

Reports concerning
the Light Houses
at North Queensferry
and South Queensferry

By Robert Stevenson

These reports are related to the removal of the original light placed on top of Signal House, to the new tower in North Queensferry. This was prompted by the experience of operating the light at South Queensferry which had been installed in a similar tower.

This document is a transcript of entries from the Business Records of Robert Stevenson held in the National Library of Scotland

Reference Acc 10706/100
Pages 413 to 417 and 431 to 432

I have matched the transcript to the original documents, except where words were hyphenated and split over the end of a line.

For future reference, the next two pages are a copy of part of the index sheets from the library covering this accession.

We had previously found entries covering Stevenson's report and quotation for building a light room on top of Signal House. These were from pages 93 to 102 of Acc 10706/96, i.e. his Report Book number 1 from 1811 to 1813.

The material in this document was discovered in 10706/100,
Report Book number 4 from 1816 to 1819

There is no index to book 1, but the later books start with an alphabetical index, which made research much easier!

Boyd Williamson for North Queensferry Heritage Trust, March 2013.

Acc. 10706.

Business Records of Robert Stevenson & Sons, Civil Engineers.

These papers, purchased by the National Library of Scotland, contain the business archive of the Stevensons from the late 18th century to the mid 20th century. They consist mainly of letterbooks, incoming correspondence, reports, memoranda, maps and plans, with a large number of printed pamphlets and reports by the Stevensons and others, concerning all the civil engineering works with which the family was involved. The main interest lies in the material relating to harbours and to lighthouse construction, and to the work of the Northern Lighthouse commissioners. The arrangement is as follows:

Nos 1 - 68	Letterbooks
69 - 72	Letterbooks on Lighthouse business
73 - 88	Incoming letters
89 - 124	Reports
96-124.	Report Books

etc
etc

Reports

89. Notes of voyages and travelling journal, 1798 - 1804, containing reports on the state of the Northern Lighthouses.
- 90-5. Reports on Northern lighthouses.
- 90. 1805-17
 - 91. 1817-22
 - 92. 1822-9
 - 93. 1830-37
 - 94. 1837-42
 - 95. 1842-53
- 96-124. Report Books
- 96. 1811-13 no.1
 - 97. 1811-13 duplicate of 96
 - 98. 1813-16 no.2
 - 99. 1814-16 miscellaneous reports of special interest - all entered in 98.
 - 100. 1816-19, no.3
 - 101. 1819-23, no.4
 - 102. 1823-7, no.5
 - 103. 1827-34, no.6
 - 104. Index to report books, 1811-34
 - 105. 1834-42, no.7
 - 106. 1842-8 no.8
 - 107. 1847-50 no.9
 - 108. 1850-53 no.10
 - 109. 1853-9 no.11
 - 110. 1859-64 no.12
 - 111. 1863-7, no.13
 - 112. 1867-71, no.14
 - 113. 1871-6, no.15
 - 114. 1875-82, no.16
 - 115. 1880-93, no.17
 - 116. Index to reports, 1811-82
(also refers to printed reports Vols 1-10, nos.523-532)
- 117-23. Reports on Northern Lighthouses
- 117. 1885-9, no.18
 - 118. 1890-2, no.19
 - 119. 1893-5, no.20
 - 120. 1896-8, no.21
 - 121. 1893-1902 no.22
 - 122. 1899-1901 no.23
 - 123. 1902-4, no.24
 - 124. Index, 1834-47

To the Hon^{ble} The Trustees
for the Queens ferry passage
The
Report of Robert Stevenson
Civil Engineer Relative
Queens ferry Lighthouse

On board
the
Lighthouse
schooner
the coast
of Southings
15th Sept
1847

I agreeably to an appointment arranged with Thomas Scotland Esq^r, one of the Trustees for the Queens ferry passage the Reporter met with Gen^l Scott the Superintendent on the 15th of Sept^r 1847, and having examined the Lighthouses on both sides of the ferry he would immediately have reported to the Trustees had time permitted but he was then within a few hours of setting off on his annual survey of the Works of the Commissioners of the Northern Lighthouses He however can communicate verbally with the Superintendent and is now to state his opinions and Report to the Trustees.

Since the Reporter had last the Honour of professionally addressing the Trustees of the Queens ferry passage their works have extended in a wonderful degree and the great improvements now effected upon this important Ferry have been felt and universally acknowledged by the public. Amongst these the establishment of Lighthouses on both sides of the passage has been none of the least in point of convenience to the passage when the Reporter upon a former occasion gave his opinion with regard to the position of these Lighthouses and the number of reflectors he stated that one Reflector upon each side was perfectly sufficient for the purposes of the Ferry this however appeared to be so moderate an allowance that some of the Trustees expressed a wish that more

To the Honourable the Trustees
 For the Queensferry Passage
 The
 Report of Robert Stevenson
 Civil Engineer relative
 Queensferry Lighthouse

On board of the
 Lighthouse yacht
 off the coast of
 Caithness 18th
 July 1817

Agreeably to an appointment arranged with Thomas Scotland Esq., one of the trustees for the Queensferry Passage, the reporter met with Lieut. Scott the Superintendent on the 15th of Sept 1817, and having Examined the Light house on both sides of the ferry, he would Immediately have reported to the Trustees had time permitted but he was then within a few hours of setting off on his annual survey of the Works of the Commissions of the Northern Lighthouses. He however can Communicate Verbally with the Superintendent and is now to state his opinion and report to the trustees.

