



# Management Plan

## South Solitary Island Lighthouse Optic (SSILO)

Prepared for Coffs Harbour City Council – Contract number LGP-1209-QI



Prepared by

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In association with

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July 2020

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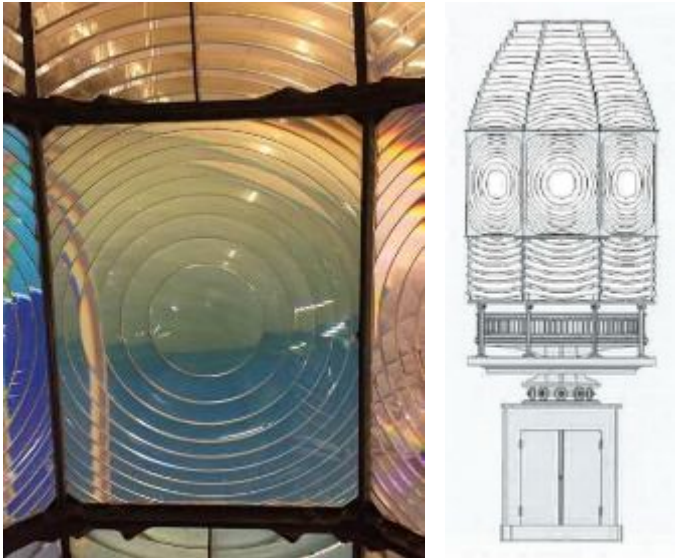
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**APPENDICES**

- Appendix A: Statement of Significance Thomas, Elizabeth. Significance of a single item. October 2013
- Appendix B: Typical Illustrations of the Lighthouse work of Chance Brothers & Co Ltd, Birmingham
- Appendix C: Coffs Harbour City Council chronology –South Solitary Island Lighthouse Optic: Compiled by Joanna Besley from Council minutes March 2020

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ITEM DETAILS

<p><b>Item</b></p>	<p>The South Solitary Island Lighthouse Optic (circa 1878) – known by the acronym SSILO</p>
<p><b>Description</b></p>	<p>8 panel First Order Fresnel Lens</p>
<p><b>Maker</b></p>	<p>Chance Brothers, Birmingham, England</p>
<p><b>Owned by</b></p>	<p>Coffs Harbour City Council</p>
<p><b>Materials</b></p>	<p>Cast iron, flint glass and other materials.</p>
<p><b>Size</b></p>	<p>Optic height: Approx. 10ft (H) =~ 310cm (H) Pedestal height: Approx. 6 ½ ft (H) =~ 205cm(H) Diameter (max width- Mercury bath): 6 ½ ft =~ 201cm Optic lens and pedestal weight: Approx. 4,300kg</p>
	
<p>Above: SSILO on display in Coffs Harbour Museum (Image source: Garry Searle 'First Order')</p>	<p>Above left: Detail of SSILO 'bull's eye' lens on display in Coffs Harbour Museum (Image source: ICS 2020); Above right: Illustration of the SSILO Chance Brothers 8 Panel Flashing First Order Lens (Image source: Garry Searle 'First Order')</p>

## 2 EXECUTIVE SUMMARY

This report was commissioned by Coffs Harbour City Council to inform how best to preserve, protect and promote the South Solitary Island Lighthouse Optic (SSILO). This Summary Report is a shortened version of that prepared for Council, focusing on the management and relocation of SSILO.

The South Solitary Island Lighthouse Optic is a highly significant item both to the Coffs Harbour community and more broadly within maritime circles. It was originally installed in the South Solitary Island Lighthouse in 1879. When the technology became redundant, it was removed in two stages between 1975 and 1977 and installed in the local historical museum in 1980. This museum has since re-located due to flooding risk and the building is hired to local table tennis clubs. A perspex shield has been installed to protect the optic and it can be viewed by appointment.

The opportunity of this project is to create a reimagining and contextualization of this valuable local government item that allows SSILO to be both fully interpreted and fully appreciated.

In creating this report the process undertaken involved a site visit followed by gathering of all related available information to understand the history and significance of the optic, reviewing existing documentation and undertaking further desktop research about the optic, the story of its placement in South Solitary Island Lighthouse and its importance for maritime navigation.

SSILO was made by Chance Bros, Birmingham, England. The lens was developed from the design of Augustin-Jean Fresnel a French physicist who pioneered in optics, particularly polarised light. He developed the use of compound lenses instead of mirrors for lighthouses.

The SSILO Fresnel lens is a First Order (the most powerful type) dioptric lens. It has eight panels with prisms of flint glass (often called lead crystal) and each panel has 127 pieces in a gun metal frame. The lens sits on a cast iron pedestal and was originally set in a bath of mercury to provide frictionless rotation. The original clockwork motor made by Chance Bros is still in working order although today an electrical source makes it rotate. The mercury bath still exists but is now filled with a lubricating oil.

SSILO can be dismantled into small enough component parts and brought out of its current location in the former museum through the doors, thus not necessitating the removal of the roof. Our estimate of the likely cost of disassembly and packing is \$75-\$85,000 + GST, with the cost of reassembly likely to be about 2/3rds of this, excluding building preparation costs.

The Consultants met with staff from the Coffs Harbour Regional Museum, and stake holders including the Friends of South Solitary Lighthouse (FOSSIL) to discuss potential relocation options for SSILO.

The Consultants agree that the optimum position for the long term location of SSILO should be adjacent to the harbour within sight of the sea. The Consultants looked at the opportunity of integrating SSILO into the new Cultural and Civic Space as a temporary measure, which has some merit since it is a 'live' project. However with the NSW Government announcing a project to revitalise the Coffs Harbour Jetty Foreshore in early May 2020, it is strongly recommended that integration of SSILO

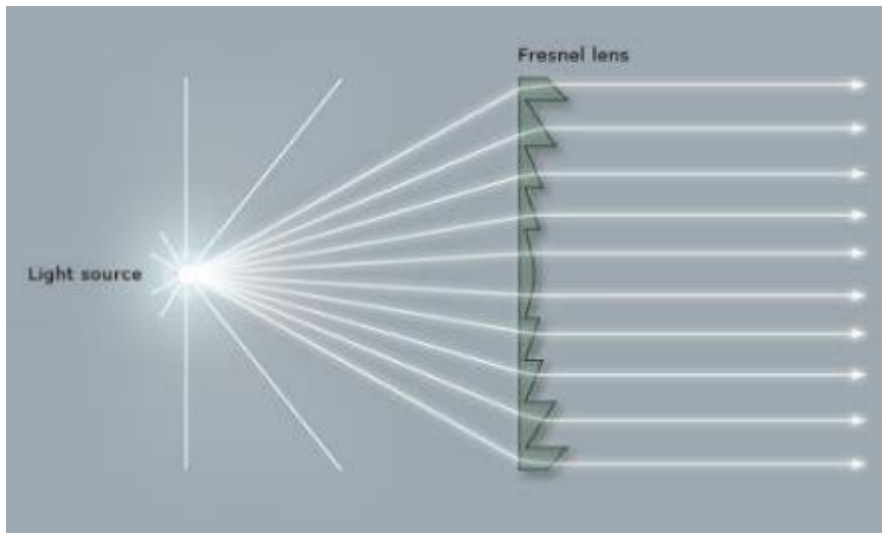
into the planning for this is considered by the Project Advisory Steering Committee. This aligns with Council's current adopted plans that reference the SSILO.

### 3 SIGNIFICANCE SUMMARY

A formal statement of significance was prepared in 2013 by Elizabeth Thomas and is attached as Appendix A. This document provides a wealth of information about the lens itself, and its history.

The following points summarise that information and add to it:

- As shipping along the East Coast of Australia grew in the early 1800s, so too did the requirement to allow navigators to negotiate passage safely along that coast. This resulted in the erection of a series of lighthouses in the mid to late 1800s as part of an overall scheme that resulted in over 350 lighthouses around Australia. This was at a time when the technology of light magnification was rapidly expanding allowing lights to be seen at a greater distance.
- Prime amongst this light technology was that of French physicist and engineer Augustin-Jean Fresnel who developed the multi-part Fresnel lens for use in lighthouses in the 1820s. His design allowed for the construction of lenses of large aperture and short focal length, without the mass and volume of material that would be required by a lens of conventional design. A Fresnel lens can be made much thinner than a comparable conventional lens, in some cases taking the form of a flat sheet. A Fresnel lens can also capture more oblique light from a light source, thus allowing the light to be visible over greater distances



- Through the years a number of classifications of Fresnel lenses were developed. These classifications, known as “orders,” were developed to meet the needs of different lighthouses in diverse coastal environments, as per below:



- The 1st order Fresnel lens was the largest of the Fresnel lenses and could exceed 12 feet in height and one ton in weight. Because of their size and strength, these lenses primarily were used in ocean lighthouses that needed an extremely focused and far-reaching signal.
- Chance Brothers a leading glass manufacturer in Birmingham established in 1824 (responsible for the Crystal Palace in 1851) became a significant provider of Fresnel lights and apparatus for hundreds of light houses across the world. Their catalogue is attached in Appendix B. The glass manufacturing process required a series of complex machining and polishing, visible in Figure 2 and the image on Page 1 of Appendix B. These machines were destroyed by bombing in the Second World War.
- Replacement glass cannot now be manufactured. If lenses get broken they can be either replaced with a few spares that are available in the world. No new lenses have been made or can be made since the Second World War. Where lens have been broken in other Fresnel lights around the world, acrylic substitutes have been fabricated. This reinforces the importance of any relocation of SSILO being very carefully planned and executed to ensure the glass is safely handled and protected during transport.
- South Solitary Island lighthouse was legislated in 1863, but not built until 1878 with the lens installed in 1880.
- The lens is a 1st order dioptric revolving Fresnel lens which eclipsed every 30 seconds. It comprises of eight panels the top with 18 prisms, the bottom with 8 prisms and the centre with 11 concentric prisms around a large bulls eye. The rotation of the lens system was driven by a clockwork mechanism which utilised a weight which was wound up at half hourly intervals. The optic initially had a roller pedestal which was later replaced with a mercury bath pedestal. The advantage of a mercury bath is that it is almost frictionless allowing the lens to turn smoothly and effortlessly.

- The original light source was a Chance Brothers 6 wick kerosene oil burner which was converted to a Chance Brothers vapourised kerosene burner in 1906. In 1912 this was changed to a Schmidt Ford burner and in 1923 auto form mantles were installed increasing the light intensity from 205,000 to 356,000 candle power. South Solitary remained kerosene operated until 1975 when it was automated, being the last kerosene operated lighthouse in NSW.
- Talking to lighthouse historians as part of this report valuations of \$3-\$4million were mentioned. The reality is that its value is academic as Council has no intention of selling it and more importantly it is irreplaceable.
- SSILO is one of 4 eight panel First Order lenses supplied to Australia, the others being at Sandy Cape, Qld (1870), Green Cape, NSW (1883) and Rottnest Island, WA (1896). Of these Sandy Cape has been removed and lost, Green Cape has been relocated to Montague Island but with 4 panels missing and Rottnest Island remains active. SSILO is the only eight panel First Order in an Australian museum.

The statement of significance identifies SSILO as significant for the following reasons:

*It is one of the most original and complete examples of a first order lens in an Australian museum and the only original example of an 8 panel First Order lens in a museum in Australia. South Solitary was the first and last lighthouse in New South Wales to utilise kerosene to fuel the light. The lighthouse itself was built in a peak period of lighthouse construction in the latter part of the 19th century.*

*The lighthouse was a link in the highway of coastal lights along the New South Wales coast. At the time of its construction coastal navigation was hazardous and the lighthouse would have assisted in the development of safe coastal trade and the subsequent economic development of NSW. It certainly would have impacted on the economic development of Coffs Harbour and its surrounds, which relied heavily on shipping transport for its timbers, sugar, fruits and dairy products.*

*The optic is well provenanced. Its creation by Chance Brothers is well documented both in paperwork as well as through their markings on individual pieces within the optic. The change in ownership to Coffs Harbour Council is also well documented. The information available regarding the history of Australian lighthouses means that the role that the optic played in the lighthouse is well understood. South Solitary lighthouse has been part of Coffs Harbour history for over 130 years with its light being the most visual link to the island and the role it played. Access to South Solitary lighthouse is now very limited and the Coffs Harbour museum provides one of the only tangible links to this aspect of Coffs Harbour's maritime history. The optic is significant through its association with colonial architect James Barnett who was a significant figure in Australian early architecture. He was responsible for not just designing many New South Wales lighthouses but also notable buildings such as Customs House, the General Post Office, Colonial Secretary's Office and a wing of the Australian Museum.*

*South Solitary Island Lighthouse is a significant part of the history of Coffs Harbour having contributed to safer waters for mariners since 1880. Its imagery is used by a number of organisations within Coffs Harbour, including the Coffs Harbour High School who motto is *lumen ex tenebris*, which is Latin for 'light out of darkness'.*



## 4

## HISTORY OF OPTIC

The following information provides a snapshot history listing chronological points for the key dates relating to the South Solitary Lighthouse Optic.

Timeline	Event
1856	The South Solitary Island Lighthouse was first discussed by a joint Government Committee
1863	The Select Committee recommended construction
October 1877	A site was selected
June 1878	Tenders were called
July 1878	Construction of the lighthouse began and continued for 20 months
August 1878	The First Order Lens order was placed with Chance Brothers in Birmingham, England
February 1879	The First Order Lens was supplied by Chance Brothers at a total cost for the lens and pedestal of £3,108
1879 / 1880 (exact date unknown)	The lens arrived at South Solitary Island
March 1880	The SSILO light was first lit
July 1915	The South Solitary Lighthouse was taken over by the Commonwealth Government
1975	The original SSILO was superseded with the installation of an automatic electric light. The three lighthouse keepers and families were withdrawn (NB. SSILO was the last kerosene operated light in NSW)
December 1975	The Lighthouse site was officially closed
After 1975	The optic was removed by the Department of Transport, packed into crates and stored initially in Melbourne and then in Sydney
1976	Ownership of the Optic passed from the Department of Transport to the Coffs Harbour Council
November 1976	Coffs Harbour Council organised the transport of the optic from Sydney to Coffs Harbour

November 1976	Nine potential sites for optic in Coffs Harbour proposed at public meeting with three preferred (Coff Street or Museum Reserve in CBD, and Park Beach Reserve)
September 1977	Uplift and relocation of the pedestal, mercury bath and lantern floor from lighthouse to Coffs Harbour. Airlift conducted by RAAF Chinook helicopter to a truck waiting at Coffs Harbour Airport and then transported to the Council Depot. A “slight mishap” occurred and a part fell into the ocean.
1977	Council develops plan for a replica lighthouse – a 10.5 metre structure with external staircase and viewing platform at 6.5 m height – on the corner of Coff and Castle Streets.
1979	Council shelves plans for stand alone lighthouse due to cost and decides to modify the plan of the new historical society museum to incorporate the optic
1980	A large crane used to place the pedestal, mercury bath, float bowl and lantern on the floor in the Museum building before the roof was put on. After the roof structure was complete, the lens, much of which had been assembled at the Shire workshop, was dismantled and reassembled in the Museum
2009	The Coffs Harbour Regional Museum closed its doors following devastating flood damage to the Museum building and its collection. The fact that the Museum is now known to be located in a flood zone means that it is not feasible for the Museum to remain in that building.
2009	The Museum collection is relocated to storage, excluding the optic which remains in the closed building due to its size and associated logistical issues around its relocation.
2009-2020	The building now houses the Coffs Harbour Table Tennis Club as well as storing the SSILO. Museum staff regularly clean and maintain the optic, however the site is not open for public viewing, except for occasional special events or by appointment.
2016	Optic’s ownership by Coffs Harbour City Council is formalised by Deed of Gift from AMSA (Australian Maritime Safety Authority).

Appendix C includes a detailed chronology of the Council’s decision making on SSILO during this time taken from Council minutes and related files, as compiled by Joanna Besley, Coffs Harbour City Council’s Gallery and Museum Curator in March 2020.

The following images have been collated during the research for this Management Plan.

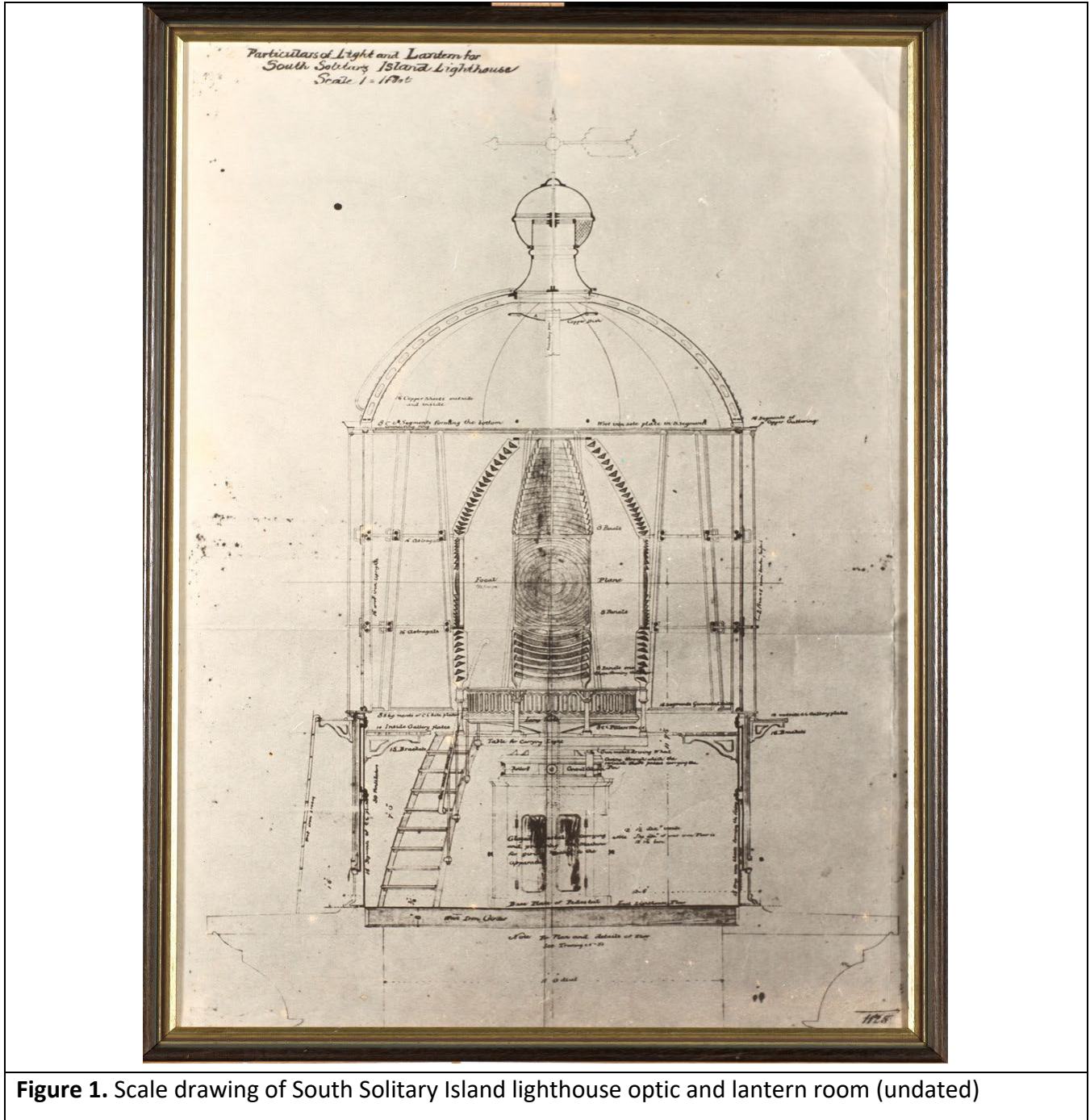
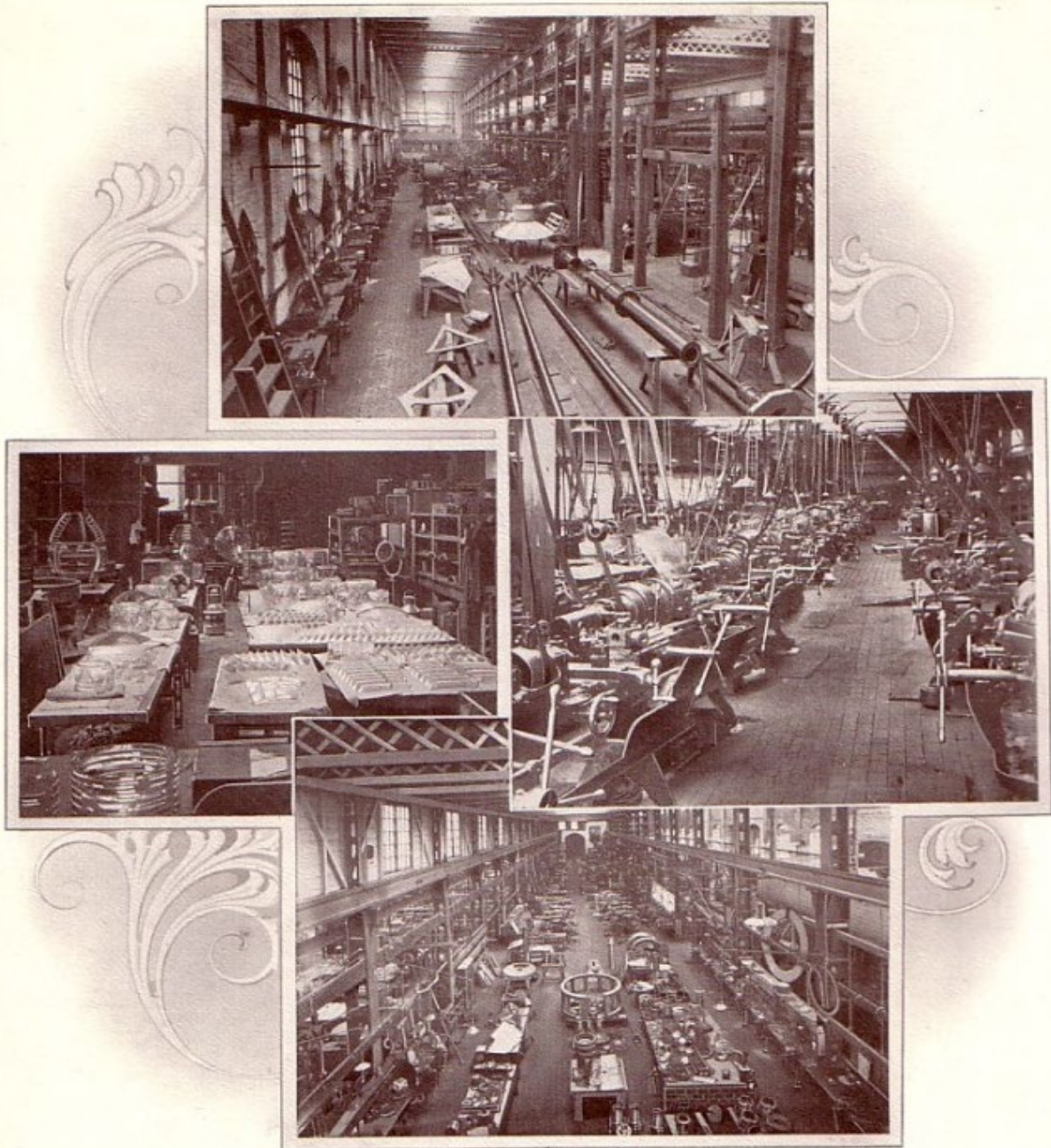
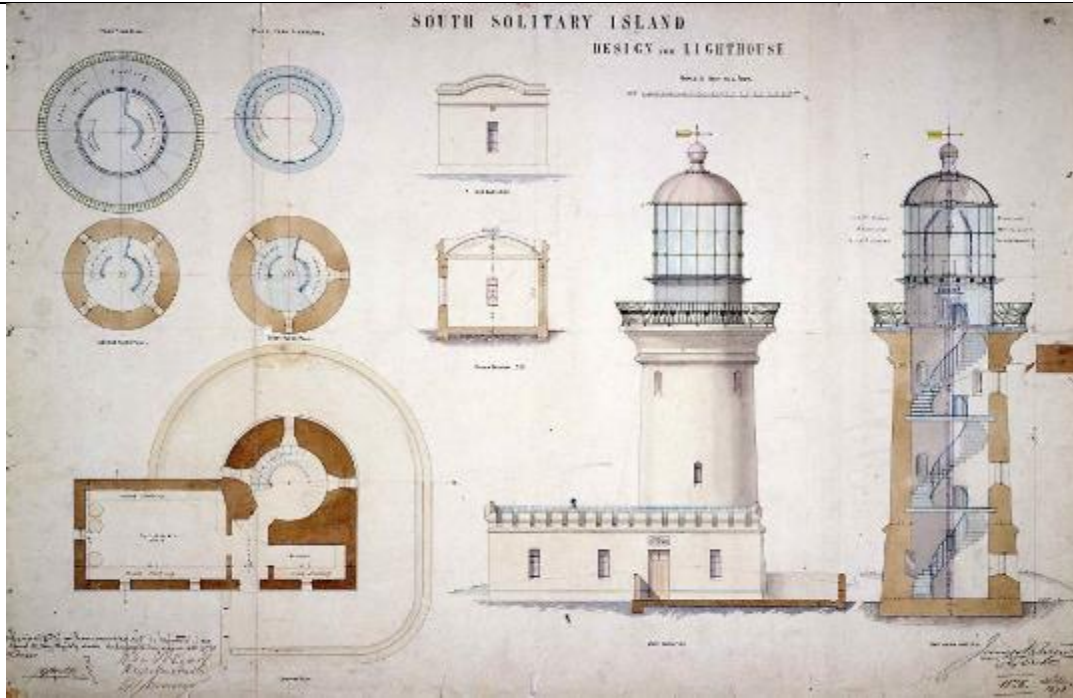


