Review of Explorations, Archaeological Findings and Original Workings at Smith’s Cove
Oak Island, Nova Scotia

Presentation By
Les MacPhie
and
John Wonnacott
August 12, 2006
Western Shore
Nova Scotia
Format of Presentation

1. **Part 1 by Les MacPhie**
   
   Review of Searchers’ work at Smith’s Cove

2. **Part 2 by John Wonnacott**
   
   Engineering analysis of original work at Smith’s Cove
Outline for Part 1 of Presentation

1. Objectives of Review
2. Geological Setting
3. Review of Findings by Searchers up to 1965 at Smith’s Cove
4. Findings by Triton in 1970 Excavation at Smith’s Cove
5. The Location of the 1850/66 Cofferdam
6. Evaluation of Carpentry Marks, Saw Marks and Nails Associated with the Timber Structure
7. Summary of Evidence for Time Frame of Smith’s Cove Workings
8. Conclusions on Flood System, Timber Structure and Time Frame of Smith’s Cove Workings
9. Acknowledgements
1. Objectives of Review

1. Provide a review and analysis of major explorations by Searchers in the Smith’s Cove area with the objectives of:
   • Examining the evidence for the flood tunnel
   • Evaluating the timber structure exposed in 1970 as original work or Searchers’ work and
   • Defining the time frame of the original workings.

2. Share information and ideas with the ultimate objective of solving the Oak Island Mystery by the cooperative effort of researchers and interested parties.
2. Geological Setting

1. Bedrock and surface geology
2. Glacial flow and deposition
3. Sea level rise
4. Offshore bottom conditions at Smith’s Cove
5. Recent changes from aerial photos 1929 to 1992
6. Conclusions on geology
Bedrock Geology Western Mahone Bay

Ref: Giles 1981
Surface Geology and Drumlins
Western Mahone Bay

Ref: Stae and Fowler 1981
Effect of Glacier Flow on Drumlín Formation

Ref: Stae and Brown 1989

Ref: Eyles 1983
Chart of Glacial Deposition in Nova Scotia

Phase 1
40-75 ka

Phase 2
21 ka

Phase 3
15-18 ka

Phase 4
12-13 ka

Wood at 125 feet in Golder BH 202 Carbon Dated to 25 000 yrs BP

Ref: Stae 2004
Glacial Till Layers at Money Pit and 10X

Stoney Till and Lawrencetown Till Phases 2 to 4, 12-30 ka BP

Flood Tunnel at Money Pit

Hartlen Till Phase 1 (or older)

Hartlen Till

Wood at 125 feet in Golder BH 202 Carbon Dated to 25 ka BP

Legends

1. Reworked Soil
2. Hard Brown to Grey Clayey Till with Boulders
3. Hard Grey, Grey Brown and Brown Stratified Clayey Silt and Sandy Silt (Till)
4. Dense Brown and Grey Sandy Till with Boulders
5. Broken Anhydrite with gypsum and limestone layers and with open or soil filled cavities
   - Open Cavity or Very Loose Soil in Broken Anhydrite
   - Soil Layer in Broken Anhydrite
6. Competent Anhydrite Bedrock
7. Bedrock at Bottom of Chappell Shaft Exposed by Hamilton at 157 Feet in 1941
8. Drilling in Hidden Shaft From 150 to 160 Feet By Hamilton in 1940 Indicated Gravel and Soft Material

Figure 4A
Geotechnical Section A-A Through Money Pit and 10X
Relative Sea Level Curve for Atlantic Canada

Lowstand about 70 m (230 feet) below present sea level 12,000 years ago

Lagoon in Mahone Bay connected to Ocean 6,000 years before present (sea level -18m)

Ref: Stae et al 2001
Connection of Mahone Bay to Ocean
6000 Years BP

Ref: Barnes and Piper 1978
Land Submergence with Rise in Sea Level

8000 yrs BP
WL -30m

6000 yrs BP
WL -18m

0 yrs BP
WL 0m

Ref: Daigle 2005
Mutlibeam Bathymetry at Oak Island July 1996

SE Phase 4
12-13 ka BP

SSE Phase 3
15-18 ka BP

Water Depth
about 30 feet

Ref: Fader and Courtney 1998
Side Scan Survey by Dave Delaney Aug 05

Frog Island Sh...

