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REPORT ON THE SALVAGE ARCHAEOLOGY AT NAVY HALL, NIAGARA-ON-THE-LAKE, ONTARIO, 1975

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CAPE SPEAR LIGHTHOUSE

by Edward F. Bush

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Abstract

In the summer of 1975 salvage archaeology was undertaken at Navy Hall, Niagara-on-the-Lake, Ontario, by the National Historic Parks and Sites Branch. The excavation of a trench for the installation of service lines revealed landscaping undertaken when the Niagara Parks Commission moved Navy Hall to its present location in the 1930s and a number of features related to former occupation of the site. Artifacts collected were primarily 19th century in origin.

Acknowledgements

I am indebted to members of the artifact research staff for help with the identification and interpretation of the artifacts. I would like to thank G. Gusset, M. Schurman and L. Sussman for their assistance with the ceramics, O. Jones for her assistance with the glass, P. Priess and B. Wade for their assistance with the metal, and I. Walker for his assistance with the clay tobacco pipes.

Introduction

The first European occupation in the Niagara area was on the east side of the river and it was not until the influx of refugees began to overwhelm resources at Fort Niagara in 1779 that settlement was begun on the west side of the river. The headquarters of the Provincial Marine on Lake Ontario, Navy Hall, was among the first buildings located there. The Navy Hall complex consisted of one large building, variously identified as a barracks (Flemming 1971) or a storehouse (McConnell and Whitfield 1975), a wharf, a cradle and a capstan. When Niagara-on-the-Lake (Lennox as it was called at the time) became the first capital of Upper Canada in 1791, Navy Hall was renovated to serve as a Government House and residence for Governor Simcoe and his family. It was apparently ill-suited to this purpose: the Simcoes chose to spend most of their time in tents rather than in Navy Hall because of its dampness; Simcoe described it as "...an old hovel that will look exactly like a carrier's ale house in England..." (quoted in Flemming 1971: 16), and Mrs. Simcoe elected to give Prince Edward the more comfortable accommodation of the tents during his 1792 visit while the Simcoes moved into Navy Hall, which she referred to as "...the damp House" (quoted in Flemming 1971: 16). Around this time the ancilliary structures connected with Navy Hall's original function were removed and additional buildings to house the staff and the government offices were built.

When the capital of Upper Canada was removed to York in

1796, Navy Hall reverted to the military where it may have served as a mess. It was badly damaged during the American bombardment of 20 November 1812 and, if any of the structure had remained serviceable, it would have been razed along with the rest of Newark (as the town was then called) when the Americans withdrew in December 1813.

Reconstruction in Newark and Fort George began in 1814 and Navy Hall was also rebuilt close to but north of its original site, probably in 1816. It served as a commissariat, an essential but undistinguished role, which probably helps to explain the lack of information about the second Navy Hall. The Durham report of 1823 contained the following description:

> Framed building with a stone foundation 100 x 25 feet and 11 feet from basement to wall plate. In good repair. The Wharf is much out of order (quoted in McConnell and Whitfield 1975: 4).

In June 1847 it was one of the locations designated to serve as quarantine stations in order to prevent an epidemic developing from illness among a large group of Irish immigrants. In 1864 Navy Hall was moved to a new location about 150 ft. to the west where it remained until the 1930s when the Niagara Parks Commission relocated it again in its present position.

Current renovations at Navy Hall included plans for a considerable amount of excavation in its vicinity: two trenches were to cross the grounds from the north, one for the installation of a sewer main and one for water, electricity and telephone lines, and a 3 ft. wide trench was to be dug around the entire building so that the basement could be water-proofed. Salvage archaeology consisted of preventing damage to any structures revealed by these excavations, recording any features and collecting any

artifacts found.

Historical research on the structural history of Navy Hall and the immediately surrounding area (McConnell and Whitfield 1975) indicates that, when Navy Hall was moved to its present location in the 1930s, an entirely new foundation was built. Consequently the proposed excavations around its exterior could not be expected to yield information of any antiquity on its construction or its associated artifacts. Any previous structures underlying the present Navy Hall would have been disturbed or destroyed by the foundation excavations. If the probable locations of earlier structures in the immediate area are correct, this would have affected two unidentified buildings from the period prior to 1812 (McConnell and Whitfield 1975: Fig. 1), although the northernmost remnants of one of these could possibly show up in the trench for the installation of services. In the post 1814 period there seems to have been one small unidentified building near the northeast corner of Navy Hall (McConnell and Whitfield 1975: Fig. 2). This building, which appeared on maps dated prior to 1863, may have been disturbed during the 1930s excavation or it may have been destroyed in the 1890s when the track of the Electric Railway Company was laid east of the present Navy Hall along the bank of the Niagara River.

Between Navy Hall and the northern edge of the property there were four structures close enough to the proposed trenches that I might expect to find traces of them. The most likely of these was the original Navy Hall (McConnell and Whitfield 1975: Fig. 1). Its dimensions were calculated to be 125 ft. by 50 ft. and its representation on some plans with three longitudinal lines possibly indicates a porch. McConnell and Whitfield (1975) found no historical information on foundations of any of the pre-1812 structures and it is possible that materials from the original

foundations were used during the reconstruction after the war. That building supplies were scarce is exemplified by the incorporation of burnt bricks from the ruins of the town in the construction of Fort Mississauga (Flemming 1971). But, even if there were no intact remains of the original Navy Hall foundation, there would still be other indications of its presence if it were intersected by one of the trenches.

The other three buildings north of Navy Hall and close to the proposed trenches appear after 1814 (McConnell and Whitfield 1975: Fig. 2). They are all identified with the operation of the ferry across the Niagara River:

> As early as 1831 there was a building just to the south of Navy Hall [the post-1812 Navy Hall lay to the north of the current structure], identified as a Ferry House (M). There is also another building (E) marked ferry house on an 1851 map, which may have replaced M. In 1835 there was a large structure of two buildings near by cited as "Leased to A Heron for ferry" (G). This building, in various permutations, continued to be marked until 1863. When it ceased to exist is unknown (McConnell and Whitfield 1975: 4-5).

None of these structures appear to be exactly in the path of the proposed excavation but their locations are not definite. Construction details of these later buildings are not mentioned.

Finally there are the possibilities that buildings whose locations are unknown or buildings considered too insignificant to be mapped, such as privies, could be encountered or that the original locations have not been accurately correlated with extant landmarks, so that unexpected features or structures could appear.

Excavations

On arrival at the site, I found that there had been some changes of plan. First, the trench for the sewer had already been excavated and backfilled except for one small hole remaining on the west side of Navy Hall (Fig. 4). The line of the trench was mapped in from the crop marks that remained in the sod (Fig. 1). Second, the original plan was to have the three service lines enter the property from the north following the path through the north gate to a point about half way from the street to Navy Hall where the telephone and electricity lines would branch to the southwest to enter Navy Hall through its western face and the water line would branch to the southeast to a point on the north face of the building near the northeast corner. In fact, all three lines followed the latter route (Fig. 1). And third, the proposed trench around the foundations was not excavated because it was decided to attempt to waterproof the building from the inside, although small excavations were made at the base of the ramps on the north and east sides of the building for the installation of drains.

The trench for the service lines (22H1A) was excavated by backhoe beginning at the north side of the property at a set of two stone steps which lead from the street onto the pathway and ending near the northeast corner of Navy Hall (Figs. 1, 5). Measurements for the excavation and the profile of the east wall of the trench (Figs. 2, 3) begin at the south side of the upper step. Artifacts were collected

in four lots to reflect their association with various features. Because of the backhoe, stratigraphic control was minimal. Thus, while I am convinced that most artifacts were associated with previous living surfaces and features, there is always the possibility of contamination.

Since certain of stratigraphic layers exposed during the excavation of this sub-operation were either constant or recurrent in the 157.25 ft. length of the trench and were not, therefore, significant in determining the extent of the various lots, it is useful to deal with them as a single unit. When Navy Hall was moved to its present location in the 1930s, part of the work undertaken was the raising of the ground level approximately 2 ft. overall and nearly 4 ft. inside the ornamental stone wall built around the foundations. This can clearly be seen in the profile as a homogeneous layer of brown fill underlying the surface coverings of gravel or sod. I suspect that such extensive alterations to the original landscape were dictated by practical considerations such as spring flooding and basement drainage and not by cosmetic principles. This conclusion is supported by the discovery of drainage tile over much of the area excavated and by the historical evidence of problems with the damp. This fill extends over the entire length of the trench and provides an effective seal for whatever archaeological remains are located in the grounds of Navy Hall.

Another of the recurrent layers, and one with no artifacts, is a layer of reddish-brown soil which underlies the cultural layers for the length of the trench, except for a 21 ft. section near the southern end where it is interrupted by a cultural deposit. This layer continued below the depth of the excavation and could be considered a sterile subsoil for archaeological purposes.

The feature which defined lot 22H1A1 was a layer of

crushed gravel which extended south from the stone steps for a distance of 27.5 ft. (Figs. 2, 3). It had a fairly uniform thickness of 0.6 ft. to 0.75 ft. (Fig. 6). In the partially backfilled approach trench to the north of the stone steps, this layer could be followed a further 14 ft. before being obscured by backfill. Beneath the crushed gravel was a layer of light brown sand of variable thickness which appeared to be the layer that the artifacts came from. In the reddish brown subsoil beneath these two layers, two pipes, 0.2 ft. in diameter, traversed the trench. The backhoe operator said that he had encountered these two pipes while digging the sewer trench to the west, although he had not found the crushed gravel there. There did not appear to be any break in either the crushed gravel or the sand above these two pipes. The crushed gravel looks to me like a gravel road whose route was altered when the grounds of Navy Hall were laid out in the 1930s. Neither of the two railway lines which approach the site are found in this location (McConnell and Whitfield 1975: Fig. 2).

