Oak Island Treasure:

The Triumph of Hope over Reason

Peter Fortune, Ph.D.

There is an island in the North Atlantic where people have been looking for an incredible treasure for over 200 years. So far, they have found bits of gold chain, a stone slab with strange symbols carved into it, even a 17th century Spanish coin. To date, six men have died trying to solve the mystery. And, according to legend, one more will have to die before the treasure can be found.

-- Leader to episodes of *The Curse of Oak Island,* History Channel

Humans tend to see patterns when, in fact, results are completely random.

--Richard A. Muller, psychologist

The Truth is Out There!

-- Fox Mulder, character in the television series *The X Files*

2016

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Introduction

In the late 1980s my wife and I were on a driving trip to Nova Scotia. We stayed at the Oak Island Inn[1]— a resort hotel in the town of Western Shore on Mahone Bay, near the town of Chester. The hotel was named for a nearby island, a name to which I paid no attention until it dawned on me that the eponymous island was *the* Oak Island. I had recently read an article in *Smithsonian Magazine* about the Oak Island treasure hunt.[2] That article was based on a 1965 *Reader's Digest* article[3] that was itself a condensation of an article in an issue of *The Rotarian* in that year. And so it goes on Oak Island.

The Legend

The *Reader's Digest* article has been an inspiration to generations of Oak Island treasure hunters, as previous articles were inspirations to earlier generations. All of this traces back to a treasure hunt dating from 1795 when, oral history says, Daniel McGinnis, a boy from Western Shore or Chester, reported seeing strange lights on nearby Oak Island. McGinnis rowed over to investigate and found an area where oak trees had been cut but one tree was left standing. From a limb of that tree hung an old block and tackle, and the ground below it was depressed as if a hole about eight feet in diameter had been dug, then filled in—something must have been hidden underground!

The next day McGinnis returned with two young friends, Anthony Vaughan and John Smith, to excavate the hole. After digging down for only a few feet they found a layer of flagstones. At a ten-foot depth they encountered a platform of oak logs. After another ten feet they found another set of oak logs, and yet another set at the thirty-foot depth. Clearly there had been a mining operation at the site and the

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[1] Now the inn is named the Atlantica Oak Island Inn and Resort.

[2] See [**A7**]

[3] See [**A5**]

marks or oak platforms were intended to mark depths and, perhaps, to provide stability to the pit's walls.

After thirty feet the boys gave up, realizing that while "something was there"—the litany of Oak Island—a more organized exploration was required. Exploration would begin again in 1803, and for well over 200 years treasure hunters would try to determine "what is there." To date it has cost six lives and perhaps $25 million (see Appendix).

The Legend's Fragility

Like the game of Telephone, start from simple observations and grow into complex and garbled stories with subsequent retelling. Even at the outset this Oak Island legend errs in several ways. Daniel McGinnis (1758-1827) was actually Donald (Daniel?) McInnes, a former British officer during the American Revolution who in 1783, after the Revolution, moved from North Carolina to Nova Scotia; we will stick to tradition and call him "Daniel McGinnis" until he objects.

In 1788 McGinnis moved to Oak Island and bought Lot 28. Thereafter he bought Lot 23 in 1790, Lot 27 in 1791, and Lot 1 in 1794. McGinnis was listed as a "farmer" in both the 1791 and 1794 poll tax listings for Lunenburg County's "heads of households." In 1795—the year the Money Pit was located—McGinnis married a local woman from Western Shore. He died on Oak Island in 1827 at age 69, his wife predeceasing him, leaving a will indicating nine children. His age at death would place him at age 25 when he left the army and moved to Nova Scotia, at age 30 when he came to Oak Island, and at age 37 when the Money Pit was first investigated.[4]

Duncan Smith, father of John Smith (1775-1857), is recorded as selling Oak Island Lot 24 in 1785 when John was age 10, then dying soon after. John's mother remarried to an Oak Islander named Neal McMullen, but John Smith was listed on the 1794 Lunenburg County poll tax list as a farmer on Oak Island, therefore a "head of household." He is recorded as purchasing the Money Pit's Lot 18 in 1795, the year

[4] See [**I1**/archives/03-2016:22].

the Pit was found.[5] Smith family records indicate that in later years he owned Lots 16-21. John Smith was age 20 when the pit was found on his soon-to-be Oak Island property.

Anthony Vaughan was also on the 1794 tax record as an Oak Island farmer. Some genealogical scouting reveals that Oak Island had two Anthony Vaughans, a father and son. Like Daniel McGinnis, Anthony Vaughan Sr. (1750-1835) was a British officer. He was age 31 when he bought Lot 14 in 1781, after which he bought Lots 15 and 16 in 1785.[6] The father sold some of his Oak Island property in 1804.[7] At the time the Money Pit was located Anthony Vaughan Sr. would have been 45.

Anthony Vaughan Jr. (1782-1860) was born on Oak Island and was age 13 at the time of the Oak Island pit's discovery in 1795. It seems probable that Anthony Vaughan Sr. was one of the three who discovered the Money Pit. In that case none of the three discoverers were "boys."

Furthermore, there was no need for the three "boys" to row over to Oak Island to investigate; they already lived on the island.

All of this early history demonstrates that even the foundation story of the Money Pit is questionable. This raises a fundamental question: if the foundation legend of Oak Island is in error, how credible are the details of the subsequent Oak Island treasure hunt? Have they been garbled, as the metaphor of Telephone suggests, or have they been intentionally altered by greed—the salting of treasure sites, the hyping of investment prospects[8]—or should they be taken at face value?

This document accepts the details passed down through history as "fact" unless reasons for revision are clear. But there is extremely little in the Oak Island story that is recorded. Reader, Beware!

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[5] See [**I1**/archives/02-2016:117, 119].

[6] The source for the 1785 date says the lots were purchased in 1765. Given the difficulty in reading legal manuscripts of the 18th century, this was probably 1785, which fits with Vaughan's birth year.

[7] See [**I1***/archives/01-2016*].

[8] It might not be a coincidence that two periods of intense treasure hunt activity on Oak Island were 1849-53, when the California gold rush was on, and 1861-66,when a Novia Scotia gold fever was underway. Investors during those episodes were more easily found than gold.

What Is the Oak Island Mystery?

Is Oak Island a hoax, or is it a natural phenomenon blown out of proportion by overactive imaginations, or is it the result of a multigenerational game of Telephone with stories increasingly garbled as they are retold, or is it a man-made area related to some activity other than treasure, or is it a completely natural phenomenon with no human intervention, or is it a treasure site, or is it all of the above? If it is a treasure site, was it created by pirates, by members of secret societies like the Rosicrucians,[9] the Knights Templar,[10] or the Freemasons, or by the English polymath Francis Bacon—Shakespeare's contemporary and, some believe, Shakespeare himself—to hide his Shakespearian manuscripts, or by Pizzaro's men when they returned to Spain with Incan treasure, or by French Royalists to hide the French Crown's jewels. Or by Captain Kidd who was reported to have left two million pounds buried on a remote New World island?

Or is it, as I have come to believe, just an example of the all-too-human triumph of hope over reason—a two-century effort guided by amateurs who wanted to believe and, in their eagerness, trashed the very evidence that might give them answers. Like Fox Mulder, they wanted to believe that "The Truth is Out There." Oak Island might simply be proof of the adage that "denial is not just a river in Egypt."

For me, the fascination of the Oak Island story is not its potential financial value, though a treasure hunt did attract my initial interest. It is that something occurred at Oak Island to leave a residue of items behind, and that we still don't know what that something was. It is also that Oak Island is a tale about the ability of otherwise intelligent people to fill in the blanks, making a coherent story out of what is really a simple collection of largely undocumented observations—that is, our

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[9] The *Rosicrucians*—the "Order of the Rosy Cross"—were a secret society formed during the 17th century Enlightenment. They espoused an esoteric doctrine based, among other things, on ancient mysticism, including the Jewish *Kaballah*. Sir Francis Bacon was said to be a member.

[10] The Knights Templar, formally called the *Order of the Poor-Fellow Soldiers of Christ and the Temple of Solomon*, was an order of warrior-monks formed in 1120 after the first crusade for the protection of pilgrims to Jerusalem, and to provide transportation and transit-related services. It developed an extensive banking and transportation system in the Levant. It was violently squelched in 1307 and its treasure was, legend says, transported to a hiding place in its ships. The order's survivors may have fled to Scotland.

ability to deceive ourselves by finding patterns where no structure exists. We will see that from a possible but highly improbable beginning, Oak Island has elicited the zaniest of theories to explain a hole in the ground—a hole whose origins themselves might well be apocryphal.

I have visited Oak Island twice since my initial visit in the late 1980s. The last visit was in 2014 when I visited Halifax on a boat with my wife and two good friends. At that time I had the pleasure of meeting some of the principals: Dan Blankenship, Dave Blankenship, Charles Barkhouse, and Rick Lagina ("Lageena"). These are very welcoming, interesting, and likable folks, sane and straightforward, who simply believe that something of major archeological, historic, or financial importance was buried on the island. They are true believers who have devoted much of their lives and treasure to the Oak Island Mystery. My heart is with them, and I wish they would be rewarded for their efforts; but I believe that they won't.

To establish my *bona fides* as a one-time hopeful among Oak Island devotees I attach a copy of a *duplicate* of my stock certificate in the now-defunct Oak Island Exploration Company. The shares were purchased in the early 1990s for $2,500. The certificate is now employed in its highest-value use—framed and sitting on my office wall.

Over the years I have read many often-conflicting books and articles on Oak Island. Virtually all we know about Oak Island is tertiary evidence—someone repeating what someone else repeated from what someone else said or read; both disputes in interpretation and factual errors are a part of that territory. But in preparing this document I came across an extremely useful source, identified in the Reference section as [**I1**]. I commend it for its investigative style, its discovery of new information, and its impartiality; it is the Fox News of Oak Island—"Fair and Balanced." The blog seems well staffed with two editors, three researchers, and two consultants well known in that field.

The citation method used in this document is standard except for Internet sources, where there is no standard. A brief explanation of those citations is in order. Suppose you see the citation [**I1**/*archives/04-2016: 85*]. This refers to page 85 of website **I1** and subsite = */archives/04-2016*.

Oak Island Overview

Brief History

In the 16th century France claimed the huge region from Hudson Bay to the Gulf of Mexico, and from Newfoundland to the Rockies, as "New France." Indian tribes, primarily the Mi'kmaq, populated what we now call Canada's Maritime Provinces until the French arrived in 1604 and claimed the region, calling it "Acadia." Acadia was the refuge for the Huguenots, French Protestants who immigrated to escape abuse at home by French Catholics.

In 1710 the British invaded Acadia and a struggle between France and Britain for control of the area continued through the French and Indian War (1754-1763), ending in a British victory and the division of the Maritime Provinces between France and Britain.

The earliest record of Oak Island settlement is a 1753 grant of three islands in Mahone Bay to two fish merchants, John Gifford and Richard Smith.[11] They established a processing station for the fishing industry on the island and, at least one researcher proposes, this was the genesis of the Oak Island Mystery.

