

# TIDE TABLES AND PORT INFORMATION 2021



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PORT OF  
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AUTHORITY

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# PORT OF LONDON AUTHORITY

## Handbook of Tide Tables and Port Information

**2021**

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**[www.pla.co.uk](http://www.pla.co.uk)**

Front cover: HMM Algeciras, one of the biggest container ships in the world, prepares to berth at DP World London Gateway in June 2020, overseen by a PLA cutter.

## **About the Port of London Authority**

The Port of London Authority has been managing a range of duties on the tidal Thames for more than 100 years. Our principal responsibility is the safety of navigation along 95 miles of river from Teddington Lock to the North Sea.

We also promote the use of the tidal Thames, work to ensure security of port operations, and are responsible for protecting the marine environment.

We have a team of more than 300 skilled staff within the organisation and our Hydrographic department, which prepares these tide tables annually, is renowned as a centre of excellence in the UK ports industry.

We operate two Vessel Traffic Services (VTS) Centres at Gravesend and adjacent to the Thames Barrier. We also crew survey vessels, harbour patrol launches and salvage craft.

### Our Priorities

The River Thames is by some margin the UK's busiest waterway for passengers and freight. It is one of the main arteries that feeds our capital city and the south east, supporting trade, travel, leisure and sporting activities.

As custodians of the tidal Thames, everything we do is designed to ensure that the river is, and remains, at its best. Our mission is to maintain a safe river to support London and the south east in a wide range of activities, at work, rest and play.

We work closely with many valued partners and stakeholders to ensure the river plays the maximum possible part in generating jobs and wealth for the country. We pay the same high level of attention to helping maintain the Thames environment and the wildlife it supports, for the benefit and enjoyment of many generations to come.

### Funding

We are funded through the fees paid by vessels using the Port, charges for the services we provide such as pilotage, and rents for anything in, under or over the river. We do not get any of our funding from the Government or local authorities. We aim to realise a small annual surplus to enable continued reinvestment in our operations.

# MAKING THE MOST OF THE THAMES



Visiting the tidal Thames or brushing-up

Authority's dedicated website for recreational boaters first. Whether you're a paddler or a cruiser, all the information you'll need is at:

**PORT OF  
LONDON**  
AUTHORITY

[www.boatingonthethames.co.uk](http://www.boatingonthethames.co.uk)

[www.pla.co.uk](http://www.pla.co.uk)

**ALL TIDAL AND ASTRONOMICAL DATA ARE IN  
GREENWICH MEAN TIME – ONE HOUR MUST BE ADDED AT  
ALL TIMES WHEN BRITISH SUMMER TIME IS IN FORCE.**

BST will be kept in Great Britain from 0100 28 March 2021 to 0100 31 October 2021.

The DATUM or zero of the predictions for tidal information in this publication is the same as that used on PLA and Admiralty Charts. The relationship of this Chart Datum and Ordnance Datum (Newlyn) is given on page 33.

In addition to this publication, predictions are also available on the PLA Website ([pla.co.uk](http://pla.co.uk)) in a user customisable format.

The tidal predictions (including sun and moon data) are © Crown Copyright and/or subject to database rights. Reproduced by permission of the Controller of Her Majesty's Stationery Office and the UK Hydrographic Office ([www.gov.uk/hydro](http://www.gov.uk/hydro)).

The information in this publication is correct at the time of going to press (November 2020). The PLA does not accept responsibility in law for the information in these tables.

Further information can be obtained from  
[www.pla.co.uk/hydrohomepage](http://www.pla.co.uk/hydrohomepage)

**NOTE:**

**Low Water levels in the upper reaches of the tidal Thames are greatly affected by the land water flow at Teddington Weir. They frequently fall below chart datum when this flow is significantly reduced, typically during the summer months.**

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Harbour Master  
Hydrographic Services  
Navigation Systems  
Civil Engineering  
Planning & Environment  
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Kent DA12 2PL  
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Fax: 01474 562403

Marine Services  
Marine Engineering  
Marine Stores  
Vessel Survey

### **London VTS (Crayfordness to the Eastern Limits of the VTS Area)**

Royal Pier Road  
Gravesend  
Kent DA12 2BG  
Tel: 01474 560311  
Fax: 01474 352996  
VHF: See Port Communications page.

Vessel Traffic Services

### **London VTS (Crayfordness to Teddington)**

34 Bowater Road  
SE18 5TF  
Tel: 0203 2607711  
VHF: See Port Communications page.

Vessel Traffic Services London

**Communication with VTS via VHF and telephone, as well as AIS and RADAR data, is recorded to support the Harbour Master in carrying out statutory functions and for the purpose of promoting maritime safety, crime prevention and public safety.**

## DESCRIPTION OF PORT LIMITS

Port Limits are described in Schedule 1 of the Port of London Act 1968 (as amended) but in general terms include the tidal Thames from Teddington, encompassing both banks up to mean high water, eastward to Foulness Point in the north and Warden Point in the south. In the estuary the limits extend from Foulness point to Gunfleet Old Lighthouse, thence to a position 3 miles north of Margate, and back to Warden Point. The port limits exclude the River Medway and certain other creeks and rivers.

### PILOTAGE

#### 1. **London Pilotage District Limits**

These are fully described in current Pilotage Directions and can be described as the same as the Port Limits, but from Putney Bridge seaward and extend beyond port limits to the north east to the Long Sand Head.

#### 2. **Pilotage Directions**

Information regarding the latest Pilotage Directions and regulations relating to the ordering of pilots and the issuing of Pilotage Exemption Certificates are contained in current Pilotage Directions, copies of which may be obtained from the Pilotage Service Administration Office, Navigation Publication Enquiries or PLA website [www.pla.co.uk](http://www.pla.co.uk) (see page 7).

#### 3. **VTS Area**

The VTS Area for London VTS is from Teddington Lock in the West, to the boundary of the Sunk Precautionary Area in the North, thence to the London Arrival/Departure Arc in the East. London VTS has a comprehensive Traffic Image of the entire VTS Area based on radar from the seaward limits of the VTS Area to Greenwich and AIS coverage throughout the area.

## MARINE SAFETY MANAGEMENT SYSTEM

In meeting its responsibilities under the Port Marine Safety Code, the PLA maintains the port's Marine Safety Management System (SMS) based on a current and dynamic Formal Risk Assessment of marine operations within the port.

Information about the Marine SMS can be found on the PLA's website at **[www.pla.co.uk](http://www.pla.co.uk)**. Questions and requests for additional information can be made through the Navigational Safety Systems Co-ordinator at [safetymanagement@pla.co.uk](mailto:safetymanagement@pla.co.uk)

The PLA's regulatory framework, in support of the Marine SMS, currently consists of the following publications:

- Port of London Act 1968 (*as amended*)
- General Directions for Navigation in the Port of London
- Port of London Pilotage Directions
- Port of London Thames Byelaws
- Port of London Vessel Licensing Byelaws
- Dangerous Substances in Bulk Byelaws
- Permanent Notices to Mariners
- Notices to Mariners (*as promulgated*)
- Notices to Agents, Berth and Ship Operators (*as promulgated*)
- Safety Bulletins (*as promulgated*)
- Code of Practice for Ship Towing Operations on the Thames
- Code of Practice for the Safe Mooring of Vessels on the Thames
- Code of Practice for Craft Towing on the Thames
- Code of Practice for Passenger Vessel Operations on the Thames
- Code of Practice for the Management and Operation of Commercial Vessels on the Thames
- Tidal Thames Recreational Users Guide
- The Tideway Code
- Guidance to Berth Operators on the Thames
- Mariners Guide to Bridges on the Tidal Thames
- Houseboat Mooring Guidance

Some of the above documents are published, but all are free to download from the PLA's website – with the exception of the Bridges Guide.