Lot 22HlA2 extended from 27.5 ft. to 113.75 ft.; it was defined on the north by the end of the crushed gravel roadbed and on the south by the beginning of a layer of moist black muck (Fig. 3). Because of the lack of congruence between the crude excavation technique and the stratigraphically subtle beginnings of the layer which indicates the onset of the next lot (22HlA4), the division between these two lots was, in fact, arbitrary; there is more likelihood of lot 22HlA4 artifacts being included with lot 22HlA2 than the reverse.

The artifacts of lot 22HlA2 came from a relatively thin cultural deposit which was characterized by various sands and gravels. From 27.5 ft. to 66.5 ft. a layer of river gravel mixed with sand replaced the crushed gravel to the north; the layer of light brown sand which underlay the

crushed gravel extends to the southern limit of this layer. It was impossible to determine whether both these layers yielded artifacts or whether they were contemporaneous. The river gravel and sand was not a natural deposit. It could have been laid as a driveway or courtyard surface because it would have provided good drainage and, because it shares its sand foundation with the crushed gravel, it could have been laid at the same time or it could have been laid earlier and been removed in the north when the crushed gravel was laid. Here the assumption is that crushed gravel is a more modern building material but this does not preclude the contemporaneous use of machine-made and natural gravels if there is, for example, a price differential between the two. Any of the structures in the area, the original Navy Hall, the rebuilt Navy Hall, the buildings connected with the operation of the ferry, could have utilized a gravelled surface.

To the south the layer of river gravel on its bed of sand is replaced by a layer of compact fine-grained dark grey sand which extends from 66.5 ft. to 104.75 ft. where it grades into a more loosely packed coarse-grained dark grey sand which extends from 104.75 ft. to 113.75 ft. The thickness of these contiguous layers of sand varies considerably. There is not enough information about the horizontal extent nor about the associations of either of these two layers to venture any interpretations.

Lot 22H1A3 includes only those artifacts in direct association with a layer of densely packed brick and mortar rubble located within the layer of dank black muck which defines lot 22H1A4. This feature was investigated to ensure that it was indeed previously deposited rubble and not a feature in the process of being created by the backhoe. It extended from 117 ft. to 122 ft. and from 2.6 ft. beneath the surface to the bottom of the excavation. While it is

not very helpful to say that the rubble represents the remains of part of a brick structure or feature of a structure, the problems created by its having been moved from its original site and by the type of excavation make it impossible to correlate this feature with any of the historical structures originally identified for this area.

To the south of lot 22H1A2 lies lot 22H1A4 which extends from 113.75 ft. to 157.25 ft. where the trench ended against the north face of Navy Hall (Fig. 1). Stratigraphically this was the most complex section of the trench. The uppermost of the layers beneath the fill of the 1930s is a layer of coarse-grained dark grey sand which began at 104.75 ft. and extended to 140.25 ft. with a break between 129.5 ft. to 135.5 ft.; this layer varies considerably in thickness from 1.1 ft. in the north to less than 0.1 ft. at its southern extremity. It overlies the layer of moist black muck which defines the lot, which surrounds the brick rubble of lot 22H1A3, and which was rich in artifacts. South of this layer no further artifacts were found, although there were two more features. The first of these is an ill-defined layer of cut stone rubble which extended from approximately 140 ft. to 144.5 ft. and which lay 4 ft. beneath the surface and the second is the disturbance created by the construction of the foundation for Navy Hall. The stratigraphy is not clear in the immediate vicinity of Navy Hall and it is uncertain whether the foundation excavation was done after the modern fill was laid or not. If the fill was brought in after the foundation was constructed, then the stone rubble lying approximately 15 ft. to the north of Navy Hall could be debris accumulated during the reconstruction of the stone foundation in the 1930s. If, on the other hand, the fill had been brought in prior to the digging of the foundation, the rubble would pertain to a previous structure. I tend to

favour the former explanation because it would have facilitated the laying of the foundation and it would account for the lack of artifacts.

The major interpretive problem lies in determining the nature of the black muck, its relationship to the brick rubble, and the relationship of these two features to the site as a whole. A first thought was that the black muck represented the contents of a latrine because of its high organic content and distinctively dank odour but there are facts which preclude this interpretation. The first of these is simply the size of the layer; it extends 16 ft. south of the brick rubble where it has a depth of at least 2.5 ft. A comparison with the privy excavated at Fort George (Henderson 1973) would support this argument regarding the size of the deposit; also, the type of soil found in the Fort George privy was altogether different. The second is that some of the artifacts, such as an entire metal wheel rim, seem unlikely latrine accumulations. With only a slight shift of focus, however, the interpretation of this layer as a deposit for organic refuse, such as manure, agrees with both the type of soil and the character of the artifacts. It is quite possible that any of the series of 19th century buildings connected with the operation of the ferry could have had a stable for the horses engaged in the land transport of the people and goods using the ferry.

The layer of black muck is found beneath the original ground level as it has been revealed during the excavation of the trench. This suggests that it was deposited either in a hole dug for the purpose or in an existing hole, such as the cellar of a ruined building. The presence of brick rubble at one side of the depression hints at the <u>in situ</u> collapse of structural remains but the evidence is not conclusive. It would appear that, as the hole was filled, the organic matter or manure, if that is what it was, was

carelessly piled so that at least part of the deposit shifted to the north. The layer of sand on top of the black muck might be the result of a deliberate attempt by later occupants of the site to level the area, or it might be a result of superficial levelling which would occur if the area were flooded in the spring or it might represent levelling which took place during the 1930s renovations at the site.

The depression in which the black muck and brick rubble were found does not correspond to any of the probable locations of structures identified from old maps. Because of the inconclusiveness of the excavation due to its limited extent and crude technique and because of the lack of direct correspondence between this feature and any historical structure, it is presumptuous to hazard a guess as to its identification.

Excavations at the base of the ramps leading into the basement of Navy Hall (22HlB) for the installation of drainage tile did not penetrate beneath those of the 1930s when drainage tile had first been installed in these locations. No artifacts were found.

Although the proposed trench around Navy Hall was cancelled, there was enough excavation next to the foundations to suggest that, should this project be reinstated, there would be little danger to any of the archaeological features at the site because the area immediately around the foundations is already excessively disturbed.

Artifacts

Ceramics

There was a total of 68 sherds recovered; wares included coarse earthenware, stoneware, creamware, pearlware, refined white earthenware, vitrified white earthenware and porcelain. There were two sherds of coarse earthenware from 22H1A4, one from a large bowl or jar probably manufactured in North America sometime after 1780. There were three pieces of stoneware from 22H1A2 including a rim sherd from a crock big enough to have been a meat tub dating from the 1840s onward and a basal fragment from a 19th century English ink or beverage bottle from Derbyshire. In 22H1A4 there was one piece of a 19th century stoneware beverage bottle also from a Derbyshire pottery. There were five creamware sherds which could date from 1760 to 1840, three from 22H1A2 and two from 22H1A4, and one piece of a pearlware plate from 22H1A2. The largest category of sherds was undecorated refined white earthenware; there were fragments of a plate and four miscellaneous sherds from 22H1A4 and 24 sherds from many different vessels from 22H1A2. There was also a variety of decorated types of refined white earthenware: in 22H1A2 there were three tiny fragments of willow pattern, one sherd of green transfer print dating between 1830-50, part of a blue transfer print saucer from *c.* 1850, and three sherds of flow blue, one with molded decoration as well, all dating to the second half of the 19th century; in 22H1A3 there was one mid-19th century example of a flow blue transfer print; and in 22H1A4

there was one blue-painted sherd with molded decoration and gilt banding and another sherd with banded decoration. The vitrified white earthenware all dates from the second half of the 19th century. There were sherds from a chamberpot in 22H1A4 and six sherds from various vessels from 22H1A2, one with the post-1863 wheat pattern molded decoration. Two fragments of Chinese porcelain came from 22H1A2 along with one example of continental hard-paste porcelain from the late 19th century. In 22H1A4 there was one sherd of German hard paste porcelain, also late 19th century.

The ceramic wares present in both 22H1A2 and 22H1A4 potentially span the period from the first occupation of the site in 1779 to the end of the 19th century. The largest number of sherds comes from 22H1A2 and are most likely from the former gravel living surface which defines that lot. The single sherd associated with the brick rubble of lot 22H1A3 dates from the middle of the 19th century, providing at least a terminus post quem for the layer.

Glass

Pane glass was found in both 22H1A2 and 22H1A4 but, as it seems to have more value in the interpretation of architectural remains than in the determination of chronological relationships, little more than noting its presence can be said about it here. There were two examples of glass vessels other than bottles: from 22H1A3 there is a fragment of a small glass bowl of indeterminate date and from 22H1A4 there is a basal fragment of a blue glass figure or vase, also of indeterminate date.