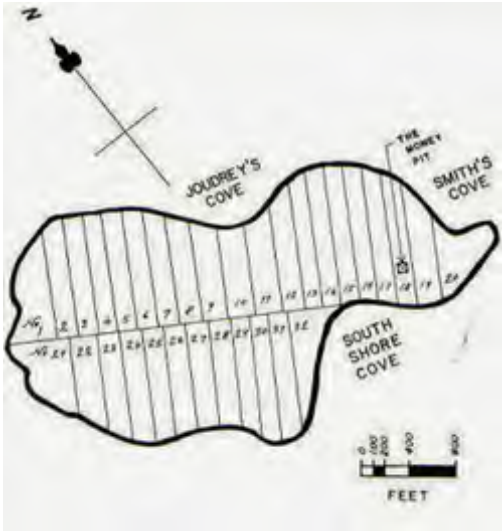
In 1762, as the Mahone Bay area began settlement under British control, Lunenburg County laid out a plot plan for Oak Island that is still in effect. Oak Island was divided into 32 lots, most of them 4 acres in size and a few larger; the average lot size is 4½ acres per lot (see plot map below). Until 1965 the island remained accessible only by water, but in that year Robert Dunfield, the treasure hunter *du jour*, built a causeway connecting the island to the mainland. Still, residential development of the island has been slow, to say the least. In the 1880s there were five farms on the island; there are now only three or four houses on the island, all occupied by the latest generations of treasure hunters.

Oak Island is in the town of Western Shore, a part of the town of in Chester, nestled in Lunenburg County on Mahone Bay. It is a small 140-acre dot sitting about

[11] See [**I3**/dennis_king-march-2010.shtml]

100 yards off of the mainland at the bay's western shore; it is about 25 miles west-south-west of Halifax and 10 miles north of the city of Lunenburg. Chester is perhaps the most pristine village on Nova Scotia. The island's maximum elevation is 36 feet above sea level and the elevation at the surface of the Money Pit is 32 feet. Three hundred years ago these elevations above sea level were three feet higher—the sea level was then three feet lower.

Oak Island, Nova Scotia



Oak Island Lot Layout

At the causeway end of the island are two homes occupied by Dan Blankenship and his son David; Dan has been hunting for treasure on Oak Island since 1967. At Joudrey's Cove on the northeast side is Fred Nolan's. Nolan, who just died in 2016, came to the island in 1962; he owns the seven blacked-out lots in the map below; Blankenship and/or his partners own the other 25 lots.

Dan Blankenship is now into his nineties but still engaged and alert, though his son has taken on the heavy lifting. He has been exploring the original Money Pit area with partners since his arrival. While Blankenship has focused on subsurface excavation at the Money Pit, Fred Nolan has focused on surface formations of rocks on his property, formations that he thinks give meaning to the Oak Island mystery. Fred's primary efforts have been at his seven lots, though on occasion he has been partnered with Blankenship on subsurface exploration.

Fred Nolan and Dan Blankenship were once partners in one of the most recent exploration companies—Triton Alliance, Ltd. Triton hunted the island's secrets from its formation in 1969 to 2011, when it folded for lack of subscription for an issue of $10 million in additional shares. In the 1980s there was a bitter falling out between Nolan and Blankenship, possibly the result of Triton bringing suit in 1983 contesting Nolan's ownership of his seven Oak Island lots, though that isn't the only dispute.

Recently the island has acquired two summer occupants. Rick and Marty Lagina are new treasure hunters from Michigan's Upper Peninsula. The Lagina brothers became interested in Oak Island as pre-teen adolescents. Rick , the eldest, is a retired postal worker. Marty is an engineer, lawyer, and entrepreneur with energy-related businesses. In 1982 he formed Terra Energy, which became Michigan's largest natural gas extractor; in 1995 he sold Terra for $62.6 million and started a clean energy company specializing in wind farms.

The Laginas connected with Dan Blankenship and formed a partnership to pick up where Triton Alliance left off. For funding they allied with The History Channel to produce a reality show. The result is *The Curse of Oak Island*, a show that aired in 2014 and is now through its fourth season. *The Curse* is a heavily scripted

example of the *fictional* historical fiction genre for which the channel is known. Marty and Rick, the hosts, are perfect foils for each other: Rick is the unabashed enthusiast who will always vote for the next step in the Oak Island treasure hunt; Marty is the conservative brother who is always on the fence—willing to pull the plug, but somehow always agreeing with his older brother to spend more money and keep looking.

The Oak Island Treasure Hunt[12]

The standard working theory for the Oak Island explorations is that pirates constructed the Money Pit in the 16th or 17th centuries to hide valuables captured in or around the Caribbean or carried by merchant vessels that traveled the trade route along the Gulf Stream that runs northward along North America's east coast, bending over to the Old World near Nova Scotia. That pirates were abundant in Mahone Bay seems certain: "mahone" is French for "pirate," local histories in Nova Scotia refer regularly to pirates, particularly in the La Have area, and the Gulf Stream from Florida brought ships up to Nova Scotia; merchant vessels, Spanish treasure ships from South America, pirates, and military vessels returning from North America's east coast.

<u>The Onslow Company: 1803-1805</u>

The first exploration company to dig at Oak Island was the Onslow Company, formed in 1803 by a Nova Scotian named Simon or Simeon Lynds with Oak Island residents McGinnis, Vaughan, and Smith as partners. The Onslow Company left no records, but J.B. McCully reported details of its operations in an 1862 letter to Nova Scotia's *Liverpool Transcript.*[13] McCully was an engineer for the Truro Company that succeeded the Onslow Company in 1849.

According to McCully, the Onslow Company dug a 16-foot diameter pit down to 93 feet, uncovering "marks" described as "putty or charcoal" every ten feet; there is no mention of oak platforms. Coconut fibers, not indigenous to the area, were found along the way. At 90 feet[14] a large flat stone roughly 2-feet wide and 1-foot thick and having several characters cut in it, was uncovered; this is the famous "90

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[12] This chronology of exploration on Oak Island draws heavily on **[I5]**. A list of Polsson's reference sources is at [**I5**/refs.html].

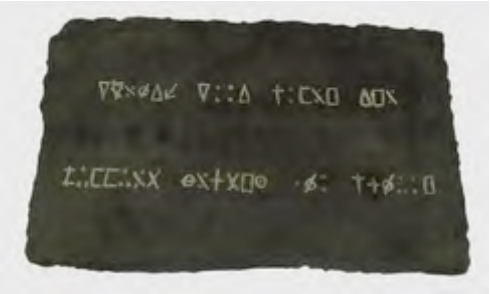
[13] See [**I3]**/*diggings.shmtl*].

[14] McCall's letter says "80 feet," an obvious error.

Foot Stone." The Onslow Company reached the 93-foot level and plumbed down with a rod, striking what they thought was a wood platform at the 98-foot level. This suggested a five-foot empty space between 93 and 98 feet, just the right size for a treasure chest.[15]

The pit quickly flooded and the Company dug a pit parallel to the Money Pit at an unknown distance and direction. From its bottom they dug sideways to intersect the Money Pit at to a point below 100-foot in an effort to retrieve the treasure from below; unfortunately, as the side tunnel neared the Money Pit it also flooded. Stymied by water, the Onslow Company stopped operating. Oak Island remained quiet until the next exploration company started operating in 1849.

A photo of the apocryphal 90-foot stone is shown below. This is a "replica" and there is considerable doubt that the characters shown on it are those on the actual stone, or that there ever were characters etched on the original stone. The code shown has been decrypted as "Forty feet below two million pounds are buried." This would place the treasure at a depth of 130 feet. Two million pounds sterling in gold (£2,000,000) at the 1795 price of £4.26 per troy ounce comes to 469,483.5 troy ounces or 20,540 common (avoirdupois) pounds. *This would have been a heavy treasure chest indeed, and the chest itself would require a capacity of at least 205 cubic feet (roughly 14x14 feet square) if stored as ingots, more if in coins!* [16]



The 90-Foot Stone

[15] See [**I1**/*archives/05-2016*].

[16] See Appendix 2

The stone is reported to have stayed in John Smith's possession, embedded in the fireplace of the Oak Island house he built in 1795, until it was moved to a bookbinder's shop in Halifax around 1919, where it was used as a surface on which to soften leather. Unfortunately, but typically for Oak Island, the stone has disappeared and there is only oral history to testify to its existence or to any characters scratched on it. Scattered reports from those who saw it in Halifax said that it had no characters on it, perhaps because the characters had been rubbed off.

The Truro Company: 1849-1853

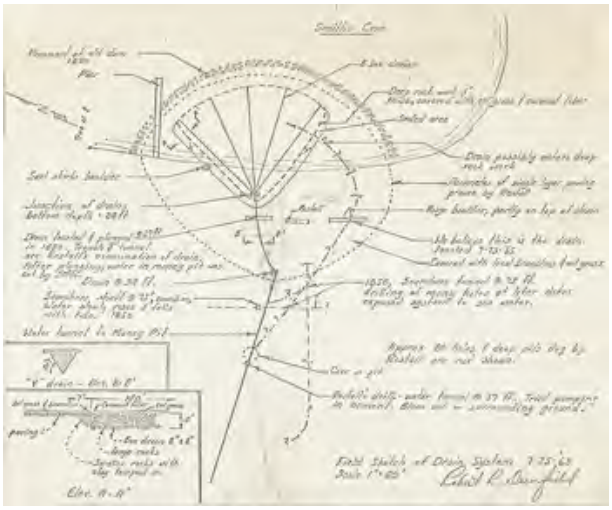
In 1849 Anthony Vaughan (probably Anthony Vaughn Jr. as Anthony Sr. would be both 99 years old and dead) and John Smith joined with new partners from Truro NS to form the Truro Company. Exploration at the Money Pit resumed. J.B. McCully's 1862 letter, cited above, describes the Truro Company's activities and discoveries.

The Company began operations by drilling the flooded Money Pit. At 98 feet The Truro Company drill encountered six inches of wood (spruce), just as reported by the Onslow Company after plumbing from 93 feet with a rod. Then the drill dropped a foot and encountered four inches of oak, then cut through twenty inches of loose metal (judging from the sound), then eight inches of oak, another twenty inches of loose metal, and four inches of oak. After this were seven feet of disturbed clay before solid clay was reached at 111 feet. The two sections of oak and metal bits from 98'6" to 104' 2" suggested two oak chests, each 2'9" high, one on top of the other, filled with loose coins.

The Truro Company drilled four additional holes around the original Money Pit. One of those replicated the drilling results for the Pit but also brought up a section of oak stave, some pieces of birch hoops, and three links of a gold chain. The stave and hoops indicated an oaken cask. The chain links were described as possibly from an "epulet," as on a military uniform. This hole also revealed a four-foot by three-foot side tunnel coming from the east (Smith's Cove) into the Pit below the 98-foot platform. Once this tunnel was exposed water flooded into the Pit.

The Truro Company then turned its attention to Smith's Cove.[17] Exploration there revealed that the beach was "artificial"—the Cove had been deepened by hand and the shoreline filled in with rocks and sand. McCully reported finding evidence of an old cofferdam and, between the cofferdam and the beach, five box drains lined with stone and covered with eel grass and coconut fiber, presumably to filter out sand and large particles that might clog the box drains. The cofferdam was probably built to expose the beach area so that the drains could be constructed.

