenth century, late seventeenth, and early eighteenth century objects. A “seventeenth century” designation was assigned to an object when there was a reasonable degree of confidence that an object or cluster of objects dated to the early to mid- seventeenth century based on diagnostic attributes, spatial context, and association with battle-related actions and sites identified from the historical records and battlefield terrain features. Given the multi-component nature of post-Pequot War Euro-American occupations at Saybrook Point, it is likely that many of the objects identified as early seventeenth century could date to a later period. However, the congruence of the historical records and key battlefield terrain features with hypothesized early seventeenth century battle-related objects indicates the prospective Saybrook Fort Site (Locus D) and prospective Wharf and Warehouse Site (Locus E; defined by concentrations of European, primarily continental flint) locations have been correctly identified.

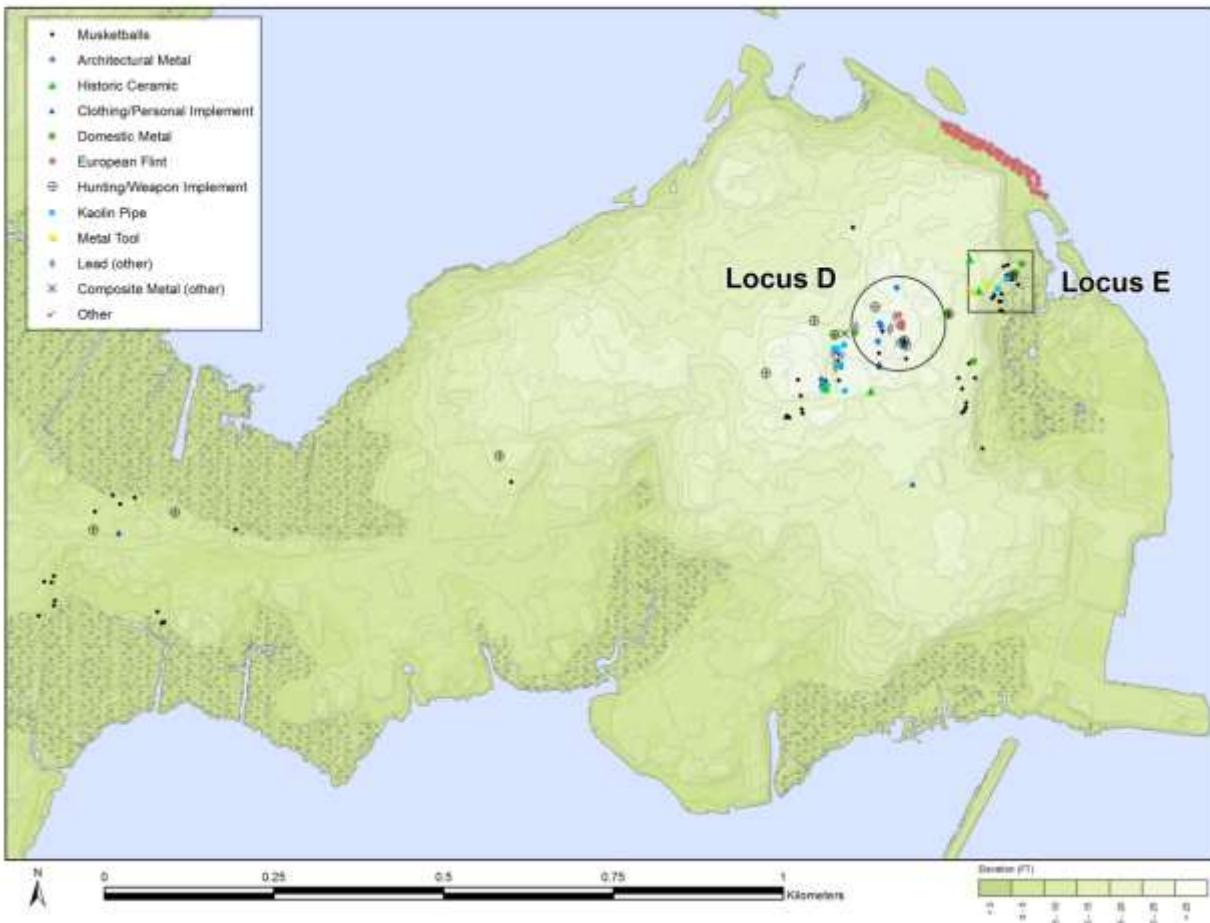


Figure 41. Saybrook Point. All Seventeenth Century Artifacts

Spatial Analysis of Battlefield Sites and Actions

The majority of the early seventeenth century domestic and architectural objects recovered from Saybrook Point are believed to be associated with the fort (Locus D) and the trading warehouse (Great House, Locus E; Figures 41, 43, 44). In these contexts it was the congruence of discrete sets of early seventeenth century architectural, domestic, and military objects in association with key terrain features that confirmed the locations of Saybrook Fort and warehouse, and were distinct from the distributions of later objects (Figure 42).

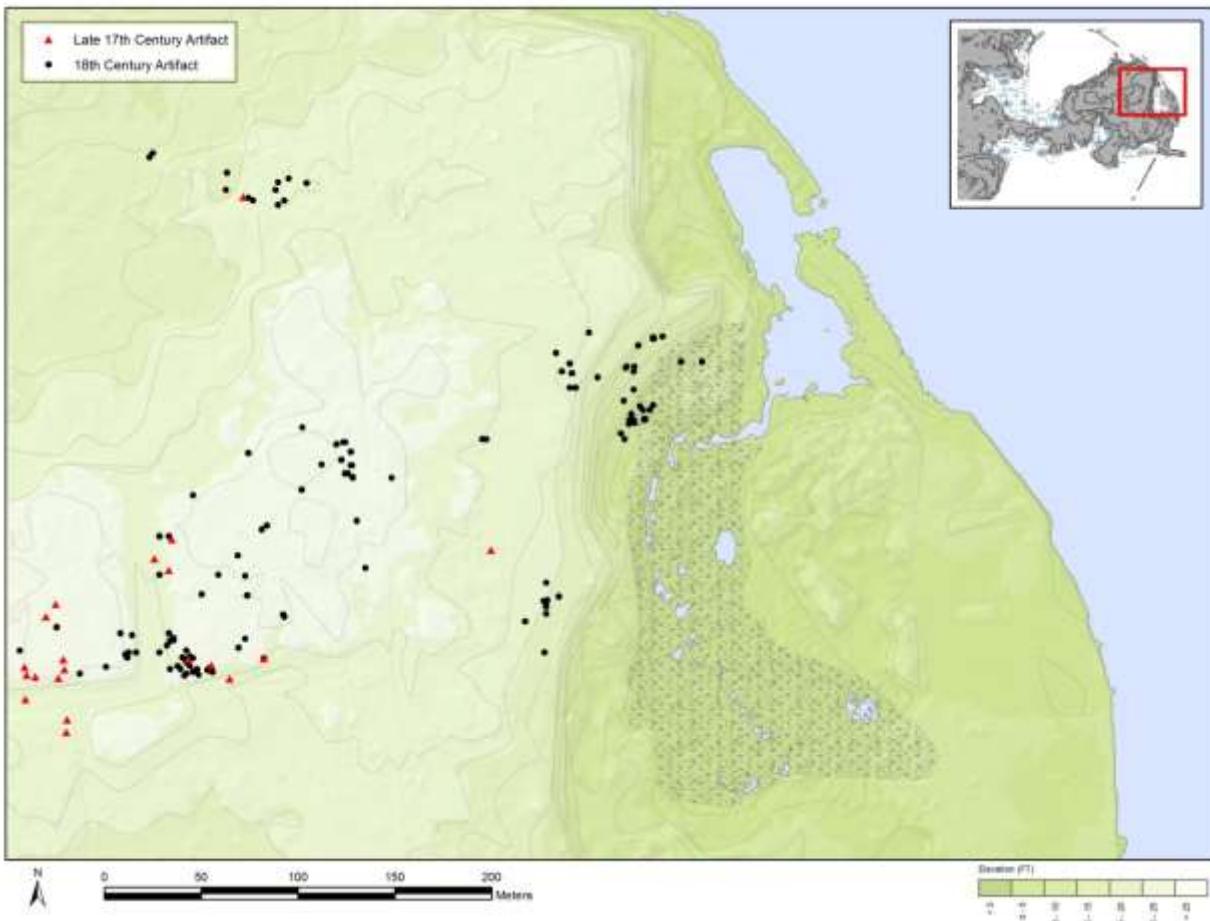


Figure 42. Late Seventeenth and Eighteenth Century Objects

Tables 5, 6, and 7 summarize all of the objects recovered from Saybrook Point from archeological and metal detector surveys organized by time period and function. The totals are a bit misleading, and should not be considered to be a representative sample of the objects by period and type recovered from Saybrook Point. When metal detector surveys identified areas of eighteenth, nineteenth, or twentieth century occupations with no hint of seventeenth century objects the survey moved to other more potentially more productive areas. Once areas of seventeenth century occupations or activities were identified and associated with key battlefield terrain features, the surveys tended to focus on these areas at the expense of others to better define the nature and boundaries of the battle-related site or action. Therefore, objects from later time periods are greatly underrepresented in the surveys. The purpose of the battlefield survey was not to identify all seventeenth century sites on Saybrook Point, but to identify only sites

related to the Siege and Battle of Saybrook Fort based on the congruence of recovered seventeenth century objects and key terrain features.

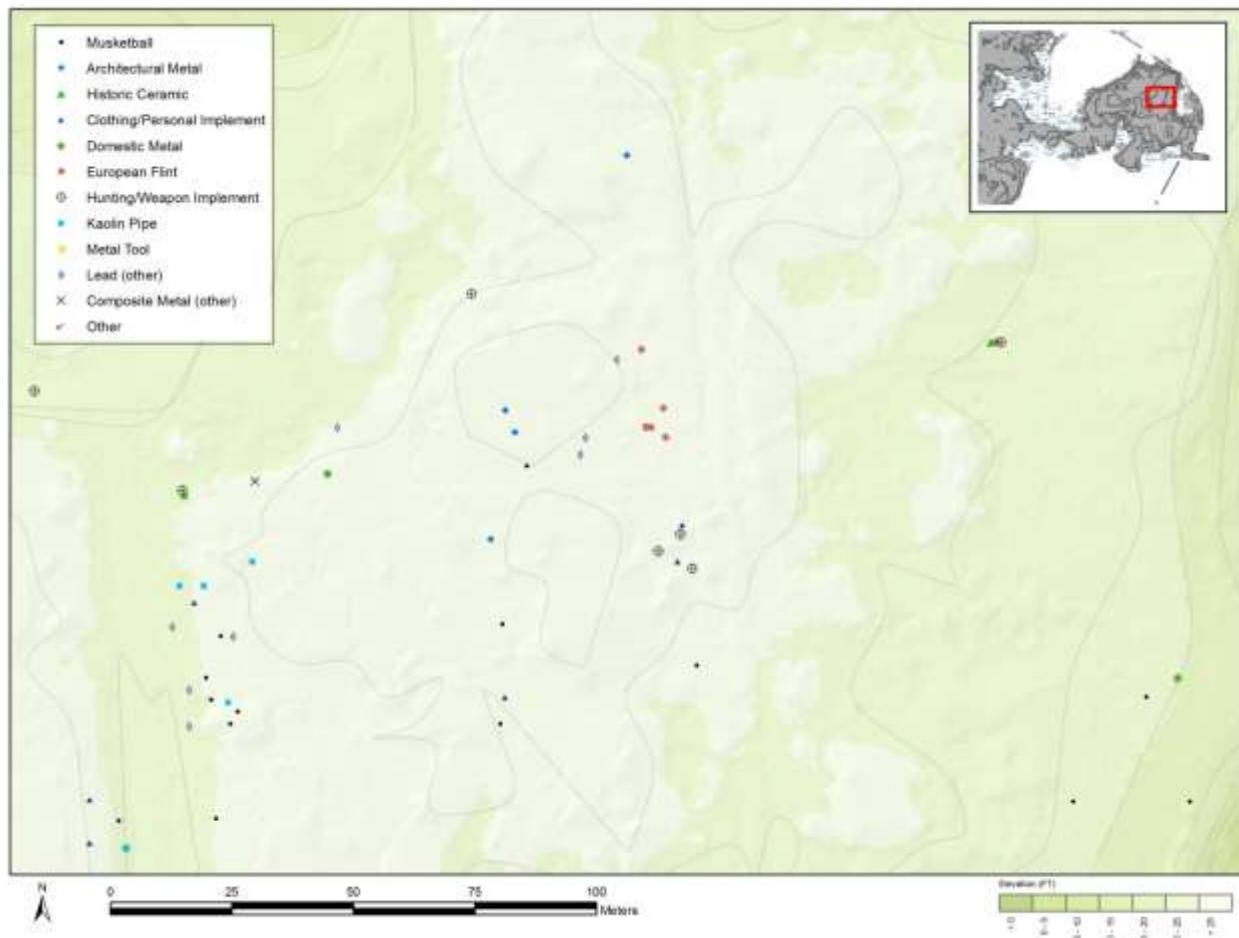


Figure 43. Early Seventeenth Century Artifacts Locus D.

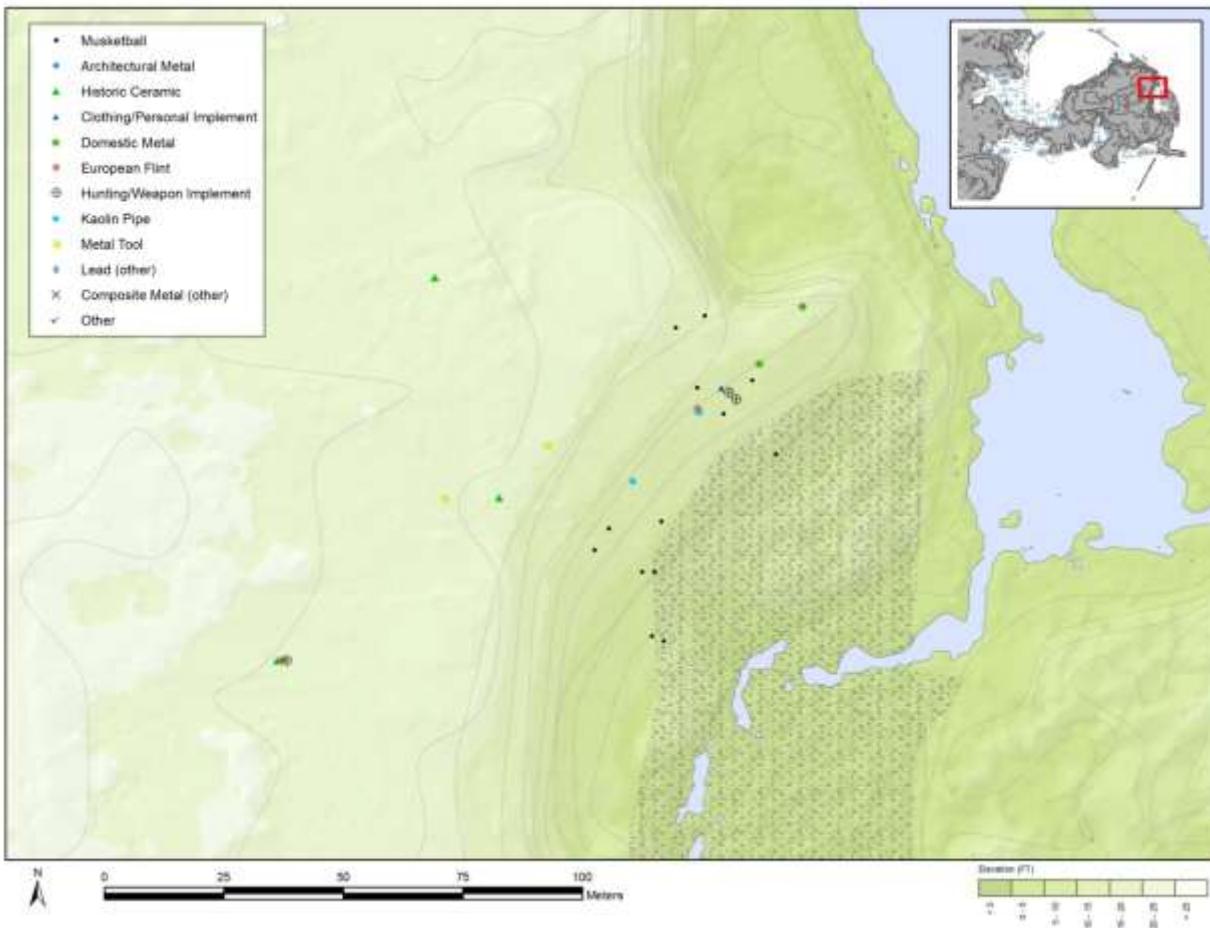


Figure 44. Early Seventeenth Century Artifacts Locus E.

Table 5 - Recovered Artifacts by Time Period

Pre-Contact	17 th	Late 17 th /Early 18 th	18 th	Late 18 th /early 19 th	19 th	20 th	unknown
190	875	136	291	279	463	136	3,874

Table 6 - Objects types by Time Period

	clothing/personal	weapon/equipment	tool/lithic	ceramic	domestic	architectural	bone/shell	botanical	other unknown
Pre-Contact			187	3					
17th	32	165	189	30	58	468	6	23	
late 17 th /early 18 th	7		1	1	20	264	1		
18th	40		7	39	107	86			
late 18 th /	30	4		268					

early 19th								
19th	19	2	3	127	20	262		7
20th	17	1	3		10	77		30
Unidentified	18		9	206	253	940	1	2428

Table 7 – Early Seventeenth Century Objects

Class	Object Type	Material	Number
Architectural			
	hand wrought rose head nails	iron	232
	hand wrought nails	iron	176
	T & L shaped nails	iron	6
	spikes	iron	17
	door hardware; bolts, hinges, clasps, knobs, lock	iron, cast brass	13
	window glazing	lead	6
	window glass	glass	15
	unknown/other	Iron	11
Domestic			
	ceramics; north devon, delft, lead glazed earthenware	clay	28
	kaolin pipes; 6/64 (3), 7/64 (7), 8/64 (3), Bowls (2)	clay	15
	clothing & personal; buttons, jewelry, rings	brass, pewter, lead	16
	kitchen; cats iron kettle frags, hooks, spoons, knives, keys, pot mends, scissors, spoons, furniture hardware, glass container	Lead, pewter, brass, iron, fishing weights	62
Military	matchlock & flintlock gun parts, armor, strike-a-lights, gunflint wraps, bandolier caps, gun barrel	Lead, iron, lithic	20
	musket balls & hail shot	lead	57
	musket ball production; molton lead, lead bar	Lead	75
Trade	bale seal, Jesuit rings, bells, brass scrap, muxes (awls)	Lead, brass, iron	10
Tools	caliper, folding knives	Brass, iron	14
Faunal	shell, bone	unidentifiable	5

Figures 45 through 54 are examples of the several classes of seventeenth century objects recovered from the Saybrook Fort Core Area, Locus D Prospective Fort Site and Locus E Wharf and Warehouse Site.



Figure 45. Saybrook Fort Architectural objects; Top A: cast brass nob, hand wrought screw, lead window glazing; Bottom iron escutcheon, rose head hand wrought iron nails.



Figure 46. Clothing and Personal Items: #s 749, 763, 249, 37, 582 Pewter Buttons; # 93 Brass Jesuit Ring, #190 Brass Buckle, # 438 Brass and Glass Pin.



Figure 47. Domestic Objects: # 2142 Hand Wrought Knife Blade, #111 Cast Brass Spoon Bowl, #658 Cast Brass Spoon Handle, #1178 Cast Iron Kettle Fragment, #597 Scissor, #748 Brass Tack, #664 Brass Kettle Lug, #647 Tin Glazed Spoon Bowl, #s 742 & 578, Lead Pot Mends, # 242 Wrought Iron Knife Fragment.



Figure 48. Domestic/Trade Objects: #1025 Brass Bell, #169 Sieve/Colander, #843 Cast Iron Kettle Fragment, #847 Scissor, #941 Lintel/Mantel Hook.



Figure 49. Scrap Brass.



Figure 50. Molten Lead and Musket Ball Casting Debris.



Figure 51. Lead Sheet Fragments.



Figure 52. #'s 1554 & 1543 Perforated Lead Discs, # 230 Lead Disc, # 1069 Lead Bale Seal.



Figure 53. Folding Knives.



Figure 54. English Flint Strike-A-Light.

Primary accounts, including Gardiner's *Relation* mentions five distinct actions or sites at Saybrook Point that appear to have identifiable archeological signatures (Figure 44):

- An undetermined number of combat actions that occurred around Saybrook Fort and the general vicinity during the six month siege. A portion of this signature was located east of the fort site and on a downhill slope. This may also be the location of the fortified garden area referred to as the “garden pales” (Locus A).
- the February 22, 1637 ambush at Saybrook Neck and running battle towards the fort site (Locus B).
- the March 9, 1637 parley 100 yards west of the fort site (Locus C).
- the prospective Saybrook Fort site (Locus D)
- the prospective Wharf and Warehouse site (Locus E).

Based upon wartime narrative descriptions of combat actions the anticipated and actual archeological signatures for the three actions (Loci A, B, & C) consisted of patterns musket balls, cannon hail shot, and some personal items. Identifying the archeological signatures associated with Saybrook Fort site and warehouse / wharf site were a bit more challenging given the intensity of seventeenth and eighteenth century colonial occupations and historical land use on Saybrook Point. However, it was assumed that both the fort and warehouse sites would have unique and discrete archeological signatures as they should include a combination of early seventeenth century domestic, military, architectural, and trade objects associated with key terrain features.

Figure 55 depicts the distribution and density of identified rose head nails, and Figure 56 depicts the distribution and density of hand wrought nails, both of which are concentrated at the suspected sites of the fort and the warehouse. These areas were designated as Locus D (Saybrook Fort Site) and Locus E (Trading Warehouse). Both types of nails are hand wrought, but rose head nails have a distinctive five-sided or “rosette” head, while the hand wrought nails have square, “L” or “T” shaped heads. Both types of nails were used throughout the seventeenth and eighteenth centuries, but rose head nails tend to be more common in the seventeenth century. Rose head nails would be used for framing or to affix larger door hardware as it didn’t matter that the nail head was not flush with the wood. Other nail head types would be used for flooring, door hardware, furniture and other uses where the intent was to make the nail head flush with the wood.

A careful comparison of the distributions of the two nail types in Figures 55 and 56 indicate some slight difference in distribution of rose head and hand wrought nails. The concentration rose head nails in Figure 55 is located between 50 to 75 meters north of the concentration of hand wrought nails depicted in Figure 56. The center of the concentration of hand wrought nails is closely associated with an early eighteenth century domestic site identified during the archaeological survey that yielded diagnostic first half eighteenth century artifact types such as German Westerwald and English salt-glazed stonewares, buckles, buttons, and architectural hardware (Figure 57).

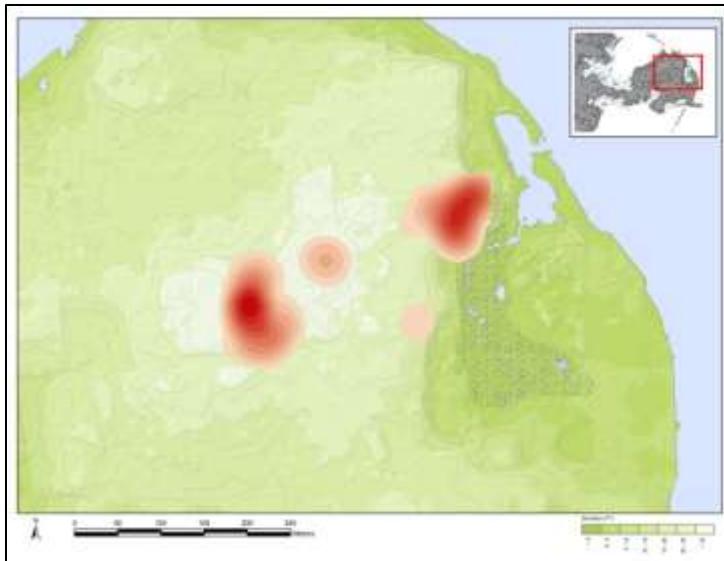


Figure 55. Density of Rosehead Nails

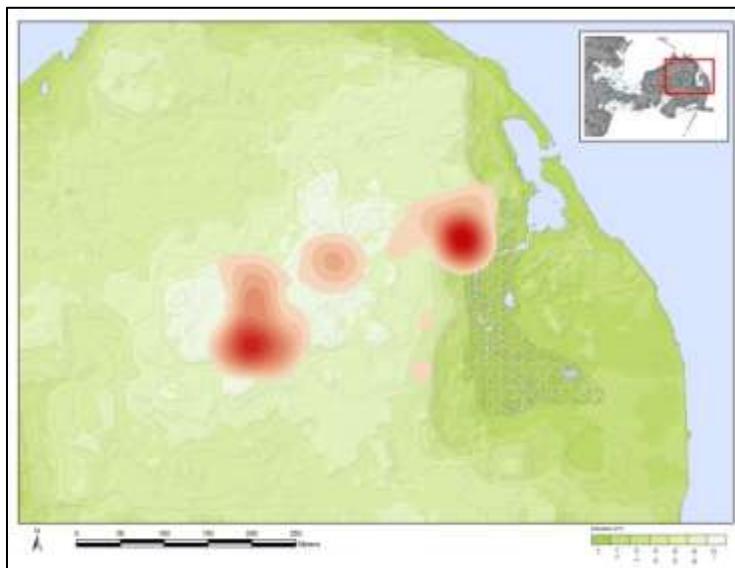


Figure 56. Density of Hand wrought Nails

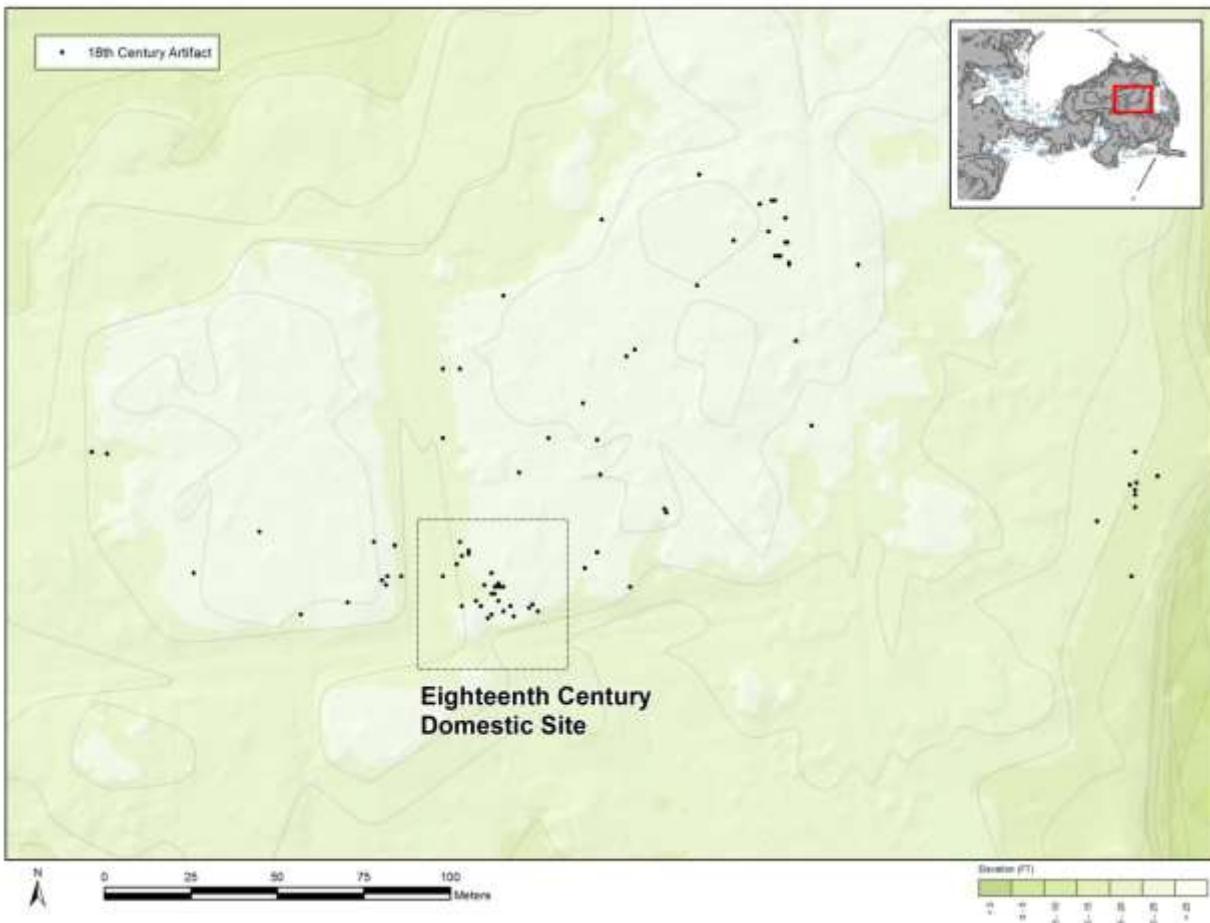


Figure 57. Eighteenth century Domestic Site.

Figures 41, 42, 43, 44 depict the distribution of all architectural, domestic, and military artifacts, except musket balls, identified as early to mid-seventeenth century objects. Two concentrations of seventeenth century artifacts are readily apparent and contrast sharply with the distribution of later seventeenth and eighteenth century objects (Figure 57). The first concentration is associated with the 26' – 28' contour interval, the highest landform at Saybrook Point. This area is believed to be the location of Saybrook Fort. The second concentration of early seventeenth century objects is located 150 meters northeast of the fort along on the twenty-foot contour interval overlooking the river and suspected wharf and warehouse area. This location is believed to be the site of the trading warehouse based on the artifact distribution and the “fit” with the location model discussed below.

Battlefield Actions

Three spatially discrete concentrations of battle-related objects (Loci A-C) were isolated at Saybrook Point which reflect distinct actions on the battlefield landscape; “Locus A: Siege Combat” which occurred along the eastern end of Saybrook Point; “Locus B: February 22, 1637 Saybrook Neck Fight” located on the western end of the point at Saybrook Neck; and “Locus C: March 9, 1637 Parley” in which hail-shot was fired from the fort’s cannons towards a small rising hill (Figure 44; Tables 5, 6, 7).

Action 1: Locus A – Combat Actions East of Saybrook Fort

Site 106-35 Locus A “Combat Actions East of Saybrook Fort,” is located on the eastern end of Saybrook Point and is a 379 meter (400 yards) linear pattern of twenty-two musket balls distributed along the low ground below the twenty-foot contour interval (Figures 40 & 58). The Locus is bounded on the north by the twenty-foot contour interval where the Warehouse (Locus E) was located, on the west by a sharply rising terrace the top of which also forms the 20’ contour interval, Gees Pond to the east, and the Lion Gardiner Monument Park to the south which is situated along the ten-foot contour interval (Figure 58). The low ground, largely hidden from the fort, was used by the Pequot on a number of occasions to approach the fort and warehouse unseen in order to launch surprise attacks. On at least two occasions Gardiner sent soldiers from the fort to chase the Pequot away. Although Gardiner mentions the fort’s cannon fired bar shot to the garden pales to the south, he does not specifically mention musket fire. However, there is a high congruence between the musket balls and the avenue of approach below the 20’ contour interval frequently used by the Pequot to approach the fort and warehouse. As many of the musket balls were impacted it is clear that combat action(s) took place in this area. Additional dropped and impacted of various calibers were also recovered within or immediately adjacent to the fort (Locus D). It is not clear which actions or activities these musket balls are associated with. It is likely that many other small actions occurred in and around the fort but there is no specific mention of them in the narratives. These musket balls/shot will be discussed further in the context of Locus D (fort).

Primary Sources associated with Locus A Combat Actions east of Saybrook Fort:

Lion Gardiner described various combat actions during the Siege in his *Relation* as follows:

...Robert Chapman, you know, y^t w you and John Bagley weare beating samp a y^e garden pales, the sentenells called you to run in for theare was a number of pequits creeping to you to catch you I hearing it went up to y^e redout and put two cross bar shot into the 2 guns y^t lay above and leveld them at y^e trees in ye middle of y^e limbs and boughs and gave order to John ffrend and his man to stand with handspickes to turn them this or y^t way, as they should heare the Indeans shout, for they should know my shout from theirs for it should be veire short, then I cald 6 men and the doggs and went out running to y^e place, and keeping all abreast in sight, close togeat^r, and when I saw my time I said stand, and called all to mee saying looke on me and wen I hould up my hand then shout as loud as you can, and when I hould downe my hand then leave and so they did, then the Indeans began a long Shout, & then went off y^e 2 great guns and toare the limbs of ye trees about th^r ears so y^t divers of them weare hurt as may yet apeare...³³⁵

...we had, with 3 great doares of 10 foot long & 4 foot broad, being boared full of hoales, and driven full of long nailes sharp as all blades Sharpened by thomas hurlbut thes we placed in Certain places, wheare they should come, fearing least they should come in y^e Night and fire our redout or batterie and all y^e place, for wee had seen their footing, wheare they had been in y^e night when they shot at our sentenells but could not hit them for y^e boards & in a dry time and a darke night they came as they did before, and found the way a little too sharp for them, and as they skipt from one they trod upon another and left the Nailes and doors died with th^r bloud which you know we saw y^e Next Morning...³³⁶

One account of combat around Saybrook Point written by John Winthrop Sr. survives in the *Winthrop's Journal* collection:

Soon after they burnt down...some outhouses and haystacks within a bow-shot of the fort, and killed a cow, and shot divers others; but they all came home with the arrows in them.³³⁷

Several additional accounts of combat around Saybrook Point written by several different authors to John Winthrop Sr. and Jr. survive in the *Winthrop Papers* collection:

November 6, 1636: Lion Gardiner to John Winthrop, Jr.:

I have sent your Cowes up to the plantations with 2 oxen 2 of them we have killed and eaten with the goates a ramm goate was brought from the Manatos but the

³³⁵ Gardiner. *Relations*. P. 32.

³³⁶ Gardiner. *Relations*. P. 32.

³³⁷ Winthrop. *Winthrop's Journal*. P. 192.

Enemie got him and all the greate swine 22 in one day and had gotten all the sheep and Cowes likewise had we not sallid out it was one the Saboath day and there was 4 men with the Cowes with firelocks for the sheep I have kept them thus longe and when the pinckes come downe I hope the will bringe hay form thme for I have not hay for them to eate by the way if I should sent them to the bay...

...I thinke it would be good if no vessels may be suffred to come but the men knowne and fitted with armes suitable charg'd not to goe ashore for they venture not onely their owne lives but wrong others also the Indians are many hundreds of both sides the river and shoote at our Pinaces as they goe up and downe; for they furnish the Indians with peeces powder and shot, and they come many tmies and shoot our owne pieces at us, they have 3 from us already, 5 of Capt: Stones one of Charles his etc...³³⁸

May 1637: John Higginson to John Winthrop:

For if that our condition here, to have 10 lustie men out of so little a number as ours is so cruelly slayne, others crying and roaring out through extremitie of the paine of wounds, others gasping and dying and breathing out their last, our selves beleaguered by the same blood thirsite, and hemmed in by those who daily seek our lives, etc...³³⁹

Captain John Underhill's narrative *Newes From America* (1637) who was deployed to Saybrook Fort detailed few combat actions but described Pequot activities as follows:

The enemy lying hovering about the Fort, continually tooke notice of the supplies that were come, and forbode drawing neere it as before.³⁴⁰

The Captain John Mason narrative that Reverend Cotton Mather included in his book *A Relation of the First Troubles in New-England* described the following:

They also lay sculking about the Fort almost constantly, that the English could not go out of the Fort, but they were assaulted by the pequods, so that Connecticut out their small numbers, constrained themselves to send Capt. John Mason with twenty men to secure the place. But after his coming, there did not one Pequot appear in view for a moneths space about the Fort...³⁴¹

Captain John Mason's *A Brief History of The Pequot War* described combat around Saybrook Fort follows:

³³⁸ Winthrop. *Winthrop Papers*. III: Pp. 319-320.

³³⁹ Winthrop. *Winthrop Papers*. III: Pp. 404-405.

³⁴⁰ Underhill. *Newes From America*. P. 16.

³⁴¹ Mather. *Troubles in New-England*. P. 25.

...also about twenty men at Saybrook, under Command of Lieutenant Lyon Gardner, who was then there settled by several Lords and Gentlemen in England. The Pequots falling violently upon them, slew divers Men at Saybrook; keeping almost a constant Siege upon the Place; so that the English were constrained to keep within their pallizado Fort; being so hard Beset and sometimes Assaulted, that Capt. John Mason was sent by Connecticut Colony with twenty Men out of their small Numbers to secure the Place: But after his coming, there did not one Pequot appear in view for one Month Space...³⁴²

The “Anonymous Narrative” Reverend Cotton Mather included in his book *A Relation of the First Troubles in New-England* described the following combat:

...They [Pequot] made towards the Fort as if they would have done some great matter; but a great Gun being discharged at them, they went quite away, and were no more seen at Say-brook, for the greatest part of that winter.³⁴³

Archaeological Signature:

Battle-related objects recovered from Locus A include iron (gun parts, door hardwares, kettle fragments), lead (dropped musket balls and molten lead) and brass (buttons, buckles, spoons). Many of these objects were recovered in close proximity to the Warehouse (Locus E) and are more likely associated with the occupation of the warehouse than the combat actions east of Saybrook Fort, as the boundaries of Locus A and E overlap to some extent. None of the musket balls recovered from Locus E were impacted and their association with molten lead suggests they were manufactured at the warehouse and are not associated with the action(s) identified within Locus A. However a cuprous button and buckle fragment were recovered in close association with the distribution of musket balls in Locus A and they were likely items dropped by English soldiers during the actions that define Locus A (Figure 61).

³⁴² Mason. *Brief History*. P. IX.

³⁴³ Mather. *Troubles in New-England*. P. 45.

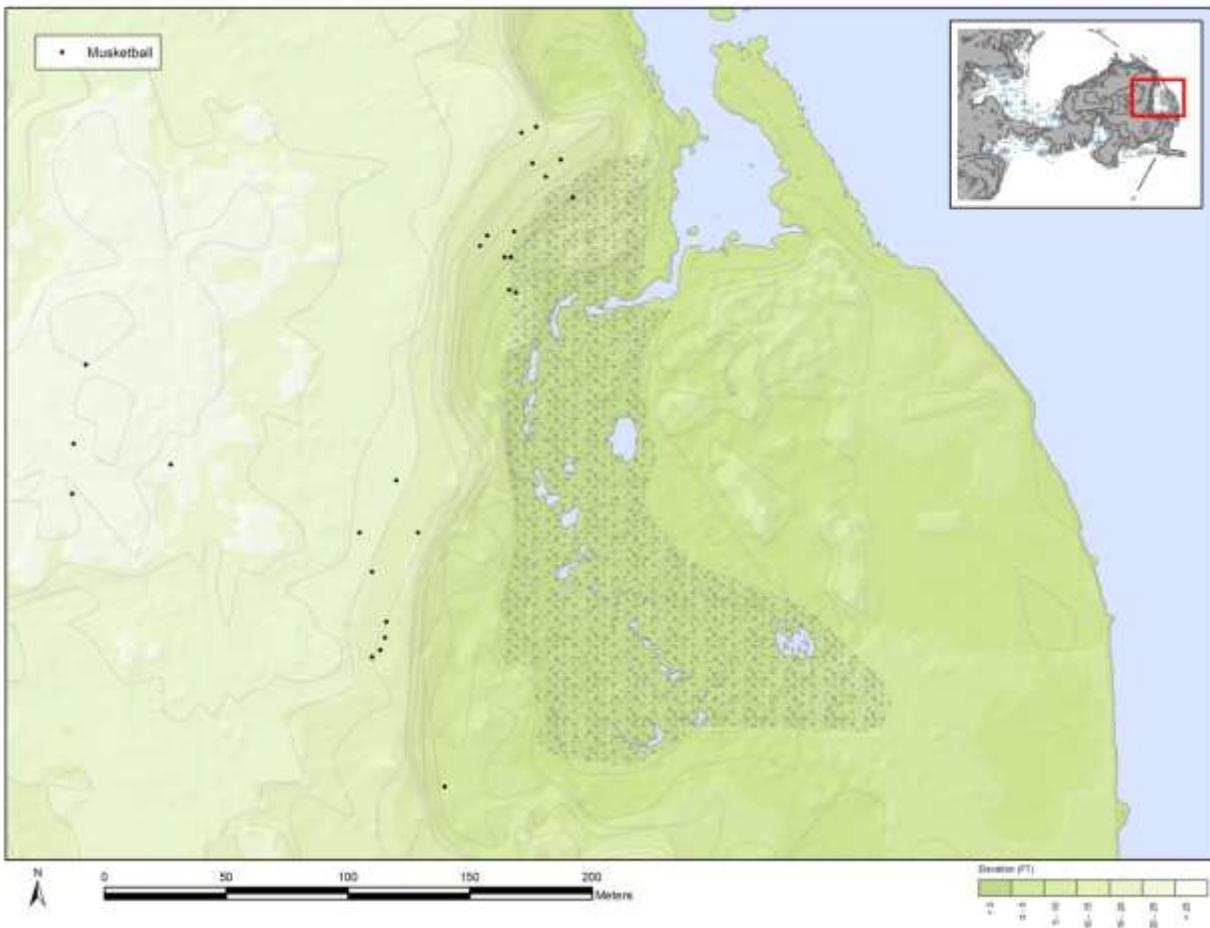


Figure 58. Site 106-35, Locus A: Combat Actions East of Saybrook Fort- Musket Balls.

A total of 22 musket balls of various calibers were recovered from Locus A (Figures 59, 60). Two of the musket balls were dropped and the remaining twenty were impacted. A cuprous button and buckle fragment were also recovered from Locus A (Figure 61).



Figure 59. Site 106-35, Locus A: Dropped and Impacted Musket Balls of Various Diameters.