Figure 1. Scale drawing of South Solitary Island lighthouse optic and lantern room (undated)

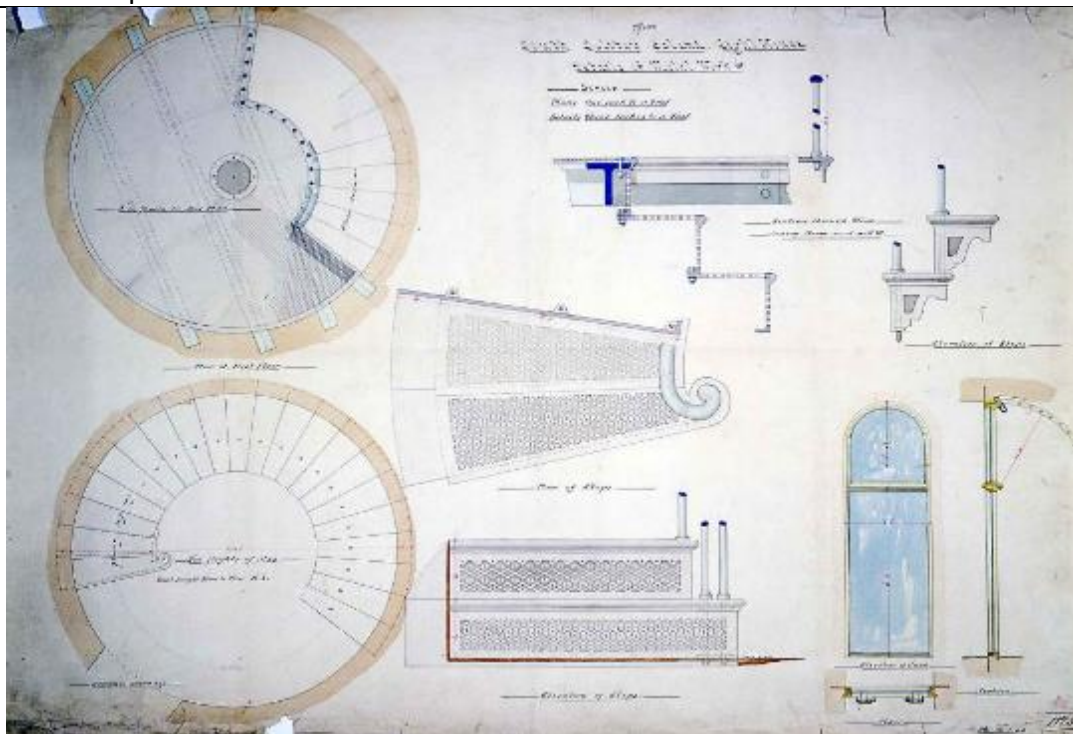
CHANCE BROTHERS AND CO. LIMITED



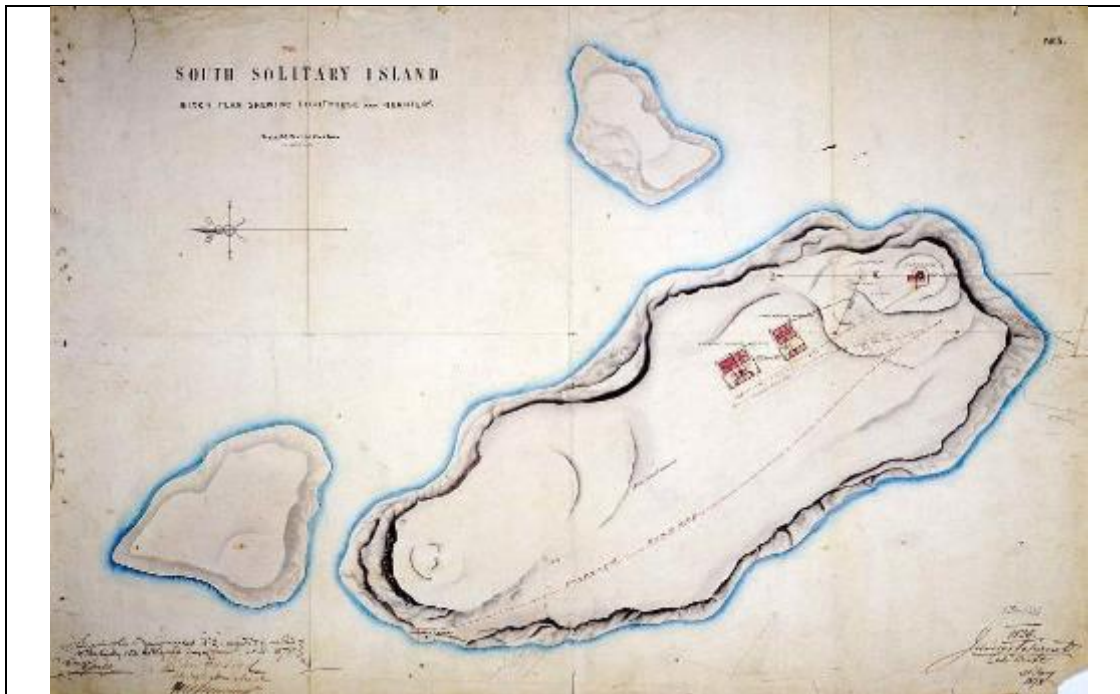
**Figure 2.** Interior views of Chance Brothers lighthouse engineers' shops, Birmingham, 1919



**Figure 3.** Architectural plans, 1879: Scale drawing of South Solitary Island Lighthouse, including cross sections and floor plans.



**Figure 4.** Architectural plans, 1879: Scale drawing of South Solitary Island Lighthouse, including cross sections and floor plans.



**Figure 5.** Architectural plans, 1879: Scale drawing of South Solitary Island Lighthouse, including cross sections and floor plans.



**Figure 6.** South Solitary Island Lighthouse 1934



**Figure 6.** South Solitary Island Lighthouse 1934



**Figure 7.** South Solitary Island Lighthouse (1930?)



**Figure 8.** South Solitary Island (1940?)



**Figure 9.** South Solitary Island Jetty 1965

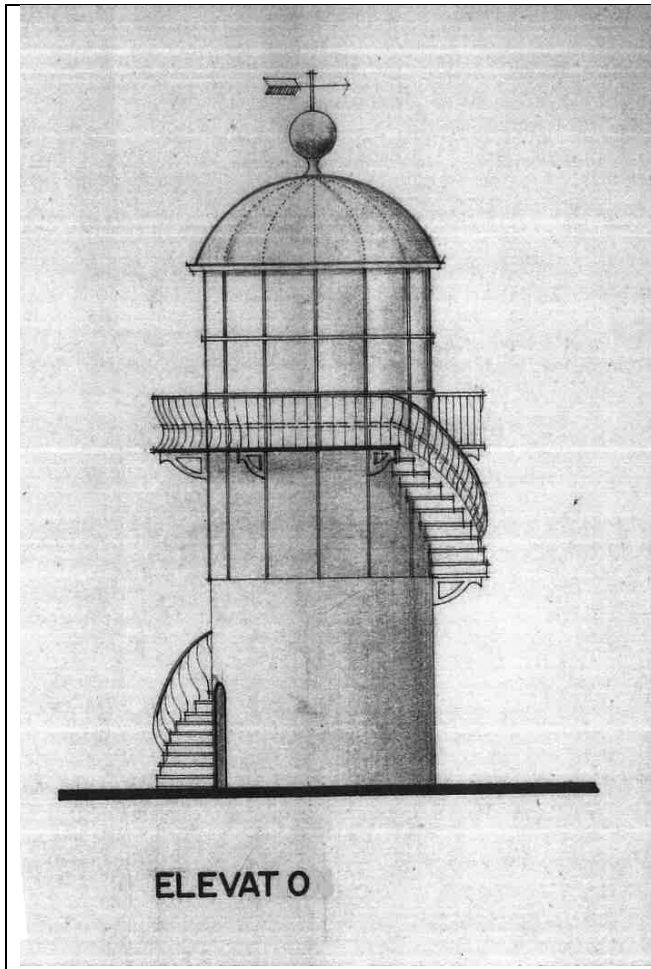


**Figure 10.** W Platts launch at South Solitary Island Lighthouse, 1934

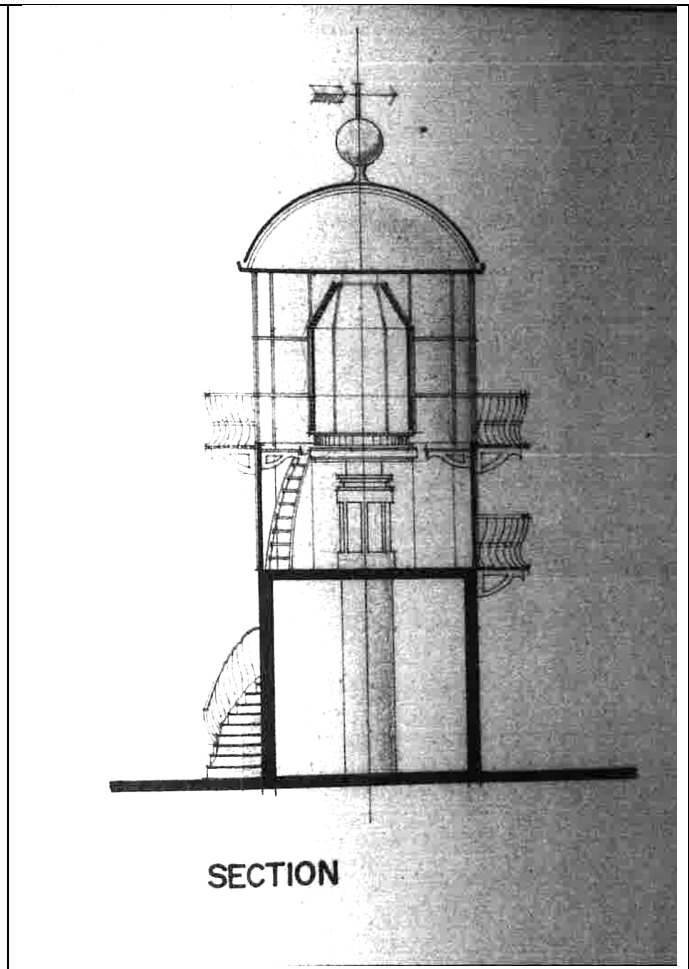


**Figure 11.** South Solitary Island Light Provision Day 1931. L-R Alf Smith, Wilfred Tulk, Phil Padden, Coal bunkers in the renowned 3 man-power truck





**Figure 12.** Drawing of proposed lighthouse (to house the SSILO) at Coff Street, Coffs Harbour by Reddacliff & Partners, Nov 1978 (not built).



**Figure 13.** Drawing of proposed lighthouse (to house the SSILO) at Coff Street, Coffs Harbour by Reddacliff & Partners, Nov 1978 (not built).

# Lighthouse but weighty money matter

Harbour's very  
house looks like costing council sub-  
stantially more than was originally  
estimated.

The original council estimate of \$15,000 for repairing and erecting the lighthouse dome in Coffs Harbour could be exceeded by up to \$7000.

The century old lighthouse was originally located on South Solitary Island and it served to warn shipping of treacherous local rocks.

When the lighthouse was replaced by an automatic beacon Coffs Harbour Shire Council decided to obtain the dome and lantern and install them in a public place in Coffs Harbour as a tourist attraction.

An Air Force helicopter lifted the lighthouse parts from the island to the mainland at the end of last year and council was left with the job of putting the dismantled parts back together.

Council engineer Mr. Ken Gentle told last week's works committee meeting that one of the biggest problems was

that the parts delivered in crates and boxes with no inventories and no clear indication of the condition of the various pieces.

Mr. Gentle said it was impossible to design the building until accurate dimensions for the base structure were determined.

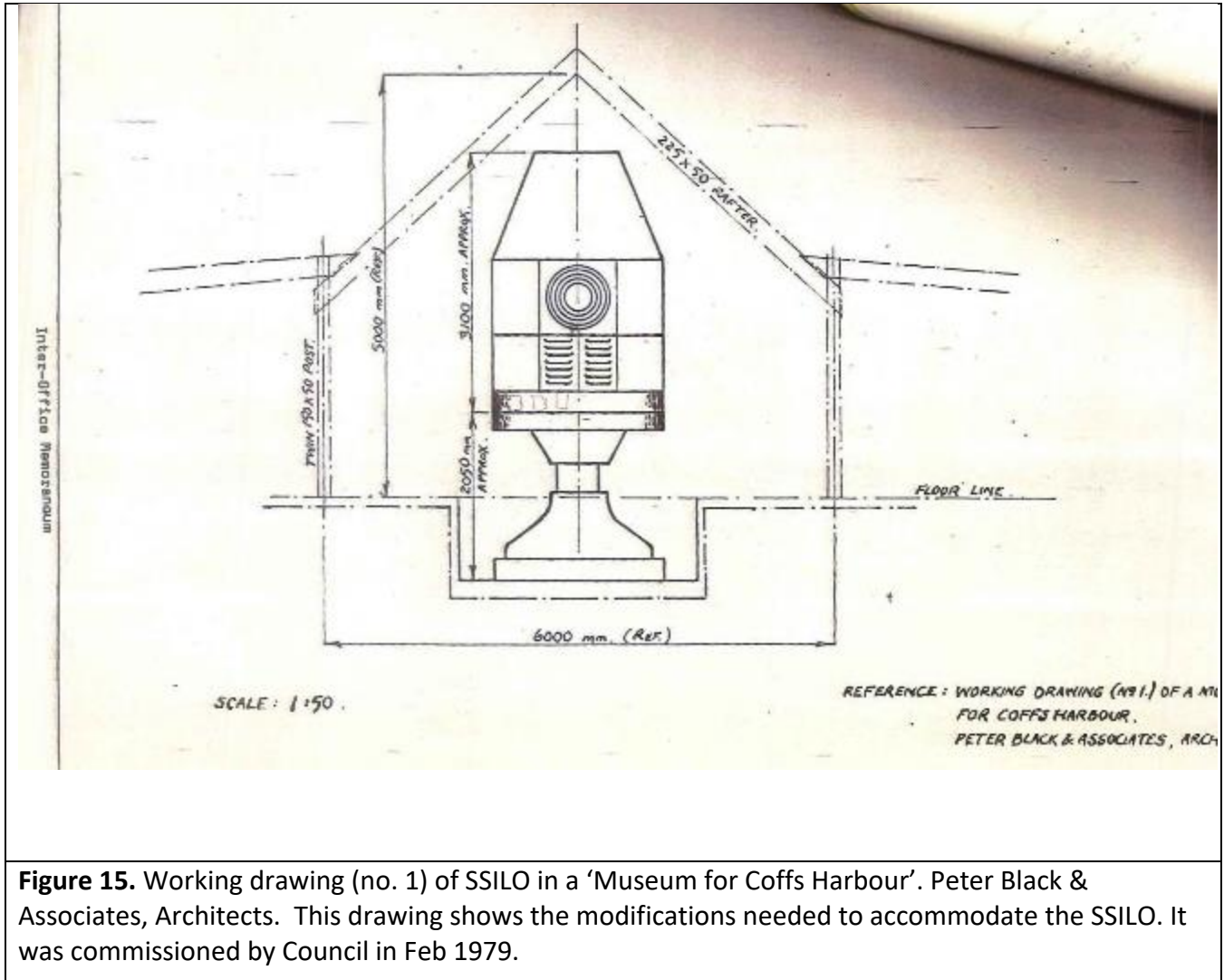
Council is faced with two problems: Determining the condition of the parts and finding if additional parts have to be manufactured and finding the actual dimensions of the structure to allow the supporting building to be designed and built.

Mr. Gentle saw only one way round this problem and that was to actually assemble all the bits and pieces which were supplied to council.

"To do this it will be necessary to rent a suitable industrial building for about six months and to engage additional staff such as a fitter mechanic," Mr. Gentle said.

"The fitter mechanic could ultimately be ab-

Figure 14. This article from The Coffs Harbour Advocate must post date the removal of the optic from South Solitary in 1975



# Home or lighthouse



**Figure 16.** 'Home for Lighthouse' in 'Coffs Harbour Advocate'. August 16 1979, p.3: Newspaper image text caption stated: 'Construction of Coffs Harbour Historical Museum is now well underway'



**Figure 17.** Reassembling the lighthouse optic in the new museum



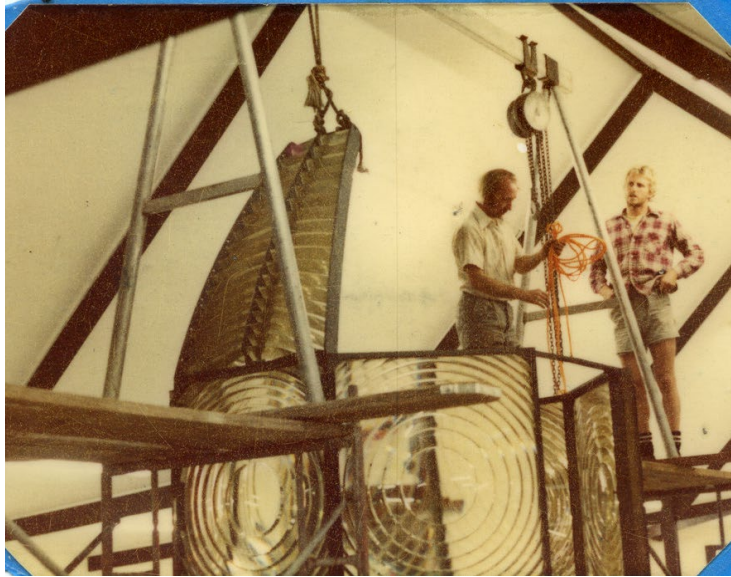
**Figure 18.** Reassembling the lighthouse optic in the new museum



**Figure 19.** Reassembling the lighthouse optic in the new museum



**Figure 20.** Reassembling the lighthouse optic in the new museum



**Figure 21.** Reassembling the lighthouse optic in the new museum



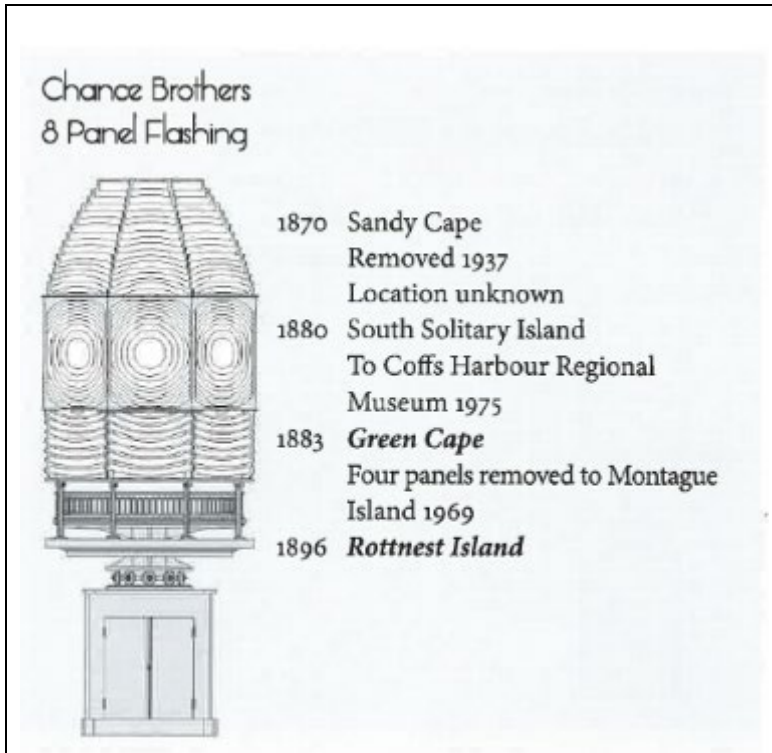
**Figure 22.** Reassembling the lighthouse optic in the new museum



**Figure 23.** The Optic turning mechanism prior to installation at the museum



**Figure 24.** The Optic turning mechanism prior to installation at the museum



**Figure 25.** Illustration of the 4 Chance Brothers 8 Panel Flashing First Order Lens in Australia (Image source: Garry Searle 'First Order')

**Figure 26.** SSILO on display in Coffs Harbour Museum (Image source: Garry Searle 'First Order')



**Figure 27** Chinook helicopter removing SSILO pedestal from South Solitary Island in Sept 1977



**Figure 28** SSILO pedestal rings at Coffs Harbour Airport Sep 1977



## 6 DISASSEMBLY / REASSEMBLY

### Overview

Key to any consideration of the potential relocation of SSILO is a clear understanding of the process of disassembly and reassembly. This has been carefully investigated by seeking information and advice from all available sources.

