

INTERNATIONAL... Leading Lights

The View Near Graemsay Island

As Told By Thomas Tag

Introduction

In April 2004, I acquired a diary, a diary hand-written by none other than Alan Stevenson. Alan Stevenson succeeded his father, Robert Stevenson, as Engineer to the Northern Lighthouse Board (NLB) in 1843. It was a custom of the day for the board's engineer to cruise the Scottish coast for an annual inspection of lighthouses. The diary offers a rare glimpse into the activities during the travel in 1850 and 1851. Alan traveled on the NLB's iron-paddlewheel tender, *Pharos III*, as he made his inspection journey. The diary is fascinating reading and describes various lighthouses then under construction, as well as problems encountered and repairs needed or being made. The diary has recently been returned to Scotland and is now in the collection of the Scottish Lighthouse Museum in Fraserburgh.

One section of the diary was of particular interest to me. Once in 1850 and four times in 1851, Stevenson visited the Hoy High and Low Lighthouses on Graemsay Island that were then under construction. While there, he took compass sightings of a number of objects in the nearby area to determine positions for future use by mariners. He also took an early afternoon away from work, to visit a local landmark known as the 'Dwarfie Stane.'

To say the least, I was intrigued. What were these curious landmarks he was observing and what in the world is a Dwarfie Stane? I contacted the head of the Tankerness House Museum in the town of Kirkwall on the main island of Orkney. He was able to provide me with a local map and information about several of the landmarks. Now I was really interested! I decided to make a trip to the Orkney Islands to see each landmark for myself and to photograph and describe all those that still exist. The remainder of this story is partially fictional, a first-person account, produced from excerpts from the diary related to the



Alan Stevenson. Author's Collection photo.

lights on Graemsay Island, accompanied by photos and descriptions of each of the landmarks seen so long ago by Alan Stevenson. I used the real names of individuals and the actual happenings related in the diary wherever possible throughout the story. I hope you enjoy reading about them and seeing them as much as I did.

The View Near Graemsay Island

A beam of brilliant sunlight shot through my cabin porthole illuminating my quarters and awakening me on this beautiful Saturday morning April 5, 1851. My servant, Ian Dunn, had laid out my clothes for the day and they now hung near my traveling trunk at the foot of my berth. I dragged my tired body from the berth, filled the wash basin with water from the pitcher, and quickly performed my daily toilet. I dressed and was in the process of tying my cravat when I heard the pings and cracking sounds of high-temperature steam building within the ship's boilers as the NLB tender, *Pharos III*, was made ready to get under way for the day.

I exited the cabin and climbed through the

gang-way bulkhead and up to the main deck just aft of midship near the base of the ship's black funnel. The First Mate, Colin MacKenzie, was proceeding from the aft deck to the officers' mess and I joined him.

"Gyd morning, Mr. Stevenson, a lovely day it is, sir," said Colin.

"And when do we raise anchor, Mr. MacKenzie?" I returned.

"The captain has set 8 o'clock for that, sir," he replied.

We arrived at the mess room joining Captain Campbell and the others. The cook, Mr. Jenkin, had prepared a fine bowl of hot oat porridge for each of the officers and me along with butter, fresh bread and steaming hot coffee. After breakfast, I returned to my cabin to prepare for the day's work. As I entered the room Ian was just finishing the remaking of my berth and setting out my travel case.

"I'll need the box compass and sextant today, Ian," I said as he turned to me.

"And the telescope, sir?" Ian asked.

"Yes, that too."

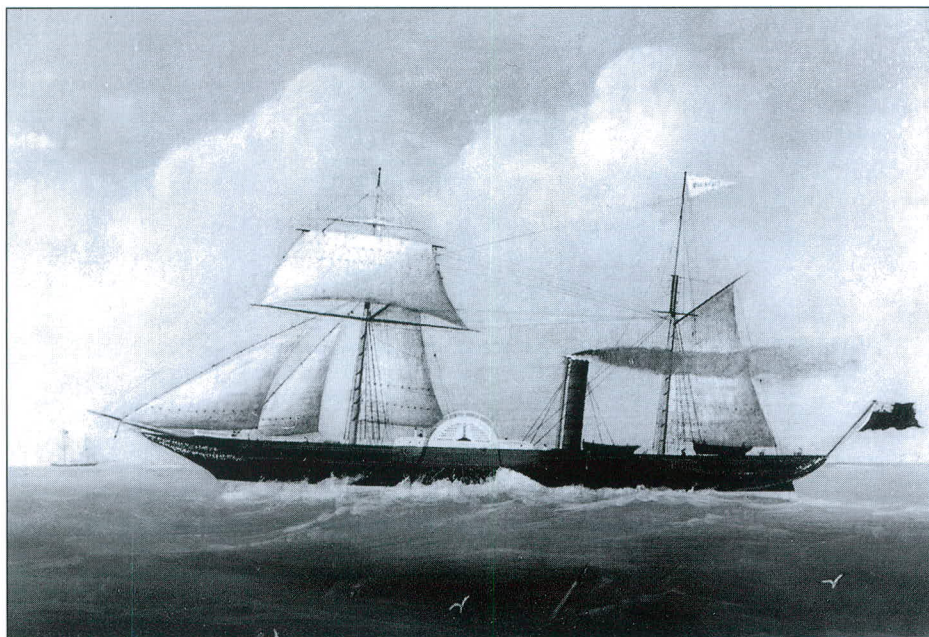
"I think I had better change into my tall walking boots as well, can you get them for me?" I requested.

Ian walked to the wardrobe and quickly retrieved the boots. Ian is a young man, born in Edinburgh, who has been my servant for three years now. He is rail thin, of average height and has a never-ending smile that wins him many friends and is the delight of any young woman he meets.

"Will ye need me to travel with ye today, sir?"

"Yes," I said, as he handed me the boots. "I'll want your assistance with the instruments."

I donned the tall walking boots and collected my heavy woolen overcoat. The day was fine with an azure sky that told me I would not need rain gear, though the chill of an April day in the Orkney Islands requires a good coat. We returned to the deck just as the anchor was raised, and soon felt a shudder through



The *Pharos III*, used by the Northern Lighthouse Board from 1846 through 1861. Drawing courtesy of the Northern Lighthouse Board.

the ship as each of the engines driving the paddle wheels received its first action of the day. After a short toot from the steam whistle and an accompanying belch of smoke from the funnel, we slowly maneuvered to starboard as the *Pharos III* began its four-mile journey from our anchorage near Houton Head in Scapa Flow, to the island of Graemsay.

The sun danced from the tips of the foot-high wavelets on Scapa Flow as we progressed southwestward toward the newly built jetty at the eastern end of the Bay of Sandside on Graemsay Island. The jetty had been finished by Mr. Scott during my last visit to the island on September 16th, 1850. The jetty, on the eastern side where the boats docked, consisted of a granite wall secured with granite key stones placed vertically between the main joints. The remainder of the jetty is made of large rectangles of the local shale, stacked closely together. The jetty slopes from the water's edge, rising gradually to the height of the island to the west of the Hoy High tower.