Since the Reporter had last the Honor of Professionally addressing the Trustees of the Queensferry Passage their works have extended in a wonderful degree and the great improvements now effected upon this important Ferry have been felt and universally acknowledged by the public. Amongst these the establishment of Lighthouses on both sides of the passage had been none of the least in point of convenience to the passage when the reporter upon a former occasion gave his opinion with regard to the position of these lighthouses and the number of Reflectors he stated that one Reflector upon each side was perfectly sufficient for the purposes of the Ferry, this however appeared to be so moderate an allowance that some of the Trustees expressed a wish that

That the Report should make an ^{actual} experiment or trial which he accordingly did and it is believed the single reflector has been found sufficiently powerful he may further add that in some measure connected with this Experiment that two years since the light of Tuckersmith was altered from stationary to a revolving light to distinguish it from the light on the Island of May and the Trustees will perhaps will be surprised to learn that such is the power of the Parabolic Reflectors which are in all respects similar to those at the Ferry that the the Lights of Tuckersmith show only one Reflector at a time yet the light is found to have a singly luminous appearance at the distance of from ten to twelve miles in its former state as stationary light Tuckersmith had three Reflectors but since it has been made to revolve only seven Reflectors are found to be necessary only one of which in rotation can be seen by the eye however the space between the reflectors giving the alternate effect of light and darkness.

Smiths Ferry
Lighthouse

But to return from this digression the Report has to observe that he examined the Lighthouse upon the Smiths side of the Queens Ferry and found it out to Mr. Tait the Property of having it completely cleaned and painted and otherwise put in order before the commencing of the lighting season the Tower and Lightroom here are found to answer very well upon the small scale in which they are constructed but the adjoining apartment is but ill adapted either for the accommodation which seems to be necessary for the Superintendent and workmen or for the stove and apparatus for heating the Lightroom which is indispensable during the frosty weather of winter in the mean time the Reporter has pointed out certain alterations in the position of stove and the direction of the smoke tubes which is thought will be attended with some advantage without occasioning any additional

that the Reporter should make an actual Experiment or trial which he accordingly did and it is believed the single reflector has been found sufficiently powerful he may further add that in some measure connected with this Experiment that two years since the Light of Inch Keith was altered from a stationary to a Revolving light to distinguish it from the light on the Island of May and the Trustees will perhaps be surprised to learn that such is the power of the Parabolic Reflectors which are in all respect similar to those at the Ferry that tho' the lights of Inchkeith show only one Reflector at a time, yet the light is found to have a strongly luminous appearance at the Distance of from ten to twelve miles. In its former state as stationary light, Inchkeith had thirteen Reflectors but since it has been made to revolve only seven Reflectors are found to be necessary only one of which in rotation can be seen by the observer the spaces between the reflectors giving the alternate effect of Light and darkness.

South Ferry
Lighthouse

But to return from this digression the Reporter has to observe that he examined the Lighthouse upon the Southern side of the Queens Ferry and pointed out to Mr Scott the Necessity of having it completely cleaned and painted and otherwise put in order before the Commencing of the lighting season. The Tower and Lightroom here are found to answer very well upon the small scale in which they are constructed but the adjoining apartment is but ill adapted either for the accommodation which seems to be necessary for the Superintendent and Boatmen or for the stove and apparatus for heating the lightroom which is indispensable during the frosty weather of winter. In the meantime the Reporter has pointed out certain alterations in the position of stove and the direction of the smoke tubes which is hoped will be attended with some advantage without occasioning any additional

believe to the trustees or change upon the external appearance of the building but when it found convenient to afford the official persons and Boatmen an accommodation on the Southern side some what similar to the accommodations at the State Ferry this can be done with equal advantage without any material inconvenience to the Quay or Landing places.

South Ferry Light House

The Reporter having examined the Southern Light he now proceeds to notice the Light house on the Northern side of the Ferry and is particularly to notice the proposed removal of the Light room from the Platform and of signal tower to the small tower just erected for it in a line with the principal landing pier.

When the Reporter originally gave his opinion about the position of the Light room upon the north side he pointed out the top of the Stair case as the most proper site for the Light room in connection with signal tower as most economical and effectual for lighting the passage boats across the Ferry the Light room however ultimately upon the Platform instead of the Stair case but it now appears that both of these higher positions are found to be less generally useful than the lower situation now proposed which is well adapted for lighting both across the Ferry and along the Pier, ^{the} convenience of no importance to passengers in going on board or coming ashore from boats the point on which the Reporter understands he is chiefly called to give his opinion is whether it would be most advisable to place a new Light room upon the new tower or to remove the present Light room from the Platform of the Signal tower and erect it upon the new tower near the

Expense to the Trustees or change upon the external appearance of the building but when it found convenient to afford the official persons and Boatmen an accommodations on the Southern side somewhat similar to the commodious state of things at the North Ferry this can be done with equal advantage without any material inconveniency to the Quay or landing places.