106-35 Locus A Musket Ball Diameter by Quantity

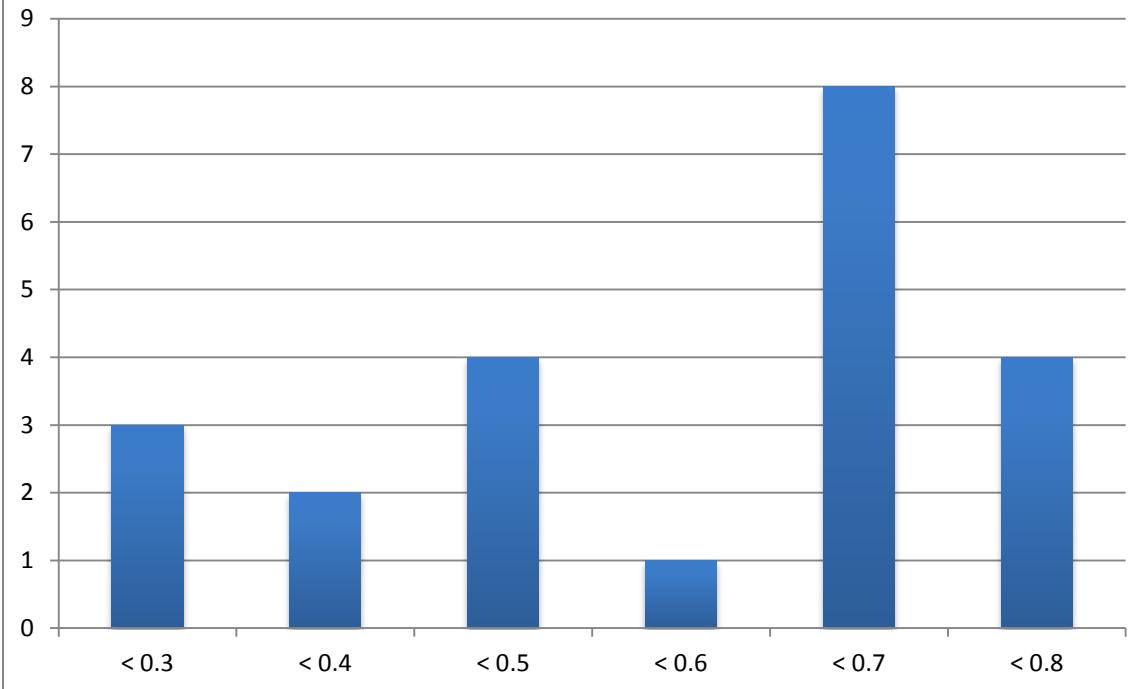


Figure 60. Musket Ball Diameters, Locus A

Although the eastern tip of Saybrook Point has been home to a fort that was used during the Colonial Wars, American Revolution and the War of 1812, MPMRC researchers are confident that the lead shot recovered from the Saybrook Fort Core Area dates to the Pequot War and not to later events due to the diameters and location. Very few of the recovered lead shot fell within the standard diameter of either French or English standard musket bore sizes of generally .69 and .75 respectively, nor do any of the musket ball distributions represent the typical “buck and ball” loads typically employed by American forces in the eighteenth and nineteenth centuries.



Figure 61. Site 106-35, Locus A. # 1549 Brass Button, # 938 Brass Buckle Fragment.

The lead shot recovered from Locus A ranged between .25"- .78" diameter, seemingly a fairly wide range. However, the overall pattern is similar to the distribution of musket ball diameters recovered from the Battle of Mistick Fort and the Battle of the English Withdrawal.³⁴⁴ Soldiers used both large and small shot on the battlefield depending on the tactical situation. Several small-shot (.25"- to .45" diameter) would be packed into a muzzle-loading firearm and could be effectively used against single or multiple targets within a range of ten to fifteen meters (30'-45'). Larger diameter musket balls, undersized within .02" of barrel bore diameter, could be effectively aimed at within an effective range of twenty fifty meters (65'-160'). The majority of the small shot recovered from Locus A was concentrated in one area at the southern end of the locus as was the largest diameter musket ball (.78").

Many of the impacted musket balls were recovered along the slope leading to the 20' contour where the warehouse (Locus E) was located indicating they were fired from a southerly

³⁴⁴ McBride, Kevin and David Naumec, et al. *Battle of Mistick Fort: Site Identification and Documentation Plan* GA-2255-09-017. Mashantucket, CT: 2009.

to northerly direction. This pattern would be consistent with actions originating from soldiers sent to or stationed at the garden pales (just outside the southern boundary of Locus A) where Gardiner sent soldiers from the fort on at least one occasion to prevent the Pequot from cutting off the warehouse from the fort. Other objects recovered along the southern slope of Locus E were several cuprous and pewter buttons, a cuprous brass, a possible iron matchlock trigger bar and several other unidentified cuprous and hand wrought ferrous objects (Figure 79). These objects, along with those recovered from the top of the twenty-foot contour are likely associated with the occupation of the warehouse (Locus E).

Interpretation:

The musket balls recovered within Locus A were distributed in two distinct concentrations in the north and south separated by an area of approximately 100 linear meters, where no musket balls were recovered and presumably no action took place. This pattern could indicate two separate combat events or a single combat event with two engagements separated slightly by time and space. The impacted musket balls recovered from the south slope of Locus E (warehouse and wharf) indicate English fired from south to north at Pequot who were on the slope. If the northern distribution is a distinct combat event, it suggests that when the English sallied from the fort they turned south and then east, attacking north as the Pequot had already passed the midpoint of Locus A. If the southern distribution of musket balls marks a second combat event the English may have attacked directly south after exiting the fort. As the terrain is flat in the southern portion of Locus A, no direction of fire can be inferred from impacted musket balls.

Alternatively, the two distributions of musket balls may represent a single combat event initiated in the area of the garden pales outside the southern boundary of Locus A. In this scenario the English first engaged the Pequot just north of the garden pales defined by the southern boundary of Locus A. The frequency of small diameter musket balls in this area suggests the English initially loaded their weapons with multiple small shot to engage the Pequot at close range. As the battle progressed, the Pequot probably had no choice but to retreat north along the low area below the 20' contour to evade the attacking English from the south and avoid fire from the fort to the west. The concentration of musket balls impacted into the south slope of

the warehouse area also suggests that a group of Pequot managed to get fairly close to the warehouse when they were engaged by the English in the final phase of the action.

Action II: Locus B – February 22, 1637 Ambush on the Neck

Site 106-35 Locus B “February 22, 1637 Saybrook Neck Fight” was the longest engagement of the siege and resulted in the highest number of English casualties in a single engagement. The Locus is identified by distributions of musket balls and dropped and broken equipment that begin just west of the narrowest part of the neck on the “mainland” side and continue for approximately 500 meters (550 yards). Recovered battle related objects include fifteen musket balls, a lead flint wrap, iron strike-a-light, and an iron sear spring from a flintlock (Figures 63, 64, 65, 66, 67).

On February 22, 1637, Lieutenant Gardiner led a party of nine men and three dogs towards Saybrook Neck to roll logs into the North Cove to float them to the fort to burn the reeds and rushes in the marshes bordering the neck, ironically to prevent a Pequot surprise attack. The flames forced a group of four Pequot out of the reeds and Gardiner and a few men quickly followed in pursuit. Gardiner called for his men to leave the marsh just as two sentries that were posted near of the smallest point of the neck called out to Gardiner that 100 or more Pequot had rushed out of the marsh in an attempt to cut off the work party. Two of the English soldiers dropped their weapons and fled, making their way safely to the fort. Gardiner later threatened to hang one of them for their cowardice. Meanwhile Gardiner gathered those men close to him and continued to fire upon the Pequot while falling back to the neck. Within a matter of minutes Gardiner’s company of ten men was reduced to four; three of which were seriously wounded, including Gardiner. One man died just as he reached the fort gate.

The Pequot closely pursued Gardiner’s men to keep them from re-loading or forming a battle line and pressed the English “in a halfe moone” formation in an attempt to surround them. Eventually Gardiner and his men were forced to rely on their swords to keep the Pequot at bay. The battle ended when the survivors fell under the protection of the fort’s guns. Gardiner had anticipated such an attack and had ordered an area within range of the fort’s cannon to be cleared knowing the Pequot would not press an attack so close to the fort. Pequot casualties are unknown but they likely suffered some dead and wounded in the engagement.

Primary Sources:

This action was described in a number of period sources, which collectively provide a fair amount of detail about the movements and actions of the Pequot and English. The more important descriptions were written by Lion Gardiner, an “Anonymous Narrative” which appears to have been written by a witness to the event, and a third written by Philip Vincent who either visited Saybrook Fort or interviewed soldiers who were there. Lieutenant Gardiner wrote an after-action report on the Saybrook Neck fight to John Winthrop Sr. which survives in the *Winthrop Papers* collection:

...one the 22th of the last moneth I with ten men more with me went abov[e] our neck of land to fire some small bushes and marshes whear we thought the enimie might have lien in ambush and aboute halfe a mile from home we started 3 Indians and having possibility to have cut them short we runinge to meeete them and to fire the marsh but whylest our men was setting it one fire there rushed out of the woods 2 severall ways a great Company of Indians which though we gave fire upon them yet they run one to the very mussels of our pieces and soe the shott 3 men downe in the place and 3 more men shott that escaped of which one died the sam[e] night and if the lord had not putt it not my mind to make the men draw ther swords the had taken us all alive soe that sometime shouttinge and sometime retraightinge keepinge them of our sword[s] we recovered a bayre place of the ground which this winter I had cleard for the same use and they durst not follow us any further because yt is under Com[mand] of our great guns of which I hope the ³⁴⁵ have had some experience as we heare by the relation of other Indians...

Gardiner described the February 22nd in much more detail in his narrative of the Pequot War *Relation of the Pequot War* (ca. 1660):

In ye 22th of ffebruarie I went out with 10 men and 3 doggs half a mile from the house to burne the weeds leaves and reedes upon the neck of land, becaus we had feld 20 timber trees which we weare to roule to y^e wat^r side to bringhome everie man carrying a length of Match with brimstone Matches with him to kindle the fier withall, but we came to y^e small of y^e Neck y^e reeds burning, I having before this set 2 sentinells on y^e small of y^e Neck, I called to y^e men y^t weare burning the reeds to cum away, but they would not until they had burt up the rest of th^r matches, p^rsently th^r starts up 4 Indeans out of y^e fierie reeds, but ran away, I calling to y^e rest of our men to cum away our of y^e Marsh; Then Robert Chapman and Tho Hurlbut being Sentenells called to me, Saying ther came a numb^r of Indeas out of y^e oth^r side of y^e Marsh, then I went to stop them that they should not get ye woodland, but Tho Hurlbut cried out to me yt sum of the men did not follow me, for Tho Rumble & Arthur branch threw downe th^r 2 guns and ran

³⁴⁵ Winthrop. *Winthrop Papers*. III: Pp. 381-383.

away, then the Indeans shot 2 of them y^t weare in the reeds, and Sought to get between us & home but durst not cum before us, but kept us in a halfe moone, we retreating, & exchanging many a shot, So y^t Tho Hurlbut was shot almost through the thigh John Spencer in the back into his kidneys myself into the thigh, 2 more weare shot dead; but in our retreat I kept Hurlbut and spencer still before us, we defending our selves with our naked swords or els they had taken us all alive, So y^t y^e 2 sore wounded men by our slow retreat got home with th^r guns, w our 2 Sound men ran away and left th^r guns behind them.... .Within a few dayes aft^r when I had cured myself of my wound I went out with 8 men to get some foule for our reliefe and found y^e guns y^t weare throune away, and the bodie of one man shot through, the arrow going in at y^e right side, y^e hed sticking fast halfe through a rib at the left side which I tooke out and cleansed it and p^rsumed to send to y^e bay, becaus they had said y^t y^e arrows of y^e Indeans weare of no force...³⁴⁶

John Winthrop, Sr. wrote a brief account of the attack in his journal likely based on based on Gardiner's letter:

12 mo. (February) 22.] The lieutenant of Saybrook, at the mouth of Connecituct, going out with nine men, armed with swords and pieces, they started three Indians, whom they pursued till they were brought into an ambush of fifty, who came upon them, and slew four of their men, and had they not drawn their swords and retired, they had been all slain. The Indians were so hardy, as they came close up to them, notwithstanding their pieces.³⁴⁷

Philip Vincent was the first published account of the Pequot War and he described the February 22nd in *A True Relation Of The Late Battell Fought In New England, Between The English And The Salvages* (1637):

...the Lieutenant of the Fort there, with tenne men armed, went out to fire the Meddowes, and to fit them for mowing. Arriving there he started three Indians, which he pursued a little way, thinking to cut them off. But presently they perceived themselves encompassed with hundreds of them, who let flie their arrowes furiously, and came desperately up on the musles of their Muskets, though the English discharged upon them, with all the speed they could. Three English men were there slaine, others wounded. The eight that remained, made their way through the Salvages with their swords, and so got under the command of the Cannon of the Fort, (otherwise they had been all slaine, or taken prisoners) one of the wounded falling downe dead at the Forts Gate. The Indians thus fleshed and encouraged, besieged the Fort as neere as they durst approach.³⁴⁸

³⁴⁶ Gardiner. *Relation*. Pp. 12-14.

³⁴⁷ Winthrop. *Winthrop's Journal*. P. 208.

³⁴⁸ Vincent. *True Relation*. Pp. 7-8.

Captain John Underhill and 20 soldiers from Massachusetts Bay were deployed to Saybrook Fort shortly after the February attack. Underhill described the attack from information obtained from Gardiner and his men and included it in his narrative of the Pequot War, *Newes From America* (1637):

The Lieutenant went out with tenne armed men, and starting three Indians, they changed some few shotte for arrows; pursuing them an hundred more started out of the ambushments, and almost surrounded him and his company, and some they slew, others they maimed, and forced them to retreat to their Fort, so that is was a special providence of God that they were not all slaine: some of their armes they got from them, others put on the English clothes, and come to the Fort jeering of them, and calling, come and fetch your English mens clothes againe; come out and fight if you dare: you dare not fight, you are all one like women, we have one amongst us that if he could kill but one of you more, he would be equall with God, and as the English mans God is, so would hee be...³⁴⁹

Captain John Mason's narrative included in Increase Mather's *A Relation of the First Troubles in New-England* described the following:

The Pequots observing Lieut. Gardner going to fire the Meadows about half a mile off the Fort, with ten men with him, was violently assaulted by the Pequot Indians, so that some were slain, the rest were rescued by the Souldiers issuing out of the Fort upon the said Pequots who fled.³⁵⁰

The “Anonymous Narrative” included in Increase Mather’s *A Relation of the First Troubles in New-England* described the attack as well:

Feb 22. The Lieut. With nine Souldiers well armed, went out of the Fort to burn the woods thereabouts, being gone half a mile from home they were beset with about seventy Indians, who let fly their Arrows very fiercely; the English retreated, one man presently was shot in the neck, and then did they lay hands on him, he drew his Sword, but that was taken from him; then would he (as the Indians afterwards testified) have killed himself with his own knife, but that also did the Indians deprive him of, and cut off his nose and hands, and put him to a cruel death; They shot down another English man with three Arrows, and a third had one of his ribs cleft with an Arrow, so that he died immediately. A fourth, was mortally wounded, and though he got home alive, he died within fourteen hours, a fifth was sorely wounded, but afterwards recovered, and lived (the next year) to behead that very Indian who had shot an arrow into him. Yea, the Lieut. Himself was wounded in this Skirmish. After this the Indians kept Leaguer before, Say-brook Fort.³⁵¹

³⁴⁹ Underhill. *Newes From America*. Pp. 15-16.

³⁵⁰ Mather. *Troubles in New-England*. P. 25.

³⁵¹ Mather. *Troubles in New-England*. Pp. 45-46.

Archaeological Signature:

The Pequot attack and English fighting retreat on Saybrook Neck have been identified as Site 106-35, Locus B “February 22, 1637 Saybrook Neck Fight.” Twenty-three properties were surveyed along the neck, and battle related objects were recovered from six properties including fifteen musket balls of various diameters, an iron sear spring from a flintlock musket, a lead flint wrap, brass buttons, an iron strike-a-light and an iron buckle (Figures 63, 64, 65, 66, 67). Other objects recovered from Locus B included a cuprous strap, two cuprous buttons, and an iron buckle, but could not be associated with the combat action with a high degree of confidence given the nature of later seventeenth and early eighteenth century activity in the area.

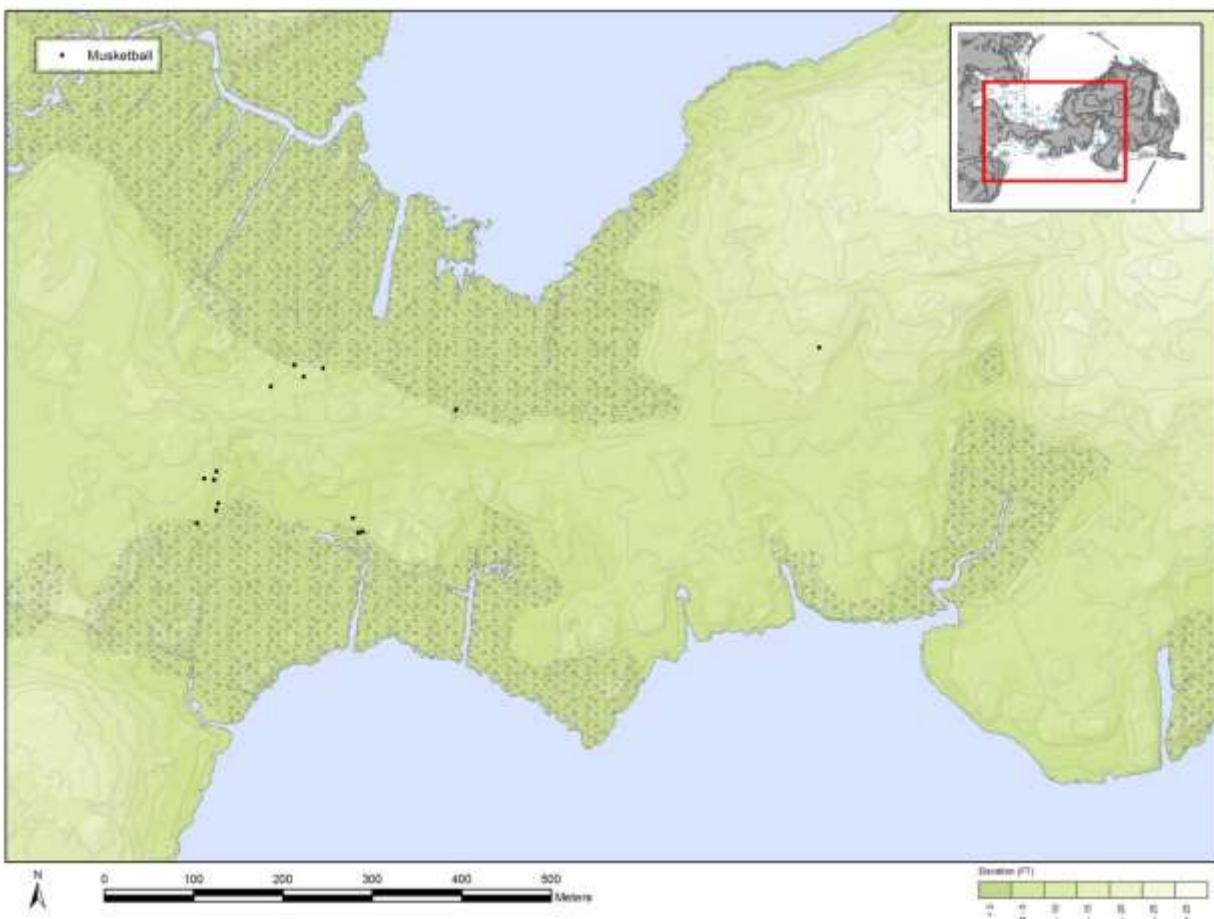


Figure 62. Site 106-35, Locus B Musket Balls “February 22, 1637 Saybrook Neck Fight”

Ten of the 15 musket balls recovered were large diameter balls (Figures 63 & 64) indicating single shots fired at a distant target while five musket balls were within the small-shot range (less than 0.4” diameter) and were likely fired as multiple rounds at a target, closer than

forty yards. Two of the large diameter musket balls exhibit casting flaws or casting cavities consistent with other musket balls recovered elsewhere on Site 106-35 Locus A and Locus D (see discussion of Locus D below). One of the larger diameter lead shot is a cylindrical shot, also described as “plug shot” or a “slug.” These projectiles were thought to tumble in flight and therefore cause a terrible wound if the projectile struck its target.³⁵²



Figure 63. Site 106-35, Locus B: Lead Musket Balls. Note # 1778 Cylindrical Shot.

³⁵² David Harding, *Lead Shot of the English Civil War* (London: Foresight Books, 2012). Pp. 100-101.

106-35 Locus B Musket Ball Diameter by Quantity

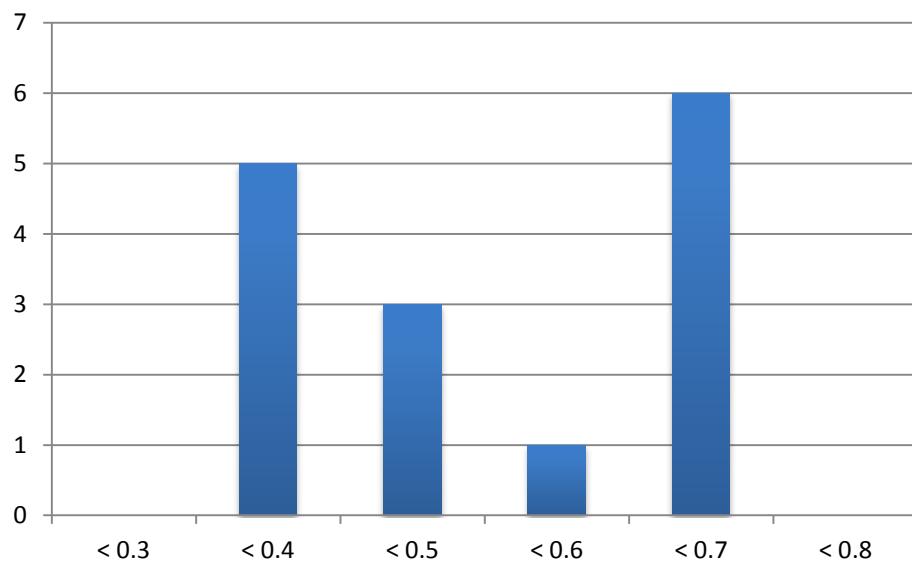


Figure 64. Site 106-35 Locus B Musket Ball Diameters.



Figure 65. Site 106-35, Locus B: Unidentified Cuprous Strap or Handle.



Figure 66. Site 106-35, Locus B: Lead Flint Wrap #1097; Steel Striker #1157; Lead Flint Wrap # 1097, Iron Frizzen Spring #1781



Figure 67. Site 106-35, Locus B: Seventeenth Century buttons #358, #817; Unidentified iron clasp or buckle #1358

Interpretation:

The distribution of battle related objects recovered from Site 106-35 Locus B is fully consistent with the surviving accounts of the combat action. Lion Gardiner states “I went out with 10 men and 3 doggs half a mile from the house [great house within the fort] to burne the weeds leaves and reedes upon the neck of land.” The narrowest part of the neck where it connects to the mainland, and where the westernmost musket balls were recovered, is precisely 0.6 miles (920 meters) from the site of Saybrook Fort. The westernmost musket balls mark the beginning of the Pequot ambush when soldiers stationed at “ye small of ye Neck” fired west at the Pequot attacking onto the neck. The highest concentration of musket balls is along the western end of the neck and along the north and south edges of the neck where it meets the marshes. This suggests the intensity of the English fire dropped off dramatically after the initial attack. Gardiner relates that two men “threw downe thr 2 guns and ran away, then the Indeans fhot 2 of them yt weare in the reeds... So yt Tho Hurlbut was fhot almosi through the thigh John

Spencer in the back into his kidneyes myself into the thigh, 2 more weare fhot dead...we defending ourselves with our naked swords.”³⁵³

Within a few minutes after the attack began, the number of men capable of defending themselves with firearms was reduced by half, which would significantly reduce the number of musket balls on the battlefield. Although Gardiner relates the small company exchanged “many a shot” with the Pequot, they were soon forced to defend themselves with their swords, further reducing the amount of musket balls on the battlefield. This sequence explains the concentration of musket balls at the beginning of the battle, and so few as the soldiers made their way down the neck to the safety of the clearing. We can reasonably assume that impacted musket balls mark Pequot positions. As such, the musket balls along the north and south margins of the neck adjacent to the marshes may reflect the English trying to counter Pequot efforts to surround and encompass them as they made their way down the center of the neck.

Action III: Locus C – March 9, 1637 Parlay

About a week or two after the February 22, 1637, Saybrook Neck Fight, a company of approximately 100 Pequot approached Saybrook Fort. Several Native emissaries wished to speak with the English. The Pequot situated themselves “within Musket shot” of the fort palisade (approximately 100 yards) “behind a little rising hill & 2 great trees.”³⁵⁴ Gardiner anticipated that the Pequot request for a parley was a diversionary tactic and:

Sent 6 men downe by the garden peaks, to looke yt none should cum vnder the hill behind us...And when ye six men came to ye garden pales at ye corner they found a great numbr of Indeans creeping behind ye fort or betwixt vs and home, but they ran away.³⁵⁵

Gardiner anticipated a possible attack and ordered his men to load two of the fort’s cannon with “Cartridges of musket bullets” and aim them at the hill “and when he faw me wawe my hat above my head he should giue fire to both the guns.”³⁵⁶ Thomas Stanton, Connecticut’s official interpreter during the Pequot War, was at the fort at the time and accompanied Gardiner as he exited the fort to meet with the Pequot “10 or 12” poles, or 55-65 yards (50-60 meters) from the fort’s gate. Gardiner instructed Stanton not to reply directly to the Pequot “I had said to

³⁵³ Gardiner. *Relation*. Pp. 12-14.

³⁵⁴ Gardiner. *Relation*. Pp. 14-16.

³⁵⁵ Gardiner. *Relation*. P. 14.

³⁵⁶ Gardiner. *Relation*. P. 14.

Thomas Stanton whatever they say to you tell me first for we will not answer y^m directly to anything; for I know not y^e mind of y^e rest of y^e English.”³⁵⁷

One of the Pequot had lived at the fort for several months and served as the Pequot spokesman and asked Gardiner “have you fought enough?” At this point in the siege the Pequot were in a superior military position and from their position of strength were trying to weigh whether they should widen the war or attempt to de-escalate the conflict. To the Pequot’s question Gardiner replied “We knew not yet.” The Pequot then asked “if we [English] did use to kill women and children” to which Gardiner replied “we said they should see y^t hereafter.”³⁵⁸ This last response infuriated the Pequot who told Gardiner “we are Pequits and have killed Englishmen and can kill them as Musketees & we will go to Connecticut and kill men, women, & children and we will take away ye horses, cows & hogs.”³⁵⁹ The parley was over.

As Gardiner and Stanton returned to the fort, Gardiner gave the signal to fire the cannons at the small hill about 100 yards away. The Pequot men presumably quickly fell back beyond cannon range and it is unclear whether they suffered any casualties. Soon after this incident the siege of Saybrook Fort was lifted partly due to Underhill’s arrival but more likely because the Pequot concentrated their forces on their eastern frontier with the Narragansett.

Primary Sources:

Lt. Gardiner described the March 9, 1637 parley with the Pequot at Saybrook Point his narrative of the war (ca. 1660) as follows:

...A few dayes after came Tho Stanton downe the River and Staying for a wind, while he was theare came a troupe of Indeans within Musket shot laying themselves and th^r armes downe behind a little rising hill & 2 great trees, which I perceiving called the Carpenter whome I had Shewed how to charge and level a gun & y^t he should put 2 Cartridges of musket bullets into 2 Sakers guns y^t lay about and we leveled th^m against the place, and I tould him y^t he must looke towards me, and when he saw me wave my hat above my head he should give fire to both the guns, then p'sently came 3 Indeans creeping out and calling to us to speake... Tho & I with my sword pistol & carbine went 10 or 12 pole without y^e gate to parlee with them... Now I had said to Thomas Stanton wt soever they say to you tell me first for we will not answer y^m directly to anything; for I know not

³⁵⁷ Gardiner. *Relation*. P. 14.

³⁵⁸ Gardiner. *Relation*. P. 15.

³⁵⁹ Gardiner. *Relation*. P. 15.

y^e mind of y^e rest of y^e English: So they came forth calling us nearer to th^m, & we th^m neerer to us: but I would not let Thomas go any furth^r then y^e great stump of a tree, and I stood by him then they asked who we weare, and he answered Thomas and Liefennat but they said he lied for I was Shott with many arrowes and So I was but my buff Coate p^rserved me; only one hurt mee, but w I spake to y^m they knew my voice for one of th^m had dwelt 3 months with us but ran away w the bay men came first: Then they asked us if we would fight with Niantecut Indeans, for they weare our friends & came to trade we said we knew not the Indeans one from anoth^r and therefore would trade with none, then they said have you fought enough, we said we knew not yet. then they asked if we did use to kill women & chilren we said they should see y^t heraft^r, So they weare silent a small space and they said we are pequits and have killed Englishmen and can kill them as muskетoes, & we will goe to connecticut and kill men women & children and we will take away y^e horses Cowes & hogs / When Tho Stanton had tould me this he prayed me to shoot y^t Rogue for said he, he hath and Englishmans coat on and Saith y^t he hath killed 3 and these oth^r 4 have their cloaths on their backs, I said no, it is not the manner of a parlee but have patience, and I shall fit them ere they foe, Nay now or never said he, so w he could get no oth^r answer but this last I bid him tell them y^t they should not goe to conetcott for if they did kill all the men and take all y^e rest as they said it would doe them no good, but hurt for English women are lazie and cannot doe th^r work horses and Cowes will spoyle yo^r cornefields, and y^e hogs th^r clam banks and so undoe them: Then I pointed to our great house: and bid him tell them there lay 20 pieces of truking cloath of M^r Pynchons with houses hatchets and all manner of trade, they were bett^r fight still with us and so get all y^t, & then goe up the river after they after they had killed all us: having herd this they weare mad as doggs and ran away: Then w they came to y^e place from whence they came I waved my hatt about my head, and ye 2 great guns went off, So yt there was a great hubbub amongst them.³⁶⁰

The “Anonymous Narrative” described the following:

March 9. A body of Indians, consisting (as we conjectured) of two or three hundred came within musket shot of the Fort, challenging the English to come out and fight, mocking and upbraiding them with such words as the English used when by them tortured to death, and bragged that they could kill English men *all one flyes*: But two great Gunns loaden with Carthages of musket bullets being fired at them, away they went, and hearing that the Narragansetts were invading their country, they visited Seybrook no more.³⁶¹

Archeological Signature:

Locus C is defined by a pattern of impacted musket balls (hail shot) located 100 meters (108 yards) southwest of the fort where the “low rising hill” was originally located (Figures 68,

³⁶⁰ Gardiner. *Relation*. Pp. 14-16.

³⁶¹ Mather. *Troubles in New England*. P. 46.

69) The small hill was determined to have been located at 87 Church Street until the early 1990's when the property owner sold the sandy hill to a local construction company for fill in a housing development. The existence of the hill was confirmed by multiple sources including oral history from the property owner and neighbors, photographs of the hill prior to its removal, and an 1853 U.S. Coast and Geodetic Survey map which depicts the elevation where the fort was located and the small rising hill to the southwest (Figures 68, 69). The nature, location, and spatial distribution of the musket balls (hail shot) 100 meters southwest of the fort confirms this locus as the Parley Action and confirms the location of the fort as well. In fact it was not until Locus C was identified that the hypothesized location of the fort was confirmed.

Although the hill was destroyed, as well as any musket balls that impacted on its northeast side facing the fort, it was reasoned that some of the hail shot would have overshot the top of the hill and eastern and could be located south of the hill's location. Metal detector surveys were conducted in these areas and eight impacted hail shot were recovered which confirmed the location of the hill, but more importantly, the location of the fort to the northeast (Figures 68, 69).

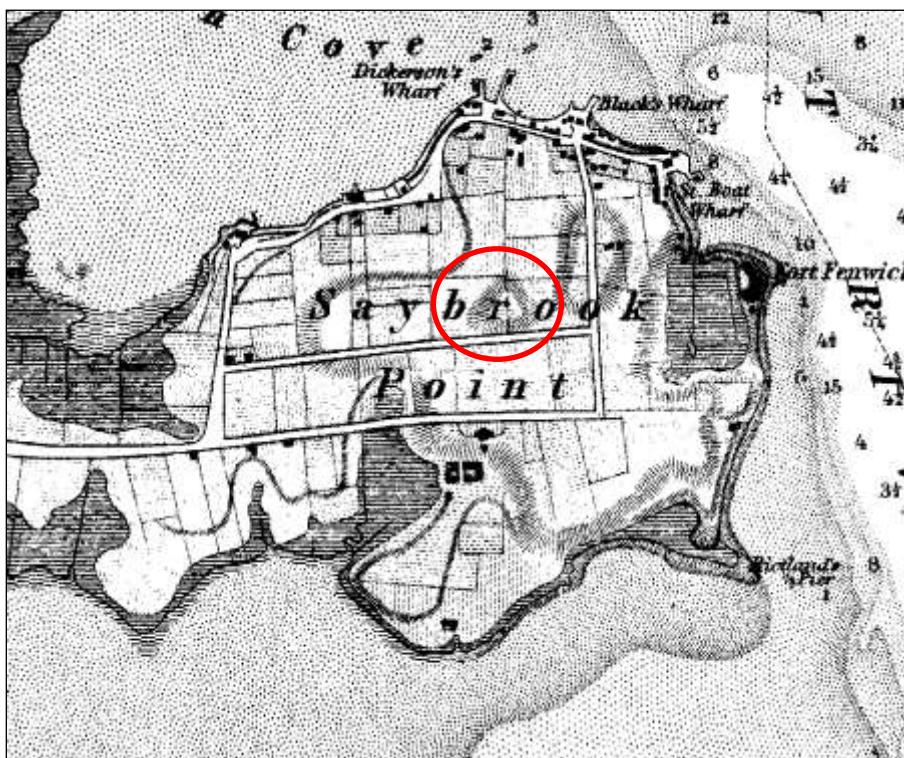


Figure 68. 1853 U.S. Coast and Geodetic Survey Map.
Location of small Rising Hill and Locus C.

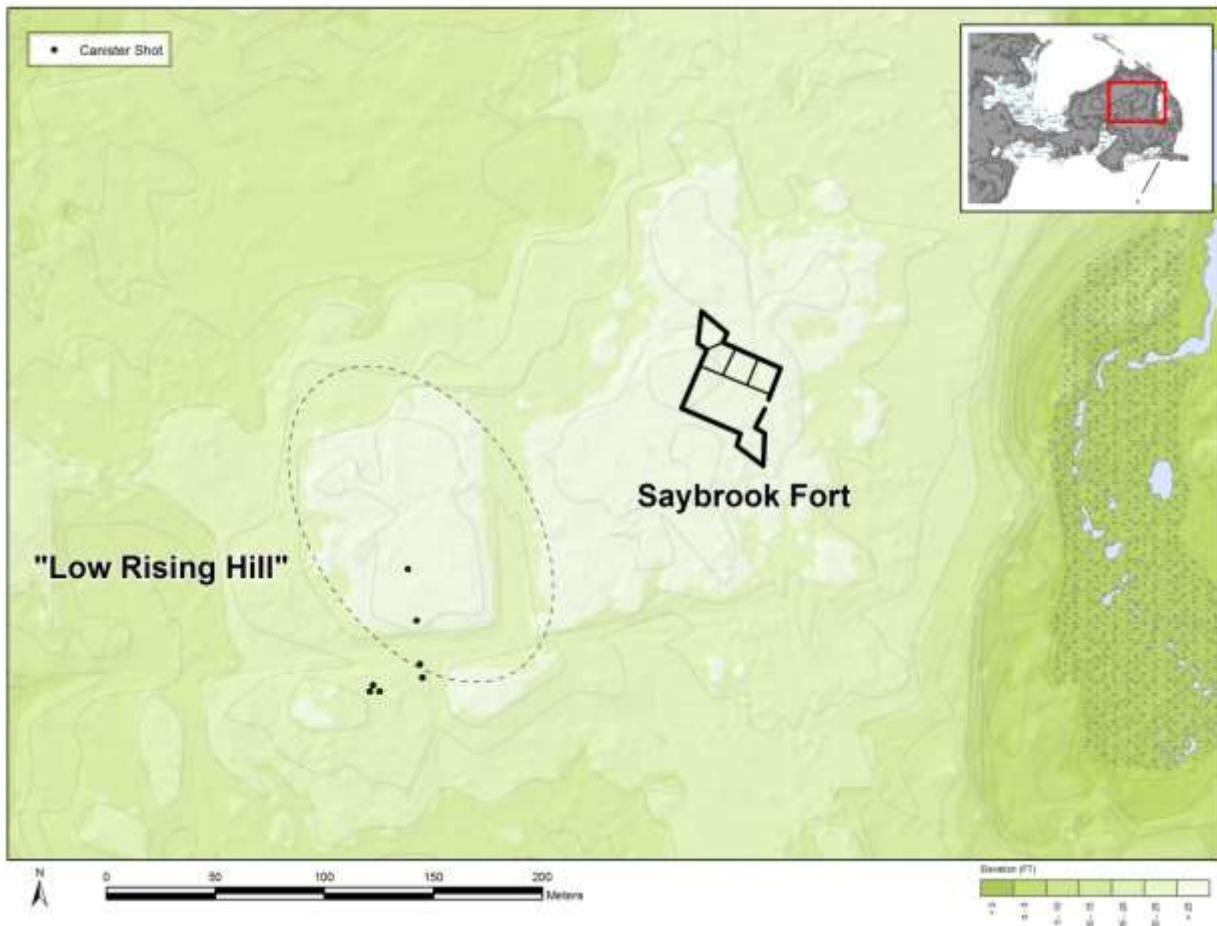


Figure 69. Locus C “March 9, 1637 Parley” Distribution of Hail Shot.



Figure 70. Locus C “March 9 Parley” Impacted Hail Shot.

One other battle-related object was recovered in the general vicinity of Locus C but is likely not related to the Parley Action. A crushed lead bandolier cap (Inv. #819; Figure 71) was recovered in the general vicinity of Locus C and may be associated with the Neck Battle action as soldiers returned to the fort, or an unidentified action near the fort. Regardless of its precise association it indicates the position of an English soldier at some point during the siege.



Figure 71. Site 106-35, Locus C: Bandolier Cap, Inv. #819, # 179 Bandolier Cap Locus C, # 1097 & 191 Flint Wraps.

Interpretation:

The recovered artifacts which constitute Site 106-35 Locus C “March 9, 1637 Parley” and their proximity to the “small rising hill” correspond to Gardiner’s description of the action as well as the spatial relationship of the small hill and the fort. Although Gardiner states he ordered his men to “put 2 Cartridges of musket bullets into 2 Sakers guns” it appears that the hail shot fired at the “low rising hill included anything that could be loaded into a cannon including musket balls, molten lead, lead fishing weights, and canister shot (Figure 70).

The assemblage of musket balls and irregular lead objects which appear to be associated with the hail-shot discharges are important for several reasons. First, they indicate the position of

Pequot-allied forces during the parley and may have used the cover of the hill at other times as well to gather intelligence or to prepare for an attack. Second, location of the assemblage on the battlefield was crucial for triangulating the location of the Saybrook Fort site on the landscape. Third, they provide additional insight into other types of projectiles fired by the fort's cannons during the siege in addition to those mentioned by Gardiner such as iron solid shot, iron bar shot, and a canister of musket balls). A canister of hail-shot (musket balls) could have been easily prepared by the fort's garrison by gathering musket balls, imperfectly cast lead shot, molten lead, or any other small objects (lead, iron scrap, rocks) which could be packed into a wooden or linen container. The assemblage of lead objects recovered from Locus C fits this description and as exhibit impact damage they were clearly fired. Among the assemblage of projectiles are three which appear partially or imperfectly cast (Inv. #s 800.00, 807.00, 1107.00; Figure 75), a perfectly formed .45 di. Musket ball (Inv. # 1106.00), and one that appears to be a faceted piece of hail shot (Inv. #1107.00). Two recovered artifacts from this assemblage deserve individual attention. Object Inv. #1110.00 resembles a weight of sorts due to an iron loop cast directly into the lead ball (Figure 70). Another possibility is that it is a "wired-shot."³⁶² A coiled wire or an iron wire was placed within the cavity of the mold before to produce this linked shot which would theoretically spread when fired. One object is likely a fishing weight as it is elongated and egg-shaped with a hole cast through the center (Inv. # 1102; Figure 70).

Locus D –Saybrook Fort Site;

Gardiner's *Relation of the Pequot Wars* provides a number of references to the fort and other structures and terrain features at Saybrook Point including garden pales, great house/house (trading warehouse), great hall/hall (inside the fort), "home" (suspected to be the trading warehouse referred to as the 'Great House'), low rising hill, and "under the hill behind us", but they are frustratingly vague and incomplete with respect to their precise location.³⁶³ Nonetheless Gardiner's narrative does provide information on locations of several structures and terrain features relative to fort and other features that eventually proved sufficient to identify the location of the fort (Chapter III: Historical Context). The architecture of the fort was discussed in Chapter VI, this section will focus only on the location of the fort.

³⁶² Harding, *Lead Shot of the English Civil War*. Pp. 174-175.

³⁶³ Lion Gardiner's *Relation of the Pequot Wars* is the only Pequot War narrative known to survive to date. It is housed at the Manuscript Archives of the Watkinson Library, Trinity College in Hartford, Connecticut. The most faithful transcription of the document in print to date is the version cited in this report. See works cited.

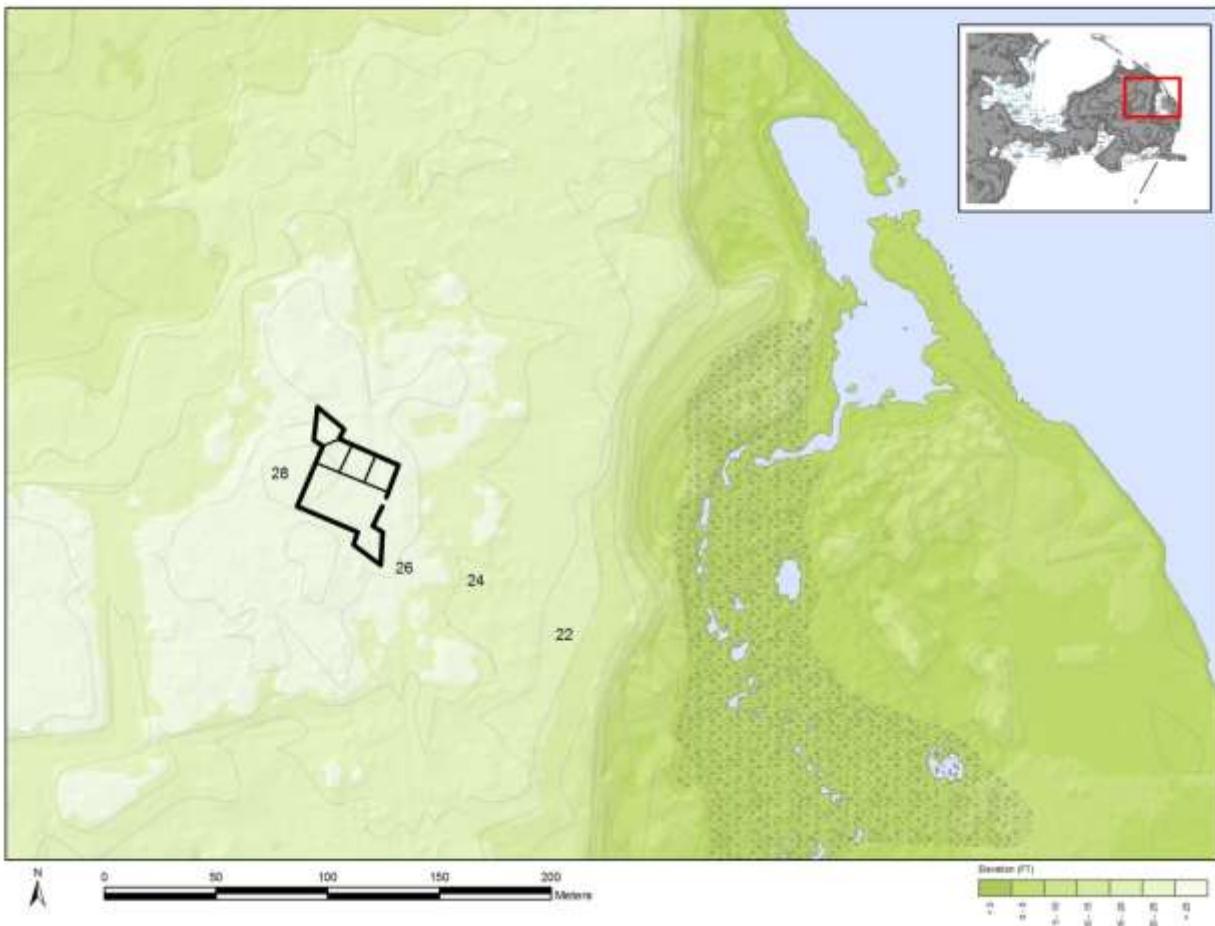


Figure 72. Hypothesized Fort Location, Design, and Orientation.

