



## SAFETY MANAGEMENT PLAN (MARINE)

### Annex I



## **Severn Estuary Navigation Aids Past and Present**

(From Sharpness to the Prince of Wales Bridge)

April 2022

Navigation House  
The Docks  
Sharpness  
Berkeley  
GL13 9UD

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# PANTHURST

**Characteristic:** F. Bu

**Position:** Lat: 51° 42'.59N  
Long: 2° 29'.04W

**OS Grid Ref:** SO 667 013

**Description:** Double row vertical blue l.e.d. on yellow fibreglass mast.



1974



Present day (2020)

## History:

Posts were established at Panthurst Farm in 1894. When in transit, these provided guidance through the channel formed in 1893 by blasting over the Bull Rock. These posts were unlit, and there is no record of their demise. However, in 1912 a single lit beacon was established. This was initially a fixed white oil lamp screened on each side; mains powered fluorescent (blue) lighting was installed in April 1974 (above left) in the form of a “St Andrew’s” cross. The current vertical lighting on a yellow mast (above right) was installed in 1987 following improvements to the flood bank. Blue l.e.d. lighting installed April 2020. This is used as a breast light to indicate where vessels should commence swinging prior to arrival at Sharpness Dock entrance.

# BULL BEACON

**Characteristic:** Fl 3s

**Position:** Lat: 51° 41'.80N  
Long: 2° 29'.89W

**OS Grid Ref:** ST 657 998

**Description:** 15m steel lattice mast, white daymark and tide gauge



*Bull Beacon (1980)*



*Bull Beacon (1988)*



*Bull Beacon (2005)*

## History:

The beacon was established in 1894 following the levelling of Bull Rocks to 2 feet below Sharpness cill height and used to mark the starboard side of the channel cut through Bull Rock. Gas lighting was installed (flashing red) on the chain-stayed wooden pole beacon in 1958 with the gas cylinders fitted at the base of the pole. The pole also carried a tide gauge (wooden battens at 2' intervals) and a radar reflector above the light.

The pole was demolished by a vessel in 1984 and replaced by a self-supporting 15m steel mast carrying a mains powered isophase light every 2 seconds. Polished steel bands were placed at 5-foot intervals around the column and indicated the depth of water over the rock. The uppermost band was at 41 feet (12.5m) above rock level. In November 2002, solar-powered lighting (using an i.e.d. lantern) was installed, and the light character changed to a flash every 3 seconds.

In August 2005, the beacon structure was changed to a latticework mast carrying a daymark and metric tideboard related to the level of Sharpness Dock entrance sill.

## BERKELEY PILL LEADING LIGHTS

**Characteristic:** F.G

**Position:** Front

Lat: 51° 41'.99N

Long: 2° 29'.41W

Back

Lat: 51° 41'.90N

Long: 2° 29'.43W

**OS Grid Ref:** SO 662 002

SO 662 001

**Description:** 8m steel lattice tower with white lantern house.

12m steel lattice tower with white lantern house.

Each lantern fitted with four pairs of l.e.d. strip lights behind green shades (2019); white daymark boards beneath each lantern.



*Front Light*



*Back Light*

### History:

These were installed in April 1906 to provide a leading line for the channel to Sharpness Dock entrance. These original structures were the wood poles fitted with oil lights which had been removed from Sheperdine. Many changes and improvements were made over the years. Gas lighting with a flashing characteristic (67fpm at the rear and 23 fpm at the front) was installed in 1926. The steel lattice towers were erected in 1937. In 1951 the gas system was replaced with a battery lighting system and the flashing lights (red) were synchronised in 1953.

Mains power and fluorescent lighting behind red screens was installed in 1964, with the supply coming directly from the adjacent power station. However, the supply was terminated in August 2002 when further decommissioning work was carried out at the power station, and an alternative mains supply was laid from a pole at the Environment Agency penstock on Berkeley Pill. Date of change to green lighting unknown.