Of the bottles and bottle fragments, only two pieces of glass possibly date earlier than the 20th century; both were from 22H1A2 and were associated with later 20th century bottle fragments. A number of bottles came from 22H1A4:

there was one complete king oval shape bottle manufactured by the Rigo Co. with the legend, "Mack Mineral Springs/MM/St. Catherines/Ont.," there were two fragmentary soft drink bottles with the legend "York Springs" on the body of the bottle and a monogram of the superimposed letters "Y M S" on the base, fragments of two rectangular bottles, one which contained Lydia E. Pinkham's Vegetable Compound, and some other nondiagnostic fragments. The soft drink bottles all date to the third and fourth decades of the 20th century, the period just prior to the renovations undertaken by the Niagara Parks Commission.

Metal

A wide variety of metal artifacts were found, the most common, of course, being nails. In 22HlAl there was a hand-forged spike of a size typically used in heavy construction, in 22HlA2 there were five cut nails and eight wire nails of various sizes and in 22HlA4 there were three cut nails and 11 wire nails. Other building materials included two bolts from 22HlA2, one hand-forged, and a wrought iron T-strap hinge likely to be of 19th century manufacture with a clenched cut nail attached to it from 22HlA4. Since hand-forged nails occur in contexts up to the end of the 19th century, cut nails begin c. 1830 and wire nails c. 1880, the building materials potentially span the period from the first occupation of the site until the present.

Other metal artifacts include a piece of copper, part of a larger unidentified object, from 22HlAl; from 22HlA2 there are two pieces of electricians wire and a pair of 19th century or later scissors; and from 22HlA4 a piece of barbed wire, a metal strap for a wooden wagon wheel, the reinforced edge of a metal container, perhaps a shallow pan of some

sort, and a teaspoon.

The teaspoon is in a form which was introduced at the beginning of the 19th century and which became one of twenty or so standard patterns made by many companies in sterling and, after 1845, electroplate (Turner 1972). The uniformity of the cross-section of the spoon would suggest that it was mass produced by stamping, perhaps in the 20th century. The manufacturer's name, "Nevada M-G. C. Co.," stamped on the back of the spoon, does not occur in the standard catalogues of American silver manufacturers (Kovel and Kovel 1961, Rainwater 1966, Turner 1972); they point out that it can be almost impossible to trace names stamped on cheap plated ware if it had been sold in bulk and stamped by the retailer. Because of the initials in the manufacturer's name and the stylistic attributes of the spoon, it may be a produce of McGlashen, Clarke & Co. which operated in Niagara Falls Ontario, from ca. 1900-10 (Turner 1972: 339).

Micellaneous

From 22H1A2 there were three fragments of clay tobacco pipes, two stem fragments and one bowl fragment, all probably 19th century in date. Also from 22H1A2 there was one painted marble, probably porcelain. Other materials included pieces of coal and clinker from 22H1A2 and 22H1A4 and fragments of brick from 22H1A2 and 22H1A3.

Summary and Conclusions

Navy Hall was moved to its present location in the 1930s. The original Navy Hall, built in 1779, was probably located 50 ft. or so to the north of the present structure; it was destroyed during the War of 1812. After the war it was rebuilt further to the north. During most of the 19th century at least part of the area which is now under the parklike grounds of Navy Hall was occupied by various buildings connected with the operation of a ferry across the Niagara River.

Salvage archaeology was primarily concerned with the excavation of a trench for the installation of services for Navy Hall; this trench extended from the northern edge of the grounds to the northeast corner of Navy Hall itself. The trench revealed a number of features but there were no remains which could be unequivocably identified with any of the previous structures in the area. Beginning at the northern end of the trench, significant layers were the remains of a crushed gravel road, a long stretch of natural gravels and sand, a layer of black muck containing a pocket of brick and mortar rubble and a lens of rough stone debris.

Artifacts included ceramics, glass, metal, clay tobacco pipes and a porcelain marble. The ceramic and metal assemblages are more or less in agreement, having artifacts that could date from the first occupation of the site until the end of the 19th century or the beginning of the 20th century, but chronologically all the artifacts in these two assemblages that could be prior to 1812 also continue beyond

the end of the war so there is therefore, nothing which must necessarily be associated with the original Navy Hall. The glass assemblage, on the other hand, looks as though it comes from a different site. The likely explanation is that it represents a different component; the soft drink bottles, for example, were possibly deposited by the workmen who built the foundation in the 1930s. This interpretation helps to confirm that the topsoil was added after the foundation was built.

From the analysis of the history of the site, the stratigraphy and the artifacts, it can be concluded that the cultural layers isolated during the salvage archaeology at Navy Hall are not necessarily associated with the original Navy Hall and that they probably reflect two components, a long 19th century use of the site by various persons running and using the ferry across the Niagara River and a 20th century deposit which may be as restricted as the rebuilding of the Navy Hall foundation in the 1930s.

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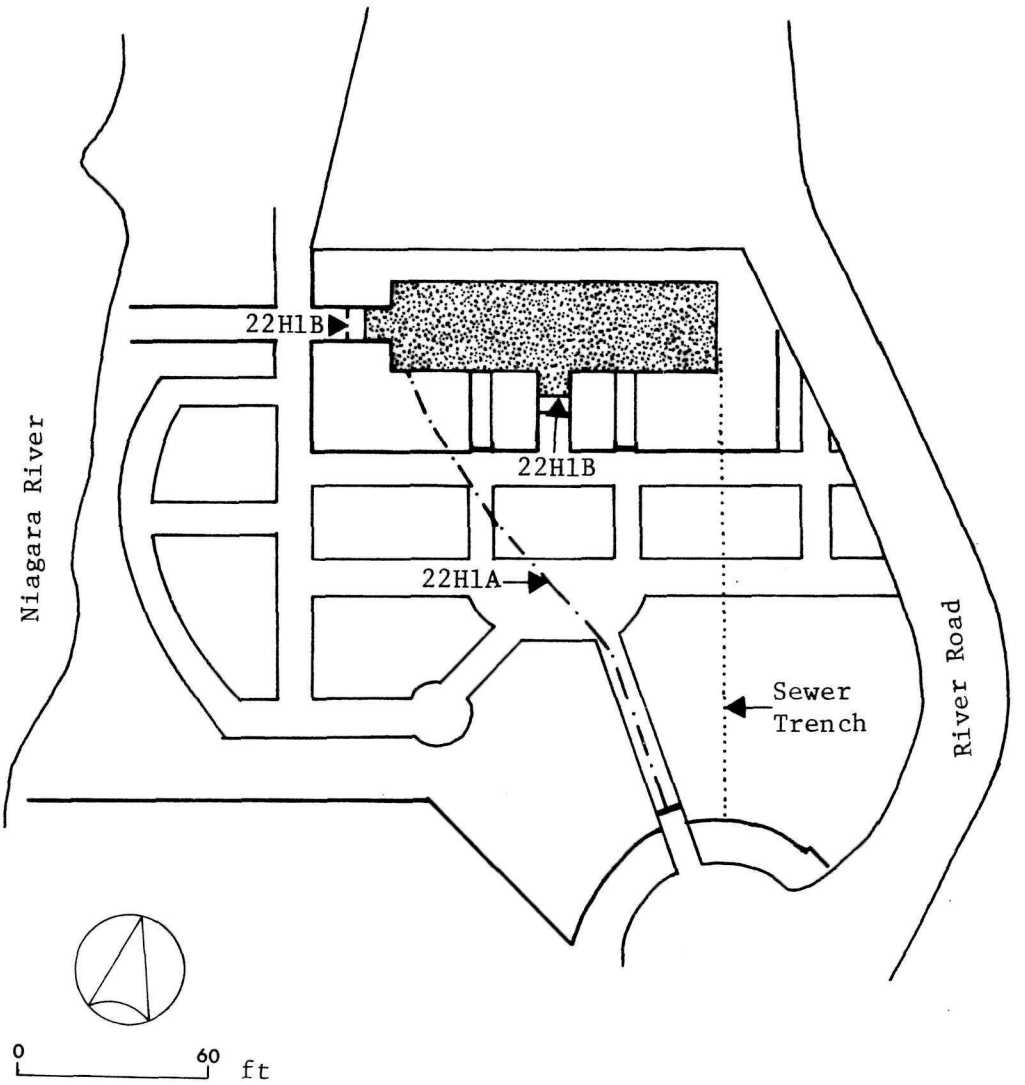
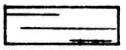
1 Navy Hall, showing location of excavations.


22H1B
22H1B
22H1A
Niagara River
Sewer
Trench
River Road
0
60
ft

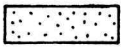
2 Legend for Fig. 3.