Primary Sources

See Chapter III Historical Context, Saybrook Fort Design Analysis for additional relevant primary source materials regarding Locus D – Saybrook Fort Site.

Palisade, Wall, and Gate:

Lieutenant Lion Gardiner described the fort gate in his *Relation* as follows:

Tho & I with my sword pistol & carbine went 10 or 12 pole without y^e gate.³⁶⁴

Mr. Tille with a pink to goe up to Harford and cuming ashoare he saw a paper nailed up over the gate...³⁶⁵

³⁶⁴ Gardiner. *Relation*. P. 14.

³⁶⁵ Gardiner. *Relation*. P. 17.

...I with you and also charge you to observe y^t w^ch you have red at ye gate...³⁶⁶

...we had, with 3 great doares of 10 foot long & 4 foot broad...³⁶⁷

George Fenwick described the palisade in his 1643 correspondence to Lord Barrington as follows:

...for the housing & fortification being made of a spungie kind of timber called a read oack rott very suddenly. All the pallasadoes wch were whol trees sett in the ground are soe rotten that on[e] may push most of them over...³⁶⁸

Lt. Gardiner described the palisade in his *Relation* as follows:

...in y^e night when they shot at our sentenells but could not hit the for y^e boards...³⁶⁹

John Winthrop, Sr. mentioned the palisade at Saybrook Fort once in the following reference:

1647. In the depth of winter, in a very tempestuous [storm?], the fort at Saybrook was set on fire, and all the buildings within the palisade, with all the goods, etc. were burnt down...³⁷⁰

References to palisades as they appear in the Connecticut Colonial Records:

...all y^e housing within y^e Palisado...³⁷¹

The Great Hall & other interior structures: A number of the structures associated with Saybrook Fort may have been originally intended to be constructed within the confines of the fort walls but is unclear how many actually were, Henry Vane's noted a "resolution to keepe the fort intire within itself." Although it is unclear exactly how many structures were constructed within the fort walls, Gardiner often refers to a "great haule" in which the garrison met and ate and where orders and notices were hung. References to the structure are often predicated with the description "great" which may not only speak to the dimensions of the building but perhaps it is a comment on the structure's size compared to that of other structures within the palisade.

Lt. Gardiner described the great hall in his *Relation* as follows:

³⁶⁶ Gardiner. *Relation*. P. 18.

³⁶⁷ Gardiner. *Relation*. P. 33.

³⁶⁸ Fenwick, George, 17956, *Ltr*. P. 8.

³⁶⁹ Gardiner. *Relation*. P. 33.

³⁷⁰ Hosmer, Ed. *Winthrop's Journal*. II: P. 328.

³⁷¹ Trumbull, *Public Records Colony of CT*. P. 267.

...I resolved to let draw lots which of them should be hanged, for the articles did hang up in the haule for them to read...³⁷²

...they found a great numb'r of Indeans creeping behind y^e fort or betwixt us and home, but they ran away.³⁷³

And we all togeath'r in y^e great Haule...³⁷⁴

When we weare all at Supper in the great haule they the pequits gave us a larum to draw us out 3 times before we could finish our short supper...³⁷⁵

John Winthrop, Sr. mentions multiple structures within the palisade at Saybrook Fort:

1647. In the depth of winter, in a very tempestuous [storm?], the fort at Saybrook was set on fire, and all the buildings within the palisade, with all the goods, etc. were burnt down...³⁷⁶

Redoubt & Battery: The only references to specific fortifications are found in Gardiner's narrative of the war. While multiple accounts reference a "fort" at Saybrook, very few discuss any specifications of the military architecture associated with the fort. On the very last page of Gardiner's *Narrative* he mentioned a redoubt on two separate occasions along with a battery, although it is unclear if he is referring to two different areas of Saybrook Fort or if the redoubt and battery are one in the same.

Lt. Gardiner described the redoubt in his *Relation* as follows:

...for theare was a number of pequits creeping to you to catch you I hearing it went up to y^e redout and put two cross bar shot into the guns y^t lay above...³⁷⁷

...fearing least they should come in y^e Night and fire our redout or batterie and all y^e place...³⁷⁸

Garden Pales: Pales or paling typically consists of split log rails planted upright in a row as a light defensive measure or to designate a boundary. Pales are similar to palisade but are spaced further apart, may not be as tall in height, and are a far weaker defense than that of the palisade. A shallow trench is often an important part of a pale defense. The "garden pales" are

³⁷² Gardiner. *Relation*. P. 13.

³⁷³ Gardiner. *Relation*. Pp. 14-15.

³⁷⁴ Gardiner. *Relation*. P. 18.

³⁷⁵ Gardiner *Relation*. P. 32.

³⁷⁶ Hosmer, Ed. *Winthrop's Journal*. II: P. 328.

³⁷⁷ Gardiner, Ed. *Relation*. P. 32.

³⁷⁸ Gardiner. *Relation*. P. 33.

referred to relatively often by Gardiner as it was a distinct area located outside the fort palisade and it was one of the few sources of food located near the fort

Lt. Gardiner described the garden pales in his *Relation* as follows:

...I sent 6 men downe by the garden peales, to looke y^t none should cum under the hill behind us...³⁷⁹

And when y^e six men came to y^e garden pales and y^e corner they found a great numb^r of Indeans creeping behind y^e fort or betwixt us and home...³⁸⁰

...Robert Chapman, you know, y^t w[hen] you and John Bagley weare beating samp at ye garden pales, the sentenells called you to run in...³⁸¹

Spatial and Relational Analysis:

As discussed above, the primary sources associated with the Siege and Battle of Saybrook Fort identify various structures and key terrain features at Saybrook Point but do not provide sufficient information to locate them in space. However, the primary sources collectively provide sufficient information on the relative locations of various sets of structures and terrain features to one that if one ‘set’ could be located in space the locations of the rest could also be determined. The first step was to identify key terrain features described by Gardiner and determine their associations to battlefield structures, sites and actions. The second step was to construct viewsheds based on potential fort location models by integrating the key terrain features with the descriptions and spatial relationships described in the primary sources. The final step was to assess (and re-asses) the validity of the various locational models through archeological and metal detector surveys. Several potential fort and warehouse locations were identified based on an analysis of primary sources, KOCOA and Viewsheds. This information was used to construct several locational models that could be tested against the historical and archeological data and battlefield terrain.

The elevation upon which the fort was situated is a critical aspect of the location analysis. Several criteria had to be met to identify the best ‘fit’ for the fort’s location with respect to spatial relationships described by Gardiner: 1) a low rising hill within 100 yards of the fort of sufficient size to provide cover for 100 or more Pequot; 2) a low elevation below a hill behind

³⁷⁹ Gardiner. *Relation*. P. 14.

³⁸⁰ Gardiner. *Relation*. P. 14.

³⁸¹ Gardiner. *Relation*. P. 32.

the fort obscured from view of the fort; 3) adequate coverage of the approaches to the fort from the neck by the fort's cannons including a clear field of fire from the fort's location to a point halfway down the neck where the cleared ground was located during the Neck Fight; 4) the garden pales were at a lower elevation and not in view from the fort, but of a sufficient distance from the fort to fire bar shot into the trees above the pales.

Figures 73 through 75 depict viewsheds from three different locations at Saybrook Point considered the most likely locations of the fort based on available evidence: the Gardiner Monument at the 15' contour interval, the 20' contour interval located 125 meters southwest of the monument, and the twenty-eight foot contour interval in the east-central area of Saybrook Point. The 15' elevation provides almost no coverage of approaches to the fort from the extent. The only key terrain feature adequately covered if the fort was situated on the 15' elevation is the low ground north of the 15' elevation and below the hill east of the fort as Gardiner described it. There is no low rising hill within 100 yards of the 15' elevation and the elevation does not adequately cover the approaches from the neck to the fort if it was located at this elevation. There is also no significant drop in elevation "behind" the 15' contour which would fit Gardiner's description of Pequot hiding behind a hill behind the fort. The 15 and 20' contour locations in the southern portion of Saybrook Point was chosen as two potential locations to test as these areas are widely believed to be the location(s) of the first Saybrook Fort by nineteenth and twentieth century historians and they meet some of the criteria outlined above. As Figures 73 and 74 indicate neither the 15' or 20' elevations meet all four of the criteria outlined above.

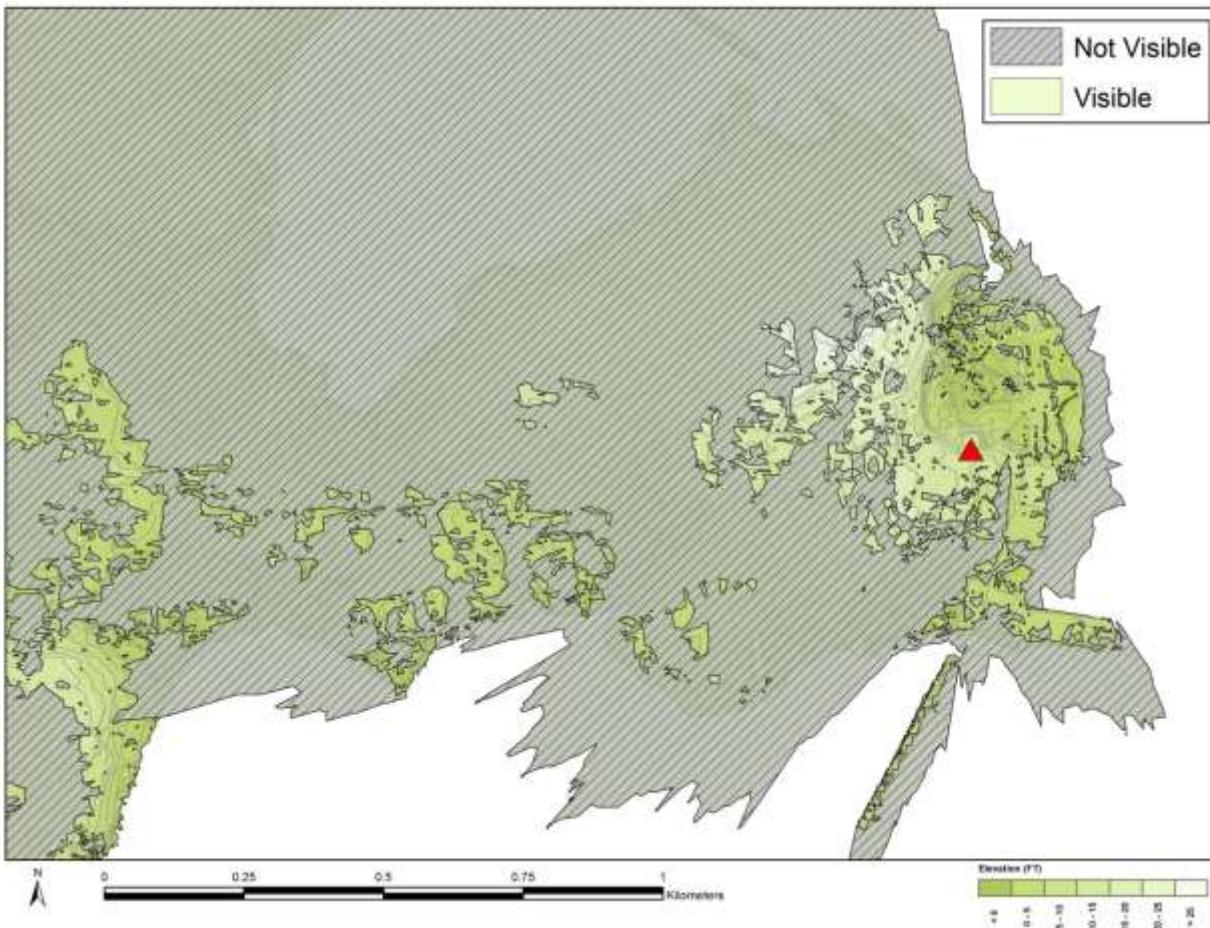


Figure 73. Viewshed from the 15' contour elevation.

The 15' elevation provides almost no coverage of approaches to the fort from the extent. The only key terrain feature adequately covered if the fort was situated on the 15 elevation is the low ground north of the fifteen-foot elevation and below the hill east of the fort as Gardiner described it. There is no low rising hill within 100 yards of the 15' elevation and the elevation does not adequately cover the approaches from the neck to the fort if it was located at this elevation. There is also no significant drop in elevation "behind" the fifteen-foot contour which would fit Gardiner's description of Pequot hiding behind a hill behind the fort. The fifteen and twenty-foot contour locations in the southern portion of Saybrook Point were chosen as two potential locations to test as these areas are widely believed to be the location(s) of the first Saybrook Fort by nineteenth and twentieth century historians and they meet some of the criteria outlined above. As Figures 73 and 74 indicate neither the 15 nor 24 elevations meet all four of the criteria outlined above.

The twenty-foot contour interval is a better fit with the criteria identified above but still lacks adequate coverage of the approaches from the neck and the low ground north of the elevation is still in view. In addition there is no hill within 100 yards of the 20 contour elevation that is of sufficient size to provide cover for the Pequot. Finally, metal detector surveys in these areas did not recover a sufficient diversity and density of period artifacts that would indicate the fort was located in the general areas of the fifteen and twenty contour intervals.

The twenty-eight foot contour interval were selected because it is the highest elevation at Saybrook Point and considered the best location to situate the fort to command the landward and river approaches. If the fort was situated at this elevation it would have a commanding view of most of Saybrook Point including the neck and areas to the east, and as well as the river. There was also a low rising hill 100 yards southwest of the 28' contour of sufficient size to provide cover for 100 Pequot. The low area under the hill east (behind) of the fort cannot be seen from the fort's location. This "blind spot" in the gun's coverage was a key piece of information that helped to determine the fort was located at the 28' elevation.

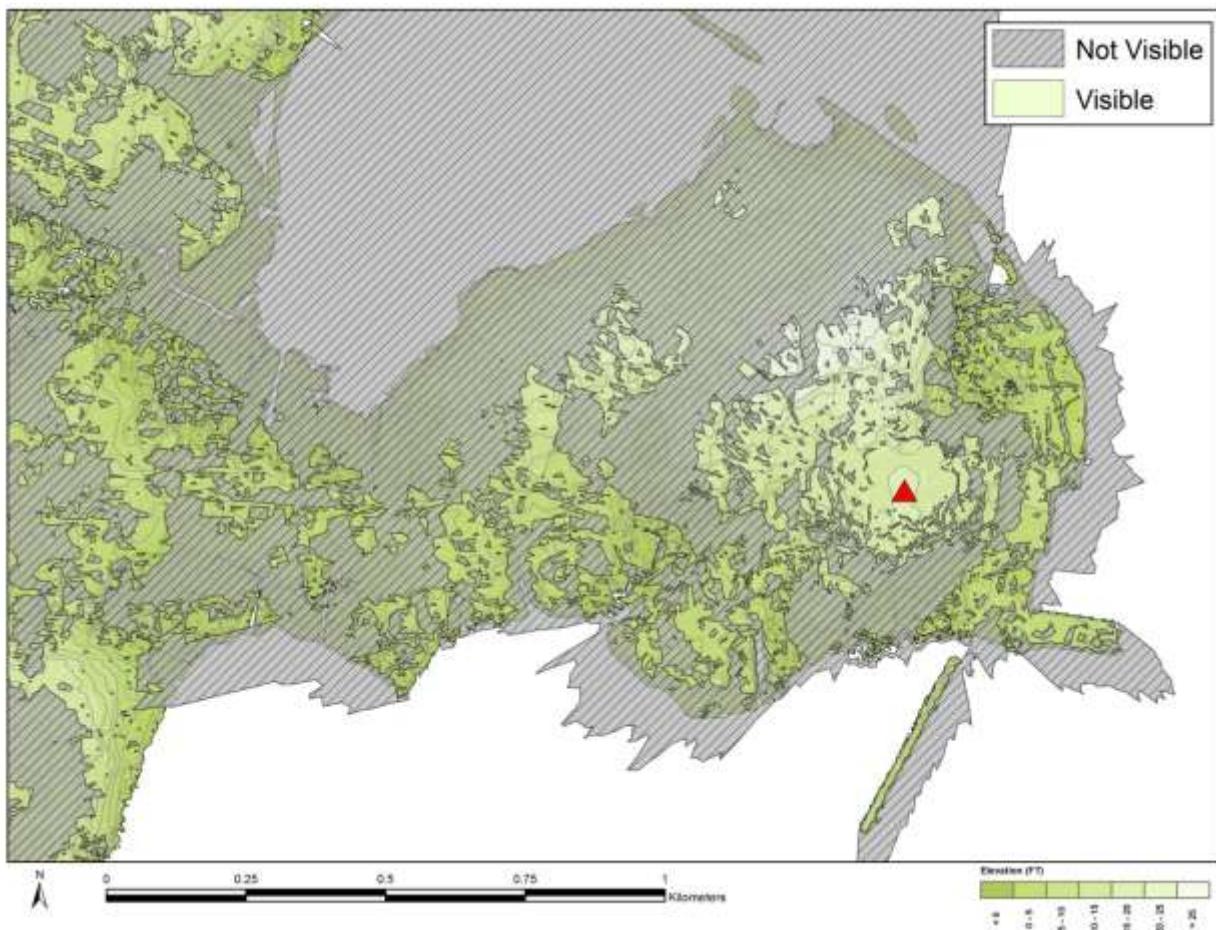


Figure 74. Viewshed from the 20' contour elevation.

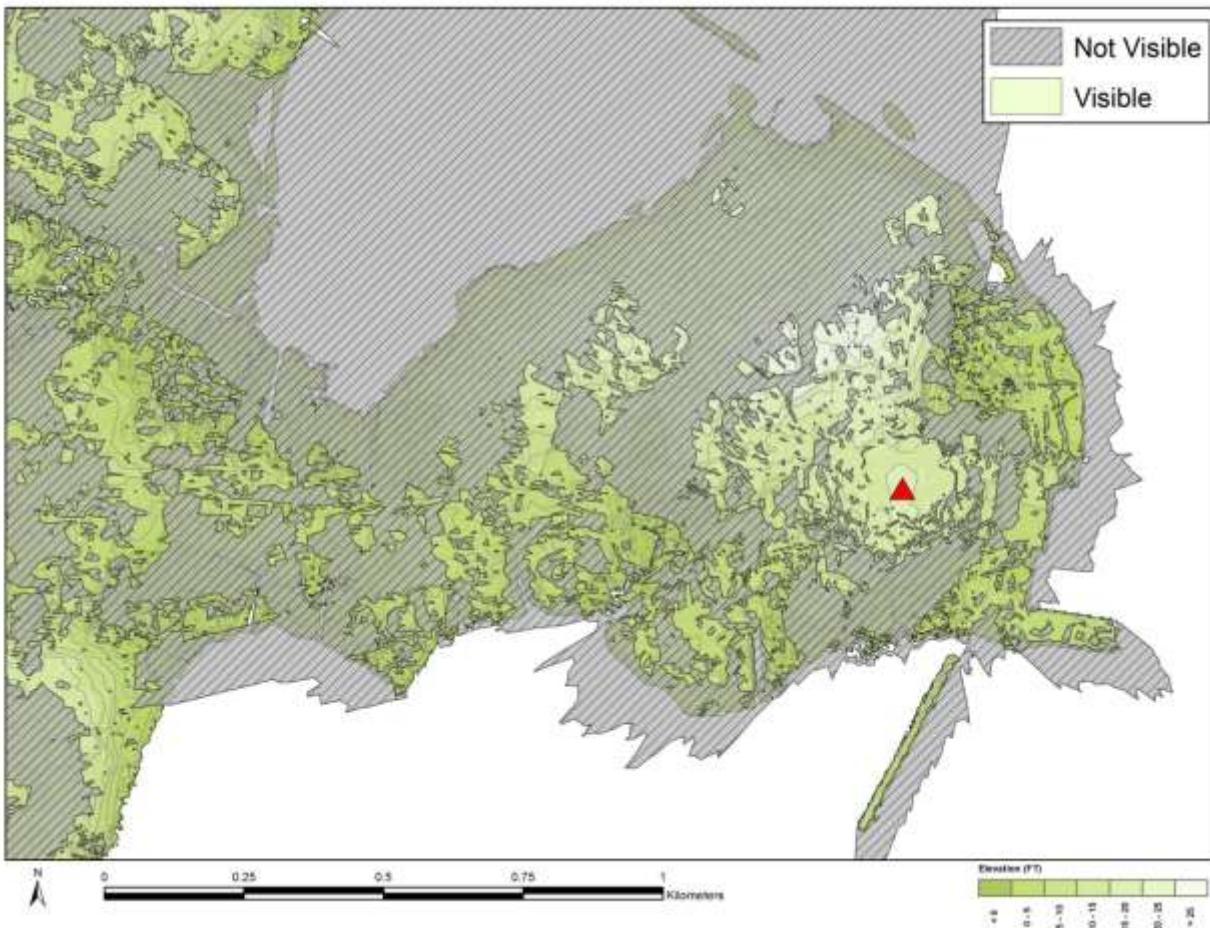


Figure 75. Viewshed from the 28' elevation.

Spatial Relationships of Key Terrain and Cultural Features:

Although Gardiner does not provide specific information on the location of Saybrook Fort on Saybrook Point, he does provide important information on the fort's location relative to several key terrain and cultural features. The most significant of this information was related by Gardiner when he recalled the March 9, 1637 parley between the Pequot and Gardiner:

1. “a troupe of Indeans [came] within Musket shot [of the fort] laying themselves and their armes downe behind a little rising hill.” The hill was 100 yards from the fort and had to be of sufficient size to hide 100 Pequot.
2. “I sent 6 men downe by the garden pales [fence], to looke y^t none should cum vnder the hill behind us.” The garden pales were located some distance from the

fort and could not be seen from the fort. There was a drop in elevation behind the fort that was not in view from the fort but could provide cover for the Pequot.

3. And when ye six men came to ye garden pales at ye corner they found a great numbr of Indeans creeping behind y^e fort or betwixt vs and home.' The garden pales and the Pequot could not be seen from the fort. The low elevation behind the fort was in view from the garden pales and provided sufficient for the Pequot to get between the fort and what Gardiner refers to as 'home.' As Gardiner is approximately 100 yards from, and within full view, of the fort there was no opportunity for the Pequot to get between him and 'home' if home referred to the fort. Home would appear to be a reference to another structure some distance fort and situated in such a way that the Pequot could use the cover of the low ground to get between the fort and 'home.'
4. "Then I poynted to our great house." Gardiner was 100 yards from the fort and in view of the great house. If the great house was 'home,' then the low ground is between the fort and the great house (home).
5. "when you and John Bagley weare beating samp [corn] at ye garden pales, the sentenells called you to run in for there was a number of pequits creeping to you to catch you...I hearing it went vp to y^e redout and put two cross bar shot into the 2 guns y^t lay above and level^d them at ye trees in ye middle of ye limbs and boughs and gave order to John frend and his man... to stand with hand pickes to turn them this or y^t way, as they should heare the Indeans shout, for they should know my shout from theirs...then I called 6 men and the doggs and went out runing to ye place, and keeping all abreast in fight, close together, and when I faw my time I said stand, and called all to mee faying looke on me and when I should up my hand then shout as loud as you can, and when I should downe my hand then leave and so they did, then the Indeans began a long Shout, & then went off y^e 2 great guns and toare the limbs of y^e trees about their ears so yt divers of them weare hurt." This passage indicates the garden pales were some distance from the fort and that the men at the garden pales could not see the Pequot suggesting that they were at a lower elevation. Gardiner's ruse also indicates the garden pales

were at a lower elevation as Gardiner directed fire into the tree tops on the higher elevation being used by the Pequot to approach the pales.

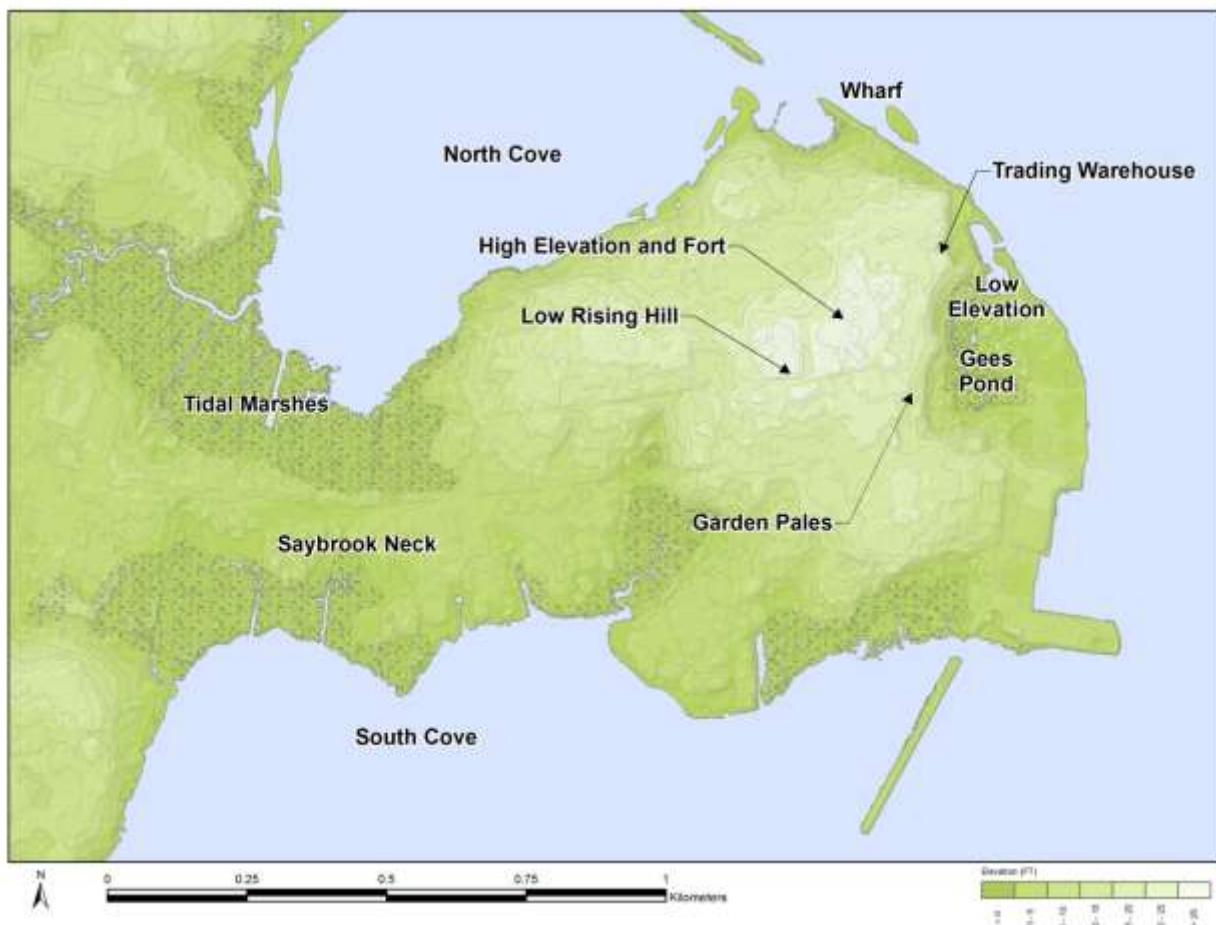


Figure 76. Spatial Relationships of Key Terrain and Cultural Features.

The evidence that eventually confirmed the scenario described above was the recovery of a small concentration of hail-shot (Figures 70, 77) on the south side of the little rising hill in relation to the suspected location of the fort 100 yards to the northeast. Although the hill was removed for residential construction, and with it much of the hail shot, it was reasoned that additional pieces of hail shot that over-shot the hill or fell short would be deposited a short distance along the lee side of the hill in relation to the fort. The recovery of the hail shot strongly indicated the twenty-eight foot contour interval was the location of the fort. This was later confirmed by metal detector surveys which recovered a very high density and variety of

seventeenth century material cultural material consistent with the fort's function of a military and domestic site.

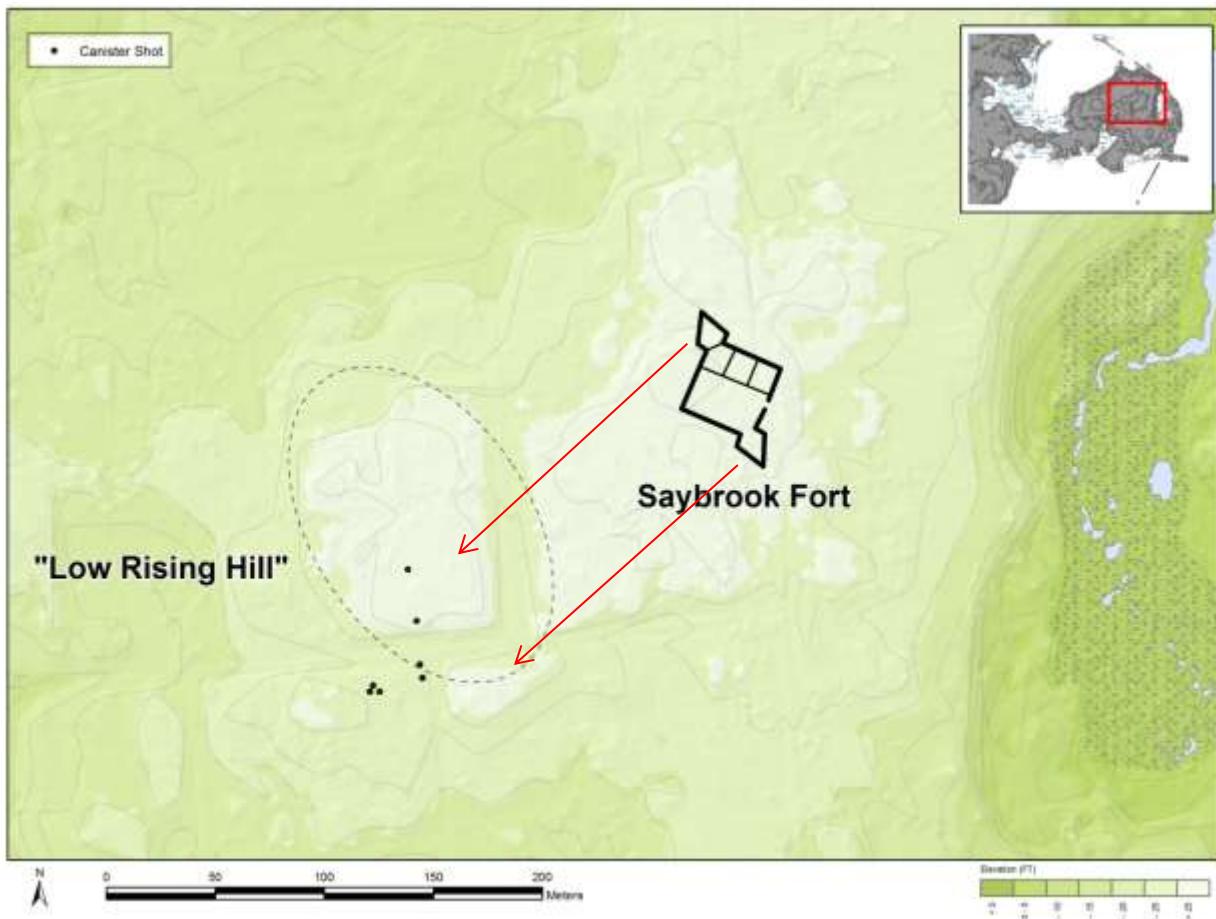


Figure 77. Hailshot Distribution and Line of Fire from Fort.

Locus E – Trading House and Wharf

Site 106-135, Locus E “Warehouse and Wharf” contains a concentration of early seventeenth century domestic and military objects that is believed to be the location of the trading warehouse or Great House used by William Pynchon, John Winthrop, Jr., and Lion Gardiner. The site is located 230 yards (215 meters) northeast of the fort (locus D) along the twenty-foot contour interval (Figure 40). The site is situated on the remains of a small peninsula extending toward the river. A large portion of the peninsula was removed for fill when the railroad was constructed in 1874.

Primary Sources

Of all the Loci, Locus E “Warehouse and Wharf” site contains the most fleeting of references to these prospective structures. There are no direct, specific references to any warehouse, wharf, or structures outside the fort palisade (with the exception of the Garden Pales). It is possible that references to the “great haule” in which the garrison met and ate and where orders and notices were hung may actually be a warehouse located closer to the river but this is a matter of interpretation. References to the structure are often predicated with the description “great” which may not only speak to the dimensions of the building but perhaps it is a comment on the structure’s size compared to that of other structures. It is possible that Gardiner refers to both the fort’s main interior structure and the warehouse outside the palisade both as a “great hall.”

Lt. Gardiner described the great hall in his *Relation* as follows:

...I resolved to let draw lots which of them should be hanged, for the articles did hang up in the haule for them to read...³⁸²

...they found a great numb^r of Indeans creeping behind y^e fort or betwixt us and home, but they ran away.³⁸³

And we all togeath^r in y^e great Haule...³⁸⁴

When we weare all at Supper in the great haule they the pequits gave us a larum to draw us out 3 times before we could finish our short supper...³⁸⁵

At one time Gardiner refers to a location in or near Saybrook Fort as “home” although it is unclear whether this is a reference to a structure inside or outside the fort.

Tho Rumble & Arthur branch threw downe thr 2 guns and ran away, then the Indeans shot 2 of them yt weare in the reeds, and Sought to get between vs & home but durst not cum before vs, but kept vs in a halfe moone³⁸⁶

I sent 6 men down by the garden pales, to look yt none should cum under the hill behind us... I with my sword pistol & carbine went 10 or 12 pole [35 – 65 yards]

³⁸² Gardiner. *Relation*. P. 13.

³⁸³ Gardiner. *Relation*. Pp. 14-15.

³⁸⁴ Gardiner. *Relation*. P. 18.

³⁸⁵ Gardiner. *Relation*. P. 32.

³⁸⁶ Gardiner. *Relation*. Pp. 13-14.

without ye gate to parley with them. And when ye six men came to ye garden pales at ye corner they found a great number of Indians creeping behind ye fort or betwixt us and home, but they ran away.³⁸⁷

Archeological Signature:

A variety of domestic and military objects were recovered from the wharf and warehouse site including rose head and hand wrought nails, molten lead, lead sheet and bar stock, musket balls, spoons, kaolin pipe fragments, and ceramics. Some lead shot patterns appear in Site 106-35, Locus E “Wharf and Warehouse Site” where a total of five musket balls (large and small shot) were recovered on what appears to be the southern portion of that Locus and near the northern section of Locus A (Figure 78). It is difficult to distinguish the musket fire included in Locus E from that of Locus A as there is nothing unique about them and they are similar in many regards. What designates this concentration as a potentially distinct Locus is that they are found impacted in a gradually rising, relatively steep slope and appear to have been fired from a southerly to northerly direction.



Figure 78. Site 106-35, Locus E # 1221 Matchlock Trigger and Musket Balls.

³⁸⁷ Gardiner, *Relation*, P. 14.

Also recovered from the southern slope of Locus E are several buttons which may be first-half seventeenth century objects along with a seventeenth century brass equipment buckle, a possible iron matchlock trigger bar and several other unidentified cuprous and ferrous objects. Other artifacts recovered from Locus E suggest a distinct concentration of objects that may mark the location of some of the forts outbuildings such as a potential warehouse and wharf, both of which are believed to have been situated in the northeast corner of Saybrook Point. A concentration of honey colored (continental (northern Europe) and mottled grey (English) ballast flint was recovered along the river 100 yards (90 meters) northeast of the trading warehouse and is believed to mark the presence of a seventeenth century wharf (Figure 79). The flint may have been offloaded to take on cargo or marks the location of a sunken or abandoned ship.



Figure 79. Continental and English Ballast Flint from Wharf Area.

It is not only possibly, but highly likely, that if there were fort-related structures in that northeastern quadrant of Saybrook Point that battle-related objects would also be located in the vicinity as Pequot forces often targeted and attempted to destroy such buildings.

Interpretation:

The artifact assemblage recovered from the Saybrook Fort Core Area (106-35), Locus E Wharf and Warehouse Site is consistent with known trade and domestic activities that are thought to have occurred. At the time of the Pequot War the wharf or dock associated with the fort was most likely situated in the vicinity of the northeast corner of Saybrook Point. North Cove is somewhat deeper than South Cove and was the only area near the fort where smaller

vessels could dock and unload cargo. The existence of a concentration of honey colored and mottled grey ballast flint is believed to mark the presence of a seventeenth century wharf (Figure 79).

This northeastern corner of Saybrook Point has been significantly impacted since the war by building construction, the creation of several additional docks including a steamboat wharf in the late nineteenth century, and later railroad construction. Further to the south of the flint ballast concentration is an area that was quarried away and leveled to create an area for shad fishermen to dry their nets (Figure 80). This modification to the land may have destroyed a portion of the warehouse site or other fort related structures. The distribution of artifacts in Locus E, and the northernmost artifacts from Locus A, appear to concentrate around this quarried area suggesting that this area was highly active during the war.

Unlike Locus D – Saybrook Fort Site, the artifacts recovered from Locus E – Wharf and Warehouse Site are primarily military (molten lead, lead sheet and bar stock, musket balls) and architectural (rose head and hand wrought nails, molten lead) in nature. Domestic artifacts (spoons, kaolin pipe fragments, ceramics) are much lower in density. This pattern of objects could reflect a Pequot War-era signature, as far less commerce occurred during the Pequot War and the wharf and warehouse locations were contested areas in which sustained skirmishing likely occurred. The existence of the European ballast flint, discretely concentrated to the northeast of the point, is also compelling evidence used to model both the wharf and warehouse location.

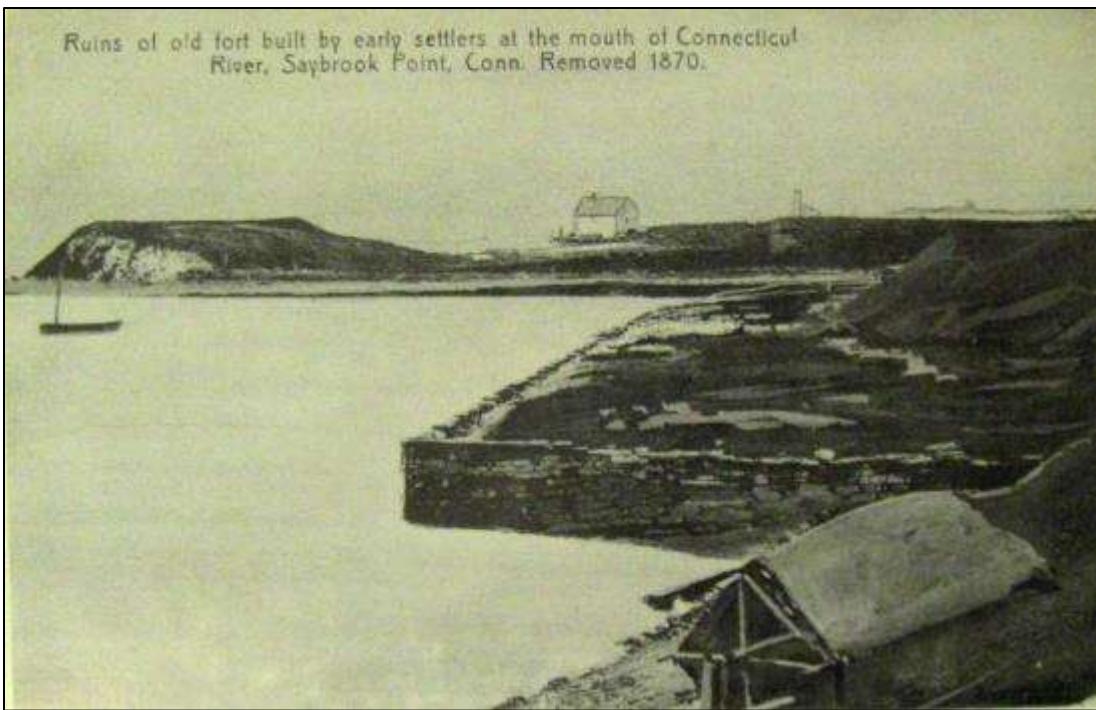


Figure 80. South view of Saybrook Point. The remains of the second fort (Fort Fenwick) is visible in the upper left. The new wharf created for fishermen is centrally located in the postcard. (*Old Saybrook Historical Society*)

VII National Register Potential – Siege and Battle of Saybrook Fort

The American Battlefield Protection Program (ABPP) promotes the preservation of significant historic battlefields associated with wars on American soil. The purpose of the program is to assist citizens, public and private institutions, and governments at all levels in planning, interpreting, and protecting sites where historic battles were fought on American soil during the armed conflicts that shaped the growth and development of the United States, in order that present and future generations may learn and gain inspiration from the ground where Americans made their ultimate sacrifice. The goals of the program are 1) to protect battlefields and sites associated with armed conflicts that influenced the course of American history, 2) to encourage and assist all Americans in planning for the preservation, management, and interpretation of these sites, and 3) to raise awareness of the importance of preserving battlefields and related sites for future generations.

An important mechanism for ensuring the long term protection and preservation of a battlefield is listing the battlefield in the national Register of Historic Places. The National Register of Historic Places (NRHP), managed by the National Park Service, is the U.S. government's official list of districts, landscapes, sites, buildings, structures, and objects deemed significant in U.S. history. A Property that's considered eligible for inclusion in the national Register has significance to the history of its community, state, or the nation and is considered worthy of preservation. Listing a battlefield in the national Register provides formal recognition of its historical significance based on national standards used by all state and federal agencies. The nomination process requires that a battlefield's significance be documented, that it be located on the landscape, and that boundaries be drawn to identify the battlefield. The National Register boundaries and documentation are tangible proof of a battlefield's location and significance and help in its preservation.

Critical Defining Terrain Features

The Critical Defining Terrain Features are those portions of the historic battlefield landscape that retain a degree of integrity and still convey a sense of the visual and physical setting at the time of the battle. If the Critical Defining Terrain Features cannot be located or have been impacted or otherwise compromised by modern development, erosion or other destructive forces, they can no longer contribute to the historic setting and battlefield

reconstruction. In the case of the Siege and battle of Saybrook Fort determining the location(s) of key battlefield terrain features was a critical component of locating other battlefield terrain features and in reconstructing the broader battlefield landscape. The majority of the key terrain features within the Saybrook Fort Core Area were found to retain a moderate degree of physical and visual integrity providing important information on the sites and actions associated with the siege. Table 8 identifies the Location status and integrity of Critical Defining Features within the Saybrook Fort Core Area (see Table 7).

Table 8. Location Status and Integrity of Critical Defining Features - Siege and Battle of Saybrook Fort (Site 106-35), Saybrook Fort Core Area.