There are two schools of thought on this, one being that this is a highly complex and expensive exercise that should only be undertaken when the final and permanent location of the optic is resolved, as it is likely that it will too risky and too costly to move again. Costs of \$300-\$400,000 have been mentioned. This view has been reinforced by the images of the Chinook helicopter removing the pedestal rings from South Solitary (see Figure 27) and the knowledge that the pedestal had to be lifted into its current location by a crane through the roof of the former museum.

The other school of thought is that the disassembly of the optic is a relatively simple process that could be undertaken by a couple of skilled fitters and machinists in a week. Certainly it needs to be remembered that the optic originally came to South Solitary Island in a series of parts in crates, and if it was feasible to haul these parts to the top of a lighthouse in such a remote and inaccessible location and install it there with 19<sup>th</sup> century equipment, it must be feasible to take it apart and relocate it within Coffs Harbour in the 21<sup>st</sup> century.

Our view is the latter namely that disassembly and reassembly of the optic can be undertaken relatively simply. This is based on:

- a) the installation at the former Museum cost c \$70,000 at present day rates to install in 1975 (see Figure 14). This installation included extensive preassembly off site to work out how it came together
- b) the installation of the Tasman Lighthouse optic in the Australian National Maritime Museum in 1989 cost c\$80,000 at present day rate. This included the electric drive motor, supply of mercury and repainting, the installation itself costing only \$10,000.
- c) discussion with Mark Sheriff who has restored a number of First Order lighthouses around Australia. His view is that disassembly can be undertaken by two people in about a week
- d) measurements of the optic on site in its current location and of the double doorway indicate that it can be removed in parts through the doorway, ie that the relatively costly exercise of removing the roof will not need to be undertaken. The reason that the pedestal was installed through the roof appears to be that at the time this was the easier way to do it, as the roof had not yet been put on the building, and also it could be installed in one piece . That does not mean it has to come out through the roof.

## **Disassembly Process**

The disassembly process will involve the following procedure:

### ***Preparation***

- 1) Disconnect all live electrical connections.
- 2) Fully condition report lens and pedestal including marking up on photographs all current damage to glass and missing screws
- 3) create a plan of management that identifies the component parts into which the optic will separate. Note that the glass prisms will all stay in their frames and will not need individual removal.
- 4) Closely examine optic to identify assembly markings and label each component part
- 5) measure each part whilst fully assembled and design and fabricate packing crates
- 6) erect gantry crane with block and tackle over optic, and have in place nylon slings for attachment to each component part as it comes loose
- 7) Tape all prisms in place to ensure any loose ones cannot move or slip out. They are held in place by lead based putty and can work loose

### ***Lens disassembly***

- 8) Remove top dome of optic by unscrewing, and sling to ground for packing. Mark location of each screw and carefully store
- 9) Remove panels section by section by unscrewing, ensuring each section and all screws are carefully labelled, and each section is securely slung from gantry before disconnecting

### ***Pedestal disassembly***

- 10) Once all glass is removed, assess how pedestal comes apart. According to Mark Sheriff this should be relatively obvious to a machinist upon close examination.  
As a guide the differently configured First Order Tasman Light at the Australian National Maritime Museum comprises of the following elements, each of which needs to be removed in the following order:
  - a. The lens turntable c 2m diameter and weight c 650kg
  - b. The lamp floor weight c 350kg
  - c. The float weight c 300kg
  - d. The mercury bath weight c 600kg
  - e. The focal height adjusting ring weight c 350kg
  - f. The pedestal weight c1350kgIt is understood from Mark Sheriff that the widest single element is the mercury bath at c2m diameter and c 300mm deep. This would fit at an angle through the doorway supported on a angled metal trolley
- 11) Before starting pedestal disassembly, disengage turning mechanism from lens turntable
- 12) Remove machinery casing and dismantle turning machine
- 13) Unbolt and remove kerosene/water cylinders and related pipework

## Reassembly Process

The reassembly process will follow the disassembly process in reverse. The ease of execution will depend extensively on the quality of documentation of the disassembly process. This should not assume that reassembly is undertaken by the same team as disassembly, ie the documentation should be clear enough for a new team to undertake. It should be noted that a significant part of the cost of the original installation in the museum was taken up by trying to figure out how it went together and undertaking a temporary assembly to inform this, due to the lack of disassembly documentation.

### Likely costs

The costs of disassembly and reassembly have been carefully considered, taking into account:

- a) Physical assessment and examination during the site visit
- b) The costs of installation in the current museum building
- c) The costs of installation of the Australian National Maritime Museum's Tasman Island optic
- d) Discussions with Mark Sherriff as detailed above

In our opinion SSILO can be dismantled into small enough component parts and brought out of the current doors, albeit with minor modifications, thus not necessitating the removal of the roof.

Our estimate of the likely cost is as follows:

Preliminaries and documentation	\$10,000
Materials, equipment and crating	\$20,000
Building modifications	\$5,000
On site labour ( 2 fitters for 2 weeks) incl cleaning and minor conservation works	\$25,000 - \$35,000
Transport	\$5,000
Contingency	\$10,000
<b>Total</b>	<b>\$75,000 - \$85,000 + GST</b>

The cost of reassembly will partly depend on how quickly the process is undertaken, as if the same team that disassembles can be used to reassemble it will happen more efficiently. On the basis that reassembly does not require crating, building modifications or transport, a reasonable budget figure would be \$50- \$60,000 + GST.

**7            CONDITION STATEMENT**

<b>Overall condition (March 2020)</b>
---------------------------------------

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Overall the Optic is in good condition</li> <li>• The paint surface throughout is stable</li> <li>• The glass is all present but variously chipped</li> <li>• The rotation machine casing is chipped and mildly corroding</li> </ul> |
|---|

<b>Detailed observations:</b>
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- |   |
|---|
| <p>Optic</p> <ul style="list-style-type: none"> <li>• Glass all present</li> <li>• Surface dirty</li> <li>• some evidence of yellowing of glass but not significant</li> <li>• some minor chipping of glass, particularly at junction with metal frame on one side</li> <li>• NB Not all glass prisms were checked for stability within their metal frames, ie some of them may be loose</li> </ul> <p>Pedestal</p> <ul style="list-style-type: none"> <li>• This was refurbished at the time of installation including the abrasive blasting and repainting of all the metal elements.</li> <li>• The surface is mildly dirty on the upper sections.</li> <li>• The base section is more dirty with oil drips and stains from the rotation mechanism.</li> <li>• There is no sign of corrosion or flaking paint</li> </ul> <p>Rotation mechanism machinery and cylinders</p> <ul style="list-style-type: none"> <li>• Surface casing is dirty</li> <li>• Some corrosion of machine casing and flaking of paint particularly near the ground</li> <li>• Rotation mechanism very dirty and dusty</li> <li>• Paint flaking on kerosene and water cylinders</li> </ul> |
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<b>Assessor</b>	Julian Bickersteth	<b>Date</b>	21 February 2020
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The following reference photos were taken at the time of the site inspection to illustrate the condition.



**Figure 29.** Street view of the current location of the SSILO. Until 2009 this was the Coffs Harbour Museum; now the site houses the Coffs Harbour Table Tennis Club as well as storing the SSILO.



**Figure 30.** Entrance door through which SSILO will need to be removed in parts



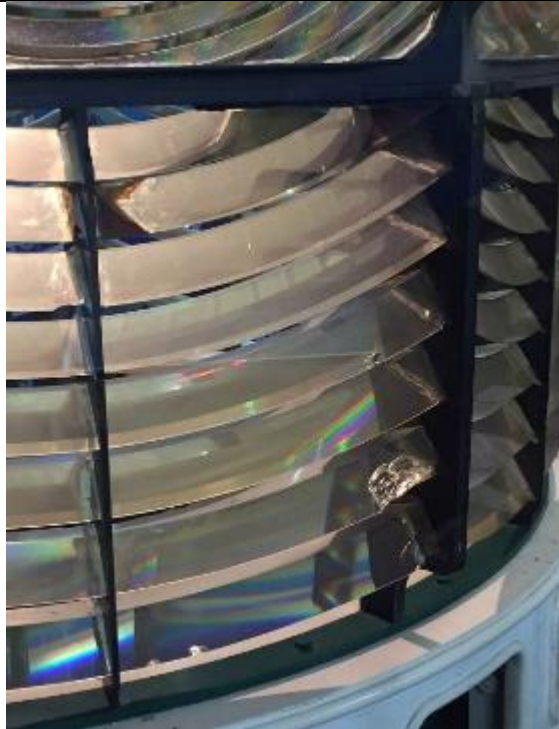
**Figure 31.** SSILO current location at back of hall



**Figure 32.** SSILO current location, Feb 2020.



**Figure 33.** General view of lens and bullseye



**Figure 34.** Detailed view of prism including chipping



**Figure 35.** Maker plate in place on rotating machine: 'Chance. Birmingham'



**Figure 35.** Entrance stairway to pit



**Figure 36.** Pedestal and ladder to lens interior



**Figure 37.** Pedestal and ladder to lens interior



**Figure 38.** Inside lens with access hole



**Figure 39.** Light inside lens



**Figure 40.** Internal screw fixings



**Figure 41.** Internal screw fixings



**Figure 42.** Rotation mechanism



**Figure 43.** Underside of rotation platform





**Figure 44.** Kerosene and water cylinders



**Figure 45.** Rotation machine

## 8 CONSERVATION TREATMENT RECOMMENDATIONS

As part of any relocation, or even if SSILO remains in its current location, conservation treatment should be undertaken. The timing on this, ie whether it is undertaken before disassembly, whilst disassembled or after reassembly, can be determined once the future of SSILO is resolved.

<b>Recommended treatment</b>
<ol style="list-style-type: none"><li>1. Dry vacuum all surfaces with soft bristle brushes, working from the top down</li><li>2. Note any loose glass shards, remove and re-adhere with Ablebond</li><li>3. Note any loose glass prisms and secure with putty to match original</li><li>4. Clean all glass surfaces with Windex and microfibre cloths, spraying Windex onto cloth not directly onto glass. For areas difficult to reach use tissue wrapped around wooden spatula</li><li>5. Wipe down all metal surfaces with damp cloth and non-ionic detergent following by dry cloth.</li><li>6. Identify cause of oil leaks and rectify if possible</li><li>7. Remove all loose and flaking paint on machine casing and cylinders, treat any corrosion with rusticide and repaint to match original</li><li>8. Take apart rotation machinery (using a qualified machinist) check for wear, clean and regrease.</li></ol>

## MAINTENANCE SCHEDULE

The following maintenance program was developed between AMSA and the Australian National Maritime Museum (ANMM) for the Tasman Island Lens, also a First Order Chance Brothers Fresnel lens. The ANMM's lens floats on a mercury bath, whereas SSILO rotates in a lubricating oil bath but the overall maintenance schedule is considered to be otherwise applicable for SSILO.

Note - the ANMM lens is an operating exhibit within their Museum, unlike the SSILO which is only operated by appointment. The schedule below should therefore be used by Coffs Harbour City Council as a guide only.

<b>Weekly</b>	<p>Inspect the lens panels for dust and clean if necessary.</p> <p>Check the lamp for failure or discolouration and replace if necessary.</p> <p>Oil the clockwork mechanism with light machine oil.</p> <p>Screw the grease cup in the column down 1/4 turn.</p>
<b>Monthly</b>	<p>Check motor and RP3B gear box for "oil leaks" and any undue noise.</p> <p>Note that gearboxes are grease filled and a small amount of oil will leach out of the grease.</p> <p>Check the motor and gear box temperature is not uncomfortable to touch.</p> <p>Motor temperatures up to 45°C are acceptable.</p>
<b>6 Monthly</b>	<p>Remove the cover on the column under the lens platform and check that the upper thrust balls are free to rotate. This will also ensure that the mercury is at the correct level.</p> <p>Lightly oil the upper thrust and lower tracking balls with light machine oil.</p> <p>Inspect the clock work mechanism for binding or wear and polish off any rust.</p> <p>Re-pack the grease cup in the column with general purpose grease.</p>
<b>Annually</b>	<p>Check the prism mounting and lens bolts for tightness.</p>

	Check all mounting and coupling bolts and tighten if necessary.
<b>Every 5 years</b>	A conservator should undertake a condition check.

## 10 RELOCATION OPTIONS

As part of the preparation of this Management Plan, the Consultants met with staff from the Coffs Harbour Regional Museum, Coffs Harbour City Council and Friends of South Solitary Lighthouse (FOSSIL) during their site visit on February 21<sup>st</sup> 2020. This provided them with an understanding of:

- The current situation of the South Solitary Island Lighthouse Optic (SSILO) and challenges and opportunities associated with its relocation
- The current situation of the Coffs Harbour Regional Museum and their storage site
- The proposed Cultural and Civic Space - concept plans and the arguments in support and opposition to the project
- The motivations and desires of FOSSIL for the future of the SSILO
- The current situation of the proposed possible alternative sites for the SSILO (i.e. near the Jetty)

### Why SSILO should be restored and relocated

Visiting SSILO allowed the Consultants to see its huge value to the Coffs Harbour community, both as an object of beauty and as an historical and technological wonder. It is fully understandable why the Council fought so hard to retain ownership of it at the time of its decommissioning from South Solitary Island, and the community pride it has engendered over the last 45 years since. More broadly there is a wider national interest from both the maritime history and heritage sectors. It is therefore clear that SSILO's current situation within the non-operational museum should change due to the risk of damage to this maritime treasure and to overcome the lack of access for the local community and tourists.

The opportunity of this project is to create a reimagining and contextualization that allows SSILO to be both fully interpreted and fully appreciated.

Discussions with FOSSIL and Museum staff drew out these key reasons why the SSILO is an important object worth preserving and presenting:

- It was/is very important to the region
- It is a local story

- It is unique and rare - the largest First Order Optic in a museum collection, and it can be viewed in operation
- It is the most valuable object in the Museum’s collection
- It elevates the Museum’s collection beyond local interest to one of national significance
- It connects with Coffs Harbour’s rich maritime history
- It is not a typical “museum object” but a striking symbol of bigger human stories - isolation, navigation, protection, disaster, perseverance and survival
- In the context of today’s Coffs Harbour, with its large refugee population, it can be viewed as a symbol of “safe harbour”
- The creation of the Optic was an extraordinary technological achievement
- There is no longer a physical connection to the South Solitary Island so the SSILO is the last vestige of that connection
- Lighthouse keeping records are patchy and so exhibiting the SSILO properly would provide an opportunity to improve them by bringing all the information together in one place

**Options for the future of SSILO**

The following options were canvased:

- Continuation of the Status Quo at 189 Harbour Drive (the former museum)
- Placement into long term storage
- Placement into museum storage with access via guided tours
- Relocation to new Coffs Harbour Cultural and Civic Space
- Relocation to a revitalised Coffs Harbour Jetty Foreshore Precinct
- Sale

Option	Pros	Cons
Continuation of the Status Quo at 189 Harbour Drive (old museum)	<ul style="list-style-type: none"> <li>● Low cost</li> <li>● Well displayed - the light works, and people can get up close to it</li> <li>● Does not require the SSILO to be</li> </ul>	<ul style="list-style-type: none"> <li>● Unloved</li> <li>● Unseen</li> <li>● Gradual damage is occurring</li> <li>● Dangerous</li> <li>● Impractical for maintenance</li> <li>● Possibility of public criticism if the SSILO is not restored as part of the new</li> </ul>

	dismantled	building
Moved into Storage	<ul style="list-style-type: none"> <li>● The SSILO will be safe</li> </ul>	<ul style="list-style-type: none"> <li>● Moving will cost as much as moving the SSILO to a new site</li> <li>● Likely that once stored it will never come out again</li> <li>● There is small risk of damage to the SSILO when it is dismantled and moved</li> <li>● Unseen</li> <li>● Missed opportunity</li> <li>● Possibility of public criticism if the SSILO is not restored as part of the new building</li> </ul>
Moved into Storage (but functioning, and available for viewing as part of back of house tours)	<ul style="list-style-type: none"> <li>● The SSILO will be safe</li> <li>● The SSILO can be seen by a limited number of people</li> <li>● The SSILO could be contextualised by host</li> <li>● No change needed to Cultural and Civic Space design</li> </ul>	<ul style="list-style-type: none"> <li>● Moving will cost as much as moving the SSILO to a new site</li> <li>● Offsite storage will need to be adapted to accommodate SSILO, offsetting any possible construction cost advantages</li> <li>● Likely that once stored it will never come out again</li> <li>● There is small risk of damage to the SSILO when it is dismantled and moved</li> <li>● Operational and staffing requirements for tours, and object not contextualised as fully as in an exhibition</li> <li>● Seen by relatively few people</li> <li>● Missed opportunity</li> <li>● The site is not near the sea</li> </ul>
New Cultural and Civic Space	<ul style="list-style-type: none"> <li>● The SSILO will be safe</li> <li>● The SSILO will be seen</li> <li>● The SSILO will be presented in the context of the Museum</li> </ul>	<ul style="list-style-type: none"> <li>● There is small risk of damage to the SSILO when it is dismantled and moved</li> <li>● The site is not near the sea</li> </ul>
Coffs Harbour Jetty Foreshore Precinct Planning: (cultural	<ul style="list-style-type: none"> <li>● The SSILO will be seen</li> <li>● The SSILO will be safe (but would still need regular care and maintenance)</li> </ul>	<ul style="list-style-type: none"> <li>● There is small risk of damage to the SSILO when it is dismantled and moved</li> <li>● The NSW Government has announced a project to revitalise the Coffs Harbour Jetty Foreshore in early May 2020</li> </ul>

interpretation multi-use facility near the Jetty or cultural/heritage facility in precinct)	<ul style="list-style-type: none"> <li>● The site is near the sea and potential development</li> <li>● Possible public/private partnership opportunity</li> </ul>	
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The idea of selling the SSILO to a private enterprise was raised by FOSSIL members. However, this was deemed not to be a viable option for two reasons:

i) The Deed for the Transfer of Heritage Objects dictates that should Coffs Harbour City Council wish to sell the SSILO at any point, AMSA must be given first right of refusal. Since the meeting the consultants have discussed this with AMSA. They have advised that AMSA does not find it necessary to involve itself in the decision-making process for SSILO’s relocation, and that under The Deed of Gift signed in 2016 states AMSA has no further responsibility over the artefact and, apart from the ability to exercise the right of first refusal, AMSA has no say in where SSILO ends up.

ii) There would likely be opposition from the Coffs Harbour public towards such an endeavour, due to the historic value of SSILO to the local community.

The idea of lending the SSILO to another institution such as a regional or national museum has been raised. In the view of the consultants this is not recommended for a number of reasons:

i) The SSILO is a beautiful and fascinating object of regional, national and international significance, with profound links to the origin story of Coffs Harbour. It should be thought of as a major asset and potential icon for the community, rather than as a liability to be taken off its hands.

ii) It is unlikely that any institutions could be easily found that would be able or willing to take the SSILO. The Australian National Maritime Museum already has a first-order optic on display. Two regional maritime museums have recently closed in other parts of the country. The immense regional significance of the Optic to the Coffs Harbour area means it would not be of equivalent interest to other general regional museums.

## Recommendations

Discussions with FOSSIL made it clear that the option that would allow SSILO to be exhibited closer to the sea and jetty is their clear preference.

The Consultants agree that the optimum position for the long term location of SSILO should be adjacent to the harbour within sight of the sea. However the new Cultural and Civic space is a funded project that is advanced in its planning stage. The opportunity of getting SSILO out of its current

location and into this space, displayed and interpreted, and accessible to the community and visitors should continue to be carefully considered.

This need only be a temporary measure until a revitalised Jetty Foreshore maritime precinct is developed with appropriate provision of space for SSILO and facilities for its preservation and interpretation.

As the consultancy that resulted in this report was concluding the NSW Government announced a project to revitalise the Coffs Harbour Jetty Foreshore in early May 2020. It is strongly recommended that integration of SSILO into the planning for this is considered by the Project Advisory Steering Committee.

This recommended location aligns with Council's planning decisions to date and current adopted plans that reference the SSILO.

## **Site and display options**

### Day and night display

Because SSILO is not a light-sensitive object, it could be displayed where it could be seen from both inside and outside the its final location, acting as an attractor to the site. Being visible from outside it could be used to create a night time light show. For example, it could be fitted with a low powered lamp as at present and turned on and rotated at night. Alternately, programmed coloured LED lights could illuminate the inside of the Optic at night, producing a kind of lightshow as the colours are refracted by the rotating glass. Either option would provide a spectacular night-time feature for the City.

### Exhibit options

The Optic could be displayed in a number of different ways. For example, the upper part (framework and glass) could potentially be displayed without its pedestal as an immobile object. While this might seem on the face of it to be a more cost-effective option than a mobile display on the pedestal as at present, there would probably not be any major savings from doing this. The (currently functioning) pedestal is an integral part of this heritage object and would need to be removed and stored in functioning condition, available for future reassembly. This would have costs associated with it which are probably not that different from keeping the object intact. Of course, as a visitor experience, a disassembled Optic would also be a much less interesting exhibit and would give visitors much less understanding of how lighthouses actually work.

One of the striking things about the current position of the SSILO in the former museum building at 189 Harbour Drive is that it enables visitors to closely inspect the lens itself and appreciate the great beauty



and ingenuity of its design and construction. This contrasts with the display of the First Order optic from the Tasman Island Lighthouse at the Australian National Maritime Museum in Sydney. There the optic is raised high above ground level on its original pedestal, which has the effect of making it impossible to view close up. As a consequence, in our observation, most visitors simply walk past the optic in the ANMM.

We suggest that the viewing height for the SSILO in any new location should be close to the current setup, with a railing around the object which enables visitors both to look down at the mechanism which rotates it, and straight across with the visitor's eye level at about the bottom of the magnificent central bulls eye panels of the SSILO.

#### Interpretive strategies and supporting contextual objects using the Museum's collection

One of the biggest advantages of siting the Optic in a museum is the ability to give the object context and to bring it alive for visitors by associating it with human stories.

The whole museum collection will help set the object in a wider context of Coffs Harbour history. But the collection also includes more specific contextual material about the lighthouse families and their lives, such as Mrs Tulk's cookbook with her tally of eggs from her chickens on the island, family stories, and photographs and archive film material. There is also the option of creating new multimedia content – there are several members of FOSSIL who lived on the island as children, for example.

There are also other lighthouse-related objects recently donated to Council from AMSA. This collection of lighthouse objects tells a fascinating story of evolving technology.

## 11

### AUTHORSHIP

This Management Plan was developed and written by Julian Bickersteth and Meredith Lynch Underwood of ICS and James Mclean and Briar Barry of Story Inc. In addition to the sources listed under References, extensive information was provided by Joanna Besley, Gallery & Museum Curator, Cultural & Community Services, Coffs Harbour City Council.

Our thanks also for the further information provided by:

- Rob Tresize
- Ian Clifford
- Jack Duvoisin
- Mark Sheriff
- Sarah Jane Lakshman (AMSA)
- Nicholas Flood (Australian National Maritime Museum)

## 12

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Thomas, Elizabeth. *Significance of a single item*. October 2013 (reproduced in Appendix A)

## APPENDIX A

### *Statement of Significance*

Thomas, Elizabeth. *Significance of a single item*. October 2013

## Significance assessment of a single item

### Description and location of item

The South Solitary Island Lighthouse optic (often called a lens or lantern); including the mercury float pedestal, clockwork, weights and pressurised oil and water tanks, circa 1878, first exhibited March 15 1880. The optic is owned by Coffs Harbour City Council and is currently located in the old museum building on Harbour Drive in Coffs Harbour (NSW), which has been closed since 2009.