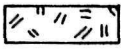
Layers:

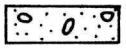
 1 Light grey gravel

 2 Brown fill added by Niagara Parks Commission

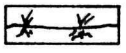
 3 Crushed gravel roadbed

 4 Light brown coarse sand

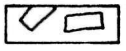
 5 Reddish brown soil

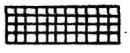
 6 Natural gravel and coarse sand

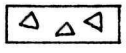
 7 Compact fine-grained grey sand

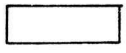
 8 Sod

 9 Coarse dark grey sand

 10 Brick rubble

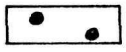
 11 Dank black muck; very wet

 12 Stone rubble

 13 Disturbance around foundation of Navy Hall

 14 Flagstones on gravel base

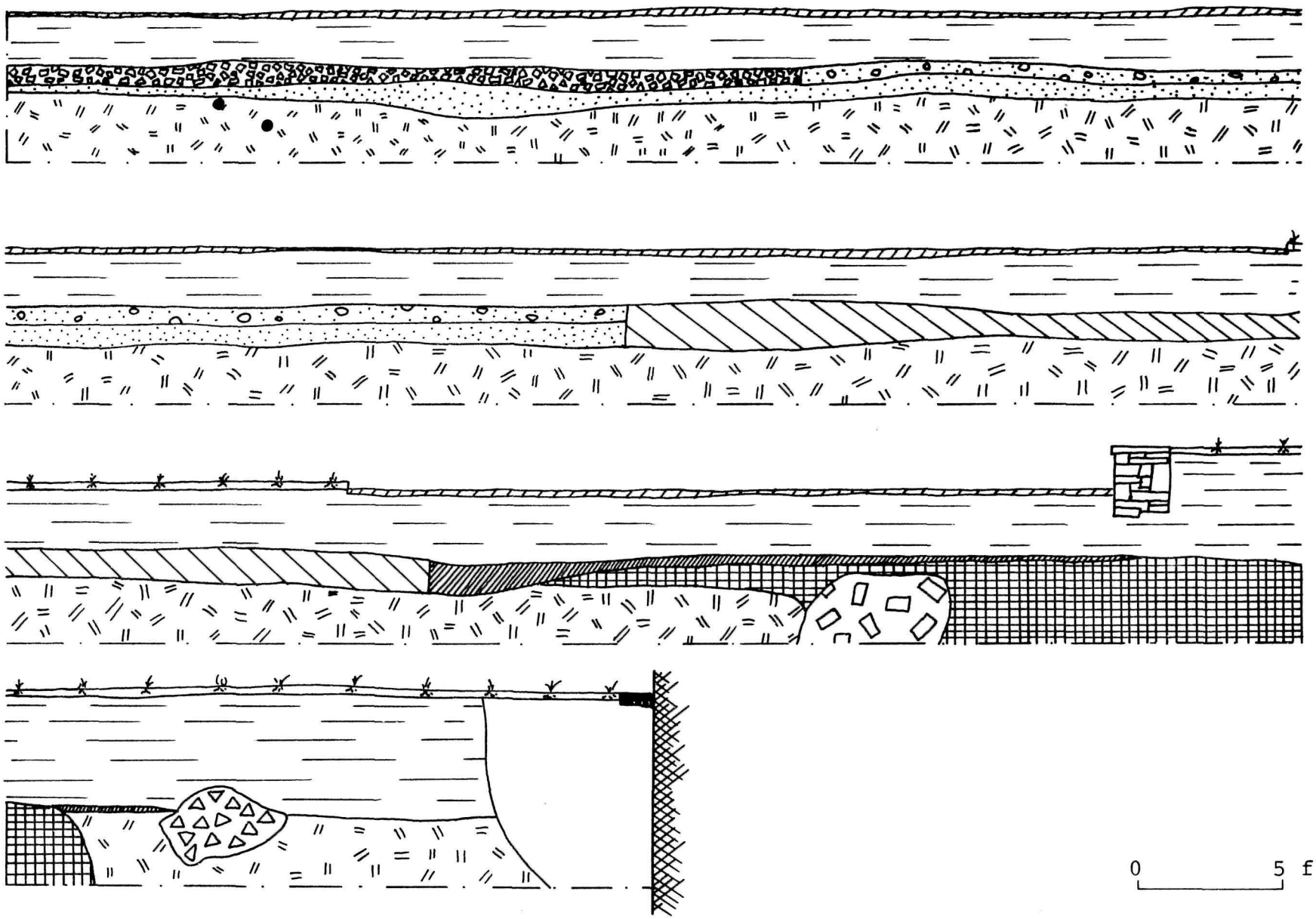
Features:

 2.5 in pipes

 Ornamental stone wall built by Niagara Parks Commission

 Foundation of Navy Hall

3 Profile of east wall of trench (22H1A).


0
5 ft.

4 Crop marks showing where the sewer trench had been excavated and backfilled. (Photo by E. Snow; 22H-101 X.)

5 Looking southeast towards Navy Hall before excavation along the line of the trench for water, electricity and telephone lines. (Photo by E. Snow; 22H-97 X.)

6 Stratigraphy at north end of trench showing stone step, 1930s fill, crushed gravel, sand and subsoil (Photo by E. Snow; 22H-103 X.)

Cape Spear Lighthouse

by Edward F. Bush

17 June 1975

Cape Spear Lighthouse
by Edward F. Bush

List of Illustrations

Narrative

Cape Spear, site of the second lighthouse on the shores of Newfoundland, is the most easterly point (longitude 52°37'W) in Canada. A wind-swept rocky promontory, supporting coarse grass and juniper as its sole vegetation some 200 feet above the breakers, Cape Spear faces 2,000 miles of ocean separating it from the coast of Britanny in the same latitude. Such a location was an obvious choice for a landfall for vessels making for the frequently fog-bound port of St. John's, some four miles distant.

It is not surprising, therefore, that so prominent a point figured on early maps. The name "Cape Spear" was of French or Portuguese origin, these being the first Europeans, other than the legendary Vikings, to explore the coast. Jean Alfonsi, who accompanied Roberval's expedition in 1541, marked the location "Cap d'espoir" on his chart dating from 1544, from which the anglicized "Cape Spear" is readily derivable.[1] On the other hand the St. John's firm of architects who prepared an "as found" study of the Cape Spear lighthouse, favour "C de Speraza" on a Portuguese map of 1556, and again "C de Esphera" from a 1663 chart; they

report the name "Cape Spear" used for the first time on John Thornton's map of 1700.[2]

Fog and ice borne south on the Labrador Current to its juncture with the Gulf Stream rendered lighthouses an early necessity for the safeguarding of ships off Newfoundland's shores. Following the granting of representative government to the colony in 1832, the legislature lost no time in addressing itself to the needs of mariners along its hazardous shores. In 1834 the governor recommended the names of four appointees as Commissioners of Lighthouses,[3] a body which carried responsibility for the erection and maintenance of lighthouses along Newfoundland's shores for more than 20 years. That summer the lighthouse commissioners ordered the Fort Amherst light, located in a blockhouse near the passage leading to the harbour, restored to service.[4] The Fort Amherst light was insufficient, however, particularly in the thick weather so recurrent in the region, to provide incoming vessels with sure guidance in the outer approaches to the harbour. An enclosure in a despatch of Governor Sir Thomas Cochrane, 3 January 1833, made this point clearly.[5] The enabling legislation, "For the Establishment of Light Houses" was passed 12 June 1834, authorizing the treasurer to raise a loan of £1,000 "from such person or persons, or body corporate or politic, as will advance the same...chargeable upon and to be re-paid out of the public funds of this

Colony" with interest at 6 per cent.[6] The Lighthouse Commissioners were to procure plans and estimates, and the upkeep of the lighthouse when built was to be finances by a light duty of a penny per ton on shipping. Unlike some lighthouses along her coasts, Cape Spear was built and financed entirely by the colony.

On 23 July 1834 the commissioners advertised for tenders, receivable at their office between the hours of twelve and one o'clock on 2 August.[7] No further reference to this subject has been found in any of the St. John's papers, and at time of writing, research in Ottawa and in St. John's has failed to establish the identity of the builder or builders of the Cape Spear lighthouse. Neither of the architectural reports written for National Historic Parks and Sites Branch contains this information. For want of direct evidence a conjecture must suffice. Robert Oke, in his "Plans of the Several Light Houses in the colony of Newfoundland," stated that Cape Spear was of the same design as Harbour Grace Island lighthouse. A tender by Nicholas Croke of St. John's for £565 was accepted for Harbour Grace Island on 9 September 1835.[8] Presumably the tender for Cape Spear was accepted the previous year, since it was advertised in July 1834. In light of the facts that the two plans were similar and that the commissioners were reasonably satisfied with the Cape Spear work, it is not altogether unlikely that the same

contractor would have been accepted for the Harbour Grace Island job. Nonetheless, the absence of positive evidence precludes crediting Nicholas Croke with the building of Cape Spear lighthouse, although it is an intriguing hypothesis. In addition to this, an item in the appendix to the Journals of the House of Assembly of Newfoundland 1837 refers to £121 9s. 3d. owing on Croke and Parker's account "for Commissioners of Light Houses to defray" but does not specify the lighthouse.[9] This account may refer either to Harbour Grace Island or Cape Spear, possibly more likely the former considering the date. Finally, in this vexatious matter of Cape Spear Lighthouse's builder, The Times and General Commercial Gazette (St. John's) refers on 14 September 1836 to one William Shields as "the engineer of the lighthouse" with no amplifying detail.[10] This item lends no support to the previous conjecture, and in any case the term "engineer" might as easily refer to a technician concerned with the light or the lantern installation as to the actual builder of the lighthouse itself. Unfortunately present research does not permit further speculation on this admittedly crucial point in the history of Cape Spear.