20 Feet
Oak Island Air Photos 1929 to 1992

1929

1945

1965

1992
Conclusions on Geology

1. The deep soil deposits at the east end of Oak Island consist of drumlin formations resulting from different phases of glacial advance over the past 75 thousand years.

2. The deep soil deposits are glacial tills of low permeability and the presence of natural pervious zones is very unlikely.

3. The sea bottom features around Oak Island are mainly the result of different directions of glacial advance followed by erosion and wave action during sea level rise.
3. Review of Findings by Searchers up to 1965 at Smith’s Cove

1. List of major explorations and earthworks at Smith’s Cove

2. Review of historical information on flood system at Smith’s Cove

3. Interpretation of evidence for flood tunnel

4. Conclusions on filter bed and flood tunnel
List of Major Explorations and Earthworks at Smith’s Cove up to 1965

1. 1850 - cofferdam and excavation by Truro Syndicate
2. 1866 - cofferdam and excavation by Halifax Group
3. 1897 - drilling and down hole blasting by Oak Island Exploration Company near shore to block flood tunnel
4. 1937 - Gilbert Hedden finds timbers with cross members attached by oak pegs
5. 1960 to 1965 - exploration by Robert Restall
6. 1965 - exploration by Robert Dunfield
**Drawing of Flood Tunnel and Filter Bed**

Published in 1893/95 Based on Work in 1850

- **Cellar to Smith’s House**
- **Flood Tunnel**
- **Filter Bed and Drains**
  - Sand and gravel
  - 2” Coconut fibre
  - 5” Eel grass
  - Beach stones
  - 5 box drains

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**Plan**

1. **MONEY PIT**
2. **PIT 110 ft. ABOUT 100 yrs. OLD.**
3. " 109 " " 43 " "
4. " 75 " " " " NO WATER.
5. " 35 " " " " WATER.
6. " 118 " " 40 " "
7. " ---- " 30 " "
8. **EXCAVATION ON THE SHORE FILLED WITH STONES. A RESERVOIR.**
9. **SUPPOSED TUNNEL FROM SHORE TO MONEY PIT.**
10. **CELLAR TO SMITH’S HOUSE.**
11. **BARN.**

**Cutaway View**

- Salt Water in Money Pit 1850
- Water 35 ft
- No Water 75 ft

Ref: Booklet – The Story of Oak Island 1895
Drawing of Flood Tunnel and Filter Bed Published in 1926 Based on Work in 1850 and 1897

Ref: Booklet – History of Oak Island, Nova Scotia, and of the Work Done There at Different Times to Recover Buried Treasure 1926

5 holes at 30 ft spacing and 5” diameter drilled and blasted by OITC in 1897

No reference to Shafts 4 and 5 by Truro Co in 1850

Hole 3 water at 80 ft 160# dynamite

Holes 1, 2, 4 and 5 No water 90-95 ft 50-75# dynamite

Tunnel length shown as 460 feet and rise is about 10 to 15 feet
## Summary of Flood Tunnel Evidence at Shafts 4 and 5 (1850) and Holes 1 to 5 (1897)

<table>
<thead>
<tr>
<th>Source</th>
<th>Author(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Nova Scotian  Aug 20, 1861</td>
<td>Unknown</td>
<td>Two shafts struck flood tunnel No depth reported</td>
</tr>
<tr>
<td>Liverpool Transcript  Oct 16, 1862</td>
<td>J. B. McCully</td>
<td>Shaft struck water, piles driven No depth reported Flow at Money Pit reduced</td>
</tr>
<tr>
<td></td>
<td>Manager of Operations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truro Company 1845-50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter 1863</td>
<td>James McNutt</td>
<td>Shaft struck drain at 75 feet, spiles driven Flow at Money Pit reduced</td>
</tr>
<tr>
<td></td>
<td>Oak Island Association</td>
<td></td>
</tr>
<tr>
<td>The Colonist  Jan 2 and 7, 1864</td>
<td>A Member of the Oak Island Association</td>
<td>Shaft struck drain at 74 feet, piles driven Flow at Money Pit reduced</td>
</tr>
<tr>
<td>Prospectus of the Oak Island Treasure Company 1893/95</td>
<td>Frederick Blair and Adams A. Tupper (at OI Summers 1850-51-63)</td>
<td>Shaft 4 to 75 feet, no water Shaft 5 to 35 feet, struck water after prying up a large boulder</td>
</tr>
<tr>
<td>Prospectus of Oak Island Treasure Company, 1900</td>
<td>Frederick Blair and others</td>
<td>First shaft no water, no depth reported  Second shaft water at 80 feet after prying up large boulder, no ref to 5 holes (see Note)</td>
</tr>
<tr>
<td>History of Oak Island Booklet, 1926</td>
<td>Frederick Blair and others</td>
<td>No ref to Shafts 4 and 5 Detailed results given for 5 holes in 1897 and flood tunnel at 80 feet (see Note)</td>
</tr>
</tbody>
</table>