The optic from South Solitary Lighthouse is a First Order dioptric revolving Fresnel lens which eclipsed every thirty seconds. It was lit by a six wick kerosene oil burner, which gave a light of 205,000 candle power, which was visible for 20 nautical miles. The rotation of the lens system was driven by a clockwork mechanism which utilised a weight which was wound up at half hourly intervals through a tube which ran through the centre of the lighthouse tower. The optic initially had a roller pedestal, which was later replaced by a mercury float pedestal.<sup>1</sup>

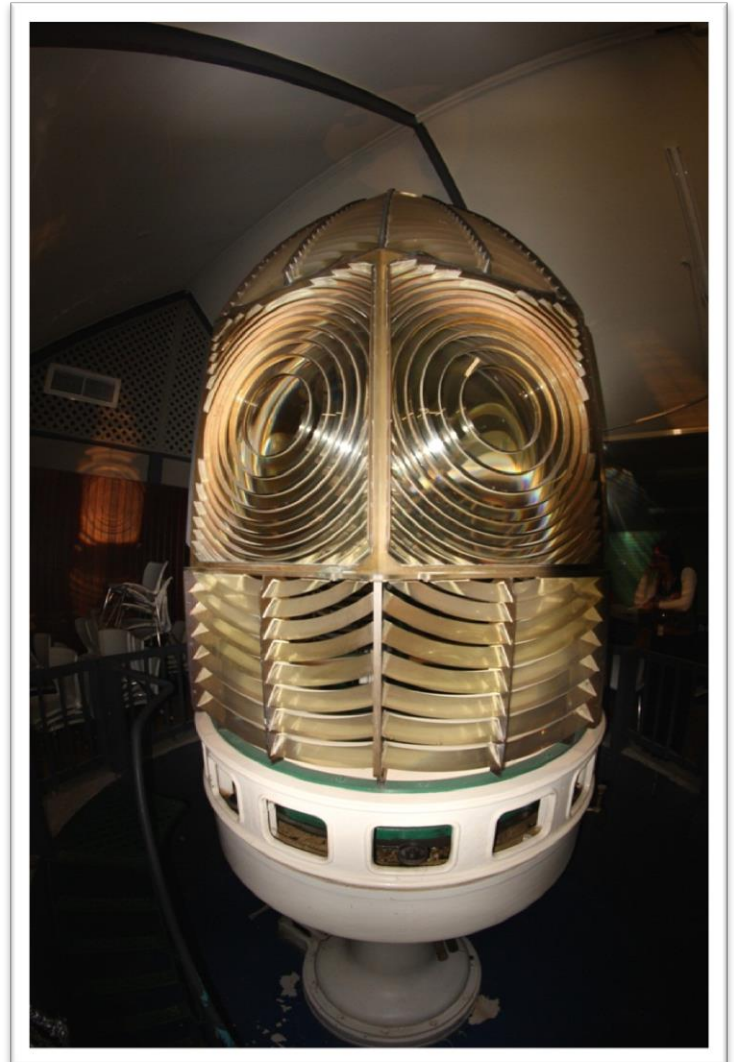


Figure 1 South Solitary Lighthouse optic and mercury float pedestal. Photo: Dave Senior.

<sup>1</sup> Garry Searle to Liz Thomas, email, 30 August 2013. Copy of original in author's possession. Note: Garry provided the Information from his book *First order, Australia's highway of lighthouses*, which is due to be published shortly; South Solitary Island, development of the lighthouse <<http://www.southsolitaryisland.com.au/page4.htm>>, accessed 15 September 2013.



Figure 2 South Solitary Lighthouse pedestal, pressurised water and kerosene tanks, clockwork and weights. The ladder leads up to the inside of the optic. The optic needed to be accommodated in a pit due to its height, Coffs Harbour Regional Museum. Photo: Dave Senior

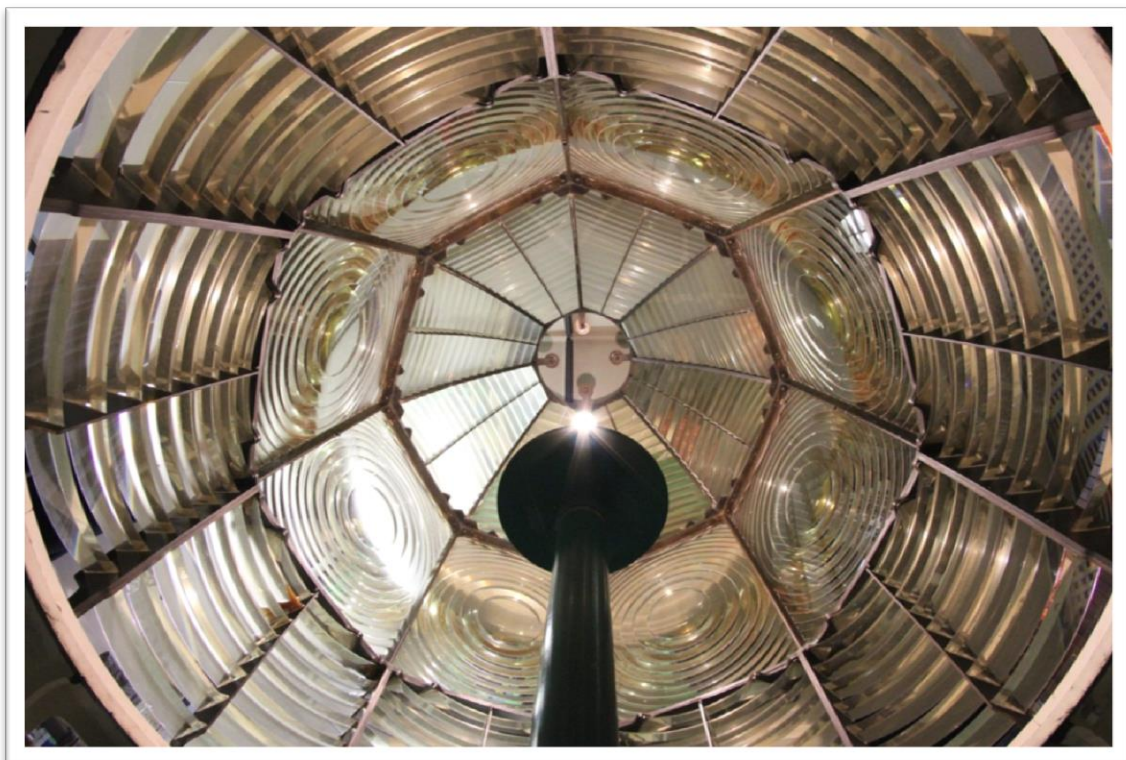


Figure 3. Inside the South Solitary optic, showing the 8 panels with their prisms, Coffs Harbour Regional Museum. Photo: Dave Senior.

### History and provenance of the item

The management and 'ownership' of Australian lighthouses, and subsequently their equipment has fallen under many jurisdictions over the years. The decision to build a lighthouse at South Solitary Island was initially decided by a select committee of the Legislative Council in 1863, with the Marine Board of NSW and the Colonial Architects Office being integral in the design and construction of the lighthouse.<sup>2</sup> Following Federation, the Commonwealth Government assumed responsibility for all Australian lighthouses in 1915, and managed them until the 1990's. In 2000 South Solitary Island was handed over to NSW National Parks and Wildlife who became custodians of the island. The lighthouse is managed by the Australian Maritime Safety Authority.<sup>3</sup>

The First Order lens from South Solitary was manufactured by Chance Brothers in Spon Lane, Smethwick near Birmingham in England, as were almost all of the lenses of that size. It was ordered on 13 August 1878 and was supplied 6 months after that date. The total cost of the lens and pedestal was £3,108.<sup>4</sup>

Chance Brothers was a leading glass manufacturer in the UK which was established in 1824 and was responsible for producing lights and apparatuses for hundreds of lighthouses across the world until the company was sold in 1954.<sup>5</sup> Most of the lighthouses built in Australia in the latter part of the 19<sup>th</sup> century had optics from the Chance Brothers Company, who dominated the English speaking world in the manufacture of lighthouse equipment.<sup>6</sup>



Figure 4: South Solitary Lighthouse pedestal being loaded onto a truck at Coffs Harbour Airport, September 7 1977. Photo courtesy of Lyndon O'Grady

<sup>2</sup> South Solitary Island: history

<<http://www.southsolitaryisland.com.au/page2.htm>> accessed 21/9/2013.

<sup>3</sup> South Solitary Island: the changing life of the island

<<http://www.southsolitaryisland.com.au/page8.htm>> accessed 21/9/2013.

<sup>4</sup> Garry Searle to Liz Thomas, email, 30 August 2013. Copy of original in author's possession.

<sup>5</sup> Black County History, Chance Brothers Limited, Smethwick

<[http://blackcountryhistory.org/collections/getrecord/GB146\\_BS6/](http://blackcountryhistory.org/collections/getrecord/GB146_BS6/)> accessed 15 September 2013.

<sup>6</sup> Graham Brooks and Associates, NPWS lighthouses, Hurstville, 2011, p. 27

The exact date that the lens arrived at South Solitary Island is not known, but it would have been between 1879 and 1880, based on the date it was ordered and the expected date of completion. Construction of the lighthouse began 11 July 1878 and continued for 20 months. The light was exhibited 15 March 1880.<sup>7</sup>

The optic remained at South Solitary from 1880 until the lighthouse was automated in August 1975. When the optic was removed by the Department of Transport, it was packed into crates and stored initially in Melbourne and then in Sydney. Following negotiations with the Department of Transport, ownership of the optic passed to Coffs Harbour Council, who began organising its transport back to Coffs Harbour in November 1976.<sup>8</sup> The pedestal, mercury bath and lantern floor had remained in the lighthouse as they had been too heavy to be moved. However, following a gesture of goodwill by the RAAF, these parts were airlifted by Chinook helicopter on September 7 1977 to a truck waiting at Coffs Harbour Airport and then transported to the Council Depot.<sup>9</sup>

The Coffs Harbour Regional Museum was being built at the time that the optic was offered to the Council, which was fortuitous as the building needed to be altered in order to fit the optic and pedestal inside. A hole five feet deep and twelve feet across was needed in order to fit the eight feet tall pedestal, with the optic requiring a further ten feet of space. A crane lifted the pedestal and mercury float through the roof into the space that was created for it. The lens was reassembled with the assistance of scaffolding. Peter Richmond, Works Supervisor with Coffs Harbour Council was the person responsible for restoring and reassembling the optic and pedestal. He likened it to a 'giant jigsaw puzzle'.<sup>10</sup> The new museum was officially opened Australia Day 1981 when the reassembled lighthouse optic was shown to the public for the first time.

The Coffs Harbour Regional Museum closed its doors in 2009 following devastating flood damage to the building and its collection. The fact that the museum was now located in a known flood zone meant that it was not feasible for the museum to remain in that building and it was subsequently rehoused in a storage facility, however the optic still remains in the

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<sup>7</sup> South Solitary Island, development of the lighthouse

<<http://www.southsolitaryisland.com.au/page4.htm>>, accessed 15 September 2013.

<sup>8</sup> 'Suggestions for sites to locate lighthouse dome', *Coffs Harbour Advocate*, 9 November 1976, p. 1.

<sup>9</sup> 'Lighthouse lift not without a hitch', *Coffs Harbour Advocate*, 8 September 1977, p. 1.

<sup>10</sup> Naomi England, *The story of a lighthouse: South Solitary*, Coffs Harbour, 1982, p. 13.

closed building. Museum staff regularly clean and maintain the optic, however it is not open for public viewing, except for the occasional special event.<sup>11</sup>

### Context

Over the past 200 years there were over 350 lighthouses built in Australia, along coastlines, islands, harbours and reefs. Many NSW lighthouses, including South Solitary were built during the latter half of the 19<sup>th</sup> century, which was a peak period in lighthouse construction, with Colonial Architect James Barnet designing a large number of them. South Solitary was integral to the 'coastal highway' of lighthouses along the NSW coast<sup>12</sup>

The location of lighthouses tended to relate directly to settlement patterns and shipping routes. During the early period of Australia's settlement shipping was essential to not only the movement of people, but also the transport of goods. Shipping provided a lifeline to the north coast, where timber, sugar, tropical fruits and dairy products all needed to be transported by water. The number of shipwrecks and consequent loss of lives and cargo was a significant factor in the construction of lighthouses around Australia. The Eastern Australian Current running along the NSW coast meant that north bound ships tried to hug the shore to avoid the strongest current with 'commanders naturally anxious to know the position of the dangerous reefs about the South Solitary'.<sup>13</sup>

The need for a lighthouse at South Solitary Island was raised as early as 1856, with further discussion taking place in 1873 at an inter-colonial marine conference. 1877 saw James Barnet, the Colonial Architect arrive on South Solitary to start selecting suitable sites for the lighthouse and associated buildings. Plans and specifications were then prepared and put out to tender on June 17 1878, with John McLeod's tender of 23 000 pounds being accepted.<sup>14</sup>

The type of lens installed at the lighthouse was a Fresnel lens, developed by French physicist Augustin-Jean Fresnel in 1822 specifically for use in lighthouses. Fresnel lenses generally fell

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<sup>11</sup> "Coffs Regional Museum still closed", *Coffs Harbour Advocate*, 30 December 2009, <http://www.coffsoastadvocate.com.au/news/nine-months-later-museum-still-closed/436984/>, accessed 20 September 2013.

<sup>12</sup> Graham Brooks and Associates, NPWS lighthouses, Hurstville, 2011, p. 50-52

<sup>13</sup> "Parliamentary paper", *Empire* (Sydney, NSW: 1850 - 1875) 17 Oct 1863: 2. Web. 22 Sep 2013 <<http://nla.gov.au/nla.news-article60550000>>.

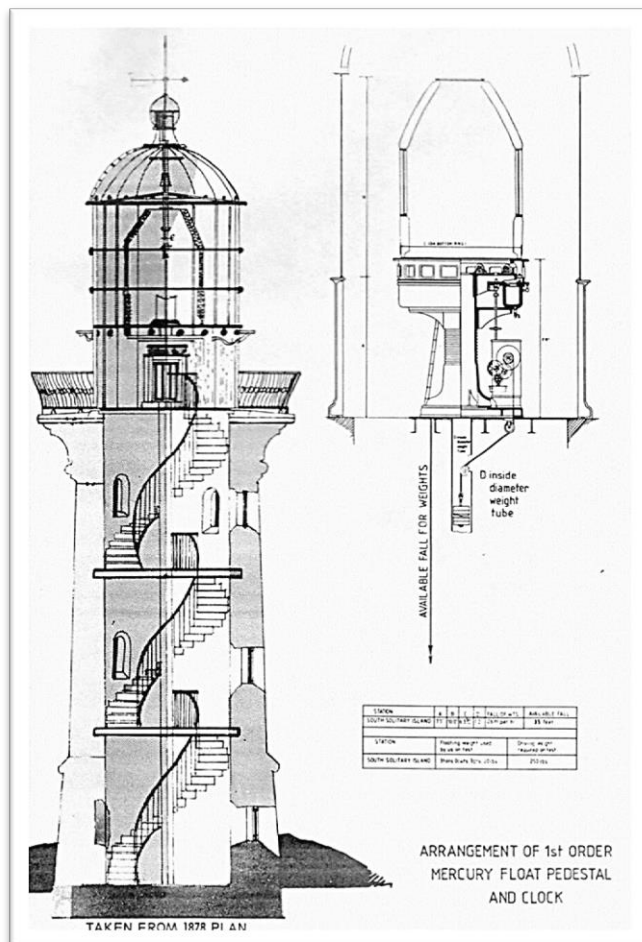
<sup>14</sup> "New lighthouse at the South Solitary Island", *The Sydney Morning Herald* (NSW: 1842 - 1954) 15 Mar 1880:6. Web. <http://nla.gov.au/nla.news-article13455884>, Accessed 20 September 2013.



into six categories, classed as 'orders'. South Solitary's lens is a First Order which is the largest size; with a focal length of 920mm.<sup>15</sup>

South Solitary Lighthouse was closely affiliated with the Signal Station at Dammerel's Headland, which was established in 1887 and closed approximately 1918. The Signal Masters duties were to keep a 24 hour watch on shipping and weather and to transmit messages to and from the Island. Flags were used during the day and Morse lamp at night.<sup>16</sup>

South Solitary Lighthouse is a significant part of the history of Coffs Harbour having contributed to safer waters for mariners since 1880. Its imagery is used by a number of organisations within Coffs Harbour, including the Coffs Harbour High School whose motto is *lumen ex tenebris*, which is Latin for 'light out of darkness'. They also have an amphitheatre called 'Lighthouse studio'.



South Solitary Lighthouse, arrangement of mercury float pedestal and clockwork. Taken from 1878 plan.

<sup>15</sup> Chance Brothers, Fresnel lenses

<<http://www.chancebrothers.com/fresnel-lenses.html>>, accessed 19/9/2013.

<sup>16</sup> South Solitary Island, the signal station

<<http://www.southsolitaryisland.com.au/page12.htm>>, accessed 21/9/2013.

### **Fabric and condition of the item**

The optic consists of eight glass panels held together by brass frames bolted to the mercury float pedestal. When looking at the optic each of the panels can be divided into three sections – the top which has 18 prisms per panel, the bottom has 8 prisms in each and the middle has 11 concentric prisms in each panel with a large bullseye in the middle which acts as a magnifying glass.<sup>17</sup>

Various parts are numbered and marked by Chance Brothers Company, which assisted with reassembling the optic in the right order<sup>18</sup>.

Chance Brothers used Crown glass to make the larger first order lenses – it was harder, lighter and had less striae than flint glass, but was easier to mould, shape and polish. The glass was a combination of French sand, lime, carbonate of soda, nitrate of soda and arsenic. Originally when the optic was installed at South Solitary 130 years ago, it would have been clear glass, but over the years the sunlight and ultraviolet light reacting with the trace elements in the glass have caused it to yellow.<sup>19</sup> The glass in the lens is in remarkable condition for its age, with only a small number having chips in them, mainly on the same panel. All of the prisms are present.

The pedestal and mercury float are made of cast iron which has been painted white. Coffs Harbour Council sandblasted the original layers of paint off and repainted it in the late 1970's. The Chance Brothers mercury float was a newer edition to the lighthouse, only being installed in 1925 to replace the original roller pedestal.<sup>20</sup> The mercury which was responsible for 'floating' the optic went missing after it was removed from the island. The optic now revolves on rollers rather than mercury.

The original clockwork which rotated the lens system was driven by weights which ran up through a tube in the centre of the lighthouse tower and were wound up every half hour.<sup>21</sup> The clockwork and cast iron weights were immersed in water following flooding at the museum, but it has not affected the way it works. The clockwork is very dirty.

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<sup>17</sup> Naomi England, *The story of a lighthouse, South Solitary*, p. 4.

<sup>18</sup> *Ibid*, p. 13.

<sup>19</sup> John Ibbotson, *Lighthouses of Australia: images from the end of an era*, Victoria, 2001, p. 6.

<sup>20</sup> Lyndon O'Grady to Liz Thomas, email, 19/9/2013, copy of original in author's possession.

<sup>21</sup> South Solitary Island, the lantern

<<http://www.southsolitaryisland.com.au/page11.htm>>, accessed 20 September 2013.

Whilst the museum holds all the original equipment used in the lighthouse to make the optic work, for practical purposes the optic has been altered so it can be rotated by electricity, and uses a light bulb instead of a wick.

The two tanks which held water in one and kerosene in the other had paint peeling from the outside, but were in good condition. The hand pump worked freely and the fittings were rust free. There was a small amount of water in the base of each tank which could be felt when shaken. The tanks are significant as South Solitary appears to have been the first lighthouse in NSW to use kerosene instead of colza oil. Its use was so satisfactory that it continue to use kerosene until 1975 when the lighthouse was automated. Consequently it was also the last to use kerosene.<sup>22</sup>

### **Comparative examples**

First order lenses were common in Australian lighthouses; however they came in many different configurations, some with only two panels others up to sixteen. There were only four first order lenses with eight panels supplied to Australia. Other than South Solitary Lighthouse, the remaining three lenses were located at Sandy Cape QLD (1870), Green Cape NSW (1883) and Rottnest Island WA (1896). Today two still remain in their towers – Green Cape, which is inactive and has had 4 of the 8 panels removed and relocated to Montague Island; and Rottnest Island, which has the only active lens. The lens at Sandy Cape was removed from the tower c.1937 and its whereabouts is not known, but it is thought to have been destroyed. There were similar lenses which had eight panels installed at Cape Schanck (Vic) and Montague Island (NSW) but they had a different configuration which had alternate flashes and steady beams. South Solitary lens is the only complete First Order eight panel lens in an Australian museum.<sup>23</sup>

There are a number of First Order lenses that can be viewed by the public, some of them in situ whilst others are displayed in museums. These have a different number of panels to South Solitary. The Montague Island optic on display at Narooma Lighthouse Museum is the

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<sup>22</sup> Lighthouses of New South Wales, South Solitary Lighthouse, <<http://www.lighthouse.net.au/lights/nsw/South%20Solitary/South%20Solitary.htm>> accessed 20 September 2013.

<sup>23</sup> Garry Searle to Liz Thomas, email, 30 August 2013. Copy of original in author's possession.

most similar to Solitary Island optic; however it is not as original, having had four of its panels replaced.<sup>24</sup>

Coffs Harbour Museum has been closed since 2009, which means that the lighthouse optic is generally not able to be viewed by the public, unless special arrangements are made. Some optics can be viewed up to seven days a week, such as the Cape Bowling Green optic at National Maritime Museum.<sup>25</sup>

### **Related places and items**

The lens is not just a museum artefact but an integral part of the history of South Solitary Lighthouse, where it was housed for 95 years, providing a beacon of light for the seafaring community along the north coast. The lighthouse structure itself was responsible for the support and protection of the lens, keeping it in optimal condition in order for it to fulfil its function as a navigational aid for mariners.

South Solitary, located approximately 18km NE of Coffs Harbour was regarded as the most isolated of all NSW Lighthouses, being one of only two lighthouses in NSW that was built on an off-shore island.<sup>26</sup> The island was very inhospitable with no beach or landing point, requiring a jetty to provide access to people and supplies. In bad weather it was totally inaccessible.

The Coffs Harbour Regional Museum holds a large range of material which relate specifically to the lens and South Solitary Lighthouse.

Two small metal blow torches which were used at South Solitary Lighthouse to light the kerosene mantle within the optic, were donated to the museum 25<sup>th</sup> November 1991 by Barry Northam, who was listed as a 'erstwhile light keeper'.<sup>27</sup> A story related by Shirley Northam (wife of Barry) outlines how the blowtorches were used. "*The first thing that the head keeper had to do when he had new lighthouse keepers was to teach them to light the light. There was a mantle and the two blowlamps had to light the mantel to a certain*

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<sup>24</sup> Garry Searle to Liz Thomas, email, 30 August 2013. Copy of original in author's possession.