## BERKELEY PILL LEADING LIGHTS (cont.)

In 2008, a refurbished lantern housing (ex-Sheperdine) was installed on the front tower, and the old front lantern was in turn refurbished and installed on the rear tower in 2010. The refurbished items incorporate handrails which comply with modern health and safety requirements, and rusty, perforated sections have been replaced with new metal.



The photograph at the left shows the oil lamp installation (ex-Sheperdine) of the front light at Berkeley Pill in the early 1900s, with light-keeper in attendance and a small craft heading upriver in the background.

# CONIGRE LEADING LIGHTS

**Characteristic:** F.Bu

F.Bu

**Position:** *Front*

Lat: 51° 41'.46N

Long: 2° 30'.02W

**Back**

Lat: 51° 41'.49N

Long: 2° 29'.81W

**OS Grid Ref:** ST 655 993

ST 657 993

**Description:** *Front*

21m steel lattice mast carrying two vertically disposed vertically oriented blue fluorescents, with orange (upper) and white board (lower) daymarks

**Back**

29m steel lattice mast carrying two vertically disposed vertically oriented blue fluorescents, with orange board daymark beneath lights.





*Front Light, with painted square daymark on wall of building behind*



*Back Light*

## **CONIGRE LEADING LIGHTS (Contd.)**

### **History:**

Two fixed white lights were in use at Conigre in 1891. They were used to indicate the “low way” across the Lydney Sand from Guscar Rocks. A green sector showing over the Bull Rock was in place in 1888. It is not known when this sector was discontinued. The oil lamps were replaced in June 1948 with Londex battery powered items which exhibited a flashing characteristic; these remained unsynchronised until 1953. The construction of the nuclear power station at Berkeley led in 1960 to the erection of two steel lattice towers fitted with mains powered fluorescent lighting. Improved daymarks were fitted in August 2018.



*Left: Conigre back light, early 1900s*



# FISHINGHOUSE LEADING LIGHTS

**Characteristic:** F

**Position:**

***Back light***

***Front lights***

Lat: 51° 40'.90N

Long: 2° 31'.09W

Lat: 51° 40'.98N

Long: 2° 31'.00W

**OS Grid Ref:** ST 643 983

**Description:**

***Back light***

16m Abacus mast, 4 vertical white fluorescents, orange/white daymarks

***Front lights***

4m white fibreglass tower, 4 vertical white l.e.d. strips, red sector light orange/white daymarks. Additional daymarks on seawall in front of light





*(Above: extended mast, August 2018)*

### **History:**

A single white light with red sector showing when abeam Haywards Rock was in place in 1886. Leading lights were established in 1894 to provide a line through Bull Rock channel. The earlier red sector was incorporated into the front light. Battery powered flashing lights installed in 1948 and the flash synchronised in 1953. Mains powered fluorescent lighting (funded as part of an agreement with the CEGB relating to the nuclear power station at Berkeley) was installed in 1960, when the back light timber structure was renewed and the front light steel lattice tower installed. The Abacus back mast and fibreglass front tower were installed in 1985 – the rear wooden mast had blown down in 1985. Following comments from pilots that the vertical separation between front and rear lights was inadequate the height of the back mast was extended by 5m in August 2018.

The following photographs show the evolution of the beacons at Fishinghouse between 1894 and 1985. The original structures were lit by oil but this was later changed to mains-powered lighting.



# HAYWARDS ROCK BEACON

**Characteristic:** VQ

**Position:** Lat: 51° 41'.26N  
Long: 2° 31'.11W

**OS Grid Ref:** ST 642 988

**Description:** North Cardinal beacon with very quick flashing white light characteristic to mark Haywards Rock.



## History:

An unlit buoy was first installed in 1906. A small flashing beacon was installed on the buoy in July 1956. A new steel buoy with gas lighting was installed in 1958. Solar powered lighting was fitted in 1987.

A grp buoy (*right*) was installed in 1991 and utilised solar panels and fittings removed from its predecessor.

The highly dynamic tidal regime and soft nature of the rock bed resulted in continual erosion of the rock and considerable wear to the mooring chains (*shown right*). Consequently, the rock required frequent remedial work in the form of concreting to avoid loss of or damage to the buoy.