The five box drains were located at an elevation between the high water and low water marks on the beach so that they would fill at about mid-tide to high tide and drain from mid-tide to low. They were first discovered in 1850 when a worker noticed water flowing into Smith's Cove *from* the shore. The five drains converged to a tunnel that went toward the Money Pit; it was thought to be a flood tunnel entering the Pit at a depth of about 111 feet. The connection with the Money Pit was verified placing bits of clay in the Smith's Cove drains and observing them arrive at the Pit.



Field Sketch of Smith's Cove

[17] While digging one of those holes, the foreman was observed inspecting something that had come up and putting it into his pocket. He never reported his findings, but a close friend soon applied for his own treasure-trove license on the property. It was denied because Truro had the rights on that land.

Armed with evidence of a man-made tunnel entering the Money Pit at a 111 foot-depth from the east (Smith's Cove), the Truro Company investigated the west (South Shore Cove) side of the Pit. McCully reports that they found an old pit on the west side of the Money Pit and drilled down, finding evidence of a tunnel to the Pit from that direction that intersected the Pit at 118 feet below the Pit's ground level, that is, about 7 feet below the Smith's Cove tunnel and about 20 feet below the 98-foot wood platform found by the Onslow Company and rediscovered by the Truro Company.[18] The intent of this west-side tunnel may have been to allow retrieval of the treasure from below the flooded Pit, or it might have been a second "flood tunnel' to South Shore Cove. This west-side tunnel soon collapsed.

So ended the Truro Company, which had spent an estimated $40,000. The Truro Company's discovery of a tunnel between the Pit and Smith's Cove supported the idea that the Money Pit had been booby trapped so that digging directly down it would flood the Pit. If there was a treasure, it was now clear that digging into the Money Pit was not the way to get it. But how would the "pirates" recapture their treasure? One idea was that the Pit was a decoy and that the treasure was really buried in shallow side shafts only twenty feet or so below ground level, but no such shafts were reported by either the Onslow or Truro companies in the course of their work, and massive digs in later years also failed to find treasure-laden side shafts.

The notion of a devilishly clever and expensively engineered treasure site suggested that there really was something very valuable hidden in the Money Pit. This excited the animal spirits of future treasure hunters.

The Oak Island Association: 1861-65

The Oak Island Association had many of the earlier Truro Company partners. In 1861 a steam-driven pump was installed to drain the Money Pit. Unfortunately, its boiler blew up, killing a worker. The Association then dug several deep shafts close to the original Money Pit, with the intention of intercepting and blocking the

[18] It is possible that this west-side tunnel was the pit and side tunnel dug by the Onslow Company to retrieve the treasure from below, not an original tunnel like the east-side tunnel. Unfortunately, the Onslow Company left no records of the direction from which their tunnel approached the Pit.

"flood tunnels," then digging horizontally into the Pit. No flood tunnels were found but still the new shafts flooded. By this time both the Onslow Company and the Truro Company had dug lateral tunnels and it was impossible to distinguish between those and the original flood tunnels, if they ever existed.[19]

An effort was made to block the box drains in Smith's Cove with clay to stop the flow through the flood tunnels. This was partially successful, indicating that Smith's Cove was a source of the flooding, but the sea's action cleared the drains and full water flow resumed.

The Oak Island Association ceased operating in 1865.

The Oak Island El Dorado/Halifax Company: 1866-1867

The Oak Island Association sold its rights to the Oak Island El Dorado Company, soon renamed the Halifax Company. A 12-foot high cofferdam was constructed at Smith's Cove to block water to the Money Pit. The dam was only partially effective, and soon an unusually high tide breached it.

A 110-foot shaft was dug 200 feet south of the Pit (toward Smith's Cove) and a tunnel was dug from its bottom toward the Pit to locate any flood tunnels. Because ground level sloped down from the Money Pit to Smith's Cove, the depth of this tunnel would have been several feet below the 111-foot depth of the Money Pit. This revealed a previous tunnel entering the Pit from above, declining at a 22.5° angle. Its source was verified at Smith's Cove by putting bits of clay into the Smith's Cove box drains and observing the clay arrive at the new shaft.

In 1867, after all the digging over many years, the bottom of the Money Pit collapsed about twenty feet, to 118 feet. This was interpreted as the giving-way of the ceiling of a large cavern at the 120-foot level. Also in 1867 a consultant named John Brown submitted a report to the Halifax Company.[20] Brown drilled some holes near the original Money Pit and concluded that there was no oak platform as reported by the Truro Company, that the Pit was originally a natural sinkhole, that the Pit flooding came from water passage through a natural layer of gravel at the

[19] See [**I3**/*floodtunnels.shtml*].
[20] See [**I3**/*johnbrown.shtml*].

140 foot level, that if there ever was an original flood tunnel it would have collapsed long ago, and that the loose metal pieces through which the Truro Company drilled were probably gravel. Perhaps on the basis of this report, the Halifax Company stopped its activities.

The Cave-In Pit: 1878

In 1878 the wife of an island farmer was plowing a field between the Money Pit and Smith's Cove when one of her team of oxen sank into what they thought was a sinkhole; the ox was rescued. The sinkhole was called "The Cave-In Pit," and its significance emerged when it was realized that the Cave-In Pit was on a direct line between the Money Pit and the box drains in Smith's Cove, a result confirmed in Robert Dunfield's map shown above. This suggested that the Cave-In Pit was initially the site of a ventilation shaft for the already-found flood tunnel from Smith's Cove to the Money Pit. By implication, the pit found by the Truro Company to the west of the Money Pit, in the direction of South Shore Cove, might have been a ventilation shaft for the west-side tunnel that Truro reported finding.

The Oak Island Treasure Company: 1893-1906

In 1893 Frederick Blair, a Nova Scotia businessman, formed a partnership to explore the Money Pit, though by now enough pits adjacent to the Money Pit had been cut to mask its exact location. Core samples of the Pit down were taken down to 165 feet. At 155 feet the drill encountered cement, oak, metal pieces including flecks of gold, a small scrap of parchment with two letters ("vi," "ui," or "wi") written in India ink with a quill pen, and, finally, another layer of oak. At 165 feet they hit an impenetrable layer thought to be iron.

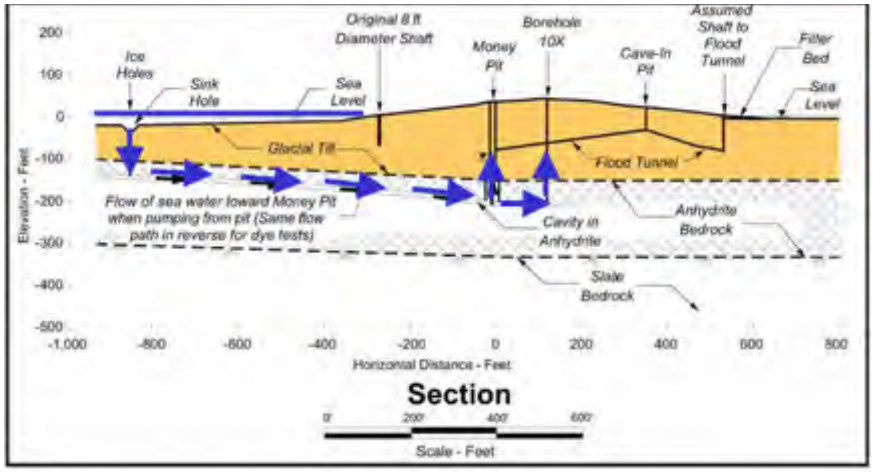
In 1897 The Oak Island Treasure Company found a flood tunnel to the Pit from the east (Smith's Cove); it was clogged with stones. This was thought to be *the* original flood tunnel, but it might well have been one of the side tunnels dug by the Onslow and Truro Companies. Five shafts were dug along the line that flood tunnel was supposed to follow between the Money Pit and Smith's Cove; these five new shafts were filled with dynamite and blown up to block the flow of water from

Smith's Cove. So much for subtlety, and for any more meaningful evidence from around the Money Pit.

The Company also explored the area called the "Cave-In Pit." When the drilling in the Cave-In Pit reached 55 feet the pit flooded. Once again dynamite was used and after additional digging the Cave-In Pit has grown from ox-leg width to a diameter of 100 feet. Nothing has been found there.

In 1898 a dye test was done at the Money Pit. The dye emerged in both Smith's Cove and South Shore Cove. This would be repeated in future years with mixed success.

Thus far the Oak Island Treasure Company had spent an estimated $100,000 and one life—a worker fell into a shaft in 1897. This was the second death of an Oak Island explorer, and it led to a mutiny among the superstitious workers that forced an end to exploration, at least for the time being. Over its life the Company and its predecessors had driven some 20 shafts near the Money Pit in order to identify flood tunnels, stop water intrusion, and tunnel into the Pit from below. Five of those shafts had been blown up to stop water intrusion, with no effect. The entire Money Pit area was a shambles and the location of the original pit was lost. More damage to the area was to come.



Oak Island Cross Section

A chart of the Money Pit area gleaned from these explorations is shown above.[21] The flood tunnel is often shown as straight line from Smith's Cove, but the shape shown in the chart is that found by the Halifax Company in 1866: the tunnel dropped directly down from the shoreline at Smith's Cove, then turned upward to the Cave-In Pit, then descended at a 22.5° angle to the bottom of the Money Pit at about 100 feet.

In 1904 Blair received a fifty-year treasure trove license to the rights to keep a portion of anything of value from exploration around the Money Pit area. Blair bought out his Oak Island Treasure Company partners and searched for new partners to work the site.

The Old Gold Salvage and Wrecking Company: 1909

Captain Harry L. Bowdoin, a mining engineer from New York, formed this partnership with Frederick Blair and others. Among the investors was a young law student named Franklin Delano Roosevelt, who worked on Oak Island in the summer of 1909.

The Company explored for just one year, finding nothing of interest. After terminating operations, Bowdoin wrote an article in *Collier's Magazine*[22] reviewing the history of Oak Island exploration and concluding that there never was treasure at the Money Pit, a conclusion vigorously disputed by Frederick Blair. The two had fallen out and Blair's supporters claimed that Bowdoin had written the *Collier's* article in revenge, hoping to warn off any investors in Blair's company.

Following this 1911 debacle, Blair maintained his rights to Oak Island treasure until his death in 1951.During the intervening forty years he leased land to a number of individuals.

William Chappell:1931-32; Gilbert Hedden: 1936-37; Mel Chappell: 1951

1931-32–William Chappell of Sydney NS on the north coast of Cape Breton leased Blair's rights. Chappell had worked at the site in 1897 when the parchment

[21] See [**I4**], file a01, page 16].
[22] See [**A2**]

was found. Unfortunately, the precise location of the 1897 site had been lost in the intervening years of digging. Chappell and Blair now disagreed on the exact location of the Money Pit: Chappell thought it was slightly north of the 1897 drill site, Blair thought it was to the south of that site. In 1931 Chappell dug a 163-foot shaft at Blair's selected location southwest of the 1897 hole. This is known as the "1931 Chappell Shaft").[23]

Between 116-127 feet Chappell's group found several artifacts including an axe, a miner's pick, and an anchor fluke. They encountered evidence of what they thought was a vault roughly 10 feet high ("the Chappell Vault"). Chappell then dug side tunnels to the Money Pit from the 1931 Chappell shaft but found nothing. He then dug a 124-foot shaft from his preferred Pit location, searching for the location of the parchment and related items found in 1897; this second shaft—the "1932 Chappell shaft"—revealed nothing. In 1932, after spending $30,000 and with the Depression under way, Chappell gave up.