## PORT COMMUNICATIONS

London VTS delivers routine information broadcasts on the appropriate VHF Channel as part of its Information Service. The timing of broadcasts are as follows:

Estuary Sector (Outer limits of VTS Area to Sea Reach 4 Buoy) Ch69 H+15 & H+45

River Sector (Sea Reach 4 Buoy to Crayfordness) Ch68 H+00 & H+30

Barrier Sector (Crayfordness to Teddington) Ch14 H+15 & H+45

### **"Sunk VTS" (Sunk Inner Precautionary Area & TSS) Run by the MCA from CNIS Dover**

V.H.F. Channels 14\*, 9

### **"London VTS" Estuary Sector (Outer Reporting Points to S.R. No 4 Buoy) Run by PLA from Gravesend**

V.H.F. Channels 69\*, 18

Tidal Information Walton, Margate, Shivering Sand & Southend

Telephone: (01474) 560311

### **"London VTS" River Sector (S.R. No 4 Buoy to Crayfordness) Run by PLA from Gravesend**

V.H.F. Channels 68\*, 20

Tidal Information Shivering Sand, Southend, Coryton and Tilbury

Telephone: (01474) 560311

### **"London VTS" Barrier Sector (Crayfordness to Teddington incl. Thames Barrier Control Zone\*\*) Run by PLA from TBNC, Woolwich.**

V.H.F. Channels 14\*, 22

Tidal Information Silvertown, Charlton & Tower Pier

Telephone: 0203 260 7711

### **"Medway VTS" (River Medway and approaches) Run by Medway Ports from Sheerness**

V.H.F. Channels 73, 74\*, 16 & 22

Tidal Information Sheerness (01795) 596596

Telephone: Sheerness (01795) 663025

### **"Sunk Pilots" (Boarding/Landing at Sunk Light Vessel)**

V.H.F. Channel 9

### **"North East Spit Pilots" (Boarding/Landing at N.E. Spit buoy)**

V.H.F. Channel 9

### **"Sheerness Pilots" (Boarding/Landing at the Warps and Oaze Deep)**

V.H.F. Channel 69, 74

### **"London Pilots" (Boarding/Landing at Gravesend)**

V.H.F. Channel 9

### **"Thames Patrol" (PLA Harbour Services Patrol Launches)**

V.H.F. Channels 69, 14, 68 & 16

### **Ship/Tug communications**

V.H.F. Channels normally available are:

Thames: 6, 8 & 10

Medway 6 & 9

### **"London Coastguard" (Maritime Rescue Co-ordination Centre) Run by the MCA from TBNC, Woolwich**

VHF Channels: 16 & 67

### **\* Station's primary working frequency**

**\*\*Thames Barrier Control Zone** — The river between Margaretness and Blackwall Point is subject to special navigational requirements concerning passage through the Thames Barrier. Mariners must observe traffic signals displayed on the barrier piers which indicate those spans open to navigation. Instructions will also be broadcast by TBNC on Channel 14.

For full details of navigational requirements for the Thames Barrier Control Zone, refer to the current General Direction for Navigation in the Port of London and Pilotage Directions. Details of planned closures are published by PLA Notices to Mariners twice each year.

## **COMMUNICATION PROCEDURES, REPORTING REQUIREMENTS & TRAFFIC MANAGEMENT**

*Full details of the requirements for reporting vessel movements in the Thames and for requesting pilots are to be found in the current General Directions for Navigation in the Port of London or Pilotage directions as appropriate.*

### **INWARDS**

#### **All Ships:**

- a) 24 hours before arrival; pass ETA and draught to Agents/Owners for onward transmission to the Port Control Centre (PCC) at Gravesend. Where ships from near ports cannot give the above notice an ETA should be passed within one hour of departure from the last port of call. Notifications should be sent using the port's on-line booking service (PISCES).
- b) In addition, Agents /Owners of vessels bound for the Port of Tilbury should contact the Marine Co-ordinator, telephone (01375) 852456.
- c) On passing the first Waypoint; pass all information not previously passed through agent and pertinent to the vessels arrival in the Port by VHF to PCC. Pass compliancy report in accordance with GD 13 and report security level.
- d) On passing each Waypoint; report by VHF to PCC for confirmation of onward clearance.
- e) On passing Sunk Head Tower Buoy or if using the Fisherman's Gat, on passing the London Arrival/Departure arc or the North East Spit Buoy INWARD - declare an ETA for Knock John No 1 buoy. They are to report again when passing Black Deep No 5 Buoy, or if using the Fisherman's Gat the Outer Fisherman's Buoy giving an updated ETA for Knock John No 1 Buoy.

#### **Ships requiring Pilots:**

- a) A request for a pilot, including ETA at the pilot station should be passed to the PCC (Shipcon), with the 24 hours notice of arrival.
- b) A **CONFIRMED** order for a pilot must be given at least 8 hours before arrival at the Sunk Pilot Station or 6 hours before arrival at the NE Spit or Warp pilot station.

## **OUTWARDS or SHIFTING BERTH**

### **All Ships:**

- a) 24 hours before proposed movement in the river; pass ETD and draught to Agents/Owners for onward transmission to the PCC. Notifications should be sent using the port's on-line booking service (PISCES).
- b) Immediately prior to commencement of movement in the river; pass all information pertinent to the vessels movement in the river by VHF to PCC and request permission to proceed.
- c) On passing each Waypoint; report by VHF to PCC for confirmation of onward clearance.
- d) On passing Sea Reach No 4 Buoy or, if departing the Medway ports, on passing the wreck of the Richard Montgomery, OUTWARD- declare the channels beyond Sea Reach No 1 buoy which they intend to use for navigation and, if planning to use the Princes Channel, make a specific declaration if planning to use the Princes Channel DW route.
- e) On passing Sea Reach No 1 buoy or the Medway buoy, and planning to use the Knock John Channel OUTWARD- report ETA for Knock John No 4 buoy.

### **Knock John Channel**

In the channel between Knock John No. 1 Buoy and the Knock John No. 4 Buoy the following traffic management procedures apply as per GD 14

- a) Passing and overtaking within the buoyed channel may be permitted subject to the agreement of the Masters of the vessels involved except when an LNG or a ULCS vessel is involved. (See GD 25 and 38), however
- b) One-way traffic working will normally be agreed between vessels or imposed by London VTS for traffic restricted by size or draught to navigating within the buoyed channel, and
- c) Vessels navigating with the tide should normally have priority and
- d) Smaller vessel not constrained to the buoyed channel should navigate outside the buoy line without restrictions, but should ensure that other traffic and London VTS are informed.

## **Princes Channel**

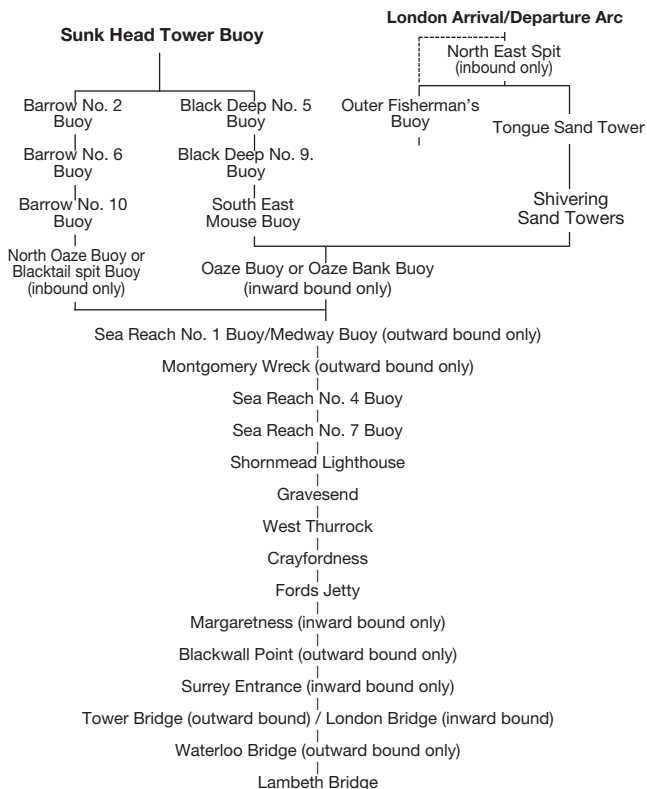
Reporting Vessels navigating in the Princes Channel are subject to the following traffic management procedures as per GD 15:

- a) the deep water route is considered to be a two-way channel; passing and overtaking is normally permitted
- b) in extreme conditions of weather, tide or traffic density, one-way traffic working may be agreed between vessels or imposed by London VTS for traffic restricted by size or draught to navigating within the deep water route
- c) when one-way traffic working has been imposed, vessels navigating with the tide should normally have priority and
- d) LNG vessels are not permitted to navigate the Princes Channel.

## **Ships requiring Pilots:**

- a) A request for a pilot should be passed to the PCC with the 24 hours notice of departure is given.
- b) A **CONFIRMED** order for a pilot must be given to PCC at least 6 hours before departure or movement (unless the services of a River Pilot only is required as far as Gravesend or Sea Reach 1 when 4 hours notice is required.

## REPORTING POINTS (WAYPOINTS)



**For vessels using the inshore passages in the estuary:**

**North**

Maplin Approach Buoy

Maplin Buoy

**South**

South East Margate Buoy

Spaniard Buoy



# SEARCH AND RESCUE RESPONSIBILITIES AND ARRANGEMENTS FOR THE TIDAL THAMES

## Introduction

This notice serves to clarify and confirm for mariners, the Search and Rescue (SAR) co-ordination arrangements currently in place in the Port of London.