**Note:** In 1897 the Oak Island Treasure Company drilled 5 holes of 5 inch diameter to depths of 80 to 95 feet across the alignment of the flood tunnel at a location 50 feet from the high water line. No water in Holes 1, 2, 4, and 5, set off 50 to 75 pounds of dynamite in each hole. Hole 3 in the middle found salt water and boulders at 80 feet, set off 160 pounds of dynamite.
## Summary of Flood Tunnel Evidence at Cave-in Pit

<table>
<thead>
<tr>
<th>Source</th>
<th>Author(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various</td>
<td>Various</td>
<td>Sophia Sellars oxen fell into Cave-in Pit in 1878</td>
</tr>
<tr>
<td>Prospectus of Oak Island Treasure Company, 1900</td>
<td>Frederick Blair and others</td>
<td>Excavated to 52 feet in 1894 in previously dug circular hole 6 to 8 feet diameter. Drilled to 16 feet below bottom of pit, next day salt water in pit.</td>
</tr>
<tr>
<td>History of Oak Island Booklet, 1926</td>
<td>Frederick Blair and others</td>
<td>The workers of the Oak Island Treasure Company opened the Cave-in Pit to 55 feet, found salt water at that depth and quit.</td>
</tr>
</tbody>
</table>
Flood Tunnel and Filter Bed Profile
Original Interpretation by Harris and MacPhie

Money Pit
Ground Surface
Mean Sea Level
Bottom of Money Pit at 111 feet depth (1897)
Flood Tunnel filled with smooth beach stones (See Detail)
Cave-In Shaft (No. 11)
Shaft No. 5
Assumed Shaft to Flood Tunnel
Filter Bed and Feeder Drains at Smith's Cove

Water 80 ft Shaft 5 (Blair 1900)
Water 80 ft Hole 3 (1926 Booklet)

Glacial Till Overburden
Approximate Bedrock Surface

Elevation – Feet
Horizontal Distance – Feet
Flood Tunnel and Filter Bed Profile
New Interpretation of Evidence

Money Pit

Ground Surface

Mean Sea Level

Water 35 ft
Shaft 5
(Blair 1893)

No Water 75 ft
Shaft 4
(Blair 1893)

Glacial Till
Overburden

Tunnel length about 520 feet
and rise about 60 feet

Bottom of Money Pit at 111 feet depth (1897)

Filter Bed and Feeder Drains at Smith’s Cove

Water 80 ft
Hole 3 ?
(1926 Booklet)

No Water 90-95 ft
Holes 1, 2, 4 and 5
(1926 Booklet)

No Water 70 ft
Shaft No. 5 4

Boring

(1926 Booklet)

Approximate
Bedrock Surface
(Projected from
Money Pit)
Possible Interpretations of Salt Water in Hole 3 in 1897

Two possible interpretations of how Hole 3 in 1897 encountered salt water and boulders at 80 feet depth

1. Hole 3 was close to the flood tunnel and, when the hole was at 80 feet (say on boulders in the till), the salt water broke in from the flood tunnel which projects to a depth of about 30 feet at Hole 3.

2. The extensive blasting in Holes 1, 2, 4 and 5 disturbed the till (and possibly bedrock) at 80 to 95 feet depth making a highly pervious zone which yielded salt water in Hole 3 at 80 feet. Based on the Ghyben-Hertzberg relationship salt water would be expected at this location.
Flood Tunnel and Filter Bed Profile
Possible Interpretations of Water in Hole 3

1. Water Entered Hole 3 from Flood Tunnel (Projected from Money Pit)
2. Blasting in Holes 1, 2, 4, and 5 Created Pervious Zone at 80 ft
Sketch of Drain System by Dunfield 1965

Smith's Cove

Remnant of old dam
1850

Pier

Tile U. 3

Seal skirts boulder

Junction of drains
Bottom depth = 24 ft.