1936-37—Next up was Gilbert Hedden, a New Jersey millionaire, who spent $100,000 to bring electric power from the mainland to run submersible pumps and drain the Pit; all future explorers have been grateful. In 1937 Hedden dug a shaft (the "Hedden shaft") near the 1931 Chappell shaft; other than water nothing was found. He then commissioned a survey by Charles Roper, a provincial land surveyor, of the east end of the island to identify all previous digs and markings. The "Roper Survey" has become a tool in all excavations. Attempts to pump the Hedden shaft were unsuccessful. Hedden gave up in 1937.

In 1941, near the end of Hedden's sublease, another treasure hunter, Edwin Hamilton, tried a go but, again, there were no finds. Several other small operators followed but all quickly fell by the wayside.

Blair controlled activity on the island until his death in 1951. Mel Chappell, William's son, acquired Blair's treasure-trove rights in 1951. He spent $25,000 on the Pit before leasing his rights to Robert Restall.

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[23] The 1937 Roper Survey would later find the 1897 shaft and show that Chappell had been correct.

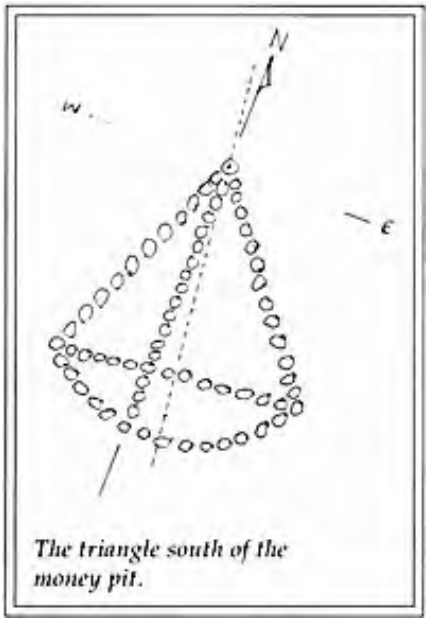
Robert Restall: 1959-65

Robert Restall was a fifty-nine year old steel worker from Ontario who, in earlier days, had been a motorcycle daredevil with his wife, Mildred; their specialty was riding two motorcycles around a circular cage without crashing or colliding. They should have stuck with that job.

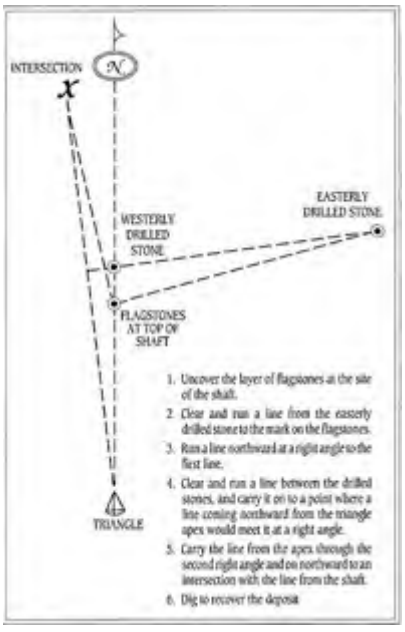
Restall leased Mel Chappell's rights to explore in 1959 and moved with his wife, Mildred, and two grown sons to Oak Island. Restall built a small two-room cabin near the Money Pit and worked the site with his sons until tragedy struck in 1965. One of his drillers was Laverne Johnson, a Freemason who wrote a pamphlet about his experiences working for Restall on Oak Island.[**I4**] More on Johnson later.

Among other things the Roper Survey had marked was an old "Stone Triangle" on the edge of South Shore Cove. As shown in the left panel below, the triangle's inner line of stones points to True North, but another line can be made from the central stone in the rear arc through the triangle's point: that line, the "Declination Line," is shown as the dotted line, runs about 7° West of True North.

Roper had also found two drill stones that were rediscovered in 1959 by Laverne Johnson. These are shown in Johnson's chart in the right-hand panel below.



The Stone Triangle



X Marks the Spot

Johnson believed that the Money Pit had no significance other than as the site of the two flagstones found just below the surface. Thus, on his chart (right panel) the Money Pit site is called "Flagstones at Top of Shaft." In addition, one drilled stone (the "Westerly Drilled Stone") was about 50 feet north of the Money Pit on the True North line from the Stone Triangle. The second drilled stone (the "Easterly Drilled Stone") lay to the east of the Money Pit near Smith's Cove.

Johnson "decoded" the information from the two drilled stones and the flagstones to find the site of the treasure. To do this take a straight line from the Easterly Drilled Stone to the Flagstones at the Top of the Shaft, then take a line that runs northward at right angles to the first line. Where that second line and the Declination Line intersect is the real treasure site—**X** marks the spot.

If this seems bizarre to you, you have my vote. In Johnson's scheme the only function of the Money Pit is served by the flagstones found near the surface in 1795—that is where you take the 90° rotation to **X**. Johnson's believed that the "boys" of 1795 thought "hole" instead of "marker" and just kept digging. Had they known about the Roper Survey stones, they would have decoded the information and dug at **X**—and they would have become rich.

These are the sorts of contortions that Oak Island's treasure hunters made to try to identify a treasure site. I should add that when Johnson dug a 30-foot pit at **X** he found nothing.

Back to the main story. Robert Restall dug eight 27-foot holes near the Money Pit to try to intercept the flood tunnels, with no success. In 1965, while inside one of these water-filled holes, he was overcome by fumes, either carbon monoxide from the pump motor or, more likely, natural hydrogen-sulfide fumes, a very toxic gas associated with organic material decomposing in water. Restall lost consciousness and fell into the water, his 30-year old son Robert jumped in to get him and had the same fate, then two workers jumped in to help. All four were overcome and drowned.

Robert Dunfield: 1965-1966

Robert Dunfield, a geologist who had been Restall's partner, leased Mel Chappell's rights to continue exploration after the Restall operation ended in tragedy. He constructed a causeway to the mainland in 1965 to bring heavy equipment onto the island. The causeway cost an estimated $40,000 and it remains in place even though it was supposed to be removed after Dunfield was finished.

Dunfield immediately ran into a conflict with Fred Nolan by refusing to let Nolan use the causeway. Nolan responded by moving his small museum of artifacts found on Oak Island to a location that blocked access from the causeway to the Money Pit. Stalemate! Dunfield sued Nolan. Eventually Dunfield was forced to let Nolan and others use the causeway; in return, Nolan was forced to restore access to the Money Pit. Once again money was spent on Oak Island to no effect.

In addition to bulldozing around the Money Pit looking for flood tunnels, Dunfield and his partners explored the Smith's Cove area and found indications of early construction activity, among them an old cofferdam, the five box drains covered in eel grass and coconut fiber, logs from a wharf or other structure, a stone market "1704," a pair of ancient wrought iron scissors.[24]

Dunfield spent an estimated $130,000 with no result except the collapse of several tunnels in a rain-soaked season. But he had a great time on that bulldozer before he suspended operations in 1966.

The area of excavation at the time of Dunfield's work is shown below. It is clear that the unscientific way the hunt had progressed over the years had effectively masked any original work done by those ubiquitous pirates or Rosicrucians.

Triton Alliance Limited/Oak Island Exploration Company: 1967-2011

In 1967 Dan Blankenship arrived on Oak Island in partnership with Dunfield, Fred Nolan, and a new partner, David Tobias. The following is a summary of their activities and findings.

[24] See [**I5**]

The Money Pit Area in 1965

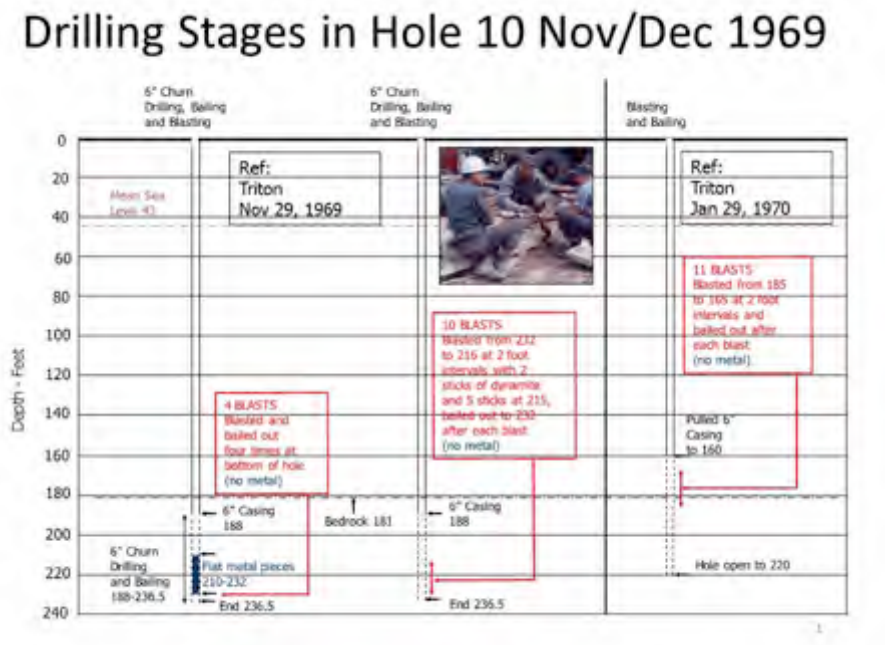
1967—Blankenship drilled about 60 deep exploration holes around the Money Pit, some to below the 180-foot bedrock. They brought up some man-made items (brass fragments, wood dated to 1490-1660 from a cavity below bedrock, charcoal, fragments of china).

1969—the partnership was formalized as Oak Island Exploration Company under Triton Alliance Limited, with David Tobias as its President. Under Blankenship's direction, Triton drilled Borehole 10-X about 160 feet from the Money Pit along the line of the alleged tunnel from the Money Pit past the Cave-In Pit to the Smith's Cove box drains. Borehole 10-X was initially a 27-inch diameter shaft driven through the bedrock at 180 feet and then down to 235 feet. Three five-foot cavities were found—one at 140 feet, one at 180 feet, and one at 230 feet; the last was well below bedrock. Metal fragments were retrieved from the second cavity.

Toward the end of 1969 Blankenship took what seems to be a tragic misstep in order to flush treasure out of Borehole 10-X: he set off charges of two dynamite sticks each at five-foot intervals in the three caverns at 10-X.[25] Nothing came up, but

[25] See [**I1**]/*archives/2016_4, p. 85*].

the use of brute force suggests now nothing *will* come up. The chart below is a record of this action.[26]



Blasting at 10-X

1970—Triton built a large 400-foot cofferdam to drain Smith's Cove. The remains of an earlier cofferdam were found —whether it was Dunfield's cofferdam or the original found by the Truro Company isn't clear. Some manmade items were also found, all pre-1790: a 12-inch ruler, nails, spikes and tools.