North Ferry
Lighthouse

The Reporter having examined the Southern Light, he now proceeds to notice the Lighthouses on the Northern side of the Ferry and is particularly to notice the proposed removal of the Lightroom from the Platform roof of signal Tower to the small tower just erected for it in a line with the principal landing pier.

When the reporter originally gave his opinion about the position of the Lightroom upon the north side, he pointed out the top of the Stair case as the most proper site for the Lightroom in connection with signal tower as most economical and effectual for lighting the passage boats across the Ferry the lightroom however ultimately upon the platform instead of the stair case. But it now appears that both of these higher positions are found to be less generally useful than the Tower situation now proposed which is well adapted for lighting both the across the Ferry and along the Pier, a conveniency of no importance to the passengers in going on board or coming ashore from boats. The point on which the reporter understands he is chiefly called to give his opinion is whether it would be most advisable to place a new light room upon the New tower or to remove the present lightroom form the platform of the Signal tower and erect it upon the new tower were this

This question put to the Reporter merely as a measure of economy he would state it as his opinion that it would be better to allow the present Light room to remain on the Signal room and erect a new Light room upon the New Tower but when he takes into account that the Light room really disfigured the handsome appearance of the Signal tower and that the mass of cast iron and copper connected with it must have a considerable strain upon the Walls of the Building and also that the two roofs of Copper and lead become no longer necessary he has no hesitation in recommending the entire removal of the Light room and its connecting apparatus and thereby restore the Signal Tower to its original State of Elegance agreeably to the Plan of the Architect. The new position of the Light room on the Southward side of the Bay will not be so commanding a Station as it now bears upon the Signal Tower it will however be seen with sufficient effect even from the Landing place proposed to be erected to the westward and will answer a much better purpose as a Beacon for lighting the Pier.

By the removal of the Light room from the top of the Signal Tower a considerable quantity of Cast Iron and Copper will remain which will not be applicable to the new building with regard to the Cast iron bars they are hardly worth the carriage to a distance for sale and therefore it would be advisable to lay them aside for the present as they may perhaps come into use in forming the roof of a shade connected with the pier. While the old Copper will fetch its price in payment at the removal of the Light room part of the old Copper should be applied for making new smoke tubes for the Stoves for heating the Light room on both Sides of the

this question put to the reporter merely as a measure of economy he would state it as his opinion that it would be better to allow the present Lightroom to remain on the Signal room and to erect a new Light room upon the New tower but when he takes into account that the Lightroom really disfigured the handsome appearance of the Signal Tower and that the mass of the cast iron and copper connected with it must have a considerable strain upon the walls of the building and also that the two roofs of copper and lead become no longer necessary he has no hesitation in recommending the removal of the Lightroom and its connecting apparatus and thereby restoring the Signal tower to its original state of Elegance agreeably to the plan of the architect. The new position of the light room on the Northern side of the Ferry will not be so commanding a station as it now has upon the Signal Tower it will however be seen with sufficient effect even from the Landing Place proposed to be erected to the westward and will answer a much better purpose as Experience for lighting the Pier.

By the removal of the Lightroom from the top of the Signal tower a considerable quantity of Cast Iron and Copper will remain which will not be applicable to the new building. With regard to the Cast Iron bars, they are hardly worth the carriage to a distance for sale and therefore it would be advisable to lay them aside for the present as they may perhaps come into use in forming the roof of a shade connected with the piers. While the old Copper will fetch its price in payment at the removal of the Lightroom, part of the old copper should be applied for making new smoke tubes for the stoves for heating the lightroom on both sides of

of the Perry as Copper is much more suitable than
for this purpose.

Heating
of the
Lightroom

The Reporter has attended to the matter proposed
by Mr. Scott for heating the new Lightroom and
though he cannot altogether approve of it yet as the
Masonry of the Building has been prepared for meeting
his views upon the subject it may be as well to
allow the trial to be made during the ensuing
winter for as things now stand it will not be
attended with additional expence and if it should
be found necessary to make an alteration in
this respect the Reporter has communicated his
ideas to Mr. Scott upon the subject.

Observations
should be
made

These alterations and repairs should be gone
about without loss of time as the season is far
advanced and inclement weather in such exposed
situations is ill suited for operations connected
with the business of the Painter and Glazier.

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of the Ferry as Copper is much more suitable than for this purpose.

Heating of the Lightrooms

The Reporter has attended to the mode proposed by Mr Scott for heating the new lightroom and though he cannot altogether approve of it yet as the Masonry of the Building has been proposed for meeting his Views upon the subject, it may be as well to allow the trial to be made during the ensuing winter, for as things now stand it will not be attended with additional expense and if it should be found necessary to make an alteration in this respect the Reporter has communicated his ideas to Mr Scott upon the subject

Alterations should be made

These alterations and repairs should be gone about without loss of time as the season is far advanced and boisterous weather in such exposed situations is ill suited for operations connected with the business of the Painter and Glazier.

Memorandum for Mr
Stevenson respecting the
Proposed Light at North Queens-
ferry

Mr Stevenson is aware that the
Light is wanted for the purpose to give
light to the passage, & to give light to the
Pier at North Queensferry. Before deciding
where the Light ought to be placed, it
will therefore be for him to consider
and to determine, whether in order both
objects cannot be attained completely,
by one Light, the chief object being to give light
on the passage or on the pier.