This high level of maintenance and the associated risk led to the installation of a 12.5m steel beacon at Hayward Rock in June 1999 and the removal of the buoy.



Pictured left is the original buoy fitted with battery-powered lighting and radar reflector. The buoy is now a “feature” at the Sharpness picnic area.

# HILLS FLATS BEACON

**Characteristic:** Fl.G.4s

**Position:** Lat: 51° 40'.7N  
Long: 2° 32'.6W

**OS Grid Ref:** ST 624 978

**Description:** Starboard hand mark exhibiting one green flash every four seconds and carrying a starboard hand topmark to show the position of Hills Flats Rocks.



## History:

The rock was marked with an unlit beacon in 1899. The following diary extracts confirm the existence of the beacon at Hills Flats (shown on an undated survey by Clegram, now in the BW archive) the remains of which are still visible.

*13 February 1902: Palmer and Phillips set stays of the beacon at Hills Flats which were very slack.*

*May 1903: Went to Hills Flats Beacon with boats men and gear to re erect Beacon which was down. Found 1 stay (northern) broken. Repaired this and put beacon up.... One of the boards on top of the beacon was broken off, this could not be repaired this time.*

*28 April 1904: Went with boat men and gear to Hills Flats to erect beacon which had been knocked down by the trow "Edith". Put beacon up repaired broken stay and left everything secure, coming to Sharpness on the nights tide. (5 ½ hours ebb before landing on the rock).*

*July 1904: Wooden buoy sent from Gloucester with stud link (1 1/4 ") chain as an experiment; fixed to special anchor put in the ground almost 30 feet up river from old beacon. This buoy (an old one) proved*

*insufficient owing to lack of buoyancy; it ultimately broke adrift and was picked up at Slimeroad where it was left on the shore.*



An unlit iron buoy was substituted in April 1905. The present green can buoy, installed in 1961, was fitted with gas lighting (pictured left). Conversion to solar power and battery was made in 1987.

A lantern utilising modern Light Emitting Diode (l.e.d.) technology was installed in September 2000. The reduced power consumption has enabled the number of batteries on the buoy to be reduced to one. A solid-state voltage regulator has replaced the electro-mechanical unit previously installed.

The new 12.5m latticework tower carrying the light and appropriate daymarks was installed in April 2011 replacing the green can buoy after fifty years' service.



# SHEPERDINE LEADING LIGHTS

**Characteristic:** F

**Position:** *Sheperdine Rear*

Lat: 51° 40'.10N  
Long: 2° 33'.16W

**OS Grid Ref:** ST 618 967

**Description:** *Sheperdine Rear*

20m grey monopole mast carrying eight vertical white l.e.d. strips and daymark panels

*Sheperdine Front*

Lat: 51° 40'.06N  
Long: 2° 33'.32W

ST 616 966

*Sheperdine Front*

8m grey enclosure carrying eight vertical white l.e.d. strips and radar antenna



## History:

Leading lights for the eastern end of Barnacle Channel were established in 1886. Timber poles were replaced with steel lattice structures in 1906. Fixed white oil lamps were used until 1948 when they were converted to battery powered flashing white lights, which were then synchronised in 1953. Fixed fluorescent lighting was installed in 1961 and a fog signal (bell) installed. The bell (the "Atlas" bell) can be seen in the following photos of the towers (taken in 1980). The bell now adorns the wall of the North Warehouse in Gloucester docks.



*Sheperdine leading lights photographed in 1980*



The front light was demolished in 1996 and replaced by the radar station at the same location. The lantern housing was stored at Sharpness for some years before being refurbished and installed on the Berkeley Pill front light in 2008.

The condition of the rear tower deteriorated and was demolished in March 2010, being replaced by an “Abacus” hydraulically-lowered column (see *photo on previous page*).