<sup>25</sup> Australian National Maritime Museum, *Cape Bowling Green Lighthouse*, <<http://www.anmm.gov.au/webdata/resources/pdfs/vessels/Lighthouse.pdf>> accessed 18 September 2013.

<sup>26</sup> Graham Brookes and Associates, *NPWS lighthouses conservation management and cultural tourism plan*, November 2011, p. 55.

<sup>27</sup> Handwritten accession folder, accession numbers 91-1073 and 91-1074, Coffs Harbour Regional Museum, unpagged, accessed 30 August 2013.

*temperature before the kerosene would go up and if you didn't do it correctly that was one mantle gone, and they were very expensive, so you learnt to do it very early on".<sup>28</sup>*

The Morse signal light which was used to send messages at night from South Solitary Lighthouse to the signal station at Dammerel's Headland. This was donated to the museum in the mid-eighties.<sup>29</sup> The signal light is encased by a wooden box, with a brass handle on top. Beryl Royal, daughter of former head keeper Jim Duncan relates a story involving this signal light:

*"An early keeper at Solitary, Mr Harry Fisher - he was courting the daughter of the Harbour Pilot at Coffs Harbor and they communicated by Morse lamp. They eventually married and many years later presented his Morse lamp to the museum at Coffs which also houses the lens removed when the lighthouse was superseded." <sup>30</sup>*

The museum holds a number of Irish linen cleaning clothes which were used to clean lighthouse lenses and are branded with the NSW government logo. It is believed that these cloths were used to clean lighthouse lenses in NSW, but not South Solitary. They are kept as an example of what was used. These clothes were donated by Mercedes Sauerstein who lived on South Solitary Island with her family for five years.<sup>31</sup>

### **Significance assessment**

The South Solitary Lighthouse optic has a strong historical significance. The lens itself is a rare representation of a complete and original eight panel First Order lens in an Australian museum. The optic is clearly provenanced and demonstrates early Australian lighthouse technology. The optic through its association with the lighthouse has links to an important colonial figure.

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<sup>28</sup> Sue Pearsall and Mark Arruzza, *South Solitary Island life* (DVD), Coffs Harbour, 2004.

<sup>29</sup> Handwritten accession folder, accession number 89-905, Coffs Harbour Regional Museum, unpagged, accessed 30 August 2013.

<sup>30</sup> Lighthouses of New South Wales, South Solitary Lighthouse  
<<http://www.lighthouse.net.au/lights/NSW/South%20Solitary/South%20Solitary.htm>>, accessed 13 September 2013.

<sup>31</sup> South Solitary Island, life on the island  
<<http://www.southsolitaryisland.com.au/page5.htm>>, accessed 7 September 2013.

### **Statement of significance**

The South Solitary optic is significant as one of the most original and complete examples of a first order lens in an Australian museum, and the only original example of an eight-panel first order lens in a museum in Australia. South Solitary was the first and last lighthouse in NSW to utilise kerosene to fuel the light.

The lighthouse itself was built in a peak period of lighthouse construction in the later part of the 19<sup>th</sup> century. The lighthouse was a link in the “highway of coastal lights’ along the NSW coast. At the time of its construction, coastal navigation was hazardous and the lighthouse would have assisted in the development of safe coastal trade and the subsequent economic development of NSW. It certainly would have impacted on the economic development of Coffs Harbour and its surrounds which relied heavily on shipping transport for its timbers, sugar, fruits and dairy products.

The optic is well provenanced. Its creation by Chance Brothers is well documented both in paperwork as well as through their markings on individual pieces within the optic. The change in ownership to Coffs Harbour Council is also well documented. The information available regarding the history of Australian lighthouses means that the role that the optic played in the lighthouse is well understood.

South Solitary Lighthouse has been a part of Coffs Harbour’s history for over 130 years, with its light being the most visual link to the island and the role it played. Access to South Solitary Lighthouse is now very limited and the Coffs Harbour museum provides one of the only tangible links to this aspect of Coffs Harbour’s maritime history.

The South Solitary optic is significant through its association with Colonial Architect James Barnet, who was a significant figure in Australia’s early architecture. He was responsible for not just designing many NSW lighthouse, but also notable buildings such as Customs House, the General Post Office, Colonial Secretary’s Office and a wing of the Australian Museum.<sup>32</sup>

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<sup>32</sup> Australian Dictionary of biography, Barnet, James,  
< <http://adb.anu.edu.au/biography/barnet-james-johnstone-2939>>, accessed 22 September 2013.

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### **Individuals consulted**

The following three people provided significant assistance with researching South Solitary Lighthouse's optic.

Garry Searle – author of *First Order – Australia's Highway of Lighthouses* ISBN-13: 978-0-9923091-0-7, which is due to be published shortly. Author provided information via email.

Lyndon O'Grady – Heritage Officer, Navigational Safety and International Division, Australian Maritime Safety Authority. Information provided by email.

Rob Trezise, former lighthouse keeper and member of Friends of South Solitary Island. Information provided in person, phone and email.

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*South Solitary Island, life on the island*, accessed online:

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*South Solitary Island, the lantern*, accessed online:

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*South Solitary Island: the changing life of the island*, accessed online:

<<http://www.southsolitaryisland.com.au/page8.htm>> accessed 21 September 2013.

South Solitary Island, the signal station, accessed online:

<<http://www.southsolitaryisland.com.au/page12.htm>>, accessed 21/9/2013.

'Suggestions for sites to locate lighthouse dome', *Coffs Harbour Advocate*, 9 November 1976, p. 1.

**APPENDIX B**

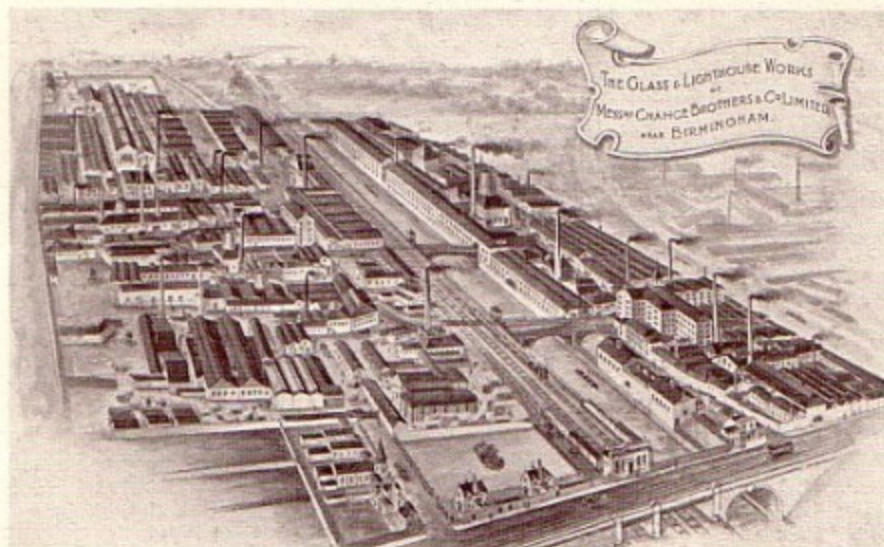
*Typical Illustrations of the Lighthouse work of Chance Brothers & Co Ltd, Birmingham*

B 1.1

Typical Illustrations  
of the  
Lighthouse Work  
of

Chance Brothers and Co  
Limited  
Birmingham

CHANCE BROTHERS AND CO. LIMITED



Typical Illustrations  
of the  
**Lighthouse Work**  
of  
Chance Brothers and Co. Limited  
Smethwick  
Birmingham

Telephone - - - Oldbury, No. 140.  
Telegrams CHANCE, LIGHTHOUSE, SMETHWICK.

Cablegrams - - - CHANCE, SMETHWICK.  
Codes used - A.B.C. 5TH EDITION, LIEBER'S,  
BENTLEY'S.

*December, 1919.*

LIGHTHOUSE ENGINEERS · BIRMINGHAM

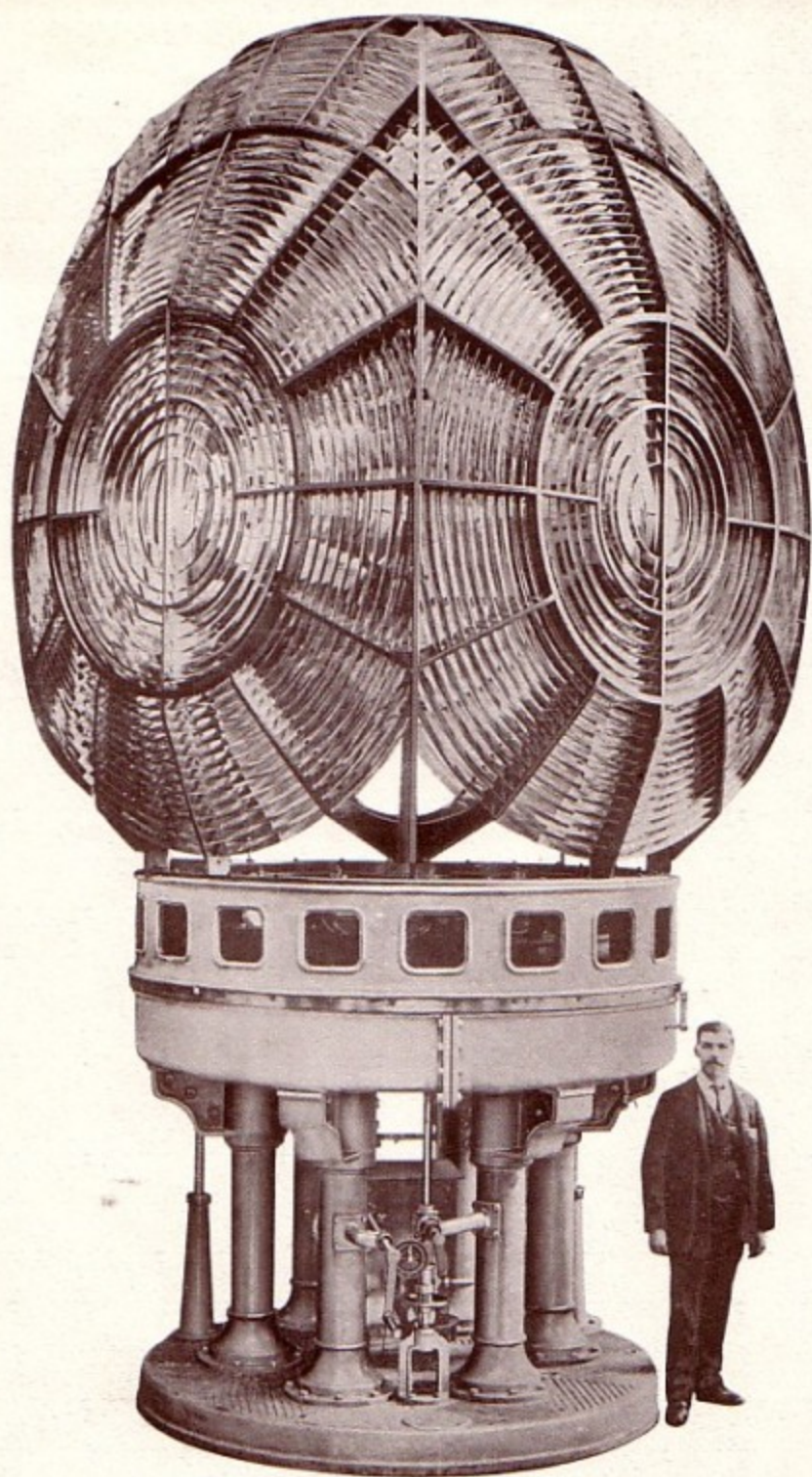
CHANCE BROTHERS AND CO. LIMITED



INTERIOR VIEWS OF SHOPS.  
Intérieur de nos ateliers.  
Interior de los talleres.

LIGHTHOUSE ENGINEERS · BIRMINGHAM

CHANCE BROTHERS AND CO. LIMITED



HYPER-RADIAL SINGLE FLASHING LIGHT.  
Feu-éclair hyperradial, à éclats simples.  
Fanal hiperradial, con característica de destellos simples.

LIGHTHOUSE ENGINEERS · BIRMINGHAM

4

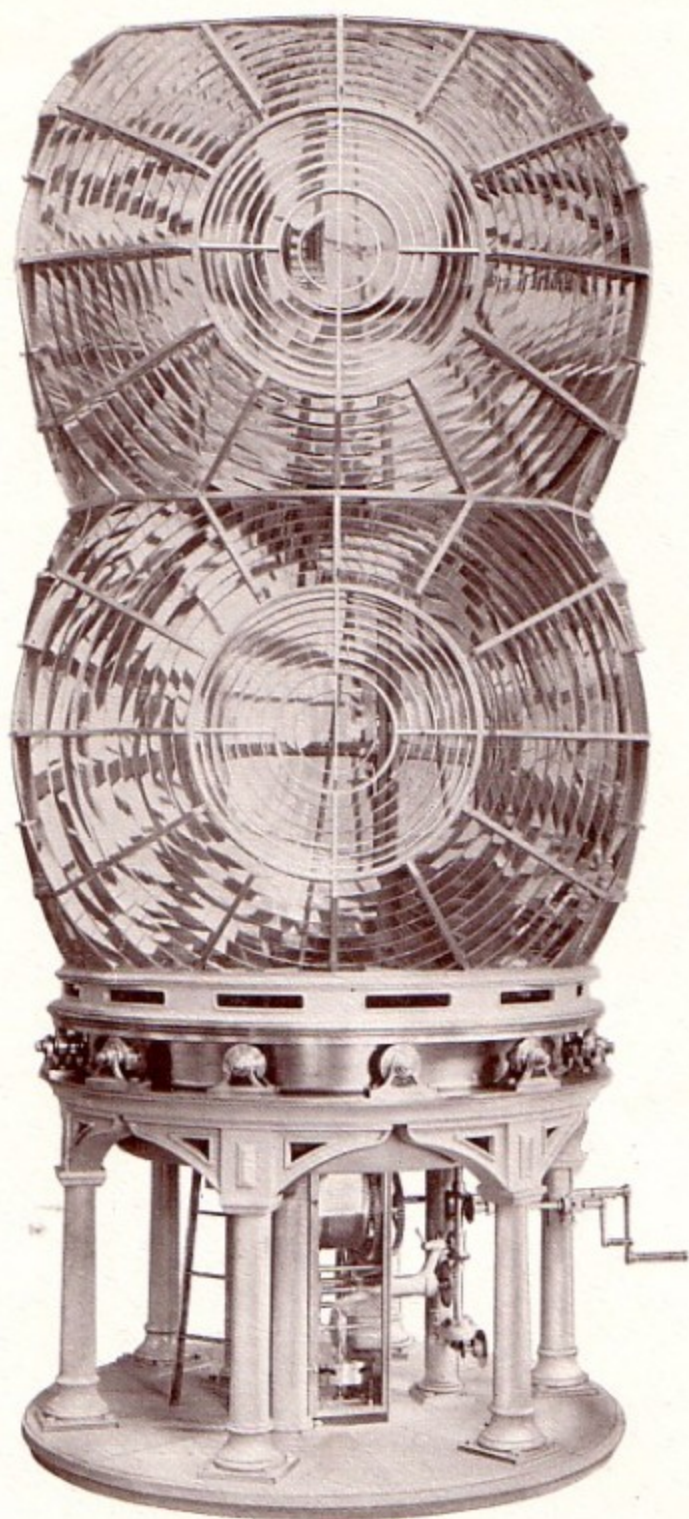


LANTERN OF "CHANCE" TYPE.  
Lanterne, type "Chance."  
Linterna, tipo "Chance."

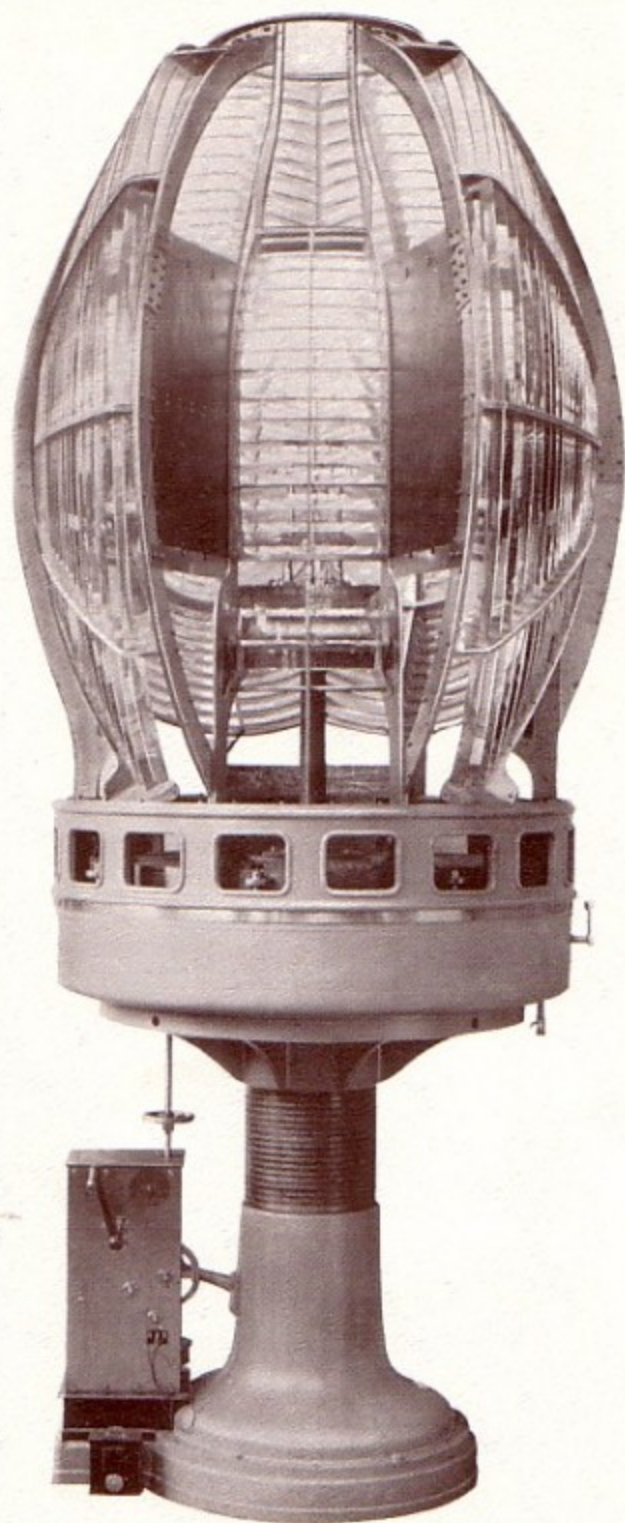


2ND ORDER SINGLE FLASHING LIGHT.  
Feu-éclair de 2e ordre, à éclats simples.  
Fanal de 2º orden, con característica de destellos simples.



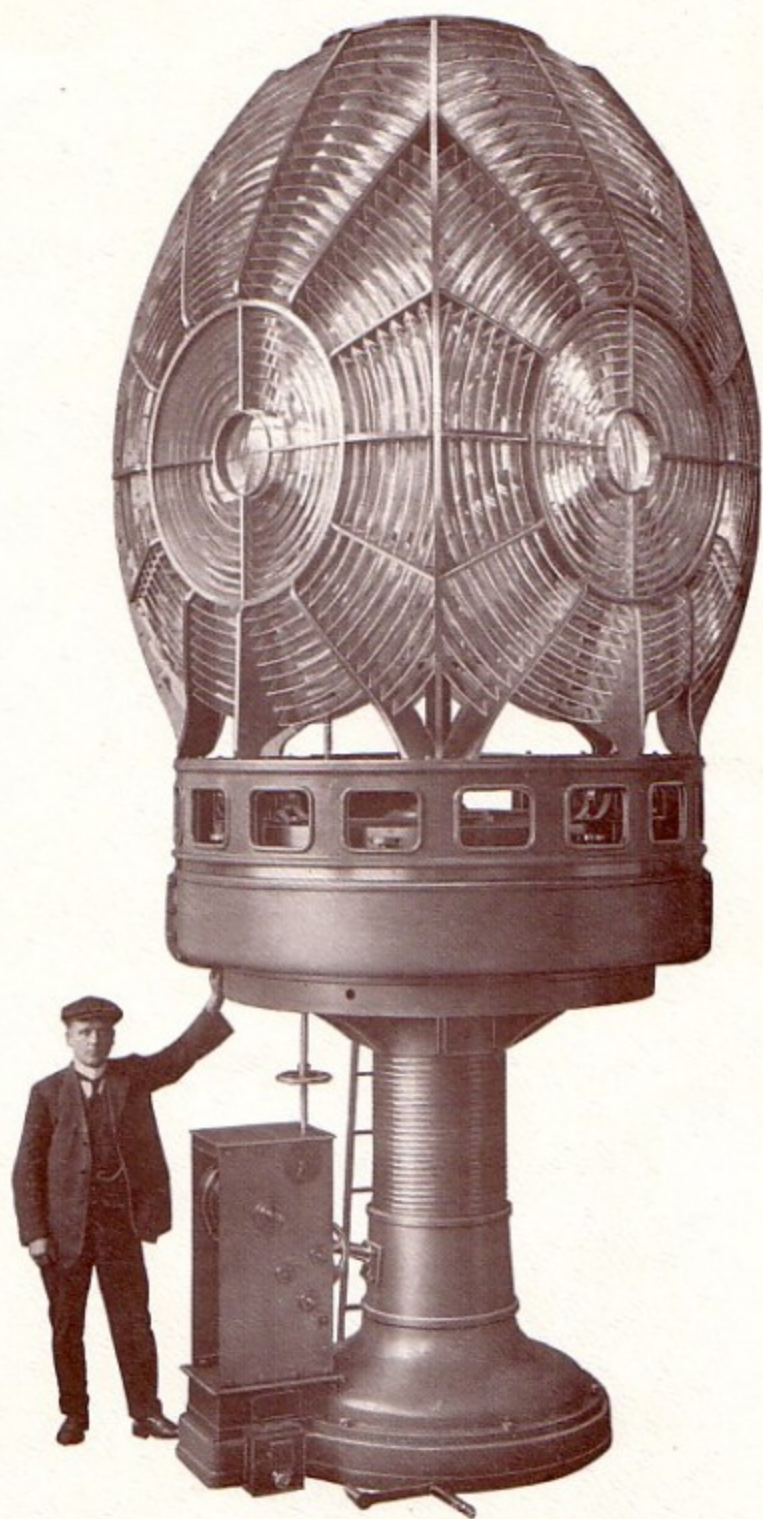


1ST ORDER BI-FORM SINGLE FLASHING LIGHT.  
Feu-éclair biforme de premier ordre, à éclats simples.  
Fanal de primer orden biforme, con característica de destellos simples.