We arrived near the jetty at 8:50 am. The *Pharos III* anchored in the Bay of Sandside while the longboat was lowered from port-side aft by Mr. MacKenzie and crew of four oarsmen assigned to take me ashore today. We quickly rowed the thirty yards to the jetty, landing at nine. I had Ian remain in the longboat while Mr. MacKenzie and I visited the now nearly finished Hoy High Light. The jetty, road, and keeper's gardens were all quite complete, with only some interior trim work in the

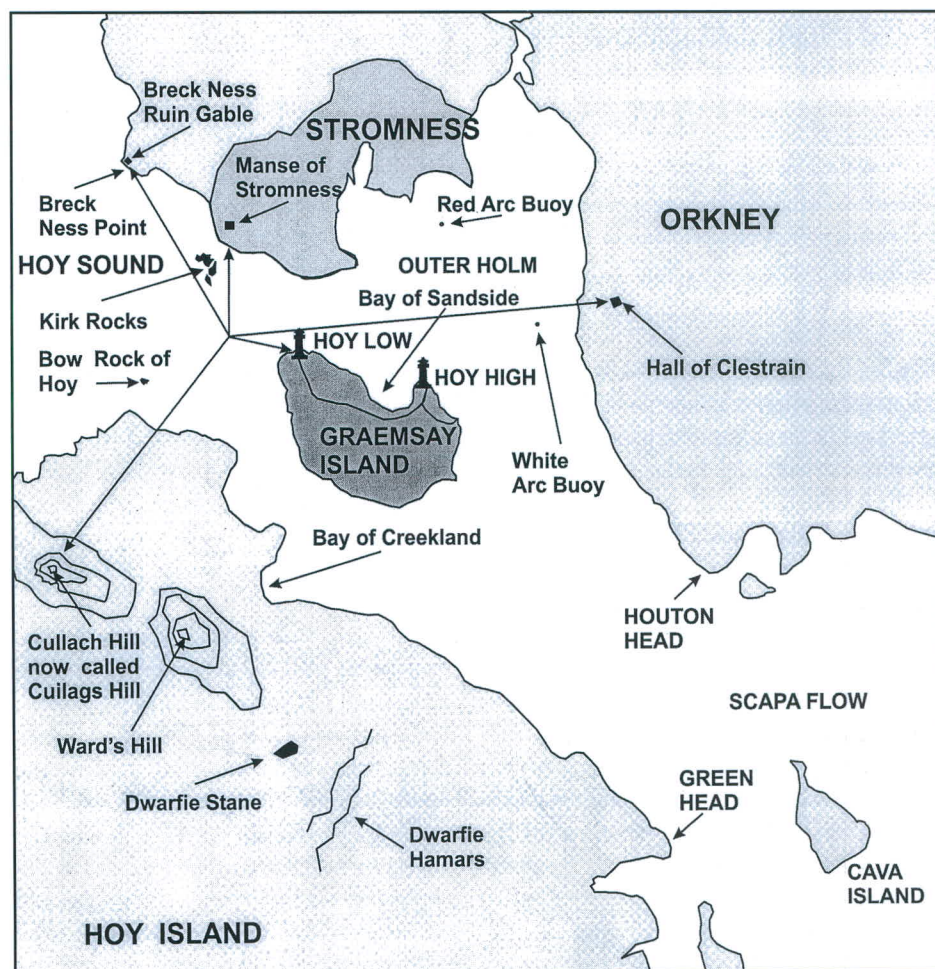
lantern remaining to be finished.

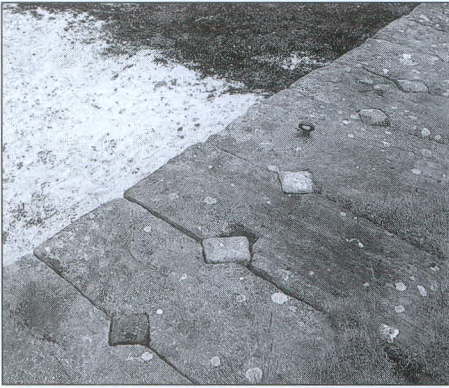
Construction on the Hoy High Light had begun early in 1850. The tower is 108 feet tall and its foundation is cut into the granite rock

seven feet above the water line of the Outer Holm. The foundation stones are held together with granite keys, as used in the jetty, and are firmly attached to the base rock with copper bolts. I incorporated the latest invention of my brother Thomas, the holophotal lens-reflector combination, as the main illumination apparatus for the tower. This forty-five inch reflector with double burner is fronted by a small Fresnel lens giving it a range of 16 miles, and has a panel of ruby glass that creates a red characteristic for the light. A second standard reflector with red filter supplies light in a slightly southwesterly direction more toward Hoy Head. In addition, there are two other red reflector lights pointing east and southeast to provide a signal to ships approaching from Scapa Flow.

"Mr. Wilson, could I speak with you for a minute?" I requested.

Alexander Wilson is the foreman of the works for the construction of both the Hoy High and Low Lights. He is a tall and somewhat imposing man with a ruddy color to his cheeks from long exposure to the wind and sun. This day he wore a long black knee-length coat with ten brass buttons, and breeches of





Above – The granite keys in the wharf at Hoy High jetty.

Right – The view from the jetty inland, showing the stacked shale.

Both photos from the author's collection.



a dark gray color that came just below his knees in the usual fashion. He also sported dark green wool stockings and a black seal-skin hat with wide brim, very similar to mine. Most of his work crew had been recruited in Ireland and were highly efficient in the construction trades.

"Mr. Stevenson, how may I be of assistance?" Came his reply.

"First I wish to commend you and your men for the fine work and the fast progress this year. Please convey my feelings to all the men." Then I asked, "Is Keeper Waeurich in the lantern?"

"Yes, Mr. Stevenson, Waeurich is in the lantern cleaning the lamp and making ready for the trials," advised Mr. Wilson.

"I need to speak with him," I said. "Have him come down."

Mr. Wilson sent one of the men to fetch Waeurich for me. Keeper Alan Waeurich is a short Orcadian man with a deeply wrinkled face, rather scruffy curly black hair, and a walrus-like mustache. He has long family ties to the islands, his great grandfather having been born in the town of Kirkwall on the main island. I selected him as keeper for the High Light the season before and he had been in training since. I assigned him to work with the team from Leith when the illumination equipment was brought to the site and installed a few weeks earlier. He is now quite experienced with the lamp and with the actions necessary to keep the illumination apparatus in good working condition. In about two minutes Mr. Waeurich exited the tower door and joined our group.

"Mr. Waeurich, I want to perform the initial lighting trial tonight. I require that the

lamps of the High and Low Lights are lit at precisely 6:00pm. We will be onboard the *Pharos III* about 17 miles to the northwest and will travel toward the lights as the trial proceeds. Mr. Waeurich you know how critical this trial will be and I must emphasize that the lamps be trimmed properly and the flames be at their exact three-inch heights throughout the trial. I shall require you to be present onboard the *Pharos III* Monday at 10 am in Stromness Harbor when we will discuss the results of our observations tonight," I stated.

"Aye Mr. Stevenson we will not let you down," Waeurich assured, "I will see that all is done as you require sir."

Mr. MacKenzie and I returned to the longboat and we soon pushed off from the shore beside the jetty, with barely a sound from the soft sand beneath the longboat. I was happy that I had worn my tall boots today as the dew was heavy on the high grass near the shore.

We now proceeded westward toward the Hoy Low Light almost two miles away. The sea in the Outer Holm was nearly calm and we progressed at a rapid pace with only the sound of the gentle slap of the oars and the comfort of the warm sun on our backs.