Drain located & plugged in 1850. Trench & tunnel are Restall's examination of drain.

After plugging, water in money pit was set by 50%.

Drain @ 34 ft.

Searchers shaft @ 75', spouting. Water slowly rises & falls with tide. 1850.

Water tunnel to Money Pit

"V" drain - Elev. B-B'

Restall's drill - water tunnel @ 57 ft. Tried pumping in cement. Blew out in surrounding ground.

Elev. A-A'

Field Sketch of Drain System 7-28-65

Scale 1" = 60'

Robert R. Dunfield
The Case for the Flood Tunnel

1. The possible presence of pervious zones in the till is remote due to the geological origin of the till.
2. If the flood system was natural, the original workers would have been flooded out.
3. Salt water was encountered on second flooding of the Money Pit in 1850 and fresh water would be expected at that depth. Fresh water was found in some inland pits at depths of up to about 130 feet.
4. In 1897 the entrance to the flood tunnel at the Money Pit was exposed at 111 to 114 feet depth.
5. Blasting in Hole 3 in 1897 caused boiling of water in the Money Pit and Cave-in Pit.
Conclusions on Filter Bed and Flood Tunnel

1. The filter bed (with coconut fibre and eel grass) and box drain system in the tidal zone at Smith’s Cove is original work.

2. A flood tunnel from Smith’s Cove to the Money Pit was part of the original work although there is some uncertainty in the configuration of the tunnel profile.
4. Findings by Triton in the 1970 Excavation at Smith’s Cove

1. Overview of 1970 Cofferdam and Excavation

2. Photos of artifacts

3. Analysis of artifacts

4. Photos of U shaped timber structure

5. First analysis of U Shaped timber structure
Overview of 1970 Cofferdam and Excavation

Start of Construction September 1970

Aerial View October 8, 1970

Wave Action October 4, 1970

Aerial View 1969 Before Cofferdam

Cofferdam failed about late Oct 1970

Aerial View October 8, 1970
Plan of 1970 Cofferdam and Excavation at Smith’s Cove

Survey Grid by Bates for 1970 Excavation
1. Inclined log ramp
2. U shaped timber structure
3. Row of 2” timbers
4. Row of 13/4” horiz boards
5. Boards - clay in between
6. Searcher’s shaft
7. 3” metal pipe 14’ long
8. Two pieces of a dish
9. Nail from cross timber
10. Piece of dish and mug
11. Wood box 3’ below log

This section of timber structure not exposed
Aerial View Oct 8, 1970 and Artifact Locations

1. Inclined log ramp
2. U shaped timber structure
3. Row of 2" timbers
4. Row of 1 3/4" horiz boards
5. Boards - clay in between
6. Searcher’s shaft
7. 3" metal pipe 14’ long
8. Two pieces of a dish
9. Nail from cross timber
10. Piece of dish and mug
11. Wood box 3’ below log
Photos of Artifacts at Smith’s Cove

Wood Box (sides and bottom oak, ends spruce)
Plank 19\(\frac{1}{2}\) inches wide (eastern hemlock)

Wood Box Insitu
3 ft below timber structure

Wrought Iron Rule

Cast Iron, Dish, Wood
Photos of Artifacts at Smith’s Cove

Spanish American Scissors
Reportedly found under a drain at Smith’s Cove, scissors are about 8” long

Smithsonian Institution indicated such scissors were made as late as mid 19th century

Heart Shaped Stone
Found in 1967 in the tidal zone of Smith’s Cove at 3 ft depth

Smithsonian Institution indicated stone was “a man-made shape”
Analysis of Artifacts

   - Rule is hand made
   - Numbers and lines made with set of mixed punches
   - “Stick my neck out” estimate first half of 19th century (1800 to 1850)

   - Wrought iron rule (possibly part of square) difficult to date
   - Wrought iron rules introduced late 1500s to early 1600s
   - Figures and marks hand engraved
   - Made before 1783 “as a guess”

   - Don’t know what it is

   - First half of 19th century (1800 to 1850)

5. Five Nails/Spikes and one Tool (Stelco Report Sept 25, 1970)
   - Wrought iron, hand forged
   - Two microsections show low carbon stock with slag stringers
   - From microsections and hand working, items produced prior to 1790
   - Nail from cross piece is machine-sheared from plate 5/32” thick

   - “made in this manner as late as the mid-19th century in North Mexico and Southwest United States”
U Shaped Timber Structure