## Dover Coastguard

Dover Coastguard has responsibility for the initiation and co-ordination of all SAR operations in the Thames Estuary to seaward of Holehaven Creek (Canvey Island).

## London Coastguard

London Coastguard has responsibility for the initiation and co-ordination of all SAR operations on the River Thames up-river of Canvey Island.

## RNLI Stations

RNLI lifeboat stations are located at Teddington, Chiswick, Waterloo Pier (Tower), Gravesend, Southend-on-Sea, Sheerness, Whistable, Margate, Ramsgate, Burnham, Clacton, Walton-on-the-Naze and Harwich.

## VHF Communications and Alerts

HM Coastguard maintains a continuous listening watch for distress or urgency calls on VHF Channel 16.

The Port of London Authority does not routinely maintain a listening watch on VHF Channel 16 but has the ability to set watch on VHF Ch 16 if required.

Any SAR alert on the tidal Thames should be raised via one of the following methods:

- “MAYDAY” or “PAN-PAN” or other call on Channel 16 or the appropriate London VTS port working frequency.
- Dialling 999 and asking for the Coastguard.
- Distress alert on VHF DSC

Should a distress or urgency call be transmitted on a port frequency (Channels 14, 68 or 69) rather than VHF Channel 16, this will be acknowledged by London VTS who will immediately notify HM Coastguard. Mariners may assume that, once a distress call has been acknowledged by London VTS, that the call will be passed to the appropriate Coastguard centre.

If the initial call is made on one of the port working frequencies, there is no requirement to repeat the call on VHF Channel 16. The casualty should maintain watch on the frequency on which the initial call is made unless directed to change channels by London VTS or HM Coastguard.

If calling on VHF, mariners should be mindful of the greater likelihood of immediate local assistance being available through the utilisation of a port working frequency particularly up-river of Crayfordness (Channel 14). For similar reasons, HM Coastguard may also decide that the incident should continue to be co-ordinated on the port working frequency, in which case other traffic not allocated to the incident should minimise transmissions or may be directed to another frequency.

London VTS will continue to co-ordinate marine emergencies and major incidents other than SAR incidents and to manage vessel traffic not involved in, or allocated to, a SAR incident.

### **TABLE OF DISTANCES WITHIN THE PORT OF LONDON**

#### **Landward Limit to Seaward Limit**

Sea miles		Land Miles
81.9	via Barrow Deep Channel	94.3
80.9	via Knock John Channel and Black Deep	93.2

## TABLE OF DISTANCES WITHIN THE PORT OF LONDON

### Above London Bridge

Sea miles		Land Miles
16.08	PLA Landward Limit .....	18.52
15.14	Eel Pie Island (Lower End) .....	17.43
15.04	Ham Landing Stage .....	17.32
14.55	Petersham Drawdock .....	16.75
13.97	Richmond Bridge .....	16.09
13.67	Richmond Railway Bridge .....	15.74
13.64	Twickenham Bridge .....	15.71
13.49	Richmond Lock & Footbridge (Recording Tide Gauge) .....	15.53
13.00	Isleworth Ait Sewage Outfalls .....	14.97
12.91	Church Ferry, Isleworth .....	14.87
11.88	River Brent and Grand Union Canal .....	13.68
11.33	Kew Bridge .....	13.05
11.30	Kew Pier .....	13.01
10.98	Kew Railway Bridge .....	12.64
10.22	Chiswick Bridge .....	11.77
10.16	University Stone, Mortlake .....	11.70
9.55	Barnes Railway Bridge .....	11.00
8.15	Hammersmith Pier .....	9.38
7.97	Hammersmith Bridge .....	9.18
7.73	Harrods Quay .....	8.90
6.92	Beverley Brook .....	7.97
6.54	Putney Pier .....	7.53
6.52	University Stone, Putney .....	7.51
6.45	Putney Bridge .....	7.43
6.31	Fulham Railway Bridge .....	7.27
5.74	Wandsworth Creek .....	6.61
5.46	Wandsworth Bridge .....	6.29
4.83	Battersea Railway Bridge .....	5.56
4.57	Chelsea Creek & Lots Rd. Generating Station .....	5.26
4.27	Battersea Road Bridge .....	4.92
4.04	Albert Bridge .....	4.65
4.02	Cadogan Pier .....	4.63
3.40	Chelsea Bridge (Recording Tide Gauge) .....	3.92
3.31	Victoria Railway Bridge .....	3.81
3.18	Battersea Generating Station .....	3.66
2.46	Vauxhall Bridge .....	2.83
2.02	Lambeth Bridge .....	2.33
1.64	Westminster Bridge .....	1.89
1.60	Westminster Pier .....	1.84
1.32	Charing Cross Bridge .....	1.52
1.12	Waterloo Bridge .....	1.29
0.63	Blackfriars Road Bridge .....	0.73
0.41	Millennium Footbridge .....	0.48
0.24	Southwark Bridge .....	0.28
0.16	Cannon Street Railway Bridge .....	0.18
0.00	London Bridge .....	0.00

## TABLE OF DISTANCES WITHIN THE PORT OF LONDON

### From London Bridge and Gravesend

Sea Miles From London Bridge		Sea Miles from Gravesend
<b>Upper Pool</b>		
0.00	London Bridge .....	23.13
0.33	Tower Pier (Recording Tide Gauge).....	22.80
0.48	Tower Bridge .....	22.65
0.73	St. Saviour's Dock .....	22.40
<b>Lower Pool</b>		
1.05	Cherry Garden Pier .....	22.08
1.26	Wapping Pier .....	21.87
1.34	Thames Tunnel .....	21.79
1.62	Rotherhithe Tunnel .....	21.51
<b>Limehouse Reach</b>		
2.08	Limehouse Basin Entrance .....	21.05
2.69	West India Pier.....	20.44
3.02	Greenland Dock Entrance .....	20.11
3.50	Convoys Jetty.....	19.63
<b>Greenwich Reach</b>		
3.87	Deptford Creek Entrance.....	19.26
4.17	Greenwich Pier .....	18.96
4.27	Greenwich Royal Naval College .....	18.86
<b>Blackwall Reach</b>		
4.99	Victoria Deep Water Terminal (U/end) .....	18.14
5.39	India & Millwall Dock Entrance .....	17.74
5.55	Blackwall Tunnel (Western).....	17.58
<b>Bugsby's Reach</b>		
6.08	Bow Creek (River Lee) Entrance.....	17.05
6.70	Hookness Point .....	16.43
<b>Woolwich Reach</b>		
7.01	Cory's Pier (Recording Tide Gauge).....	16.12
7.40	Thames Flood Barrier .....	15.73
7.52	Thames Barrier Navigation Centre .....	15.61
7.76	Thames Refinery Inner/ Outer (Recording Tide Gauge)....	15.37
8.33	Woolwich Ferry & Foot Tunnel.....	14.80
<b>Gallions Reach</b>		
8.89	Gallions or Bulls Point .....	14.24
9.10	King George V Dock Entrance.....	14.03
9.23	Gallions Marina Entrance.....	13.90

## TABLE OF DISTANCES WITHIN THE PORT OF LONDON

### From London Bridge and Gravesend

Sea Miles From London Bridge		Sea Miles from Gravesend
<b>Barking Reach</b>		
9.87	Margaretness Lighthouse.....	13.26
10.12	Barking Creek (River Roding) Entrance.....	13.01
10.49	Barking Petroleum Limit for Seagoing Tankers.....	12.64
10.58	Barking Point.....	12.55
<b>Halfway Reach</b>		
11.35	Crossness Point Lighthouse.....	11.78
11.90	Dagenham Dock No. 4 Jetty (U/end).....	11.23
12.15	Ford's Jetty (U/end) (Ferry).....	10.98
<b>Erith Reach</b>		
13.02	Jenningtree Point.....	10.11
13.55	Rainham Pumping Unit.....	9.58
14.41	Erith Causeway.....	8.72
<b>Erith Rands</b>		
14.45	Coldharbour Point Lighthouse.....	8.68
14.47	Erith Pier (Recording Tide Gauge).....	8.66
15.49	Crayfordness Lighthouse.....	7.64
<b>Long Reach</b>		
15.89	Dartford Creek Entrance.....	7.24
16.29	Harrison's Jetty.....	6.84
17.22	Littlebrook Generating Station (U/end).....	5.91
17.68	Queen Elizabeth II Bridge.....	5.45
17.98	Vopak Terminal (U/end).....	5.15
<b>St Clements Reach</b>		
18.75	Stoneness Lighthouse.....	4.38
19.41	Overhead Electric Transmission Cables.....	3.72
<b>Northfleet Hope</b>		
20.11	Broadness Lighthouse.....	3.02
20.85	Tilbury Grain Terminal (U/end).....	2.28
21.44	Tilbury Container (L/end) (Recording Tide Gauge).....	1.69
21.51	Tilbury Dock Entrance.....	1.62
21.70	Northfleet Traffic Warning Light.....	1.43
<b>Gravesend Reach</b>		
22.00	Tilbury Cargo Jetty (U/end).....	1.13
22.68	London International Cruise Terminal.....	0.45
23.13	Port Control Centre, Gravesend.....	0.00
23.15	Royal Terrace Pier.....	0.02
23.90	Denton Wharf (Recording Tide Gauge).....	0.77
24.45	Diver Buoy.....	1.32
25.12	Tilbury Buoy.....	1.99