Construction got under way, presumably in 1835 although a start may have been made late in 1834. Basically the Cape Spear lighthouse, like those of Harbour Grace Island and Cape Bonavista, consisted of a solid stone circular tower of modest height surrounded by living quarters; the tower,

surmounted by its lantern, rose from the centre of the roof. The original structure was 32 feet square with four rooms on the ground floor and a 30-foot tower. The surrounding living quarters were two-storeyed and were built of pine timber.[11]

Accordingly to legend, the tower was built of imported English granite.[12] The "as found" report mentioned above does not specify the stone used for the tower, but states that the sandstone at the site was suitable for the purpose.[13] Although limestone was imported from England[14] it seems likely that local stone would have been used if of equivalent quality. Lack of evidence, however, precludes a more definitive statement.[15] The John R. Stevens architectural report written for this department describes the tower as built in rubble masonry, faced with "smoothly dressed freestone" on the inside and iron plates on the upper exposed portion.[16] The 30-foot circular tower is in good condition today, 140 years after its construction, a fact which speaks well for the anonymous builder.

The 30-foot square two-storeyed living quarters formed the original structure. They consisted of pine timbers and sheathing boards, lined on the outside with 6-inch clapboarding. There was a door on the north side, later replaced with a window, and a door on the west side leading to the kitchen.[17] A hipped roof completed the structure, from

the centre of which protruded the circular tower surmounted with a polygonal lantern.

Access to the second floor was by means of a spiral 16-riser wooden staircase with banisters; the architects believe that this is not in its original position. There were originally four rooms on the ground floor, which are generally in better state of preservation than the numerous additions made in later years. The second storey comprises four rooms with adjoining attics.

An 11-riser spiral stone stairway gives access from the second storey to the lantern, 16-sided and copper domed. The light apparatus has been transferred to the new light-house, but the mount for the heavy apparatus, cast iron and six-legged and of later installation, remains.[18] By 31 January 1835 the Commissioners of the Lighthouses reported that the structure was now ready to receive the lantern.[19] The lighthouse commissioners sought the advice of Robert Stevenson of the Northern (or Scottish) Lighthouse Board on the type of apparatus which would best serve their needs; Stevenson advised the installation of catoptric rather than dioptric apparatus (reflector-type rather than prismatic), and of a revolving rather than a fixed light.[20] The estimate for a 10-foot diameter lantern, 5 feet 8 inches in height with a copper dome and 30 plates of ¼-inch thick glass, came to £335, and for an 8 lamp catoptric light with 21-inch

parabolic reflectors £310.[21] The light finally chosen for Cape Spear was a 7-reflector revolving light which had seen service in the Inchkeith lighthouse, near Edinburgh, from 1815 to 1834.[22] The lamps consisted of Argand burners with glass chimneys designed for the use of sperm oil, although after a few years the more economical seal oil was preferred. The Argand lamp was designed with a circular wick for better combustion. The 7 Argand lamps, for each of which was fitted a 21-inch parabolic reflector at a focal distance of 4 inches, were mounted on a 7-sided frame, the whole assembly revolving once per minute. The white light flashed for 17 seconds, followed by a 43-second eclipse.[23]

First exhibited on 1 September 1836, the Cape Spear light consumed about 320 gallons of sperm oil annually, with maintenance costs about £360.[24] In 1841 pale seal oil replaced sperm oil in the Newfoundland lighthouse service at an annual saving of about £400.[25]

In May 1835 the legislature had to raise an extra £500 to finance the project.[26] The maintenance and operating costs were financed by a light duty of 3d. per ton on all vessels except coasters calling at Newfoundland ports; coasters and sealers paid a duty ranging from 10s. to £1 per annum.[27]

Local tradition, widely accepted, holds that the keepership of the Cape Spear lighthouse had been in the Cantwell

family from the beginning to the present day. This is not sustained by the facts, for James Cantwell was the second incumbent, not the first. Emanuel Warre received the first appointment on 25 October 1834, before the lighthouse had been built, and held the post until 1846, when James Cantwell was appointed.[28] The Cantwell family tradition asserts that Cantwell, a St. John's pilot, was awarded the Cape Spear keepership at the behest of Prince Henry of the Netherlands, who paid a state visit to St. John's in 1835. The Prince's ship, the frigate Rhine, became lost in fog off St. John's and was guided in by James Cantwell. In gratitude for saving the ship from possible disaster, Prince Henry is said to have offered Cantwell a reward. Cantwell asked for the keepership of the Cape Spear lighthouse for himself and heirs for as long as they should wish to retain it. The Dutch prince arrived in St. John's on the morning of 9 August 1845. Of the two St. John's papers which reported the gala events in some detail, neither mentions the Cantwell incident nor any difficulty making the harbour.[29] One would think that this incident, if true, would have been reported widely in the local papers. None the less an English translation of a document written in low German and presented to Cantwell, a copy of which is among Department of Transport records, reads as follows:

> The undersigned, Captain, Commander at Sea, of H M Frigate of War Der Ryn declares that the

pilot James Cantwell of St. John's, has piloted this ship from the ocean into the Harbour of St. John's, 9 August 1845, and on 26 August 1845 again piloted her to the ocean. He has shown himself to be an experienced person and well qualified for this profession and deserves full recommendation

(signed) H M S Der Ryn

August 26, 1845.[30]

These dates corresponded exactly with those of the newspapers, although not with the subsequent tradition, which makes James Cantwell the first keeper. The testamentary document, still in the family's possession, has been signed by all visiting royalty, including the present Queen and Prince Philip. Such an appointment, of course, would not be in Prince Henry's gift, but his recommendation may have carried weight with the lighthouse commissioners or the governor. In any case, James Cantwell secured the appointment in 1846, following the royal visit.[31] The Cantwells have tended the Cape Spear lighthouse since that time in continuous succession, including the present keeper.[32] Providing the document quoted above is genuine, probably Cantwell did obtain his post through his services to Prince Henry, although perhaps under less dramatic circumstances.

Minor maintenance only was called for in the early

years. A severe gale in 1846, however, caused considerable damage to the structure, necessitating repairs beyond the ordinary. By 1849 extensive work had become mandatory.[33] In particular the wooden foundation for the heavy light apparatus had obviously not stood up to the strain and had to be replaced. The structure with the exception of the light room had weathered the early years well. The foundations were anchored to the rock as a safeguard in rough weather, a precaution justified by events. On 19 September 1846, a gale of near-hurricane force blew "with such violence as to completely uplift one side of the building several inches off the foundation (to which it again settled down on the storm subsiding) and...shook the frame-work of the light room." The light room, directly beneath the lantern, was exposed above the roof of the building. Every pane in the lantern was strained or cracked and the whole building shook to a degree that the keeper feared for his life.[34] Although damage had been done to the lantern and light room, the commissioners were confident that the lighthouse as a whole was sound. Nonetheless, in the following year (1850) the commissioners ordered a stone pier as a foundation for the light apparatus, at an estimated cost of £420 sterling. This measure had been adopted at Cape Bonavista with encouraging results.[35]

By 1856 some of the Argand lamps or burners required

replacement.[36] In 1859 repairs were made to the tower and dwelling and the installation of a fog signal was considered.[37] The lighthouse was now considered to be in good shape for a number of years to come. The Edinburgh firm of D. and T. Stevenson were consulted regarding what type of fog alarm would best serve the purpose at Cape Spear. A tolling bell was considered, but it was not until 1878 that a proper steam-operated fog alarm was installed. This proved a great boon to ships making for St. John's in thick weather, which more often than not could reach their berths and were forced to anchor in the bay until the fog should lift.[38]

John R. Steven's architectural report cites two additions to the living quarters: a wing added to the west end about 1850, consisting of two rooms and centre hall, and an addition to the east end about 1860, also comprising two rooms and centre hall.[39] In fact the latter was built in 1865, and was a lean-to providing two additional rooms for the assistant keeper and family.[40] In the following years the roof where the additions joined the original structure required frequent attention, and in general the original quarters stood up very much better than the subsequent additions. As early as 1862 repairs totalling £5 were required for the roof,[41] and in 1864 the chimney tops required attention.[42]

Seal oil with Argand burners was used until 1874 in the

Cape Spear light. At 80¢ per gallon, seal oil was considerably cheaper than sperm oil, and was effective down to 5°F below zero,[43] a temperature lower than Cape Spear ever experienced. In the 1860s mineral oil of various types, a yet more economical and effective illuminant was introduced, and in 1874 the Cape Spear light was converted to kerosene using Doty multiple wick burners.[44]

In 1879 there were complaints of the ineffectiveness of the Cape Spear steam whistle. On one occasion a ship (the Gulnare) approaching St. John's from the south was within half a mile of the lighthouse before the fog alarm could be heard. The Board of Works engineers concluded that there was insufficient steam pressure, for which the installation of a self-regulating pressure gauge was recommended.[45] In 1883 a new boiler of improved design, the work of James Angel of the Victoria Engine Works, was installed,[46] after which there were fewer complaints. Again in 1894 another new boiler was put in, either to replace the original (which had been used as a standby) or the Angel boiler.[47]

The clockwork mechanism for the light's rotation stood up very well, but by 1882, more than 45 years after its installation it was reported as running inaccurately. It was corrected by adjustments.[48] When it is remembered that this mechanism had been in continuous service since 1816, its quality may be readily appreciated. In 1895 the catoptric

7-lamp unit was taken apart, cleaned and adjusted. The roofs of the dwelling required periodic attention throughout this period. Sometime in the course of the 1890s the cast iron 6-legged stand to serve as foundation for the heavy light apparatus was installed. In 1891 the south side of the dwelling required covering with "patent wire roofing", with the intention to treat the east and west sides in like manner in the immediate future.[49]