We arrived near the Low Light and carefully beached the boat on the rocky coast leaving Ian and the seamen with the longboat. Mr. MacKenzie and I walked westward up through a narrow cleft in a bank of rough stone and onto a field of wild spiked grass looking almost like clumps of porcupine quills. Here we also find sea oats dappled with

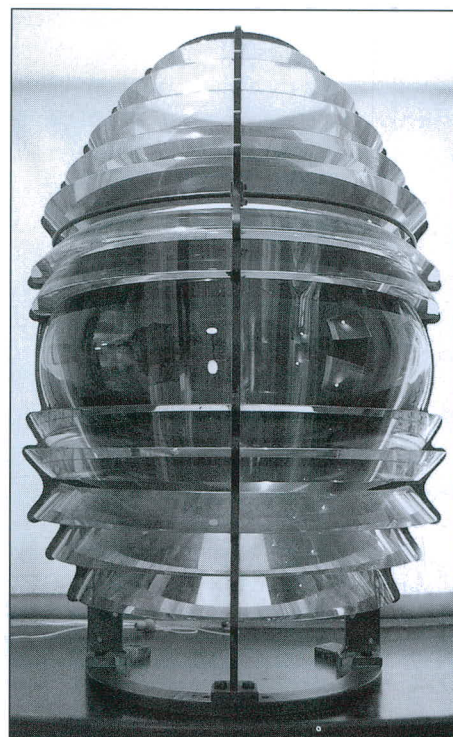
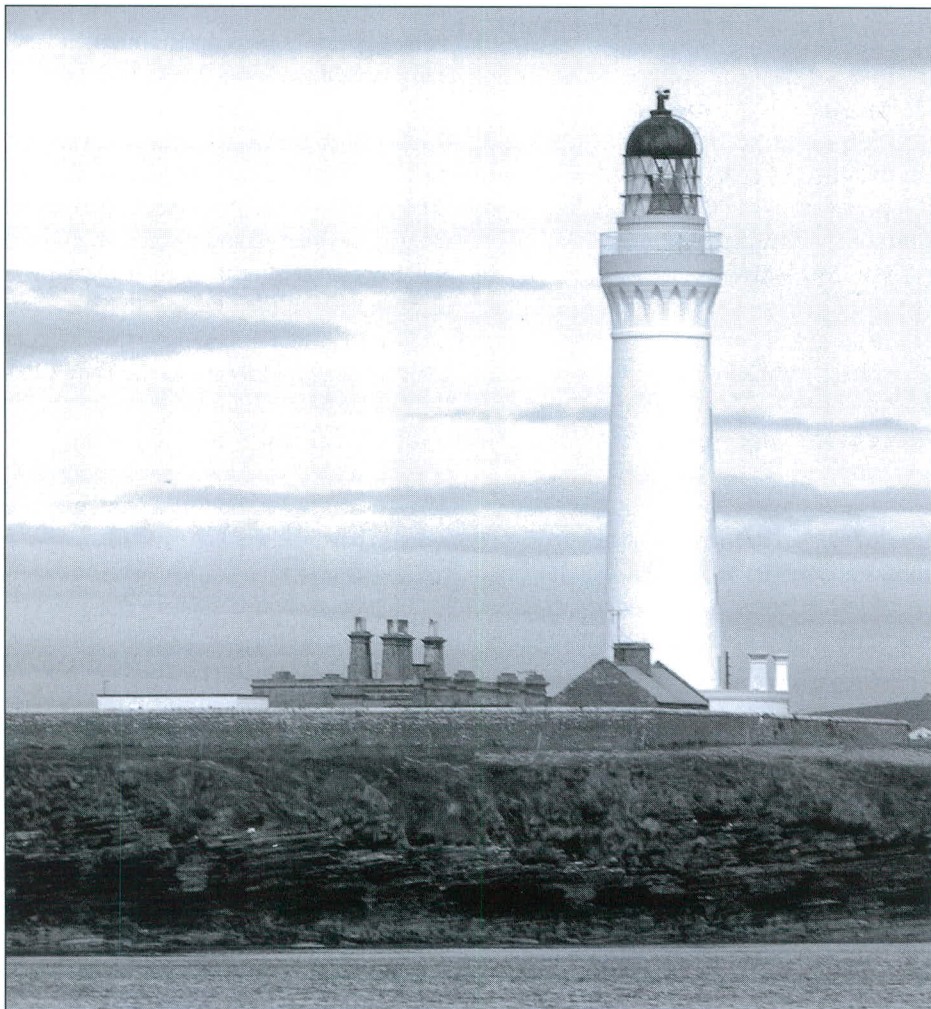
a few early spring flowers. Further inland is a field with sheep and a few cows that belong to one of the four main farms on the island. The Low Light is a quarter mile further to the west on Oxan Point and we reached its recently-finished walled enclosure in a short time as we climbed the long slope of the west hill of Graemsay. Construction had also begun on the Hoy Low Light last year and is now complete. It is built on a slightly higher piece of land with its base some 16 feet above the surface of the water. The Low Light, at only 40 feet tall, is much shorter than the High Light. Its illumination is a 4th order fixed Fresnel Lens that forms a leading, or range, light in the northwesterly direction when viewed with the light from the high tower. The range of the white light is 15 miles.

The keeper assigned to the Low Light is John Narin, a lad of only seventeen years. He has wild red hair, steel gray eyes, a boyish face, and a slight stutter to his speech. I selected him to act as assistant to Keeper Waeurich and they have worked as a team for nearly three months now. Mr. Narin learned a great deal while assisting the construction crew and had worked directly with Mr. Waeurich on the lighting equipment. He is young and still very naïve, but has good potential as an assistant keeper because he is a willing and hard worker.

As we entered the courtyard of the Low Light we saw the glaziers installing the final pane of glass in the lantern. All other construction is complete except for several piles of rub-



Above – Hoy Low Lighthouse
Below – Hoy High Lighthouse.
Both photos from the author's collection.



The Fourth Order Fixed Fresnel lens from Hoy Low Lighthouse.
Photo from the author's collection.

bish left in the courtyard to be removed. I see Mr. Narin coming out of the keeper's dwelling and summon him. He is wearing a brown shirt, sans coat, with dark green breeches that reach below the knee and the brightest pair of red-striped stockings I have ever seen.

"Mr. Narin, how is your training going?"

"Oh, Mr. Stevenson sa-sir, I didn't know ya-you were expected today. Mr. Waeurich has taught me all about the lamp, sir, and I still ha-have a wee bit more learning to do on how to ka-keep the lens perfectly polished," Narin replied, somewhat concerned.

"This is an important day, Mr. Narin, Mr. Waeurich will need your help during the light trials tonight. You will be in charge of the lamp here and must have all in readiness by this afternoon. I want you to go to the High Light now and meet with Keeper Waeurich. He will tell you what will be expected this evening," I stated.

"Yes, sa-sir. I will go right now, and I'll da-do my best, sir," Narin quickly replied.

"All appears ready here, Mr. MacKenzie," I said. "I think we can return to the boat now."

"Aye, sir," MacKenzie responded.

We slowly amble back to the landing where we rejoin the others, and push the longboat off the rocky shore back into the Holm.

"Mr. MacKenzie, I wish to head to the northwest," I request. "I want you to pass the Low Light and then align with both lights. Then continue to the northwest until we are just at the point where we can no longer see the lantern of the High Light."

"Aye, sir," he quickly replied.