## TABLE OF DISTANCES WITHIN THE PORT OF LONDON

### From London Bridge and Gravesend

Sea Miles		Sea Miles
From London Bridge		from Gravesend

#### Lower Hope

25.55	Coalhouse Point .....	2.42
25.78	Ovens Buoy .....	2.65
26.49	Mucking No. 7 Buoy .....	3.36
27.23	Mucking No. 5 Buoy .....	4.10

#### Sea Reach

27.67	Lower Hope Point.....	4.54
27.88	Mucking No. 3 Buoy .....	4.75
27.98	Lower Hope Buoy .....	4.85
28.50	Mucking No. 1 Buoy .....	5.37
28.67	West Blyth Buoy .....	5.54
29.20	London Gateway (L/end) (Recording Tide Gauge) .....	6.07
30.50	Coryton No. 5 Jetty .....	7.37
30.79	Mid Blyth Buoy .....	7.66
31.25	Holehaven Creek Entrance.....	8.12
31.85	Calor Gas Jetty Canvey (Tanker Warning Light).....	8.72
33.69	Chapman Buoy.....	10.56
33.72	Sea Reach No. 7 Buoy (North).....	10.54
34.29	East Blyth Buoy .....	11.16
35.55	Sea Reach No. 6 Buoy (North).....	12.42
36.08	Crowstone — London Stone Line .....	12.95
36.55	Sea Reach No. 5 Buoy (North).....	13.42
37.57	Southend Pier Head (Recording Tide Gauge) .....	14.44
38.29	Sea Reach No. 4 Buoy (North).....	15.16
40.00	Sea Reach No. 3 Buoy (North).....	16.87
41.85	Sea Reach No. 2 Buoy (North).....	18.72
43.67	Sea Reach No. 1 Buoy (North)	
	— PLA former seaward limit.....	20.54

#### Seaward Limit

	When proceeding via Knock John Channel to a position	
64.82	near Black Deep No. 6 Buoy .....	41.69
	When proceeding via Barrow Deep Channel to a	
65.82	position near the Barrow No. 2 Buoy .....	42.69

*Note:*— The above table gives the distances when the various marks are abeam of the normal Channel course.

**OUTER ESTUARY**  
**TABLE OF DISTANCES IN SEA MILES**  
**FISHERMAN'S GAT ROUTE**

No. 1 Sea Reach Buoy

2.8	Oaze Buoy				
9.6	6.8	Knock John No. 7 Buoy			
18.4	15.6	8.8	Inner Fisherman Buoy		
22.3	19.5	12.7	3.9	Outer Fisherman Buoy	
31.9	29.1	22.3	13.5	9.6	NE Spit Pilot Station

**PRINCES CHANNEL ROUTE**

No. 1 Sea Reach Buoy

2.8	Oaze Buoy						
7.7	4.9	Shivering Sand Tower					
8.8	6.0	1.1	Princes No. 6 Buoy				
13.0	10.2	5.3	4.2	Princes No. 2 Buoy			
16.4	13.6	8.7	7.6	3.4	Princes Outer Buoy		
21.6	18.8	13.9	12.8	8.6	5.2	E. Margate Buoy	
24.7	21.9	17.0	15.9	11.7	8.3	3.1	NE Spit Pilot Station

## OUTER ESTUARY

### TABLE OF DISTANCES IN SEA MILES

#### BARROW DEEP AND WARP ROUTE

No. 1 Sea Reach Buoy

5.6	SW Barrow Buoy					
10.5	4.9	Barrow No. 10 Buoy				
15.9	10.3	5.4	Barrow No. 6 Buoy			
21.8	16.2	11.3	5.9	Barrow No. 3 Buoy		
29.5	23.9	19.0	13.6	7.7	Sunk Head Tower Buoy	
34.7	29.1	24.2	18.8	12.9	5.2	Sunk Inner

#### KNOCK JOHN CHANNEL & BLACK DEEP ROUTE

No. 1 Sea Reach Buoy

9.6	Knock John No. 7 Buoy					
12.8	3.2	Knock John No. 1 Buoy				
18.5	8.9	5.7	Black Deep No. 7 Buoy			
25.6	16	12.8	7.1	Black Deep No. 3 Buoy		
31	21.4	18.2	12.5	5.4	Sunk Head Tower Buoy	
36.4	26.8	23.6	17.9	10.8	5.4	Sunk Inner



**RIVER THAMES – DESIGNATED ANCHORAGES  
LONDON BRIDGE TO THAMESHAVEN**

Name	Area	Restriction
Regents Canal	North Side Lower Pool	2 hours
West India Dock (1)	North Side Blackwall Reach	2 hours
Barking Creek Entrance	North Side Barking Reach	2 hours
Thamesmead	South Side Barking Reach	4 hours
Halfway	South Side Halfway Reach	2 hours
Erith	South Side Erith Rands	2 hours
Long Reach (2)	South Side Long Reach	12 hours
St. Clements	South Side St. Clements Reach	12 hours
Gravesend Lower (3)	South Side Lower Gravesend Reach	12 hours
Higham Bight (3)	South Side Lower Gravesend Reach	Max Length 100m
		Unrestricted Max Length 100m

**Notes**

- (1) West India Dock anchorages lie over the Jubilee Line tube tunnels. Vessels using these anchorages are exempt from the general requirement not to anchor within 60 metres of a tunnel.
  
- (2) The Anchorage in Long Reach will normally be reserved for vessels of a size greater than 100m (328 feet) in length.
  
- (3) Demarcation line between Gravesend Lower and Higham Bight Anchorages is an imaginary line extending 000° (T) from the upper outer corner of Clubbs Jetty at Denton, as shown on Admiralty Chart 1186.

**RIVER THAMES – DESIGNATED ANCHORAGES  
YANTLET TO THE BARROW**

Name	Area	Restriction
Yantlet Small Ship	Between East Blyth buoy and 1000 metres East of West Nore Sand buoy – South Side Yanlet Channel	Unrestricted
Leigh Small Ship	Between West Leigh Middle buoy and Southend Pier – North Side Yantlet Channel	Unrestricted
Southend Small Ship	Off Southend Pier, North Side Yantlet Channel	Unrestricted
Southend Deep Water	Between West & South Shoebury buoys – North Side Yantlet Channel	Unrestricted
Warp	Off Blacktail Split	Large Tankers staging only
Mouse	ENE of North Oaze buoy	Unrestricted
Great Nore	Area to the North of the Medway Channel between Nos 1 and 7 buoys	} Administered by Medway Ports
Little Nore	Between Grain Hard buoy and No. 11 Medway buoy – North Side Medway Channel	
Sheerness Small Ship	Between West Cant buoy and No. 8 Medway buoy – South Side Medway Channel	
Knob Special K3	Inner end of Knob Channel	Medway LNG
Shivering Sand	N. E. of Shivering Sand Towers	Unrestricted
Barrow Deep	W. of Barrow No. 3 Buoy	Unrestricted (See note 3)
Black Deep	Black Deep between Black Deep 5 and Black Deep 7 buoys	Unrestricted (See note 3) Large Vessels staging only