There are three principal landing
places on the South side, at Long Leith, Dalry,
and West Calder, and it is desired, that the
Halls will continue the chief landing
place on the South side. On the north
side, the landing places are at the Baiting,
North Queensferry and Long Craig, the last are
yet unstarted. It is doubtful whether when
the last is created, the chief landing place
will be at North Queensferry, which is to
be carried out to a point further than its present
end.

The situation of these points will enable
Mr Stevenson to decide, at what ^{point} place
the landing place for lighting the passage
ought to be placed.

In case Mr Stevenson thinks, that the
present Light on the Signal House will answer
for lighting the passage as well as at any
other point, it will be necessary for him
to report how the inconvenience which Mr
Stevenson

Memorandum for Mr
Stevenson regarding the
Proposed Light at North Queens
Ferry

Mr Stevenson is aware that the light is wanted for purposes to give light to the passage and to give light to the Pier at North Queensferry. Before reporting where the light ought to be placed it will therefore be for him to consider and to determine whether in case both objects cannot be attained completely by one light, the chief object be to give light on the passage or on the pier.

There are three principal landing places on the South side, at Long Craig, New Halls and Port Edgar, and it is obvious that New Halls will continue to be the chief landing place on the South side. On the north side, the landing places are at the Battery, North Queensferry, and Long Craig, this last not yet erected. It is doubtful whether when the last is erected the chief Landing Place will be at North Queensferry which is to be carried out 44 feet further than its present end.

The situation of these piers will enable Mr Stevenson to decide at what point the landing place for lighting the passage ought to be placed.

In case Mr Stevenson thinks that the present Light on the Signal House will answer for lighting the passage as well as at any other point it will be necessary for him to report how the inconvenience which Mr Scott

452 scott the Superintendent, has felt from
the mode of managing that light, may
be removed. If the present light be
continued, it will also be necessary
for Mr Stevenson to report, how the
pier may be lighted most conveniently
and economically, the present light
being found quite unfit for that purpose.
In pier, Mr Stevenson's opinion is
requested on this point, whether the
passage and pier can be lighted by one
light on a single pier, and if
his opinion be in the affirmative - where
ought the light to be placed - if his opin-
ion be in the negative, by what lights
can the passage and pier be more
and economically lighted

Signal House }
4th Nov 1817 }

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The Superintendent has felt from the mode of managing that light may be removed. If the present Light be continued, it will also be necessary for Mr Stevenson to report how the pier may be lighted most conveniently and economically the present light being found quite unfit for that purpose.

En fine, Mr Stevenson's opinion is requested on this point, whether the passage and the pier can be lighted by one Light on North Queensferry pier and if his opinion be in the affirmative, - where ought the Light to be placed – If his opinion be in the negative, by what lights can the passage and pier be most and economically lighted.

Signal House

4th Nov 1817

To the Trustees for the
Quincy Ferry Passage
The

Report of Robert Stevenson
Civil Engineer - Relative
to the Lighthouses at Quincy
Ferry

Edinburgh
12 Dec 1847

The Reporter accordingly is an appointment
arranged by James Mackell Esq of Glasgow,
attendant on a meeting of the trustees on the
signal-house at Stobbsquarry ferry on the 10th
1847, and having met with Mr Stewart &
Mr Subbarnd of Glasgow, and attended to
various arrangements made by Capt Stewart
of the Royal Navy, and Mr Scott the other
gentleman, relative to the location of the
lights of North & South Quincy Ferry then the
Reporter also received the proposed documents
from the Trustees for his direction and inspec-
tion in preparing upon the subject of the
best position for the lights -

Some days afterwards a conversation
having taken place between Mr Stewart
and Professor Leslie, on the subject of the
Quincy Ferry lights, the Reporter had the
honour to visit upon the Professor when that
learned gentleman consented to visit
the ferry and examine the local situation
of the lights, and with his ingenious
suggestions fully in view, the following
statement and Report is drawn up.

It may be noticed generally for light
that there are in the point out some local
land or structural facts, by which the bearing
may know his relative situation. The two
lights may be considered as of two kinds
the first for showing the position of the fer-
ries and for denoting the depth of water
at 50

To the Trustees for the
Queensferry Passage
The
Report of Robert Stevenson
Civil Engineer, Relative
to the lighthouses at
Queensferry

Edinburgh

24 Dec 1817

The Reporter agreeably to an appointment arranged by James Stuart Esq of Dunearn attended a meeting of the trustees in the Signal House at North Queensferry on the 4th Nov 1817, and having met with Mr Stuart and Mr Scotland of Luscar, and attended to various observations made by Captⁿ. Mowbray of the Royal Navy, and Mr Scott the Superintendent relative to the position of the Lights of North and South Queensferry, when the Reporter also received the prefixed memorandum from the Trustees for his direction and instruction in Expanding upon the subject of the best position for these lights.