## LEDGES BUOY

**Characteristic:** Fl(3)G.10s

**Position:** Lat: 51° 39'.75N  
Long: 2° 34'.05W

**OS Grid Ref:** ST 608 962

**Description:** Starboard mark flashing Green (3) every 10s to mark Narlwood Rocks and power station reservoir wall.



### History:

This new aid of the same specification as the Counts buoy was installed in 1961. Originally fitted with a gas powered light and bell, this mark was converted to battery and solar panel operation in 1986. A lantern utilising modern Light Emitting Diode (l.e.d.) technology was installed in September 2000. The reduced power consumption has enabled the number of batteries on the buoy to be reduced to one. A solid-state voltage regulator has replaced the electro-mechanical unit previously installed.

## LEDGES (cont.)



Ledges Buoy as installed in 1961 showing pockets for the dissolved acetylene gas and CO<sub>2</sub> cylinders, bell and lantern.

Mooring arrangement for Ledges Buoy showing additional (square) anchor point bolted to river bed and installed after original mooring ring had all but worn through.



## NARLWOOD BEACONS

**Characteristic:** Fl W 2s

**Position:**

<i>Front</i>	<i>Rear</i>
Lat: 51° 39'.57N	Lat: 51° 39'.50N
Long: 2° 34'.75W	Long: 2° 34'.86W

**OS Grid Ref:** ST 601 958

**Description:** Steel masts, yellow with orange daymarks, 12m (front) and 17m (rear) synchronised solar powered white flash every 2 seconds. Provides a leading line for the Hills Flats channel.



*Front mast (July 2018)*



*Rear mast (July 2018)*

### History:

A single pole or perch had evidently been erected on Winstone Rock (see *Beechey chart of 1847 and Clegram chart 1882*) and it appears likely that it remained in service until the installation of the set of leading lights.

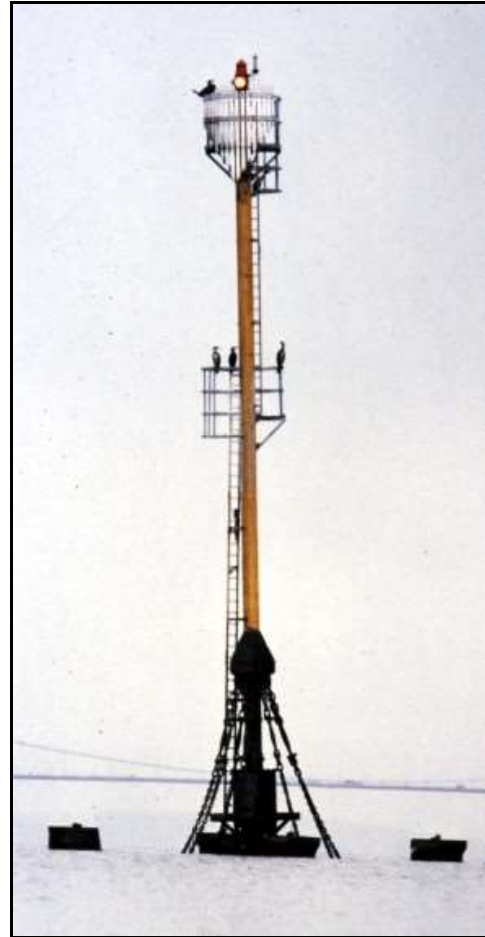
The remains of the bases and chain anchors for the Counts and Winstone beacons may still be seen on the rocks.

The original installation established in 1900 comprised fixed white lights (oil burning) on timber poles (*below left*). The lighting was changed in 1926 to gas-powered automatic flashing white lights (67fpm at the rear and 23fpm at the front). The front light was knocked down in April 1931 and restored in July of that year.

Self-righting beacons (*below right*) were installed in 1964 when an offshore reservoir was constructed to supply cooling water to the nuclear power station at Oldbury on Severn. The gas lighting was replaced by solar panels and batteries in 1987.



*Oil lighting, early 1900s*



*Gas lighting, 1980 (cylinders stored at base of mast)*

Following failure of the synchronising cable laid between the two beacons, i.e.d. lanterns featuring GPS synchronisation were fitted in December 2005, and the gradual deterioration of the supporting chains and attachment points of the self-righting design led to the installation of new fixed masts (attached to cast 40t concrete bases) in June 2018. Improved GPS-synchronised i.e.d. lanterns were also installed in 2018.