Soon after the turn of the century a casing of wrought iron plating was added to all exposed tower surfaces, due to deterioration from the wear and tear of the elements.[50] For some years the assistant-keeper had been complaining of smoky and sooty down draughts from his chimney whenever the wind was in the southeast. Rebuilding the chimney resolved this trouble.[51] The next improvement was the installation of a new fog alarm (probably a diaphone) in the spring of 1910, along with sundry other maintenance work. The new equipment was located 140 yards west-southwest of the old site. Continuous heavy seas had delayed the landing of machinery; it will be recalled that in the earlier years the only communication with Cape Spear was by sea. (The present road is little more than a stony dirt track, exceedingly rough.) The dwelling needed for repairs and internal alterations.[52]

In the latter years of the 19th century the development

of lighthouse technology had demonstrated beyond a doubt the superiority of the dioptric to the catoptric or reflector-type apparatus. Dioptric apparatus consisted of finely wrought prisms, a combination of reflecting and refracting elements, mounted on a brass frame, which more effectively focused and directed the light. In 1910 a 3rd Order dioptric light, with the new pressurized oil vapour light and usuing an incandescent mantle, replaced the original apparatus. This apparatus, weighing 7 tons, was manufactured by the well-known Birmingham firm of Chance Brothers; it too was a rotatory type of light, driven by a clockwork mechanism actuated by weights.[53] In 1917 acetylene was adopted in place of kerosene.[54] The light was controlled by a sun-valve, a photometric device which automatically turned the light on and off at dusk and sunrise. The final change to electricity in 1929 replaced the weights with a simple electric motor to rotate the light, and the acetylene burner with a 500-watt or 1,000-watt bulb.[55]

The present roof shingles and a good part of the clap-boarding on the outer walls date from the 1930s, as do the window sashes and glazing. The oldest clapboarding is on the north wall, but it is not thought to be original.[56]

A particularly severe storm in October and November 1922 caused extensive damage to Cape Spear, as well as to other lighthouses, no doubt necessitating extensive replace-

ment of shingles and clapboarding on the roofs and walls. But the annual reports are sparing of details as the years pass.[57]

With the coming of war, Cape Spear's commanding position on the outer approach to St. John's harbour assumed strategic importance, given the German submarine menace on the North Atlantic shipping routes. Guns were installed in 1941 at the site, and the following year the old lighthouse was camouflaged.[58] A system of underground passages connected the gun emplacements with the magazines and barracks. Most of this was demolished after the war.

With Newfoundland's entry into the Canadian federation, the Cape Spear lighthouse, along with all the province's navigational facilities, passed to the jurisdiction of the federal Department of Transport. The more-than-century-old structure, which had been begun under the aegis of the lighthouse commissioners, had passed to the Board of Works in 1856, then to the newly-created Department of Marine and Fisheries in 1898, and then to the Department of Natural Resources with the formation of commission government in 1934. It finally became the responsibility of the national Department of Transport in 1949-50.

A Department of Transport inspector in July 1949 visited the station, and reported it in good condition: "This station has been well looked after. It has been, as

it were, the showplace for the service. The buildings have been kept well painted and are in fair condition."[59]

The head keeper had a kitchen, living room, dining room, four bedrooms and a storage room; his assistant had the same accommodation, less one bedroom. The living quarters were clean and tidy. The doors were ill-fitting, some roof shingling was required, and the window sills needed work. A good well 100 yards from the lighthouse provided excellent water. The keeper requested the installation of an electric pump to provide the house with running water; he had already installed all the plumbing fixtures himself. Since electricity was provided for the station for a flat rate of $100 per month the department could well afford to grant his request.

The light at this time was reported to be a 4th Order 250-millimetre focus Chance Brothers dioptric, rotating on a mercury float and driven by a ¼ horse-power motor driving the old clockwork mechanism through a reduction gear. If this description is accurate, apparently the original 3rd Order apparatus was replaced at some date by a slightly smaller unit.[60]

On the night of 31 October 1950 a 2,200 volt power line fell across the fog alarm building during a severe thunderstorm; the building was a total loss from fire. A new fog alarm was in operation by noon 16 June 1951.[61]

With the takeover of all Newfoundland's lighthouses by the federal government, no time was lost in setting up a local office in St. John's and carrying out an inspection of all the province's lighthouses, toward the end of modernizing their facilities. By 1953 the department had decided to replace the Cape Spear lighthouse with a new tower of reinforced concrete, and to demolish the old landmark, but encountered opposition from those who wished to see the structure preserved on historical grounds.

In June 1954 the department found that it had not clear title to the land; the Cantwell family claimed it. On 11 August 1954 the chief of aids to navigation ordered his St. John's subordinates not to proceed with the demolition of the old lighthouse until further notice, but the argument continued, with the department's engineers justifying their stand on the practical basis that the lighthouse was in a bad state of repair and would be too costly to renovate. (Reinforcement of the tower with a layer of concrete 12 inches thick was considered, but abandoned as being too expensive.)

As a result, the construction of a new Cape Spear lighthouse was approved. By 15 October 1954 the new structure, a reinforced concrete tower with sloping sides, and aluminum lantern, 45 feet from base to vane, was completed. Its light, transferred from the old lighthouse, went into

service in 1955.[62] The new lighthouse is on slightly lower ground nearer the cape.

The old Cape Spear lighthouse ended its days, as a schoolhouse for the lightkeepers' children; the desks are stored in one of the ground floor rooms. With the new light automated no one lived on the station, the keeper coming out at intervals to check on the equipment. Inevitably the abandoned lighthouse deteriorated rapidly in its unheated untenanted condition, subject to the penetrating damp of its exposed location and the periodic depredations of vandals. In December 1959 the Deputy Minister of Transport first approached Historic Sites through the Deputy Minister of Northern Affairs to sound out the latter on restoration and preservation of the lighthouse as an historic site.[63] Three years later (1962) the Historic Sites and Monuments Board defined the lighthouse as a structure of major (and presumably national) historic interest because of its age and design. A detailed report by restoration staff was written in 1972. Several areas needed repair work, but in general the old lighthouse was "well stabilized and ventilated."[64]

Appendix A. Administrative Sequence, Newfoundland Lighthouses

Commissioners of Lighthouses 1834-56: appointed by Governor of Newfoundland.[1]

Board of Works 1856-98: composed of Surveyor-General, Attorney General, Colonial Secretary, President of the Legislative Council, three members of the House of Assembly; enabling legislation 18-19 Vict. cap. 7.[2]

Department of Marine and Fisheries 1898-1934: by legislation passed 3 March 1898 this new department took over from the Board of Works of St. John's all jurisdiction over lighthouses, lights, buoys and beacons.[3]

Department of Lands and Fisheries 1932: formed of merger of Department of Marine and Fisheries with Agriculture and Mines.

Department of Marine and Fisheries 1933: again a separate department with custody of lighthouses.

Department of Natural Resources 1934: the Department of Marine and Fisheries became an adjunct of this new department under the commission government.[4]

Department of Transport (Canadian): 1949.

Appendix B. Evolution of Light Illuminant Apparatus

Catoptric 7-reflector revolving apparatus, with Argand circular wick burners; original illuminant sperm oil until 1841; conversion to seal oil with same apparatus at annual saving of about £400. Rotation of light by clockwork gears actuated by weights set in a weight shaft down the inside of the tower. Light in service 1 September 1836.

1850: stone pier installed as foundation for light.

1856: some Argand burners replaced; light in good condition.

1865: seal oil still in use at 80¢ per gallon.

1874: kerosene Doty multiple wick lamps installed.

1882: rotatory machinery adjusted.

1910: installation of Chance Bros dioptric 3rd Order revolving light; apparatus weighed 7 tons; petroleum vapour light with incandescent mantle light source about this time.

1917: acetylene substituted for petroleum vapour.

1929: light electrified; 500-watt lamp, ¼ horsepower electric motor operated gears in place of weights.

1949: light described as 4th Order dioptric; not determined whether smaller light installed or whether this was an error in the report.

1955: new lighthouse in service, with light transferred from old lighthouse.

Appendix C. Structural Changes, Maintenance, Fog Alarm, etc.

1834-35: original structure built; 30-foot stone rubble tower, building stone not determined; living quarters 32-foot square building of pine timbers, with 4 rooms ground floor, 2 covered-over fireplaces; hipped roof; clapboards 6 inches wide underlaid with tar paper; centre doorway probably in centre north side originally; door on west side led to kitchen; polygonal cast-iron lantern with copper roof.

1846: sustained substantial damage in gale; 1849.

1849: required extensive work; recommended that light room be modified similar to Cape Bonavista; reported that wood frame in light room not strong enough to support apparatus, but rest of structure in good condition; £420 set aside in 1850 for stone pier foundation.

1859: repairs to tower and roof.

ca. 1850: wing added to west end (two rooms with centre hall).

1865: small addition to east side for extra accommodation.

1862: minor repairs to roof.

1864: chimney tops £1.

1878: steam fog whistle installed; Admiralty complaints in following year on effectiveness; 1893-94, improved steam boilers installed to improve fog alarm.

1894: lantern drum repaired, also dwelling roof.

1890: roof leaky in places; repairs needed this year. South side of dwelling covered with "patent wire roofing," with east and west sides to be treated in the same manner; iron railing and supporting platform should be replaced.

ca. 1900: single storey building with low-pitched roof built and joined to west wing by passageway. Also exposed tower surfaces above roof sheathed with wrought iron plating.