Some days afterwards a conversation having taken place between Mr Stuart and Professor Leslie, on the Subject of the Queensferry Lights, the Reporter had the honor to wait upon the Professor when that learned gentleman consented to visit the Ferry and examine the local situation of the Lights, and with his ingenious suggestions fully in View, the following statement and Report is drawn up

It may be noticed generally of sea lights that their use is to point out some head land or sunken rock, by which the mariner may know his relative situation. Harbour Lights may be considered as of two kinds the first for showing the position of the pier head, or not for denoting the depth of water

at the entrance, for the information of the Pilot. The second is perhaps a new application of a Light house, and is adapted to the sloping form of Boat Pier of a quay, for the landing of goods and Passengers at all times of tide, where the light must be so placed as to serve both as a direction for the passage, and also for enlightening the Pierway or causeway of the Pier, & thereby rendering the transportation of Passengers and goods more safe and convenient, especially in dark and stormy weather. It is to this last description of light that the Report alludes as now directed and the question is, What is the best position for the light at the Northgerman quay, both for indicating the course of passage to the boats, and for illuminating the landing for the accommodation of Passengers walking on the pier during night.

Northgerman
quay
Light

If the question had been agitated de novo as to the position of Light house for the benefit of this Quay, the Report should have recommended the Light as it would be have been placed upon the Southern, instead of the Northern side of the public road or to have occupied about 20 feet in length of the wharfe and ground in front of it, instead of joining the western gable of the Inn of New-Hall. This he thinks would have been the most suitable place for that Light, and for a small apartment for the Superintendent, and place of shelter. S.C.

at the entrance, for the information of the Pilot. The Second is perhaps a new application of a Light-house, and is adaptable to the sloping form of a Boat Pier of a ferry, for the landing of goods and Passengers at all times of tide, where the Light must be so placed as to serve both as a direction for the passage, and also for enlightening the Roadway or causeway of the Pier and thereby rendering the transportation of passengers and goods more safe and commodious, especially in dark and stormy weather. It is to this last description of light that the Reporter's attention is now directed and the question is, What is the best position for the light at the North Queensferry, both for indicating the course of passage of the boats, and for illuminating the landing for the accommodation of passengers walking on the pier during night.

South Ferry
Light

If the question had been agitated de novo as to the position of Lighthouses for the benefit of this Ferry, the Reporter should have recommended the lighthouse at New Halls to have been placed upon the Southern, instead of the Northern side of the public road or to have occupied about 20 feet in length of the stable and ground in front of it immediately joining the western Gable of the Inn at New Halls. This he thinks would have been the most suitable place for that light, and for a small apartment for the Superintendent and place of shelter

Whether for the boatmen By this means
 all the purposes of lighting the passage and
 the fire would have the advantage in the
 same manner as at present, that a
 strong light would have been thrown upon
 the public coast which would have been
 a very great convenience and economi-
 cation to the King. Were this done only
 to the extent of furnishing and placing the
 dominant sides of the present Lightness,
 according to an idea of Professor Leslie, of
 a double reflection from one beam and
 by this means throwing a strong light upon
 the public Coast the advantage connected
 with such a plan would be considerable.

With regard to the elevation or height
 of the Lighthouse on the Southern side
 of the ferry, the Professor is of opinion that
 it is sufficiently high for the distance across
 the ferry, at which it is required to be seen.
 The only motives for elevating a Light stand
 above the level of the sea are in order that
 it may be seen by an observer at a suf-
 ficient distance, and give timely warning
 to the Mariner so that some necessary
 adjustment to the View may be made; but
 it must be obvious that the more the light
 is upon a level with the eye of the steerer
 the more direct and less oblique will
 the rays of light be, which a low light
 is much more convenient and suitable
 for the sloping pier of a Beach-Boatman.

With
 ferry
 light

For early operation of the Light the
 Trustees was, to erect a Signal Tower with
 apartments for the Superintendent &
 boatmen on the Northern side of the Ferry,
 and the strict regulation of the boatmen
 in conjunction with the improvements of
 the landing places, soon brought the prompt
 order.

for the Boatmen. By this means all the purposes of lighting the passage and the pier would have been answered in the same manner as at present, while a strong light would have been thrown upon the public road, which would have been a very conveniency and accommodation for the Ferry. Were this done only to the extent of opening and glazing the dormant sides of the present lightroom, according to an idea of Professor Leslie's, of a double reflector from one burner and by this means throwing a strong light upon the public road the advantage connected with such a plan would be considerable.

With regard to the elevation or height of the Lighthouse on the Southern side of the Ferry, the reporter is of opinion that it is sufficiently high for eth distance across the Ferry, at which it is required to be seen. The only motives for elevating a light much above the level of the sea are in order that it may be seen by an observer at a sufficient distance, and give timeous warning to the Mariner or that some intervening obstruction to the view may be overcome, for it must be obvious that the more the light is upon a level with the eye of the observer the more direct and less oblique will the rays of the light be; while a low light is much more commodious and suitable for the opposing piers if a Boat harbour.

North
Ferry
Light

An early operation of the Hon. the Trustees was to erect a Signal Tower with apartments for the Superintendent and boatmen on the Northern side of the Ferry and the strict regulation of the boatmen in conjunction with the improvements of the landing places soon brought the promptitude

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being with such reputation with the
public that the stores in a few years
amounted to about ten times their
former receipts, and this ferry became
the resort, not only of a more widely
extended range of passengers, on the
ordinary course of travelling, but was also much
more frequently resorted to upon under-
sight. It therefore soon appeared that
a light-house upon each side of the Strait
was indispensably necessary. The Trustees
accordingly resolved upon placing the
light for the north ferry on the first instance
upon the top of the Signal-house, but after
a trial of several years it was not found
to answer the purpose of lighting both the
pier and the passage.