"Look sharp boys, oars in the water!" Mr. MacKenzie directed the seamen.

"Ian, I need the telescope now," I requested. Ian quickly retrieved the telescope, removed it from its worn leather case and handed it to me.

The sun was now high in the sky. The temperature, being nearly 40 degrees, was quite warm for the Outer Holm in April. We rowed slowly past the Low Light. As we rounded Oxan Point into Hoy Sound the strong Atlantic wind picked up from the west making the rowing far more difficult as the surface of the water became choppy; foam clinging to the tips of the now two-foot tall waves. In addition, we now faced what is known as The Roosts, which are unstable waters caused by the fast running tides in this area. These tides cause the sea to form ridges and whirlpools raising white caps and unpredictable wave patterns. We are very fortunate for the fine day we are having because the western entrance to Hoy Sound is often perilous with heavy seas and gale force winds.

We slowly made our way northwestward as I tracked our progress observing the High Light with the telescope. As we continued, the High tower slowly diminished from view behind the Low Light tower.

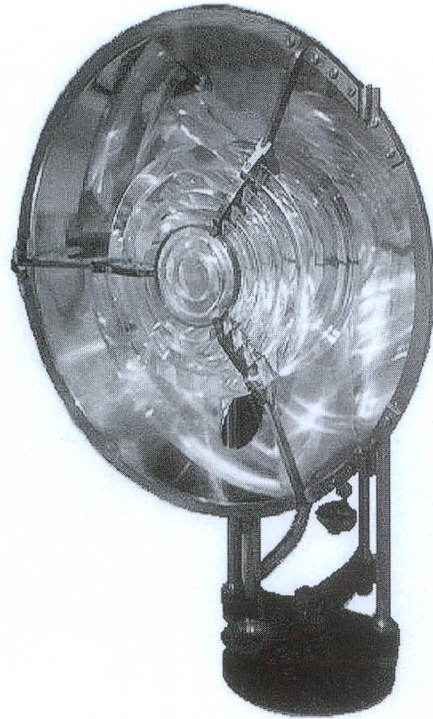
"Mr. MacKenzie, we are nearing the spot to anchor. I'll yell out when I see the High Light's lantern disappear," I called out.

"Aye, sir."

When I could no longer see the lantern I called out to cease rowing and drop anchor. The water at this point in Hoy Sound was 8 fathoms or 48 feet deep. We set two anchors, both fore and aft, to steady the longboat in the sea.

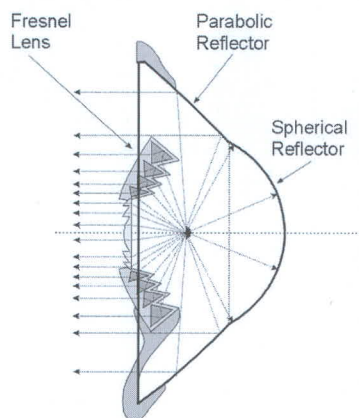
I turned to the northwest and used the telescope to scour the shore of the main island of Orkney in the area known as Breck Ness Point. This area is also called the Point of Spoil due to the numerous shipwrecks that have occurred there. On the point is the ruin of a structure originally built by George Graham, Bishop of Orkney, in the year 1633. This building has on its roof a cupola or tall gable.

"Ian, the sextant if you will, and the com-



Above – Thomas Stevenson's Holophotal lens-reflector combination. Photo from the author's collection.

Below – The operation of the Holophotal Reflector. Drawing by the author.



pass as well," I requested. Ian quickly removed the sextant from its well-used oak box, handing it to me while retrieving the telescope. He then placed the compass box on the seat of the longboat and opened its lid.

I now used the smaller telescope on the sextant to relocate the gable of the ruin on Breck Ness Point and the compass to establish true north. I next used the sextant to determine the arc, or angle, between the gable of the ruin on Breck Ness and true north, which I measured to be $32^{\circ} 34'$. On the shore of the main island directly true north from our position, I could see the Manse of Stromness in the telescope of the sextant.

I wanted to take additional sightings of other highly-visible landmarks around the horizon. Using the telescope on the sextant again, I located the Hall of Clestrain further to the east. This large stone house was slowly falling into ruin. It had once been the home of the Honeymans, one of the major land owners in the Orkney Islands, and began its decline when it had been looted by the pirate John Gow in 1725.

Again, the sextant was applied to take an arc from the Manse of Stromness to the Hall of Clestrain, which is $85^{\circ} 00'$. Moving on to the southeast, the tower of the Low Light measured $17^{\circ} 35'$ from the Hall of Clestrain. Looking further toward the southwest came the cairn of stones on the top of Cullach Hill on the Island of Hoy, which has an arc of $114^{\circ} 32'$ from the Low Light tower. The final measurement of the arc between the Cullach Hill Cairn and the gable of the ruin back at Breck Ness Point was found to be $109^{\circ} 53'$, completing the circle of measurements.

When these landmarks are described on a chart of the area, along with the arcs I recorded, sea captains entering the harbor will be able to quickly determine their position relative to the Hoy High and Low, leading lights. If a turn is made at this point of approximately 20° to the north of the line, between the two leading lights, a ship will steer a clear channel between the Bow Rock of Hoy, which is always submerged and dangerous, and the Kirk Rocks located near the shore of the main island before Stromness.

"Mr. MacKenzie, I am now finished. Let us up anchors and return to the *Pharos III*," I announced.

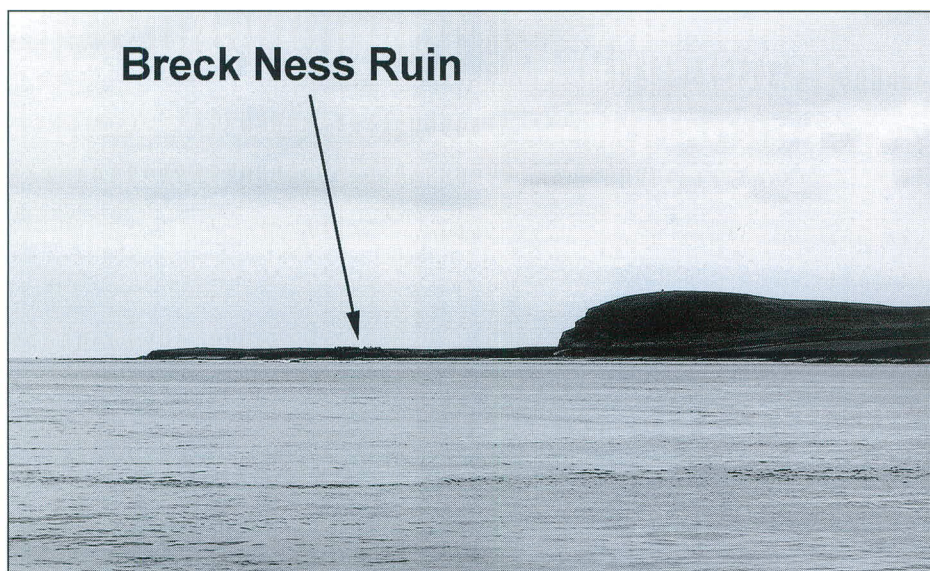
MacKenzie gave the appropriate commands and we were soon on our way back. The sea had picked up further and we were lucky to have the wind at our backs, making the rowing easier.

Ian properly stowed the compass, telescope and sextant, while I watched a group of seals heading toward the rocks near the shore of Graemsay Island, barking and playing as they went.