1971—Borehole 10-X was widened to an eight-foot diameter to allow divers access down to the 180-foot bedrock level; the original 27-inch diameter hole that runs from 180 feet down to 235 feet was left untouched. Divers were sent down to bedrock at 180 feet, but visibility was poor and nothing was seen. A camera was sent down to the cavern at 225 feet and very grainy photos were taken. It seems strange to expect to see anything intact in an area you have demolished, but Blankenship identified several items in the photos: a human hand, a human body, a

[26] Also in 1969 Fred Nolan drained the "swamp" near the Money Pit and found what appeared to be a section of the mast of an old sailing ship.

pickaxe, chests and two side tunnels from the cavern. (I couldn't identify any of these when I saw the photos.).

1972—George Bates, a Nova Scotia historian, presented a new theory of Oak Island at a meeting of the Canadian Institute of Surveying and Mapping. His theory is that the original excavations (the Money Pit, the east-side tunnel to Smith's Cove, and the works in Smith's Cove) were signs of a shipyard. This idea will be discussed later.

1976— While Dan Blankenship was diving in Borehole 10-X the side of the metal casing collapsed just below him, closing off the lower section. He barely escaped.

1979—In February four holes appeared in the ice over South Shore Cove. This occurred after pumping activity in the Pit; once the pumping stopped, the holes disappeared. The ice-holes reappeared in1987, again after a pumping operation.[27] The holes have been attributed to air bubbles related to the pumping.

1983—Triton sued Fred Nolan, contesting ownership of his seven lots on Oak Island. If Nolan loses the suit, he loses his rights on Oak Island along with his influence as a member of Triton Alliance. This might well have been the source of the enmity between Blankenship and Nolan. There was also litigation later over Nolan moving some property markers to enhance his property.

1**985**—Nolan won and Triton appealed. In 1987 Triton lost again on appeal: Nolan's ownership of the seven lots was finally confirmed. (Nolan lost on the property line dispute.)

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[27] See [**I1**/*archives/03-2016:22*]

1987—Triton announced a stock issue to raise $10 million to drive a tubular casing 80 feet in circumference (13-feet in diameter) around Borehole 10X down to bedrock at 180 feet, thus closing off the water source and allowing drainage of 10-X. The October 1987 stock market crash ended the plan and Triton ended active exploration. It held its last annual meeting in 2011 and in 2014 it was formally eliminated from the Canadian register of companies for nonpayment of annual fees.

2006—David Tobias sold his fifty percent share of Triton to the Lagina Brothers.

2008—Triton sold its treasure-trove license to Oak Island Tours, Inc. One estimate of the cost to Triton of its activities on the island is $500,000.[28]

Oak Island Tours, Inc.: 2008-Present

Oak Island Tours, Inc. was formed by Dan Blankenship to promote Oak Island as a tourist area. In 2008 it purchased Triton Alliance's treasure-trove license, allowing it to continue explorations at Oak Island. The Company's partners include Dan and Dave Blankenship, Rick and Marty Lagina, Charles Barkhouse, and Craig Tester. Craig is Marty's former college roommate, his partner in the new wind farm energy company, and an engineer with expertise in soil resistivity. Charles is curator of the Oak Island Museum and a very knowledgeable local historian.

The Laginas began negotiations with the History Channel to see if it might be interested in filming a "reality show" about Oak Island. It was, and the result is *The Curse of Oak Island*, now ending its fourth season. Every episode is padded with segments from previous episodes, and each segment of an episode ends with a teaser that brings the viewer past the commercial only to let them down afterward. It is a very frustrating show with a tight structure: each episode has a segment filmed in the "War Room," where the principals meet to plan the next foray, often with outside advisors who have outrageous ideas about what's there, where it is, and who did it. Also present are the divers, drillers, and others who will execute the plans. At the end of each meeting Marty puts on a serious face and asks, "Should we

[28] See [**A3**]

do this?" Then Rick, also with his game face on, says, "Yes, it might lead to nothing, but . . . *what if it does*!" The other principals nod their heads sagely, Marty ponders a bit, slaps the table, and say, "Let's do it!" Then they retire to a bar.

Still, anyone who has followed the Oak Island saga will want to see *The Curse* if only to see what the Laginas did and what they found. The short answers are "a lot" and "not much."

What have the Laginas have actually done is "a lot."

† ***They have drained the swamp three times.***[29] *(Nolan first drained it in 1969).* The first time all that was found was a Spanish 8-reale *meravedi*, a copper coin, dated 1652. The second was on the advice of a Norwegian named Peter Amundson who believed that the surface stones forming "Nolan's Cross" were actually part of a larger formation called the Tree of Life, and that something would be found at the Tree's "Mercy Point" located in the swamp; instruments at the Mercy Point located nonferrous metal (perhaps gold or silver) but nothing of value was retrieved. The third time they drained it dry, pumping the brackish water to the Cave-In Pit, then they brought in a backhoe to dig in a specific area and found a long plank like from a ship's hull and a large spike, both associated with early ship construction, perhaps a Spanish Galleon.

† ***They repeatedly sent divers down Borehole 10-X*** to find the objects that Blankenship's camera revealed in 1971—a wooden chest, a body, a hand, a pickaxe, side tunnels. Only one diver made it and he found none of those objects. In that diver's opinion the cavern is a natural formation.

† ***They have explored Smith's Cove*** to search for the box drains found by previous expeditions. They came up with more coconut fiber and a few wrought iron tools dated pre-1790.

† ***They repeatedly met in the war room to listen to* the** *doofus du jour* ***describe his theory of who did it, when, and why***. None of these visitors has had credentials in history, archeology, or geology. Some are so uncredible as to be incredible. Most of the ideas are bizarre, among them,

° The *Rosicrucians*, a secret society formed during the 17th century Enlightenment. The Rosicrucians were adherents of a mystical doctrine that included the Jewish Kaballah and its Tree of Life.

° *Sir Francis Bacon,* the17th century English polymath who some think *was* Shakespeare, buried William Shakespeare's lost plays on Oak Island.

[29] In 1969 Fred Nolan drained the swamp for the first time, finding a section of an old ship's mast. This led to the idea that an entire treasure ship had been buried in the swamp.

- *The Knights Templar*, formally called the "Society of the Poor Fellow-Soldiers of Christ and of the Temple of Solomon," buried their treasure amassed as bankers and transporters to pilgrims during the crusades—a treasure that includes the Holy Grail and the Ark of the Covenant. The Knights Templar was formed circa 1120 after the First Crusade, and it was violently dissolved in 1307 to expropriate its wealth.
- *Marie Antoinette's* fabled jewels, or the *French Crown jewels* buried by French Royalists.
- *Captain William Kidd's* two-million pound treasure reported to have been buries on a secluded northern island in America.

† ***Marty and some team members flew to France and Scotland to follow up on the history of the Knights Templar*****,** who were centered in France and reportedly fled to Scotland with their ships and treasure after 1307. They came back well fed but no wiser.

† ***They interviewed three sisters—descendants of Daniel McGinnes—who reported the family story that the three "boys" had actually found three treasure chests; each had taken one chest home***. If this story is true, whatever was buried at the Money Pit has already been found. As evidence they showed a beautiful gold cross made for a necklace; jewelers had dated it to the 1500s. This was the only item in Daniel McGinnis' chest that remains in the family.

† ***The Laginas returned to the Money Pit to pick up where Triton left off in 1987.*** They sank a large metal caisson around a site called V3, where they thought the original Pit was located; this was done to stabilize it, to shut off water sources, and to find what is at the bottom. A clamshell shovel was lowered by crane into the tube to remove earth and material. At 140 feet they found square timbers. This was very exciting until they noticed that the timbers had marks from circular saws, which weren't invented until the late 18th century and were not commonly used until the mid-19th century; the Laginas concluded that the timbers were cribbing from an earlier side shaft into the Pit dug by William Chappell in 1931.

† **They dug a second shaft**, called C1, about twenty feet from V3 with the same type of caisson used at V3. This reached what appeared to be a cavity at 170 feet. During this dig they sent a camera down and saw glimpses of a shiny yellow object.

In short, **The Lagina brothers and their History Channel backers have found nothing that was not found before, and they have failed to find some things that had been found before.** They also have an indication that their treasure chest(s) might have been retrieved centuries ago. After this last revelation

at the end of the third season the War Room met to discuss whether to continue; Marty slapped the table and said, "Let's Do It!".

It's clear that there is at least one hoax in the Oak Island story: it is the airing of *The Curse* on a channel that masks fiction as history. Of course, that doesn't stop us from watching the series—the Laginas are such perfect hosts, and the show is so *outré* and campy, that our ears perk up every time someone says, "Wow, what is this?" before going to commercial. We know that the Laginas and their partners are acting, but still it sucks us in.

Hopefully, the History Channel has jumped the shark and in the future Oak Island will be known as a place rather than as an adventure. Perhaps someday we will be at that point when the first question a psychiatrist asks of a potentially psychotic patient is, "Do you believe in Oak Island?" The Oak Island Mystery will then have reached its proper place in the public's consciousness—as a sanity test.

The Flood Tunnels: Digging, Dowsing, and Dye Tests

An important goal of exploration at Oak Island has been to investigate the network of flood tunnels reputedly created by the original diggers. This has been done in three ways: digging, dowsing, and dye tests.

Digging has been the primary approach. Shafts have been dug all over the site to find tunnels. This has been discussed elsewhere in this document, but it bears repeating that brute force has both "muddied the waters" and torn up the eastern end of the island, all to achieve inconsistent results: some digging finds flood tunnels, some digging finds no flood tunnels, and some suggests that flood tunnels newly found are actually tunnels dug by earlier explorers to enter the Money Pit.

Dye tests are a more scientific approach. A water-dye mix is pumped into a shaft (usually the Money Pit or Borehole 10-X) and the shoreline is watched for appearance of the dye. These results are also mixed. The first reported dye test, in 1898 when dye pored down the Pit, showed at dye both Smith's Cove and South Shore Cove. The second test was in 1941 when Edwin Hamilton poured dye into the Money Pit and it appeared at South Shore Cove. This was taken as confirmation of a

westward tunnel from the Pit, perhaps the same tunnel discovered by the Truro Company circa 1897.

The third dye test was in 1992 when Dan Blankenship poured dye into the Money Pit and after 3-4 hours it appeared 1,155 feet away at the "opposite side of the island" (near Joudrey's Cove?).[30] This should have been totally unexpected, but, amazingly, Blankenship reported that he had identified that wholly new tunnel *prior* to the dye test by using the ancient method of dowsing. This tunnel is a surprise because there were no reports of early explorers tunneling from the Pit to the northeast, and because Joudrey's Cove is so far away—over two-tenths of a mile.

In the fourth dye test, also in 1992, Blankenship poured dye down a hole north of Borehole 10-X. This dye showed at both Smith's Cove and at South Shore Cove.[31] The Woods Hole Oceanographic Institute performed a fifth dye test in 1995 as part of a larger study of Oak Island hydraulics: WHOI poured dye into Borehole 10-X and reported that no dye was observed emerging at either Smith's Cove or South Shore Cove.[32] Finally, circa 2013 the Laginas replicated the 1995 WHOI test by pouring dye into Borehole 10-X: once again, no dye appeared on the island's coast.