## RIVER THAMES – DESIGNATED ANCHORAGE BERTHS

### SEA REACH - SOUTHEND

Name	Latitude N. WGS 84	Longitude E.	Radius (Cables)	Depth (m) at C.D.	Bearing (T)	Distance (Miles)
From Phoenix Unit						
<b>A</b>	51° 30.367	0° 44.471	1.67	8.2	264	0.94
<b>B</b>	51° 30.142	0° 45.193	1.67	11.5	236	0.58
<b>C</b>	51° 30.007	0° 45.703	1.67	12.5	199.5	0.49
<b>D</b>	51° 29.968	0° 46.236	1.67	11.5	161	0.53
<b>E</b>	51° 29.950	0° 46.789	1.67	11.6	135	0.73
<b>F</b>	51° 29.928	0° 47.329	1.67	12.1	122.5	1.01
From Shoebury Beacon						
<b>Z1</b>	51° 29.742	0° 47.715	1.67	14.2	240	1.11
<b>Z2</b>	51° 29.731	0° 48.349	2.00	13.2	225	0.80
<b>Z3</b>	51° 29.757	0° 49.207	2.50	12.2	183	0.54
<b>Z4</b>	51° 29.841	0° 49.998	1.67	11.4	133.5	0.66
<b>Z5</b>	51° 29.908	0° 50.591	1.67	11.3	115	0.92
<b>Z6</b>	51° 30.024	0° 51.143	1.67	11.0	103	1.21
<b>Z7</b>	51° 30.084	0° 51.722	1.67	11.1	098	1.56
<b>Z8</b>	51° 30.180	0° 52.238	1.67	11.1	093.5	1.87
From Blacktail Bn W						
<b>Z9</b>	51° 30.240	0° 52.864	1.67	10.9	230	1.90
<b>Z10</b>	51° 30.366	0° 53.482	1.67	11.7	224.5	1.53
<b>Z11</b>	51° 30.509	0° 54.195	2.00	11.8	213.5	1.14
<b>Z12</b>	51° 30.626	0° 55.069	2.50	11.8	185.5	0.84

### WARP AND KNOB

<b>W1</b>	51° 30.869	0° 55.883	2.50	13.8	144	0.73
<b>W2</b>	51° 31.193	0° 57.123	2.50	14.3	102.5	1.23
From S.S. North Tower						
<b>K3</b>	51° 30.360	1° 04.000	2.60	12.6	310.0	0.63

<https://www.pla.co.uk/Safety/Sea-Reach/-/Estuary-Designated-Anchorage>

**GREAT NORE**  
Refer to Medway Ports Authority

## RIVER THAMES – DESIGNATED ANCHORAGE BERTHS Cont'd

- Notes 1. WI & 2 anchor berths are normally used for staging large vessels. K3 may be used by other vessels provided a LNG vessel is not expected.
2. Depths shown in these berths are correct at the time of going to press. More recent information may be available from Port Control Centre, Gravesend.
  3. To be used primarily by vessels awaiting clearance of restricted visibility as per the Pilotage Direction. Usable in clear visibility by small to medium sized vessels, subject to approval given by Port Control.

### DIRECTIONS TO VESSELS ANCHORING

General Directions for Navigation in the Port of London states:

#### 23. NAVIGATING CHANNELS, WAITING AND ANCHORING

- (1) No vessel shall navigate in a Fairway of the Thames or anchor in a Designated Anchorage in the Thames unless such Fairway or Designated Anchorage (as the case may be) is the Fairway or Designated Anchorage most suitable for a vessel of that draught and size. In particular, vessels with an operating draught of less than 6.0 metres shall not be navigated along the Black Deep, except with the express permission of the Harbourmaster.
- (2) Unless otherwise specifically authorised by a VTS Centre, Reporting Vessels are permitted to wait for a berth in the Thames only:
  - a) at a mooring allocated to the vessel by the Harbourmaster for that purpose, or
  - b) in a Designated Anchorage.
- (3) Except in an emergency, or with the permission of the Harbourmaster, vessels are not permitted to wait in a Designated Anchorage:
  - a) for longer than the period (if any) specified for anchoring in such an area by the Harbourmaster; and
  - b) where the vessel's dimensions would normally preclude it using that anchorage.
- (4) Vessels are not to be anchored in a Fairway, other than in an emergency or for the purpose of manoeuvring or with the prior approval of the Harbourmaster.

#### DEFINITIONS

- j) "*Designated Anchorage*" means an area designated by a Harbourmaster as an anchorage area or berth and published on charts, in the PLA Handbook of Tide Tables and Port Information or in Notices to Mariners;
- l) "*Fairway*" means a regular course or track of shipping, comprising all marked and/or charted navigable channels within the Thames and includes the following areas:
  - i) The Fisherman's Gat;
  - ii) The Princes Channel from the Tongue Sand Towers to the Oaze Precautionary Area;
  - iii) The Black Deep and Knock John Channels from the seaward limit to the Oaze Precautionary Area;
  - iv) The Barrow Deep and Mouse Channels from the seaward limit to the Warp;
  - v) The East and West Swin Channels from the seaward limit to the Warp;
  - vi) The Warp;
  - vii) The Oaze Precautionary Area; and
  - viii) The Thames to the west of Sea Reach No. 1 Buoy.

## RIVER THAMES — DESIGNATED EXPLOSIVE ANCHORAGES HIGHAM TO CHAPMAN

- Higham Bight** — *Northern limit:*—  
The South Channel edge down to the gas pipe crossing.  
— *Western limit:*—  
An imaginary line in a 000° direction from the upper outer corner of Clubbs Jetty at Denton. Excluding any portion which lies within the dredged channel.
- Mucking Coaster** — Within a 0.67 cables radius measured from a point 245° by 0.80 miles from the Waterman's Stone at Lower Hope Point. Barges may anchor within the area shown on Admiralty chart 1186.
- Chapman** — Within a one mile radius downstream of the Chapman Buoy north of the dredged channel.

### CHAPMAN ANCHOR BERTHS

Name	Latitude N. WGS 84	Longitude E.	Radius (Cables)	Depth at C.D. (m)	Max. Ship length
<b>C1</b>	51° 30.297	0° 37.410	1.33	9.6	137m
<b>C2</b>	51° 30.297	0° 37.947	1.33	11.8	137m
<b>C3</b>	51° 30.312	0° 38.484	1.67	9.6	183m

- N.B.** Vessels other than those working or carrying explosives may use the above anchorages providing permission has been granted by the harbour master at Port Control Centre, Gravesend.

### VESSELS CARRYING DANGEROUS GOODS

Information on any special navigation conditions applying to vessels carrying bulk or packaged dangerous substances or which, if having carried such substances in bulk, remains non gas free, is available from the Port Control Centre, Gravesend.

## PUBLIC SHIP TIERS & MOORINGS

### Latest Depth Information

<i>Name of Mooring</i>	<i>Ship Length (m)</i>	<i>Date of Survey</i>	<i>Ruling Depth</i>
Tower Bridge Upper Mooring	158	11/12/19	5.6m
George's Stairs Tier	65/75/120	10/10/19	5.3m / 5.2m / 5.1m
Greenwich Tier	128/208	08/10/20	8.1m
E. Woolwich Upper Tier	113	19/03/20	7.1m
Thamesmead Tier	100	09/07/20	5.3m
Erith Swing Mooring	95	22/05/20	4.9m
Erith Tier	122	22/05/20	7.0m
Greenhithe Swing Mooring	94	06/08/19	6.5m
Denton Small Ship Mooring	82	01/10/20	5.8m

**Port of London Authority  
Hydrographic Service**

[www.pla.co.uk/hydrohomepage](http://www.pla.co.uk/hydrohomepage)

[www.pla.co.uk/chartproducts](http://www.pla.co.uk/chartproducts)

## OPERATIONAL INFORMATION FOR VESSELS USING PORT OF TILBURY LOCK

### DIMENSIONS

Length of Lock	304.8m	1,000 ft
Width at Impounded Level	33.5m	110 ft
Depth on outer sill below chart datum	7.3m	23.85 ft

### NOTES

1. The period during which the Tilbury lock system can be operated is dependent on three factors:—

- (i) The height of water above the lock sills.
- (ii) The construction of the lock pierheads.
- (iii) Depth of water in lock approach.

2. The variation between Neap and Spring tides, together with abnormal tidal conditions caused by strong winds and also limitations imposed by siltation in the approach channels and lock entrances, do not permit any definite times relative to each H.W. to be laid down. For this reason, the following information can only be of a general nature and is intended to assist mariners approaching the Port of Tilbury to obtain some indication of the time they should arrive at Gravesend in order to dock on a particular tide.

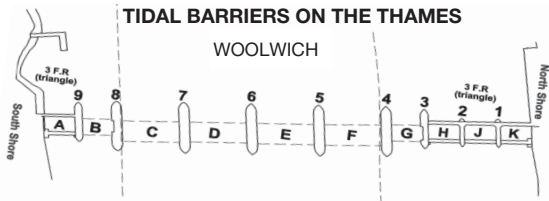
**3. More precise information can be obtained by direct reference to the Port of Tilbury Harbour Master, Tel: Tilbury (01375) 852447.**

4. Sill depths and lock dimensions are shown above. To find the level of water over the sill at any time, add the sill depth below chart datum to the height of the tide at the time required.