1905: chimney in assistant keeper's house redesigned to prevent down draughts.

1909: new fog alarm being installed; new installation 140 yards west-southwest of old site; repairs and internal alterations to dwellings.

1912: new dwelling built for third keeper -- no details; keeper's dwelling repaired.

1930s: present roof shingling and much of clapboarding date from this period.

1922: extensive damage caused by gales October-November.

1927: extensive repairs -- no details.

1941: guns installed.

1950: 31 Oct.-1 Nov. fog alarm building burned down result of fallen power line in thunder storm.

1955: new light house goes into service.

Appendix D. Sundry Invoices and Tradesmens' Accounts

These documents may provide restoration workers with pertinent information on the structure.

1843[1]

McBride and Kerr	white lead
W. Walsh	contract for repairs
Thomas McGrath	one oven
Patrick Fitgerald	one punt

1844[2]

T. M'Grath	smith's work
J. Halligan	funnelling
O'Dwyer	calicoe
M'Lean	boards, shingles, paint, sundries
McBride and Kerr	paint and oil
Perchard and Boag	white lead

1866[3]

Robert Peace & Co.	tinsmiths
J. Maher	ironwork
Job Bros.	room paper

F. Harley	contract for chimney
J. Gleeson	nails, hinges
R. Peace and Co.	funnelling
Bowring Bros.	nails

1870[4]

Gear and Co.	stove
Bowring Bros.	nails
W. Grieve and Co.	room paper
J. Gleeson	pulley, nails, glass
W.T. Parsons	repairing machinery

1872[5]

D. Dooley	carpentry
L. O'Brien	nails
Job Bros.	lead and glass
W. and G. Rendell	board and varnish
G. Langmead	repairing machinery
Foundry Co.	castings
Berney and Fitzgibbon	room paper
J. Gleeson	nails and hinges
P. Hutchins	chimney top
George Langmead	clock
W. Grieve and Co.	room paper
W.P. Walsh	chairs

J. Elliott	victory stove and chairs

1873[6]

W. Carsons & Sons	paint
D. and T. Stevenson	lanterns
R. O'Dwyer	glass and putty
J. Gleeson	lamps and chimneys
J. Elliott	stove and fittings
D. and T. Stevenson	wicks and glasses

1874[7]

J.A. Whiteford	telescope
Bowring Bros.	lock
W. and G. Rendell	oil and paint
Geo. Gray	24½ gal. pale seal oil
M.J. Power	iron work
Goodfellow and Co.	oil cloth
W. and G. Rendell	varnish
Ayre and Marshall	room paper
James Elliott	stove lining
George Gear	lamp chimneys

Endnotes

Narrative

1 E.R. Seary, Place Names of the Avalon Peninsula of the Island of Newfoundland (Toronto: University of Toronto Press, 1971), pp. 34-5.

2 Dobush, Stewart, Bourke and Barlow, "Report on As Found Conditions, Cape Spear Lighthouse", manuscript on file, National Historic Parks and Sites Branch, Ottawa.

3 Canada. Public Archives (hereafter cited as PAC), MG11, Colonial Office Papers, CO197 Vol. 4, p. 14.

4 The Newfoundlander, St. John's, 21 Aug. 1834, p. 3.

5 PAC, MG11, CO194, Vol. 85, p. 24.

6 The Newfoundlander, St. John's, 3 July 1834, p. 1.

7 The Public Ledger and Newfoundland General Advertiser, St. John's, 1 Aug. 1834, p. 3.

8 PAC, MG11, CO197, Vol. 4, p. 78, 9 Sept. 1835.

9 Newfoundland. Legislative Assembly, Journals of the House of Assembly of Newfoundland (hereafter cited as Newfoundland, Journals of the Assembly), 1837, appendix, p. 407, statement dated St. John's, 27 June 1837.

10 The Times and General Commercial Gazette, St. John's, 14 Sept. 1836, p. 2.

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12 Canada. Department of Transport, (hereafter cited as Canada, DOT), file 8010-3026 (HQ), Vol. 2, newspaper clipping of article by Harold Horwood.

13 Dobush, Stewart et al., op. cit., introduction.

14 PAC, MG12, WO55, Vol. 869, p. 382, memo, Collector of Customs.

15 The author tends to the opinion that local stone would have been used if suitable, but cannot venture beyond this point. Although he has seen the tower, his knowledge of stone types does not permit a definite statement.

16 John R. Stevens, "Report on Cape Spear Lighthouse", manuscript on File, National Historic Parks and Sites Branch, Ottawa, 1964.

17 Ibid.

18 Personal observation of author.

19 Newfoundland, Journals of the Assembly, 1835, appendix, "Report of the Commissioners of Light Houses", p. 149.

20 Ibid.

21 PAC, MG24, A44, Cochrane Papers, MSS 2350 (reel A299).

22 Canada, DOT, Marine Services, St. John's, Nfld. agency, file 7952-3026.

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42 Ibid., 1865, appendix, p. 154.

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44 Dobush, Stewart et al., op. cit., p. 18.

45 Newfoundland, Journals of the Legislative Council, 1880, appendix, Doc. 15, pp. 39-40.

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47 Ibid., 1894, appendix, p. 184.

48 Ibid., 1882, appendix, pp. 444-5.

49 Ibid., 1891, appendix, p. 386.

50 Dobush, Stewart et al., op. cit., p. 6.

51 Newfoundland, Journals of the Assembly, 1906, appendix, p. 209.

52 Ibid., 1910, appendix, pp. 436-7.

53 Dioptric apparatus was rated from largest (first order) to smallest (fourth order) depending on the diameter.

54 Newfoundland, Journals of the Assembly, 1917, appendix, p. 674.

55 Dobush, Stewart et al., op. cit., p. 3.

56 J.R. Stevens, op. cit.

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58 Canada, DOT, Marine Services, St. John's agency, File 7952-3026.