- South Arm
- East Side
- North Arm
- Cross Piece Removed
- Section Removed
- This section of timber structure not exposed
Photos South Arm and East Side of Structure

Possible Inclined Saw Marks

South Arm

East Side

South Arm

East Side
Photos East Side of Timber Structure

South Arm

East Side

No Notches or Cross Timbers

Oak Peg

East Side

3

4

3

4
Photos North Arm of Timber Structure

Oak Peg

No Boards on Inclined Timbers

Notch for Missing Cross Timber

North Arm

North Arm of Timber Structure

42
Photos North Arm of Timber Structure
First Analysis of Timber Structure
Original Work or Searchers’ Work

1. John Dunton (DI AND Fortress of Louisbourg Report Nov 25, 1970) examined photos of the timber structure and did not know what it was “as much in the dark as you.”

2. The Roman numerals on the north arm of the timber structure show different workmanship from those on the east side. The cross timbers at the north arm are not present at the east side and the south arm. Could the north arm be of different origin?

3. Carbon dating in 1969 and 1970 on samples of the timber structure give dates ranging from about 300 to 1100 years before present (950 to 1650) and cannot be used to reliably determine the age of the structure although one recent result on the north arm gives a later date.

4. The wrought iron nails and spikes were dated prior to 1790 by Stelco although one nail from the north arm was machine-sheared (cut nail).

5. There is conflicting evidence for the timber structure as original or Searchers’ work so two further areas of investigation were pursued:
   • If the timber structure is significantly offset from the 1850 and 1866 cofferdams it is more likely original work. What are the respective locations?
   • The chronology of using Roman numerals to mark timber joints, and of using cut nails, may give a time frame for the timber structure.
5. The Location of the 1850/66 Cofferdam and the Timber Structure

1. Relevance of cofferdam and timber structure locations
2. Air photos of Smith’s Cove 1929 to 1992
3. Old photos of Smith’s Cove Pre-1897
4. Cofferdam surveys compared to air photos
5. Survey of U shaped timber structure compared to air photos
6. Conclusions on location of 1850/66 cofferdam
Relevance of the 1850/66 Cofferdam and Timber Structure Locations

1. The U shaped timber structure may be the remnant of cofferdam construction by Searchers in 1850 and 1866 or may be original work.

2. The location of the timber structure in relation to the previous cofferdams will provide information to assess this issue.

3. If the timber structure is a significant distance from the 1850/66 cofferdam location then it is original work. If the timber structure is at the same location as the 1850/66 cofferdam then it may or may not be original work.
Aerial Photos of Smith’s Cove 1929 to 1992

1850/66 Cofferdam not visible

Large Boulder

1850/66 Cofferdam not visible

1850/66 Cofferdam not visible

Assumed Remnants of 1850/66 Cofferdam
Pre-1897 Photos of South Shore and Smith’s Cove

- Smith’s House?
- Large Boulder
- 1850/66 Cofferdam
- Cellar to Smith’s House
- Money Pit Area from South Shore Cove
- Smith’s Cove Looking toward Isaac’s Point at High Tide
- Cofferdam at Smith’s Cove Looking Northeast at Low Tide

1895 Sketch
Comparative Photos of Smith’s Cove Pre-1897 and About 1897

Smith’s Cove Looking toward Isaac’s Point Pre-1897

Smith’s Cove Looking toward Isaac’s Point About 1897 (R V Harris 1958 and 1967)
Comparative Photos of 1850/66 Cofferdam Pre-1897 and from R V Harris Book

Cofferdam at Smith’s Cove Looking Northeast at Low Tide (Pre-1897)

Supposed to be 240 feet

Cofferdam at Smith’s Cove Looking Northeast at Low Tide (R V Harris Book, date of photo not provided but described as 1866 Cofferdam)
Part of the Lozier Survey of 1916 (Redrawn)

1850/66 Cofferdam by 1916 Lozier Survey

Main Pit

Large Boulder
Cofferdam from 1916 Lozier Survey Compared to 1850/66 Cofferdam

1916 Lozier Survey

1945 Air Photo with Cofferdam by Lozier Survey

Section of cofferdam removed by Hedden for 1937 wharf construction

Shoreline Lozier Survey

Cofferdam by 1916 Lozier Survey

Large Boulder

1850/66 Cofferdam

Large Boulder

240 feet

50 ft

100 Feet

100 Feet
The Roper Survey of 1937
Redrawn by George T Bates 1970

Cofferdam by 1937 Roper Survey
Large Boulder
Cofferdam from 1937 Roper Survey Compared to 1850/66 Cofferdam