# COUNTS BEACON

**Characteristic:** VQ

**Position:** Lat: 51° 39'.50N  
Long: 2° 35'.75W

**OS Grid Ref:** ST 589 957

**Description:** North Cardinal mark with very quick flashing light characteristic to mark the northern extremity of the higher Narlwood Rocks.



## History:

It is believed that a beacon was installed in 1874 at this location and is shown on a survey dated 1882. It is known that an unlit pole beacon (black, surmounted by a globe) was in use from 1906 until it was replaced in the 1960s.

## COUNTS BEACON (cont.)

A boat-shaped buoy was installed in 1961. Originally fitted with gas powered light and bell, this mark was converted to battery and solar panel operation in 1986.



Former Counts Buoy



Counts Buoy rock mooring (typical system)

A lantern utilising modern Light Emitting Diode (l.e.d.) technology was installed in September 2000. The reduced power consumption enabled the number of batteries on the buoy to be reduced to one. A solid-state voltage regulator replaced the electro-mechanical unit which had been installed previously.

The new 12.5m latticework tower carrying the light and appropriate daymarks was installed in April 2011 replacing the old buoy after fifty years' service. It carries a tide gauge which is related to Chart Datum for the area.

The new tower meets the highest safety and navigational standards and requires far less routine maintenance.

:

## INWARD ROCKS LEADING LIGHTS

**Characteristic:** F

**Position:** *Back light*

Lat: 51 ° 39'.22N  
Long: 2 ° 37'.64W

*Front light*

Lat: 51 ° 39'.26N  
Long: 2 ° 37'.46W

**OS Grid Ref:** ST 567 952

ST 568 952

**Description:** 20m Abacus mast, 4 vertical white l.e.d. striplights (2019) and daymark.

6m white fibreglass lighthouse with 3 vertical white l.e.d. striplights (2019)



*Back light*



*Front light*

### History:

A single light was installed on the shore in 1886. The leading lights were established in 1898. The front light timber structure was replaced with a steel lattice tower in 1907 and the fibreglass lighthouse was installed in 1985. The rear timber structure was replaced in 1961 by a steel mast. This was in turn replaced by an Abacus hydraulic mast sited further from the front light in 1985. The lights have been powered by main electricity since 1962. The lights provide a leading line of 252° 28' in the western part of the Barnacle Channel.

## INWARD ROCKS LEADING LIGHTS (cont.)



Inward Rocks: Front light (post-1907) and rear beacon (viewed from the NE) following electrification in 1962.



# SEDBURY

**Characteristic:** 2 F.R(vert) 10m 3M

**Position:** Lat: 51° 37'.80N  
Long: 2° 39'.03W

**OS Grid Ref:** ST 551 925

**Description:** Two vertically disposed fixed mains powered red lights on 10m Abacus mast



*Original light*



*New mast (1990)*



*Present light (2018)*

## History:

The light was established in 1962 and comprised two vertical fixed blue fluorescent tubes on a wooden pole (*above left*). A 10m Abacus mast with two vertically disposed fixed mains powered red lights was installed in 1988. Improved l.e.d. lighting and daymark panels to improve the visibility of the light were installed in 2000. This light provides a shoreline reference point for vessels bound up-river after rounding Lyde Rock and before reaching the Slimeroad leading lights.

## SLIMEROAD LEADING LIGHTS

**Characteristic:** F.Bu

<b>Position:</b>	Front	Back
	Lat: 51° 37'.24N	Lat: 51° 37'.19N
	Long: 2° 39'.07W	Long: 2° 39'.11W

<b>OS Grid Ref:</b>	ST 550 915	ST 550 915
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<b>Description:</b>	White hut carrying 6 vertical blue fluorescent tubes above broad white stripe painted on cliff face	Black lattice steel tower with white lantern house carrying 6 vertical blue l.e.d. strips above white daymark
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### History:

Two fixed white lights on wooden structures were established in 1915. The present steel lattice tower (*right*) was erected in 1941. The white, flashing, oil-burning lights were converted to battery power in June 1948, and the flashes synchronised in 1953. They were converted to mains operation in 1963 using yellow fluorescent tubes; blue fluorescent lighting was installed in 1981 and replaced by blue l.e.d. lighting on the rear light in 2020.