We reached the *Pharos III* by noon and were quickly on board. I went immediately to see Captain Campbell in the wheelhouse.

"Ah, Mr. Stevenson, sir, how was your morning?" Greeted the Captain.

"Good, Captain Campbell – very good! We completed the review of construction and I have arranged for the light trials to begin at 6



Above – Breck Ness Ruin as seen from the observation point.

Right – Close-up view of the ruin.

Both photos from the author's collection.

tonight. I also completed a survey of the proper bearings for the entrance to Hoy Sound from the northwest. Please mark these sightings on your chart," I said as I handed him the notes covering the bearing arcs.

"Captain, I would now like to set the range buoys for the lights in the Outer Holm." I stated, "please return to our pier in Stromness harbor to collect the buoys."

The wind and seas had picked up on the Outer Holm and we kept the sails of the *Pharos III* reefed, and only the paddle wheels gave us motion as we turned to the northwest toward Stromness harbor.

We spend the afternoon reaching the newly-built Northern Lighthouse Board supply pier in Stromness harbor and loading the several buoys that we will be deploying over the next few days. At about 5:30pm the anchor is hoisted and the ship prepares to leave the harbor. The *Pharos III* travels slowly to the northeast, where we await the lighting of the lamps in the Hoy High and Low towers. As I had requested, the lamps are lit at 6pm. I observe the High tower's red light from the bridge of the *Pharos III*, and ask the Captain to progress slowly to the east. When the red light is cut off from view, a buoy is set to mark the location. We progress farther to the southeast and set a second buoy where the white light from the Low tower is cut off from our view by the land near the High tower. The ship now proceeds at full speed toward the northwest, leaving the Outer Holm and entering Hoy Sound. I request that Captain Campbell con-



tinue in this direction, in line with the two lights on Graemsay Island, until neither light can be observed through my telescope. When that spot is reached, we turn for the southeast and proceed in a direct line toward the Hoy High and Low Lights. Our first sighting of the Low Light occurs at about a 14-mile distance, but we still cannot see the High Light. The *Pharos III* continues on course and after one further mile's travel we pick up the red High Light.

The red light is very powerful and fine and seems to be a noble light. The white light is somewhat less powerful than expected. At this point I take an arc of the bearing from the first place where we could see the red light toward the Dunnet Head Light on the Scottish mainland.

"Captain, I can see both lights now. Please align directly with both lights and proceed toward them slowly," I requested.

As we continued our run toward the lights I note that the lamp in the low light still appears

somewhat feeble. I will have to talk to Mr. Narin about that when next I see him. As we align with the two lights the red light disappears behind the tower of the Low Light and we continue toward the lights. Suddenly, the red light appears just above the tower of the White Light and I know we are at the location where I took the bearing arcs earlier in the day. We make our slight course correction to the north and the red light and tower now fully appear from behind the Low Light Tower as we approach. I ask the Captain to steer for Stromness Harbor to dock for the night. As

we turn further northward into the harbor I notice a dramatic drop-off in the power of the red light. This will have to be corrected.

The Captain approached our Stromness Pier smoothly and we were soon tied to the pier for the night. By the time the docking was completed, I had returned to my cabin for a well earned rest.

On Sunday morning I awake to the ship's bell ringing 7 am, though the ship is rather quiet this morning with little activity from the crew. I find clean Sunday clothes set out by Ian, as usual, and quickly perform my daily toilet and dress. Today being the Sabbath, I wear my finest forest-green coat with the dark maroon trim and a crisp white linen shirt. My breeches are of maroon wool and meet with gray silk stockings and I wear my usual seal-skin hat.

At 8 o'clock all hands are assembled on the quarter-deck. The Captain had arranged the deck with a small table set amidships at the fore part of the deck. The crew and passengers

assemble in a half circle before the flag-draped table on which lay the Bible. At this point, the bell is tolled as a special signal and all uncover their heads in respect, as the Captain and I each read a prayer. With the conclusion of this service all onboard retire to their respective berths to await the call for breakfast. I spend the remainder of the day onboard completing the entry of the information collected yesterday into my diary and reviewing my plans for the work on Monday. I decide that I will not hold the meeting onboard ship with Keeper Waeurich tomorrow morning, and send word to him that I will instead meet with him at the Hoy High Light at 10 am where I can instruct him about the needed changes.

Monday arrived blustery and cold with a strong 20 knot wind from the west and a few light showers. I asked Captain Campbell to have the ship take me to Graemsay Island and to prepare for further work with the light trials later in the day.

At 9 o'clock we left the pier and began the short journey to the island. As before, we anchored just beyond the jetty and launched a longboat for the trip to the High Light. Ian and I reached the High Light just before 10 am and were happy to find Keeper Waeurich waiting for us in the keeper's dwelling where he had made a kettle of piping-hot tea. We sat at a small table with the nicety of a checkered table cloth and began our discussion of the light trial. We had barely begun to speak when the outside door was wrenched open and Mr. Narin, the Assistant Keeper, was tossed into the room by the force of the wind, loosing his head cover in the process. Mr. Narin collected himself and stood near the sideboard with a mortified look on his face.

"Mr. Stevenson, sa-sir, I am sa-sorry to be late," John Narin said sheepishly.