The defects of the light in a high po-
sition were not so fully considered, or its in-
conveniences observed, until a new light
was erected upon a comparatively low
tower on the northern side of the Strait,
when it is believed the disadvantages
of the higher situation were almost
universally acknowledged. This has
ultimately led to the erection of a new
tower on the northern side of the Strait,
similar both in form and in height
above the level of the sea with that
upon the southern side. Some incon-
venience however having arisen re-
garding the position of the light at the high
water end of this pier by the Boatmen
finding it difficult on approaching
the pier in the proper line of its
direction, it occurred to some of
the Trustees that this matter should

and safety of the passage at Queensferry with such reputation with the public that the dues in a few years amounted to about ten times their the resort not only of a more widely extended range of passengers, in the ordinary course of handling, but was also much more frequently ventured upon under night. It therefore soon appeared that a lighthouse upon each side of the Firth was indispensably necessary. The Trustees accordingly resolved upon placing the light for the north ferry in the first instance upon the top of the Signal house but after a trial of several years it was not found to answer the purpose of lighting both the pier and the passage

The defects of the light in a high position were not as fully understood, or its disadvantages observed, until a new light was erected upon a comparatively low tower on the southern side of the Ferry; when it is believed the disadvantages of the higher situation were almost universally acknowledged. This has ultimately led to the erection of a new Tower on the Northern side of the Ferry similar both in form and in height above the level of the Sea with that upon the Southern side. Some inconveniency however having arisen regarding the position of the light at the high water end of this pier by the Boatmen finding a difficulty in approaching the pier in the proper line of its direction, it occurred to some of the Trustees that this matter should again

again be brought under the consideration of the Reporters in view of the proposed new channel.

It has been submitted to the Reporters that the long braig on the north-western side of the Ferry may ultimately come to be the principal landing place and in this event it will be necessary to erect an additional light at this position; and from the commanding situation of such a new land-side pier which shortens the passage to it must be obvious that the long braig would become the chief landing place upon the north side of the Ferry.

One thing however must be remembered here that the somewhat sheltered state of the present north-western bay harbor, must render it always an eligible situation for a landing place. Here also it may be proper for the Reporters to observe, that although the spirit of the Trustees in erecting various landing places, is that to put the bay in a place to which the boats can sail in safety & in all without making a tack yet when this matter is rightly considered it is obvious that this arrangement of various landing places, can only be particularly necessary upon one side; since as this has already been carried into effect on the southern side, where no less than four landing places are already provided, and may be considered as so many divergent points from the north-western side it is obvious that boats may either sail to or from this central point to one or other of the

again be brought under the consideration of the Reporter in terms of the prefixed memorandum

It has been submitted to the Reporter that the Long Craig on the Northern Side of the Ferry may ultimately come to be the principal landing place and in this event it will be necessary to erect an additional light at this position; and from the commanding situation of such an extended pier which shortens the passage so it must be obvious that the Long Craig would become the chief landing place upon the north side of the Ferry. One thing however must be remarked here that the somewhat sheltered state of the present North Queensferry harbour must render it always an eligible situation for a landing place. Here also it may be proper for the Reporter to observe, that although the object of the Trustees in erecting various landing places, is, that the public, may have a place to which the boats can sail in adverse winds without making a tack; yet when this matter is rightly considered it is obvious that this arrangement of various landing places, can only be particularly necessary upon one side; now as this has already been carried into effect on the Southern side, where no less than four landing places are already provided, and may be considered as so many divergent points from the North Queensferry it is obvious that boats may either sail to or from this central point to one or other of

of the opposite Landing places on
 vice versa in this View therefore the
 erection of a pier at the long bay on
 the northern side of the passage may be
 considered as a more distinct object
 This however it would be very desirable
 to undertake when the funds will ad-
 mit; because by this means the passage
 would be reduced to about half a mile
 across from pier to pier. When this
 plan comes to be acted upon, the removal
 of the removal of the light house from one
 place to the other, were scarcely to be
 regarded as an obstacle. It is well known
 that in the plan now adopted, of lighting
 the pier as well as the passage, this cannot
 otherwise be effected than by having a
 light at each principal Landing place
 pier or station to be used at night
 Even if a light were established at
 the long bay on the north side, it might
 be rendered extremely useful, in connection
 with the lights at the South Bay, as a
 direction for the dangerous rock called
~~Dark~~ called the Beavers, in approaching
 that additional Landing place.