Name	Location Status	Integrity	Research Status
Saybrook Point	Identified	Modified: Terrain and Contours Intact	No Additional Research Needed
High Ground at Saybrook Point	Identified	Modified	No Additional Research Needed
Saybrook Neck	Identified	Modified: Terrain and Contours Intact	No Additional Research Needed
Gee's Pond	Identified	Intact	No Additional Research Needed
North Cove	Identified	Intact	No Additional Research Needed
South Cove	Identified	Intact	No Additional Research Needed
Marshes	Identified	Intact	No Additional Research Needed
"Low Rising Hill"	Identified	Destroyed	No Additional Research Needed
Low Ground below Hill East of Fort	Identified	Intact	No Additional Research Needed
Highest Elevation at Saybrook Point; 26'-28' contour interval	Identified	Terrain Modified	No Additional Research Needed
Saybrook Fort (106-35)	Identified	Terrain Modified	Additional Research Recommended
Great House / Warehouse	Identified	Terrain Modified	No Additional Research Needed
Wharf	Identified	Modified	Additional Research Recommended

Significance and Historic Contexts

Battlefield surveys are conducted according to preservation standards for the identification, evaluation, registration, and treatment of archaeological resources according to National Park Service standards. An essential component of the planning and preservation process is the identification and assessment of archaeological and traditional cultural properties

that are eligible for inclusion in the National Register. Archaeological properties can be a district, site, building, structure, or object. Traditional cultural properties are considered eligible for inclusion in the National Register because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Consultation with Native American or other resident communities are necessary to make recommendations about the significance and eligibility of archaeological and traditional cultural properties.

An archaeological property may be pre-contact (ca. 12,000 B.P. – 450 B.P.), post-contact, or contain components from both periods. Pre-contact (sometimes termed “prehistoric”) is used to refer to Native American groups (and sites) prior to contact with Europeans and written records. In accordance with the NPS guidelines, “pre-contact” is used, unless directly quoting materials that use “prehistoric.” There is no single year that marks the transition from pre-contact to post-contact. Post-contact (or what is often termed “historical”) refers to the archaeology of sites and structures associated with periods during which there is significant contact between Native Americans and Europeans. Documentary records and oral traditions can be used to better understand these properties and the people they are associated with. National Park Service guidelines stipulate that the term “post-contact” should be used when referring to the archaeological record associated with this period, unless directly quoting materials that use “historical.”

The NPS has established four criteria for listing significant cultural properties in the National Register (36 CFR 60). These criteria are broadly defined to include the wide range of properties that are significant in American history, architecture, archaeology, engineering, and culture. The quality of significance may be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. The criteria (known by the letters A–D) include those sites that are:

- A. associated with events that have made a significant contribution to the broad patterns of our history; or
- B. associated with the lives of persons significant in our past; or
- C. distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a

significant and distinguishable entity whose components may lack individual distinction; or

- D. likely to yield, or have yielded, information important to prehistory or history.

Archaeological and traditional cultural properties can be determined eligible for listing in the National Register under all four criteria, but must meet at least one. Archaeological properties listed under Criteria A or B must have a demonstrated ability to convey their associations with events, persons, or patterns significant to our history. Criterion C is intended to recognize properties that are significant expressions of culture or technology (especially architecture, artistic value, landscape architecture, and engineering). Under Criterion C, an archeological property must have remains that are well-preserved and clearly illustrate the design and construction of a building, structure. Archaeological properties are most often listed under Criterion D and must have the demonstrated potential to yield important information. An important consideration for listing a site under Criterion D is an assessment as to whether the data derived from a site are unique or redundant, and how they relate to the current state of archaeological knowledge (research questions, topics) of a period or site(s).

Another critical component in assessing the National Register eligibility of a historic property is an evaluation of its integrity. Historic properties either retain integrity (i.e., convey their significance) or they do not. The National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity which include:

- location, the place where the historic property was constructed or the place where the historic event occurred;
- design, the combination of elements that create the form, plan, space, structure, and style of a property;
- setting, the physical environment of a historic property;
- materials, the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- workmanship, the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;

- feeling, a property's expression of the aesthetic or historic sense of a particular period of time; and
- association, the direct link between an important historic event or person and a historic property.

To retain historic integrity, a property will always possess several, and usually most, of these qualities. The retention of specific aspects of integrity is vital for a property to convey its significance. “Property types” are groupings of individual sites or properties based on common physical and associative characteristics. They serve to link the concepts presented in the historic contexts with properties illustrating those ideas. Determining which of these aspects or qualities are most important to a particular property requires knowing why, where, and when the property is significant. The formulation of historic contexts is a logical first step in the formulation of an archaeological research design and is a critical component in evaluating archaeological and traditional cultural properties in the absence of a comprehensive regional survey. Historic contexts provide an organizational framework that integrates information about related historic properties based on a historical or cultural theme, geographic limits, and chronological periods. A historic context should identify gaps in data and knowledge to help determine what significant information may be obtained from the resource. Each historic context is related to the developmental history of an area, region, or theme (e.g., agriculture, transportation, and waterpower), and identifies the significant patterns of which a particular resource may be an element. Only those contexts important to understanding and justifying the significance of the property need be discussed. Historic contexts are developed by:

- identifying the concept, time period, and geographic limits for the context
- collecting and assessing existing information about these time periods
- identifying locational patterns and current conditions of the associated property types
- synthesizing the information in a written narrative; and
- identifying information needs

The following historic contexts were identified for the Siege and battle of Saybrook Fort Multiple Property Documentation Form (MPDF) and are organized thematically and chronologically in order to convey the cultural and historical environments, as well as the varied perspectives associated with this period in American history.

- I. Contact, Trade, and Pequot Territorial Expansion in Long Island Sound and the Connecticut River Valley (1611-1636)
- II. English Arrival, Dutch Conflict, and the Beginning of the Pequot War: 1633-1636
- III. The Siege and Battle of Saybrook Fort (September 1636 – April 1637)

The Pequot War (September 1636 – August 1637), which included the Siege and battle of Saybrook Fort (September 1636 – April, 1637), was the culminating result of a series of geographically and temporally expansive events set within a tense and shifting cultural climate. Therefore, the prelude and setting of the Pequot War (and its associated battles) spans nearly three decades (ca. 1611-1637) and stretches from coastal Long Island Sound into the lower Connecticut River Valley region. This time frame and geographic extent corresponds to the arrival of Dutch explorers and traders (c. 1611) and English traders and settlers (c. 1633) until the conclusion of the Pequot War (August 1637).

The historical contexts for the Siege and battle of Saybrook Multiple Property Documentation include: I) Contact and Trade in Long Island Sound and the Connecticut River Valley and Pequot Territorial Expansion (1611-1636); II) English Arrival in Long Island Sound and the Connecticut River Valley and the Beginning of the Pequot War (1633-1636); III) The Siege and battle of Saybrook Fort (September 1636 – September 1637). These contexts include information on the development and complexity of economic relationships between Native tribes, the Dutch, and the English in early New England and New Netherlands. The Pequot generated a profitable trade relationship with the Dutch during this period, during which the Pequot subjugation of neighboring tribes and henceforth their territorial expansion increased their control of trade goods, i.e. furs and wampum. The English arrival into the region and their

attempts to break the Pequot and Dutch trade monopoly heightened tensions between the Pequot and the Europeans, and as a result sowed the seeds of the Pequot War.

Criterion A: A property may be registered if it is associated with events that have made a significant contribution to the broad patterns of our history.

The Siege and Battle of Saybrook Fort Battlefield Core Area/District with its key terrain features, unique landscapes, and archeological sites is directly associated with the events and actions of the English allied forces during the Siege and battle of Saybrook Fort (September 1636 – April 1637). The Saybrook Fort Core Area is emblematic of the nature and evolution of weapons, tactics, and strategies employed by the English and their Native allies during the Pequot War. The Siege and Battle of Saybrook Fort is nationally significant as it is the first major conflict between Native Americans and Europeans in northeastern North America.

Criterion D: A property may be registered if it has yielded, or may be likely to yield, information important in prehistory or history.

The Siege and Battle of Saybrook Fort Battlefield Core Area/District is also significant under Criterion D, as the District yielded and may be likely to yield archeological resources and information about military tactics and weaponry used by both Native and English combatants during the site's period and dates of significance.

The soldiers, settlers and traders at Saybrook would become the first English in New England to fully experience Native warfare. Analysis of the primary sources associated with the siege identified no fewer than twenty-two actions or events over the seven month siege that directly or indirectly threatened the inhabitants of Saybrook. Although the chroniclers of the siege recorded only the more noteworthy occurrences, nonetheless these accounts provide a valuable perspective of what the settlers regularly experienced during the siege.

VIII Works Cited

Primary Source Materials:

Bradford, William. *History of Plymouth Plantation 1620-1647*, Vol. II. New York, NY: Russell & Russell, 1968.

Broadhead, John Romeyn. *Documents relative to the colonial history of the state of New-York*. Albany, NY: Weed, Parsons, and Company, 1856.

Connecticut State Library, Connecticut Archives Collection, Towns and Lands, Volume I, Document 67a.

Van Der Donck, Adriaen. *A Description of the New Netherland*. Lincoln, NE: University of Nebraska Press, 2008.

Fenwick, George. *17956 Ltrr., 1643*. Hartford: Connecticut Historical Society. (MS copies)

Gardiner, Lion. *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardiner*. Hartford: Case, Lockwood & Brainard Company for the Acorn Club of Connecticut, 1901.

Harvard Peabody Museum of Archeology and Ethnology. Object # 95-20-10/49340.

Heath, Dwight B., Ed., *Mourt's relation: a journal of the pilgrims at Plymouth*. Bedford, MA: Applewood Books, 1963.

Hubbard, William. *A Narrative of the Troubles with the Indians in New England*. Boston, MA: John Foster, 1675.

Johnson, Edward. *Wonder Working Providence of Sions Saviour in New England*. Delmar: Scholars' Facsimiles & Reprints, 1974.

LaFantasie, Glenn W. *The Correspondence of Roger Williams*. Volume I 1629-1653. Providence: Brown University Press, 1988.

Mason, John in Thomas Prince, Ed, *A Brief History of the Pequot War*. Boston, MA: S. Kneeland & T. Green, 1736.

Mather, Increase. *A Relation Of the Troubles which have hapned in New-England By reason of the Indians there: From the Year 1614 to the Year 1675*. Boston, MA: John Foster, 1677.

De Rasieres, Isaack. "Letter of Isaack De Rasieres to Samuel Bloomeart" in J. Franklin Jameson *Narratives of New Netherland 1609-1664*. New York, NY: Charles Scribner's Sons, 1909.

Shuttleff, Nathaniel B., Ed., *Records of the Governor and Company of The Massachusetts Bay in New England*. Boston: William White, 1853.

Smith, Helen Evertson. *Colonial Days & Ways As Gathered from Family Papers by Helen Evertson Smith*. New York: The Century Co., 1900.

Trumbull, J. Hammond. *Public Records of the Colony of Connecticut, Prior to the Union with New Haven Colony*. Hartford, CT: Brown & Parsons, 1850.

Underhill, John. *Newes from America*. London, UK: Peter Cole, 1637.

Verbael gehouden door de Heeren H. van Beverningk, W. Nieupoort, J. van de Perre, en A. P. Jongestal, als Gedeputeerden en Extraordinaris Ambassadeurs van de Heeren Staeten Generael der Vereenigde Nederlanden aan de Republyck van Engelandt ('sGravenhage, 1725), Pp. 606-608 (Translated by Charles T. Gehring) in Charles T. Gehring, *Annals of New Netherland: The Dutch among the People of the Long River* (New York, NY: New Netherland Institute, 1994).

Vincent, Philip. *A True Relation of the Late Battell fought in New England, between the English, and the Salvages: With the present state of things there*. London, UK: Nathanael Butter and John Bellamie, 1637.

de Vries, David Pietersz in J. Franklin Jameson, ed. *Narratives of New Netherland 1609-1664*. New York, NY: Charles Scribner's Sons, 1909.

Wassenaer. Nicholaes. "Historisch Verhael," in J. Franklin Jameson *Narratives of New Netherland 1609-1664*. New York, NY: Charles Scribner's Sons, 1909.

Williams, Roger. *A Key To Language of America*. London, UK: Gregory Dexter, 1643.

Winslow, Edward. *Good Newes from New-England: a true relation of things very remarkable at the plantation of Plimoth in New England*. Bedford: Applewood Books, 1996.

Winthrop, John. "John Winthrop's letter to the King," Doc. 110. MS Rawl A. 175. Bodleian Library, Oxford, England.

Winthrop, John in James Kendall Hosmer, Ed. *Winthrop's Journal "History of New England" 1630-1649*. New York, NY: C. Scribner's Sons, 1908.

Winthrop, John. *The Journal of John Winthrop 1630 – 1649*. Cambridge: Belknap Press, 1996.

Winthrop, John. *Winthrop Papers*. Volume I: 1925; Volume 2: 1935; Volume 3: 1943; Volume 4: 1944; Volume 5: 1947. Boston, MA: Massachusetts Historical Society.

Secondary Source Materials:

Alley, Ruth. *Pelliana, Pell of Pelham: Thomas Pell, first Lord of the Manor of Pelham, Westchester, Col, New York*. Montpelier, VT: Privately Printed, 1962.

American Battlefield Protection Program, *Battlefield Survey Manual*. Washington, DC: National Park Service, revised 2007.

Anderson, Robert Charles. *The Great Migration Begins: Immigrants to New England, 1620-1633*. Boston: New England Historic Genealogical Society, 1995.

Blackmore, David. *Arms & Armour of the English Civil Wars*. London: Royal Armouries, 1990.

Bolstad, Paul. *GIS Fundamentals: A First Text on Geographic Information Systems*. White Bear Lake, MN: Eider Press, 2008.

Fiske, J. *The Beginnings of New England or the Puritan Theocracy in Its Relation to Civil and Religious Liberty*. New York: Houghton Mifflin Company, 1899.

James Bradley. "Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region, 1600-1664" in *New York State Museum Bulletin 209, Volume XVII*. Albany: New York State Museum, 2006.

Carlson-Drexler, Carl G. "Finding Batter Positions at Wilson's Creek, Missouri" in Eds. Douglas Scott, Lawrence Babits, and Charles Haecker. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Washington, D.C.: Potomac Books, 2009.

Cave, Alfred A. *The Pequot War*. Amherst, MA: University of Massachusetts Press, 1996.

Connor, Melissa & Douglas D. Scott. "Metal Detector Use in Archaeology: An Introduction." *Historical Archaeology* 32(4), 1998.

Deagan, Kathleen. "Strategies of Adjustment: Spanish Defense of the Circum-Caribbean Colonies, 1493-1600" in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications*. Leiden, Netherlands: Brill, 2010.

Drake, Samuel Gardiner. *History and antiquities of Boston*. Boston: Luther Stevens, 1856.

Edmundson, George. "Frederick Henry, Prince of Orange," *The English Historical Review*, Vol. 5, No. 17. Oxford University Press, 1890.

Fox, Richard A. and Douglas D. Scott. "The Post-Civil War Battlefield Patter: An Example from the Custer Battlefield" in *Historical Archaeology*, Vol. 25, No. 2 (1991).

Gates, Gilman. *Saybrook at the Mouth of the Connecticut: The First One Hundred Years*. New Haven: Wilson H. Lee Co., 1935.

Harding, David F. *Lead Shot of the English Civil War: A Radical Study*. London: Foresight Books, 2012.

Haviser, Jay B. “The ‘Old Netherlands Style’ and Seventeenth-Century Dutch Fortifications of the Caribbean” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications*. Leiden, Netherlands: Brill, 2010.

Heath, E.G. *The Grey Goose Wing*. Greenwich: Osprey Publishing Ltd., 1971.

Heimmer, Don H. and Steven L. De Vore. *New-Surface, high resolution geophysical methods for cultural resource management and archeological investigations*. Denver, CO: U.S. Dept. of the Interior, 1995.

Henry, Chris. *English Civil War Artillery 1642-1651*. New York, NY: Osprey Publishing, 2005.

Huey, Paul R. “Dutch Colonial Forts in New Netherland” in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications* . Leiden, Netherlands: Brill, 2010.

Jennings, Francis. *Invasion of America*. Chapel Hill: University of North Carolina, 2010.

Juli, Harold. *Archaeological Investigations at Saybrook Point, Old Saybrook, CT* (1980 Season, Report No. 1 1980)

Juli, Harold. *Archaeological Investigations at Saybrook Point. Old Saybrook, CT: Summary of the 1981 Excavations and Proposal for Continuing Archaeological, Historical and Site Development Work* (Report No. 5 1981).

Kist, J.B. “A Commentary” in Jacob De Gheyn, *The Exercise of Armes*. New York: McGraw-Hill Books, 1971.

Malone, Patrick M. *The skulking way of war: technology and tactics among the New England Indians*. Lanham, MD: Madison Books, 1991.

Markham, C. R. *A Life of the Great Lord Fairfax Commander-in-Chief of the Army of the Parliament of England*. London: MacMillian and Co., 1870.

McBride, Kevin. “War and Trade in Eastern New Netherland” in *A Beautiful and Fruitful Place: Selected Rensselaerswijck Papers* Vol. 3. Albany, NY: New Netherland Institute, 2013.

McBride, Kevin and David Naumec, et al., *Battle of Mistick Fort: Site Identification and Documentation Plan* GA-2255-09-017. Mashantucket, CT: 2009.

National Park Service, “History of Armour and Weapons Relevant to Jamestown,” Historic Jamestown, www.nps.gov/jame/historyculture/history-of-armour-and-weapons-relevant-to-jamestown.htm.

New England Historic and Genealogical Register. *Genealogies of Connecticut Families* (Baltimore, MD: Clearfield, 2006).

Oswin, John. *A Field Guide to Geophysics in Archaeology*. New York, NY: Praxis Publications, 2009.

Pendery, Steven R. "A Survey of French Fortifications in the New World, 1530-1650" in Eric Klingelhofer, Ed. *First Forts: Essays on the Archaeology of Proto-colonial Fortifications*. Leiden, Netherlands: Brill, 2010.

Peterson, Harold L. *Arms and Armor in Colonial America 1526 – 1783*. Mineola: Dover Publications Inc., 2000.

Plant, D. "Sir Thomas Fairfax," *British Civil Wars and Commonwealth*. Retrieved from, <http://www.british-civil-wars.co.uk/biog/fairfax.htm>

Pratt, G. Michael. "How Do You Know It's a Battlefield" in Eds. Douglas Scott, Lawrence Babits, and Charles Haecker. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Washington, D.C.: Potomac Books, 2009.

Radabaugh, Jack S. "The Militia of Colonial Massachusetts" in *Military Affairs*. Volume 18, 1954.

Scott, Douglas D. *Archeological perspective on the Battle of the Little Bighorn*. Norman, OK: University of Oklahoma Press, 1989.

Scott, Douglas, Lawrence Babits & Charles Haecker, Eds. *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Washington, DC: Potomac Books, 2009.

Shelley, Henry C. *John Underhill: Captain of New England and New Netherland*. New York: D. Appleton and Company, 1932.

Shelley, Henry C. "John Underhill Captain of New England and New Netherland" in *Bulletin of the Underhill Society of America* October 1972. Greenwich, CT: Underhill Society of America Education and Publishing Fund, 1972.

Sprunger, K. L. "Other Pilgrims in Leiden," *Church History*, Vol. 41, 1. Cambridge: Cambridge University Press, 1972.

St. George, Robert. "Bawns and Beliefs," *Winterthur Portfolio*, Volume 25 (4). Chicago: University of Chicago Press, 1900.

Straube, Beverly A. "'Unfit for any modern service'? Arms and armour from James Fort" in *Post-Medieval Archaeology* Vol. 40, Issue 1 (2006).

Stearns, R. P. "The New England Way in Holland," *The New Quarterly*, Vol. 6, No. 4. New England Quarterly, 1933.

Sweet, Anne. *Robert Chapman, One of Saybrook's First Settlers*. Presented to the Saybrook Colony History Bluffs, November 29, 1995. Old Saybrook Historical Society, Unpublished.

Tisdale, D. A. *Soldiers of the Virginia Colony 1607 – 1699: A Study of Virginia's Military, Its Origins, Tactics, Equipment, and Development*. Richmond: Dietz, 2000.

Vauban, Sebastien LePrestre de. (George A. Rothrock, Ed.). *A Manual Of Siegcraft And Fortification*. Ann Arbor, MI: University of Michigan Press, 1968.

Vaughan, Alden. *New England Frontier*. Norman: University of Oklahoma Press, 1995.

Ward, Robert. *Anima'Dversions of Warre or, A Militarie Magazine*. London: John Dawson, 1639.

Wheatley, David and Mark Gillings. *Spatial Technology and Archaeology: The Archeological Applications of GIS*. New York, NY: Taylor & Francis, 2002.

Zelner, Kyle. *A Rabble In Arms*. New York, NY: New York University Press, 2009.

Appendix I: Artifact Descriptions

NPS ABPP GA-2255-12-011
“Siege and Battle of Saybrook Fort”
Artifact Descriptions

In many cases, the military equipment and personal objects recovered from the Saybrook Point Core Area (Site 106-35) could have been feasibly carried by either Pequot-allied or English-allied forces. Examples include edged weapons, blade tools, buttons, and jaw harps. Small percentages of Pequot and English-allied Native men were armed with firearms but it is assumed that nearly all firearm-related objects (lead shot, firearms parts, accoutrements) were carried by English allied forces. This assumption is based on the artifact assemblages, proximity to the positions of known combatants, and historical research which indicates that firearms were not widely adopted or used by Native peoples during the Pequot War, although documentation does exist which indicates that Pequot forces did employ firearms early in the siege.

Ultimately, the context in which they appear is the most important factor in attributing the object to a particular combatant. Artifacts such as dropped or impacted musket balls, European military arms and equipment, buttons, buckles, and personal items such as folding knives all helped reconstruct English-allied troop movements. Recovered objects such as cuprous scrap fragments, cuprous arrow points, cuprous and lead amulets or pendants, and personal effects such as a pipe and knives were used to estimate Pequot-allied positions on the battlefield. Although Pequot-allied and English-allied objects undoubtedly overlap on the battlefield, great efforts are made to deconstruct recovered battlefield objects in order to attribute to proper artifact to the appropriate combatant.

To date there is no positively identified Native American (Pequot or English-allied) Military Equipment or Personal Items recovered from Saybrook Fort Core Area. Unlike other Pequot War-era battlefield sites that have been surveyed (Battle of Mistick Fort; English-allied Withdrawal & Pequot Counterattack) there were no definitive signs of Native American military equipage such as cuprous conical or triangular arrow points, cuprous scrap fragments, cuprous and lead amulets, straight knives, or cuprous pipes. Again, in the context of the Siege and Battle, it is difficult to determine whether Native attributed objects were carried by Pequot or English-allied warriors unless they were recovered from an area of the battlefield upon which battle lines

can be firmly reconstructed. In this case, English positions could be reconstructed based on military and domestic artifacts while Pequot positions were only determinable through the distribution of impacted musket balls and cannon projectiles.

European Military Equipment & Personal Items

All of the objects recovered from Site 106-35 were determined to be associated with the English occupation of Saybrook Fort in terms of both fort-related structures and episodes of siege combat in the form of European Military equipment, personal items, and domestic artifacts. Included in this group are dropped and impacted lead shot, firearms parts, buckles and hooks from military equipage, and knife blades. The next group of artifacts is European personal items such as buttons, buckles, folding knives, jaw harps, and fire steels.

Among the objects recovered from the Saybrook Fort Core Area (106-35), Loci A-D, include the following:

Inventory								
Site	Number	Material	Type	Category	Description	Condition	Notes & Location	
106	3 5	7	Metal	iron	architectural	hand wrought nail	fragment	48 Cromwell Place Location: Clean Lab, 9/17/2015
106	3 5	15	Metal	iron	architectural	hand wrought nail	fragment	48 Cromwell Place Field Identification #77 possible 17th century
106	3 5	16	Metal	iron	architectural	hand wrought nail	complete	flat head, spatula point 48 Cromwell Place Field Identification #78 Location: Clean Lab, 9/17/2015
106	3 5	17	Metal	lead	other	unidentified	fragment	48 Cromwell Place Field Identification #79 possible 17th century
106	3 5	18	Metal	lead	other	sheet		48 Cromwell Place Field Identification #80 3.5cm x 2cm 1.4mm thick possible 17th century
106	3 5	18.01	Metal	lead	other	sheet		48 Cromwell Place Field Identification #80 1.5cm x 1.0cm 3.9mm thick possible 17th century

106	3 5	19	Metal	iron	architectural	hand wrought nail	fragment	48 Cromwell Place Field Identification #81 possible 17th century
106	3 5	27	iron	architectural	bolt	fragment		hand made thread 33 Cromwell Place Location: Wet Lab Fridge 4/14/2015
106	3 5	36	Metal	lead	other			33 Cromwell Place possible 17th century
106	3 5	37	lead	clothing and personal	button	fragment		single cast plain face, cast seam on back, missing shank 33 Cromwell Place
106	3 5	38	lead	hunting and weapon	musket ball	.39" diameter		12.3mm x 8.4mm casting seam, clipped sprue 33 Cromwell Place oval, does not appear to be melted
106	3 5	43	Metal	iron	architectural	hand wrought nail	fragment	33 Cromwell Place possible 17th century
106	3 5	45	Metal	iron	architectural	spike	complete	40 Cromwell Place 11mm long
106	3 5	47	Metal	iron	other	unidentified		possible 17th century 40 Cromwell Place
106	3 5	49	Metal	iron	architectural	spike	fragment	40 Cromwell Place
106	3 5	50	Metal	lead	other	unidentified		33 Cromwell Place some iron adhering possible 17th century
106	3 5	51	Metal	cuprous and iron	other	unidentified		33 Cromwell Place pivoting catch?

106	3 5	52	Metal	lead	other	unidentified		33 Cromwell Place possible 17th century
106	3 5	53	lead	hunting and weapon	musket ball	.65" diameter		canister with casting cavity 33 Cromwell Place
106	3 5	58	Metal	lead	other	sheet		48 Cromwell Place Field Identification #17 4cm x 1.8cm 2.85mm thick possible 17th century
106	3 5	62	Metal	lead	hunting and weapon	fishing weight		48 Cromwell Place Field Identification #20 26.12mm diameter 5.5mm thick possible fishing weight/net sinker possible 17th century
106	3 5	63	Metal	lead	other	sheet		48 Cromwell Place Field Identification #21 3.5-4cm long if unfolded 2.2cm wide possible 17th century
106	3 5	64	Metal	iron	other	unidentified		possible 17th century 48 Cromwell Place, circular with latch Field Identification #22
106	3 5	65	Metal	iron	architectural	spike	complete	spatula tip 48 Cromwell Place Field Identification #23
106	3 5	66	cuprous	tool	folding knife	fragment		48 Cromwell Place Field Identification #24 folding knife scale?

106	3 5	67	Metal	iron	architectural	spike		round head, square tip 48 Cromwell Place Field Identification #25
106	3 5	70	Metal	iron	architectural	spike	complete	spatula tip 48 Cromwell Place Field Identification #28
106	3 5	80	Metal	iron	tool	unidentified		possible 17th century 3 Cromwell Court not a nail
106	3 5	81	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court curved
106	3 5	84	Metal	iron	other	unidentified	fragment	3 Cromwell Court
106	3 5	85	Metal	iron	architectural	hand wrought nail		3 Cromwell Court possible 17th century
106	3 5	89	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court
106	3 5	92	Metal	iron	other	unidentified		3 Cromwell Court
106	3 5	93	cuprous	clothing and personal	finger ring	complete		In display box for quick viewing 3 Cromwell Court IHS Jesuit Ring
106	3 5	94	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NW quarter of box possible 17th century

106	3 5	104	Metal	iron	tool	folding knife	fragment	possible 17th century needs further analysis 3 Cromwell Court whale back folding knife?
106	3 5	107	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court SE quarter of box possible 17th century
106	3 5	109	Metal	iron	architectural		fragment	4 Cromwell Court
106	3 5	111	cuprous	domestic	spoon	fragment		4 Cromwell Court has makers mark
106	3 5	114	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court 2.8mm long possible 17th century
106	3 5	116	iron	hunting and weapon	flintlock trigger	fragment		4 Cromwell Court
106	3 5	120	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court, SE quarter of box possible 17th century
106	3 5	121	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court, SE quarter of box curved possible 17th century
106	3 5	124	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court possible 17th century
106	3 5	125	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court

106	3 5	126	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court possible 17th century
106	3 5	127	Metal	lead	other	unidentified	fragment	4 Cromwell Court possible 17th century
106	3 5	130	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court, SE quarter of box possible 17th century
106	3 5	132	Metal	iron	other	unidentified		4 Cromwell Court
106	3 5	133	Metal	iron	other	unidentified		hooked object needs further analysis 4 Cromwell Court
106	3 5	136	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court, SE quarter of box
106	3 5	138	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court, SE quarter of box
106	3 5	139	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court, SE quarter of box possible 17th century
106	3 5	145	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court, NE quarter of box
106	3 5	146	Metal	iron	architectural	cotter pin		4 Cromwell Court
106	3 5	147	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court, NE quarter of box possible 17th century

106	3 5	153	Metal	iron	architectural	hand wrought nail	fragment	40 Cromwell Place, NE quarter of box possible 17th century
106	3 5	159	Metal	iron	other	unidentified	fragment	possible 17th century 40 Cromwell Place
106	3 5	160	Metal	iron	architectural	spike	fragment	square head 45 Cromwell Place
106	3 5	164	Metal	lead	other	unidentified		50 Cromwell Place cast cylinder object with stem, hole lengthwise needs to be weighed 60mm long, stem is 12.3mm, body is 22.7mm possible 17th century
106	3 5	165	Metal	iron	other	unidentified	fragment	50 Cromwell Place Location: Clean Lab, 9/17/2015
106	3 5	169	cuprous	domestic	scrap	fragment		50 Cromwell Place Location: Wet Lab Fridge 4/14/2015
106	3 5	170	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place possible 17th century
106	3 5	171	Metal	lead	other	unidentified		50 Cromwell Place/ 0 Cromwell Place Field Identification # 36 39.2mm long x 9.5mm wide possible 17th century
106	3 5	175	Metal	cuprous	other	strip		50 Cromwell Place/ 0 Cromwell Place Field Identification # 40 cut broken upon examination

								possible 17th century
106	3 5	177	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place possible 17th century
106	3 5	179	lead	hunting and weapon	gunflint wrap			possible jaw marks 33 Cromwell Place 36.0mm wide
106	3 5	187	Metal	iron	architectural	hand wrought nail	fragment	33 Cromwell Place 7.6mm long possible 17th century
106	3 5	188	Metal	iron	other	eyelet	fragment	33 Cromwell Place
106	3 5	189	Metal	iron	architectural	door hardware		33 Cromwell Place SW quarter of box
106	3 5	190	cuprous	clothing and personal	buckle			In display box for quick viewing 33 Cromwell Place
106	3 5	191	lead	hunting and weapon	gunflint wrap	fragment		possible jaw marks 33 Cromwell Place 4.5cm wide
106	3 5	192	Metal	pewter	domestic	handle	fragment	33 Cromwell Place 1cm x 1cm possible 17th century
106	3 5	193	Metal	lead	architectural	window glazing		33 Cromwell Place 27.7mm long x 8.45 mm wide possible 17th century

106	3 5	201	Metal	iron	architectural	hand wrought nail	fragment	33 Cromwell Place SW quarter of box possible 17th century
106	3 5	211	Metal	lead	other	sheet	fragment	3 Cromwell Court 11mm x 18.6mm possible 17th century
106	3 5	213	lead	hunting and weapon	musket ball	.26" diameter		3 Cromwell Court has sprue possible canister faceted?
106	3 5	214	lead	hunting and weapon	musket ball	.44" diameter		possible canister Locus C 3 Cromwell Court
106	3 5	215	Metal	lead	other	unidentifie d		3 Cromwell Court possible 17th century
106	3 5	216	lead	hunting and weapon	musket ball	.66" diameter		3 Cromwell Court chewed: pig teeth indentation needs further analysis
106	3 5	217	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SW quarter of box possible 17th century
106	3 5	219	Metal	lead	other	unidentifie d		3 Cromwell Court possible 17th century
106	3 5	220	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NW quarter of box possible 17th century
106	3 5	222	Metal	lead	other	unidentifie d		3 Cromwell Court possible 17th century

106	3 5	227	Metal	lead	domestic	pot mend		3 Cromwell Court possible 17th century exterior diameter 21.3mm interior diameter 11.9mm
106	3 5	228	Metal	pewter	other	unidentified	fragment	3 Cromwell Court 20.6mm x 13.5mm possible 17th century
106	3 5	230	Metal	lead	other	disc		3 Cromwell Court 21mm diameter 0.7mm thick possible 17th century
106	3 5	231	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SE quarter of box possible 17th century
106	3 5	232	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SE quarter of box possible 17th century
106	3 5	236	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	237	lead	hunting and weapon	musket ball	.60" diameter		3 Cromwell Court
106	3 5	238	Metal	lead	other	sheet		3 Cromwell Court Field Identification #119 4.6mm thick possible 17th century
106	3 5	242	Metal	iron	domestic	knife	blade	possible 17th century 3 Cromwell Court Location: Wet Lab Fridge 4/14/2015

106	3 5	246	Glass	blue-green	unidentified glass	untyped flat glass	fragment	3 Cromwell Court possible 17th century 1.1mm
106	3 5	249	Metal	pewter	clothing and personal	button	complete	3 Cromwell Court single cast, partial shank plain front, cast seam on back 16mm diameter possible 17th century
106	3 5	251	Metal	lead	other	tubular		fishing weight/net sinker 3 Cromwell Court possible 17th century
106	3 5	259	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court SW quarter of box possible 17th century
106	3 5	261	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court SW quarter of box possible 17th century
106	3 5	264	Metal	lead	other	unidentified		2 Cromwell Court possible 17th century possible casting scrap? Sprue from mold?
106	3 5	270	Metal	lead	architectural	window came		2 Cromwell Court possible 17th century melted?
106	3 5	276	Metal	iron	architectural	hand wrought nail	complete	2 Cromwell Court NE quarter of box, 6mm long possible 17th century
106	3 5	284	Metal	cuprous	tool	folding knife	fragment	2 Cromwell Court inventory #285 mends? Possible 17th century

106	3 5	286	Metal	lead	other	unidentified		2 Cromwell Court hole possible 17th century
106	3 5	294	Metal	iron	architectural	hand wrought nail	complete	50 Cromwell Place SW quarter of box possible 17th century
106	3 5	295	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place SW quarter of box possible 17th century clinched headed
106	3 5	301	lead	hunting and weapon	musket ball	.69 diameter		In display box for quick viewing 500 Main Street
106	3 5	310	Metal	lead	other	unidentified	fragment	0 Cromwell Place Field Identification #157 purposeful hole, broken object, ribbed possible 17th century
106	3 5	311	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place Field Identification #159 possible 17th century
106	3 5	312	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place Field Identification #160 possible 17th century
106	3 5	315	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	318	Metal	iron	architectural	door hardware	fragment	possible 17th century 3 Cromwell Court Location: Wet Lab Fridge 4/14/2015

106	3 5	322	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court possible 17th century
106	3 5	328	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	332	Metal	cuprous	other	sheet		0 Cromwell Place Field Identification #167 45mm x 25mm 1.57mm thick possible 17th century
106	3 5	333	Metal	cuprous	other	ring		0 Cromwell Place Field Identification #168 possible curtain ring possible 17th century
106	3 5	334	Metal	iron	architectural	spike	fragment	0 Cromwell Place Field Identification #170
106	3 5	335	Metal	iron	other	unidentified	fragment	0 Cromwell Place Field Identification #171
106	3 5	336	Metal	lead	other	sheet		0 Cromwell Place folded and rolled 24mm long unrolled, 17mm wide Field Identification #172 possible 17th century
106	3 5	337	Metal	iron	other	strip		has mesh wire 0 Cromwell Place Field Identification #173
106	3 5	339	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	341	Metal	iron	architectural	hand wrought	complete	0 Cromwell Place NW quarter of box

					nail		possible 17th century	
106	3 5	342	iron	hunting and weapon	strike-a-light		48/50/0 Cromwell Place Field Identification #163	
106	3 5	358	Metal	cuprous	clothing and personal	button	502 Main Street Field Identification #189 early 17th century	
106	3 5	358	cuprous	clothing and personal	button		502 Main Street Field Identification #189 early 17th century	
106	3 5	360	lead	hunting and weapon	musket ball	.36" diameter	502 Main Street Field Identification #192	
106	3 5	362	Metal	lead	hunting and weapon	musket ball	.35" diameter	425 Main Street Field Identification #174 GPS Provenience
106	3 5	362	lead	hunting and weapon	musket ball	.35" diameter	425 Main Street Field Identification #174 GPS Provenience	
106	3 5	363	Metal	lead	hunting and weapon	musket ball	.68" diameter	425 Main Street with firing hemisphere, sprue Field Identification #175 GPS Provenience
106	3 5	363	lead	hunting and weapon	musket ball	.68" diameter	425 Main Street with firing hemisphere, sprue Field Identification #175 GPS Provenience	

106	3 5	364	Metal	lead	hunting and weapon	musket ball	.35" diameter	In display box for quick viewing 425 Main Street Field Identification #176 GPS Provenience
106	3 5	364	lead	hunting and weapon	musket ball	.35" diameter		In display box for quick viewing 425 Main Street Field Identification #176 GPS Provenience
106	3 5	365	Metal	lead	hunting and weapon	musket ball	.53" diameter	425 Main Street Field Identification #177 GPS Provenience cast seam, sprue
106	3 5	365	lead	hunting and weapon	musket ball	.53" diameter		425 Main Street Field Identification #177 GPS Provenience cast seam, sprue
106	3 5	366	Metal	lead	hunting and weapon	musket ball	.32" diameter	425 Main Street Field Identification #178 GPS Provenience
106	3 5	366	lead	hunting and weapon	musket ball	.32" diameter		425 Main Street Field Identification #178 GPS Provenience
106	3 5	372	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court possible 17th century
106	3 5	376	lead	architectural	window glazing			2 Cromwell Court
106	3 5	377	Metal	pewter	other	unidentified		2 Cromwell Court possible 17th century
106	3 5	379	lead	architectural	window glazing			2 Cromwell Court

106	3 5	381	Metal	pewter	other	unidentified		2 Cromwell Court possible 17th century
106	3 5	399	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court SW quarter of box possible 17th century
106	3 5	403	Metal	iron	architectural	spike	fragment	possible 17th century hook on one end, flare on other 2 Cromwell Court
106	3 5	404	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court SW quarter of box possible 17th century
106	3 5	408	Metal	iron	architectural	hand wrought nail	complete	2 Cromwell Court NW quarter of box possible 17th century
106	3 5	410	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court NW quarter of box
106	3 5	429	lead	other	unidentified	fragment		3 Cromwell Court
106	3 5	432	lead	other	unidentified	fragment		3 Cromwell Court
106	3 5	433	Metal	cuprous	other	scrap		3 Cromwell Court possible 17th century
106	3 5	436	lead	hunting and weapon	musket ball	.40" diameter		3 Cromwell Court
106	3 5	438	cuprous	clothing and personal	jewelry			7 Cromwell Court costume jewelry
106	3 5	439	lead	hunting and weapon	musket ball	.46" diameter		7 Cromwell Court

106	3 5	442	Metal	lead	other	unidentified		2 Cromwell Court possible 17th century
106	3 5	444	lead	other	unidentified			2 Cromwell Court
106	3 5	448	Metal	iron	architectural	bolt		9 Cromwell Court
106	3 5	451	Metal	iron	architectural	hand wrought nail	complete	11 Cromwell Court in metal
106	3 5	452	Metal	iron	hunting and weapon	matchlock trigger	fragment	matchlock trigger mechanism 11 Cromwell Court SW quarter of box
106	3 5	452	iron	hunting and weapon	matchlock trigger	fragment		matchlock trigger mechanism 11 Cromwell Court SW quarter of box
106	3 5	455	Metal	cuprous	architectural	knob	fragment	2 Cromwell Court Field Identification #1 possible 17th century possible cabinet/furniture hardware
106	3 5	456	Metal	cuprous	clothing and personal	button	complete	cast one piece undrilled shank late 1600s - early 1700s 2 Cromwell Court Field Identification #2
106	3 5	459	Metal	lead	other	unidentified		2 Cromwell Court Field Identification #5 possible 17th century
106	3 5	460	Metal	lead	other	unidentified		2 Cromwell Court Field Identification #6 possible 17th century
106	3 5	461	lead	hunting and weapon	musket ball	.41 " diameter		2 Cromwell Court Field Identification #7

106	3 5	463	Metal	lead	domestic	weight		2 Cromwell Court Field Identification #9 possible 17th century perforated , has sprue 5.54mm hole 24.0mm diameter 3.7mm thick
106	3 5	466	Metal	iron	architectural	spike	complete	possible 17th century 2 Cromwell Court
106	3 5	468	lead	other	slag			2 Cromwell Court
106	3 5	473	lead	other	unidentified			2 Cromwell Court
106	3 5	495	Metal	iron	architectural	spike	complete	possible 17th century 2 Cromwell Court
106	3 5	499	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SE quarter of box possible 17th century
106	3 5	500	lead	other	unidentified			3 Cromwell Court
106	3 5	502	lead	other	unidentified			3 Cromwell Court
106	3 5	503	Metal	lead	other	sheet	fragment	3 Cromwell 55mm x 20mm 2.6mm thick possible 17th century
106	3 5	506	Metal	lead	other	unidentifie d		7 Cromwell Court Field Identification #193 possible 17th century

106	3 5	508	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court Field Identification #195 possible 17th century
106	3 5	511	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	513	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	514	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court NW quarter of box, 6mm long possible 17th century
106	3 5	515	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	516	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	517	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	518	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	527	Metal	lead	other	unidentified	fragment	3 Cromwell Court possible 17th century 28.4mm x 45.8mm x 6.4mm thick
106	3 5	531	Metal	iron	architectural	hand wrought nail		3 Cromwell Court SW quarter of box possible 17th century

106	3 5	532	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court SE quarter of box 3mm long possible 17th century
106	3 5	533	Metal	iron	architectural	hand wrought nail		3 Cromwell Court SE quarter of box possible 17th century
106	3 5	534	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SE quarter of box possible 17th century
106	3 5	535	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SE quarter of box possible 17th century
106	3 5	536	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NE quarter of box 7.5mm long, bent possible 17th century
106	3 5	542	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court SW quarter of box possible 17th century
106	3 5	543	Metal	iron	other	unidentified	fragment	possible 17th century 3 Cromwell Court
106	3 5	547	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court SW quarter of box, bent possible 17th century
106	3 5	548	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NW quarter of box possible 17th century