If these dye tests indicate anything at all, it is that any connection between the Money Pit area and Mahone Bay is either nonexistent or very complicated: subsurface channels seem to appear and disappear over time, and they seem to be found at some holes but not at others. One wonders how much the digging and blasting around the area has closed off or redirected water channels found at earlier dates.

We referred above to Blankenship's use of dowsing. According to him it was quite successful with several tunnels, not just the long previously unknown northeasterly tunnel toward Joudrey's Cove. When this became common knowledge it set off a flood of Internet discussions about the efficacy of dowsing. There is no

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[30] See [**I1**]/*did-dowsing-dicoveries-lead-Dan-to-dig-10X: 6*].

[31] See [**I4**]. Macphie has developed a number of excellent scientific PowerPoint presentations on Oak Island.

[32] See [**A8**].

scientific basis for the practice, yet it has been used for hundreds of years as a way to find water, metals, or other conductive objects below ground.

MacPhie reports the results from a small dowsing test in England.[33] Two metal objects were buried, one at three meters (26 feet) and the other at eight meters (43 feet). Sixteen students independently doused for them and eleven found at least one of the objects, 9 finding both; this left five students (5) with no hits. Using standard statistical tests, the probability that 11 or more students would get a hit simply by chance is .067 (6.7 percent). This does not quite meet the standard of .05 or smaller that statisticians typically use to determine "significance," but it is close and with the small sample size there is considerable sampling variability. Still, a number of other studies have also found a success rate no better than chance.[34] If Blankenship's method off finding tunnels is no better than chance, how did he find that 1,155-foot long tunnel? Perhaps he is just a better than average dowser.

A personal story. While on a family trip to England years ago we visited the village of Avebury where a ring of stones like those at Stonehenge (but much smaller) had been found long ago by dowsing. Some stones were still buried, and we were asked if we wanted to dowse for them. When I passed over certain spots the dowsing rod was almost forced from my hand, a palpable hit. The evidence of my own hands led me to a choice, either dowsing worked or large magnets had been buried for tourists to find.[35]

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[33] See [**I4**], file a03, p.5]. Eleven of the students identified only the shallow object while 9 found the deeper object. "Chance" means a 50 percent probability that something is found, with a corresponding 50 percent probability that nothing is found.

[34] See "Dowsing" on Wikipedia.

[35] My experience with dowsing is an example of what psychologists call *ideomotor activity*—the entirely unconscious translation of an idea ("there is something buried here") into physical action.

Exploring Surface Stone Formations

Little has been said of Fred Nolan's independent search for information from surface-level rock formations on his property. The reason is, of course, that these efforts are far less dramatic than the Money Pit explorations.

Perhaps the most dramatic stone formation is "Nolan's Cross," a large formation in the shape of a cross on the northeast side if the island. The top of the cross points east, its left arm points north, and the cross's right arm points to the Money Pit.

Nolan's Cross

At the center of the cross, where the two arms intersect, Nolan found a large stone with what looks like part of a human face carved on it. Those of us familiar with the now-collapsed "Man of the Mountain," a once famous natural formation of a human profile hanging off of New Hampshire's Mount Washington, know that human faces can be carved in stone by natural forces, so we might not buy the "man-made" stone face on Oak Island. Nor do we know what other stones were in the area of the cross from which the six stones in the cross might be selected as a meaningful

feature. But the legend is that these six stones stand out in a clear cross, perhaps a replica of the Templar Cross.

Indeed, Petter Amundson, a Norwegian fixated on Oak Island and one of the outsiders who presented his theories to the War Room, has found four additional stones that that create a larger formation from Nolan's Cross, a formation that matches a symbol from the Jewish *Kaballah* called the "Tree of Life." The map below overlays Nolan's Cross on Oak Island, then the Tree of Life on Nolan's Cross: Nolan's Cross is the central pillar and middle cross arm of the red formation called the Tree of Life.

Oak Island's Tree of Life

The Tree of Life has ten points, or nodes; as a group these points are called *sephirot* (singular: *sephirah*). At each Oak Island *sephirah,* shown as a large red dot, is a stone: six of them form "Nolan's Cross" and the other four found by Amundson complete the Tree of Life. Each *sephirah* represents an aspect of God's universe: the leftmost pillar with its three *sephirah* shows the three aspects of "God's Masculine Side" (Understanding, Justice, Glory), the central pillar with its four *sephirah* shows

four aspects of "Ideal Balance" (Divine Crown, Beauty, Foundation, and God's Presence), and the rightmost pillar with *three sephirah* shows three aspects of God's Feminine Side (Wisdom, Mercy, Eternity). Amundson found large stones at all ten points, all but one above ground. As marked on the photo, the middle-right *sephirah* represents "Mercy." Again, there might have been a plethora of stones in the area with Amundson selecting only the ten that fit the relative measurements of a Tree of Life.

Note the area marked "7." This is the triangular swamp that Nolan first drained in 1969. The sephirah to the left of "7" marks the Mercy Point; it is at the triangular point of the swamp. In a War Room meeting Amundson directed the group's attention to the Mercy Point, claiming *ex cathedra* that something of importance would be found there. The Laginas drained the swamp and explored that area with metal-detectors. Nothing of significance was found.

The Tree of Life and Nolan's Cross are the largest and most complex of the stone figures found on the island, but there are other stones that have been interesting. Near Smith's cove lies a stone with a "G" clearly carved into it; G is the symbol for God in Freemasonry. Freemasonry was a rapidly growing movement in the 17th century and is thought by some, without evidence, to be directly descended from the Knights Templar; its ties to Rosicrucianism are more direct. This stone suggests that Freemasons—and perhaps Knights Templar— were on Oak Island. But the presence of Freemasons is not surprising as it was a flourishing egalitarian organization in Britain with members drawn from the army, the aristocracy, and the growing middle class. During the American colonial period Freemasonry was active in America. Indeed, George Washington was a Freemason.

The Oak Island "G" Stone

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Natural Explanations of Oak Island

Perhaps the only solid information gained from 216 years of digging and destruction is that there was human activity of some sort on Oak Island predating the 1795 discovery of the Money Pit: the Smith's Cove area has revealed tools, probable box drains, coconut fibers and eel-grass, wharf-like log structures, and other evidence indicative of shipping activity; the many pits dug on the island have revealed evidence of tools, nails, anchors, gold links, glass and pottery, old coins; isolated carved stones like the "G" stone and the apocryphal "90 Foot Stone" were found in the Money Pit area.[36]

But over those 200 years more questions have arisen than answers have been given. Among those questions is:

- *What would justify all of the engineering and mining effort that Oak Island apparently reveals?*
- *Has the flooding of the Pit and other sites been due to man-made tunnels to Mahone Bay, or has it been tide-driven flow through natural channels as argued by many students of the island.*
- *Why have "supernatural" theories been preferred to "natural" theories of Oak Island's history?*

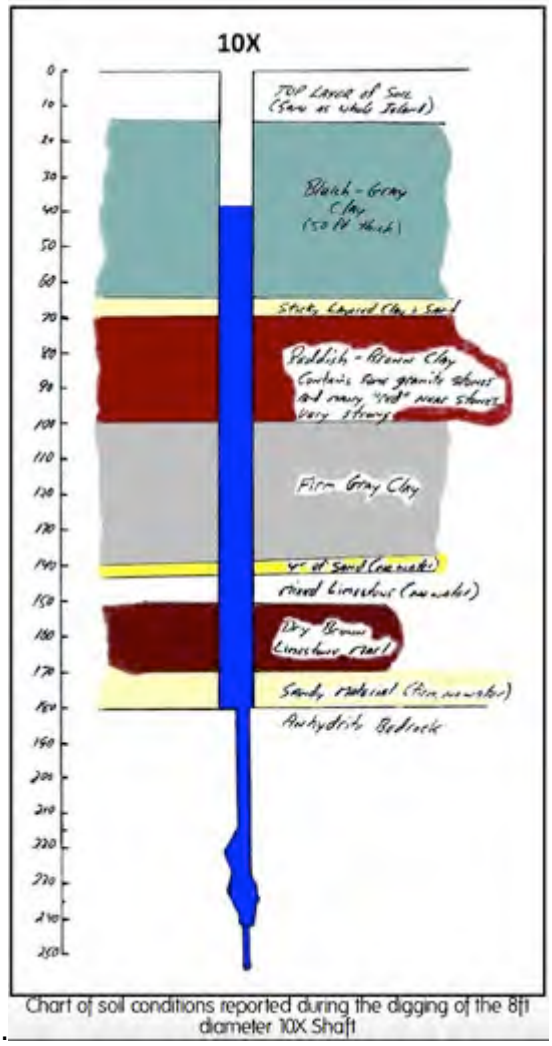
These questions remain unanswered, or, in many cases, have received conflicting answers. What seems clear is that few investigators have sought "natural" solutions to the Oak Island Mystery—solutions that derive from human activity and experience, not human aspirations or mysticism. Instead, Oak Island has become a treasure hunt driven by the underlying search philosophy "If It Isn't Found, It Must Still Be There."

Once we are committed to sane and scientific answers, we look for plausible explanations for these findings that don't require traveling three thousand miles on

[36] All of this assumes that what is reported to have been found was actually found—treasure sites are notorious for being "seeded" to attract investors.

potentially dangerous seas to hide extremely valuable items like the Ark of the Covenant or Marie Antoinette's jewels in a 100-foot pit. Stated this way, pirates seem more plausible.

Oak Island has clearly been inhabited for a long time, certainly well before it was laid out in 1762. Even if not inhabited, it has been available to passing ships bound for Europe since the discovery of America by Europeans. We would expect to find tools and signs of early life and activity on the island, though we would not expect those artifacts to be as deep underground as they were found. Still, the coins, tools, nails and other indications of human activity might simply be the residue from construction on the Island that is unrelated to treasure.



Cross-Section of Borehole 10-X

The geological characteristics of Oak Island area is certainly relevant. It is a low island with a maximum elevation of only 36 feet, an elevation that has decreased about one foot for each century as sea levels rose. Many observers argue that the island rests on porous limestone in which natural tunnels and caverns are readily carved by groundwater or seawater. Does this limestone foundation exist, and, if so, would it create the flood tunnels that have been the subject of so much attention? There are doubters.

Doug Henskee, an Oak Island investigator who dug Borehole 10-X with Blankenship in 1969, is skeptical. In 1997 Henskee stated that when Borehole 10-X was dug, "We never found any significant horizontal flow of water at any depth, from the surface down to bedrock at 180 feet." But if 10-X was and remained dry for a long period, why does it now have water in it? Does the 1971 blasting explain this?

The cross-section of Borehole 10-X shown above is drawn by Henskee. Note that the island's bedrock is anhydrite rock, which has a highly crystalline structure and is very porous. While bedrock could be water-laden, its ability to transmit water to higher levels depends on what is on top of the bedrock. Henskee's chart shows a layer of sandy material at 170-180 feet, a layer of dry limestone marl (150-170 feet), 6 feet of mixed but dry limestone (144-150 feet), and 4 feet of sand (140-144 feet). Above this, at 100-140 feet, is 40 feet of firm gray clay, the residue of glacial till; this is the sweet spot of the Money Pit, the target are for most of the digging. The impermeability of that clay does not bode well for the theory that flooding came from natural channels.