*Above: Slime Road front light, early 1900s*

*Rear light 2019*

# LYDE ROCK

**Characteristic:** QR (September 2007) (Previously Q.R.W.) 5m 5M  
**Sectors:** None (previously Red 057° - 328°, white 328° - 247°, red 247° - 156°)  
**Position:** Lat: 51° 36'.89N  
Long: 2° 38'.66W  
**OS Grid Ref:** ST 554 909  
**Description:** Lantern carried on 10m black/white lattice tower



1896



1941



1983



2007

## History:

The light was established in 1896 (*above left*) to help vessels steer clear of Hen & Chickens Rocks. It was initially lit by an oil lamp installed on an iron pillar. The next steel lattice tower was installed in November 1941 (*above centre*) following the demolition by collision of the old structure in October 1941. It was converted to battery power (giving a white flashing light with two red sectors at 12 fpm) in 1947, to gas in 1951, then to mains electricity in 1983, when the old lantern house and platform were removed (*above right*). Tide gauges were installed on the tower and rock below in December 1962 to read actual depth of water. To convert readings to height above MLWS it was necessary to add 20' to the reading on the upper gauge or 8' to the reading on the lower gauge. (The lower tide gauge on the rock disappeared prior to 1998.)

Although substantially rebuilt during September 1968, the tower structure continued to deteriorate, leading to a decision to replace the tower with a 10m steel lattice mast, which was erected in September 2007 (*pictured left*). A change in light characteristic and conversion to battery/solar power was also carried out at this time. White horizontal bands indicate depths above local datum of 8 -9m, 10 - 11m, 12 - 13m and 14 -15m. An orange mark is also used to highlight the 10-11m marking.

# CHAPEL ROCK

**Characteristic:** Fl. 2.6s (21.12.2007) (Previously Fl.WRG.2.6s) 6m 8M

**Position:** Lat: 51° 36'.43N  
Long: 2° 39'.21W

**OS Grid Ref:** ST 548 901

**Description:** 6.2 metre slimline steel lattice tower.

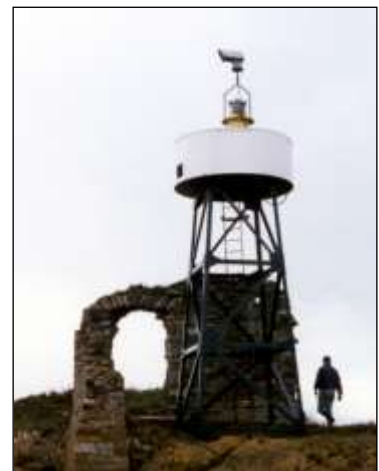
*Newly built 1907*



*Appearance in 1979*



*Appearance in 1998*



## History:

The light was established in 1886. The original timber structure was replaced in 1907 by a steel lattice tower (*above left*). Initially lit by oil lamp, it was converted to battery power (providing a white flashing light with green sectors at 12 fpm) in 1947, and to gas in 1951 (*above centre*), then to mains electricity in 1983. An additional sectored lamp using l.e.d.s was installed in 2001, and the sector colours transposed in 2002 to satisfy the revised requirements of Trinity House. In December 2007 the sectored light was replaced by an all-round white light.

In view of the deteriorating condition of the tower and access ladder, it was decided to replace the existing structure and a slimline steel latticework mast (pictured left) was erected in June 2010.

2010

## BULWARK LIGHT (discontinued)

<b>Characteristic:</b>	n/a
<b>Position:</b>	Lat: 51° 37'.20N Long: 2° 39'.50W
<b>OS Grid Ref:</b>	ST 544 914
<b>Description:</b>	Yellow locker with 3m red 'H' section post carrying remains of gas-operated lantern and sun valve (below right).