106	3 5	552	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	558	Metal	iron	tool	folding knife		3 Cromwell Court possible 17th century
106	3 5	559	Metal	lead	other	slag		0 Cromwell Place possible 17th century
106	3 5	561	Metal	lead	other	unidentified		0 Cromwell Place possible 17th century Field Identification #131
106	3 5	563	Metal	lead	other	unidentified		50 Cromwell Place Field Identification #124 possible 17th century
106	3 5	566	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court SE quarter of box possible 17th century
106	3 5	570	Metal	iron	other	unidentified	fragment	possible 17th century possible internal gun part, has pivot needs further analysis 3 Cromwell Court Field Identification #106
106	3 5	574	Metal	iron	architectural	hand wrought nail	head fragment	7 Cromwell Court possible 17th century
106	3 5	578	Metal	lead	domestic	pot mend		needs further analysis 7 Cromwell Court exterior diameter 18.17mm interior diameter 8.74mm

								needs further analysis 7 Cromwell Court exterior diameter 18.17mm interior diameter 8.74mm
106	3 5	578	lead	domestic	pot mend			
106	3 5	579	kaolin pipe	kaolin	6/64	stem fragment		7 Cromwell Court
106	3 5	580	Metal	iron	architectural	lock	fragment	possible 17th century heart shaped padlock 7 Cromwell Court
106	3 5	582	cuprous	clothing and personal	button	complete		7 Cromwell Court discoidal central pellet button,Identification by "Metal buttons", Brian Read, pages 75-77,"Buttons and Fasteners", Gordon Bailey, page 30
106	3 5	584	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NW quarter of box, bent possible 17th century
106	3 5	586	Metal	iron	architectural	hand wrought nail	shank	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	593	Metal	iron	other	unidentified		possible 17th century 9 Cromwell Court SW quarter of box
106	3 5	597	Metal	iron	domestic	scissor	fragment	possible 17th century 9 Cromwell Court
106	3 5	598	Metal	iron	architectural	hand wrought nail	fragment	9 Cromwell Court SW quarter of box possible 17th century
106	3 5	634	kaolin pipe	kaolin	7/64	stem fragment		5 Cromwell Court

106	3 5	637	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court possible 17th century
106	3 5	644	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	645	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	647	Metal	latten	domestic	spoon	bowl	4 Cromwell Court possible 17th century
106	3 5	650	Metal	iron	architectural	hand wrought nail	complete	4 Cromwell Court SE quarter of box, bent possible 17th century
106	3 5	651	Metal	iron	architectural	hand wrought nail	fragment	4 Cromwell Court possible 17th century
106	3 5	655	pewter	other	unidentified			4 Cromwell Court
106	3 5	658	Metal	cuprous	domestic	spoon	handle fragment	5 Cromwell Court slip in stalk possible 17th century
106	3 5	662	lead	hunting and weapon	musket ball	.55" diameter		cylindrical shot diameter .55" measured with calipers 5 Cromwell Court Field Identification #183
106	3 5	664	cuprous	domestic	fastener	complete		4 Cromwell Court Field Identification #111
106	3 5	665	Metal	cuprous	other	unidentified		4 Cromwell Court Field Identification #116

								possible 17th century
106	3 5	666	lead	other	unidentified			4 Cromwell Court Field Identification #118
106	3 5	666.01	Metal	cuprous	other	unidentified		4 Cromwell Court Field Identification #118 possible 17th century 2.43mm thick
106	3 5	671	Metal	iron	architectural	spike	fragment	0 Cromwell Place possible 17th century
106	3 5	672	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box, bent possible 17th century
106	3 5	674	Metal	iron	architectural	spike	fragment	0 Cromwell Place
106	3 5	679	lead	hunting and weapon	musket ball	.76" diameter		0 Cromwell Place casting cavity
106	3 5	680	Metal	iron	architectural	spike	complete	0 Cromwell Place NE quarter of box
106	3 5	681	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place
106	3 5	682	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	688	Metal	iron	tool	folding knife	fragment	0 Cromwell Place possible 17th century
106	3 5	690	Metal	iron	architectural	spike	fragment	missing head 0 Cromwell Place

106	3 5	696	Metal	cuprous	other	scrap		0 Cromwell Place Field Identification #148 possible 17th century
106	3 5	697	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place Field Identification #149 possible 17th century
106	3 5	698	Metal	iron	architectural	latch	fragment	0 Cromwell Place Field Identification #150
106	3 5	700	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	702	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	704	Metal	iron	other	unidentified		possible kettle fragment possible 17th century 0 Cromwell Place
106	3 5	709	Metal	iron	domestic	knife	fragment	needs further analysis possible 17th century 0 Cromwell Place straight knife rat tail tang
106	3 5	711	Metal	iron	architectural	spike	fragment	0 Cromwell Place
106	3 5	712	Metal	iron	other	unidentified		possible 17th century needs further analysis 0 Cromwell Place Field Identification #139

								needs further analysis cast lead object modified and drilled possible 17th century 0 Cromwell Place
106	3 5	714	Metal	lead	clothing and personal	amulet		
106	3 5	720	Metal	iron	architectural	staple	complete	0 Cromwell Place
106	3 5	727	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	729	Metal	iron	other	unidentified	fragment	31 Cromwell Place
106	3 5	732	Metal	lead	other	slag		31 Cromwell Place possible 17th century
106	3 5	733	lead	hunting and weapon	musket ball	.43" diameter		mis-cast 33 Cromwell Place
106	3 5	735	iron	hunting and weapon	armor			needs further analysis possible armor 33 Cromwell Place
106	3 5	737	Metal	lead	other	unidentified		33 Cromwell Place possible 17th century
106	3 5	740	Metal	iron	architectural	hand wrought nail		33 Cromwell Place Field Identification #46 possible 17th century
106	3 5	742	Metal	lead	domestic	unidentified		33 Cromwell Place Field Identification #48 possible 17th century
106	3 5	743	Metal	lead	other	unidentified		33 Cromwell Place Field Identification #49 possible 17th century

106	3 5	745	Metal	lead	other	unidentified		33 Cromwell Place Field Identification #51 possible 17th century
106	3 5	747	Metal	lead	other	sheet	fragment	33 Cromwell Place Field Identification #54 18.8mm x 19.5mm 2.5mm thick possible 17th century
106	3 5	748	Metal	cuprous	domestic	tack	complete	furniture boss 33 Cromwell Place Field Identification #55 possible 17th century
106	3 5	749	Metal	pewter	clothing and personal	button	complete	fleur de lis on face button shank & cast seam could date button to early 17th century but identical button found at an early 18th century CT homestead (Thomas Daniels site) 33 Cromwell Place Field Identification #56
106	3 5	749	pewter	clothing and personal	button	complete		fleur de lis on face button shank & cast seam could date button to early 17th century but identical button found at an early 18th century CT homestead (Thomas Daniels site) 33 Cromwell Place Field Identification #56
106	3 5	752	Metal	cuprous and lead	domestic	weight		copper loop on lead weight 33 Cromwell Place Field Identification #61 possible 17th century

106	3 5	757	Metal	cuprous	other	unidentified	fragment	possible 17th century needs further analysis 33 Cromell Place Field Identification #96
106	3 5	758	Metal	lead	other	unidentified		Needs further analysis mortar or ash on surface 33 Cromwell Place Field Identification #97 possible 17th century
106	3 5	759	Metal	lead	other	sheet		.82mm thick needs further analysis 33 Cromwell Place Field Identification #98 possible 17th century
106	3 5	760	Metal	lead	other	unidentified		needs further analysis possible 17th century 33 Cromwell Place Field Identification #100
106	3 5	761	Metal	lead	other	unidentified		possible 17th century needs further analysis 33 Cromwell Place Field Identification #101
106	3 5	762	Metal	cuprous	other	scrap		33 Cromwell Place Field Identification #102 possible 17th century Location: Wet Lab Fridge 4/14/2015
106	3 5	763	Metal	pewter	clothing and personal	button	fragment	possible 17th century 33 Cromwell Place Field Identification #103

106	3 5	767	iron	hunting and weapon	matchlock trigger	fragment		45 Cromwell Place NE quarter of box
106	3 5	771	Metal	iron	architectural	hand wrought nail	fragment	45 Cromwell Place NE quarter of box possible 17th century
106	3 5	772	Metal	iron	architectural	hand wrought nail		45 Cromwell Place NE quarter of box possible 17th century
106	3 5	774	Metal	ferrous and lead	other	unidentified		possible 17th century needs further analysis wood inside lead tubular bell like shaped 45 Cromwell Place
106	3 5	778	Metal	iron	architectural	hand wrought nail	complete	48 Cromwell Place SW quarter of box possible 17th century
106	3 5	779	Metal	iron	domestic	knife		possible 17th century 48 Cromwell Place blade and tang Location: Clean Lab, 9/17/2015
106	3 5	790	Metal	iron	architectural	hand wrought nail	complete	48 Cromwell Place SW quarter of box possible 17th century
106	3 5	792	Metal	iron	domestic	hook		possible 17th century 48 Cromwell Place Location: Wet Lab Fridge 4/14/2015
106	3 5	795	Metal	lead	other	sheet	fragment	48 Cromwell Place 1.85mm thick possible 17th century

106	3 5	797	Metal	iron	architectural	hand wrought nail	complete	48 Cromwell Place SE quarter of box possible 17th century
106	3 5	798	Metal	iron	architectural	hand wrought nail	fragment	48 Cromwell Place NE quarter of box possible 17th century
106	3 5	800	lead	hunting and weapon	canister shot	.38" diameter		87 Church Street possible impacted dumb-bell shot Field Identification #301
106	3 5	807	lead	hunting and weapon	canister shot	.44" diameter		possible hail shot 87 Church Street Field Identification #307
106	3 5	817	Metal	cuprous	clothing and personal	button	complete	possible 17th century 87 Church Street, Field Identification #317 biconvex hollow undecorated, front/back soldered together, with cuprous wire shank (soldered)
106	3 5	819	lead	hunting and weapon	bandolier cap			87 Church Street Field Identification #319
106	3 5	820	Metal	iron	architectural	hand wrought nail	complete	87 Church Street Field Identification #320 possible 17th century
106	3 5	830	Metal	lead	architectural	window came	fragment	needs further analysis 50 Cromwell Place possible 17th century
106	3 5	843	Metal	iron	domestic	kettle	fragment	possible 17th century 50 Cromwell Place
106	3 5	852	Metal	lead	other	unidentified		50 Cromwell Place possible 17th century

106	3 5	853	Metal	lead	hunting and weapon	fishing weight		48 Cromwell Place lead fishing weight/lead sinker possible 17th century
106	3 5	855	lead	hunting and weapon	musket ball	.41 " diameter		50 Cromwell Place sprue casting cavity
106	3 5	856	Historic Ceramic	tin glazed earthenware	untyped delftware			50 Cromwell Place possible 17th century
106	3 5	859	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place SW quarter of box possible 17th century
106	3 5	870	Metal	iron	tool	folding knife	blade	has hole for pivot possible 17th century 50 Cromwell Place
106	3 5	872	lead	hunting and weapon	musket ball	.47"diame ter		50 Cromwell Place Field Identification #63 sprue scar
106	3 5	877	Metal	lead	other	unidentifie d		50 Cromwell Place Field Identification #68 possible 17th century
106	3 5	878	Metal	lead	other	unidentifie d		50 Cromwell Place Field Identification #132 possible 17th century
106	3 5	879	Metal	lead	other	unidentifie d		50 Cromwell Place Field Identification #133 possible 17th century
106	3 5	880	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place Field Identification #134 possible 17th century

106	3 5	883	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place SW quarter of box possible 17th century
106	3 5	886	Metal	iron	architectural	hand wrought nail		50 Cromwell Place NE quarter of box possible 17th century
106	3 5	889	Metal	cuprous	clothing and personal	button		50 Cromwell Place American Federal Navy Button(1790-1815) Artifact permanently housed at the CT River Museum in Essex as of March 2014.
106	3 5	893	Metal	iron	architectural	hand wrought nail	complete	50 Cromwell Place NW quarter of box possible 17th century
106	3 5	895	Metal	iron	tool	folding knife	fragment	possible 17th century 50 Cromwell Place
106	3 5	899	Metal	iron	tool	drill bit		50 Cromwell Place mux, muxe? drill?
106	3 5	910	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place SW quarter of box possible 17th century
106	3 5	916	Metal	iron	architectural	hand wrought nail	complete	50 Cromwell Place NE quarter of box possible 17th century
106	3 5	917	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place NE quarter of box possible 17th century
106	3 5	920	Metal	iron	architectural	hand wrought nail	complete	50 Cromwell Place NW quarter of box possible 17th century

106	3 5	922	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place NE quarter of box possible 17th century
106	3 5	925	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place SE quarter of box possible 17th century
106	3 5	932	Metal	lead	other	bar	fragment	0 Cromwell Place possible 17th century 12.0mm x 9.0mm
106	3 5	935	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	938	Metal	cuprous	clothing and personal	buckle	fragment	0 Cromwell Place likely 17th century, mid-late? Possible 17th century
106	3 5	940	Metal	lead	other	unidentified		0 Cromwell Place possible 17th century
106	3 5	941	iron	domestic	hook	fragment		0 Cromwell Place dry hook
106	3 5	942	Metal	iron	domestic	strap	fragment	0 Cromwell Place with hole possible 17th century
106	3 5	947	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	949	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place
106	3 5	950	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place

								0 Cromwell Place caliper measure 15.76mm diameter possible pig lead possible 17th century
106	3 5	954	Metal	lead	other	bar	fragment	
106	3 5	955	lead	hunting and weapon	musket ball	.77" diameter		0 Cromwell Place sprue
106	3 5	959	Metal	iron	architectural	spike	fragment	0 Cromwell Place possible 17th century
106	3 5	964	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	966	Metal	lead	other	unidentified		0 Cromwell Place possible 17th century
106	3 5	974	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	976	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	978	Metal	iron	domestic	strap		0 Cromwell Place possible 17th century
106	3 5	984	Metal	iron	architectural	hand wrought nail		0 Cromwell Place NW quarter of box possible 17th century
106	3 5	985	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century

106	3 5	992	Metal	cuprous	domestic	unidentified		Needs further analysis rivet? 0 Cromwell Place 27.75mm exterior diameter 12.2mm interior diameter possible 17th century
106	3 5	1003	Metal	iron	domestic	kettle	rim fragment	0 Cromwell Place Field Identification #217 possible 17th century
106	3 5	1005	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Field Identification #219 possible 17th century
106	3 5	1013	Metal	iron	architectural	hand wrought spike	complete	0 Cromwell Place Field Identification #227 possible 17th century
106	3 5	1015	lead	hunting and weapon	musket ball	.60" diameter		0 Cromwell Place Field Identification #228
106	3 5	1016	lead	hunting and weapon	musket ball	.62" diameter		0 Cromwell Place heavily impacted Field Identification #229
106	3 5	1017	Metal	iron	other	sheet	fragment	0 Cromwell Place Field Identification #230 possible 17th century
106	3 5	1018	Metal	iron	domestic	strap	fragment	possible 17th century has hole 0 Cromwell Place Field Identification #231
106	3 5	1022	Metal	lead	other	unidentified		0 Cromwell Place Field Identification #234 possible 17th century

106	3 5	1025	Metal	cuprous	domestic	bell	complete	0 Cromwell Place crotal bell, trade bell? Field Identification #237 possible 17th century
106	3 5	1026	Metal	lead	other	unidentified		0 Cromwell Place Field Identification #238 possible 17th century
106	3 5	1029	Metal	lead	other	unidentified		0 Cromwell Place Field Identification #241 possible 17th century
106	3 5	1035	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NW quarter of box possible 17th century
106	3 5	1036	Metal	lead	other	unidentified		3 Cromwell Court NW quarter of box 1.5mm thick possible 17th century
106	3 5	1039	Metal	iron	other	unidentified	fragment	9 Cromwell Court possible 17th century possible gun part?
106	3 5	1041	Metal	iron	other	unidentified	fragment	9 Cromwell Court possible 17th century possible gun part
106	3 5	1048	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court possible 17th century
106	3 5	1055	Metal	iron	other	unidentified	fragment	400 Cromwell Court Field Identification #356 possible 17th century possible gun part

106	3 5	1061	Metal	iron	architectural	hand wrought nail	complete	400 Cromwell Court Field Identification #363 possible 17th century
106	3 5	1062	Metal	iron	architectural	hand wrought nail	complete	400 Cromwell Court Field Identification #364 possible 17th century
106	3 5	1063	Metal	iron	architectural	hand wrought nail		400 Cromwell Court Field Identification #365 possible 17th century
106	3 5	1066	lead	hunting and weapon	musket ball	.37" diameter		400 Cromwell Court Field Identification #368
106	3 5	1069	Metal	lead	domestic	bale seal		400 Cromwell Court Field Identification #371 possible 17th century
106	3 5	1074	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1075	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1077	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1088	Metal	iron	architectural	hand-wrought	fragment	possible equipment related needs further analysis 3 Cromwell Court possible 17th century

								possible jaw mark, casting cavity 2mm thick 33 North Cove Road Field Identification #394 GPS Provenience
106	3 5	1097	lead	hunting and weapon	gunflint wrap			
106	3 5	1098	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1101	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	1102	Metal	lead	hunting and weapon	canister shot		possible fishing weight found among other canister shot 80 Church Street Field Identification #374 possible 17th century
106	3 5	1106	lead	hunting and weapon	canister shot	.43" diameter		80 Church Street Field Identification #378 musket ball with casting cavity
106	3 5	1107	lead	hunting and weapon	canister shot	.57" diameter		80 Church Street Field Identification #379 middle ball from three ball load
106	3 5	1108	lead	hunting and weapon	canister shot	.39" diameter		80 Church Street Field Identification #380
106	3 5	1109	aluminu m	other	unidentified			80 Church Street Field Identification #382
106	3 5	1110	lead	hunting and weapon	canister shot	.67" diameter		80 Church Street Field Identification #383 wired shot

106	3 5	1115	Historic Pipe	redware pipe			bowl fragment	87 Church Street Field Identification #330 possible 17th century
106	3 5	1116	Metal	iron	architectural	hand-wrought	fragment	Possible lancet? Possible 17th century 87 Church Street Field Identification #331
106	3 5	1136	lead	hunting and weapon	musket ball	.63" diameter		463 Main Street Field Identification #242 GPS Provenience
106	3 5	1139	lead	hunting and weapon	musket ball	.68" diameter		463 Main Street Field Identification #245 GPS Provenience casting cavity
106	3 5	1146	lead	hunting and weapon	musket ball	.47" diameter		heavily impacted 463 Main Street Field Identification #252 GPS Provenience
106	3 5	1147	lead	hunting and weapon	musket ball	.67" diameter		425 Main Street Field Identification #269 GPS Provenience slight impact casting cavity and seam
106	3 5	1154	lead	hunting and weapon	musket ball	.36" diameter		530 Main Street Field Identification #276 GPS Provenience
106	3 5	1157	iron	hunting and weapon	strike-a-light	fragment		510 Main Street Field Identification #255 GPS Provenience

								pointed ends with serrated edge molded grooves missing chape and spindle: unable to date probably late 1600s - early 1700s similar example Whitehead p.101 #644 400 Cromwell Court Field Identification #268
106	3 5	1165	Metal	cuprous	clothing and personal	buckle	fragment	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1176	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1177	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1178	Metal	iron	domestic	kettle	fragment	possible 17th century 5 Cromwell Court
106	3 5	1179	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1180	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1181	Metal	cuprous	architectural	knob		hand made threads Possible 17th century 7 Cromwell Place Field Identification #299
106	3 5	1185	Metal	lead	other	unidentified		7 Cromwell Place Field Identification #284 possible 17th century

106	3 5	1186	Metal	iron	architectural	hand wrought nail	fragment	7 Cromwell Place Field Identification #287 possible 17th century
106	3 5	1187	Metal	lead	hunting and weapon	weight	complete	7 Cromwell Place fishing weight/net sinker possible 17th century
106	3 5	1188	Metal	cuprous	architectural	ring	complete	7 Cromwell Place possible 17th century
106	3 5	1189	Metal	lead	other	unidentified		7 Cromwell Court Field Identification #352 possible 17th century
106	3 5	1190	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court Field Identification #353 possible 17th century
106	3 5	1192	iron	clothing and personal	jaw harp	fragment		7 Cromwell Place Field Identification #290
106	3 5	1196	Metal	lead	other	unidentified		has handle, possible powder horn plug possible 17th century 7 Cromwell Place Field Identification #294
106	3 5	1200	lead	hunting and weapon	musket ball	.69" diameter		possible canister 0 Cromwell Place not assigned a Field Identification #
106	3 5	1204	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place not assigned a Field Identification # possible 17th century

106	3 5	1205	Metal	lead	other	sheet	fragment	0 Cromwell Place not assigned a Field Identification # 40mm x 15mm possible 17th century
106	3 5	1207	Metal	iron	other	unidentified		possible 17th century 0 Cromwell Place not assigned a Field Identification #
106	3 5	1211	Metal	iron	other	unidentified		possible 17th century 0 Cromwell Place not assigned a Field Identification #
106	3 5	1216	lead	hunting and weapon	musket ball	.28" diameter		0 Cromwell Place with sprue not assigned a Field Identification #
106	3 5	1218	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place not assigned a Field Identification #
106	3 5	1220	lead	hunting and weapon	musket ball	.66" diameter		0 Cromwell Place not assigned a Field Identification # casting cavity
106	3 5	1221	iron	hunting and weapon	matchlock sear bar spring			0 Cromwell Place not assigned a Field Identification #
106	3 5	1223	Metal	iron	other	unidentified	fragment	possible 17th or 18th century 5 Cromwell Court test pit presumed to be N210180; incorrect paperwork listed as N110E180
106	3 5	1240	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court test pit possible 17th century

106	3 5	1263	kaolin pipe	kaolin	7/64	stem fragment		3 Cromwell Court test pit
106	3 5	1270	Historic Ceramic	stoneware	untyped stoneware		sherd	English 3 Cromwell Court test pit possible 17th century
106	3 5	1287	Other Historic	brick			fragment	3 Cromwell Court test pit possible 17th century
106	3 5	1294	Metal	iron	other	unidentified		possible 17th century 0 Cromwell Place
106	3 5	1296	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place possible 17th century
106	3 5	1299	lead	hunting and weapon	musket ball	.29" diameter		0 Cromwell Place deep sprue removed, faceted
106	3 5	1301	Metal	cuprous	clothing and personal	buckle		with glass 0 Cromwell Place Field Identification #483, possible 17th century "Buckles,1250-1800", Ross Whitehead, P.97
106	3 5	1302	lead	hunting and weapon	musket ball	.76" diameter		0 Cromwell Place Field Identification #484
106	3 5	1303	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place Field Identification #486

106	3 5	1304	lead	hunting and weapon	musket ball	.63" diameter		In display box for quick viewing 0 Cromwell Place Field Identification #404
106	3 5	1306	lead	hunting and weapon	musket ball	.73" diameter		0 Cromwell Place Field Identification #406 end ball from three ball load with hole, possible casting cavity
106	3 5	1308	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place Field Identification #408
106	3 5	1312	Metal	cuprous	domestic	furniture hardware	fragment	0 Cromwell Place Field Identification #412 ornamental brass inlay .74mm thick possible 17th century
106	3 5	1314	Metal	iron	tool	caliper	fragment	possible 17th century 0 Cromwell Place Field Identification #415
106	3 5	1318	Metal	iron	tool	folding knife	fragment	possible 17th century 0 Cromwell Place Field Identification #419
106	3 5	1320	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1321	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century

106	3 5	1323	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place Location: Wet Lab Fridge 4/14/2015
106	3 5	1324	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1325	Metal	iron	other	unidentified	fragment	possible 17th century 0 Cromwell Place SE quarter of box
106	3 5	1326	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	1327	Historic Ceramic	tin glazed earthenware	untyped delftware		sherd	0 Cromwell Place possible 17th century
106	3 5	1329	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1331	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1332	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1336	lead	hunting and weapon	musket ball	.46" diameter		18 Church Street Field Identification #397
106	3 5	1342	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1343	lead	hunting and weapon	musket ball	.35" diameter		0 Cromwell Place with sprue

106	3 5	1344	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1345	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1348	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1349	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1354	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1355	Metal	iron	tool	folding knife		0 Cromwell Place possible 17th century
106	3 5	1357	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	1358	Metal	cuprous	clothing and personal	strap buckle		Possible 17th century possible equipment buckle, leather attachment? 10 Light House Lane Field Identification #424 provenienced with GPS
106	3 5	1359	Metal	iron	tool	rivet rove	fragment	48 Cromwell Place same as inventory #1361.00 possible 17th century
106	3 5	1360	iron	hunting and weapon	gun part	fragment		48 Cromwell Place

106	3 5	1361	Metal	iron	tool	rivet rove	fragment	48 Cromwell Place same as inventory #1359.00 possible 17th century
106	3 5	1366	Metal	lead	other	unidentified		0 Cromwell Place (plateau) Field Identification #459 possible 17th century
106	3 5	1367	Metal	lead	other	unidentified		needs further analysis cylinder pointed on both ends 0 Cromwell Place (plateau) Field Identification #460 possible 17th century
106	3 5	1369	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place (plateau) Field Identification #462 possible 17th century
106	3 5	1373	lead	hunting and weapon	musket ball	.38" diameter		0 Cromwell Place (plateau) Field Identification #466 casting seam, sprue
106	3 5	1374	Metal	lead	other	unidentified	fragment	0 Cromwell Place (plateau) Field Identification #467 possible 17th century 33mm x 3.8mm
106	3 5	1375	Metal	iron	domestic	hook	fragment	possible 17th century 0 Cromwell Place (plateau) Field Identification #468
106	3 5	1376	Metal	iron	architectural	screw	fragment	0 Cromwell Place (plateau) Field Identification #469 hand cut threads possible 17th century
106	3 5	1378	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place (plateau) Field Identification #470 possible 17th century

106	3 5	1379	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place (plateau) Field Identification #471 possible 17th century
106	3 5	1381	lead	hunting and weapon	musket ball	.42" diameter		0 Cromwell Place (plateau) Field Identification #473 sprue
106	3 5	1382	lead	hunting and weapon	musket ball	.67" diameter		0 Cromwell Place (plateau) Field Identification #474
106	3 5	1387	lead	hunting and weapon	musket ball	.48" diameter		0 Cromwell Place (plateau) Field Identification #479
106	3 5	1389	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place (plateau) Field Identification #481 possible 17th century
106	3 5	1391	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Field Identification #444 possible 17th century
106	3 5	1392	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place Field Identification #445 possible 17th century
106	3 5	1393	lead	hunting and weapon	musket ball	.70" diameter		possible canister heavily impacted 0 Cromwell Place Field Identification #446
106	3 5	1394	Metal	lead	other	disc		0 Cromwell Place Field Identification #447 remnants of lead cast from pot possible 17th century 6.5cm diameter

								needs further analysis 0 Cromwell Place Field Identification #455 possible 17th century possible gun part Location: Wet Lab Fridge 4/14/2015
106	3 5	1402	Metal	iron	other	unidentified	fragment	
106	3 5	1410	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place Field Identification #433 possible 17th century
106	3 5	1411	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Field Identification #434 possible 17th century
106	3 5	1414	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Field Identification #437 possible 17th century
106	3 5	1420	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Field Identification #443 possible 17th century
106	3 5	1422	Metal	cuprous	domestic	unidentified		3 Cromwell Court Field Identification #391 possible 17th century amber glass embedded Location: Wet Lab Fridge 4/14/2015
106	3 5	1423	Metal	lead	other	unidentified		3 Cromwell Court Field Identification #392 possible 17th century
106	3 5	1440	Historic Ceramic	coarse earthenware	red earthenware (no glaze)		handle sherd	0 Cromwell Place mend possible 17th century

106	3 5	1443	Europaea n flint	debitage	flake			0 Cromwell Place
106	3 5	1456	Europaea n flint	debitage	flake			0 Cromwell Place
106	3 5	1470	kaolin pipe	kaolin	7/64	stem fragment		0 Cromwell Place
106	3 5	1471	kaolin pipe	kaolin	6/64	stem fragment		0 Cromwell Place
106	3 5	1511	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	1515	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	1516	Metal	iron	domestic	key	fragment	0 Cromwell Place possible 17th century
106	3 5	1518	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1519	Metal	iron	architectural	hand wrought nail	shank	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1521	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	1522	lead	hunting and weapon	musket ball	.27" diameter		In display box for quick viewing 0 Cromwell Place has facet and several dimples

106	3 5	1525	Metal	cuprous	domestic	spoon	fragment	0 Cromwell Place 1.48mm thick possible 17th century
106	3 5	1526	lead	hunting and weapon	musket ball	.63" diameter		0 Cromwell Place casting cavity
106	3 5	1530	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1532	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1536	Metal	iron	architectural	hasp	complete	0 Cromwell Place possible 17th century
106	3 5	1540	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place Nw quarter of box possible 17th century
106	3 5	1543	Metal	lead	other	disc		0 Cromwell Place not assigned a Field Identification # 21.6mm x 24.4mm 1.87mm thick hole is 3.4mm possible 17th century
106	3 5	1545	Metal	iron	architectural	rivet rove		possible 17th century 0 Cromwell Place not assigned a Field Identification #, similar to #1548
106	3 5	1547	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place not assigned a Field Identification # possible 17th century

106	3 5	1549	cuprous	clothing and personal	button	complete		half dome, wire shank 0 Cromwell Place not assigned a Field Identification #
106	3 5	1550	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place not assigned a Field Identification # possible 17th century
106	3 5	1551	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place not assigned a Field Identification # possible 17th century
106	3 5	1553	Metal	iron	domestic	kettle	fragment	possible 17th century 0 Cromwell Place not assigned a Field Identification #
106	3 5	1554	Metal	lead	other	disc		conically drilled 23.9mm diameter 3.7mm thick 5.77mm hole needs further analysis 1 Lighthouse Lane Field Identification #427 possible 17th century
106	3 5	1556	Metal	cuprous	domestic	hardware	fragment	box/furniture hardware military? 5 Lighthouse Lane Field Identification #425 provenienced with GPS possible 17th century
106	3 5	1559	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court SE quarter of box possible 17th century
106	3 5	1560	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court SE quarter of box possible 17th century

106	3 5	1562	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court possible 17th century
106	3 5	1566	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	1567	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	1568	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	1569	Metal	iron	architectural	hand wrought nail	shank	5 Cromwell Court NE quarter of box possible 17th century
106	3 5	1571	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1572	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1573	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court NE quarter of box possible 17th century
106	3 5	1579	Metal	iron	architectural	hand wrought nail	complete	9 Cromwell Court Field Identification #211 possible 17th century
106	3 5	1580	Metal	iron	architectural	hand wrought nail	fragment	9 Cromwell Court Field Identification #212 possible 17th century

106	3 5	1582	Metal	iron	domestic	kettle	fragment	possible 17th century 9 Cromwell Court Field Identification #214
106	3 5	1584	Metal	iron	architectural	hand wrought nail	complete	9 Cromwell Court Field Identification #216 possible 17th century
106	3 5	1590	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court SW quarter of box possible 17th century
106	3 5	1591	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	1592	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	1593	Metal	iron	architectural	hand wrought nail	fragment	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	1594	Metal	iron	architectural	hand wrought nail	complete	5 Cromwell Court NW quarter of box possible 17th century
106	3 5	1600	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1601	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1602	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century

106	3 5	1603	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1606	Metal	iron	architectural	unidentified		possible 17th century 0 Cromwell Place
106	3 5	1609	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1610	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1611	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1612	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1615	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1616	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1617	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1618	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NW quarter of box possible 17th century

106	3 5	1619	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1620	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place NE quarter of box possible 17th century
106	3 5	1621	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1623	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1625	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1627	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1628	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1630	Metal	iron	architectural	hand wrought spike	fragment	possible 17th century 0 Cromwell Place
106	3 5	1640	Metal	iron	architectural	hand wrought nail		0 Cromwell Place NW quarter of box possible 17th century
106	3 5	1645	Metal	iron	domestic	knife	blade/bolster fragment	17th century 0 Cromwell Place

106	3 5	1645	iron	domestic	knife	blade/bolster fragment		17th century 0 Cromwell Place
106	3 5	1648	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place SW quarter of box possible 17th century
106	3 5	1655	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place SE quarter of box possible 17th century
106	3 5	1657	Metal	iron	architectural	hand wrought spike	fragment	0 Cromwell Place NE quarter of box
106	3 5	1664	lead	hunting and weapon	musket ball	.67" diameter		0 Cromwell Place with sprue, casting seam
106	3 5	1767	Metal	cuprous	other	sheet	fragment	nailed 0 Cromwell Place Field Identification #42 possible 17th century
106	3 5	1769	Metal	iron	domestic	knife	blade/bolster fragment	possible 17th century 0 Cromwell Place Field Identification #44
106	3 5	1772	cuprous	architectural	hinge			40 Cromwell Place Field Identification #70
106	3 5	1775	lead	hunting and weapon	musket ball	.62" diameter		500 Main Street with sprue
106	3 5	1778	lead	hunting and weapon	musket ball	.42" diameter		500 Main Street cylindrical shot, casting cavity 10.94mm, .423 inches diameter, .47 inches long
106	3 5	1781	iron	hunting and weapon	flintlock frizzen spring			500 Main Street

106	3 5	1826	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court test pit possible 17th century
106	3 5	1827	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court test pit possible 17th century
106	3 5	1828	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court test pit possible 17th century
106	3 5	1829	Metal	iron	architectural	hand wrought nail	fragment	7 Cromwell Court test pit possible 17th century
106	3 5	1833	kaolin pipe	kaolin	8/64	stem fragment		7 Cromwell Court test pit
106	3 5	1856	Historic Ceramic	coarse earthenware	red earthenware slip decorated		sherd	7 Cromwell Court test pit, mend possible 17th century
106	3 5	1862	coarse earthen ware	North Devon gravel tempered ware			sherd	7 Cromwell Court test pit
106	3 5	1866	Metal	iron	architectural	hand wrought nail	fragment	7 Cromwell Court test pit possible 17th century
106	3 5	1867	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court test pit possible 17th century

106	3 5	1882	Historic Ceramic	coarse earthenware	red earthenware (unidentified lead glaze)		sherd	0 Cromwell Place possible 17th century
106	3 5	1883	Historic Ceramic	coarse earthenware	red earthenware (unidentified lead glaze)		sherd	0 Cromwell Place possible 17th century
106	3 5	1898	European flint	debitage	flake			0 Cromwell Place
106	3 5	1972	Metal	lead	other	strip	fragment	30mm long comes to point 5mm at its widest possible 17th century 3 Cromwell Ct
106	3 5	2031	Glass	aqua	glass untyped bottle		fragment	0 Cromwell Place possible 17th or 18th century
106	3 5	2032	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place possible 17th century
106	3 5	2039	Historic Ceramic	coarse earthenware	red earthenware (unidentified lead glaze)		rim sherd	0 Cromwell Place possible 17th century
106	3 5	2041	Glass	aqua	glass untyped bottle		fragment	0 Cromwell Place 17th or 18th century

106	3 5	2046	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2047	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2057	kaolin pipe	kaolin	7/64	stem fragment		3 Cromwell Court test pit
106	3 5	2058	Faunal	unidentified bone		non calcined tooth	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2060	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2070	Glass	green	glass container	glass untyped bottle	fragment	0/50 Cromwell Place test pit possible 17th or 18th century
106	3 5	2072	Glass	blue-green	flat glass	window glass	fragment	0/50 Cromwell Place test pit possible 17th or 18th century
106	3 5	2075	Historic Ceramic	tin glazed earthenware	untyped delftware		sherd	0/50 Cromwell Place test pit possible 17th century
106	3 5	2091	Glass	green	glass container	glass untyped bottle	fragment	0/50 Cromwell Place test pit possible 17th or 18th century
106	3 5	2092	Glass	green	glass container	glass globe and shaft bottle	fragment	0/50 Cromwell Place test pit possible 17th or 18th century

106	3 5	2094	Metal	iron	architectural	hand wrought nail	fragment	0/50 Cromwell Place test pit possible 17th century
106	3 5	2097	kaolin pipe	kaolin		bowl fragment		0/50 Cromwell Place test pit
106	3 5	2098	coarse earthen ware	North Devon gravel tempered ware		sherd		0/50 Cromwell Place test pit
106	3 5	2119	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court test pit possible 17th century
106	3 5	2120	Metal	iron	architectural	hand wrought nail	shank fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2123	Metal	iron	other	rod	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2129	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2137	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2142	Metal	iron	domestic	scissor	blade	7 Cromwell Court possible 17th century Location: Wet Lab Fridge 4/14/2015
106	3 5	2143	Metal	iron	architectural	hand wrought nail	complete	7 Cromwell Court SE quarter of box possible 17th century

106	3 5	2147	Glass	clear	unidentified glass	untyped curved glass	fragment	0 Cromwell Place test pit possible 17th century
106	3 5	2149	Aborigi nal Ceramic	unidentified aboriginal ceramic			sherd	0 Cromwell Place test pit possible 17th century
106	3 5	2152	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place test pit possible 17th century
106	3 5	2171	Historic Ceramic	coarse earthenware	red earthenware black lead glaze		sherd	0 Cromwell Place test pit possible 17th century, likely 18th century
106	3 5	2193	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place test pit possible 17th century
106	3 5	2199	Metal	iron	architectural	hand wrought nail		0 Cromwell Place test pit possible 17th century
106	3 5	2206	Metal	iron	architectural	hand wrought nail	complete	0 Cromwell Place test pit possible 17th century
106	3 5	2218	Historic Pipe	earthenware pipe		8/64	stem fragment	3 Cromwell Court trench 8/64? possibly Dutch possible 17th century
106	3 5	2218	earthen ware pipe		8/64	stem fragment		3 Cromwell Court trench 8/64? possibly Dutch possible 17th century

106	3 5	2221	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court trench possible 17th century
106	3 5	2230	Metal	iron	architectural	hand wrought nail	shank	3 Cromwell Court trench possible 17th century
106	3 5	2238	Glass	blue-green	flat glass	window glass	fragment	3 Cromwell Court trench possible 17th century
106	3 5	2266	Metal	iron	architectural	hand wrought nail	fragment	test pit possible 17th century 5 Cromwell Ct
106	3 5	2281	Metal	iron	architectural	hand wrought nail	fragment	test pit possible 17th century 5 Cromwell Ct
106	3 5	2284	Metal	iron	architectural	hand wrought nail		test pit possible 17th century 5 Cromwell Ct
106	3 5	2285	Metal	iron	architectural	hand wrought nail	complete	test pit possible 17th century 5 Cromwell Ct
106	3 5	2290	Metal	iron	architectural	hand wrought nail	fragment	test pit possible 17th century 5 Cromwell Ct
106	3 5	2324	Metal	iron	architectural	hand wrought nail	fragment	50 Cromwell Place test pit possible 17th century
106	3 5	2330	Historic Ceramic	coarse earthenware	red earthenware brown lead glaze		sherd	50 Cromwell Place test pit possible 17th century

106	3 5	2383	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court test pit possible 17th century
106	3 5	2387	kaolin pipe	kaolin	7/64	bowl/stem fragment		3 Cromwell Court test pit
106	3 5	2408	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	2410	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	2415	iron	hunting and weapon	matchlock trigger	fragment		0 Cromwell Place
106	3 5	2416	Metal	cuprous	other	unidentified		0 Cromwell Place possible 17th century
106	3 5	2434	Glass	clear	flat glass	untyped flat glass		2 Cromwell Court possible 17th century
106	3 5	2454	Metal	iron	architectural	hand wrought nail		2 Cromwell Court possible 17th century
106	3 5	2463	Metal	iron	architectural	hand wrought nail	fragment	3 Cromwell Court test pit possible 17th century
106	3 5	2465	Metal	iron	architectural	hand wrought nail	complete	3 Cromwell Court test pit possible 17th century
106	3 5	2506	Faunal	unidentified bone		calcined bone	fragment	50/0 Cromwell Place test pit possible 17th century

106	3 5	2517	Glass	blue-green	flat glass	window glass	fragment	7 Cromwell Court test pit possible 17th century
106	3 5	2520	Metal	lead	tool	unidentified		7 Cromwell Court test pit possible 17th century
106	3 5	2526	Glass	blue-green	flat glass	window glass	fragment	7 Cromwell Court test pit possible 17th century
106	3 5	2533	Historic Ceramic	coarse earthenware	red earthenware clear lead glaze		sherd	2 Cromwell Court possible 17th century
106	3 5	2538	Metal	iron	architectural	hand wrought nail	fragment	2 Cromwell Court possible 17th century
106	3 5	2552	Historic Ceramic	tin glazed earthenware	delftware body (no glaze)		sherd	2 Cromwell Court possible 17th century
106	3 5	2562	European flint	debitage	small angular debris	cortical fragment		2 Cromwell Court English ballast flint
106	3 5	2568	Faunal	unidentified bone		non calcined bone	fragment	2 Cromwell Court test pit possible 17th century
106	3 5	2572	Glass	green	glass miscellaneous	untyped glass	rim fragment	2 Cromwell Court test pit possible 17th century possible case bottle fragment

106	3 5	2573	Glass	unidentified color	unidentified glass	untyped curved glass	fragment	2 Cromwell Court test pit possible 17th century possible bottle
106	3 5	2582	Glass	blue-green	flat glass	window glass	fragment	2 Cromwell Court test pit possible 17th century
106	3 5	2585	Historic Ceramic	tin glazed earthenware	untyped delftware		fragment	2 Cromwell Court test pit green glaze possible 17th century
106	3 5	2587	European flint	debitage	small angular debris	cortical fragment		2 Cromwell Court test pit English flint, ballast cobble
106	3 5	2600	Glass	blue-green	flat glass	window glass	fragment	2 Cromwell Court test pit possible 17th century
106	3 5	2605	Glass	blue-green	unidentified glass	untyped curved glass	fragment	2 Cromwell Court Trench 1 possible 17th century
106	3 5	2637	coarse earthenware	North Devon gravel tempered ware		sherd		0 Cromwell Place
106	3 5	2642	Metal	cuprous	other	sheet	fragment	0 Cromwell Place possible 17th century
106	3 5	2656	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century

106	3 5	2658	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century
106	3 5	2661	Faunal	unidentified bone		calcined bone	fragment	0 Cromwell Place possible 17th century
106	3 5	2665	Faunal	unidentified bone		calcined bone	fragment	2 Cromwell Court possible 17th century
106	3 5	2679	European flint	debitage	flake			2 Cromwell Court possible continental flint, honey colored
106	3 5	2689	European flint	debitage	small angular debris	cortical fragment		2 Cromwell Court English ballast flint
106	3 5	2690	European flint	debitage	flake			2 Cromwell Court possible continental flint
106	3 5	2695	Glass	blue-green	flat glass	window glass	fragment	2 Cromwell Court possible 17th century
106	3 5	2706	Glass	green	glass container	glass untyped bottle	fragment	possible 17th century 2 Cromwell Court
106	3 5	2710	European flint	debitage	small angular debris	cortical fragment		2 Cromwell Court English flint
106	3 5	2712	Other Historic	organic: other		charred	fragment	2 Cromwell Court Dentate decorate possible tuber or cheese wrapped in fabric, fabric still visible Possible 17th century needs further analysis, magnification

106	3 5	2721	Historic Ceramic	tin glazed earthenware	delftware body (no glaze)		sherd	denticulate decoration/stamped soft body possible 17th century 2 Cromwell Court
106	3 5	2723	Glass	blue-green	flat glass	window glass	fragment	possible 17th century 2 Cromwell Court
106	3 5	2729	European flint	strike-a-light	strike-a-light		fragment	English flint, ballast cobble? 2 Cromwell Court
106	3 5	2743	coarse earthenware	North Devon gravel tempered ware			sherd	0 Cromwell Place
106	3 5	2745	Faunal	unidentified bone		calcined bone	fragment	0 Cromwell Place possible 17th century needs to be identified
106	3 5	2759	Glass	green	glass untyped bottle		fragment	0 Cromwell Place possible 17th century
106	3 5	2765	Metal	iron	architectural	hand wrought nail	fragment	0 Cromwell Place possible 17th century Location: Wet Lab Fridge 4/14/2015
106	3 5	2791	coarse earthenware	North Devon gravel tempered ware		rim sherd		small amount of grit 5 Cromwell Court test pit
106	3 5	2898	Glass	black	glass globe and shaft bottle		base fragment	mends late 17th century Donated by landowner. 45 Cromwell Place

106	3 5	2899	Glass	black	glass container	glass globe and shaft bottle	lip/neck fragment	late 17th century Donated by landowner. 45 Cromwell Place
106	3 5	2900	Glass	black	glass container	glass globe and shaft bottle	base fragment	late 17th century Donated by landowner. 45 Cromwell Place

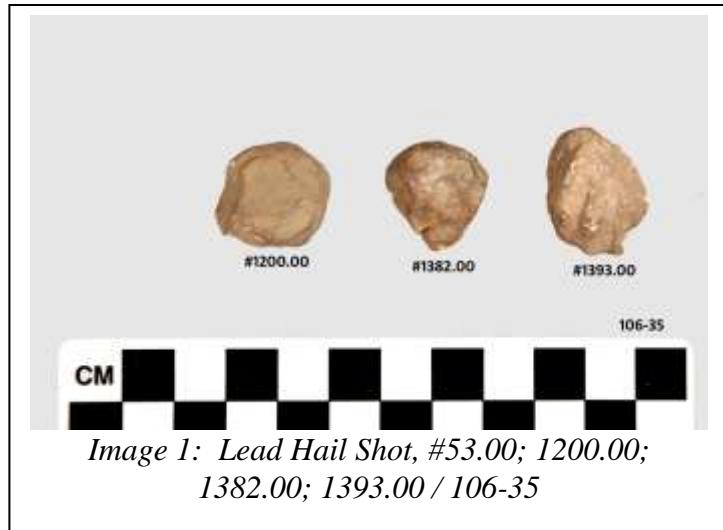
Object: Lead Hail Shot

Site Number: 106-35

Inventory Numbers: 1200.00;
1382.00;
1393.00

Material: Lead

Dimensions: 1200.00 .69" dia.
1382.00 .67" dia.
1393.00 .70" dia



Description: Three lead artifacts were recovered from the *Siege and Battle of Saybrook Fort* battlefield site in close proximity to each other within the “Saybrook Fort Core Area, Locus A – Siege Combat Actions” which constitutes the remains of a hail-shot or musket ball cannon cartridge blast [Image 1]. They are all impacted and each contains multiple faceted sides. Based on Sivilich’s Musket Ball formula the lead shot ranges from .67” diameter to .70” diameter.³⁸⁸

Comments: In Lieutenant Gardiner’s *Relation of the Pequot Wars* he describes the presence of a pair of cannon known as “sakers.” Although the term saker can be used to an array of medium sized cannon it most often refers to a specific smoothbore artillery field piece that typically has bore diameter of 3.5” capable of firing multiple projectiles (solid shot, bar shot, hail shot), and were typically mounted on a wheeled gun

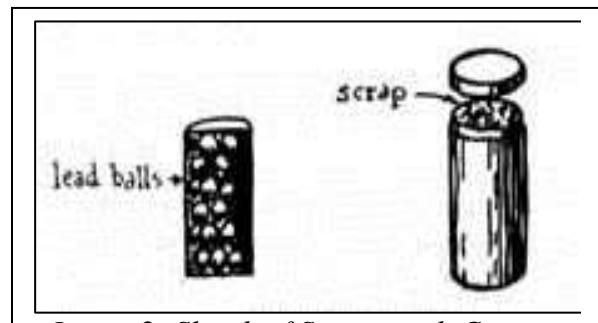


Image 2: Sketch of Seventeenth Century Hail Shot Cartridges consisted of containers made of hollowed logs or broad cloth sacks filled with projectiles such as lead balls or scrap metal and

³⁸⁸ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). Pp. 101-109.

carriage.³⁸⁹ Lion Gardiner described an incident during the siege in which he ordered “the Carpenter whome I had Shewed how to charge and level a gun & y^t he should put 2 Cartridges of musket bullets into 2 Sakers guns y^t lay about and we leveled th^m against the place.”³⁹⁰ The cannons were discharged in the direction of Pequot forces who had taken cover behind a small rising hill which dispersed them. Such hail shot cartridges would have been simple to manufacture by hollowing out a log, or using a linen sack, to fill with lead, stone, and iron projectiles [Image 2]. Early on during the siege, hail shot cartridges may have consisted of proper musket balls but as the months wore one the loads could have been created using any number of hard objects [Image 3].