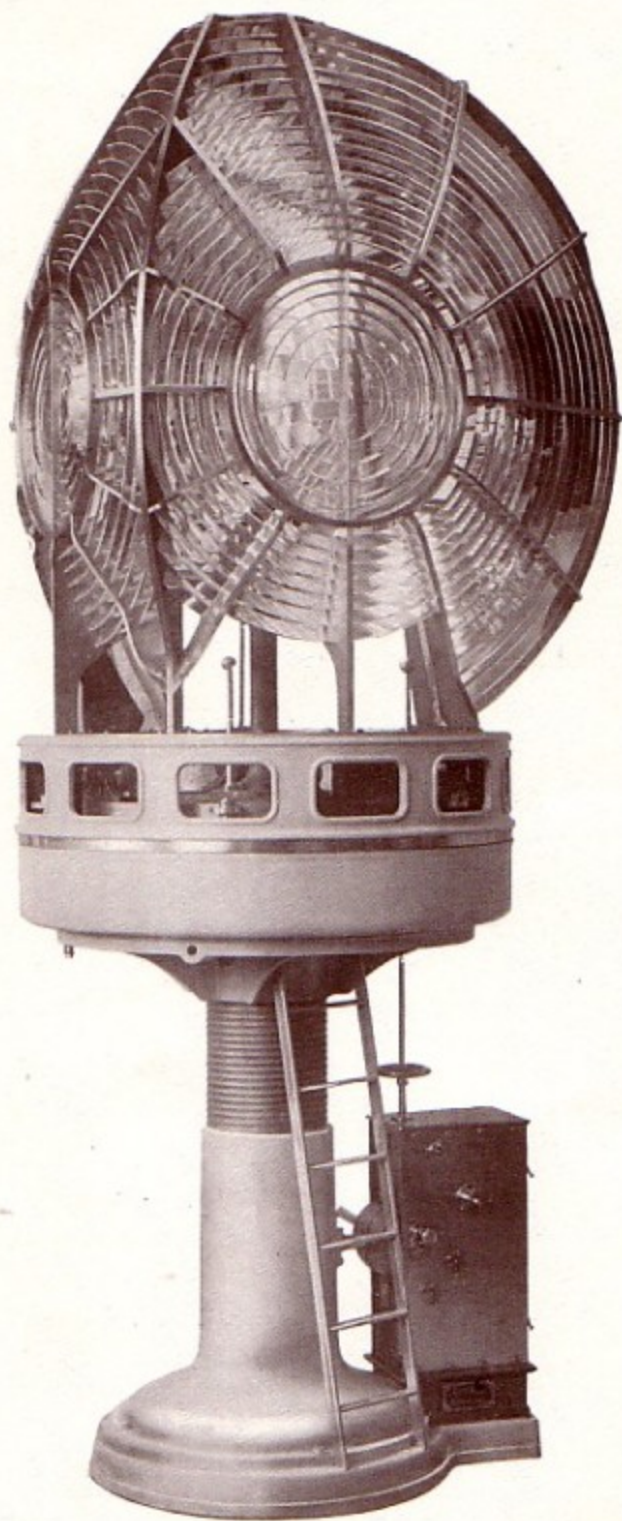
1ST ORDER QUADRUPLE FLASHING LIGHT.  
Feu-éclair de premier ordre, à groupes de 4 éclats.  
Fanal de primer orden, con característica de cuatro destellos.

CHANCE BROTHERS AND CO. LIMITED

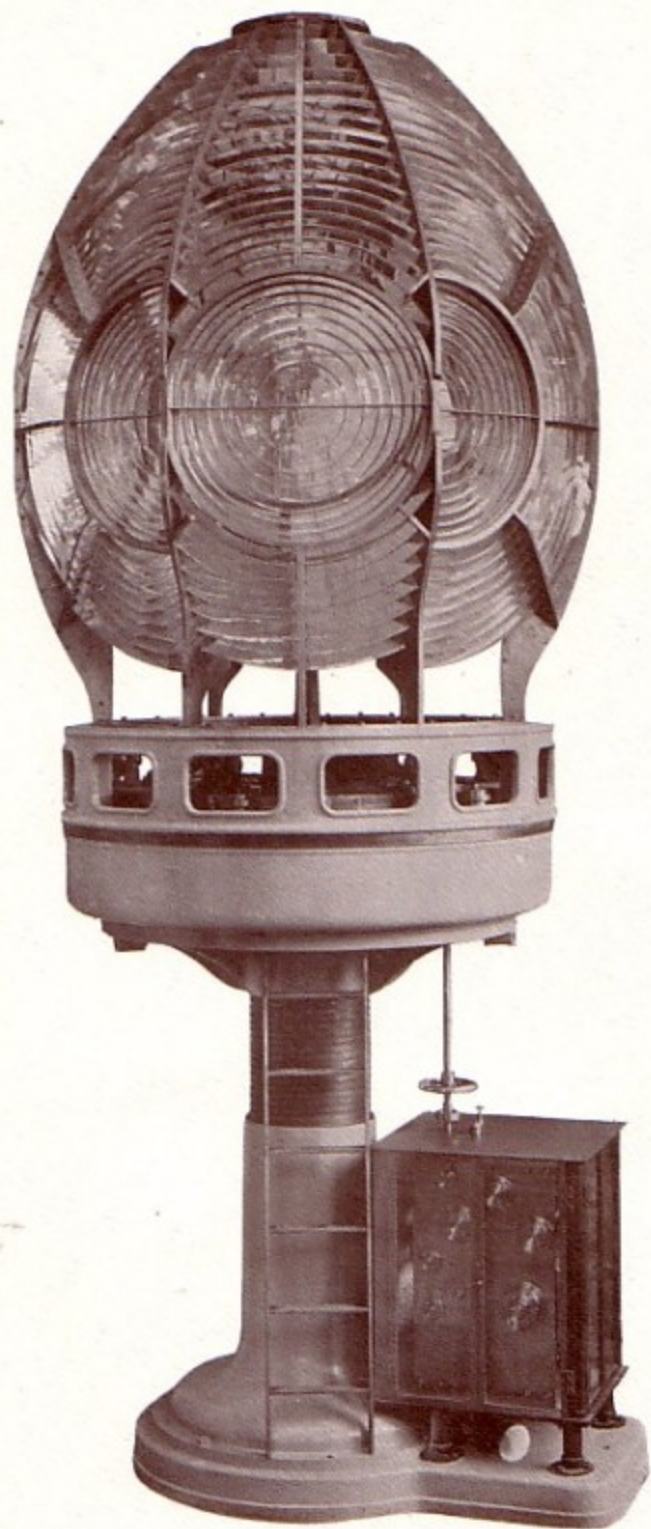


1ST ORDER SINGLE FLASHING LIGHT.  
Feu-éclair de premier ordre, à éclats simples.  
Fanal de primer orden, con característica de destellos simples.

LIGHTHOUSE ENGINEERS BIRMINGHAM



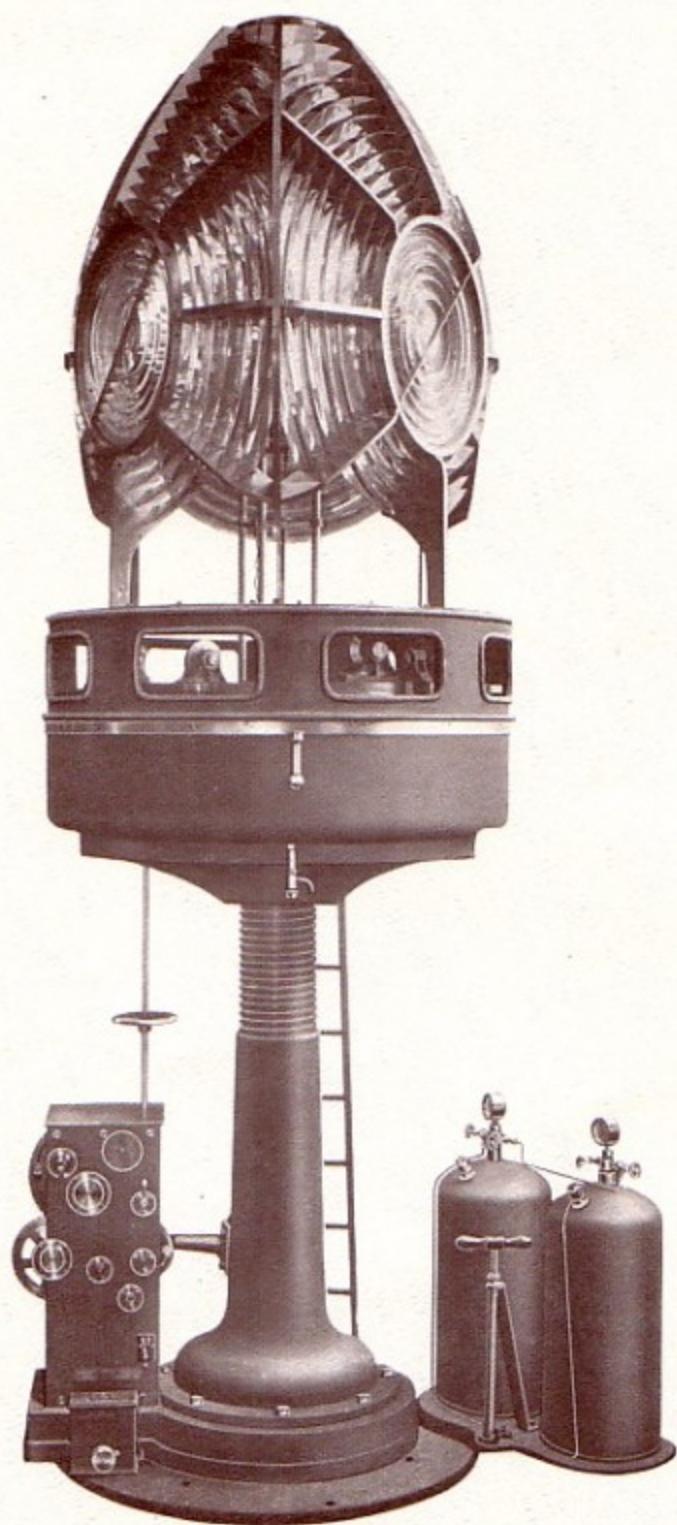
2ND ORDER DOUBLE FLASHING LIGHT.  
Feu-éclair de 2e ordre, à groupes de deux éclats.  
Fanal de segundo orden, con característica de dos destellos.



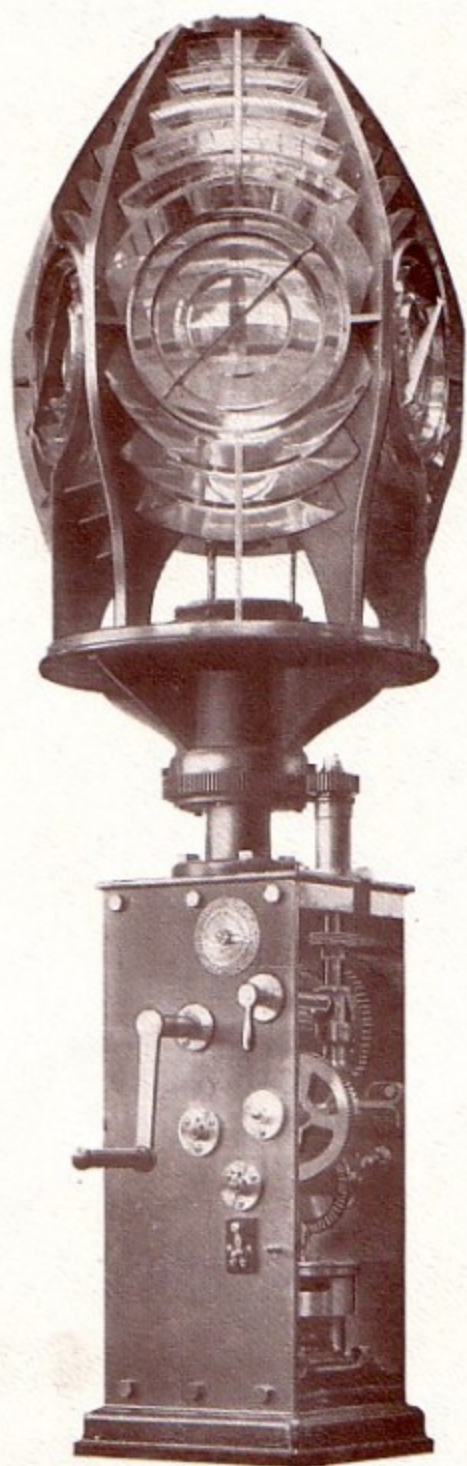
2ND ORDER TRIPLE FLASHING LIGHT.  
Feu-éclair de 2e ordre, à groupes de 3 éclats.  
Fanal de segundo orden, con característica de tres destellos.



HYPER-RADIAL LENSES AND MIRRORS FOR SUBSIDIARY APPARATUS.  
Lentilles et réflecteurs hyperradiaux pour appareils subsidiaires.  
Lentes y reflectores hiperradiales para aparatos auxiliares.



3RD ORDER SINGLE FLASHING LIGHT.  
Feu-éclair de 3e ordre, à éclats simples.  
Fanal de 3º orden, con característica de destellos simples.



4TH ORDER TRIPLE FLASHING LIGHT.  
Feu-éclair de 4e ordre, à groupes de trois éclats.  
Fanal de 4° orden, con característica de tres destellos.

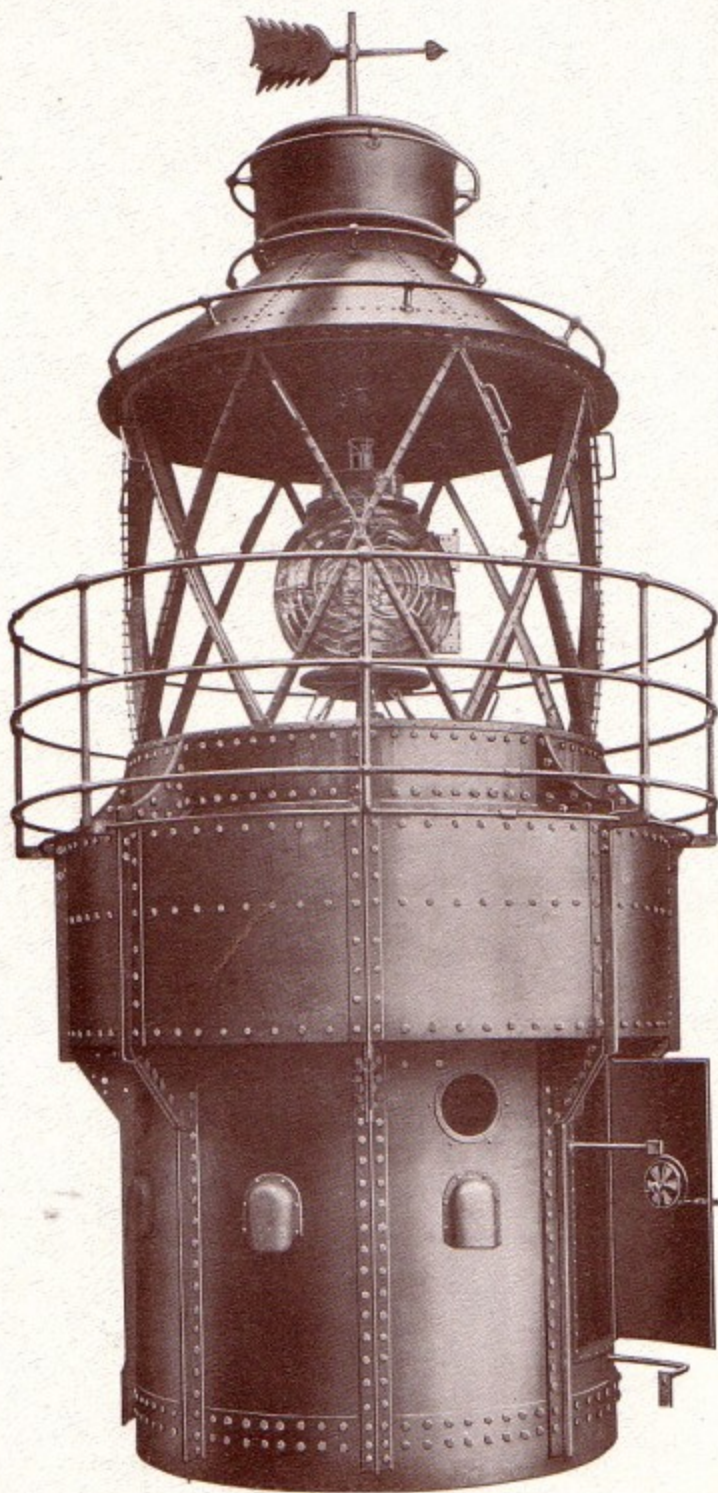




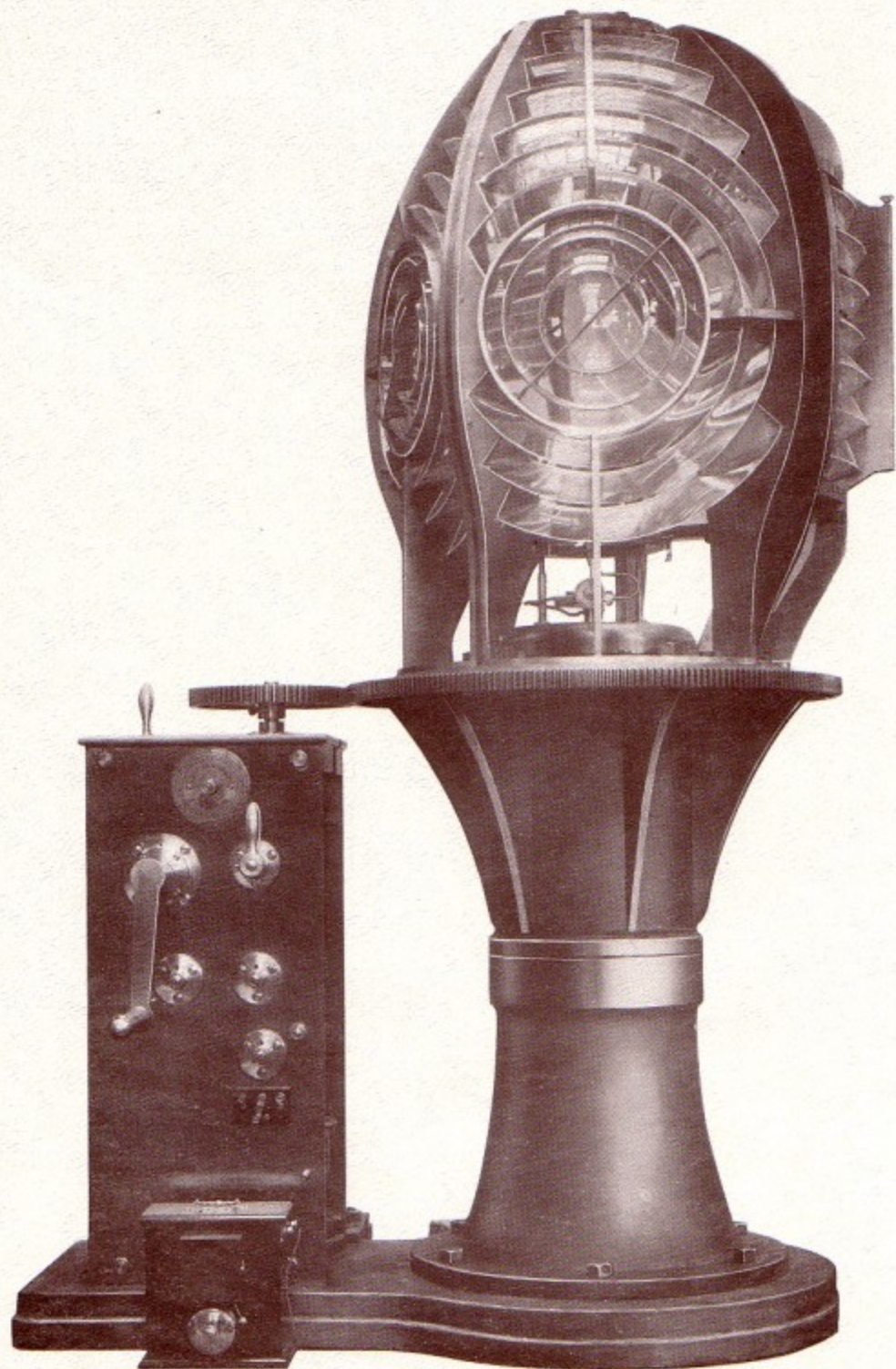
2ND ORDER LIGHT, IN 12FT. LANTERN, ERECTED ON MASONRY TOWER.  
Feu de 2e ordre, dans lanterne de 12 pieds, monté sur tour en maçonnerie.  
Fanal de 2º orden, dentro de linterna de 12 piés, montada sobre torre de mampostería



4TH ORDER FIXED LIGHT AND LANTERN, FOR UNATTENDED LIGHTSHIP.  
Feu fixe de 4e ordre et lanterne, pour phare-flottant sans gardien.  
Fanal de 4° orden, de luz fija, y linterna, para buque-fanal no vigilado.



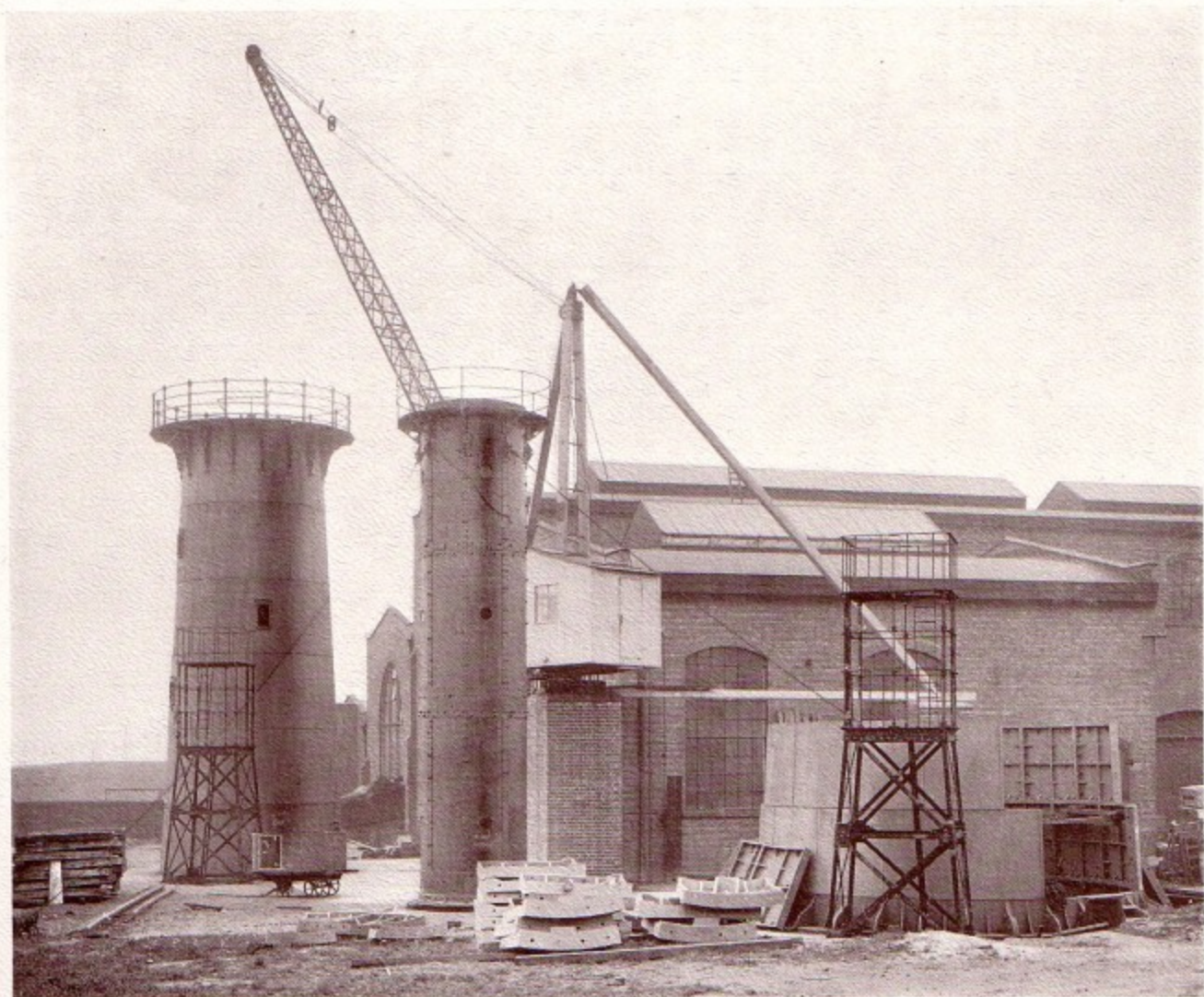
4TH ORDER REVOLVING APPARATUS AND LANTERN, FOR LIGHTSHIP.  
Appareil tournant de 4e ordre et lanterne, pour phare-flottant.  
Aparato giratorio de 4° orden y linterna, para buque-fanal.