### History:

The Bulwark light was established in June 1966 and was used in association with the blue centre-span lights of the Wye Road Bridge. This provided a lead into the river Wye for vessels trading to Chepstow in connection with the activities of Medport Ltd. Maintenance of this aid ceased in September 1982 when Chepstow was designated a "daylight port only" (Notice to Mariners 4/82).

## WYE BRIDGE

The downstream face of the west pier carries a gauge board indicating height from water level to the underside of the bridge (*in feet*).



# REDCLIFFE LIGHTS

**Characteristic:** F.Bu

**Position:** *Front*

Lat: 51° 36'.19N  
Long: 2° 41'.36W

**OS Grid Ref:** ST 523 896

**Description:** *Front*

10m Abacus column with white daymark and 6 blue fluorescent tubes and 6 blue l.e.d. strips

*Back*

Lat: 51° 36'.38N  
Long: 2° 41'.29W

ST 524 899

*Back*

30m Abacus column carrying 12 blue fluorescent strips



## History:

Redcliffe front light was established in 1886. It was a fixed white light oil light on a wooden post which gave a lead through the Shoots channel when in transit with Charston light. This was replaced with a steel lattice tower erected in 1910. An automatic gas-powered white flashing (67 flashes per minute) light was installed in 1926, with a colour change to red in December 1927 then back to white in May 1928. It was converted to mains electricity in 1965 and blue colour was added in 1966. The back light was erected in 1982, and additional light units were fitted to the front light at this time.

Due to deterioration of the steel lattice tower, the front light was replaced by a new 10mtr hydraulically lowered Abacus steel column in February 2022 (see photo previous page).



*Front light dating from 1910, replaced in 2022*



# CHARSTON ROCK

<b>Characteristic:</b>	Fl W 3s 5m 8M
<b>Position:</b>	Lat: 51° 35'.35N Long: 2° 41'.67W
<b>OS Grid Ref:</b>	ST 519 881
<b>Description:</b>	White painted 7m stone tower with vertical black line



## History:

The light was established in 1886 on an existing (1869) stone tower owned by the Great Western Railway Company. The oil burning light was used in conjunction with the Redcliffe light, established at the same time, to provide a leading line through the Shoots. The light was converted to acetylene gas in 1926, when the character was changed from white (occulting) to white (flashing, 23 fpm). In December 1927 the flash rate was reduced to 12 fpm. Battery operation followed in 1966 using the redundant lens from Redcliffe. The lens arrangement provided for all round visibility with reinforcement of the beam on the leading line.

The lantern housing and lens were removed in 1980 and replaced with an all round light (with reinforcement on the leading line) powered by a combination of solar panels and batteries.

In October 2005, the batteries were installed inside the lantern pedestal

and a new, l.e.d. lantern was fitted.

The photograph (*right*) taken in the early 1900s shows the original shape of the lantern housing and tapered base of the stone tower erected by the railway company. The base has since been concreted over.



## NORTHWICK BUOY (discontinued)

Characteristic:	Fl.Y.5s
Position:	Lat: 51° 35'.92N Long: 2° 38'.49W
OS Grid Ref:	ST 556 892
Description:	Yellow buoy fitted with mooring shackle and two yellow strobe lights each giving a flash every five seconds.



### History:

A mooring was established at Northwick Oaze in September 1892 to enable neaped vessels bound for Sharpness to be lightened. The buoy was installed in December 1994 and moored to a reinforced concrete sinker of 650 tonnes (see *above*). The mooring was designed to be safe for the use of a 10,000 dwt vessel.

However, increasing concerns about the long-term durability of the mooring components and the safe maintenance of the mooring led to the removal of the buoy in December 2003. The concrete block and mooring chains remain on the river bed, marked as an obstruction on the navigational chart.

## SHOOTS BEACONS

<b>Characteristic:</b>	Lady Bench	Q.R	
	Old Man's Head	VQ(9)10s	
	Mixoms	Fl(3)R.10s	
	Lower Shoots	Q(9)15s	
<b>Position:</b>	Lady Bench	51° 34'.85N	2° 42'.19W
	Old Man's Head	51° 34'.74N	2° 41'.69W
	Mixoms	51° 34'.04N	2° 42'.59W
	Lower Shoots	51° 33'.85N	2° 42'.05W

**Description:** Each beacon is constructed of reinforced concrete formed within precast concrete rings and is approximately 16m high overall. The beacons carry lights and shapes appropriate to their location and although originally supplied by a combination of mains, solar and wind power the lighting now relies solely upon solar power (July 2019).