Image 3: Seventeenth Century Lead Canister projectiles discovered in Montgomery, Wales, UK. Note that the projectiles range in diameter and form. Some appear to be cast-offs or partially cast round ball while others may have been hammered into bars

Images: Image 1: Lead Hail Shot, #53.00; 1200.00; 1382.00; 1393.00 / 106-35

Image 2: Sketch of Hail Shot Cartridges

Image 3: Seventeenth Century Lead Canister Projectiles

Works Cited:

- Henry, Chris. *English Civil War Artillery 1642-1651*. New York, NY: Osprey Publishing, 2005.
- Gardiner, Lion. *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardener*. Hartford: Case, Lockwood & Brainard Company for the Acorn Club of Connecticut, 1901.
- Sivilich, Daniel. “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109)

³⁸⁹ Chris Henry, *English Civil War Artillery 1642-1651* (New York, NY: Osprey Publishing, 2005). Pp. 9, 36.

³⁹⁰ Gardener, *Relation*. Pp. 14-16.

Object: Lead Shot**Site Number:** 106-35**Inventory Numbers:**

679.00; 872.00; 855.00; 955.00; 1015.00;
 1016.00; 1200.00; 1220.00; 1216.00;
 1299.00; 1302.00; 1304.00; 1306.00;
 1343.00; 1373.00; 1381.00; 1382.00;
 1387.00; 1393.00; 1522.00; 1526.00;
 1664.00.

Material: Lead**Dimensions:** Range .27" dia. - .77" dia.

Image 1: Complete lead shot assemblage recovered from Siege and Battle of Saybrook Core Area (106-35) – Locus A: Siege Combat Actions

Description: Twenty-two lead artifacts were recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus A – Siege Combat Actions.” These 22 objects are lead shot of various diameters consistent with other Pequot War battlefield sites. Object Inventory Numbers 1200.00, 1382.00, and 1393.00 are identified as “hail-shot” which would be fired out of smoothbore cannon. The hail-shot projectiles were found in close proximity to other concentrations of lead shot. The remaining projectiles were fired from European small arms of various calibers. Based on Sivilich’s Musket Ball formula the lead shot ranges from .27” diameter to .77” diameter.³⁹¹ Three of the lead shot appear to be dropped while the others are all impacted.



Image 2: Seventeenth Century Matchlock Musket purchased for the Plimoth Garrison during the Pequot War. It is has a .73 diameter bore. One of two surviving

³⁹¹ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109).

Comments: During the six month siege of Saybrook Fort, Lieutenant Gardiner's garrison was under near constant surveillance by Pequot forces. It is clear from the writings of Gardiner and his contemporaries (John Mason, John Underhill, John Winthrop, etc.) that skirmishes occurred on a regular basis. Several notable engagements are discernible from period accounts such as the "February 22, 1637 Ambush on the Neck" and the "March 3, 1637 Parley" but by in large, the majority of combat actions appear to be limited skirmishing. These projectiles were largely recovered from the central, eastern edge of Saybrook Point on a slope of a hill running east to a body of wetlands known as Gees Pond. Gees Pond contains a fresh water spring and may have been the source of water for the fort. It is also conjectured that the forts gardens may have been on or near that eastern slope and the closest body of fresh water. The density of lead shot recovered from this area does not appear to have been fired during a single engagement. The distribution and mixed diameters of the recovered shot suggests several, if not dozens, of individual skirmishes or singular gunshots during the course of the siege, particularly if garrison soldiers regularly visited Gees Pond to tend gardens, gather water, or attend to any structures in the vicinity.



Image 3: Seventeenth Century Fowler owned by John Thompson of Plimoth, ca. 1635. It is has a .74 diameter bore. One of two surviving Pequot War-era

- Images:**
- Image 1: Complete lead shot assemblage recovered from "Siege and Battle of Saybrook" Core Area – Locus A: Siege Combat Actions
 - Image 2: Seventeenth Century Matchlock Musket purchased for the Plimoth Garrison during the Pequot War.
 - Image 3: Seventeenth Century Fowler owned by John Thompson of Plimoth, ca. 1635

Works Cited:

Sivilich, Daniel. "Analyzing Musket Balls to Interpret a Revolutionary War Site" in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109).

Object: Fire Steel

Site Number: 106-35

Inventory Number: 1157.00

Material: Iron

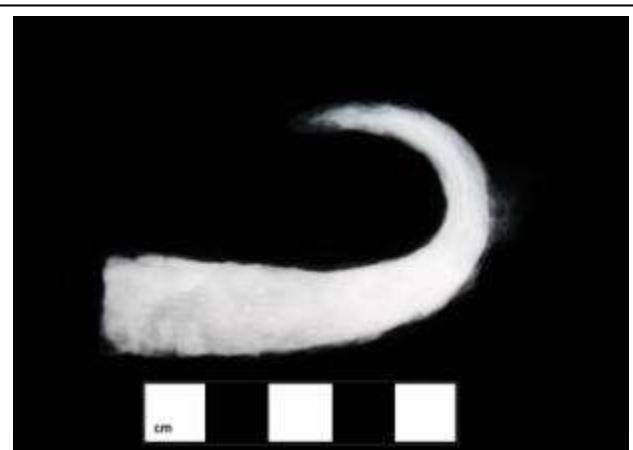
Dimensions: 6.9cm x 4.1cm

Description: This hand-wrought iron object was recovered from the “Siege and Battle of Saybrook Fort,” Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site (Image 1, 2). Its form resembles a hook but the object is made of a flat bar stock and exhibits signs of wear on the wide flat end. The wide end of the object was finished as such and is not broken. It is similar in form to some variety of steel strikers.

Comments: Steel strikers when struck with flint cause small sparks of hot iron fragments. The thrown sparks when used with charred cloth or tow (tinder) were fire starters. Steel strikers were produced in large numbers and ranged in design. All strikers maintained a flat striking edge. Strikers may have been worn as pendants around the user’s neck for easy access (Image 3). A flint and steel fire kit would have been common pieces of equipment for both English and Native people at this time.



*Image 1: Iron Fire Steel prior to conservation,
#1157.00 / 106-35*



*Image 2: X-ray of Iron Fire Steel
#1157.00 / 106-35*

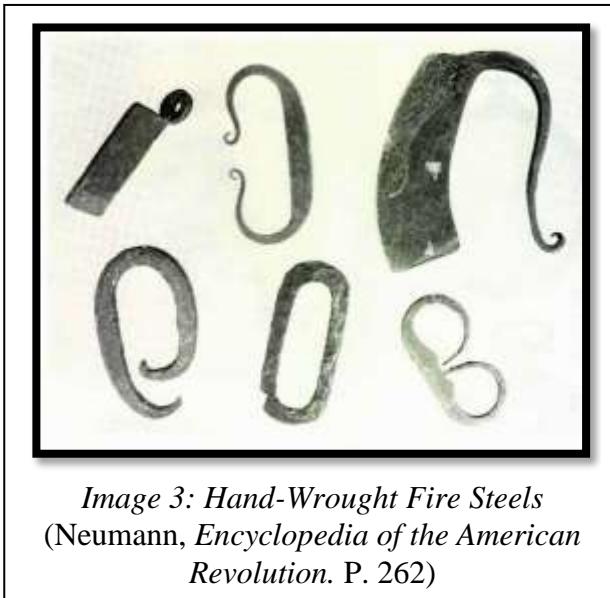


Image 3: Hand-Wrought Fire Steels
(Neumann, *Encyclopedia of the American Revolution*. P. 262)

- Images:**
- Image 1: Iron Fire Steel prior to conservation #1157.00 / 106-35
 - Image 2: X-ray of Iron Fire Steel #1157.00 / 106-35
 - Image 3: Hand-Wrought Fire Steels

Works Cited:

George Neumann and Frank Kravic, *Encyclopedia of the American Revolution*. Texarkana, AK: Southwest Printers, 1992 (1975). P 62.

Object:	Buttons & Fastener
Site Number:	106-35
Inventory Number:	358.00; 817.00; 1358.00
Material:	Cuprous
Dimensions:	
358.00	0.7cm Dia. x 0.8cm W
817.00	0.9 Dia. x 1.7cm W
1358.00	4.8cm L x 2.1cm W



Image 1: Cuprous Button #358.00 / 106-35; Cuprous Button #817.00 / 106-35; Cuprous Fastener #1358.00 / 106-35.

Description: Two cuprous buttons and one fastener were recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site (Image 1, 2). The buttons are made from a copper alloy sheet metal and are biconvex. They are undecorated, hollow, three piece with the front and back soldered together. Their cuprous wire shanks have also been soldered on. #817’s shank is complete, while #358’s is broken with only a small piece remaining. The cuprous fastener is cast and has two small iron rivets which would have been attached to leather or fabric. These artifacts resemble other Seventeenth Century cuprous buttons and fasteners of the day.

Comments: These cuprous buttons and fastener were recovered from different properties along the north side of Saybrook Neck. The north side of the “neck” is higher in elevation than the surrounding stretch of land that connects Saybrook Point with the mainland. It is believed that Lieutenant Lion Gardiner’s command of



Image 2: Pieter de Hooch's still life painting of soldiers (La Buveuse 1658). Both Cuprous (Brass and Copper alloys) and Pewter buttons adorn the soldiers' coats. Cuprous and Ferrous fasteners could be used on military equipage including the armor depicted in the painting.

nine men and two dogs used this area as their route of approach as they walked towards the western end of the “neck” to burn off any high grasses along the waterside. After being drawn into a Pequot ambush, Gardiner’s surviving troops retreated along this same route towards a clearing somewhere in the middle of Saybrook Point, and the protection of the forts guns. It is possible that these items were dropped from the clothing or equipment of English soldiers during their fighting retreat.

Images: Image 1: Cuprous Button #358.00 / 106-35; Cuprous Button #817.00 / 106-35;
 Cuprous Fastener #1358.00 / 106-35.

Image 2: Pieter de Hooch’s still life painting of soldiers (1658)

Works Cited: Pieter de Hooch “La Buveuse” ca. 1658. Oil on Canvas.

Object: Lead Flint Wrap
Site Number: 106-35
Inventory Number: 1097.00
Material: Lead
Dimensions: 3.0 L x 2.0 W CM

Description: This lead object was recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site (Image 1). It is likely a Flint Wrap which is used with flintlock arms to better secure a flint in the jaws of the hammer (Images 1, 2).

Comments: A lead flint wrap can be constructed in several manners and at this time they were custom made to fit each individual arm. A thin lead wrap held irregular musket flints in place far better than other alternatives including leather or linen. The Lead Flint Wrap can be either cast into a desired form or it can be made from a round ball bullet, hammered flat and cut to fit the width of the musket hammer jaw. The Lead Flint Wrap recovered from the “Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site appears complete but folded tightly over on itself. It is three centimeters wide at the folded base which indicates the jaw of the musket was at least three



centimeters wide which is relative large for military arms of the day. The recovery of an empty lead flint wrap could be the result of a soldier replacing a flint on the march out to the western end of the neck, it could have been lost or discarded as a result of combat, or was lost on the retreat to the fort. The Lead Flint Wrap was a common piece of seventeenth century military equipment and was both easily made and replaced. Another Pequot War-era example has been



*Image 3: (Left) Original Lead Flint Wrap from Mistick Fort site, #2.00 / 59-36
(Right) Reproduction Lead Flint Wrap.*



*Image 4: Original Lead Flint Wrap recovered in Silloth, UK.
(www.finds.org.uk)*

recovered from the “Mistick Fort Core Area: English Rest and Vantage” site (59-36) (Image 3).

- Images:**
- Image 1: Lead Flint Wrap #1097.00 / 106-35
 - Image 2: Reproduction flintlock hammer, vice, screw, flint & lead wrap.
 - Image 3: Original Lead Flint Wrap & Reproduction Lead Flint Wrap.
 - Image 4: Original Lead Flint Wrap recovered in Silloth, UK.

Object: Unidentified
Cuprous
Object

Site Number: 106-35

Inventory Number: 1556.00

Material: Cuprous

Dimensions:

15.0 L x 4.0 W [Widest Point] CM

Description: This cuprous object was



Image 1: Unidentified Cuprous Object #1556.00 / 106-35 from Saybrook Fort Core Area (106-35), Locus B.

recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site (Image 1). The object appears to be a brass alloy and based upon its design, size, gauge, patina, and where it was found it is believed to date to the seventeenth century. It is unknown whether the object was cast or cut from another source and although it is unidentified it most resembles a handle or strap.

Comments: This unidentified cuprous handle or strap was recovered along the north side of Saybrook Neck. It is bent in several areas and it is unclear if it is purposefully formed in that manner or if it a result of later damage. In its current form it is 15 centimeters long but if stretched flat the object would span approximately 22 centimeters overall. It is four centimeters wide on one end which is its widest point. There is some ornamental design cut into the object at the widest point



Image 2: Detailed view of the design and punched hole in Inventory #1556.00 / 106-35

and there is a hole punched at the tip. The hole looks to have been perforated with a small nail or perhaps it was nailed onto another material. The opposite end of the unidentified cuprous object appears to have been snapped and there is the remnant of what may have been another punched hole. Possible explanations for this unidentified cuprous object include that it may be the remains of a handle, a strap or hinge, or a utensil.

This object was recovered on the north side of the “neck” higher in elevation than the surrounding stretch of land that connects Saybrook Point with the mainland. It is believed that Lieutenant Lion Gardiner’s command used this route of approach as they walked towards the western end of the “neck” to burn off any high grasses along the waterside. After being drawn into a Pequot ambush, Gardiner’s surviving troops retreated along this same route towards a clearing somewhere in the middle of Saybrook Point, and the protection of the forts guns. It is unknown which combatant may have carried this object but if it is a war related artifact it was possibly dropped during this ambush.

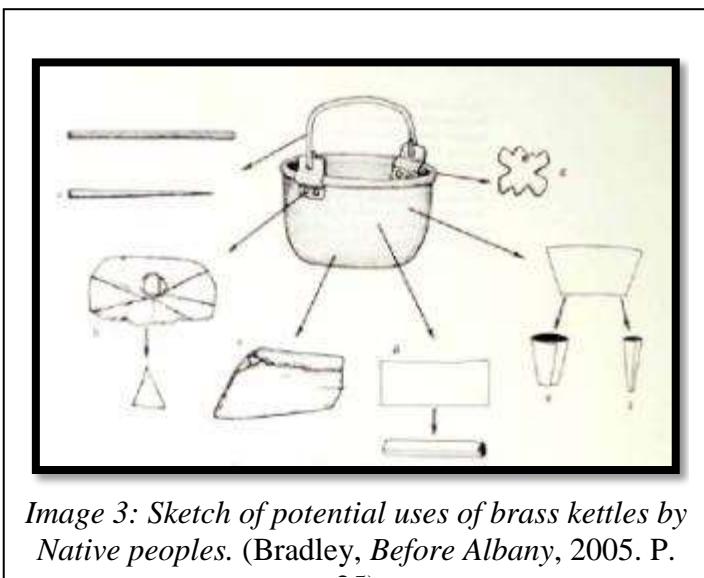


Image 3: Sketch of potential uses of brass kettles by Native peoples. (Bradley, Before Albany, 2005. P.

- Images:** Image 1: Unidentified Cuprous Object #1556.00 / 106-35
 Image 2: Detailed view of the design and punched hole in Inv. #1556.00 / 106-35
 Image 3: Sketch of potential uses of brass kettles by Native peoples.

Works Cited: James W. Bradley, *Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664* (Albany, NY: University of the State of New York, 2005).

Object: Flintlock Battery /
Frizzen Spring

Site Number: 106-35

Inventory Number: 1781.00

Material: Iron

Dimensions: 4.5 L x 2.0 W CM

Description: This iron object was recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site [Image 1]. Based upon its design, size, gauge, and where it was found it is believed to date to the Seventeenth Century and is an early Flintlock Musket Frizzen Spring.

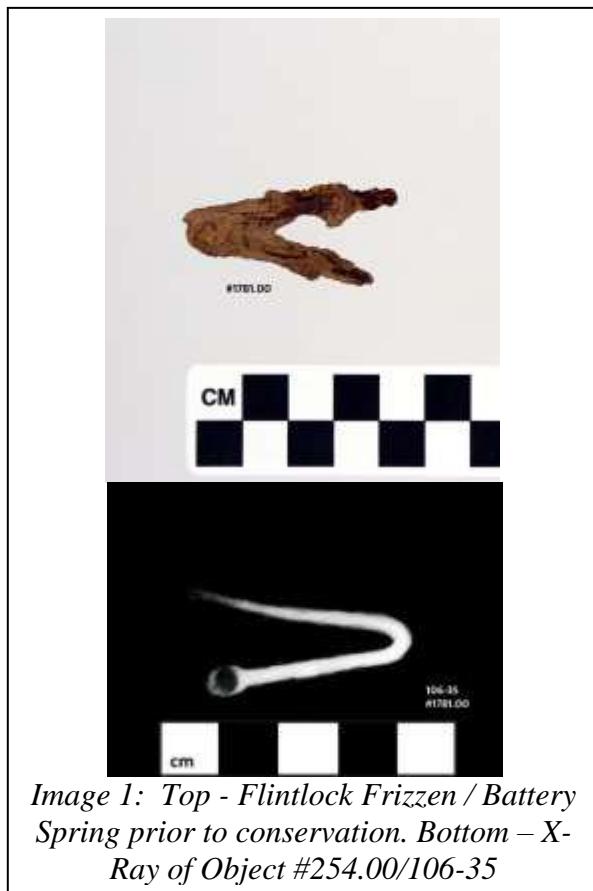
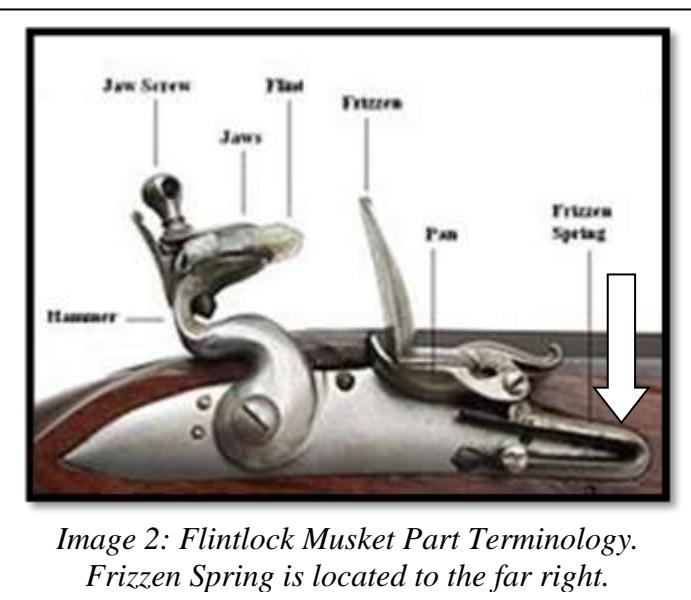


Image 1: Top - Flintlock Frizzen / Battery Spring prior to conservation. Bottom – X-Ray of Object #254.00/106-35

Comments: A Flintlock Musket Frizzen Spring is a small iron part that is affixed to the musket lock plate by means of a small screw [Image 2]. It is designed to maintain pressure on the part known as the frizzen or battery steel which covers a powder charge when priming the pan [Image 2, 3]. When the hammer and flint strike the frizzen the force of the blow simultaneously snaps the frizzen pan



*Image 2: Flintlock Musket Part Terminology.
Frizzen Spring is located to the far right.*

open while the pressure applied by the frizzen spring slows the process and allows the flint to strike hot embers of steel into the powder charge below. Object #1781.00 was recovered at the smallest point of Saybrook Neck which is where Lion Gardiner stationed two sentries during the February 22, 1637 ambush in that location. As Gardiner and eight other men were burning brush they pursued a few Pequot warriors who were in the reeds only to be drawn into a larger ambush. The sentries located at the neck alerted Gardiner to other warriors trying to cut off the English squad at the neck. Nearly all the English soldiers were either killed or wounded as they fought their way back towards the fort. Other object found in the vicinity of object #1781.00 include a dropped musket ball, dropped buttons and equipment further east along the neck and impacted musket balls were recovered between 35 and 50 yards south of that position. It is believed that the iron Flintlock Musket Frizzen Spring object is related to the combat that occurred on Saybrook Neck that day.



*Image 3: Early original English flintlock showing Frizzen Spring section.
(Plimoth Plantation)*

Images: Image 1: Flintlock Frizzen / Battery Spring. #254.00 / 106-35

Image 2: Flintlock Musket Part Terminology.

Image 3: Early original English flintlock showing Frizzen Spring section.

Object: Lead Shot**Site Number:** 106-35**Inventory Number:**

301; 360; 362; 363; 364; 365; 366;
 1136; 1139; 1146; 1147; 1154; 1336;
 1775; 1778

Material: Lead**Dimensions:** Range: .32" - .69" Dia.**Description:** Fifteen lead artifacts

Image 1: Lead Shot recovered from Saybrook Fort Core Area (106-35), Locus B

were recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus B: February 22, 1637 Ambush at the Neck” site (Image 1). These 15 objects are lead shot of various diameters consistent the diameter of other musket balls recovered from other Pequot War battlefield sites. Based on Sivilich’s Musket Ball formula the lead shot ranges from .32” diameter to .69” diameter.³⁹² Eleven musket balls exhibit both impact marks indicative of rock and soil impacts while several appear dropped or unfired.

Comments:

Eleven of the musket balls recovered from “Locus B: February 22, 1637 Ambush at the Neck” include both small-shot and large singular bullets which were the two most common small arm ammunition types used during the war. New England Colonial forces were trained to fire aimed shots with a single musket ball fit to the bore of their weapon at targets as far away as 100 yards. Small shot consisted of multiple pistol ball sized ammunition, which typically ranged from .30 to .45 diameter. These shotgun-like blasts were effective at ranges up to approximately 40 yards and thereafter they became far less effective, although potentially lethal.

³⁹² The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109).

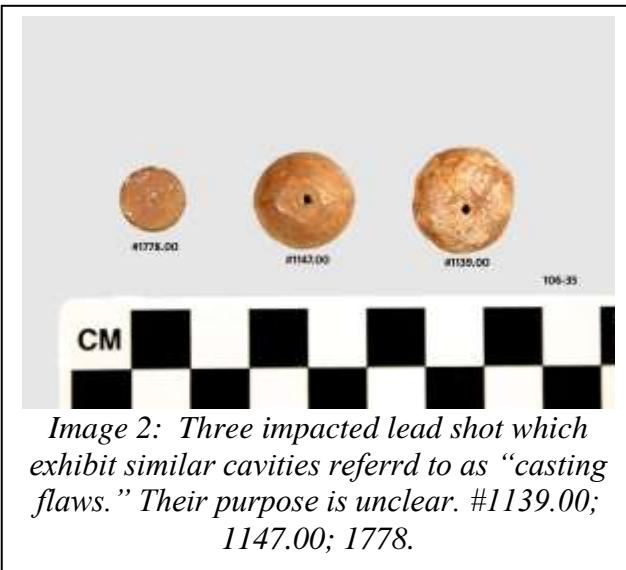


Image 2: Three impacted lead shot which exhibit similar cavities referred to as “casting flaws.” Their purpose is unclear. #1139.00; 1147.00; 1778.

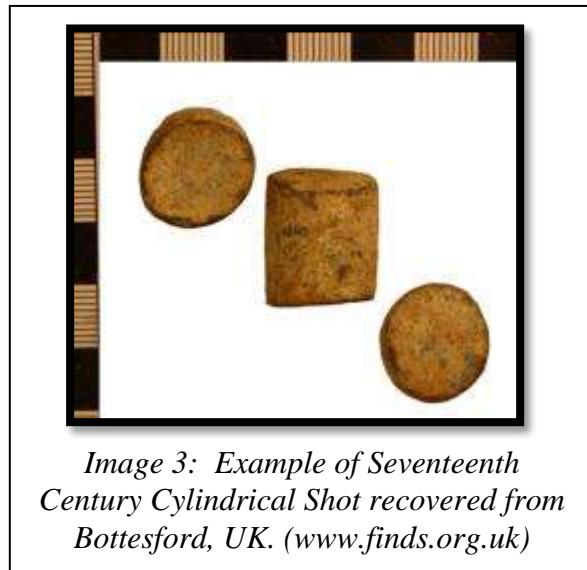


Image 3: Example of Seventeenth Century Cylindrical Shot recovered from Bottesford, UK. (www.finds.org.uk)

Object Inventory #1778.00 is an example of cylindrical shot which was either cast or hammered into shape from an existing musket ball, the theory being that cylindrical ammunition would result in stronger stopping power and damage. Object Inventory #1778.00 is .54 diameter and exhibits signs of both being fired and impacted. Three of the lead shot (#1139.00; 1147.00; 1778) exhibit similar cavities situated on or near the location of the casting sprue. Lead shot with similar depressions or “casting flaws” have been recovered from American Colonial War and Revolutionary War battlefields as well as European sites. Their purpose remains unclear but theories include air pockets from casting or they were purposefully made to fill with “poison” (rancid food, feces, dirt, etc.) but there is no definitive explanation.

Images: Image 1: Lead Shot recovered from Saybrook Fort Core Area (106-35), Locus B
 Image 2: Three impacted lead shot which exhibit similar “casting flaws.”
 Image 3: *Example of Seventeenth Century Cylindrical Shot.*

Works Cited:

Sivilich, Daniel. “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109)

106-35 (Locus C) – Lead Hail Shot

1 of 2

Object: Hail Shot

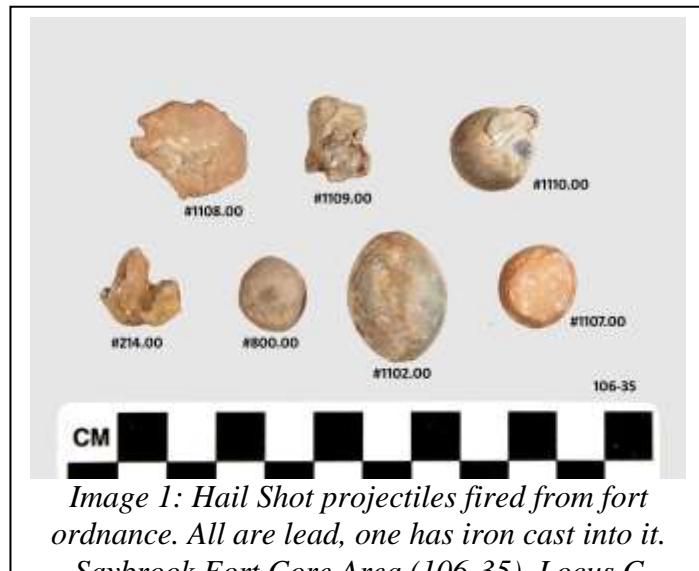
Site Number: 106-35

Inventory Number:

214; 800; 1102;
1107; 1108; 1109; 1110

Material: Lead, Iron

Dimensions: Range .38" – .67" dia.



Description:

Three lead artifacts were recovered from

Image 1: Hail Shot projectiles fired from fort ordnance. All are lead, one has iron cast into it. Saybrook Fort Core Area (106-35), Locus C

the *Siege and Battle of Saybrook Fort* battlefield site in close proximity to each other within the “Saybrook Fort Core Area, Locus C – March 9, 1637 Parley” [Image 1]. These lead objects are all impacted and each contains multiple faceted sides and no two are alike. Object #800.00 and #1107.00 appear to be partially cast musket balls while #214.00, #1108.00, #1109.00 are heavily impacted lead shot. Object #1102.00 resembles an early fish net weight [Image 2] and #1110.00 has an iron wire loop [Image 1] that is believed to be cast directly into the ball but severe impact marks suggest it was used as a projectile. Based on Sivilich’s Musket Ball formula originally ranged from .38" diameter to .67" diameter in size.³⁹³



Image 2: Seventeenth Century lead weight or bead recovered from Rochester, UK (Record ID: NCL-E5B8F1)

Comments: Based upon primary historical accounts, the geography of the land, and close examination of the artifacts it appears that these lead objects likely constitute the remains of a

³⁹³ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109)

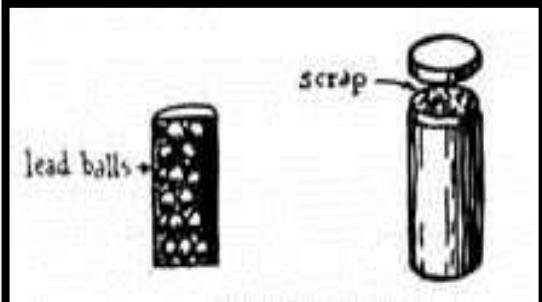


Image 3: Sketch of Seventeenth Century Hail Shot Cartridges consisted of containers made of hollowed logs or broad cloth sacks filled with projectiles such as lead balls or scrap metal and stone.



Image 4: Seventeenth C. Lead canister projectiles discovered in Montgomery, Wales, UK. Note that they range in diameter and form. Some are cast-offs while others have been hammered into bars

hail-shot or musket ball cannon cartridge blast. Furthermore they may be evidence of a March 9, 1637 incident described by Lion Gardiner in his *Relation of the Pequot Wars* in which a large number of Pequot warriors advanced near the fort and took cover behind a “small rising hill.” He described a pair of cannon known as “sakers” which refers to a smoothbore artillery piece with a bore diameter of 3.5” capable of firing multiple projectiles (solid shot, bar shot, hail shot), and could be mounted on a wheeled gun carriage.³⁹⁴ Gardiner wrote that he ordered “2 Cartridges of musket bullets into 2 Sakers guns y^t lay about and we leveled th^m against the place.”³⁹⁵ Two blasts from the cannon dispersed the Pequot force from the hill. These cartridges were simple to manufacture by hollowing out a log or using a linen sack that was filled with lead, stone, and iron projectiles [Image 3]. Early on during the siege hail shot cartridges may have consisted of proper musket balls but



Image 5: Seventeenth Century demi-culverin cannon on display at Pilgrim Hall, Plymouth, MA. Hail shot cartridges were designed for use in smoothbore cannon like this. (Pilgrim Hall,

³⁹⁴ Chris Henry, *English Civil War Artillery 1642-1651* (New York, NY: Osprey Publishing, 2005). Pp. 9, 36.

³⁹⁵ Gardener, *Relation*. Pp. 14-16.

later on they could have included any number of objects including fishing net weights and poorly cast musket balls [Image 1, 4].

- Images:**
- Image 1: Lead Hail Shot, #53.00; 1200.00; 1382.00; 1393.00 / 106-35
 - Image 2: Seventeenth Century lead weight or bead from Rochester, UK
 - Image 3: Sketch of Hail Shot Cartridges
 - Image 4: Seventeenth Century Lead Canister Projectiles
 - Image 5: Seventeenth Century demi-culverin cannon, Pilgrim Hall, Plymouth, MA

Works Cited:

- Henry, Chris. *English Civil War Artillery 1642-1651*. New York, NY: Osprey Publishing, 2005.
- Gardiner, Lion. *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardener*. Hartford: Case, Lockwood & Brainard Company for the Acorn Club of Connecticut, 1901.
- Sivilich, Daniel. “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109)

Object: Lead Shot

Site Number: 106-35

Inventory Number: 1106

Material: Lead

Dimensions: .43 Inch / 11mm Dia.

Description: This lead object was recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus C: March 9, 1637 Parley” site and is an impacted musket ball (Image 1). Based on Sivilich’s Musket Ball formula object #1106.00 is .43” diameter.³⁹⁶

Comments: This musket ball was recovered in the vicinity of the “small rising hill” described in Lion Gardiner’s narrative. It was found in a location just east of the location of the several pieces of hail shot recovered in the locus which suggests that it is related to a different combat action. It is possible that it does belong to the hail shot grouping. It either could have fell short during the discharge or it was moved from its original location at a later date due to human activity. This musket ball contains a distinctive cavity which is situated on or near the area where the casting sprue would have been located. Lead shot with similar depressions or “casting flaws” have been recovered from American Colonial War and Revolutionary War battlefields as well as battlefield sites in Europe.

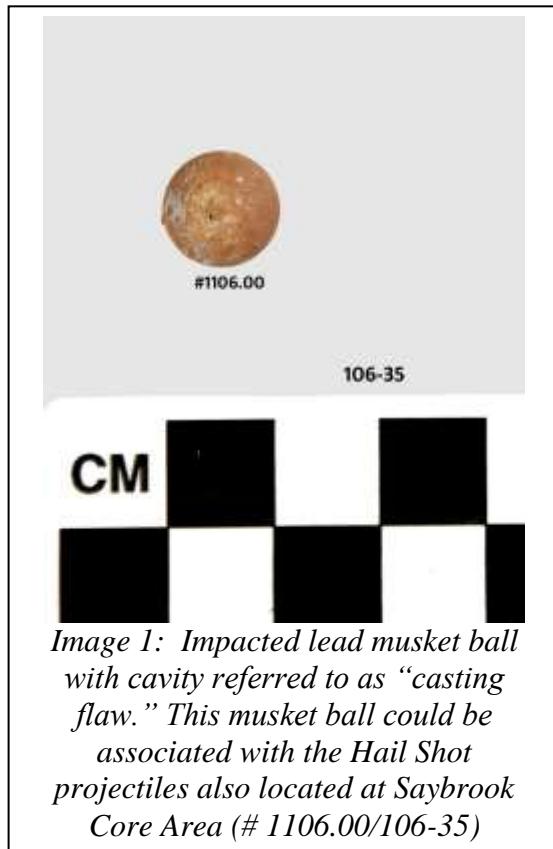


Image 1: Impacted lead musket ball with cavity referred to as “casting flaw.” This musket ball could be associated with the Hail Shot projectiles also located at Saybrook Core Area (# 1106.00/106-35)

³⁹⁶ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109).

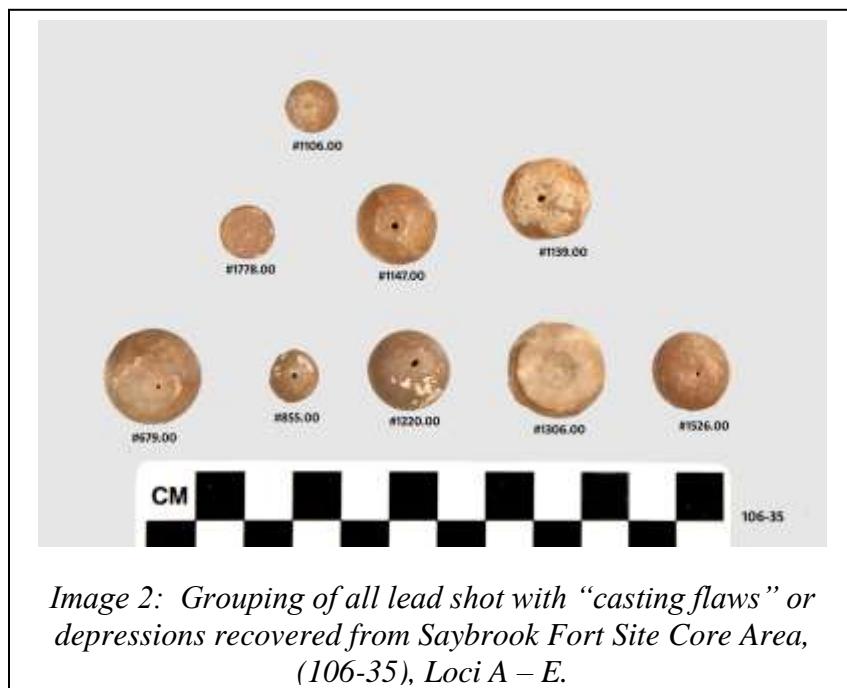


Image 2: Grouping of all lead shot with “casting flaws” or depressions recovered from Saybrook Fort Site Core Area, (106-35), Loci A – E.

If the depression is in fact a flaw or accident as a result of cast it may be a result of an air pockets the escaped during cooling. If the depression was made purposely the reason remains unclear but theories include that they were fill with “poison” (rancid food, feces, dirt, etc.) or an actual nail or wire was inserted in the hole to create a more devastating wound but there is no definitive explanation.

Images: Image 1: Impacted lead musket ball with cavity referred to as “casting flaw.”
Saybrook Core Area (# 1106.00/106-35)

Image 2: Grouping of all lead shot with “casting flaws” or depressions recovered from Saybrook Fort Site Core Area, (106-35), Loci A – E.

Works Cited:

Sivilich, Daniel. “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109)

Object: Bandolier Cap

Site Number: 106-35

Inventory Number: 819.00

Material: Lead

Dimensions: 2.5 L x 1.5 W CM

Description: This lead artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus C – March 9, 1637 Parley” [Image 1]. It appears to be made of a two piece construction and at least one ear is visible although the entire object has been crushed. It was recovered just north of the location of a slightly elevated hill referred to in Lieutenant Gardiner’s narrative of the Pequot War and west of the prospective fort location.

Comments: A bandolier cap is part of set of accouterments known as the bandolier. The Bandolier consisted of multiple cylindrical wooden or metal containers known as “charges,” which were suspended from a leather sling worn by the shooter. The number of charges on a bandolier varied from 10 to 18. Each cylinder held a pre-measured powder charge and was topped with a removable cap affixed to the string which suspended the entire container.

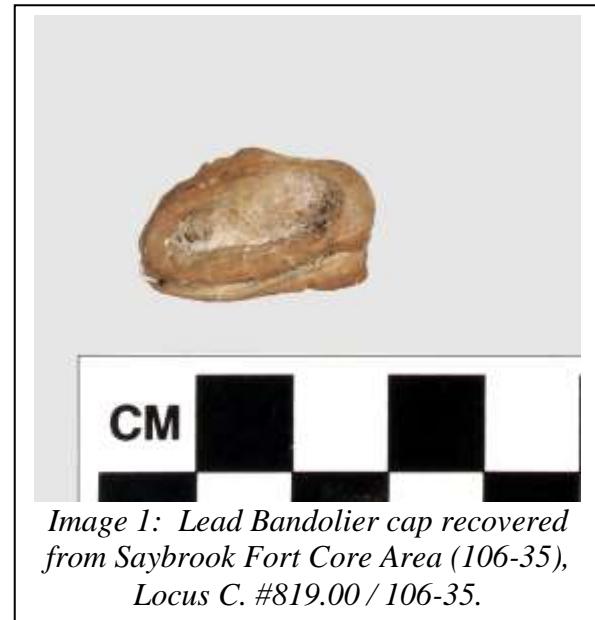


Image 1: Lead Bandolier cap recovered from Saybrook Fort Core Area (106-35), Locus C. #819.00 / 106-35.



Image 2: Seventeenth Century lead bandolier cap recovered from Cotheridge, UK (Record ID: WAW-6C78CB) www.finds.org.uk

The bandolier often contained a leather pouch containing lead shot, and a small priming flask with finer black powder used to prime the firearm. Early bandolier charges were made of wood and the wooden cap would tend to swell in humidity or when wet making it difficult to remove [Image 2, 3]. A lead or pewter bandolier cap solved this problem and replacements were easily cast if needed.³⁹⁷

The bandolier was a common piece of military equipment typically worn by any individual armed with a firearm as it was seen as the most efficient means of carrying pre-measured charges. By the early seventeenth century the bandolier and corresponding ball pouch with large round ball was military equipage issued to all the major European armies of the day.