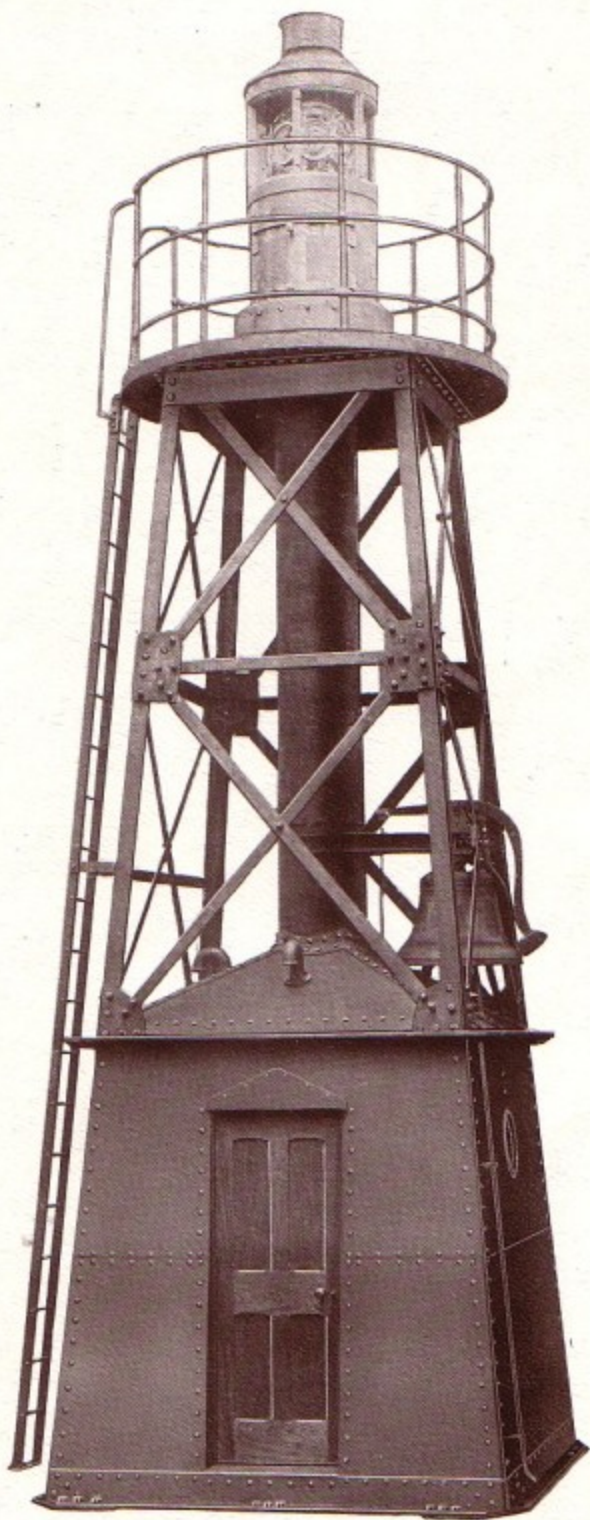
4TH ORDER TRIPLE FLASHING LIGHT WITH SPECIAL PEDESTAL FOR LIGHTSHIP.  
Feu-éclair de 4e ordre, à groupes de 3 éclats, avec piédestal spécial, pour phare-flottant.  
Fanal de 4° orden, con característica de tres destellos, con pedestal especial, para buque-fanal.



LIGHTSHIP WITH LANTERN AND ILLUMINATING APPARATUS.  
Phare-flottant, avec lanterne et appareil lumineux.  
Buque-fanal, con linterna y aparato luminoso.



LIGHTHOUSE TOWERS IN COURSE OF ERECTION AT OUR WORKS.  
Tours pour phares, en voie de construction dans nos ateliers.  
Torres para faros, en vía de construcción en nuestros talleres.

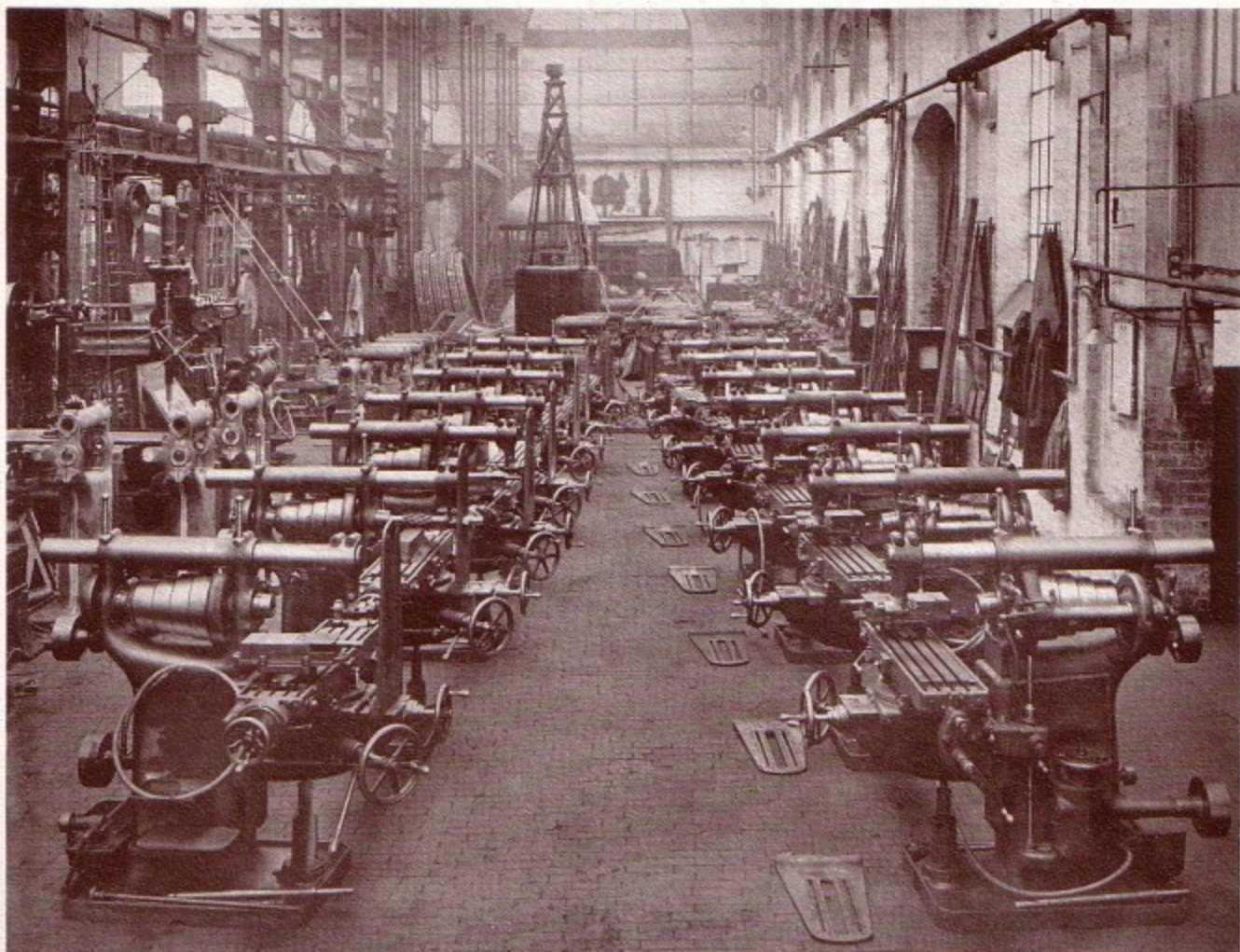


REVOLVING PORTLIGHT, WITH FOG-BELL, MOUNTED ON STRUCTURE.  
Feu de port, tournant, avec cloche signal de brume, sur édifice.  
Luz giratoria de puerto, con campana de aviso en tiempo de niebla, sobre fábrica.



CAST IRON TOWER WITH LANTERN AND 4TH ORDER FIXED LIGHT.  
Tour en fonte, avec lanterne et feu fixe de 4e ordre.  
Torre de hierro fundido, con linterna, y aparato luminoso de 4º orden de luz fija.

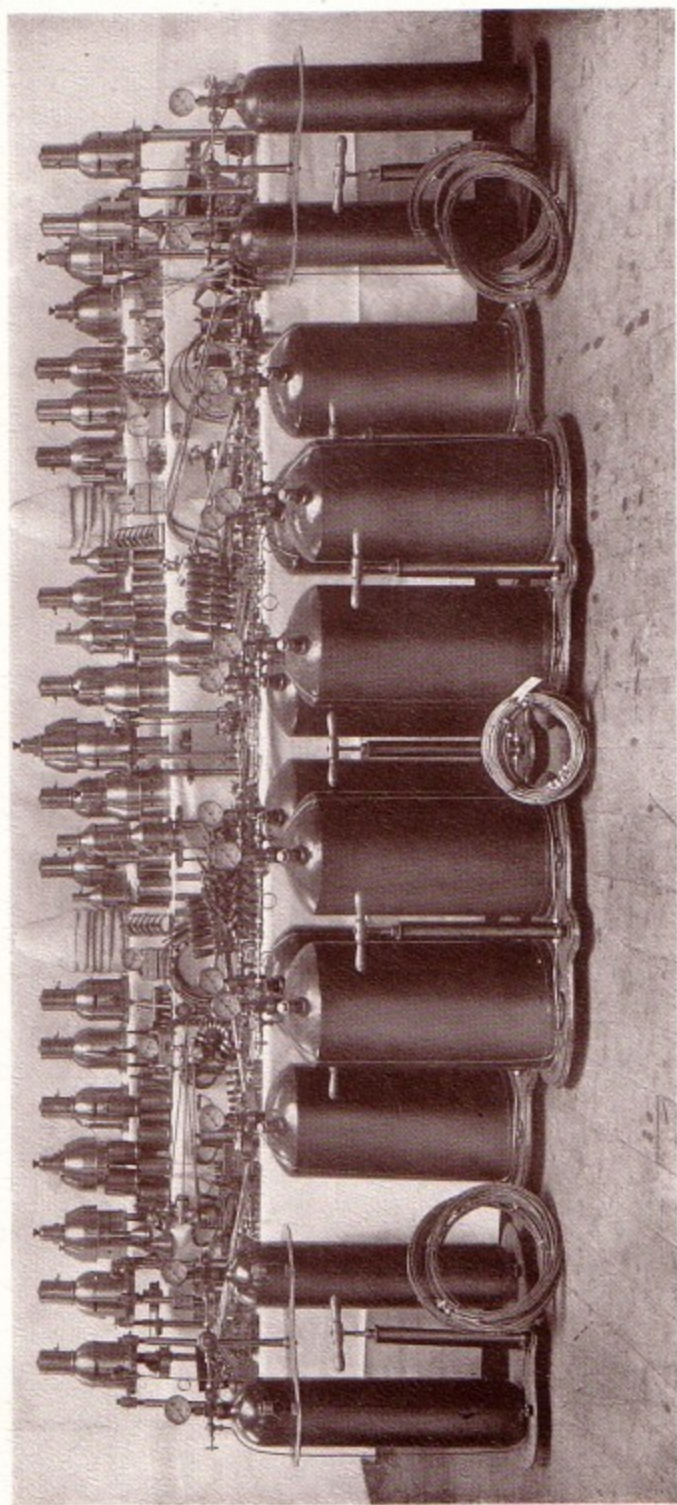




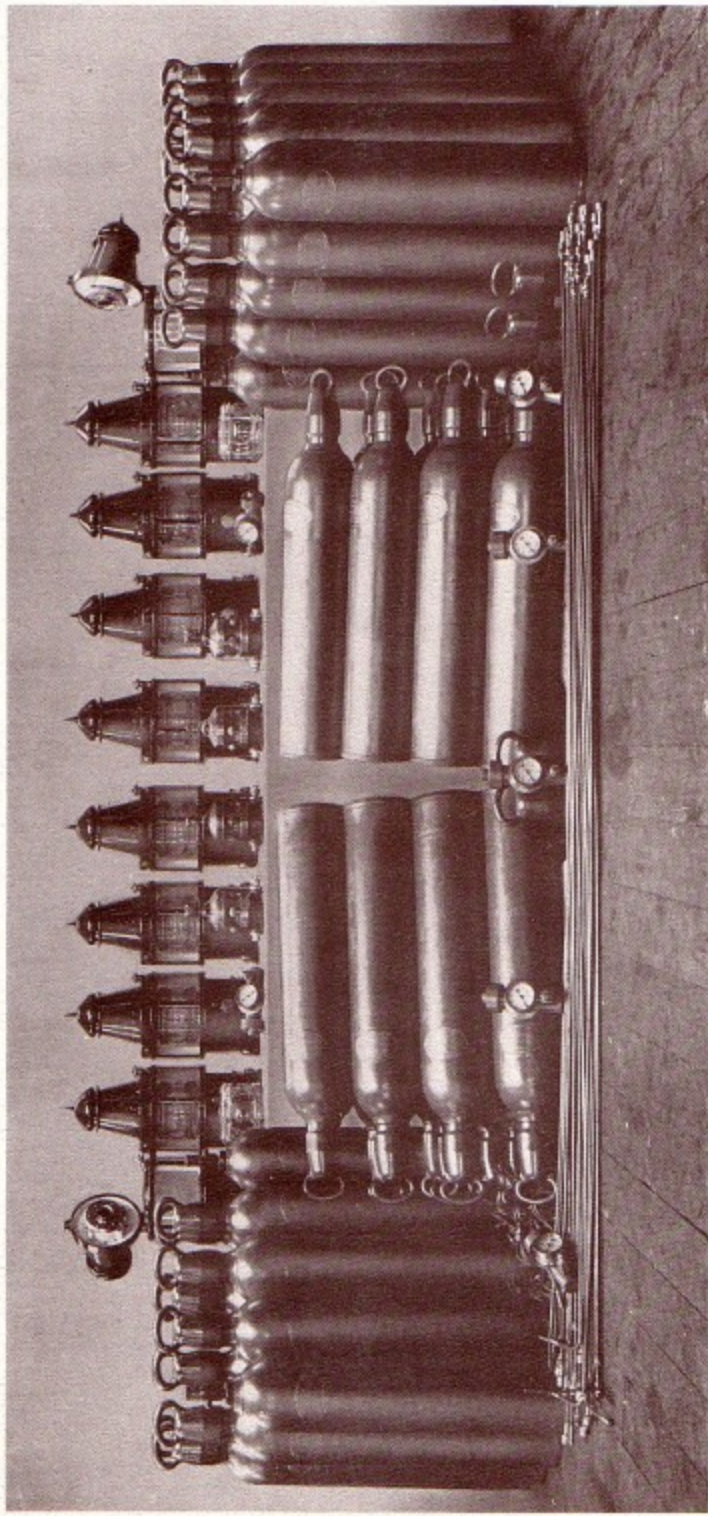
SOME UNIVERSAL MILLING MACHINES CONSTRUCTED DURING WAR PERIOD.  
Quelques machines-outils construites pendant la guerre.  
Algunas de las herramientas mecánicas construídas durante la guerra.



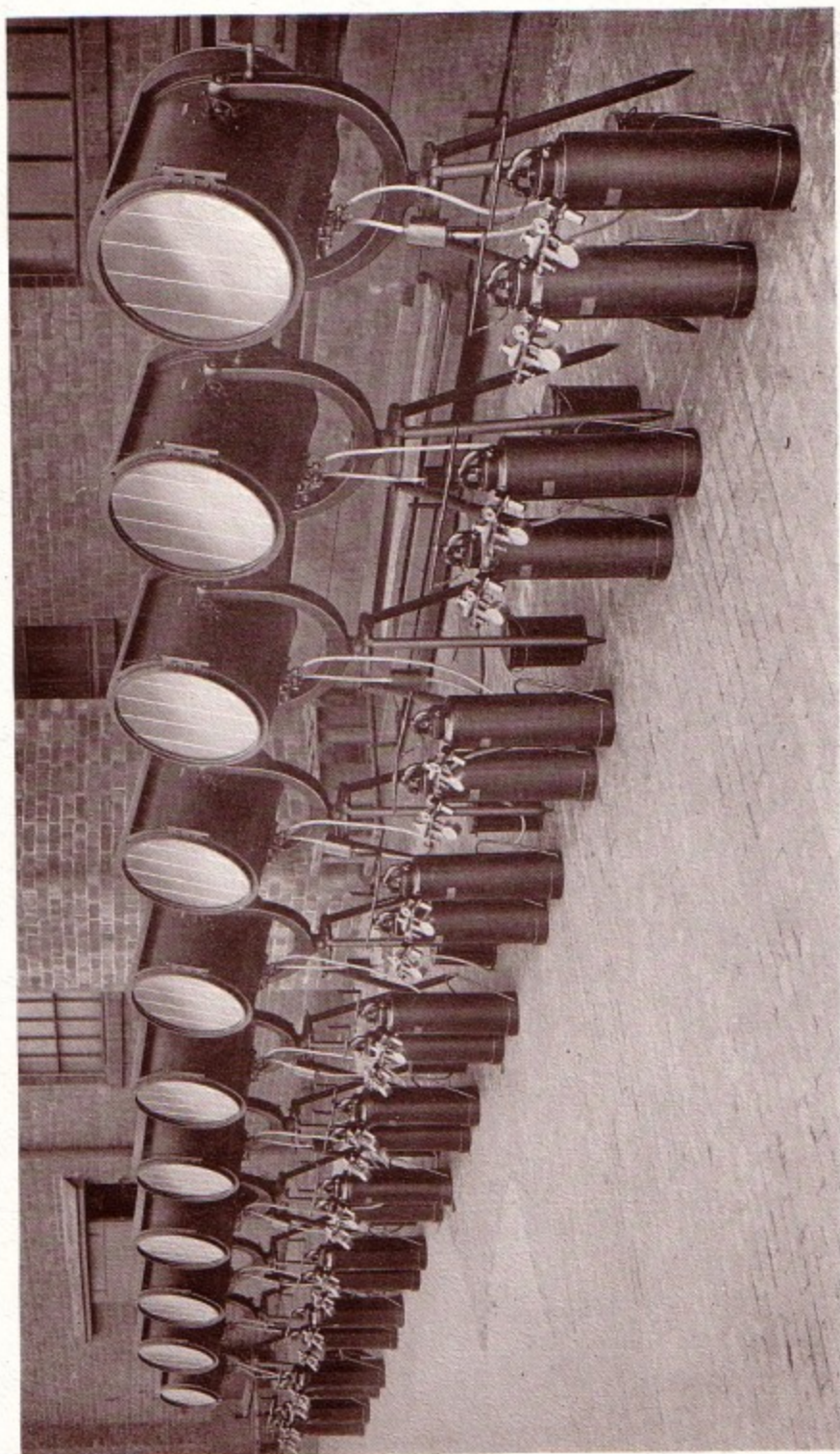
LIGHT FOR AERIAL NAVIGATION, USING DISSOLVED ACETYLENE.  
Feu pour la navigation aérienne, employant l'acétylène dissous.  
Luz para máquinas voladoras, empleando el acetileno disuelto.



PART OF A CONTRACT FOR "CHANCE" INCANDESCENT BURNER INSTALLATIONS.  
Partie d'une commande, d'installations de brûleurs à incandescence système "Chance."  
Parte de un contrato, de instalaciones de quemadores de incandescencia sistema "Chance."



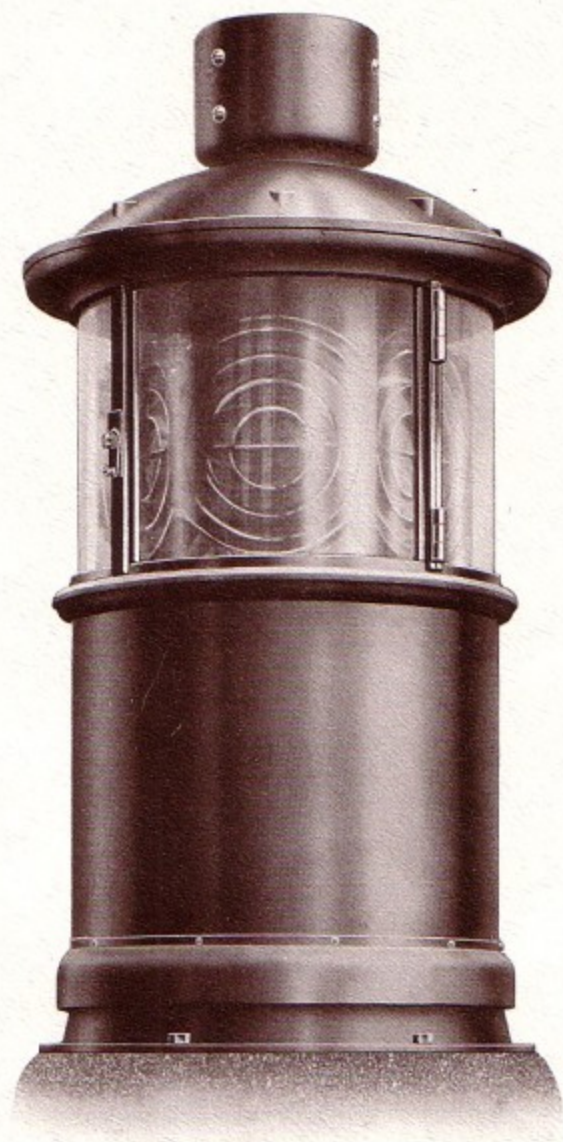
PART OF A CONTRACT FOR UNATTENDED ACETYLENE LIGHTS.  
Partie d'une commande, de Feux sans gardien, employant l'acétylène.  
Parte de un contrato, de Luces no vigiladas, empleando el acetileno



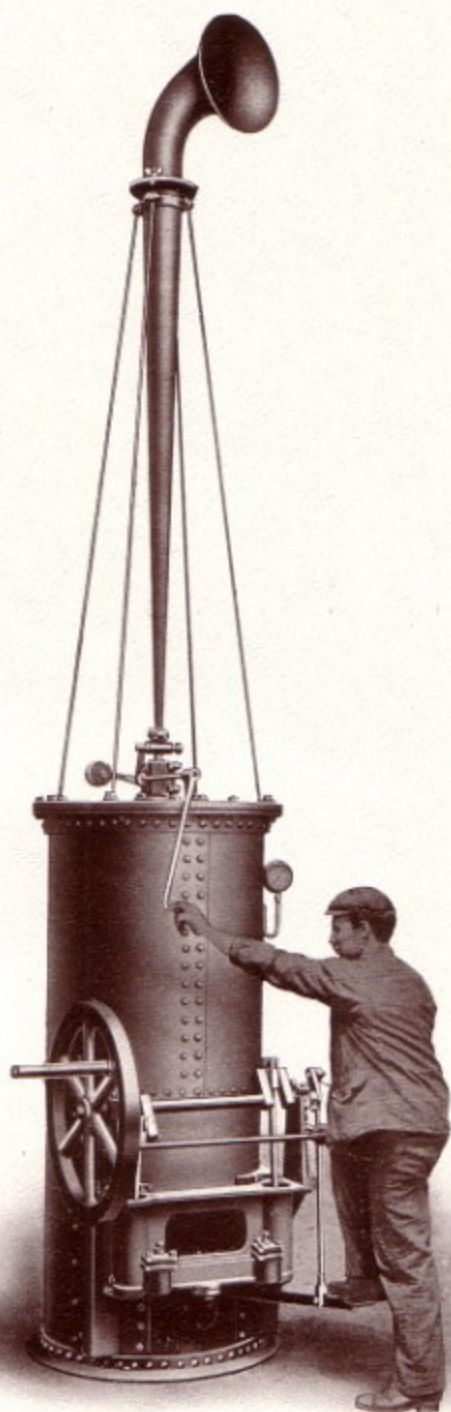
"CHANCE" OXY-ACETYLENE SEARCHLIGHTS 20IN. (508 M/M) DIAMETER.  
Projecteurs d'oxy-acétylène, système "Chance," de 508 m/m de diamètre.  
Proyectoros sistema "Chance," de oxy-acetileno, de 508 m/m de diámetro.