Recommendations With regard to the position of the
 the removal of light house, on the top of the Signal House
 the light The Reporter has considered the effect
 of an inverted Reflector for directing the
 rays of light down upon the pier, by raising
 the top of the Signal House, and giving
 the Reflector an oblique direction, but still
 in by the other side were carried to an
 inconvenient and even an absurd height
 The light could not be relieved of the
 shadows of the House. While this plan was
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the opposite :landing places and vice versa; in this View therefore the erection of a pier on Long Craig on the northern side of the passage may be considered as a mire distinct object. This however it would be very desirable to undertake when the funds will admit; because by this means the passage would be reduced to about half a mile across from pier to pier. When this plan comes to be acted upon, the expense of the removal of the lighthouse from one place to the other, were scarcely to be regarded as an obstacle. It is well known that in the plan, now adopted, of lighting the pier as well as the passage, thus cannot otherwise be effected that by having a light at each principal ~~landing place~~ pier or station to be used at night. Even if a light were established at the Long Craig on the north side, it might be made extremely useful, in connection with the lights at the North Ferry, as a direction for the dangerous rock called ~~rock called~~ The Beamer; in approaching that additional landing place. *No 13*

Recommends
the removal of
the Light

With regard to the position of the Lighthouse, on the top of the signal House the Reporter has considered the effect of an inverted Reflector for directing the rays of the Light down upon the pier, by raising the staircase of the Signal House, and giving the reflector an oblique direction but still unless the stair case were carried to an inconvenient and awkward height the Light could not be relieved of the shadow of the house. While this plan would

at the same time require a second reflector for the use of the passage. The Reporter has therefore no objection or recommendation the removal of the light from the top of the signal house to the new tower lately erected for its reception, at the high water end of the pier, when it will not only fully light the pier but in a great measure answer the purpose of the passage, nearly as well as in the present position. Indeed the only objection to its influence being as general as at present arises from the position of the signal house, but however does not prevent its being seen at the landing place of Port Edgar, and even this objection to the free passage of the light will be found to be advantage by the Boatmen, who will thereby know their relative situation by this means, in regard to the Beamer Rock, when they happen to be in that quarter working on passage with an adverse wind.

Reading of the meeting of the Trustees upon the Light 4th Nov: it was stated by Capt. Brown that inconvenience and even hazard attended the approaching the low water end of these landing piers from the difficulty experienced in ascertaining their precise line of direction with only a single light at the high water end of them. The Capt^l was then in favour of opinion, that it would be necessary to have the light, if possible, removed to the opposite or low water extremities of the piers respectively. But from the sloping construction of a Boat pier, it must be obvious that the light in that situation could not be approached at flood tide by the Boatmen without a work of great magnitude & still a second reflector would be found necessary.

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at the same time require a second reflector for the use of the passage. The Reporter has therefore no hesitation in recommending the removal of the present lightroom from the top of Signal House to the new Tower lately erected for its reception at the high end of the pier, where it will not only fully light the pier but in a great measure answer the purpose of the passage, nearly as well as in the present position. Indeed the only obstruction to its influence being as general as the present arises from the position of the Signal House; this however does not prevent its being seen at the Landing place of Port Edgar; and even this obstruction to the free passage of the light will be turned to advantage by the Boatmen who will thereby know their relative situation by this means in regard to the Beamer Rock, when they happen to be in that quarter working on passage with an adverse wind.

Leading
Lights

At the meeting of the Trustees upon the 4th Nov. it was stated by Captⁿ. Mowbray that inconvenience and even hazard attended the approaching the low water end of these landing piers from the difficulty experienced in ascertaining their precise line of direction with only a single light at the high water ends of them. The Captⁿ. was therefore of opinion that it would be necessary to have the Light, if possible, removed to the opposite, or low water extremities of the piers respectively. But from the sloping construction of a Boatpier, it must be obvious that the light in that situation could not be approached at flood tide by the Light keeper without a risk of great magnitude and still a second Reflector would be found

possibly necessary for lighting the pier
 In this case the original plan is now
 understood by Professor Leslie and is
 ready attached to in this respect only as
 there have been found several of these
 Reflectors so placed the one on the
 pier and the other down at the low
 corner could be made to illuminate
 both, but still the principle of the lead-
 ing light as recommended by Capt
 Mackay and now in practice at the
 South pier, would be found preferable
 for the case of the pier, as the boatman
 on a short passage make little
 use of the Mariners Compass & the
 two lights placed, the one at high
 water end and the other about the
 middle of the pier, or between high &
 low water marks, would form the best
 possible direction for the Boatman both
 on the passage and in approaching
 the pier. The second or leading light
 on the north side may be made a small
 what more considerable light as to
 render important use to the passage
 in general, from its more prominent
 position in the direction of the pier
 which extends considerably beyond
 the situation of the signal house.

With a view to the best possible
 arrangement of the plan of the leading
 light for the north pier, in connection
 with this new pier, it would be proper
 before the commencement of the building
 operations now in view, to have the plan
 fully considered that the work may be
 proceeded with as a whole and to the
 best advantage.

Yours Robert Stevenson

indispensably necessary for lighting the pier. In this case the ingenious plan recommended by Professor Leslie and already alluded to in this respect xxx xx here have been found useful of having Reflectors do pointed the one up the pier and the other down which one burner could be made to illuminate both; but still the principal of the leading light as recommended by Captⁿ. Mowbray and now in practise at the South Ferry would be found preferable for the use of the ferry as the boatmen on so short a passage make little use of the Mariners Compass and the two lights placed the one at high water and the other about the middle of pier, or between high and low water marks, would form the best possible direction for the Boatmen, both on the passage and in approaching the pier. The seaward or leading light on the north side may be made a somewhat more considerable object so as to render important use to the passage in general, from its more prominent position in the direction of the pier which extends considerably beyond the situation of the Signal House

With a view to the best possible arrangement of the plan of the leading light for the north Ferry, in connection with this new pier, it would be proper before the commencement of the building operations now in view, to have the plan fully considered that the work may be proceeded with as a whole and to the best advantage

Signed Robert Stevenson

Observations relative to the Light
house of Newburyport by
Professor Leslie.