- **Shoreline Roper Survey (High Water Mark)**
- **Cofferdam by 1937 Roper Survey**
- **Large Boulder**
- **Wharf Constructed in 1937 by Hedden**

1937 Roper Survey

1945 Air Photo with 1866 Cofferdam by Roper Survey

- **1850/66 Cofferdam**
- **Large Boulder**
- **70 ft**
- **240 feet**

100 Feet Scale
1970 U Shaped Timber Structure Compared to 1850/66 Cofferdam on 1945 Air Photo

Sketch of Smith’s Cove

1945 Air Photo with Cofferdams by Lozier and Roper Surveys

1945 Air Photo with 1970 and 1850/66 Cofferdams, and Timber Structure
Conclusions on the Location of the 1850/66 Cofferdam and the Timber Structure

1. The Lozier survey of 1916 and the Roper survey of 1937 show the cofferdam some 50 to 70 feet closer to shore than the inferred location of the 1850/66 cofferdam shown on the 1945 air photo.

2. The 1929 and 1931 air photos were taken at higher tide and the location of the 1850/66 cofferdam cannot be seen, thus these photos cannot be used to verify the cofferdam location shown on the Lozier and Roper surveys.

3. It has been assumed that the Lozier and Roper surveys are not necessarily accurate. This assumption suggests that the east side of the U shaped timber structure corresponds to the alignment of the 1850/66 cofferdam.

4. A likely scenario is that the remnant of the earth structure is along the alignment of the 1850 cofferdam and that the U shaped timber structure is along the alignment of the 1866 cofferdam.
6. Evaluation of Carpentry Marks, Saw Marks and Nails Associated with the Timber Structure

1. Carpentry marks on old timber structures

2. Saw marks on boards

3. Evaluation of nails
Carpentry Marks on Timber Frames
The Scribe Rule and the Square Rule

1. The Scribe Rule and the Square Rule are terms used to define the transition between the traditional method (with carpentry marks) and the standard method (without carpentry marks) of timber framing. In New England, this transition started in the 1830s.

2. The Scribe Rule is the name given to the traditional method of laying out the timber frame on the ground in the Carpenter’s yard and making each joint a unique fit. The timbers are then marked with Roman numerals or equivalent for assembly at the building site.

3. The Square Rule is the name given to the standard method of defining a list of required timbers and preparing them (sometimes in different yards) to a standard pattern for each type of joint.
Carpentry Marks on Timber Frames
York Minster Chapter House, U. K.
Late 13th Century

Ref: Yoemans 1999
Carpentry Marks on Timber Frames
Leigh Court Barn, Worchester, U. K., ca 1325

Barn Looking West

Interior of Barn

Barn in Plan
140 Feet by 35 Feet

Roman Numeral Identification of Bays

Sketch and Pencil Rubbing of Carpentry Mark III, Matching Mark Assumed Hidden on Tendon

Ref: Yoemans 1999
Carpentry Marks on Timber Frame Dwelling, Deerfield, New Hampshire, ca 1800

Ref: Garvin 2001
Pit Saws

Pit saw used in ship building

Pit saw marks on wood from ship Belle 1600s

Recreation of pit saw, Puritan Settlement Plymouth 1600s

Pit saw in UK 1800s

Top Dog

Bottom Dog
Old Sawmills and Saw Marks on Boards

Reciprocating Sawmill
Used in New England from the mid 1600s to the mid 1800s

Circular Sawmill
Used in New England from the early 1800s

Board with Vertical Saw Marks from Reciprocating Blade

Board with Curved Saw Marks from Circular Blade

Ref: Garvin 2001
Evolution of Nails

Wrought Nail

Cut Nail - Hand Headed

Wire Nail

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Date</th>
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<tbody>
<tr>
<td>Wrought Nail</td>
<td>Hand-wrought nail, before circa 1800.</td>
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<tr>
<td>Cut Nail - Hand Headed</td>
<td>Type A cut nail, circa 1790-1830.</td>
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<tr>
<td>Cut Nail - Machine Headed</td>
<td>Type B cut nail, circa 1820-1900.</td>
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<tr>
<td>Wire Nail</td>
<td>Wire nail, circa 1890 to present.</td>
<td></td>
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</table>

Ref: glasgowsteelnail.com

Ref: uvm.edu (Univ Vermont)
Conclusions on Carpentry Marks, Saw Marks and Nails

1. Carpentry marks (Roman numerals) were used for centuries and were phased out in New England about 1830.

2. There is no reliable date for phase out of pit saws although they were uncommon in New England since water powered reciprocating sawmills were introduced in the mid 1600s, essentially with first settlement.