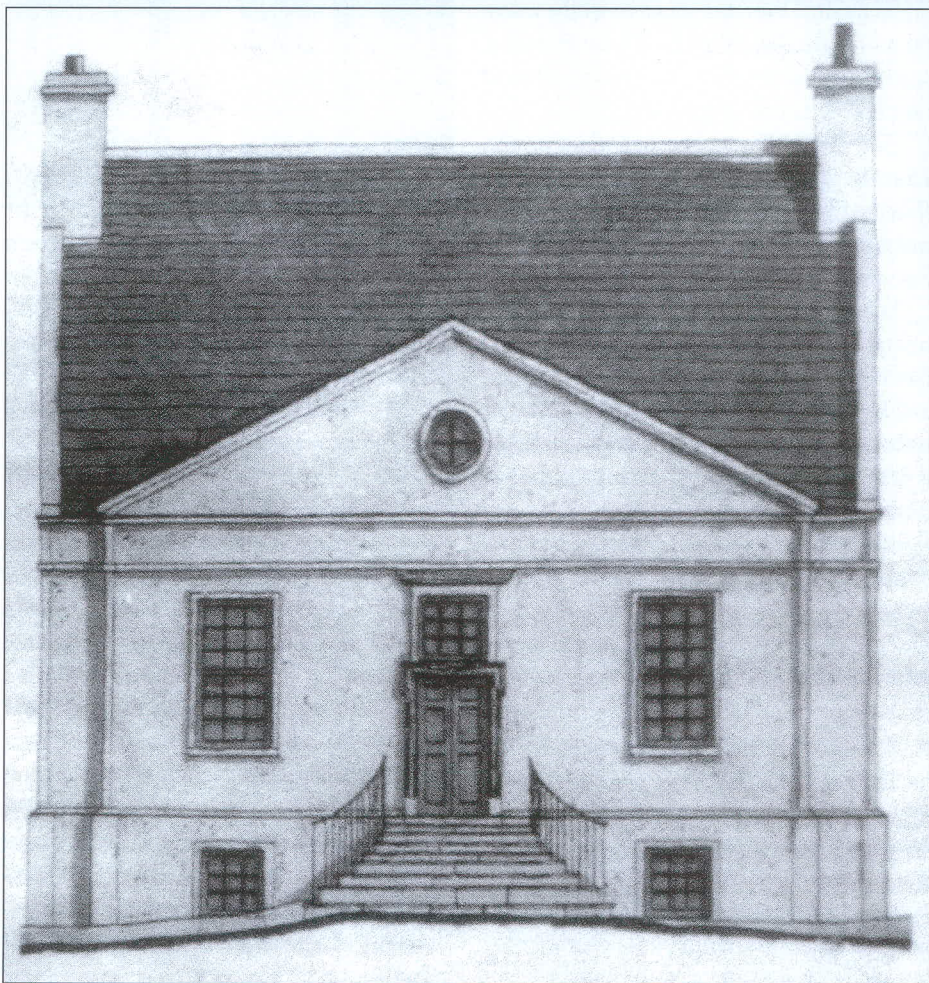
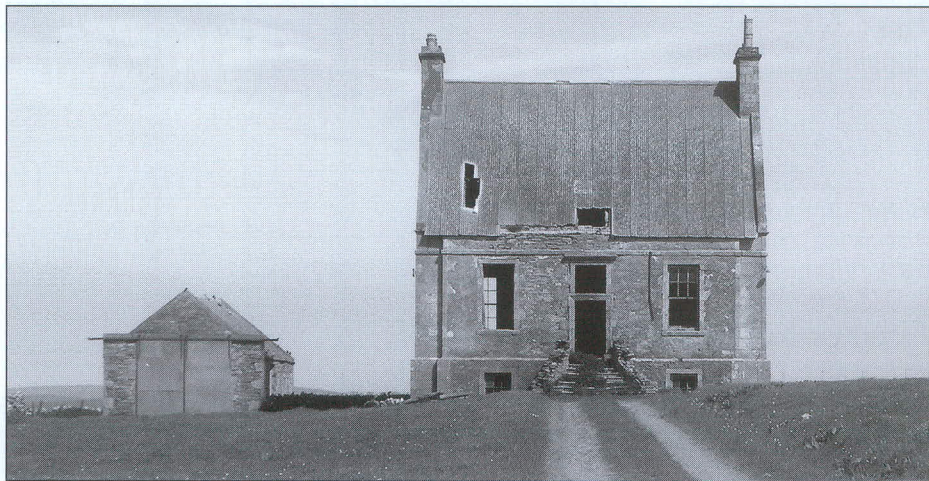
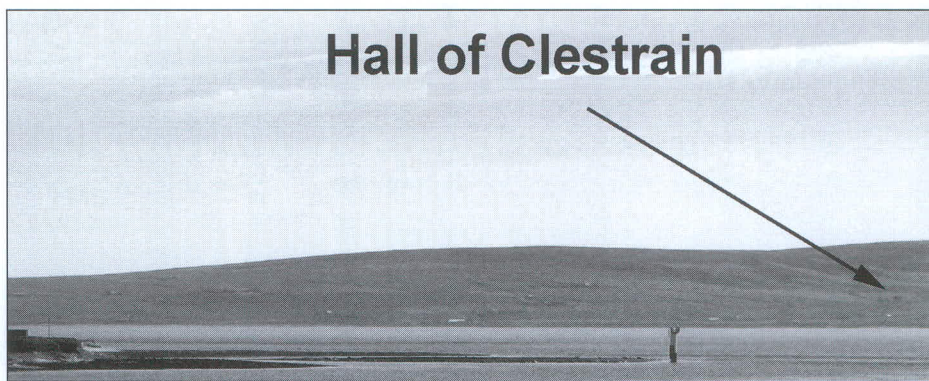
"Pick up your hat and collect yourself, Mr. Narin," I demanded.

We sat at the table and I began to lay out my observations of the light trial.

"Let me begin with the High Light," I suggested.

"I found the red light from the High tower exceptional from a distance as we approached the two lights in line." I stated with pleasure, noting the relief on Keeper Waeurich's face.

The Hall of Clestrain: Top – as seen from the observation post; Center – as it appears today; Bottom – as it looked originally. Photos and drawing from the author's collection.



"However, I found a dramatic drop off in its power as we turned north toward the harbor at Stromness," I said as Waeurich noticeably winced.

"When we finish this discussion let us climb to the lantern and inspect the reflector and ruby glass filter." I continued, "We will have to correct the power toward the north."

"I think we have a design problem," I added to relieve Mr. Waeurich's concern.

"As for the Low Light, Mr. Narin, the white lamp had a feeble amount of power."

"Was the flame maintained at three inches?" I questioned, as John Narin's face turned ashen.

"Wa-well sir, the flame looked gyd and I think it was at three inches," Mr. Narin responded with great concern.

"We will see Mr. Narin - we will see," I responded.

"Ian, you can stay here if you like. Gentlemen, let's climb the tower and see about this red light drop-off." Then I warned, "watch the wind at that door as we leave."

Waeurich, Narin and I got up, collected our belongings and left the keeper's dwelling. As we crossed the short distance to the tower entrance the pewter sky looked as though it could bring forth more rain at any time and the near gale-force wind made us to hold onto our hats. We quickly climbed the tower and entered the lantern. I could see that Alan Waeurich had been a good choice for keeper. All construction refuse had been removed from the entire tower and I noted that even the tower steps were clean enough to please the most fastidious requirements of the NLB. I was even more pleased with the lantern room and illumination equipment. The holophotal reflector sparkled and I was amazed to see that its rear exterior side had also been polished to a high gloss by Mr. Waeurich.

"I am impressed, Mr. Waeurich," I stated. "You have produced excellent work here."

I began to closely examine the holophotal reflector. I found that it was positioned correctly by taking a sighting along its axis and determined that it aligned exactly with the center of the Low tower. Next, I checked the ruby glass filter and found it extremely dark, far too dark to supply sufficient red light in the northwest direction of Stromness Harbor. We could change the filter from ruby glass to the lighter, almost pink, glass used by the French. Another option would be to replace the current holophotal reflector with a series of about

five standard reflectors attached spirally on the large shaft to light all of the areas covering the approximately 56 degrees of the horizon I want lighted. For now, I decide to remove the red filter and turn the holophotal reflector a few degrees toward Stromness. The other standard reflector with red filter is realigned with the Low Light tower and should be sufficient as the leading light.

Next I check the reflectors facing toward the island of Cava and Houton Head and find them too widely spread. Mr. Waeurich, Narin, and I spend the early afternoon readjusting them and also inclining them downward about seven degrees to aim closer to each location. Light to the horizon is not the object here!

I now ask Mr. Narin to light the lamp in the Cava reflector and show me how he establishes the flame. Surprisingly, I find his methods both efficient and correct. The flame he produced slowly grew to exactly three inches as required, and I could see no reason for the feeble light that had come from the Low Light during the initial trials. The lamps are not exactly the same, but his methods indicate that he is familiar with the task and should be able to produce the correct flame. I decide to await the second trial tonight and see if the output of the Low Light is improved.

It is nearly 5pm when we leave the High tower. I have John Narin return to the Low Light and prepare for tonight's trial, scheduled for 7pm. I discuss the signals I will use for the testing of each High Light reflector with Mr. Waeurich and then Ian and I return to the *Pharos III*. The earlier storms have now abated and the wind is also down to about ten knots. As Ian and I signal the *Pharos III* for the longboat, the sky begins to clear and we can see the first bright stars appear in the north.