At the request of James Smith Esq
of Newburyport, I accompanied Mr. Stevenson &
him on Saturday the 5th Dec^r to inspect the
position of the piers on both sides of the New
bury, under the mode of lighting that paper.
We visited the several points during the day
and had likewise an opportunity of seeing
the effect of the lights after night fall. Having
since conversed with attention, on Stevenson's
written Report, I find the views it contains coin-
cide with my own on the whole with those
which I was led to form, after examining all
the circumstances of the case. But perhaps
it may be proper to notice here a few partic-
ulars on which Mr. Stevenson has bestowed
only a cursory glance.

1st The principal light should in doubt be
collocated for illuminating the pier & guiding
the passengers either in embarking or landing.
It should therefore be placed on an elevated
situation & above the highest mark that the
lamp may be visible and light under all
circumstances. The light or signal house at the North
Landing should therefore be removed to the new
building erected for it, at the upper part of the
pier, & should it ought to be advisable to bring the
lights at Newbury about the same as to be
illuminated the streets as well as the quay.

2^d The outer part of the pier on both sides of the
Landing is at present very imperfectly lighted, owing
to the great length of the Quay & the extreme obliquity
of the rays that pass the distant lamps, passengers
must therefore encounter some danger in
landing at night, which further augmented
by the offensive glare that meets them. If new
Reflectors were to be adopted, I should have no
hesitation therefore in recommending, instead
of the parabolic shape, the form of an hyperbolic
cylinder.

Observations relative to the Light
house of Queensferry by
Professor Leslie

At the request of James Stuart Esq of Dunearn, I accompanied Mr Stevenson and him on Saturday the 6th Dec to inspect the position of the piers on both sides of the Queensferry, and the mode of lighting that passage. We visited the several points during the day and had likewise an opportunity of seeing the effect of the lights after night fall. Having since perused with attention Mr Stevenson's able Report, I find the views it contains coincide, on the whole with those which I was led to form after examining all the circumstances of the case. But perhaps it may be proper to notice two or three particulars on which Mr Stevenson has bestowed only a cursory glance.

1st. The principal Light should no doubt be calculated for illuminating the pier and guiding the passengers either in embarking or landing, It should therefore be placed in an elevated situation and above the high water mark that the lamp may be accessible and kept constantly trimmed. The light on Signal House at the North Ferry should therefore be removed to the new building erected for it at the upper part of the pier, and it might be advisable to bring the light at Newhalls also to the Inn so as to illuminate the street as well as the quay.

2nd The outer part of the pier on both sides of the Ferry is at present very imperfectly lighted owing to the great length of the Quay and the extreme obliquity of the rays shot from the distant lamp, passengers must therefore encounter much danger in landing at night, which further augmented by the offensive glare that meets them. If new Reflectors were to be adopted, I should have no hesitation therefore in recommending, instead of the parabolic shape, the form of an hyperbola

442, whose asymptotes diverge at an angle
of 40 or 5 degrees. - But should such a
change be thought unnecessary, the present
Reflector might be made to serve over nearly
the same purpose by lowering the axis 15 degrees
and bringing the Burner near the bottom, so
as to send a spreading pencil of light that
will strike the ground at a small
obliquity.

3^d A common lamp placed at low
water mark, may perhaps be sufficient
for directing the Boatmen. But it might
also be made to assist in lighting the
lower part of the pier. I should
therefore recommend a larger wick
or burner than ordinary & behind a
small metallic reflector, perhaps 6 or 8
inches wide and in the center of it
a lens of 3 or 4 inches. By this arrange-
ment the lamps would be easily seen
from the opposite side of the passage, while
it would guide the passengers in landing
by throwing a tolerably direct light where
it is most wanted, in aid of the distant
principal Reflector.

Signed John Leslie

Edin^g 8 Jan^y 1818.

whose asymptotes diverge at an angle of 10 or 15 degrees. – But should such a change be thought unnecessary, the present Reflector might be made to answer nearly the same purpose by lowering the axis 5 degrees and bringing the burner near the bottom, so as to send a spreading pencil of light that will strike the ground at a small obliquity.

3rd. A common lamp placed at low water mark, may perhaps be sufficient for directing the Boatmen. But it might also be made to assist on lighting the xxxxx part of the pier. I should therefore recommend a longer wick or burner than ordinary and behind a small metallic Reflector, perhaps 6 or 8 inches wide and in the centre of it a lens of 3 or 4 inches. By this arrangement the lamps would be easily seen from the opposite side of the passage, while it would guide the passengers in landing by throwing a tolerably vivid light where it is most wanted, in aid of the distant principal Reflector

Signed John Leslie

Edinburgh 8 Jan 1818