5. The height of the tide can be estimated by using tables of predicted hourly heights (see page 4).

6. If the actual height of tide at any time is required, it can be obtained on request from **London VTS** (see page 10).

7. There is a flood gate installed at the river end of Tilbury lock as part of the overall Thames Flood Defences. The lock will be closed to shipping when this gate is in the defence position. Information will be broadcast by **London VTS**.



River Thames - **Thames Barrier Control Zone**: Margaretness to Blackwall Point.

Full details of navigational procedures in the **TBCZ** are contained in **General Direction 27 and Appendix** for Navigation in the Port of London.

The availability of spans for navigation are marked as follows  
 Red St. Andrew's Crosses (Lt) from Piers = Barrier or Span Closed.  
 Green Arrows (Lt) from Piers = Span Open.

In low visibility, high-intensity directional fixed white lights operate on either side of spans C, D, E and F in conjunction with the green arrows. The intensity of these lights is variable and may be adjusted on request to London VTS at TBNC

It is extremely dangerous to go through a Span that is marked Closed (for navigation), the gates may be in a semi-raised position.  
 Small Craft: Do not navigate above Thames Refinery jetty or below Royal Wharf unless intending to pass through the Barrier.

**Depth over sill: Spans C, D & E, F = 5.8m. C.D. Spans B,G = 1.2m. C.D.**

Call **London VTS** (Barrier Control) on Channel 14 at Margaretness and/or Blackwall Pt for permission to pass through the Barrier. If no VHF Radio then pass through the span marked by Green Arrows furthest to the starboard side of the channel.

**Vessels fitted with a working engine should use motor power to navigate through the Thames Barrier.**

BARKING CREEK	MHWS clearance 33.3m	} Creek Barriers show Fl.R. when closed.
DARTFORD CREEK	MHWS clearance 12.0m	
EASTHAVEN CREEK	MHWS clearance 3.2m	
FOBBING CREEK	MHWS clearance 9.2m	
BENFLEET CREEK	MHWS clearance 1.5m	



## THAMES BRIDGE CLEARANCES

### Minimum Headway of NAVIGABLE ARCH in METRES above:

Bridge Name (Quoted Arch)	Chart					
	Datum	MHWS	MHWN	MLWN	MLWS	HAT
Snapper (1)	5.4	2.9	3.9	5.4*	5.4*	2.1
Richmond (3)	7.9	5.5	6.5	7.9*	7.9*	4.7
Richmond Railway (2)	8.0	5.5	6.5	8.0*	8.0*	4.8
Twickenham (2)	8.5	6.1	7.1	8.5*	8.5*	5.3
Richmond Foot** (2)	10.5	5.7	6.7	10.2	10.4	5.0
Lots Ait Footbridge	9.0	3.9	4.9	8.6	8.8	3.2
Kew (2)	10.4	5.2	6.3	10.0	10.2	4.6
Kew Railway (4)	10.9	5.5	6.6	10.3	10.6	4.9
Chiswick (2)	12.0	6.6	7.7	11.5	11.8	6.0
Barnes Railway (2)	10.9	5.4	6.5	10.3	10.7	4.8
Hammersmith (South) (2)	9.3	3.5	4.6	8.6	9.0	2.9
Putney (3)	11.3	5.2	6.3	10.4	10.9	4.7
Fulham Railway (3)	12.7	6.6	7.8	11.9	12.4	6.1
Wandsworth (2)	11.8	5.7	6.8	11.0	11.5	5.1
Battersea Railway (3)	12.1	5.9	7.1	11.3	11.9	5.4
Battersea (3)	11.8	5.4	6.6	10.9	11.4	5.0
Albert (2)	11.5	5.2	6.4	10.6	11.2	4.7
Chelsea (2)	12.9	6.4	7.6	12.0	12.6	6.0
Victoria Railway (2)	12.4	5.9	7.1	11.4	12.0	5.4
Vauxhall (3)	12.2	5.6	6.8	11.2	11.9	5.1
Lambeth (3)	13.0	6.3	7.5	11.8	12.6	5.8
Westminster (4)	12.2	5.3	6.5	10.9	11.7	4.8
Charing Cross Railway (3)	13.8	6.9	8.1	12.5	13.3	6.4
Waterloo (3)	15.4	8.5	9.7	14.1	14.9	8.0
Blackfriars (3)	14.0	6.9	8.2	12.6	13.4	6.5
Blackfriars Railway (3)	14.0	6.9	8.2	12.6	13.4	6.5
Millennium Foot (2)	15.8	8.8	10.0	14.4	15.3	8.3
Southwark (3)	14.2	7.2	8.4	12.8	13.7	6.7
Cannon Street Railway (3)	14.1	7.1	8.3	12.7	13.6	6.6
London Bridge (2)	15.8	8.6	9.9	14.3	15.2	8.1
Tower (Closed) (2)	15.6	8.5	9.7	14.1	15.1	8.0
Tower (Open) (2)	49.6	42.4	43.7	48.1	49.0	41.9
London Cable Car	67.6	60.4	61.6	66.0	66.9	59.8
QE2 (5)	60.7	53.9	55.1	59.1	60.0	53.4

## BOW CREEK BRIDGE CLEARANCES

### Minimum Headway of NAVIGABLE ARCH in METRES above:

Bridge Name (Quoted Arch )	Chart	MHWS	MHWN	MLWN	MLWS	HAT
	Datum					
Lower Lea Crossing	16.5	9.2	10.5	14.8	15.8	8.7
Leamouth Lifting Footbridge (Lowered)	12.3	5.0	6.3	10.6	11.6	4.5
Leamouth Lifting Footbridge (Raised)	16.5	9.2	10.5	14.8	15.8	8.7
Docklands Light Railway	16.2	8.9	10.2	14.5	15.5	8.4
Canning Town Old Railway	12.1	4.8	6.1	10.4	11.4	4.3
Dock Road Foot	13.3	6.0	7.3	11.6	12.6	5.5
Canning Town Road	12.3	5.0	6.3	10.6	11.6	4.5
Barge Dock Foot	16.8	9.5	10.8	15.1	16.1	9.0
Alisa Wharf	12.5	5.2	6.5	10.8	11.8	4.7
Twelve Trees Road	12.1	4.8	6.1	10.4	11.4	4.3
Bow Locks Foot	12.2	4.9	6.2	10.5	11.5	4.4
District Line Rail	10.3	3.0	4.3	8.6	9.6	2.5
Hammersmith & City Rail	10.3	3.0	4.3	8.6	9.6	2.5
Channelsea Island Foot	10.4	3.1	4.4	8.7	9.7	2.6

## DEPTFORD CREEK BRIDGE CLEARANCES

### Minimum Headway of NAVIGABLE ARCH in METRES above:

Bridge Name	Chart	MHWS	MHWN	MLWN	MLWS	HAT
	Datum					
Deptford Swing (Closed)	10.2	2.9	4.2	8.6	9.5	2.4
Deptford Creek Lifting (Cl)	9.9	2.6	3.9	8.2	9.2	2.1
Deptford Rail	12.3	5.0	6.3	10.6	11.6	4.5
Deptford Creek Foot	10.1	2.8	4.1	8.4	9.4	2.3
Docklands Light Railway (x3)	12.5	5.2	6.5	10.8	11.8	4.7

\* Refers to headway above maintained water level.

\*\* For details of the operation of the weir sluice-gates and lock associated with this bridge see page 34.

The arch number to which the measurement refers is given in the parenthesis next to the bridge name. Arches are numbered from the north shore to south shore.

Further information on all the bridges and individual arch heights can be found at [www.pla.co.uk](http://www.pla.co.uk) and in the PLA "Mariner's Guide to Bridges on the Tidal Thames".

## CHART DATUMS & STANDARD LEVELS IN THE PORT OF LONDON

- 1. Chart Datum** is set to approximately the level of Lowest Astronomical Tide (L.A.T.)
- 2. Low Water levels** in the upper reaches of the tidal Thames are greatly affected by the land water flow at Teddington Weir. **They frequently fall below chart datum** when this flow is significantly reduced, typically during the summer months.
- 3. Maintained level** and chart datum above Richmond half tide weir are both 1.72 metres above Ordnance Datum (Newlyn).
- 4. Trinity High Water (T.H.W.)** is deemed, by the Port of London Act, 1968, to be a level having a value of 11.4 feet (**i.e. 3.475 metres**) above Ordnance Datum (Newlyn).