59 Ibid., (HQ) file 8010-3026, Vol. 1.

60 Ibid.

61 Ibid.

62 Ibid., notice to mariners, No. 130, 1955.

63 Ibid.

64 Parks Canada, Restoration Services, general file 09/7R1, 26 Oct. 1972.

Appendix D

1 Newfoundland, Journals of the Assembly, 1843, pp. 143-4.

2 Ibid., 1845, appendix, pp. 295-6.

3 Ibid., 1867, appendix, p. 177.

4 Ibid., 1871, appendix, p. 109.

5 Ibid., 1873, appendix, pp. 121-2.

6 Ibid., 1874, appendix, pp. 150-1.

7 Ibid., 1875, appendix, pp. 99-100.

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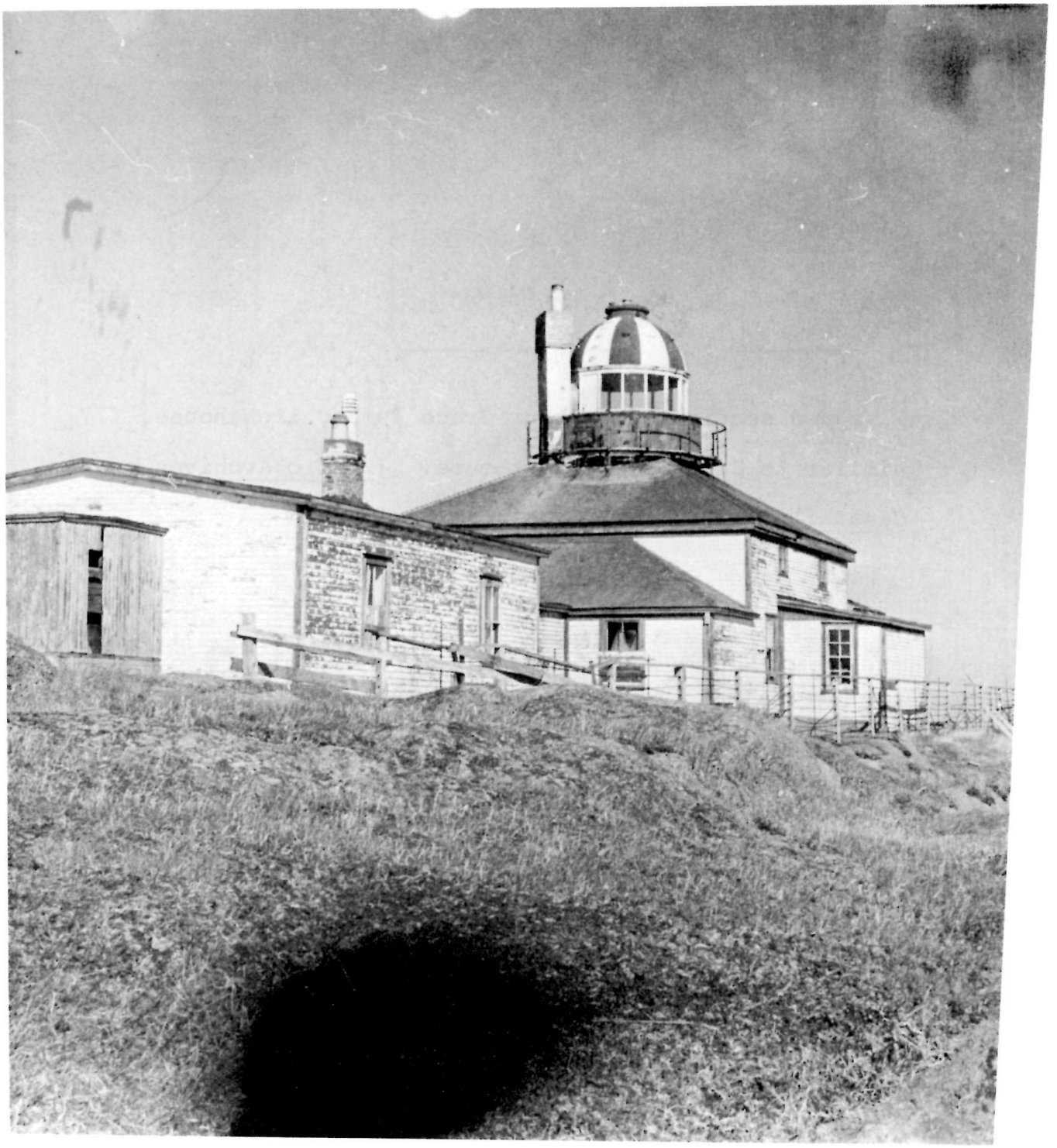
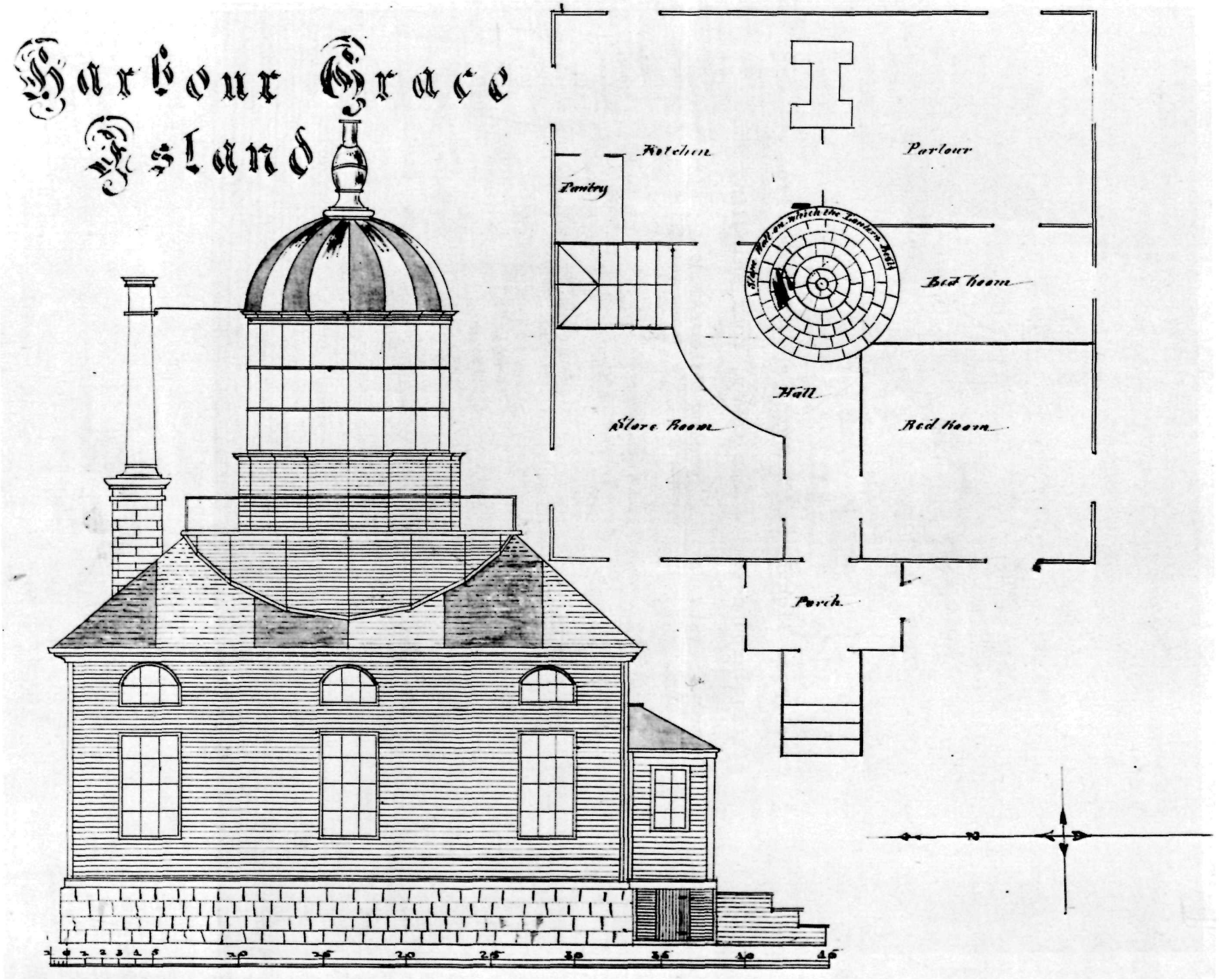
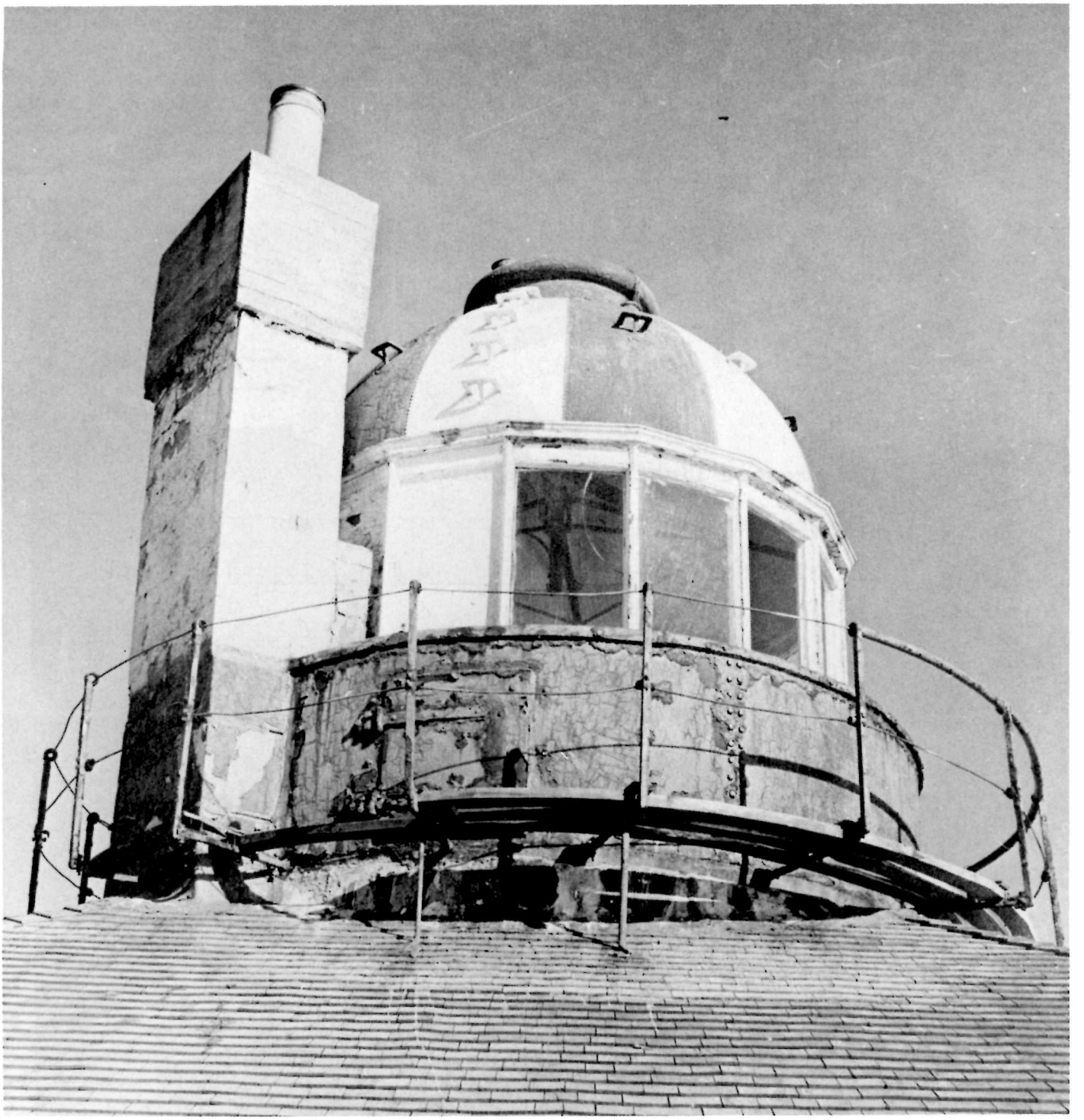
1 Cape Spear lighthouse. (St. John's Evening Telegram.)



2 Plan and section of Harbour Grace Island lighthouse, similar to Cape Spear lighthouse. (Public Archives of Canada.)


Harbour Grace
Island
Kitchen
Parlour
Pantry
Bed Room
Hall
Store Room
Bed Room
Porch

3 Cape Spear lighthouse lantern, showing cast iron plating around top of the tower, roof shingling and chimney. (St. John's Evening Telegram.)



4 The present lightkeeper tending the light in the new lighthouse; dioptric apparatus transferred from the old lighthouse. (St. John's Evening Telegram.)