Alternatively, a musketeer could use a powder horn or powder box with a measure as well as early paper or linen cartridges. When discharge small-shot loads, Pequot War-era soldiers likely relied on a powder horn and loosely measured loads and may not utilize the bandolier.

It is known for certain that at least some English allied forces were equipped with bandoliers during the Pequot War and during the Siege of Saybrook Fort in particular. When Captain John Underhill lead his Massachusetts Bay company of 20 soldiers on patrol around Saybrook Fort, he specifically described the equipment of his men were: “completely armed, with Corslets,



Image 3: Reproduction Seventeenth Century Bandolier with wooden flasks and lead bandolier caps.

³⁹⁷ Keith Roberts, *Matchlock Musketeer 1588-1688* (Long Island City, NY: Osprey Publishing, 2002). Pp. 9-10.

Muskets, bandileeres, rests, and swords.”³⁹⁸ Around June 19, 1637 Captain Patrick, then in command of Saybrook Fort, reported recovering the body of a dead English solider who had floated downriver. He described how “one of the slane men came driving by saybrooke, stuck with 3 or 4 arrows, his cloths one, his bandeloers about him, and his sworde under his arme ready drawne.”³⁹⁹ Patrick’s description is important as it both describes the equipment of the typical English soldiers but it is also noteworthy that Patrick appears surprised that the soldier had not been stripped of his clothes, bandolier, and sword which may indicate that he died fighting and was not captured and later killed.

Images: Image 1: Lead Bandolier cap recovered from Saybrook Fort Core Area (106-35),

Locus C. #819.00 / 106-35.

Image 2: Seventeenth Century lead bandolier cap, Cotheridge, UK

Image 3: Reproduction Bandolier with wooden flasks and lead caps.

Works Cited:

Keith Roberts. *Matchlock Musketeer 1588-1688*. Long Island City, NY: Osprey Publishing, 2002.

John Underhill. *Newes from America; or, a New and Experimentall Discoverie of New England; Containing, a True Relation of their War-like Proceedings there Two Years Last Past, with a Figure of the Indian Fort, or Palizado.* J.D. for Peter Cole: London, 1638.

John Winthrop. *Winthrop Papers*. Volume III. Boston: The Massachusetts Historical Society, 1943.

³⁹⁸ John Underhill. *Newes from America; or, a New and Experimentall Discoverie of New England; Containing, a True Relation of their War-like Proceedings there Two Years Last Past, with a Figure of the Indian Fort, or Palizado.* (J.D. for Peter Cole; London, 1638). P. 15.

³⁹⁹ John Winthrop. *Winthrop Papers*. Volume III. Boston: The Massachusetts Historical Society, 1943. Pp. III:430-431.

106-35 (Locus D) – #2729.00 Flint Strike-a-Light Fragment

1 of 2

Object: Strike-a-Light Fragment
Site Number: 106-35
Inventory Number: 2729.00
Material: Flint
Dimensions: 2.2 cm x 1.6 cm



Description: This flint artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. It retains a slight cortex and appears to have been knapped from a larger cobble, perhaps European flint ballast rock. The size and form of the fragment along with the wear pattern along the edge indicate that it may be the remains of a flint strike-a-light. It would have been used by an individual as a strike-a-light by holding the flint and hitting it with a steel striker in order to produce sparks hot enough to set fire to dry tinder. This system of fire starting is known as the Percussion method.

Image 1: Flint Strike-a-Light Fragment from Saybrook Fort Core Area (106-35), Locus D. #2729 / 106-35.



Image 2: Reproduction Strike-a-Light, percussion fire starting kit. In addition to flint and steel the kit includes tinder such as charred cloth and tow.

Comments: The earliest form of this percussion fire making technology consisted of flint and pyrites. This technology was known to both early Native Americans and Europeans.⁴⁰⁰

⁴⁰⁰ Walter Hough, *Fire-Making Apparatus in the United States National Museum*. Washington, D.C.: Government Printing Office, 1890. Pp . 572-577.

Europeans added to this system by introducing a metal striker during the Iron Age.⁴⁰¹ A Flint and Steel fire starting kit, or tinderbox, was a commonplace item used by most Europeans by the seventeenth century.⁴⁰² Fire steels have been recovered from Pequot War battlefield sites and they appear to be part of the standard equipment carried by European combatants as it would have been used for any number of activities ranging from starting campfires to lighting musket matches. The flint component of the strike-a-light is rarely encountered. This flint strike-a-light fragment and additional concentrations of Seventeenth century military and domestic items suggests that they may be associated with the prospective Saybrook Fort site. Of course, flint and fire steel were commonly used well into the nineteenth century and this object may have been dropped at a later date.

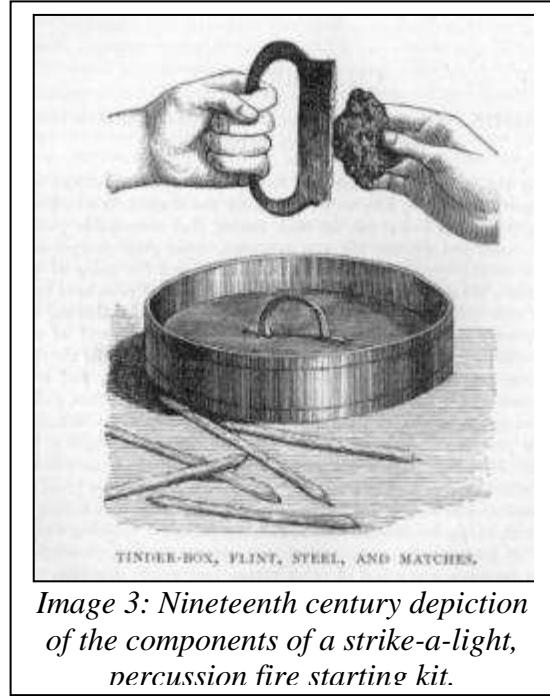


Image 3: Nineteenth century depiction of the components of a strike-a-light, percussion fire starting kit.

Images: *Image 1: Flint Strike-a-Light Fragment from Saybrook Fort Core Area (106-35), Locus D. #2729 / 106-35.*

Image 2: Reproduction Strike-a-Light, percussion fire starting kit.

Image 3: Nineteenth Century depiction of the components of a strike-a-light kit.

Works Cited:

Hough, Walter. *Fire-Making Apparatus in the United States National Museum*. Washington, D.C.: Government Printing Office, 1890. Pp. 572-587.

⁴⁰¹ Hough, *Fire-Making*. P. 577.

⁴⁰² Hough, *Fire-Making*. Pp. 577-578.

106-35 (Locus D) – Flint Fragments

1 of 2

Object: Flint Fragments

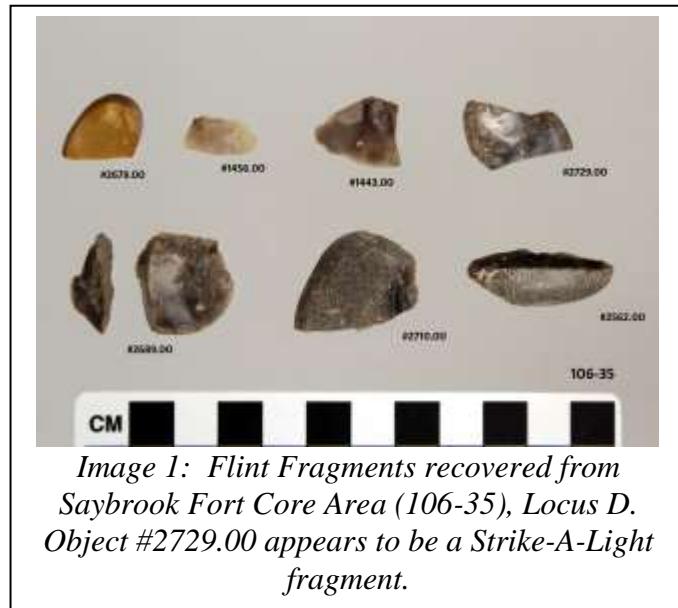
Site Number: 106-35

Inventory Number: 1443.00; 1456.00;
2562.00; 2679.00;
2689.00; 2710.00;
2729.00

Material: Flint

Dimensions:

1443.00	1.8 L x 1.6 W CM
1456.00	1.7 L x 0.9 W CM
2562.00	3.3 L x 1.3 W CM
2679.00	2.0 L x 1.6 W CM
2689.00	2.4 L x 1.9 W CM
2710.00	3.1 L x 2.2 W CM
2729.00	2.6 L x 1.7 W CM



Description: These flint artifacts were recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. They are all flint fragments of various sizes and forms. They all exhibit traits of percussion flaking and some have remnant cortexes suggesting that they were worked from a larger cobble, perhaps European flint ballast rock. Object #2729.00 appears to be a flint



strike-a-light fragment [Image 1]. It too retains a slight cortex and appears to have been knapped from a larger piece while the size and form of the fragment along with the wear pattern along the edge indicate that it may be the remains of a flint strike-a-light.

Comments: This group of flint debitage was located among an assemblage of seventeenth century military and domestic items along with a concentration at the highest elevation of Saybrook Point. This density of these types of seventeenth century objects does not appear in other surveyed areas of Saybrook Point which suggests that they may be associated with the prospective Saybrook Fort site. Of course, the flint and fire steel were commonly used by people well into the nineteenth century. If these materials are in fact fort related objects then the entire assemblage of flint fragments could have been produced from the manufacture of flint tools such as gunflints and strike-a-lights [Image 2].



Image 3: Reproduction Strike-a-Light, percussion fire starting kit. In addition to flint and steel the kit includes tinder such as charred cloth and tow.

- Images:** Image 1: Flint Strike-a-Light Fragment from Saybrook Fort Core Area (106-35), Locus D. #2729 / 106-35.
 Image 2: Flint fragments from the Ephraim Sprague House Archaeological Site.
 Image 3: Reproduction Strike-a-Light, percussion fire starting kit.

Works Cited:

Harper, Ross K., and Mary Harper. *Report: Phase II Intensive Archaeological Survey and Phase III Archaeological Data Recovery Program. The c. 1705 Ephraim Sprague Homestead Site (Site No. 1-12)*. Storrs, CT: Archaeological and Historical Services, Inc., 2007

Hough, Walter. *Fire-Making Apparatus in the United States National Museum*. Washington, D.C.: Government Printing Office, 1890. Pp. 572-587.

106-35 (Locus D) – #767.00 Iron Matchlock Bar-Trigger Fragment

1 of 2

Object: Iron Matchlock
Bar-Trigger Fragment.

Site Number: 106-35

Inventory Number: 767.00

Material: Iron

Dimensions: 5.5 L x 2.5 W CM

Description: This iron artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. It is constructed of hand-wrought iron, is approximately 5.5 CM long and is broken [Image 1, 2]. The object curves at nearly a 90 degree angle with a bulbous tip at the end. It appears to be the remains of a trigger mechanism or trigger bar which were common employed on early matchlock firearms.

Comments: Matchlock musket designs varied slightly between European gunmakers of different nationalities. One common form of trigger mechanism used to manipulate the matchlock serpentine was the trigger bar [Image 3, 4]. This innovation was simply an iron rod or bar which screwed into the



Image 1: Iron Matchlock Bar-Trigger Fragment prior to conservation 160-35 / #767.00



Image 2: X-Ray of object #767.00 / 106-35 illustrating the hand-wrought iron construction.

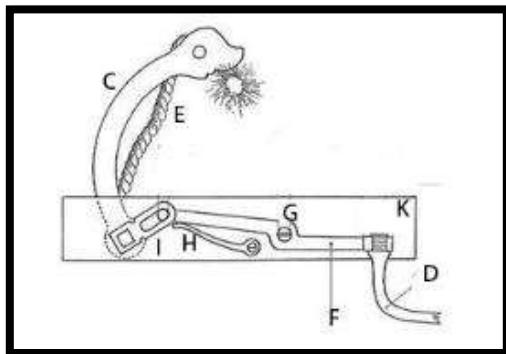


Image 3: Diagram of the interior of a Matchlock Musket lock. D) Trigger Bar; f) Sear Bar; K) Point where the Trigger screws into the sear.

matchlock's sear bar. Squeezing the trigger bar would manipulate the sear bar which would pull the tumbler. The matchlock serpentine being attached to the tumbler drops into the priming pan when the tumbler is pulled by the sear bar attached to the trigger bar. The most common way of securing the trigger bar to the sear bar was to thread the end of the bar and screw it directly into the sear bar. The trigger bar would have a tendency to become loose from repeated usage of if the threading became stripped and the part could become

unsecure and fall from the firearm altogether. It is unclear whether this particular part snapped or if the entire trigger was originally lost intact. Object #767.00 also exhibits the standard finial or bulbous tip at the end which was both utilitarian to serve as a hand stop and it also likely served an ornamental purpose as well [Image 1, 2]. Other period examples exhibit similar bar trigger mechanisms including the one Pequot War attributed matchlock on display at Pilgrim Hall in Plymouth, MA [Image 3].



Image 4: Matchlock musket at Pilgrim Hall, purchased in 1637 for the Plimoth Garrison. (Pilgrim Hall, Plymouth, MA)

Images: Image 1: Iron Matchlock Bar-Trigger Fragment #767.00 / 106-35.

Image 2: X-Ray of object #767.00 / 106-35.

Image 3: Matchlock sear lock recovered from the site of James Fort, Virginia.

Image 4: Matchlock musket at Pilgrim Hall.

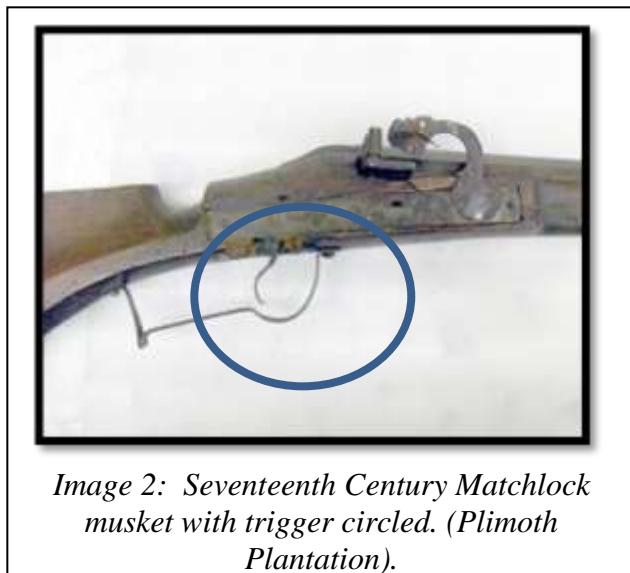
Object: Iron Firearm Trigger
Site Number: 106-35
Inventory Number: 116.00
Material: Iron
Dimensions: 3.0 L x 3.5 W CM

Description: This iron artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. It is constructed of hand-wrought iron, is approximately 3.0 CM long and has a hole drilled or punched at a point to allow the object to articulate if pinned [Image 1, 2]. It appears to be the remains of a trigger mechanism for an early firearm.



*Image 1: Iron Firearm Trigger Fragment
160-35 /#116.00*

Comments: Musket designs varied slightly between European gunmakers of different nationalities. One common mechanism used to manipulate the firearm’s serpentine or cock was the trigger [Image 1, 2, 3]. This innovation was simply an iron piece that was pinned into the stock of the arm of which a small piece of the object protruded below the stock which served as a lever. When this piece was pulled it would roll on its pin and the flat stock piece of the object would rise until it made contact with the sear in the musket lock. In a matchlock, the trigger



*Image 2: Seventeenth Century Matchlock
musket with trigger circled. (Plimoth
Plantation).*

pressed the sear bar which would manipulate the tumbler that dropped the serpentine into the priming pan. In a flintlock, the trigger would release the sear that holds back the tumbler and cock that is under tension from a mainspring. When the trigger releases the sear the cock snaps forwards which strikes the flint in its jaw against a steel frizzen or battery cover resulting in a shower of sparks. Object #116.00 is similar to most other early English flintlock firearm triggers of this type [Image 1, 2]. Other period examples exhibit similar bar trigger mechanisms including the one Pequot War attributed fowler on display at the Old Colony Historical Society in Taunton, MA [Image 3].



Image 3: Seventeenth Century Fowler owned by John Thompson of Plimoth, ca. 1635. It is has a .74 diameter bore. One of two

Images:

Image 1: Iron Firearm Trigger Fragment #116.00 / 160-35

Image 2: Seventeenth Century Matchlock musket (Plimoth Plantation).

Image 3: Seventeenth Century Fowler, ca. 1635 (Old Colony Society).

Object: Cuprous Jesuit Ring
Site Number: 106-35
Inventory Number: 93.00
Material: Cuprous
Dimensions: 2.5 L x 1.0 W CM



Description: This cuprous artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. It is made from a cuprous material, likely brass, which has been cast into a finger ring and then engraved. The ring measures 2.5cm by 1.0cm. This particular ring is cast with decorative grooves on the band and then engraved with the letters “IHS” (the first three letters of the Greek form of Jesus).

Comments: This type of finger ring is known as a “Jesuit” ring. The Jesuits are a religious order of Catholic priests and brothers. These rings were commonly worn by Catholic Jesuit priests who played an active role in the colonization of New France in

the seventeenth century. They first arrived in Quebec in 1625 and soon became involved in working among the Huron until New France was briefly lost to the English in 1629. When the French regained control of their colony in 1632 the Jesuits had returned to work among Native



Image 2: Drawing and photo of a Jesuit ring found at the Hood Village site in Ontario.

peoples by 1634. Brass rings bearing the inscription “IHS” were commonly worn by Jesuit priests and distributed to Native American converts to the Catholic faith [Image 2]. These rings soon became a popular trade item and were commonly exchanged between Europeans and Native Americans from the arrival of the Jesuits through the eighteenth century.

When these rings appear in early seventeenth century contexts in Southern New England they are overwhelmingly associated with Native American sites. More often than not, brass rings, and brass ornaments in general, are connected to males. Other Jesuit rings have been recovered from the “Battle of Mistick Fort” and the “English-Allied Withdrawal” Pequot War battlefield sites and from Seventeenth Century Narragansett and Pequot cemeteries as well as sites along the upper Connecticut River Valley. It is conjectured that these rings were important trade items among Native peoples and that they were disseminated throughout southern New England through existing Native trade networks. The Jesuit ring recovered in the vicinity of Locus D - Prospective Saybrook Fort Site could be the result of Native trade or it could have been worn by a Native individual during the Pequot War or prior to it.

Images: *Image 1: Cuprous Jesuit ring #93.00/106-35*

Image 2: Sketch and image of Jesuit ring from the Hood Village site, Ontario.

Works Cited:

- Fitzgerald, William R, et al. Catholic Devotional Items From Seventeenth century Ontario Archaeological Sites. *The Ontario Archaeological Society, 1994: 9-19.*
- Power, Peter. *The Globe and Mail*. Toronto, Ontario. February 2013.

Object: Trapezoidal Buckle
Site Number: 106-35
Inventory Number: 190.00
Material: Cuprous
Dimensions: 4.0 L x 2.0 W cm



Image 1: Complete Cuprous Buckle Frame recovered from Saybrook Fort Core Area (106-35) Locus D. 106-35 / #190.00

Description: This cuprous artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D –

Prospective Fort Site” [Image 1]. This cuprous buckle is solid cast into a trapezoidal shape with no decoration. The buckle is four centimeters by two centimeters and has considerable weight. The frame is complete but the buckle is missing the spiked pin which would have wrapped around the center bar. The trapezoidal buckle was common in the Seventeenth century for use on belts and other straps.

Comments: This cuprous buckle fragment was recovered on the eastern part of Saybrook Point in the vicinity of the 20 foot contour in the prospective Saybrook Fort site location. It is located in an area which has a high density of military and domestic objects. It is centrally located to sites 106-35 (Locus C – March 9, 1637 Parley) and 106-35 (Locus E – Prospective Wharf & Warehouse). The density of domestic, personal, and architectural seventeenth century objects, twenty foot contour, combined with the proximity of Locus C and Locus E suggests



Image 2: Example of a Seventeenth Century Trapezoidal Buckle recovered in the UK. (ID# WMID-82A2D2, www.finds.org.uk)

the area in which the trapezoidal buckle was found (Locus D) could be the prospective Saybrook Fort site. The buckle fragment is similar in form to trapezoidal buckles that date to the seventeenth century. These buckles were used for a variety of military and domestic purposes but a buckle of this gauge could have been affixed to sword belt, bandoleer, or other belt or hanger which would require adjusting. English Garrison Soldiers at Saybrook Fort likely wore equipment which incorporated heavy framed buckles to adjust equipment to the desires of the individual soldier.

Images:

Image 1: Cuprous Buckle Fragment
#938.00 /106-35 (Locus A)



*Image 3: Mid-Seventeenth Century English arms and armor. Note the large frame trapezoidal buckle on the carbine sling.
(Blackmore – Arms & Armor)*

Image 2: Example of a Seventeenth Century Trapezoidal Buckle recovered in the UK.

Image 3: Mid-Seventeenth Century English arms and armor.

Works Cited:

Blackmore, David. *Arms & Armour of the English Civil Wars*. London: Royal Armouries, 1990.

“Buckle” ID# WMID-82A2D2. www.finds.org.uk. Accessed October 31, 2015.

106-35 (Locus D) – Lead Shot

1 of 2

Object: Lead Shot

Site Number: 106-35

Inventory Number: 679.00; 855.00;
1220.00; 1306.00;
1526.00

Material: Lead

Dimensions:

679.00	.76" Dia.
855.00	.41" Dia.
1220.00	.66" Dia.
1306.00	.73" Dia.
1526.00	.63" Dia.



Image 1: Impacted lead shot recovered from Saybrook Fort Core Area (106-35), Locus D. 106-35 / #679.00; 855.00; 1220.00; 1306.00; 1526.00

Description: Five lead artifacts were recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective



Image 2: A .73 caliber Matchlock Musket purchased for the Plimoth Garrison during the Pequot War.

Fort Site” [Image 1]. These objects are lead shot of various diameters consistent with other Pequot War battlefield sites. All of the artifacts appear to be impacted. One unique feature of this assemblage is the “casting flaws” that are evident on all five pieces of shot. Object Inventory Numbers 1200.00, 1382.00, and 1393.00 are identified as “hail-shot” which would be fired out of smoothbore cannon. The hail-shot projectiles were found in close proximity to other concentrations of lead shot. They all appear to be projectiles fired from European small arms of various calibers and not ordnance [Image 2, 3]. Based on Sivilich’s Musket Ball formula the lead shot ranges from .41" diameter to .76" diameter.⁴⁰³

⁴⁰³ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109).

Comments: During the siege of Saybrook Fort, Gardiner's garrison was under constant surveillance by Pequot forces. It is clear from the writings of Gardener and his contemporaries (John Mason, John Underhill, John Winthrop, etc.) that skirmishes occurred regularly. These projectiles may have been part of this fighting as they were spread throughout Locus D. Although much of this area of Saybrook Point was impacted during twentieth century housing construction it appears that top soil was stripped it was redeposited on site. The artifacts recovered in Locus D may not be in their original context they are not believed to have moved far from their original location. In any case, the distribution of mixed diameter musket balls suggests several individual shooters discharged those gunshots during the course of the siege, perhaps during sentry duty which is when Gardiner mentions his men were often assaulted.



Image 3: Seventeenth Century Fowler owned by John Thompson of Plimoth, ca. 1635. It is has a .74 diameter bore.

Images: Image 1: Lead shot recovered from Saybrook Fort Core Area, Locus D

Image 2: Seventeenth C. Matchlock Musket purchased for the Plimoth Garrison.

Image 3: Seventeenth Century Fowler owned by John Thompson of Plimoth, ca. 1635

Works Cited:

Sivilich, Daniel. "Analyzing Musket Balls to Interpret a Revolutionary War Site" in *Historical Archaeology*. Volume 30, Number 2, 1996. (101-109)

Object: Lead Hail Shot
Site Number: 106-35
Inventory Number: 53.00
Material: Lead
Dimensions: 53.00 .65" diameter

Description: This lead artifact was recovered from the *Siege and Battle of Saybrook Fort* battlefield site within the Saybrook Fort Core Area (106-35), Locus D – Prospective Fort Site [Image 1]. This lead object is impacted and contains multiple faceted sides, no two of which are alike. Object #53.00 appears to have been a cast musket ball and based on Sivilich's Musket Ball formula it was originally .XX" diameter in size.⁴⁰⁴



Image 1: Lead Hail Shot from Saybrook Fort Core Area (106-35), Locus D. #53.00 / 106-35

Comments: Based upon primary historical accounts, the geography of the land, and close examination of the artifact it appears that this lead object was once part of a hail-shot or musket ball cannon cartridge blast. According to Lion Gardiner's *Relation of the Pequot Wars* Saybrook Fort was equipped with at least one pair of cannon known as "sakers." This type of ordnance is a smoothbore artillery piece with a bore diameter of 3.5" capable of firing multiple



Image 2: Seventeenth Century demi-culverin cannon on display at Pilgrim Hall, Plymouth, MA. Hail shot cartridges were designed for use in smoothbore cannon like this. (Pilgrim Hall,

⁴⁰⁴ The formula used to determine pre-impact diameter of lead shot as developed by Dan Sivilich, President, Battlefield Restoration and Archaeological Volunteer Organization is as follows: Diameter in Inches = 0.223204 x (weight in grams) 1 / 3. See: Daniel Sivilich, "Analyzing Musket Balls to Interpret a Revolutionary War Site" in *Historical Archaeology*. (Volume 30, Number 2, 1996). (101-109)

projectiles (solid shot, bar shot, hail shot), and could be mounted on a wheeled gun carriage [Image 2].⁴⁰⁵ Gardiner describes using hail-shot loads in these guns. During the March 3, 1637 parley incident he described how he ordered “2 Cartridges of musket bullets into 2 Sakers guns y^t lay about and we leveled th^m against the place.”⁴⁰⁶ Such cartridges were used as anti-personnel loads which were designed to disperse over a wide area when fired [Image 3, 4].



Image 3: Seventeenth C. Lead canister projectiles discovered in Montgomery, Wales, UK. Note that they range in diameter and form. Some are cast-offs while others have been hammered into bars.

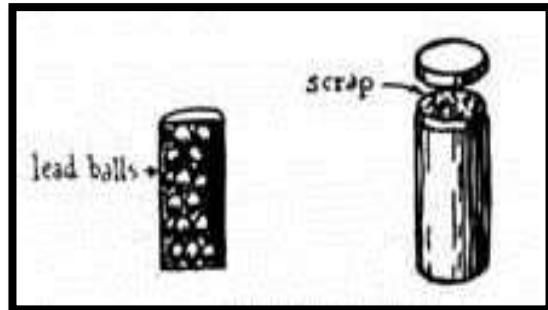


Image 4: Sketch of Seventeenth Century Hail Shot Cartridges consisted of containers made of hollowed logs or broad cloth sacks filled with projectiles such as lead balls or scrap metal and stone.

These cartridges were simple to manufacture by hollowing out a log or using a linen sack that was filled with lead, stone, and iron projectiles [Image 3, 4]. It appears that the English garrison at Saybrook employed these simple, but effective, cartridges on a regular basis during the siege. This lone piece of hail shot could either be the remains of a broken hail-shot cartridge or may be part of a shot discharged west or southwest towards the direction of Gee’s Pond during the course of the siege. In any case, this artifact appears to be associated with the 1636-1637 Siege and Battle of Saybrook Fort but may have been moved from its original context.

⁴⁰⁵ Chris Henry, *English Civil War Artillery 1642-1651* (New York, NY: Osprey Publishing, 2005). Pp. 9, 36.

⁴⁰⁶ Gardener, *Relation*. Pp. 14-16.

- Images:**
- Image 1: Lead Hail Shot #53.00 / 106-35.
 - Image 2: Seventeenth Century demi-culverin cannon, Pilgrim Hall, Plymouth, MA.
 - Image 3: Sketch of Hail Shot Cartridges
 - Image 4: Seventeenth Century Lead Canister Projectiles

Works Cited:

- Henry, Chris. *English Civil War Artillery 1642-1651*. New York, NY: Osprey Publishing, 2005.
- Gardiner, Lion. *Relation of the Pequot Warres: Written in 1660 by Lieutenant Lion Gardener*. Hartford: Case, Lockwood & Brainard Company for the Acorn Club of Connecticut, 1901.
- Sivilich, Daniel. “Analyzing Musket Balls to Interpret a Revolutionary War Site” in *Historical Archaeology*. Volume 30, Number 2, 1996. (Pp. 101-109)

106-35 (Locus D) – Lead Musket Flint Wraps

1 of 1

Object: Lead Musket Flint Wrap

Site Number: 106-35

Inventory Number: 179.00; 191.00

Material: Lead

Dimensions:

#179.00 2.0 L x 2.0 W CM

#191.00 4.0 L x 2.0 W CM

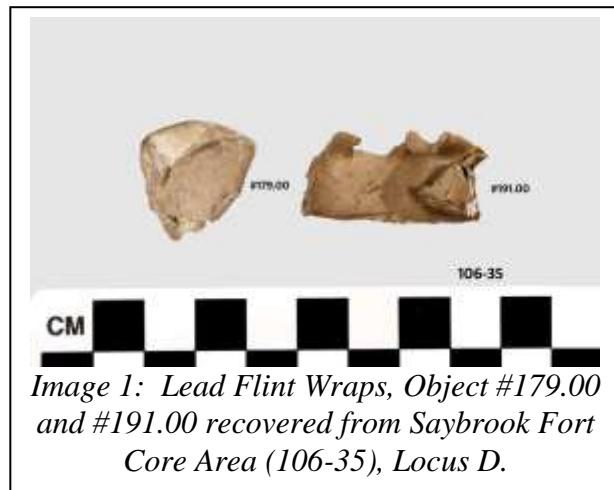


Image 1: Lead Flint Wraps, Object #179.00 and #191.00 recovered from Saybrook Fort Core Area (106-35), Locus D.

Description: These lead objects were recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core Area, Locus D: Prospective Fort Site” [Image 1]. It is likely a Flint Wrap which is used with flintlock arms to better secure a flint in the jaws of the hammer [Images 1, 2].

Comments: A lead flint wrap can be constructed in several manners and at this time they were custom made to fit each individual arm. A thin lead wrap held irregular musket flints in place far better than other alternatives including leather or linen. It can either be cast into a desired form or it can be made from a lead round ball bullet, hammered flat and cut to fit the width of the musket hammer jaw. The Lead Flint Wraps



Image 2: Reproduction Seventeenth Century flintlock hammer, vice, screw, lead wrap, and flint.

recovered from the “Saybrook Fort Core Area, Locus D: Prospective Fort Site” appear to both be folded tightly over on itself. Object #179.00 is about two and a half centimeters wide indicating that the jaw of the musket was at least that wide while Object #191.00 is three centimeters wide at the folded base. Both lead wraps belonged to firearms with musket hammer jaws at least three centimeters wide which is relative large for military arms of the day.



*Image 3: (Left) Original Lead Flint Wrap from Mistick Fort site, #2.00 / 59-36
(Right) Reproduction Lead Flint Wrap.*



*Image 4: Original Lead Flint Wrap recovered in Silloth, UK.
(www.finds.org.uk)*

The recovery of an empty lead flint wrap could be the result of a soldier replacing a flint on the march out to the western end of the neck, it could have been lost or discarded as a result of combat, or was lost on the retreat to the fort. The Lead Flint Wrap was a common piece of Seventeenth Century military equipment and was both easily made and replaced. Another Pequot War era example has been recovered from the “Mistick Fort Core Area: English Rest and Vantage” site (59-36) [Image 3].

Images:

Image 1: Lead Flint Wraps from Saybrook Fort Core Area, Locus D.

Image 2: Reproduction Seventeenth century flintlock hammer, vice, screw, lead flint wrap, and flint.

Image 3: (Left) Original Lead Flint Wrap from Mistick Fort site, #2.00 / 59-36; (Right)
Reproduction Lead Flint Wrap.

Image 4: Original Lead Flint Wrap recovered in Silloth, UK.

Object: Buttons

Site Number: 106-35

Inventory Number: 37, 249, 749, 763

Material: Pewter

Dimensions:

#37.00 1.7cm Dia., 0.2cm Gauge

#249.00 1.6cm Dia., 0.4cm Gauge

#749.00 2.2cm Dia., 0.2cm Gauge

#763.00 1.5cm Dia., 0.5cm Gauge



Image 1: Pewter buttons recovered from Saybrook Fort Core Area (106-35), Locus D.

Description: These pewter artifacts were recovered from the “Saybrook Fort” Core Area, Locus D (Image 1). These buttons are hand cast and all but #763 have mold seams or cast lines. The back of #763.00 is too degraded to see a mold seam. #749.00 has an intact shank while the others only have a scar remaining. All of the buttons have flat faces except for #249 which has a convex face. #749 is the only button with visible decoration. Corrosion conceals any previous face decoration on the other buttons and they now appear plain.

Comments: This hand cast pewter button is typical of seventeenth century clothing fasteners



Image 2: Seventeenth century re-enactor with a coat fastened with pewter flat buttons.

(Image 2). These buttons may have been attached to a coat, cloak or jacket. Such pewter buttons were also popular on doublets frequently worn by men during the period. Doublets were typically fastened by buttons, unless worn under armor when instead laced.

Images: Image 1: Pewter buttons recovered from Saybrook Fort Core Area, Locus D.

Image 2: A re-enactor wearing a soldier's coat fastened with pewter flat buttons.

Works Cited:

Read, Brian. *Metal Buttons c.900 BC – c.AD 1700*. Somerset: Portcullis Publishing, 2005.
Ready To Wear (1640's Style). Re-enactor Soldier Coat.
<http://thegoodwyfe.blogspot.com/2011/01/soldiers-coat.html>

106-35 (Locus D) – Seventeenth Century Ceramic Shards

1 of 2

Object: Ceramic Shards

Site Number: 106-35

Inventory Numbers:

1270.00; 1856.00; 1862.00; 2533.00;
2552.00; 2585.00; 2721.00; 2791.00

Material:

1856.00; 2533.00 Red Earthenware
 North Devon
 Delftware

Dimensions:

1270.00	1.4 cm x 0.9 cm
1856.00	3.5 cm x 2.5 cm
1862.00	1.3 cm x 1.2 cm
2533.00	2.8 cm x 1.5 cm
2552.00	2.4 cm x 1.5 cm
2585.00	1.5 cm x 0.8 cm
2721.00	1.9 cm x 1.1 cm
2791.00	3.3 cm x 1.9 cm



Image 1: Seventeenth Century Ceramic Shards recovered from Saybrook Fort Core Area (106-35), Locus D.

Description: These ceramic shards were recovered from Saybrook Fort Core Area (106-35), Locus D – Saybrook Fort Site. Laboratory analysis concludes that these ceramic shards were the remains of North Devon, Delft, and Lead-glazed Earthenware. These ceramic types were commonly produced and used in the first-half seventeenth century.

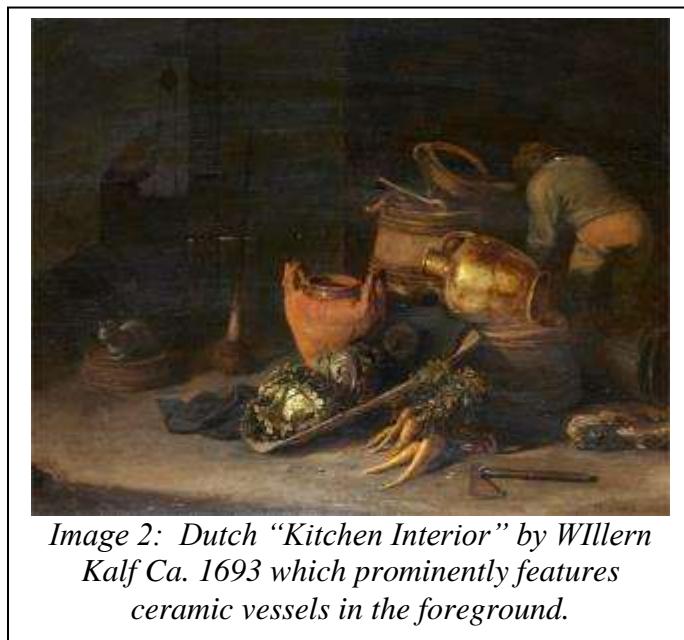


Image 2: Dutch "Kitchen Interior" by Willern Kalf Ca. 1693 which prominently features ceramic vessels in the foreground.

Comments: During the sixteenth and seventeenth centuries, domestic pottery was common items in Europeans households. Ceramic production was a major industry in most European cities and was a commonly exported item. People of all classes consumed a variety of affordable ceramic types such as coarse or glazed red earthenwares, delftware, and coarse North Devon-wares.

During the seventeenth century North Devon pottery was also a mass-produced ceramic exported to North America. Hundreds of thousands of North Devon ceramic shards have been recovered by the National Park Service during their Jamestown, Virginia excavations. In Virginia an important trade relationship between tobacco planters and English North Devon pottery makers grew and many of these vessels likely arrived in New England as well. Other examples have been found in Maryland and Newfoundland. Delftware is a tin-glazed earthen ware first produced in Delft, Holland in the early seventeenth century and resembles porcelain at first glance. The greatest amount of delftware was produced during the seventeenth century. Although salt-glazed stonewares were produced in the early seventeenth century in the German states and the Netherlands, such as the distinctive “Bartmann” or “Bellarmine” vessels, but no evidence of these vessels were recovered.



Image 3: Seventeenth century ceramic vessels reproduced at Plimoth Plantation, Plymouth, MA.

Images:

Image 1: Ceramic Shards, Saybrook Fort Core Area (106-35), Locus D

Image 2: Dutch “Kitchen Interior” by Willern Kalf Ca. 1693.

Image 3: Ceramic vessels reproduced at Plimoth Plantation, Plymouth, MA

106-35 (Locus D) – Possible Seventeenth Century Domestic Artifacts **1 of 2**

Object: Possible Seventeenth Century Domestic Artifacts

Site Number: 106-35

Inventory Number: 111.00; 242.00; 578.00; 597.00; 647.00; 658.00; 664.00; 742.00; 748.00; 1178.00; 2142.00

Material:

Cuprous: 111.00; 647.00; 658.00;
664.00; 748.00

Ferrous: 242.00; 597.00;
1178.00; 2142.00

Lead: 578.00; 742.00



Image 1: Assemblage of Seventeenth Century domestic artifacts recovered from the Saybrook Fort Core Area (106-35), Locus D.

Description: This assemblage of seventeenth century domestic artifacts was recovered from the Saybrook Fort Core Area (106-35), Locus D – Saybrook Fort site. After further research they appear to be fragments of commonplace seventeenth century domestic items including iron knife blades (242.00; 1178.00; 2142.00), brass spoon (647.00), latten spoon (111.00), candlestick base (742.00), scissors (597.00), a kettle ear (664.00), cuprous button (748.00), lead ceramic pot mends (578.00), and a piece of rolled brass (658.00).

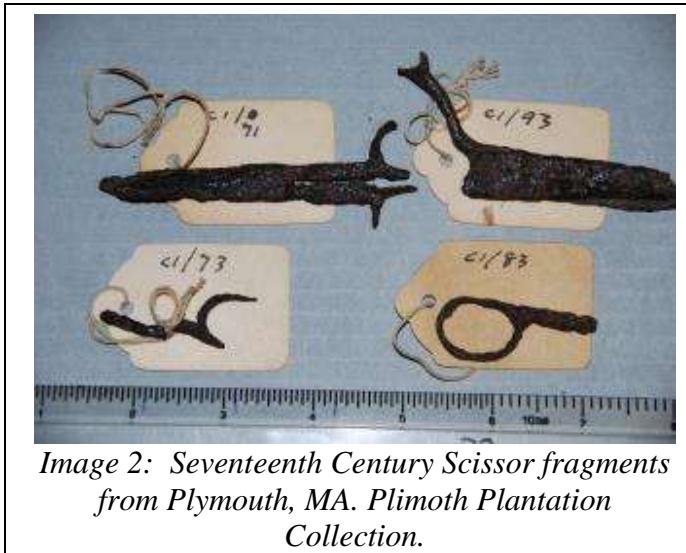
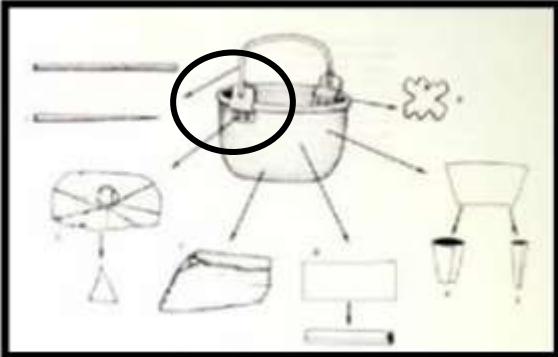


Image 2: Seventeenth Century Scissor fragments from Plymouth, MA. Plimoth Plantation Collection.

106-35 (Locus D) – Possible Seventeenth Century Domestic Artifacts 1 of 2



*Image 3: Sketch brass kettles, kettle ear circled. (Bradley, *Before Albany*. P. 25)*



Image 4: Seventeenth Century candlestick recovered from Jamestown, VA.

Comments: The identified seventeenth century domestic artifacts recovered from within the same general special location within the Saybrook Fort Core Area (106-35) which was designated Locus D – Saybrook Fort site. In addition, several military artifacts and architectural artifacts were recovered from Locus D. The total sum of these assemblages was used to help identify the prospective Saybrook Fort site in conjunction with the establishment of Locus C. The density of seventeenth century domestic artifacts was concentrated in the vicinity of Cromwell Court, Cromwell Street, Cromwell Circle, and Church Street. This area became designated as Locus D and the density of first-half seventeenth century artifacts declined rapidly outside of these bounds.

Images: Image 1: Assemblage of Seventeenth Century domestic artifacts (106-35).

Image 2: Seventeenth Century Scissor fragments from Plymouth, MA.

Image 3: Sketch of potential brass kettles usage by Native people.

Works Cited:

James W. Bradley, *Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664* (Albany, NY: University of the State of New York, 2005).

106-35 (Locus D) – #558.00 Iron Folding Knife

1 of 2

Object: Iron Folding Knife
Site Number: 106.35
Inventory Number: 558.00
Material: Iron
Dimensions: 6.5 L x 2 W CM



Image 1: A Seventeenth Century iron folding knife recovered from the Saybrook Fort Core Area (106-35), Locus D. #558.00 / 106-35

Description: This iron object was recovered from the “Saybrook Fort” Core Area (106-35), Locus D [Image 1, 2]. It is approximately 6.5 CM long and 2 CM wide and constructed of hand-wrought iron. Further analysis determined the object to be a complete seventeenth century folding knife. It is missing its grips which would have most likely been fashioned out of wood or bone.