Tidal Station	Level of Chart Datum below Ordnance Datum (Newlyn) m	Standard levels above local C.D.				
		Mean Low Water Springs MLWS	Mean Low Water Neaps MLWN	Mean High Water Neaps MHWN	Mean High Water Springs MHWS	Highest Astronomical Tide (HAT)
WALTON	2.16	0.5	1.1	3.5	4.3	4.7
MARGATE	2.50	0.6	1.3	4.0	4.8	5.1
SHIVERING SAND	-	0.6	1.4	4.4	5.4	5.7
SOUTHEND	2.90	0.6	1.4	4.8	5.9	6.3
CANVEY	2.97	0.6	1.4	5.0	6.1	6.6
CORYTON	3.05	0.6	1.5	5.1	6.2	6.7
TILBURY	3.12	0.6	1.5	5.4	6.6	7.0
GREENHITHE	3.20	0.6	1.6	5.6	6.7	7.2
DAGENHAM	3.28	0.6	1.6	5.8	7.0	7.5
NORTH WOOLWICH	3.35	0.6	1.6	5.9	7.2	7.7
LONDON BRIDGE	3.20	0.5	1.5	5.9	7.1	7.6
BLACKFRIARS	3.05	0.5	1.4	5.8	7.0	7.5
WESTMINSTER	2.90	0.5	1.3	5.7	6.9	7.4
VAUXHALL	2.59	0.3	1.0	5.4	6.6	7.1
VICTORIA RAIL	2.44	0.3	0.9	5.3	6.5	6.9
ALBERT BRIDGE	2.29	0.3	0.9	5.1	6.3	6.8
WANDSWORTH	2.13	0.3	0.9	5.0	6.2	6.7
PUTNEY	1.98	0.3	0.8	4.9	6.1	6.6
HAMMERSMITH	1.68	0.3	0.7	4.7	5.8	6.4
BARNES	1.37	0.2	0.6	4.4	5.5	6.1
CHISWICK	1.22	0.2	0.5	4.3	5.3	6.0
KEW	1.07	0.2	0.5	4.2	5.2	5.9
BRENTFORD	0.91	0.1	0.4	4.0	5.0	5.7
RICHMOND	0.61	0.1	0.2	3.8	4.8	5.5
TWICKENHAM	Note 3	-	-	1.5	2.5	3.2

## TABLE OF AVERAGE TIME DIFFERENCES

The times of high and low water at the following places on the River Thames may be found **approximately** by applying the differences shown to the times of high and low water given in the Tide Tables.

### RICHMOND LOCK & WEIR

The sluice gates at Richmond Weir are raised approximately 2 hours before and 2 hours after high tide at Richmond Lock, depending on fluvial flows. In periods of unusual low and high fluvial flows, please contact the Lock Foreman for an up-to-date assessment of when the weirs will be raised. During this period, passage through the navigation spans of Richmond Footbridge is available. At all other times Richmond Lock may be used: length 76.2m width 7.9m for which there is a charge. This information can also be found in the PLA Charges book, or on the LED screen at Richmond Lock. Predicted times and heights of high and low waters are available for Richmond Lock at [www.pla.co.uk](http://www.pla.co.uk)

### DIFFERENCES ON LONDON BRIDGE (TOWER PIER)

	For H.W.	For L.W.
	h m	h m
Teddington Lock.....	add 1 01	add —
*Richmond Lock .....	add 1 01	add 2 50
Kew Bridge .....	add 0 52	add 2 46
Barnes Railway Bridge .....	add 0 44	add 2 19
Hammersmith Bridge.....	add 0 38	add 1 58
Putney Bridge .....	add 0 31	add 1 38
Chelsea Bridge .....	add 0 14	add 0 45
Westminster Bridge .....	add 0 10	add 0 30
Greenland Dock Entrance.....	sub 0 9	sub 0 14

### DIFFERENCES ON NORTH WOOLWICH

Greenwich Pier and Buoys .....	add 0 13	add 0 21
India & Millwall Dock Entrance .....	add 0 10	add 0 19
Royal Victoria Dock, Western Entrance .....	add 0 7	add 0 14

## DIFFERENCES ON TILBURY

	For H.W.	For L.W.
	h m	h m
Ford's (Dagenham).....	add 0 23	add 0 33
Purfleet.....	add 0 12	add 0 17
London International Cruise Terminal.....	sub 0 4	sub 0 4
Diver Shoal.....	sub 0 7	sub 0 7

## DIFFERENCES ON SOUTHEND-ON-SEA

Lower Hope Point .....	add 0 17	add 0 20
Holehaven .....	add 0 13	add 0 13
West Oaze Buoy.....	sub 0 10	sub 0 10

## DIFFERENCES ON MARGATE

Princes Channel Bar .....	add 0 18	add 0 17
N.E. Spit .....	sub 0 10	sub 0 5

## DIFFERENCES ON WALTON-ON-THE-NAZE

Knock John .....	add 0 28	add 0 35
Little Sunk.....	add 0 9	add 0 12
Sunk Pilot Station .....	sub 0 5	sub 0 14

# DRYING OUT FACILITIES IN THE UPPER DISTRICT



The PLA has two drying out facilities in the Upper District; Strand-on-the-Green Grid and Isleworth Drawdock

Isleworth Drawdock is a stretch of vertical river wall with regularly spaced piles and a riverbed suitable for taking the ground (for appropriate vessels) that is directly accessible by road. Isleworth is practically unlimited in the size of vessel it can accommodate.

The Drawdock is available as either a full length or half-length berth (suitable for vessels up to 18m in length). Vessels using one half of Isleworth Drawdock will be charged £40 per 24 hours or part thereof. Vessels wishing to use either the full length of the drawdock or who moor across the centre line dividing the berths will be charged £60 per 24 hours or part thereof.

Strand-on-the-Green grid is a timber grid suitable for smaller vessels, but without road access. The grid is limited to flat bottomed vessels of 25m length, 9m beam and a displacement of 200 tons.

All vessels, regardless of size, draught or displacement, will be charged £60 per 24 hours or part thereof to use Strand on the Green Grid.

Locations of our drying out facilities can be found on our website under About Us \ Moorings, or using our interactive map on [www.boatingonthames.co.uk](http://www.boatingonthames.co.uk)



To book call the Harbour Service Upper crew who may be contacted 7 days a week between 0700 and 1700 on 07711 640 095. [www.pla.co.uk](http://www.pla.co.uk)

# PLA Tide Tables

including  
Sunrise & Sunset



Moonrise & Moonset  
for 2021

on pages 38 - 91

# JANUARY 2021

TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> F	0047 4.1 0658 0.5 1301 4.2 1854 0.8	0102 4.6 0726 0.7 1327 4.6 1926 0.9	0119 5.1 0739 0.5 1337 5.2 1935 0.9	0136 5.6 0757 0.6 1353 5.7 1946 0.9	0211 6.2 0834 0.7 1427 6.4 2019 0.9	0241 6.8 0908 0.7 1457 7.0 2059 1.0	0301 6.7 0944 0.6 1518 7.0 2140 1.0
<b>2</b> SA	0126 4.1 0737 0.4 1341 4.2 1932 0.8	0141 4.6 0805 0.6 1409 4.6 2005 0.9	0158 5.1 0818 0.5 1417 5.2 2015 0.9	0216 5.6 0835 0.6 1434 5.7 2025 0.9	0249 6.2 0913 0.6 1507 6.4 2059 0.9	0319 6.8 0947 0.6 1537 7.1 2138 0.9	0338 6.7 1025 0.5 1558 7.0 2219 0.9
<b>3</b> SU	0205 4.1 0818 0.4 1423 4.1 2015 0.9	0220 4.6 0846 0.6 1453 4.5 2048 1.0	0237 5.1 0859 0.5 1500 5.1 2058 0.9	0255 5.5 0916 0.5 1516 5.6 2109 1.0	0328 6.1 0953 0.6 1549 6.4 2143 1.0	0357 6.7 1025 0.6 1619 7.0 2220 1.0	0416 6.7 1103 0.5 1638 7.0 2258 1.0
<b>4</b> M	0246 4.0 0902 0.4 1508 4.1 2101 0.9	0300 4.5 0931 0.6 1537 4.4 2133 1.1	0317 5.0 0941 0.5 1545 5.0 2144 1.1	0334 5.4 0958 0.6 1600 5.5 2155 1.1	0407 6.0 1034 0.6 1633 6.2 2229 1.1	0437 6.6 1103 0.6 1703 6.9 2304 1.1	0454 6.6 1138 0.6 1721 6.8 2338 1.1
<b>5</b> TU	0329 3.9 0950 0.5 1557 4.0 2154 1.0	0343 4.4 1019 0.7 1624 4.3 2223 1.2	0400 4.9 1027 0.6 1633 4.9 2234 1.2	0417 5.3 1043 0.7 1649 5.4 2245 1.2	0450 6.0 1117 0.7 1721 6.1 2317 1.2	0518 6.5 1142 0.7 1750 6.7 2349 1.3	0535 6.5 1214 0.7 1808 6.7
<b>6</b> W ☾	0418 3.9 1046 0.5 1653 3.9 2255 1.1	0432 4.4 1113 0.7 1718 4.3 2320 1.3	0448 4.8 1118 0.7 1728 4.8 2330 1.3	0504 5.2 1134 0.7 1743 5.3 2343 1.3	0537 5.9 1204 0.8 1816 5.9	0605 6.4 1227 0.8 1844 6.5	0621 6.2 0622 6.4 1256 6.8 1903 6.5
<b>7</b> TH	0514 3.8 1149 0.5 1756 3.8	0528 4.3 1214 0.8 1821 4.2	0545 4.8 1218 0.8 1829 4.7	0601 5.2 1234 0.8 1846 5.2	0612 5.8 1301 0.9 1918 5.8	0641 6.4 1322 0.9 1947 6.4	0711 6.4 0717 6.3 1350 0.9 2007 6.3