3. Cut nails were first manufactured in New England (not UK) starting in 1790. This is a reliable date.
7. Summary of Evidence for Time Frame of Smith’s Cove Workings

1. Summary of evidence for original and Searchers’ work at Smith’s Cove

2. Time chart giving range of dates for components of Smith’s Cove workings

3. Conclusions
### Summary of Evidence for Original and Searchers’ Work at Smith’s Cove

| Items Related to U Shaped Timber Structure                                                                 |
|-----------------------------------------------------------------------------------------------|----------------|----------------|
| 1. Carpentry marks on timber structure (phased out about 1830 in New England)                      | L              | P              |
| 2. Pit saw marks on boards at east side of the timber structure (pit saws phased out in 1600s)     | L              | P              |
| 3. One cut nail embedded in a cross piece at the north arm of timber structure (used 1790 to 1900) | No             | Yes            |
| 4. Five hand-forged wrought iron nails and spikes in timber structure (Stelco: pre 1790, phased out early 1800s but used as late as about 1900) | L              | P              |
| 5. Carbon dating by Brock Univ in 1970 of inclined beam, log sill and oak peg from north arm of timber structure (1570±150 yrs, 1645±115 yrs, 1676±159 yrs) | L              | P              |
| 6. Recent carbon dating of log sill in north arm of timber structure (1860±40 years)               | P              | L              |

| Other Items                                                                                   |
|-----------------------------------------------------------------------------------------------|----------------|----------------|
| 7. Metal Rule (Stelco: such rules introduced late 1500s to early 1600s, dates to before 1783 as a guess) (Louisbourg: 1800 to 1850 as an estimate) | P              | L              |
| 8. Spanish American scissors (made to mid 1800s)                                              | L              | P              |

**Legend:**

- **L** - Likely
- **P** - Possible (cannot be excluded)

**Note 1:** Carbon dating by Brock Univ in 1969 on inclined beam and oak peg from timber structure indicated dates of 815±110 yrs and 1090±140 yrs.
Time Chart Giving Range of Dates for Components of Smith’s Cove Workings

1. Carpentry Marks (Roman Numerals)
2. Pit Saw Marks East Timber
3. Cut Nail North Timber
4. Wrough Iron Nails (Various Places)
5. 1970s C14 Date North Timber
6. Recent C14 Date North Timber
7. Metal Rule
8. Scissors

Year
1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000

Original -1780
Searchers +1850

1969 C14 on Timber 815 and 1090
8. Conclusions on Flood System, Timber Structure and Time Frame of Smith’s Cove Workings

1. The flood tunnel exists and is man made. The filter bed and flood tunnel are original work.

2. The most likely alignment of the flood tunnel is a uniform upward slope from 114 feet depth at the Money Pit to about 25 feet depth near the shore (length about 520 feet, vertical rise about 60 feet allowing for 29 feet difference in ground elevation, slope about 11.5% or 6.6 degrees or 8.7H:1V).

3. The artifacts found at Smith’s Cove cannot be specifically related to Searchers’ work or original work and thus cannot be used to select a reasonable time frame for the original filter bed and flood tunnel work.

4. The north arm of the timber structure is Searchers’ work. The east side and south arm of the timber structure are likely Searchers’ work. Therefore the evidence from the timber structure cannot be used to select a time frame for the original filter bed and flood tunnel work.

5. The time frame of the original filter bed and flood tunnel work is best estimated considering information from other areas of Oak Island and the historical context. The time frame of the original work is judged from all evidence to be about 1650 to 1750.
Treasure from the Concepción (Leftovers)
*Nuestra Senora de la pura y limpia Concepción*

Articles Recovered in 1978 by Burt Webber
Ref: National Geographic July 1996
When the Treasure is Found

“It’s gold—we’re rich! With all this loot, what’s the first thing you’re going to do?”
9. Acknowledgements

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