The longboat arrives in a few minutes and we are taken to the waiting ship. I also note that the captain has steam up and the running lights are being lit as we arrive alongside. Once onboard I go to the wheelhouse and discuss the impending trial with the captain. My first goal is to determine the strength of the light toward Houton Head and I request that the captain proceed into Scapa Flow, circle south of Houton Head, and notify me when we are in position. While these maneuvers are in progress Ian and I sup on some fresh John-Dory fish prepared by the cook.

It is just after 7pm when I am summoned to the wheelhouse. I see that the light from the standard-red reflector facing Houton Head is

an utter failure. The light appears dim and is still directed well over our heads giving a decidedly weak appearance. I must strengthen or further redirect this light. I signal Mr. Waeurich in the High tower with a blue flare and he repositions the reflector lower as we had previously agreed. I note a significant increase in the brightness of the red light from the reflector. Another blue flare is used and the reflector further lowered. Suddenly we have a brilliant light meeting all requirements.

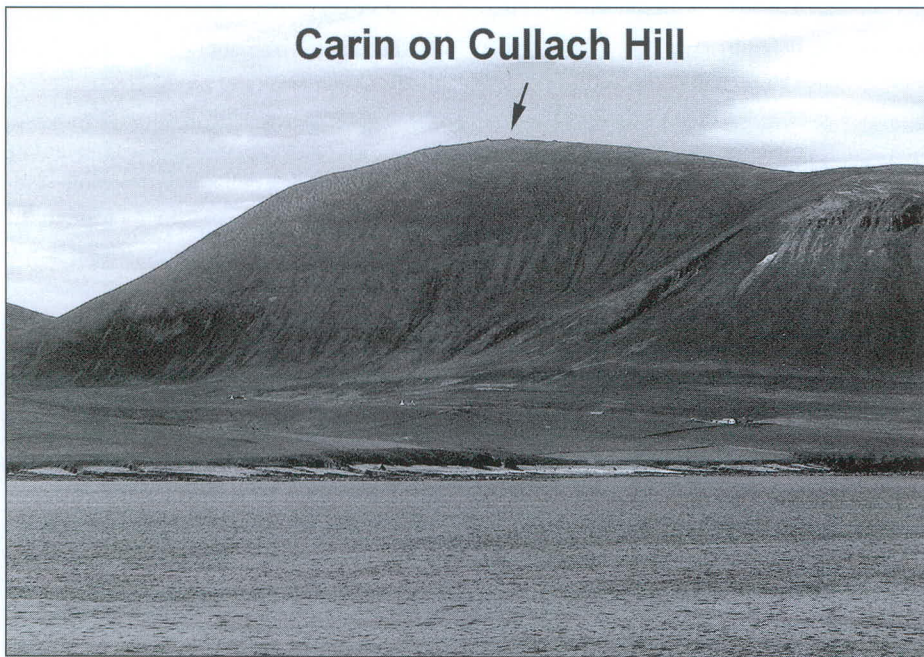
My next goal is to check the reflector pointed toward Cava Island and I ask Captain Campbell to head southwest, circle the island, and enter the channel between Cava and Green Head from the south. Within half an hour we enter the channel and find the red light towards Cava quite a failure. I fear that we must drop it until we can add a third reflector pointed in that direction. It is useless to even try repositioning this reflector.

I have the captain move on toward Stromness and observe the new white lens light from the Outer Holm and Stromness Harbor. All on board think making the red-lens light in the High Tower white and pointing it more towards Stromness a decided advantage.

We now head northwest into Hoy Sound and repeat last night's experiments. The red light in the High tower remains a very good light even without the use of the holophotal reflector, and we see a good cut-off of the white light directed toward Stromness. The white light from the Low Light remains quite weak. I decide to personally observe this lamp and lens tomorrow with Mr. Narin. I now ask the captain to return to the pier in Stromness for the night.

When the ship is at the pier I repair to my cabin and spend the next two hours completing my diary entries for the day. I also decide to write a letter to Mr. Sherar to see about obtaining pink glass, either from our sources in England or from France. It happens that the packet-ship *Prince of Wales* is at anchor in Stromness Harbor and I ask Captain Campbell to have my letter taken to her for return to Edinburgh.

I awake on Tuesday the 8th of April to a simply glorious day. All the gray of yesterday is replaced with a beautiful sun rising in a cloudless sky. Even at seven bells I find the temperature above 40 degrees and know the day will turn far warmer. After dressing in my tan cotton shirt and black tweed breeches, I again request my tall walking boots from Ian and my lighter green corduroy coat.



Carin on Cullach Hill

The Carin on Cullach Hill from the observation post. Photo from the author's collection.

Climbing to the main deck, I am surprised to hear the barking and honking of about six large seals in the harbor frolicking near the pier. Overhead is a flight of Great Skuas heading southeast toward Scapa Flow to fish. We also eat fish this morning! Cook Jenkin has caught a fine mess of pollack, which we have fried, along with Dundee marmalade slathered on Irish soda bread.

I ask the captain to take the *Pharos III* to the west end of Graemsay Island today where I can disembark for the Low Light. The day is so fine, with just a moderate breeze from the northwest that the captain decides to use only the sails today as we make our short trip. The *Pharos III* cuts through the Holm at about four knots while under sail, and I longingly remember the days, just a few short years ago, when a fine sailing ship was my only means of visiting the lights for the annual inspection tour. Steam has its place and provides a much more controlled mode of travel, but to me, a true sailing vessel is more satisfying.

We anchor off the end of the Bay of Sand-side, also known locally as "The Hap," and the longboat is lowered to take Ian and me to shore.

The water of the Holm is like glass and the sun is now heating the air. I enjoy watching a sea eagle floating on the air currents above the hill near Oxan Point. We walk to the Low Light and meet Mr. Narin near the well.

"Gyd morning sa-sir, I have been awaiting your arrival. Wa-what is the result of the trial last night?" John asked.

"Good morning to you, Mr. Narin. As before, the light from the Low Light was weak during the trial," I responded. "Let's look at the lamp and lens and I want you to show me your procedure for setting up the lamp."

We walk to the tower and climb to the lantern. Here I am also impressed. Since Saturday all of the construction refuse has been removed and I find the tower and lantern exceptional as to cleanliness. I can see the hand of Mr. Waeurich reflected in the quality of the work and recognize that he has tutored Mr. Narin well.

Mr. Narin takes me to the lens and removes the lamp. The lamp itself is clean and the wick looks to be in perfect condition. I have him light the lamp and establish the flame as he would at night. He performs the task well and soon the flame is at its full height, which I measure at just over three inches. Next, I ask him to lock the lamp in its holder inside the lens and carefully view the light through the lens. I note a slight tear-drop shape to the image of the flame rather than the tall oval shape expected.

The lamp needs to be repositioned within the lens. Inside each lens are two pairs of small knobs that are located on the lens frame at the exact level of the focal plane. When adjusting the lamp position, two strings are stretched across the lens between the pairs of knobs; the intersection of these strings is the vertical center of the lens. The burner must be centered within the lens and its upper edge is positioned exactly twenty millimeters below the strings.