John Wonnacott, a well-regarded geologist recently interviewed for [**I1]**, argues that the we should expect no natural watercourse into the Money Pit or Borehole 10-X.[37] Wonnacott notes that the island's bedrock is at 180 feet and that between bedrock and the ground level at the Money Pit or Borehole 10-X is a layer

[37] See [**I1**/*archives/02-2016*: 44].

of glacial till, a composite of usually fine stone and heavy clay that is impervious to water. Thus, Wonnacott claims, any water that flooded the Money Pit during early explorations would have to come from man-made tunnels. This information has re-invigorated the debate about flood tunnels, but it has left the purpose of them unexplained.

Still, it is obvious that Oak Island was a site of human activity from early days—people lived and farmed there, and items were lost only to be recovered with the island's Big Digs. The coins, tools, nails and other indications of human activity might simply be the residue from life on the island unrelated to treasure; that they were often underground might be because wells were sunk to obtain fresh water and items were dropped into them.

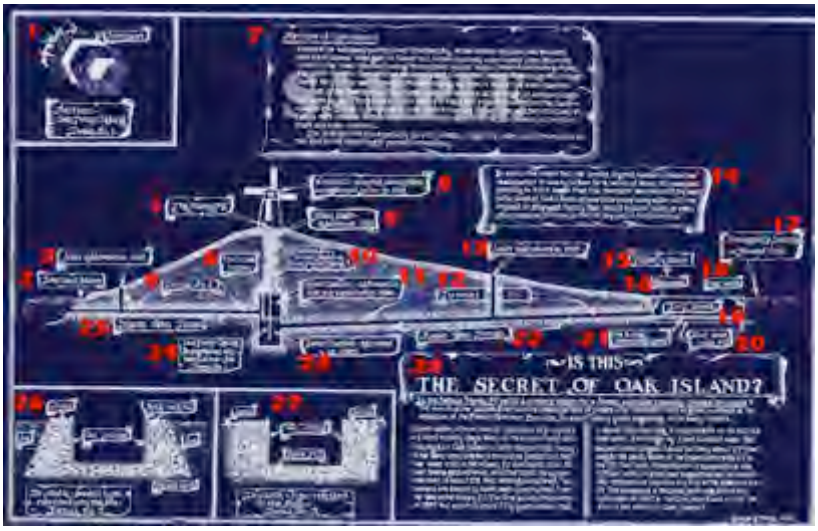
The discovery of coconut fiber—a common component of ship's caulking and regularly used as dunnage (packing) for fragile items—supports the idea that the activity was related to Oak Island's position in the Gulf Stream at a turning point on the main route to Europe for ships of all types—merchant, military, and pirate. It would be no surprise that the island would be a stopping point for refitting and provisioning, and fresh water—ships of the 18th century and earlier required bottom cleaning, hull repair and caulking, mast repair, and other maintenance to make the long trip over open water to the Old World. Where better to do this than an island in reasonably protected waters and covered with oak trees?

One simple explanation for the Money Pit might be that it is the result of an unsuccessful search for fresh water. That the water in the Money Pit is described as "brackish" suggests a source of fresh water. Coconut fibers found in the pit might be from attempts to prevent seawater seepage from the pit walls. This, of course, leaves other "facts" of Oak Island unexplained—the Smith's Cove works, the flood tunnels—but those possible signs of excavation might have independent explanations.

A more elaborate theory was offered in 1972 at a meeting of the Canadian Institute of Survey and Mapping in Dartmouth, Nova Scotia. George T. Bates was a Canadian surveyor who had worked on the island in 1937, and a Nova Scotia historian who wrote on 18th century migration to and from Nova Scotia. Bates

suggested at this meeting that Oak Island was used as an early shipyard for passing vessels. That this was not be recorded might well be because there was no indigenous population to record it, or that activities were covert for a variety of reasons (smuggling, taxation, fear of theft).

Bates argued that the design of the Money Pit *cum* flood tunnels mimicked a known pre-19th century shipyard in the West Indies. Regrettably, I've not seen Bates' presentation nor have I found any reference supporting that claim. His theory was that the "Money Pit" is actually a pumping station with a windmill or windlass at the surface powering a pump deep in the Pit. The schematic shown below was his creation; Bates often presented his visual displays in a blueprint-like form. Smith's Cove, with a dry dock, is to the right, with a tunnel connecting it to a cavity at the bottom of the Money Pit.[38]



Schematic of a Shipyard at Oak Island

The dry dock theory works like this: at Smith's Cove a dam is constructed with a water gate through which a ship can enter at high tide. The Watergate is closed and the box drains are opened to drain the Cove into a cavity at the bottom of

[38] The Halifax Company found in 1867 that this tunnel was not straight, as Bates shows. Instead it angled upward from Smith's Cove toward a point below the Cave-In Pit, then it angled downward at 22.5° to intersect the bottom of the Money Pit.

the Money Pit. That cavity is then drained into South Shore Cove by pumping it up to a higher flood tunnel in the Pit that runs to that cove. At the end of the operation the ship has settled into a cradle or dry-dock, the Smith's Cove box drains are closed, and the cavity at the bottom of the Pit is empty. When the ship repairs are done, the outer watergate is opened, refilling Smith's Cove, the ship departs, and repair station is ready for the next ship.

There are, of course, criticisms of this idea. One simple point is that Bates reverses the relative depth of the two flood tunnels—the Smith's Cove tunnel was reported as 100-feet deep at the Pit while the South Shore Cove tunnel was 118-feet deep. Perhaps Bates was showing a more generic plan of a shipyard operation, but it makes little difference to the operation. A South Shore Cove tunnel isn't even needed—water could flow into the bottom of the Pit from Smith's Cove, then be pumped directly to the surface then piped down to South Shore Cove.

A second criticism is that a common way of cleaning a ship's bottoms or making minor hull repairs was *careening*. The ship would be beached near high tide, the tide would go out, exposing the bottom, the bottom would be cleaned and repairs made, then the ship would be refloated at the next high tide. But while careening is a perfectly sound practice in the Caribbean, where tide ranges are low and sandy beaches are common, in North America's northeast the shores and bottom are filled with rock and ledge that could damage a careened boat. Furthermore, storms are frequent and a careened boat is subject to their full fury.[39]

Another criticism is that no remnants of a windmill have been found, and that the side tunnels are controversial, especially the tunnel from the Pit to South Shore Cove. But absence of a windmill/windlass or a pump could be due to their value—when the shipyard was finally closed these items were removed and either sold or used elsewhere. After all, Early Oak Island maps indicate locations of 18th century houses, houses that have also disappeared.

Yet another criticism is that with a 30-foot tidal range at the Bay of Fundy the ability to work on a ship on dry land would be better there than with the 7-foot tide

[39] In fact, a common practice is to send vessels to sea when a serious storm approaches. A careened boat can not be refloated quickly—it requires a high tide—so it remains exposed to untimely storms.

range at Oak Island. Why not go up to Fundy to do repairs? This ignores important characteristics of the Bay of Fundy. Let's suppose we are at Digby, about halfway up the eastern side of the Bay. The tide range there averages some 30 feet, but it is highly variable both by time of month and local weather: the range between neap and spring tides is far greater than the average tide range in that region, and unpredictable storm surges can create even greater tide variation—northeast winds blow water out, southeast wind blow it in.

If the point is to gain a lengthy time for repairs, careening a ship at Digby might be a bad choice because it exposes the ship to unpredictable flotation at inopportune times, and to the powerful forces of tidal flows in that region. Added to that is the fact that going to Digby for repairs would take you well out of the Gulf Stream and add several hundred miles to your trip. Perhaps a better choice is a shipyard on Oak Island.

No doubt other faults can be found with Bates' idea. But to the layman—and virtually everyone in the Oak Island game is a layman—Bates' proposal has the advantage of resting on a natural foundation without resorting to mysticism or treasure. And it is consistent with the dismal failure of the treasure hunt to find anything worth finding other than the residue of human activity apparently related to ships. Bates' theory has the advantage of tying the known evidence together—the Pit, the flood tunnels, the box drains at Smith's Cove,

Dennis King offers another theory.[40] King believes, with Bates, that the idea of treasure is the result of excessive enthusiasm. To him the fundamental question of Oak Island is, "Why were the box drains in Smith's Cove and the associated tunnel from them constructed?" He does not believe that either the treasure pit or the idea of flood tunnels to it hold water (pun intended).

King's answer is "salt." Over the centuries salt has been a very valuable commodity. Salt is essential as a food preservative, as an aid to food's taste, and as a source of human and animal health. Wars have been fought for it, states have

[40] See [**I3**/dennis_king_march_2010.shtml]

monopolized trade in it as a revenue source, and social customs have been built around it.[41]

Salt has been recovered in a variety of ways. The ancient Chinese (circa 2,700 BCE) drew briny water through bamboo pipes from brine wells, then boiled the water off in either open pans or in pots that left a solid pot-shaped block of salt. Inhabitants of areas once undersea have raked it off of the surface or have mined it; in that form it is Halite and called "rock salt." In fact, at the Bay of Fundy's northern end is a salt mine 4,000 feet thick left from the long-ago days when sea levels were hundreds of feet higher.

Salt is ubiquitous in social customs. Medieval guests of high rank were seated "above the salt" at banquet tables; salt was associated given to solidify peace treaties and other types of social amity; soldiers were paid in salt, making them "worth their salt" (in fact, the words "salary" and "soldier" are based on the Latin for "salt").

As noted above, the first recorded residents of Oak Island were the fish merchants John Gilbert and Richard Smith, who received Oak Island in a 1753 land grant. This would place Oak Island as a site for offloading fresh fish and the buyers would have a particular interest in salt as a preservative. But salt was expensive to transport and, in many countries, highly taxed to boot.[42] What more cost-effective source than a remote island near the fishing ground but far from the tax collector, especially if the taxman can be bought.

In Nova Scotia's northern climate salt recovery by simply boiling raw seawater was possible but inefficient: it was not only fuel-intensive (though trees were abundant) but during the winter the seawater was frozen near the surface. The key to creating salt efficiently was to pass seawater through several stages, concentrating the salt with each stage. At the end of that concentration phase, the salt content of the remaining water would be high and the water could more rapidly be boiled off to leave a larger amount of salt per BTU of heat required.

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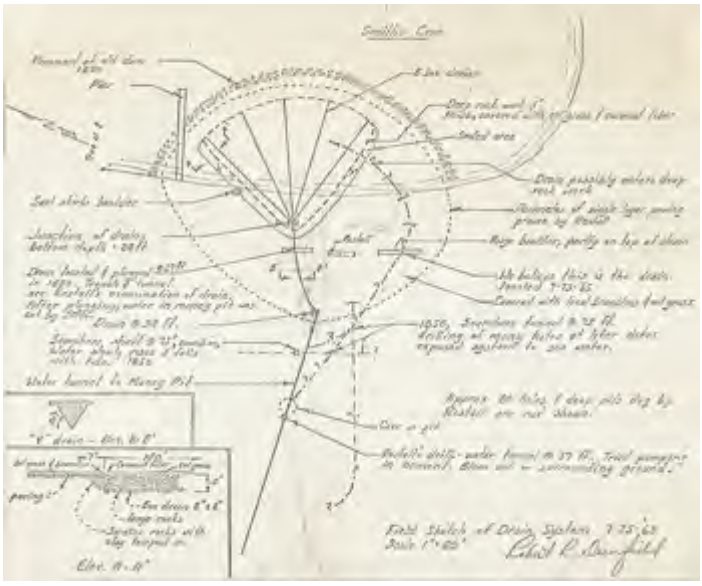
[41] See [**B1**] for a surprisingly captivating history of salt.