*Mixoms*



*Lower Shoots*

## SHOOTS BEACONS (Cont.)



A mark and light which, when aligned with the Lady Bench beacon, define part of the track between the Severn Bridge and the Second Severn Crossing are provided on the Second Severn Crossing.

### History:

Unlit beacons (No. 1 and No. 2) were established in 1891 to mark the eastern edge of the Shoots Channel. The wooden poles were 16m in length and are shown below, pictured in 1985.



No. 1 Beacon (South)



No. 2 Beacon (North)

These beacons were removed in 1993 to be replaced by the four concrete beacons which define the deep water channel beneath the new bridge. These four beacons were last repainted in 2013.

## ROYAL PORTBURY LEADING LIGHTS (discontinued)

<b>Characteristic:</b>	Q.Bu	F.Bu
<b>Position:</b>	<i>Front</i>	<i>Back</i>
	Lat: 51° 30'.00N Long: 2° 43'.64W	Lat: 51° 29'.48N Long: 2° 43'.83W
<b>OS Grid Ref:</b>		
<b>Description:</b>	<b><i>Front</i></b>	<b><i>Back</i></b>
	A blue strobe light, screened to avoid interference to other lights, carried on a lighting column on Portbury dock north pier.	A 30m steel Abacus tower carrying 12 blue fluorescent tubes



### History:

The lights were installed 1992 to provide a lead through Shoots Channel to outward bound vessels during the construction phase of the Second Severn Crossing. They were discontinued in 2002.

The Abacus tower was re-used in 2010 and installed as the replacement rear light tower at Sheperdine.

## GLOUCESTER WAGON COMPANY LIMITED

A number of lighting posts were produced by the Gloucester Wagon Company for the Gloucester Pilotage Board during 1886. The images below show a 20' "Signal Post" fitted with a chain and crank to raise/lower the oil lamp, together with a small store at the base. These posts were installed at Fishinghouse, Inward Rocks and Redcliff as single lights in 1886.

The Gloucester Wagon Company was renamed the Gloucester Railway Carriage and Wagon Company in 1887, and produced similar designs that would be used in later years at Panthurst and other locations.



*Image source: Gloucestershire Archive, photograph album reference number D4791/16/2a*

## Lights Installed & Maintained by Others

Location	Type	Colour / Character	Range	No. (Total)
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### **Prince of Wales Bridge:**

Main Span - centre	Fluorescent	Fixed Blue	3nm	2
Pylon M1	Pharos FA.249	Red Fixed	4 nm	4
Pylon M1	Pharos DA.8	Fog signal (I) 30s	2 nm	1
Pylon M1	Pharos FD.310	Detector		1
Gwent viaduct	Sabik LS240/LED	Red Occ (4+1)	5 nm	1
Pylon M2	Pharos FA.249	Green Fixed	4 nm	4

### **Severn Road Crossing:**

Beachley Pier		Quick Red		6
Beachley Pier	Fog Signal	Horn (3) 30s		1
Main Span – centre		Qk.Fl.Blue		1
Aust Pier		Quick Green		6

### **Wye Road Bridge:**

Main Span – centre		Fixed Blue (hor.)		4
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### **Aust Transmission Tower:**

Lower seaward corners		Qk.Fl.Green (vert.)		4 (discontinued 2018)
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### **Lydney Dock:**

North Pier		2 Fixed Red (vert.)		2
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### **Berkeley Power Station:**

Outfall Mark		Green cone, stbd mark		1
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### **Sharpness Dock:**

South Pier		2 Fixed Green (vert.)		2
North Pier		2 Fixed Green (vert.)		2
North Pier	Fog Signal	Siren (I) 5s		1
North Pier	Fog Signal	Bell		1