Mr. Narin attaches the strings and locks the

lamp in its holder. I now measure the distance from the edge of the lamp to the intersection of the strings and find exactly twenty millimeters. So the lamp is at the correct height, but is it centered within the lens? We have to remove the upper cowl and chimney to look down into the lens from above. I note that the lamp is slightly off center in a southeastward direction. This means the lamp is out of focus and too weak, especially in the northwestern direction. I show him what I have found and we now relocate the lamp-holder plate to reposition the lamp. With the lamp in proper position the flame image is now the correct oval shape and I feel the problem is resolved.

"Mr. Narin you have been privileged to witness a lamp adjustment that is seldom ever changed," I state. "Please review this change with Keeper Waeurich and show him what we did here today."

"Yes, sa-sir," he responded.

"You know, John," I said with a broad smile. "I think we have done enough for today. Would you like to go with Ian and me to see this thing, the Dwarfie Stane?"

"Wa-why yes, sir," John Narin answered, surprised that I had actually referred to him by his given name, as well as by my offer.

"Ian, John - it's time to have some fun," I stated.

The three of us descend the tower and walk back to the longboat. The sun is high in the sky and it is close to noon. I suggest that we return to the ship, have lunch, and then begin our adventure. We arrive onboard the *Pharos III* and I have Ian and John wait on deck while I go directly to speak with Captain Campbell.

"Captain, we have completed the work at the Low Light and I would now like to anchor in the Bay of Creekland off Hoy Island. I plan an excursion to visit the Dwarfie Stane," I said.

"Captain, I have another request. I wish Mr. Narin to have lunch with Ian and me in the officers' mess. Could I have your permission for that sir?" I requested.

"Ah, a bit unusual Mr. Stevenson, but I see no reason why it can-na be done. You have my permission, sir," he responded.

I returned to Ian and John and escorted them to the officers' mess where we found First Mate Colin MacKenzie and ship's Doctor Robert Cragie already eating.

I introduced John Narin to the group. Cook Jenkin arrived and we were served parleyed potatoes with lamb sausage and mugs of hot coffee.

"John, can you tell me anything about this Dwarfie Stane?" I asked.

"Well, sa-sir, the word stane is old Norse, you see. It means stone, so it's a large stone, sa-sir." John began.

"All the folks here about on Orkney believe in the fairy folk. On Hoy Island th-ere is a hill called Ward's Hill, sa-sir, and some cliffs known as the Dwarfie Hamars. Again, the wa-word hamar is old Norse, meaning an inland cliff. In between the hill and the cliffs is a valley that's always been known as the Trowie Glen. You see, sa-sir, a Trow is what the Orkney people call the fairy folk. In the Trowie Glen you will find the Dwarfie Stane, sa-sir. It is very old and a Trow is said to live there," John explained.

I noted the others at the table were intently listening to Mr. Narin's story. Colin Mackenzie had a curious look of both interest and disbelief as the story progressed, while Doctor Cragie only smiled.

"Have you seen this Dwarfie Stane, John?" I asked.

"Na-no, sir. I have heard the stories, but I have never gone there. Strange things happen there, sa-sir." John replied with a tinge of concern on his face.

As we completed our discussion I felt the first shudder as the paddle wheels came to life and we appeared to be underway for an adventure on Hoy Island.

"Mr. MacKenzie, I will need the longboat and crew this afternoon if you will," I requested.

Turning to Dr. Cragie, I asked, "Would you do us the honor of joining us on this trip Doctor?"

"I would be delighted," the doctor responded

with an even broader smile on his face.

"Then let us begin gentlemen," I suggested as we rose from the mess table and walked on deck.

The ship was already in full motion and we began to pick up speed as we turned to port and circled the western tip of Graemsay Island, heading to the anchorage in the Bay of Creek-land off the northeast coast of Hoy Island.

We soon arrived in the wide shallow bay. The coast here is low, covered in dirt and sand with little of the granite outcrops so common on Graemsay Island. Beyond the shore a grassy plain extended inland for a half mile to the base of Ward's Hill. This hill is nearly 1600 feet tall, just a few feet more than Cullach Hill to the west.

The longboat is lowered and we row to shore on Hoy. The sand here is a peculiar pink color with many small shells both in the water and on the beach and the water is very light green from the sandy bottom below. I have the longboat pulled ashore and suggest to Mr. MacKenzie that the sailors accompany us on the trip. Our party of nine now heads inland to explore the island.

Walking is easy for the first half mile as we pass through a grassy plain dotted with heather and a few bright purple flowers. Luckily the midgies, a kind of small fly, are not out in full at this time of year; they stay close to the plants at our feet. In the summer, the midgies would make such a walk hellish with their constant bites and buzzing sounds. We begin to climb a gentle slope that borders the base of Ward's Hill to our west. Here we find wild hare in bountiful profusion eating anything green in the area.

"I shu'd-ah brought my rifle," Mr. MacK-

enzie commented when he saw the hare. "We'd-ah had a gyd supper!"

We continued up a larger hill now filled with outcroppings of various large rocks. Our party broke a new pathway, zigzagging slowly up the hill, beyond which, we could not see. After a few minutes of non-stressful climb we reached the crest and found before us a beautiful green valley blessed with several small streams of crystal water that filled the air with gurgles and the splashing of small waterfalls. Dotted throughout this valley were huge blocks of stone laid out like the pieces on some giant's checkerboard. I could see why it was called Trowie Glen.

Mr. Narin, do you know where the Dwarfie Stane is supposed to be located?" I questioned.

"It is said to be half way across the valley on the east sa-side, sir," He responded.

We pushed off in that direction, making our way among the huge boulders. It was not long before we came to a huge slab of stone some thirty feet long with a curious doorway cut into its side. In front of the doorway lay what must have originally been the door stone, now on its side. I walked to the opening and peered inside the stone. Here I found a small four-foot tall chamber with a side cavity inside the rock; a few strange markings ornamented the walls of the chambers. No wonder the Orcadians were in such dread of this area, and particularly this stone! The Dwarfie Stane was obviously a prehistoric monument or grave of some kind.

I suggested that the others explore the stone and was not surprised when the ever-superstitious sailors refused to go anywhere near it. However, Mr. MacKenzie, Dr. Cragie, Ian, and even Mr. Narin, were willing to check it over thoroughly.

Our mission accomplished, we now headed back toward the longboat and a return to *Pharos III*.

Conclusion

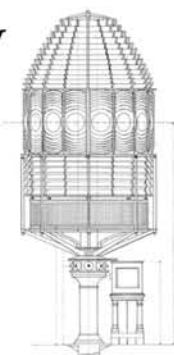
Alan Stevenson remained in the Orkney area for two more days and continued his nightly light trials. When he left for Edinburgh on April 11, 1851 he was still not totally happy with the Hoy High and Low Lights. They were finally put in operation after another visit in July resulted in further adjustments, and were officially lit as of the first of August 1851.



The Dwarfie Stane on Hoy Island. Photo from the author's collection.



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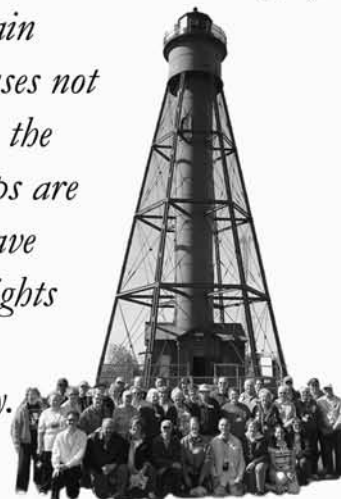
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