[42] The French *Gabelle* was a salt tax that helped generate the French Revolution. British salt taxes were a source of chronic unrest in India. The Chinese levied a salt tax before Christ. These salt tax were sales taxes laid on top of the already high price of salt due to state monopolies

In King's theory, the original cofferdam was built to allow management of the water level in Smith's Cove. Between the cofferdam and the shore a number of box drains were constructed arrayed in a wide arc covering the central portion of the cofferdam arc, as shown in Robert Dunfield's field sketch, (page 14, repeated below). The box drains converged at a single point on the shore where a common drain fed into a tunnel leading to a well.

The box drains were covered with layers of eel grass and coconut fiber, on top of which a thick layer of sand would be laid. The purpose of the sand was to capture the salt content of the seawater, leaving brackish remains to filter through the eel grass and coconut fibers and into the box drains, hence into the well where it would be pumped out.



Robert Dunfield's Field Sketch of Smith Cove

After several repeated tide cycles the salt-soaked sand is carted to the empty well and dumped in. Pure seawater would then be allowed to enter the well through the box drains. This seawater would absorb the salt concentrated in the sand, adding that to its own saline content. The high-saline water would then be drawn from the well and boiled in large pans until evaporation left only salt crystals to be harvested.

King finds that several features of the Smith's Cove works fit this description. First, Oak Island had timber to burn as fuel for the boiling-off of water. Second, in 1965 Robert Dunfield found a well on the shore near the box drains, but because it was only 24-feet deep and didn't connect to any flood tunnels he disregarded it.[43] Third, it was widely reported by several expeditions that the box drains were covered with eel grass and coconut fibers with the probable intention of filtering water going into them, though nobody understood that the underlying purpose was not just to filter water going in but to leave salt behind in the sand.

Finally, in 1969 Blankenship found an odd pan-shaped "U-shaped") structure buried two feet down about 150 feet south of the center of Smith's Cove beach. It was made of stones cemented together, it showed signs of intense heat, pieces of charcoal were found at the site, and the stones had a reddish color—a characteristic of similar stone saltwater -boiling sites in England.

So we have two completely natural arguments for the findings at Oak Island. The first—shipyard activity—is consistent with the nautical nature of many of the artifacts, and with the discovery in the swamp of items apparently related to ship construction. This explanation requires a pit like a deep pit (the Money Pit?) and flood tunnels. The second explanation—salt production—requires neither pit nor flood tunnels; it only requires the artificial sand beach, box drains covered with sand, a short tunnel to a well, and a pan-like structure for boiling concentrated seawater—all of which have been found.

Take your pick, or find another explanation.

[43] See Dunfield's field sketch. The well to which King refers is just inside the shoreline and well above high tide. It is labeled as a "drain" 24 feet deep.

Appendix 1

The Economics of Oak Island

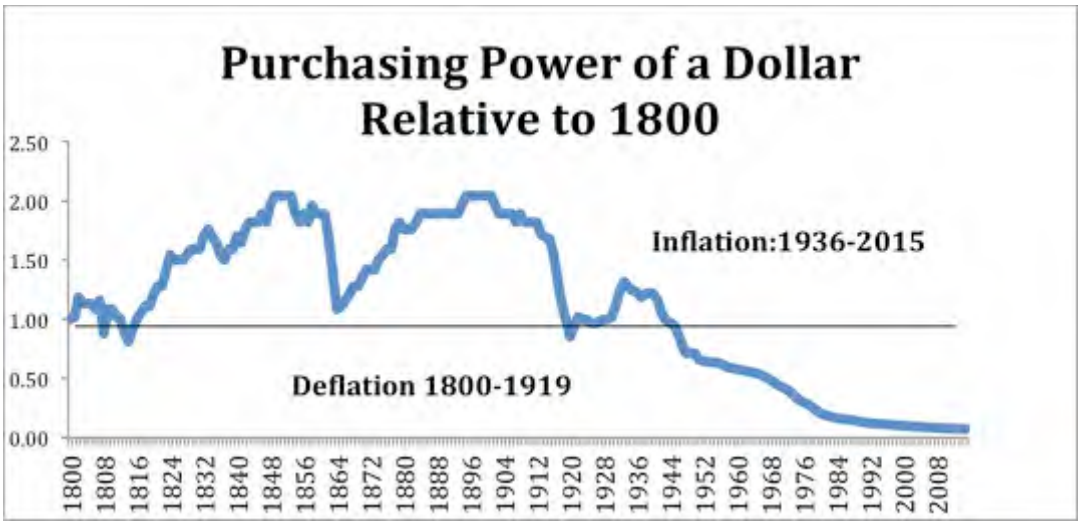
This Appendix considers the costs and potential value of Oak Island's treasure hunt—what might be the monetary value of the treasure should it exist? How much has been spent on efforts to find the treasure? These are all questions that have no firm answers—any answer depends on the assumptions made and, most importantly, on how gaps in data are filled in.

The easiest question is the value of the treasure. The correct answer is, *nothing, unless it is found*. But how many dollars *might* lie under the surface of Oak Island. Obviously, that depends on what is there—is it the uncountable treasure of the Knights Templar, the original manuscripts of Shakespeare, or the French Crown Jewels? Let's suppose it is what the 90-foot stone is purported to say: Two million pounds sterling and that the £2,000,000 is valued at the price of gold in the year 1800. Between 1800 and 2015 the sterling price of gold rose 171-fold, from £4.26 per ounce to £730, so the sterling value of the treasure in 2015 would be £342 million or $505 million at the year-end 2015 exchange rate of $1.48 per £. *So, as a rough estimate, the unfound treasure might now be worth about half a billion dollars!*

How much has been fruitlessly spent over the years to *not* find an Oak Island treasure? Unfortunately this is a far more difficult calculation. To answer it we need both an accurate year-by-year statement of expenses and an accurate record of annual price levels to assure that all calculations are in dollars of the same year. To my knowledge, there has been no thorough investigation of the books of the various companies, and it seems unlikely that the books would accurately measure the costs—uncompensated workers (Franklin Roosevelt, Robert Dunfield and Robert Restall come to mind) provided free or contingent services, expenses might have been inflated for tax advantages, and equipment used might have been provided on a contingency basis. We don't have any year-by-year expense estimates, nor do we even know the general shape over time of the actual amounts spent.

Yet another problem is that the amounts spent in any year were in that year's dollars while inflation and deflation changed the meaning of a dollar. In the chart below, the line exceeds 1.0 when the dollar has *appreciated* vis-à-vis the 1800 dollar—that is, when there has been deflation since 1800; the line is below 1.0 when there has been dollar depreciation (inflation vis-à-vis 1800; in short: on the chart "up" is deflation, "down" is inflation.

For the entire period 1800-1919 prices were lower than in 1800 and the dollar's purchasing power appreciated. For example, in 1896—the year of William Jennings Bryan's Cross of Gold speech about the Gold Standard's responsibility for chronic deflation, a dollar had twice the purchasing power of one 1800 dollar. This reversed after 1945 with the advent of chronic inflation due, in part, to fiat money. By 2015 the purchasing power of a dollar was less than ten percent of its 1800 purchasing power.



In 1966 Robert Dunfield—the man with the bulldozer who arrived to work with Robert Restall in 1965—estimated the historical costs of Oak Island exploration to date at $1.75 million.[44] As a rough guess, I'll double that to account for the unquantified but expansive work of the Triton Alliance from 1969 to 2010.

This leaves the expenses of the Blankenship-Lagina Oak Island Tours, Inc. to complete an initial estimate of Oak Island costs. There is no public record for those expenses, but having seen on *The Curse* the massive equipment they've used liberally for four seasons, I'd be surprised if they've spent less than $3 million. So let's take $6.5 million as a back-of-the- envelope guess at total spending on Oak Island since 1800.

The next question is, "How was that allocated among the 216 years from 1800 through 2015?" Again, we don't know. But let's consider two approaches. The first is a linear approach: assume constant annual spending—therefore linearly increasing total spending. This has fatal flaws: the implied average annual spending is $30,100, which must seriously overstate annual spending in the early years and badly understate spending in later years. So when an inflation adjustment is made, this will seriously overstate exploration costs in 2015 dollars.

The second approach is to assume that spending increased exponentially following the simple equation a_0bt^2: a_0 is the first year (1800) cost and b is a parameter measuring the rate of cost acceleration: we can interpret b as b = 1+r, where r is the annual rate of increase in costs.

To implement the exponential approach I assume that year 1800 spending was $200. i.e. $a_0 = 200$. Then I search for the value of b that makes the total cost over 1800-2015 sum to $6.5 million, the estimated total cost over 1800-2015. The

[44] See [**I6**/dunfield-calls-halt-march-22-year-unknown. Dunfield claimed that he had spent $120,000 in 1965-66. I assume that was included in Dunfield's $1.75 billion estimate.

resulting value of b is 1.0328, meaning that annual dollar spending increased at a 3.28 percent annual rate. This is a surprisingly sensible estimate: the actual average rate of annual inflation from 1800 to 2015 was 1.23 percent, so a 3.28 percent average annual increase in dollar spending implies a 2.05 percent increase in real spending at Oak Island.

The annual spending thus calculated is in the dollars of each year, so to derive total spending in 2015 dollars we must adjust those annual spending amounts by price inflation between the each spending year and 2015. For example, if 1864 spending is, say, $1,579 (as our simulation "predicts") we multiply that by the ratio of the 2015 price level to the 1864 price level (15.1) to get $23,843 for 1864 spending in 2015 dollars. For this final step we use historical price data for the Consumer Price Index from 1800-2015, made available by the Federal Reserve Bank of Minneapolis.[45]

The result: a crude estimate of total spending on the Oak Island Treasure Hunt from the beginning through 2015 is $**25,500,000** ***in 2016 dollars***.

[45] Of course, the CPI doesn't really go back that far. The data used for early years are other price indexes that have been spliced to the CPI data.

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Appendix 2

Monetary Weights and Measures*

1 Troy Ounce of Gold	31.1034768 grams	
1 Common Ounce of Gold	28.3495231 grams	
1 Troy Ounce	1.42857 Common Ounces	
1 Common Ounce	0.911458 Troy Ounces	
1 Troy Ounce, Gold	Cubic Inches	
1 Common Ounce, Gold	.0897 Cubic Inches	
1 Cubic Inch, Gold	11.14 Common Ounces	
1 Troy Ounce, Gold	£4.26 = $19.39	(1800 average)
	£796 = $1,170	(year-end 2015)
1 Pound Sterling	$4.55	(1800 average)
	$1.47	(year-end 2015)

* In this table a "common" unit (for example, a "common ounce") is the avoirdupois unit commonly used; there are 0.7 common ounces for one troy ounce. Gold units are typically measured in troy ounces.

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