"CHANCE" BUOY LANTERN WITH 200 m/m LENS.  
Lanterne de bouée, système "Chance," avec lentille de 200 m/m  
Linterna de boya, sistema "Chance," con lente de 200 m/m.

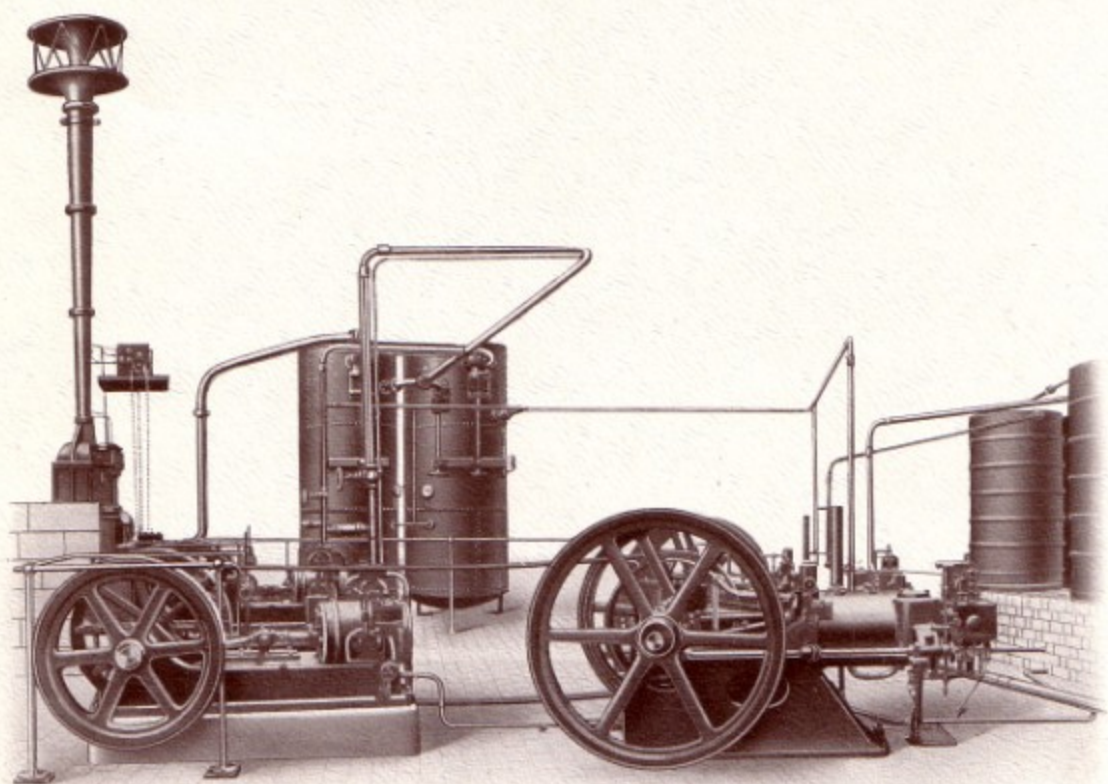


"CHANCE" REVOLVING PORTLIGHT.  
Feu de port tournant, système "Chance."  
Luz giratoria de puerto, sistema "Chance."

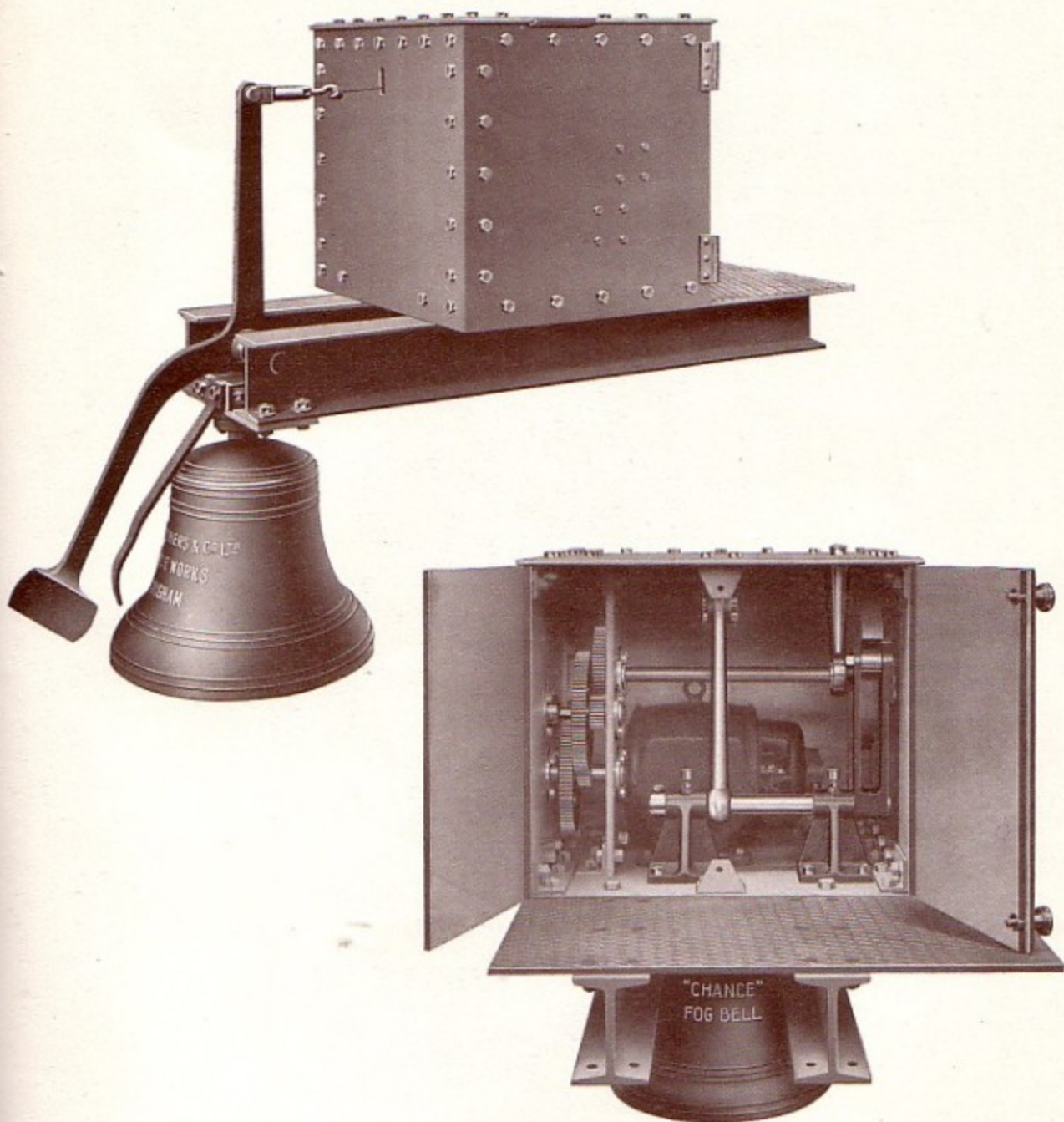


MANUAL REED FOG HORN.  
Sirène actionnée à main.  
Sirena de lengüeta, movida á mano.





COMPLETE FOG-SIGNAL INSTALLATION, SHOWING SIREN WITH MUSHROOM TRUMPET.  
Installation complète de signal de brume, avec sirène et trompette forme "champignon."  
Instalación completa de sirena, con bocina forma hongo.



FOG-BELL DRIVEN BY ELECTRIC MOTOR.  
Cloche, signal de brume, actionnée moyennant moteur électrique.  
Campana de aviso en tiempo de niebla, movida por motor eléctrico.



## APPENDIX C

### **Coffs Harbour City Council chronology – South Solitary Island Lighthouse Optic**

*Compiled by Joanna Besley from Council file containing, minutes, correspondence and newspaper clippings, March 2020*

#### **18 December 1974 (Advocate)**

Call to save the buildings on SSI. Council passed motion (put forward by Councillor Cox) seeking further information from the Commonwealth Department of Transport and resolved to hold a public meeting.

#### **19 December 1974**

Council letter to DoT requesting information about plans for the island and offering to form a local committee to maintain the buildings if necessary.

#### **23 December 1974**

DoT to Council – issues are “under consideration”.

#### **11 February 1975**

Council to DoT “what’s happening?”

#### **August 1975**

Lighthouse automated

#### **18 August 1975**

Council resolved to make application to DoT for the lighthouse equipment scheduled to be removed from the island, due to automation.

#### **22 August 1975 (Advocate)**

Report from Council meeting – DoT have stated that the equipment may be available as a donation but are undecided what to do with it and have asked Council, what will you do with it?

“The old pioneers will turn in their graves is we let this equipment go out of the Shire” Councillor R. Robinson.

#### **26 August 1975**

Council to DoT – we recognise its historical value, we will put it on display, will arrange exhibition and fund erection of lantern “on the basis that the items would be made available to Council at no charge”.

#### **18 October 1975**

Bananacoast Tourist Association to DoT. Letter from Secretary Hec Goodall – the equipment should be kept on the island for future tourism, we will look after it. If it must come to the mainland, we want to be responsible for it.

#### **20 November 1975**

DoT to Council – forwarded letter from Bananacoast Tourist Association. We need to know that you all agree before we give it to any of you.

**15 December 1975**

Council resolved to ask BC Tourist Association to withdraw their application for the lantern, allocated \$3000 to the project from the 1975/76 loans budget and decided on the enclosed area adjacent to the boat launching ramp at the southern breakwater of Coffs Harbour.

**December 1975**

Lighthouse vacated.

**19 March 1976**

BC Tourist Association to Council – we have no objection to Council taking responsibility for the lantern but it should be at the yacht club.

**Handwritten notes – Captain Taylor, DoT, letter 8 March 1976**

Expected to land equipment in Sydney, now in Melbourne, leaving end of April/early May. Melbourne to Sydney by ship. Sydney to Coffs Harbour at Council's expense. Provides weight estimates for freight costs.

**March, May 1976**

Confidential notes regarding the condition of the optic and comparative lighthouse equipment

**13 April 1976**

Council to DoT – allocation of a further \$2000 to the project. The BC Tourism Association has conceded that Council is the best custodian.

**5 August 1976**

Council recommends a maximum allocation of \$15,000 for erecting the lighthouse lantern and dome "in a public place in Coffs Harbour" and will hold a public meeting regarding sites and to form a committee to assist Council. DoT will be asked to address the meeting.

**5 October 1976**

DoT to Council – Mr Jack Duvoisin, Navigational Aids Engineer, will be there to address the meeting.

**September – October 1976**

Lobbying, letters from various individuals and groups, esp. Park Beach Progress Association.

**14 October 1976**

DoT to Council – Ministerial approval has been given for Council to take responsibility for lantern, will arrange transfer from DoT regional warehouse in Marrickville to Coffs Harbour

**21 October 1976**

File note – "space can be found at depot"

#### **4 November 1976**

Public meeting held to recommend a site for a (replica) lighthouse to accommodate the optic and form a public committee for the project. No committee was formed but the meeting expressed confidence in the Council handling the project.

Nine sites were put forward:

- Emerald Beach Headland
- Park Beach Reserve (McNamara Park)
- Rotary Park, Coff Street
- Surf Lifesaving Clubhouse, park Beach
- New boat ramp at jetty
- Adjacent to library/public relations centre/public baths in Coff Street
- Museum reserve, Duke and High Street
- Park Beach Reserve
- Beacon Hill

Mr Duvoisin's lecture notes and minutes of the meeting are in the file.

Key issues:

- Can Council afford it?
- What condition is it in?
- Safety of light being operable – must not face seaward and can't be a hazard for aircraft
- Is inside or outside more of a tourist attraction? Is it interesting if it's not working?
- Organisations all wanted it in their park – Lions, Jaycees
- "it lends itself to the sea, but it also lends itself to the town"
- Not much interest in a committee, once it is erected "we might be able to create sufficient interest to have a committee formed to maintain it"

#### **9 November 1976 (Advocate)**

Reported on public meeting – 23 attended including 15 members of public and 6 apologies.

#### **15 November 1976**

Council decided 5 to 3 in favour of the site on the corner of Coff's and Castle Street (where the Council Chambers now stands). Some of the debate:

- People would clamber all over it at Park Beach
- There would be "no dignity" in a caravan park area and it would be "just another steamroller"
- "real impact" in Castle Street as people stop for lunch and visit the Tourist Information Centre
- It would be a "fish out of water" in Castle Street

#### **19 November 1976 (Advocate)**

Council considered these locations and voted the following priority:

1. Land bordering Coff Street (CBD)

2. Museum reserve (CBD)
3. Park Beach Reserve

Left to Council staff to investigate the practicality of the sites. The site had to be “carefully selected because the lantern will be restored to full working order and could cause difficulties if located where it could be seen by vessels at sea”.

### **29 November 1976**

Department of Administrative Services to Council - the buildings on SSI are now surplus to requirements, does Council want to take out a lease?

### **20 December 1976**

Council to DSA – no lease for us thanks but respectfully request that you see if any local organisations are interested.

### **20 December 1976**

Council resolved that the lighthouse be erected on SW corner of Castle and Coff Streets.

### **21 December 1976**

Council to RAAF, requesting assistance to move by helicopter from the island “7 separate items, the heaviest is 30cwt”.

### **1 February 1977**

Council to Mr Ian Robinson MP – there are still 5 sections on the island, can you help us get assistance from the RAAF.

More letters/lobbying about location – Council continues to affirm its choice of Coff & Castle Streets

### **8 August 1977**

Minister of Transport to Council – RAAF will do it.

### **29 August 1977**

RAAF to transport parts on 7 September. Mr Duvoisen will be in attendance. Council will need a lorry at the airport.

### **8 September 1977 - Advocate**

Parts airlifted by RAAF Chinook from island – the pedestal: “while the dome and most of its fittings were taken off the island (two years ago) during the automatic light changeover, the pedestal was left behind due to its prohibitive weight”. A “slight mishap” occurred and a part fell into the ocean.

### **20 October 1977**

Council to Mr John Meurs of Crystal waters Caravan Park, Korora – Council is committed that the lighthouse be located in a public place: “the Department of Transport imposed such a condition because some of the equipment is extremely valuable obviously the Minister would not have been prepared to allow it to pass into private hands”.

**2 November 1977**

Memo – “only the lens system and glassware was delivered from Sydney, no dome framing, dome or window framing has arrived”

**May/June 1978**

Handwritten note – Rob Tresize offers his assistance

**17 May 1978**

SSI lighthouse group listed by the National Trust of NSW “despite the aesthetic damage resulting from the irresponsible removal of its splendid domed lantern in 1976” (listing).

**1 June 1978**

Request from Shire Engineer to erect the lantern at the depot so they can see what they’re dealing with and employ a fitter-mechanic to do the work

**6 July 1978**

Shire engineer given permission to use the depot and concrete the floor.

**13 September 1978**

Council to DoT – we still need the following parts to assemble this lighthouse – provides a list, including “mercury for mercury bowl”

**5 October 1978**

Shire Engineer’s report about the difficulty of the job, the design challenge is becoming apparent – can Council inspect the work to date so he can better illustrate some of these points? Cost estimate should hold but with the present proposal to build a lighthouse to house the apparatus, “the interesting part of the light, that is, the lens system, pedestal, and clockwork mechanism will not be visible. This could be overcome if the outer structure was not built and the lens system and pedestal etc. were erected inside a building such as the new Historical Museum”

**5 October 1978**

Authority given to engage an architect.

**20 October 1978**

Mr B Rose of Reddacliff & partners briefed to provide a sketch design for replica lighthouse to house the apparatus.

**12 December 1978 - Advocate**

Council calls for ideas about the lighthouse optic and its “innards”. At this time, the plan was for a replica lighthouse – a 10.5 metre structure with external staircase and viewing platform at 6.5 m height – on the corner of Coff and Castle Streets. It was proving to be expensive and Council was “considering consigning the lighthouse innards, the lens, turntable and pedestal arrangement, to the proposed



historical museum, instead of leaving them with the rest of the dome as originally planned". Vandalism, cost safety and historical context were the major concerns.

**19 December 1978**

Council to DoT and Historical Society – we want to put it in the museum, any objections?

**1 February 1979**

Shire Engineer's report – no objections, pay the architect Peter Black (who has designed the museum for free) to modify his plans to accommodate the optic. Approved by Works Committee.

**9 February 1979**

Letter from Jetty Foreshores Committee (five service clubs Rotary, Lion, Apex). We don't like the location proposed for optic, we want it at the foreshores with a lighthouse tower and adjoining buildings which look like the buildings on SSI with a kiosk and museum.

**1 March 1979**

Foreshore Committee's ideas rejected in letter from Council – we appreciate your interest but have "made a final decision to incorporate the lighthouse parts within the proposed historical museum" on the corner of High and Duke Streets.

**7 February 1980**

Works committee recommends approaching Mr Ian Robinson MP to approach DoT on Council's behalf for the supply of the mercury necessary for the rotation of the lantern.

**11 February 1980**

Council to Ian Robinson – help!

**21 April 1980**

DoT to Council – how are you going? Director Mr Kenneth Mascord is visiting CH 13 or 14 May and is pleased to offer technical advice.

**28 April 1980**

Council to DoT – pedestal is installed in museum, lantern being prepared for installation in the next month to six weeks. We are not installing the dome. "One major problem which Council has in the installation of the lantern is the fact that the mercury has not been supplied, and any assistance that you could give Council in this matter would be appreciated."

**12 June 1980 – Advocate**

"Who's Got Our Mercury?" – the optic is installed in all its glory but it's a "lame duck" and will remain static until the mercury is returned to its base. One popular theory is that it got lost in the "inner recesses" of the government stores. Looking to Ian Robinson MP to help.

**19 August 1980 - Advocate**

“Beacon mercury has been found” – sort of, not really. Historical Society Secretary Naomi England says they are “now practically certain that the mercury rested in the Government Stores in Melbourne”. “But we’ve been told it will cost us \$2500 to reclaim it”.

### **2 December 1980**

DoT to Council – since you don’t want the dome, please return it as now that some of our properties are being listed on the National Estate we might need it.

### **18 October 1985**

Australian Heritage Commission to Council – intention to list SSI on the national estate

### **18 November 1985**

Council has no objection to listing.

### **1996**

Museum experiences major flooding, with damage to the collection.

### **2005**

Coffs Harbour District Historical Society (founded in 1955) wound up its affairs and closed the museum. Coffs Harbour City Council took over the building and the collection. It is believed that some collection items and research material went missing at this time.

The Director of the Regional Gallery became responsible for the museum, along with a part-time museum coordinator and part-time technician.

### **26 January 2007**

After a major refurbishment, the museum re-opens at its existing location.

### **31 March 2009**

Museum experiences storm damage and major flooding, with further damage to the collection. Despite a rescue and salvage effort by museum volunteers, losses to the collection were incurred and the building was deemed unsuitable for use as a museum.

### **2009 - 2014**

Museum closed to the public as the collection was cleaned, repacked and re-housed a temporary location in the Isles Drive industrial area. Staff and volunteers concentrated on cleaning, conserving and documenting the collection, including a de-accessioning program, which focused on the importance of provenance and condition. There was a small Museum ‘pop-up’ presence at Palms Shopping Centre during this time.

### **September 2010**

Council purchased the former Courthouse and Police Station at 215A Harbour Drive.

### **November 2012**

Renovation plans by Studio 22 to convert the building into a museum approved by Council.

**March 2013**

Museum collection is moved into the “old Salvos” building in Gordon Street.

**October 2013**

At Council Meeting, Council noted:

The South Solitary Island lighthouse optic (light) is currently housed within Council’s museum collection but is not on permanent display. It is considered that the Jetty Foreshores location is an appropriate place for its future display. This is a design element which should be accommodated in the future detailed design of Area D Jetty Pier Precinct. The Concept Plan nominates the display of the lens as a component of a self-guided interpretive display and would be a part of any redesign of the TS Vendetta site.

**18 September 2014**

Museum officially opens at 215A Harbour Drive.

**14 June 2018**

Council adopts the Concept Business Case for the Cultural and Civic Space project, located in Gordon Street, that includes the Regional Museum as part of the facility.

**September 2018**

Grant for the National Library of Australia’s Community Heritage Program to undertake a Significance Assessment of the museum collection.

**May- September 2019**

Significance Assessment undertaken by Dr Roslyn Russell. She concludes that:

The Coffs Harbour Regional Museum collection embodies a wide range of material relating to a large number of historic themes: Indigenous culture and history; pioneers; maritime history; timber industry; agriculture; developing the region; community; commerce and entertainment; domestic life; tourism and beach culture; and a diverse society as a result of successive waves of European and non-European settlement. Within these thematic areas are individual items of significance, in particular the South Solitary Island Lighthouse lantern dating from 1880; the historic Bayldon textile collection; important items relating to timber getting; an impressive collection of World War I honour boards; and items associated with the iconic Tasma Theatre and nationally significant showman, Lawrence Penn. The ‘Banana Republic’ tourism promotion of Coffs Harbour put the region and its banana growing industry on the national map in the 1980s.

**November 2019**

Museum collection is moved to a temporary location in the Orlando Street industrial precinct in preparation for the Cultural & Civic Space project.