Comments: The folding knife was a common personal item carried by civilians and soldiers during the seventeenth century. Folding knives have been recovered from seventeenth century archaeological sites in North America and Europe [Image 3]. It appears that during the Pequot most English soldiers carried a knife or folding knife which served as a multi-purpose tool used for any number of domestic and military activities. Several examples of which have been recovered from the Battle of Mistick Fort Site and the English-Allied Withdrawal Site. Folding knives were acquired by Native peoples as trade items and may have been carried by some Native men during the Pequot War as well. The remains of a seventeenth century folding knife was recovered from the English-Allied Withdrawal and Pequot Counter Attack Battlefield Site at the Pequot Woods Village Site (59-73). Object #558.00 is

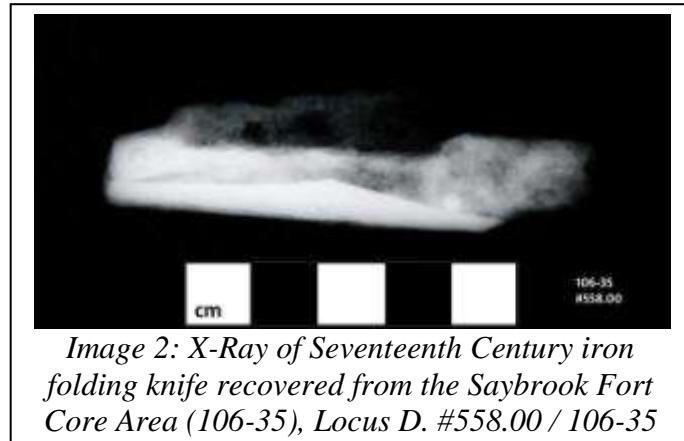


Image 2: X-Ray of Seventeenth Century iron folding knife recovered from the Saybrook Fort Core Area (106-35), Locus D. #558.00 / 106-35

likely associated with English forces based on its location within Locus D and its proximity to other associated objects.

Images:

Image 1: Seventeenth Century iron folding knife, #558.00 / 106-35.

Image 2: X-ray of Object #558.00 / 106-35.

Image 3: Seventeenth century folding knives.

Works Cited:

City of St. Augustine Archaeology Program

<http://www.digstaug.org/>

Portable Antiquities Scheme, “Folding Knife.”

<http://finds.org.uk/database/artefacts/record/id/86190>



Image 3: [Top] Seventeenth century folding knives. St. Augustine, FL. (City of St. Augustine Archaeology Program)
[Bottom] London, UK. (Portable

Object: Iron Jaw Harp

Site Number: 106-35

Inventory Number: 1192.00

Material: Iron

Dimensions: 4.7 cm x 2.8 cm



Image 1: A Seventeenth Century iron Jaw Harp recovered from the Saybrook Fort Core Area (106-35), Locus D. #1192.00 / 106-35

Description: This iron object was recovered from the Saybrook Fort Core Area (106-35), Locus D – Perspective Fort Site. Radiographs identified the corroded artifact (Image 1, 2) as the remains of a jaw harp.

Comments: The Jaw or Jew harp was a popular hand held instrument enjoyed by men and women of all ages during the seventeenth century. This small musical instrument is held between the teeth or lips and plucked with the finger to produce a vibration (Image 3). These items were commonly traded to Native peoples throughout North America. Similar harps have been excavated from known Pequot War-era battlefield sites, other seventeenth century Native Pequot village sites, as well as English colonial sites in Plymouth, MA and Jamestown, VA (Image 4, 5).

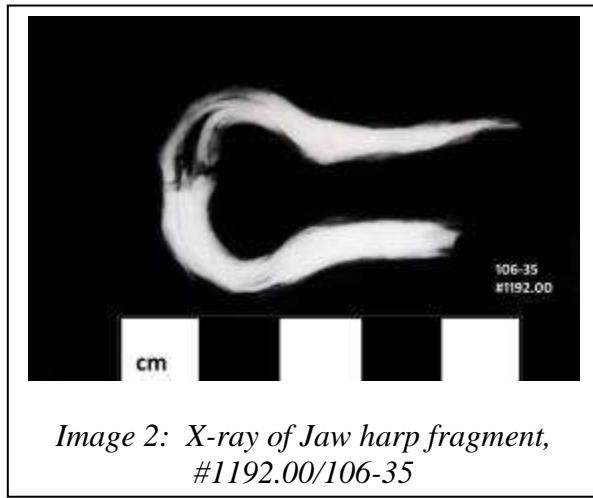


Image 2: X-ray of Jaw harp fragment, #1192.00/106-35

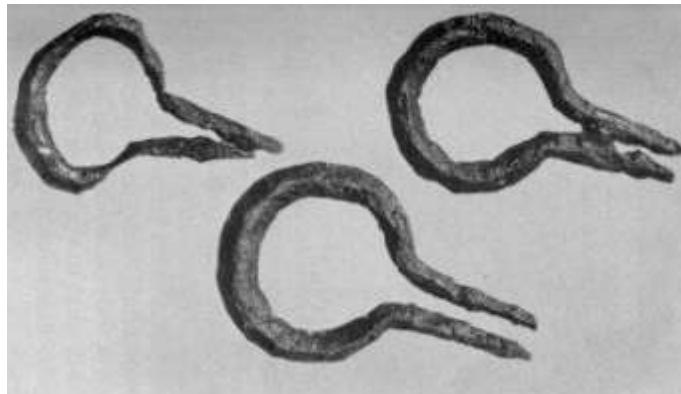


Image 4: Several Jaw harps excavated at Jamestown.



Image 3: Boy Playing a Jaw Harp, Sir Peter Lely (c.1648).

Images:

Image 1: Seventeenth Century Jaw harp, # 1192.00 /
106-35

Image 2: X-ray of Jaw harp, # 1192.00 / 106-35

Image 3: *Boy Playing a Jaw Harp*, Sir Peter Lely
(c.1648)

Image 4: Several Jaw harps excavated at Jamestown.

Works Cited:

Cotter, John L and J. Paul Hudson. *New Discoveries at Jamestown*. United States Department of the Interior, Washington, D.C., 1957.

Object: Cuprous Fragments

Site Number: 106-35

Inventory Number: 433.00; 665.00;
666.01; 757.00;
762.00

Material: Cuprous

Dimensions:

433.00	1.5 cm x 1.5 cm
665.00	2.1 cm x 1.6 cm
666.01	3.1 cm x 2.9 cm
757.00	1.2 cm x 0.8 cm
762.00	5.4 cm x 0.7 cm



Description: These cuprous objects were recovered from the Saybrook Fort Core Area (106-35), Locus D – Saybrook Fort Site [Image 1]. It cannot be determined if it was specifically created in this shape or if it originally a larger form.

Comments: These cuprous artifacts are described as Unidentified Cuprous Scrap as their original form or intended purpose cannot be determined. Cuprous materials (brass and copper alloys) were commonly used for domestic and military purposes in the seventeenth century [Image 2, 3]. Native people of the region were known to break apart cuprous objects such as brass kettles to custom produce their own

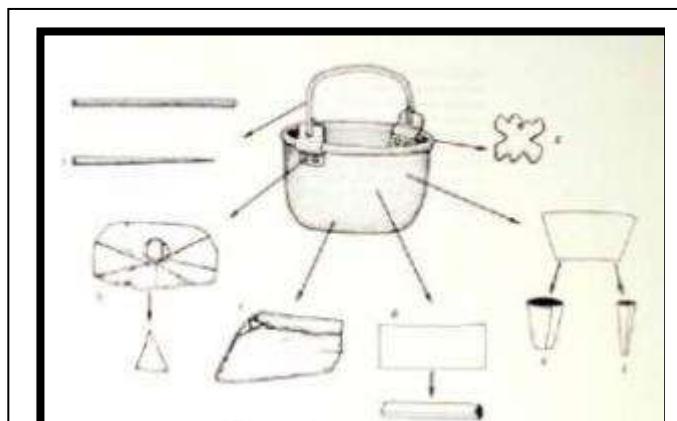


Image 2: Sketch of potential brass kettles usage by Native people. (Bradley, Before Albany. P. 25)

items and Europeans would modify their personal possessions as well if the need arose [Image 2]. It is possible that these items are domestic in nature, or possibly decorative. Being cuprous they could have also been pieces from a larger European military item such as a powder box.

Images:

Image 1: Several cuprous fragments recovered from the Saybrook Fort Core Area (106-35), Locus D.

Image 2: Sketch of potential brass kettle usage.

Image 3: Brass pieces recovered from Jamestown, VA

Works Cited:

James W. Bradley. *Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664*. Albany, NY: University of the State of New York, 2005.



Image 3: Brass pieces recovered from the Werowocomoco Site in Jamestown, VA

106-35 (Locus D) – Seventeenth Century Kaolin Pipe Fragments

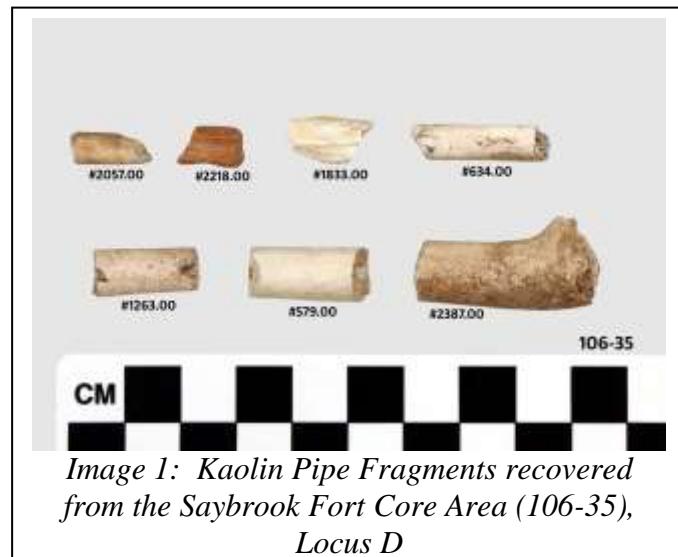
1 of 2

Object: Kaolin Pipe Stems

Site Number: 106-35

Inventory Number: 579.00; 634.00;
1263.00; 1833.00;
2057.00; 2218.00;
2387.00

Material: Kaolin



Dimensions:

#579.00	2.00 L CM, 6/64 Dia.
#634.00	2.25 L CM, 6/64 Dia.
#1263.00	1.50 L CM, 6/64 Dia.
#1833.00	1.50 L CM, 6/64 Dia.
#2057.00	1.50 L CM, 6/64 Dia.
#2218.00	1.00 L CM, 6/64 Dia.
#2387.00	2.50 L CM, 6/64 Dia.

Description: These seven kaolin pipe stem fragments were recovered from the Saybrook Fort Core Area (106-35), Locus D – Saybrook Fort Site. They range in overall length from 1 to 2.5 CM. Their bore diameters are uniformly 6/64 which date these artifacts squarely in the seventeenth century.

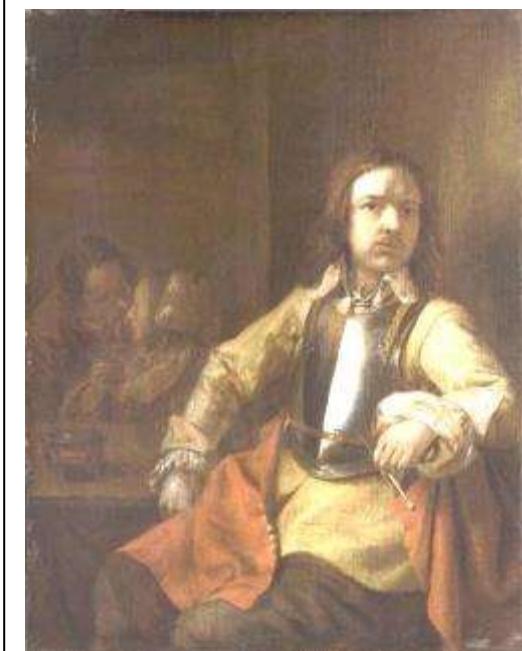


Image 2: Seventeenth Century painting depicting a soldier smoking from a kaolin pipe (Pieter de Hooch)

Comments: The kaolin pipe was mass produced ceramic smoking utensil which became increasingly popular during the early seventeenth century as Europeans began to consume North

American tobacco. The shape and size of the kaolin pipe bowl enlarged as by the mid-seventeenth century as tobacco prices fell and the commodity was more plentiful.

Images:

Image 1: Kaolin Pipe Fragments (106-35), Locus D

Image 2: Seventeenth Century painting depicting a soldier smoking (de Hooch ca. 1650)

Works Cited:

Georgia Lynne Fox. *The Kaolin Clay Tobacco Pipe Collection from Port Royal, Jamaica* (Oxford, UK: Hadrian Books, 1999). Pp. 25-27.

Pieter de Hooch. “A Soldier Smoking,” Oil on Canvas, Ca. 1650.

106-35 (Locus D) – Molten Lead

1 of 3

Object: Molten Lead

Site Number: 106-35

Inventory Number: 264.00; 286.00;
432.00; 506.00;
559.00; 743.00;
760.00; 852.00;
877.00; 879.00;
940.00; 1189.00

Material: Lead

Dimensions:

264.00	7.0g
286.00	5.1g
432.00	2.8g
506.00	13.0g
559.00	7.9g
743.00	72.7g
760.00	26.3g
852.00	8.5g
877.00	75.5g
879.00	16.2g
940.00	52.1g
1189.00	24.6g

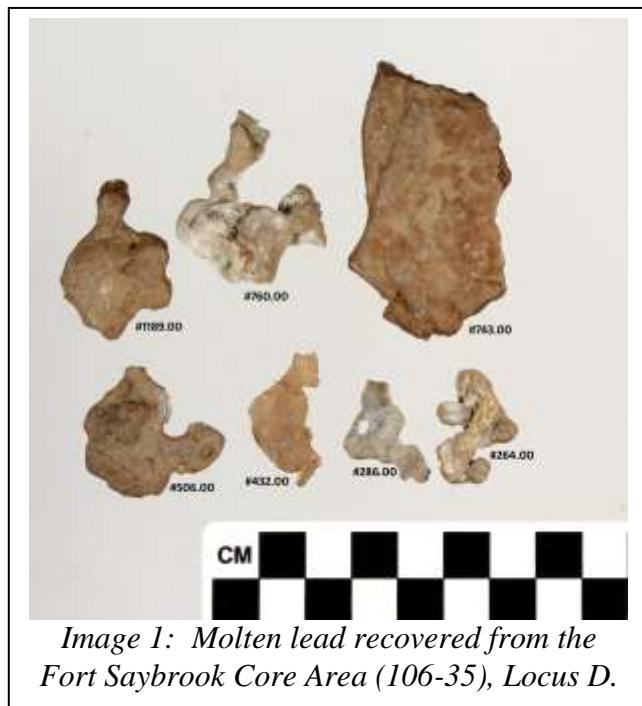


Image 2: Soapstone Bullet Mold fragment from Thompsonville, CT. (Institute for American Indian Studies, Washington, CT)

Description: These lead objects were recovered from the Saybrook Fort Core Area (106-35), Locus D – Wharf and Warehouse Site. They are all lead scrap or melted slag and only two of the artifacts exhibit any discernible features.

Object #264.00 appears to be the result of casting lead musket balls and is either a strip of discarded musket ball sprues or three small shot still attached to the casting sprue from being cast in a gang mold. Object #743.00 may have been cut from a larger sheet due to its size, gauge, and marks that suggest the object was cut, sheered, or chiseled from a larger piece.

Comments: Lead was a commonly used material by Europeans in the casting of any number of objects including firearm ammunition, ornamental items, and for mending holes in pottery. Lead was also used in the seventeenth century in the construction of window panes. Lead slag and lead scrap objects are routinely recovered from seventeenth century domestic and military sites. Saybrook Fort was primarily a military installation but it also likely contained much of the same domestic items encountered on a small farmstead of the period. It is known that lead was being used at the fort for military purposes and undoubtedly for domestic purposes as well when needed. In 1635 John Winthrop,



*Image 3: Reproduction seventeenth century melting ladle and musket ball mould with lead rod and cast musket balls.
(Society of the Seventeenth Century)*



Image 4: Example of lead scrap from a seventeenth century small shot gang mold. (Plimoth Plantation, Plymouth, MA)

Jr. sent “14 piggs of lead” to Saybrook.⁴⁰⁷ In his correspondences to John Winthrop, Jr., Lion Gardener mentions cutting pieces out of “sheets of lead” belong to Winthrop Jr. in order to cast bullets.⁴⁰⁸

Images:

Image 1: Molten lead recovered from the Fort Saybrook Core Area (106-35), Locus D.

Image 2: Soapstone Bullet Mold fragment from Thompsonville, CT.

Image 3: Reproduction melting ladle and musket ball mould with lead rod and cast musket balls.

Image 4: Example of lead scrap from a seventeenth century small shot gang mold.

Works Cited: Winthrop, *Winthrop Papers*. III: P. 201-206

⁴⁰⁷ Winthrop. *Winthrop Papers*. III: Pp. 201-206

⁴⁰⁸ Winthrop. *Winthrop Papers*. III: Pp. 201-206

Object: Perforated Cuprous Fragment

Site Number: 106-35

Inventory Number: 169.00

Material: Cuprous

Dimensions:

4.2 cm x 3.7 cm x 0.11 cm gauge



Description: This cuprous object was recovered from the Saybrook Fort Core Area (106-35), Locus E – Wharf and Warehouse Site [Image 1]. It is snapped on both ends and appears to be cut or chiseled into its folded shape and contains two rows of punched holes.

Comments: This cuprous artifact is unidentified but described as a perforated cuprous fragment. It cannot be determined whether the artifact was modified from a larger object or if it was purposely manufactured this way. Cuprous materials (brass and copper alloys) were commonly used for domestic and military purposes in the seventeenth century [Image 2, 3]. Native people of the region were known to break apart cuprous objects such as brass kettles to custom produce their own items and Europeans would modify their personal possessions as well if the need arose [Image 2]. The function of the perforated holes is not clear. It is possible that the item is domestic in nature, like a colander, or it could possibly be decorative in nature.

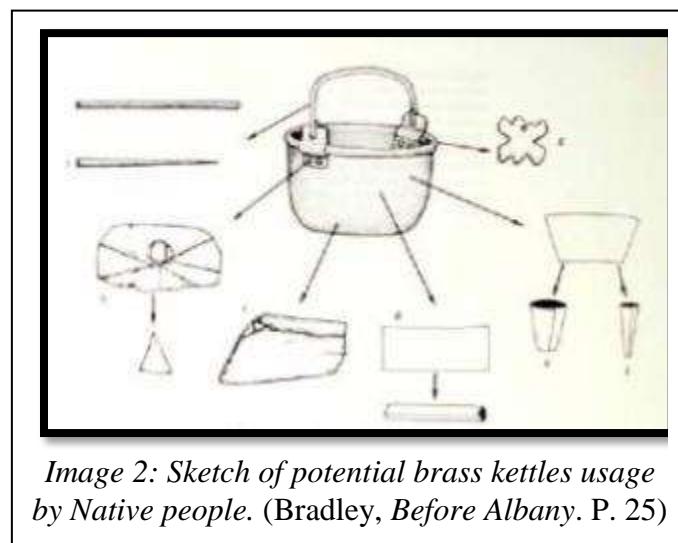


Image 2: Sketch of potential brass kettles usage by Native people. (Bradley, Before Albany. P. 25)

Images:

Image 1: Perforated Cuprous Fragment, #169.00 / 106-35

Image 2: Sketch of potential brass kettle usage.

Image 3: Brass pieces recovered from Jamestown, VA



Image 3: Brass pieces recovered from the Werowocomoco Site in Jamestown, VA

Works Cited:

James W. Bradley, Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664 (Albany, NY: University of the State of New York, 2005).

106-35 (Locus E) – Molten Lead

1 of 2

Object: Molten Lead

Site Number: 106-35

Inventory Number: 559.00; 852.00;
877.00; 879.00; 940.00

Material: Lead

Dimensions:

559.00	7.9g
852.00	8.5g
877.00	75.4g
879.00	16.2g
940.00	52.1g

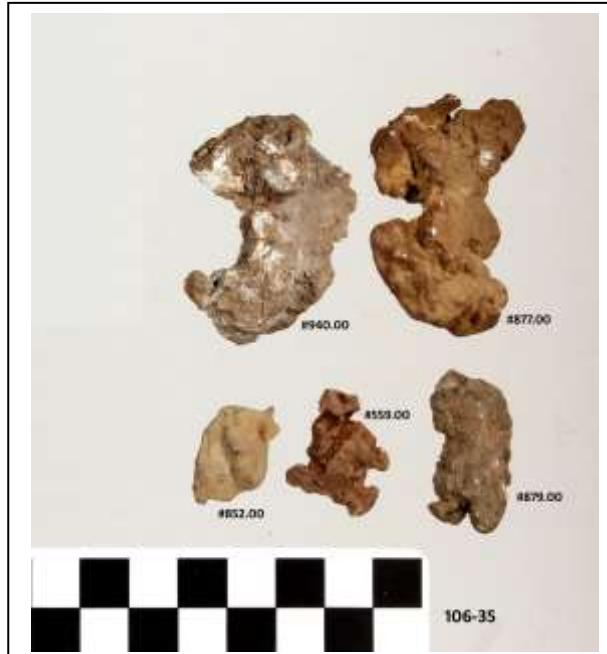


Image 1: Pieces of Molten Lead recovered from Saybrook Fort Core Area (106-35), Locus E – Warehouse & Wharf Site

Description: These lead objects were recovered

from the Saybrook Fort Core Area (106-35), Locus D – Wharf and Warehouse Site. They are all lead scrap or melted slag and only one of the artifacts exhibit any discernible features. Object #559.00 appears to be the result of casting lead musket balls and is either a strip of discarded musket ball sprues or three small shot still attached to the casting sprue from being cast in a gang mold.

Comments: Lead was a commonly used material by Europeans in the casting of any number of objects including firearm ammunition, ornamental items, and for mending holes in pottery. Lead was also used in the seventeenth century in the construction of window panes.



Image 2: Soapstone Bullet Mold fragment from Thompsonville, CT. (Institute for American Indian Studies, Washington, CT)

Lead slag and lead scrap objects are routinely recovered from seventeenth century domestic and military sites. Saybrook Fort was primarily a military installation but it also likely contained much of the same domestic items encountered on a small farmstead of the period. It is known that lead was being used at the fort for military purposes and undoubtedly for domestic purposes as well when needed. In 1635 John Winthrop, Jr. sent “14 piggs of lead” to Saybrook.⁴⁰⁹ In his correspondences to John Winthrop, Jr., Lion Gardiner mentions cutting pieces out of “sheets of lead” belong to Winthrop Jr. in order to cast bullets.⁴¹⁰

Images:

Image 1: Molten lead recovered from the Fort Saybrook Core Area (106-35), Locus D.

Image 2: Soapstone Bullet Mold fragment from Thompsonville, CT.

Image 3: Reproduction melting ladle and musket ball mould with lead rod and cast musket balls.

Image 4: Example of lead scrap from a seventeenth century small shot gang mold.



*Image 3: Reproduction seventeenth century melting ladle and musket ball mould with lead rod and cast musket balls.
(Society of the Seventeenth Century)*



*Image 4: Example of lead scrap from a seventeenth century small shot gang mold.
(Plimoth Plantation, Plymouth, MA)*

Works Cited: Winthrop. *Winthrop Papers*. III: P. 201-206

⁴⁰⁹ Winthrop. *Winthrop Papers*. III: Pp. 201-206

⁴¹⁰ Winthrop. *Winthrop Papers*. III: Pp. 201-206

Object: Cuprous Buttons
Site Number: 106-35
Inventory Number: 1549.00
Material: Cuprous - Brass
Dimensions: 1.0 CM Dia

Description: This cuprous button was recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core, Locus E: Prospective Wharf and Warehouse” site [Image 1]. Artifact #1549.00 is a bulbous cuprous cast button which includes a broken, but complete, eyelet.

Comments: This cuprous button was recovered on the eastern part of Saybrook Point on a northern rising slope. It is located in an area which has a high density of impacted musket balls, military, and domestic objects. It is in close vicinity to sites 106-35 (Locus A – Siege Combat Actions) and 106-35 (Locus E – Prospective Wharf & Warehouse). The density of battle-related objects suggests that several combat actions likely occurred in the vicinity but none of the recovered objects or assemblages can be specifically linked to any actions discussed in any of the primary narratives.

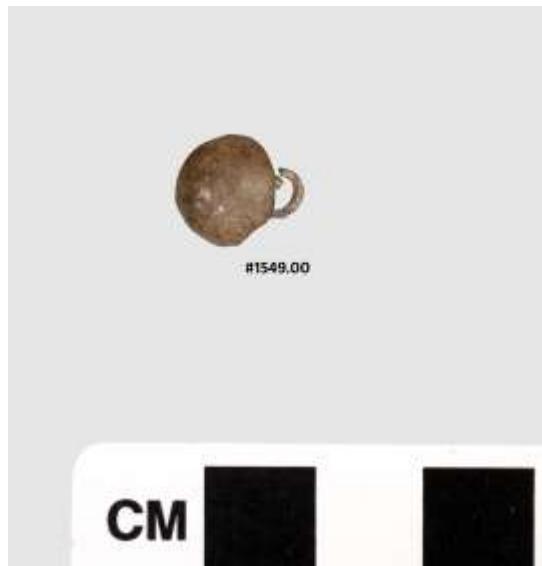


Image 1: One Cuprous Buttons recovered from the Saybrook Fort Core Area (106-35) Locus E. #1549.00 / 106-35



Image 2: Pieter de Hooch's still life painting of soldiers (La Buveuse 1658). Both Cuprous (Brass and Copper alloys) and Pewter buttons adorn the soldier's coats. Cuprous and Ferrous fasteners could be used on any number of military equipage including the armor depicted in the painting.

These button forms were widely used in the early seventeenth century on a variety of European clothing. Although these buttons are likely attributed to the Saybrook Fort garrison or other European visitors Native peoples were also known to wear some European garments like shirts and jackets at this time. During the Siege of Saybrook Fort Pequot forces often wore clothing captured from English soldiers and traders

and often taunted Saybrook garrison troops with such displays.



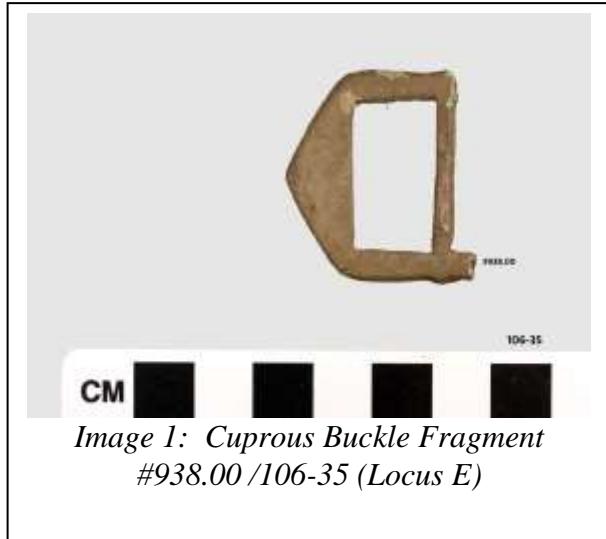
Image 3: Seventeenth Century cuprous buttons from Plymouth, MA. Plimoth Plantation Collection

- Images:**
- Image 1: Cuprous Buttons from the Saybrook Fort Core Area (106-35) Locus E.
 - Image 2: Pieter de Hooch's still life painting of soldiers (La Buveuse 1658).
 - Image 3: Seventeenth Century cuprous buttons from Plymouth, MA.

Works Cited: Pieter de Hooch "La Buveuse" ca. 1658. Oil on Canvas.

Object: Buckle Fragment
Site Number: 106-35 (Locus A)
Inventory Number: 938.00
Material: Cuprous - Brass
Dimensions: 3.5 L x 3.25 W CM

Description: This cuprous object was recovered from the “Siege and Battle of Saybrook Fort, Saybrook Fort Core, Locus E: Prospective Wharf and Warehouse” site (Image 1). It is a cuprous cast buckle which the frame has broken nearly in half at the bar.



Comments: This cuprous buckle fragment was recovered on the eastern part of Saybrook Point on a northern rising slope. It is located in an area which has a high density of impacted musket balls, military, and domestic objects. It is in close vicinity to sites 106-35 (Locus A – Siege Combat Actions) and 106-35 (Locus E – Prospective Wharf & Warehouse). The density of battle-related objects suggests that several combat actions likely occurred in the vicinity but none of the recovered objects or assemblages can be specifically linked to any actions discussed in any of the primary narratives. The buckle fragment is similar in form to trapezoidal buckles that date to the Seventeenth Century. These buckles were used for a variety of military and domestic purposes but a buckle of this gauge could have been affixed to sword belt, bandoleer, or other belt or hanger which would require adjusting. English Garrison Soldiers at Saybrook Fort likely wore



equipment which incorporated heavy framed buckles to adjust equipment to the desires of the individual soldier.

Images:

Image 1: Cuprous Buckle Fragment
#938.00 /106-35 (Locus A)

Image 2: Example of a Seventeenth Century Trapezoidal Buckle recovered in the UK.

Image 3: Mid-Seventeenth Century English arms and armor.

Works Cited:

Blackmore, David. *Arms & Armour of the English Civil Wars*. London: Royal Armouries, 1990.

“Buckle” ID# WMID-82A2D2.
www.finds.org.uk. Accessed October 31, 2015.



Image 3: Mid-Seventeenth Century English military equipment. Note the large frame buckle on the sling.
(Blackmore – Arms & Armor)

106-35 (Locus E) – #1221.00 Possible Trigger Bar or Sear Mechanism 1 of 2

Object: Unidentified Iron
Site Number: 106-35
Inventory Number: 1221.00
Material: Iron

Dimensions: 13.6 cm x 1.2 cm



Image 1: Unidentified Iron Object, Possible Matchlock Trigger Bar or Sear Mechanism recovered from Saybrook Fort Core Area (106-35), Locus E. #1221.00 / 106-35.

Description: This iron artifact was recovered from the *Siege and Battle of*

Saybrook Fort battlefield site within the “Saybrook Fort Core Area, Locus D – Prospective Fort Site” [Image 1]. It is constructed of hand-wrought iron, is approximately 13.6 cm in length [Image 1]. This object is straight for 10 CM before bending at a right angle and extending another 2 CM. It could possibly be the remains of a trigger bar mechanism employed on early matchlock firearms or a sear bar from a matchlock musket lock [Image 2, 3].

Comments: This unidentified iron object is believed to be the remains of a firearm part based on its form and the location where it was recovered. The type of part the artifact resembles is that of a matchlock trigger bar mechanism employed or a matchlock sear bar [Image 2, 3]. One other matchlock trigger bar fragment was recovered from Locus D as well. Matchlock musket designs varied slightly between European gunmakers of different nationalities but one common

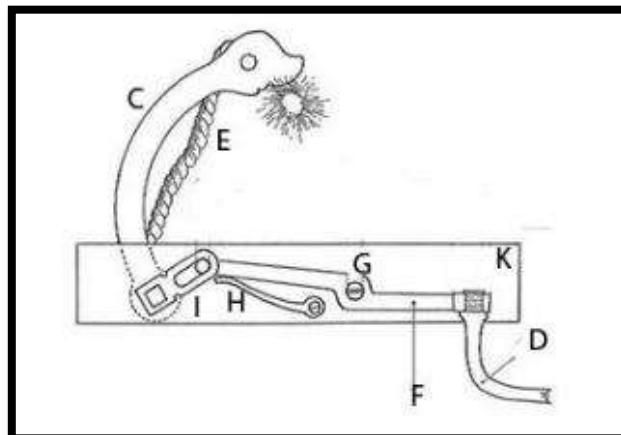


Image 2: Diagram of the interior of a Matchlock Musket lock. D) Trigger Bar; f) Sear Bar

106-35 (Locus D) – #1221.00 Iron Matchlock Bar-Trigger Fragment 2 of 2

form of trigger mechanism used to manipulate the matchlock serpentine was the trigger bar [Image 2, 3]. This innovation was simply an iron rod or bar which screwed into the matchlock's sear bar. Squeezing the trigger bar would manipulate the sear bar which would pull the tumbler. The matchlock serpentine being attached to the tumbler drops into the priming pan when the tumbler is pulled by the sear bar attached to the trigger bar. The most common way of securing the trigger bar to the sear bar was to thread

the end of the bar and screw it directly into the sear bar. The trigger bar would have a tendency to become loose from repeated usage of if the threading became stripped and the part could become unsecure and fall from the firearm altogether. A sear bar could have been lost if the individual part was discarded or if the entire musket was lost or a lock was discarded.



Image 3: Matchlock musket at Pilgrim Hall, purchased in 1637 for the Plimoth Garrison. (Pilgrim Hall. Plymouth. MA)

Images: Image 1: Iron Matchlock Bar-Trigger Fragment #767.00 / 106-35.

Image 2: X-Ray of object #767.00 / 106-35.

Image 3: Matchlock sear lock recovered from the site of James Fort, Virginia.

Image 4: Matchlock musket at Pilgrim Hall.

106-35 (Locus E) – Unidentified Cuprous Scrap

1 of 2

Object: Unidentified
Cuprous Scrap

Site Number: 106-35

Inventory Number:

Material: Copper / Brass

Dimensions:

175.00 2.0 W x 1.9 L CM

696.00 4.4 W x 3.0 L CM – Folded

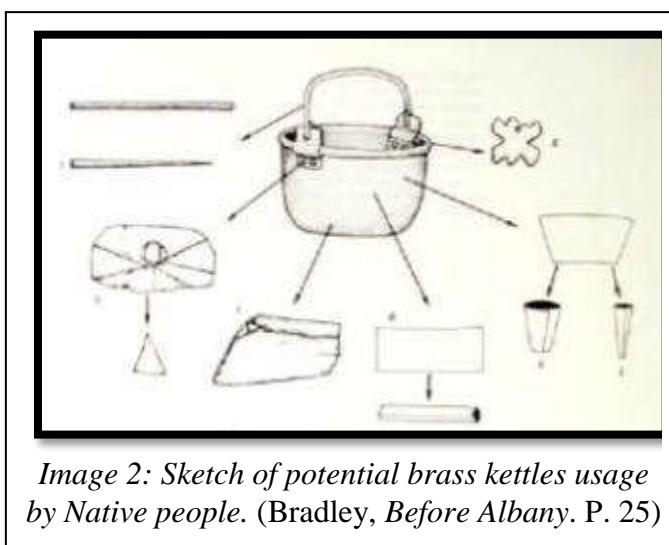
8.4 W x 3.0 L CM – Open



Description: These two cuprous objects

were recovered from the Saybrook Fort Core Area (106-35), Locus E – Wharf and Warehouse Site [Image 1]. The smallest of the two pieces, #175.00 / 106-35, has been folded almost perfectly in half and appears to have been cut into shape. It cannot be determined if it was specifically created in this shape or if it originally a larger form but the object was very weak along the fold and subsequently broke along the fold. The larger of the two pieces, #696.00 / 106-35, exhibits signs of wear on all sides and its original form is unknown

Comments: These cuprous artifacts are described as Unidentified Cuprous Scrap as their original form or intended purpose cannot be determined. Cuprous materials (brass and copper alloys) were commonly used for domestic and military purposes in the seventeenth century [Image 2, 3]. Native people of the region were known to break apart cuprous objects such as brass kettles to custom produce their own items



and Europeans would modify their personal possessions as well if the need arose [Image 2]. It is possible that these items are domestic in nature, or possibly decorative. Being cuprous they could have also been pieces from a larger European military item such as a powder box.

Images:

Image 1: Cuprous (Brass) scraps recovered from Saybrook Fort Core Area (106-35), Locus E. #696.00 / 106-35; #175.00 / 106-35.

Image 2: Sketch of potential brass kettle usage.

Image 3: Brass pieces recovered from Jamestown, VA

Works Cited:

James W. Bradley. *Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664*. Albany, NY: University of the State of New York, 2005.



Image 3: Brass pieces recovered from the Werowocomoco Site in Jamestown, VA

106-35 (Locus E) – Possible Seventeenth Century Domestic Artifacts **1 of 2**

Objects: Cast Cuprous Bell
Perforated Cuprous Piece
Cast Iron Kettle Fragment
Hand Wrought Iron Hook

Site Number: 106-35

Inventory Numbers:

169.00; 843.00; 847.00

941.00; 1025.00

Material: 169.00 - Cuprous / Brass
843.00 – Cast Iron
941.00 – Hand Wrought Iron
1025.00 – Cuprous / Brass

Dimensions:

169.00	4.2 cm x 3.7 cm (folded)
843.00	6.6 cm x 4.2 cm
941.00	14.7 cm x 4.5 cm
1025.00	3.9 cm x 3.0 cm



Image 1: Possible Seventeenth Century domestic items recovered from Saybrook Fort Core Area (106-35), Locus E



Image 2: (Circled) Cuprous Cast Bell from the Second Battle at Nipsachuck Site (200-2507) along with other ferrous and cuprous domestic objects.

Description: This assemblage of seventeenth century domestic artifacts was recovered from the Saybrook Fort Core Area (106-35), Locus D – Saybrook Fort site. After further research they appear to be fragments of commonplace seventeenth century domestic items a cast cuprous bell (#169.00), an unidentified perforated cuprous fragment (#1025.00), a cast iron kettle fragment (#843.00), and a hand wrought iron hook (941.00).

106-35 (Locus E) – Possible Seventeenth Century Domestic Artifacts **2 of 2**

Comments: The identified seventeenth century domestic artifacts, and possible trade items, were recovered from within the same general special location within the Saybrook Fort Core Area (106-35) which was designated Locus E – Warehouse and Wharf Site. In addition, several military artifacts and architectural artifacts were recovered from Locus E. The total sum of these assemblages was used to help identify the prospective Saybrook Fort site (Locus D) related combat actions in the vicinity (Locus A).

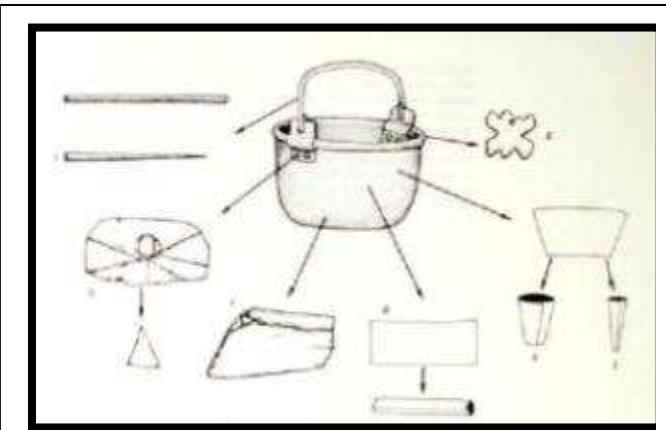


Image 2: Sketch of potential brass kettles usage by Native people. (Bradley, Before Albany. P. 25)

- Images:**
- Image 1: Assemblage of Seventeenth Century domestic artifacts (106-35).
 - Image 2: Seventeenth Century Scissor fragments from Plymouth, MA.
 - Image 3: Sketch of potential brass kettles usage by Native people.

Works Cited:

James W. Bradley. *Before Albany: An Archaeology of Native-Dutch Relations in the Capital Region 1600-1664*. Albany, NY: University of the State of New York, 2005.

106-35 (Locus E) – Seventeenth Century Ceramic Shards

1 of 2

Object: Seventeenth Century Ceramic Shards

Site Number: 106-35

Inventory Number: 856.00; 1440.00;
2098.00

Material: Red Earthenware
Delftware
North Devon slipware

Dimensions:

856.00	1.7 cm x 1.5cm
1440.00	7.0 cm x 3.0 cm
2098.00	1.2 cm x 1.0 cm

Description: These ceramic shards were recovered from Saybrook Fort Core Area (106-35), Locus E – Wharf and Warehouse Site. Laboratory analysis concludes that these ceramic shards were the remains of North Devon, Delft, and Lead-glazed Earthenware. These ceramic types were commonly produced and used in the first-half seventeenth century.

Comments: During the sixteenth and seventeenth centuries, domestic pottery was common items in Europeans households. Ceramic production was a major industry in most European cities and was a commonly exported item. People of all classes consumed a variety of affordable ceramic types such as coarse or glazed red earthenwares, delftware, and coarse North Devon-wares.



Image 1: Several ceramic shards recovered from Saybrook Fort Core Area (106-35), Locus E. #856.00, 1440.00, 2098.00 / 106-35



Image 2: Dutch "Kitchen Interior" by Willern Kalf Ca. 1693 which prominently features ceramic vessels in the foreground.

During the seventeenth century North Devon pottery was also a mass-produced ceramic exported to North America. Hundreds of thousands of North Devon ceramic shards have been recovered by the National Park Service during their Jamestown, Virginia excavations. In Virginia an important trade relationship between tobacco planters and English North Devon pottery makers grew and many



Image 3: Seventeenth century ceramic vessels reproduced at Plimoth Plantation, Plymouth, MA.

of these vessels likely arrived in New England as well. Other examples have been found in Maryland and Newfoundland. Delftware is a tin-glazed earthen ware first produced in Delft, Holland in the early seventeenth century and resembles porcelain at first glance. The greatest amount of delftware was produced during the seventeenth century. Although salt-glazed stonewares were produced in the early seventeenth century in the German states and the Netherlands, such as the distinctive “Bartmann” or “Bellarmine” vessels, but no evidence of these vessels were recovered.

Images:

Image 1: Ceramic Shards, Saybrook Fort Core Area (106-35), Locus D

Image 2: Dutch “Kitchen Interior” by Willern Kalf Ca. 1693.

Image 3: Ceramic vessels reproduced at Plimoth Plantation, Plymouth, MA

Appendix II: Landholders

Y / N / Verbal	Parcel Address	First Name	Last Name	Mailing Address	Town	State	Zip	Acreage
Y	100 College Street	Cypress	Cemetery	PO Box 40	Old Saybrook	CT	06475	11
Verbal	200 North Cove Road	Osprey Way	LLC	200 North Cove Road	Old Saybrook	CT	06475	1.89
Verbal	87 Church Street	Richard	Bourn	87 Church Street	Old Saybrook	CT	06475	0.77
Verbal	102 College Street	Susan	Duquette	65 Janis Road	Westfield	MA	01085	0.6
Verbal	66 Church Street		Bourn	66 Church Street	Old Saybrook	CT	06475	0.18
Y	115 College St, (College Street-Park)		Town of Old Saybrook	302 Main Street	Old Saybrook	CT	06475	19.5
Y	75 College Street	Alan & Phyllis	Sedlock	75 College Street	Old Saybrook	CT	06475	0.42
Y	2 Cromwell Court	Angela	Kulmann	2 Cromwell Court	Old Saybrook	CT	06475	0.48
Y	18 Willard Avenue	Charles	Trine	18 Willard Avenue	Old Saybrook	CT	06475	0.48
Y	16 Cromwell Court	David & Caroline	Miller	16 Cromwell Court	Old Saybrook	CT	06475	0.7
Y	89 College Street	Jean	Malinowski	89 College Street	Old Saybrook	CT	06475	0.44
Y	42 Cromwell Place	Linda & George	Knightly	42 Cromwell Place	Old Saybrook	CT	06475	1.25
Y	6 Gibbons Circle	Martha	McVerry	6 Gibbons Circle	Old Saybrook	CT	06475	0.5
Y	69 Cromwell Place	Richard & Louise	Tietjen	69 Cromwell Place	Old Saybrook	CT	06475	0.9
Y	5 Cromwell Court	Robert & Janet	Brown	5 Cromwell Court	Old Saybrook	CT	06475	0.48
Y	33 Cromwell Place	Robert & Virginia	Shreders	33 Cromwell Place	Old Saybrook	CT	06475	0.48
Y	11 Fenwick Street	Sandra	Smith	15630 Vinola Drive	Montverde	FL	34756	0.14
Y	23 Cromwell Place	Thomas	Crow	23 Cromwell Place	Old Saybrook	CT	06475	0.66