<b>8</b> F	0003 1.1 0622 3.8 1255 0.6 1908 3.7	0027 1.3 0837 4.3 1322 0.8 1935 4.2	0036 1.3 0649 4.7 1328 0.8 1938 4.7	0051 1.4 0708 5.1 1341 0.8 1955 5.1	0119 1.5 0740 5.7 1407 0.9 2026 5.7	0146 1.6 0808 6.3 1435 1.0 2056 6.3	0213 1.5 0827 6.3 1501 1.0 2117 6.3	<b>8</b> F
<b>9</b> SA	0116 1.1 0736 3.8 1359 0.6 2020 3.8	0145 1.3 0752 4.3 1429 0.8 2045 4.3	0152 1.3 0802 4.7 1436 0.8 2050 4.7	0206 1.4 0822 5.1 1449 0.8 2106 5.1	0234 1.5 0853 5.8 1516 0.9 2136 5.8	0305 1.6 0923 6.3 1548 1.0 2205 6.4	0331 1.5 0943 6.4 1614 1.0 2225 6.4	<b>9</b> SA
<b>10</b> SU	0226 1.0 0847 3.9 1502 0.6 2126 3.9	0256 1.2 0904 4.4 1531 0.8 2149 4.4	0306 1.2 0914 4.8 1540 0.8 2158 4.8	0319 1.2 0933 5.3 1555 0.8 2213 5.3	0350 1.3 1004 5.9 1624 0.9 2245 5.9	0423 1.4 1034 6.5 1658 1.0 2313 6.5	0451 1.4 1053 6.5 1726 0.9 2332 6.5	<b>10</b> SU
<b>11</b> M	0332 0.8 0948 4.0 1602 0.6 2224 4.0	0401 1.0 1010 4.5 1629 0.8 2246 4.5	0414 0.9 1019 5.0 1640 0.8 2257 5.0	0431 1.0 1037 5.5 1659 0.8 2313 5.4	0506 1.1 1109 6.1 1733 0.8 2346 6.0	0539 1.2 1139 6.7 1807 0.9	0610 1.1 1159 6.7 1841 0.9	<b>11</b> M
<b>12</b> TU	0434 0.6 1043 4.2 1658 0.7 2315 4.1	0503 0.8 1110 4.6 1723 0.8 2336 4.6	0516 0.7 1118 5.2 1735 0.7 2349 5.1	0537 0.8 1134 5.7 1756 0.8	0615 0.8 1207 6.3 1834 0.8	0615 6.6 0651 0.9 1237 6.9 1912 0.9	0610 1.1 1159 6.7 1841 0.9	<b>12</b> TU
<b>13</b> W	0531 0.5 1133 4.3 1747 0.7	0601 0.7 1203 4.7 1812 0.8	0613 0.5 1210 5.3 1825 0.7	0606 5.5 0636 0.6 1226 5.8 1847 0.8	0638 6.2 0715 0.6 1259 6.5 1928 0.8	0109 6.8 0752 0.7 1330 7.1 2006 0.9	0130 6.8 0820 0.6 1351 7.1 2037 0.8	<b>13</b> W
<b>14</b> TH	0002 4.2 0623 0.4 1220 4.3 1833 0.7	0021 4.6 0653 0.5 1251 4.8 1857 0.9	0036 5.2 0704 0.4 1258 5.3 1910 0.8	0053 5.6 0808 0.5 1313 5.9 1933 0.8	0126 6.3 0808 0.5 1347 6.6 2014 0.9	0158 6.9 0845 0.5 1418 7.2 2052 1.0	0219 6.9 0912 0.4 1440 7.2 2123 0.8	<b>14</b> TH
<b>15</b> F	0046 4.2 0711 0.3 1305 4.3 1914 0.8	0103 4.7 0739 0.5 1337 4.7 1937 0.9	0120 5.2 0751 0.4 1343 5.3 1951 0.8	0137 5.7 0816 0.4 1358 5.9 2013 0.9	0210 6.3 0856 0.4 1433 6.6 2054 0.9	0243 6.9 0932 0.5 1504 7.2 2131 1.0	0304 6.9 1000 0.4 1526 7.2 2205 0.9	<b>15</b> F

# JANUARY 2021

TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> SA	0128 4.2 0753 0.3 1349 4.2 1952 0.9	0144 4.7 0821 0.5 1420 4.6 2014 1.0	0201 5.2 0833 0.4 1426 5.2 2029 0.9	0219 5.7 0857 0.4 1442 5.8 2047 1.0	0253 6.3 0936 0.5 1517 6.5 2128 1.0	0325 6.9 1012 0.6 1548 7.1 2202 1.1	0345 6.9 1041 0.4 1609 7.1 2240 1.0
<b>17</b> SU	0208 4.1 0831 0.4 1432 4.1 2026 0.9	0223 4.6 0858 0.6 1500 4.5 2049 1.1	0240 5.1 0909 0.5 1507 5.0 2104 1.0	0258 5.6 0931 0.5 1524 5.6 2118 1.1	0333 6.2 1009 0.6 1559 6.3 2156 1.1	0404 6.8 1041 0.7 1628 6.9 2231 1.2	0423 6.8 1115 0.6 1648 6.8 2309 1.1
<b>18</b> M	0246 4.0 0905 0.5 1515 3.9 2100 1.0	0300 4.5 0932 0.7 1538 4.3 2125 1.2	0318 5.0 0941 0.6 1548 4.9 2138 1.1	0336 5.4 0957 0.7 1605 5.3 2150 1.2	0410 6.1 1033 0.7 1639 6.0 2226 1.2	0440 6.6 1103 0.8 1706 6.6 2301 1.3	0459 6.6 1139 0.7 1726 6.6 2335 1.2
<b>19</b> TU	0324 3.9 0939 0.6 1558 3.7 2136 1.1	0337 4.4 1007 0.8 1615 4.2 2204 1.3	0356 4.9 1013 0.7 1628 4.7 2215 1.3	0413 5.3 1025 0.8 1645 5.1 2225 1.3	0446 5.9 1059 0.8 1718 5.8 2300 1.3	0514 6.4 1129 0.9 1743 6.3 2334 1.4	0533 6.4 1202 0.8 1802 6.3 2355 1.2
<b>20</b> W	0405 3.8 1018 0.7 1643 3.5 2220 1.2	0416 4.3 1046 1.0 1655 4.0 2248 1.4	0435 4.7 1050 0.9 1710 4.5 2258 1.4	0452 5.1 1059 0.9 1728 4.9 2307 1.4	0523 5.7 1131 1.0 1758 5.5 2339 1.5	0550 6.2 1201 1.0 1823 6.1 2361 1.4	0605 1.3 0609 6.2 1229 1.0 1841 6.1
<b>21</b> TH	0452 3.6 1107 0.8 1734 3.4 2318 1.3	0500 4.1 1133 1.1 1747 3.8 2342 1.6	0520 4.5 1135 1.1 1758 4.3 2350 1.6	0536 4.9 1143 1.1 1816 4.7 2358 1.6	0610 5.5 1210 1.2 1845 5.3 1909 5.9	0631 6.0 1238 1.2 1909 5.9	0640 1.5 0650 6.0 1304 1.2 1927 5.8
<b>22</b> F	0547 3.5 1210 1.0 1831 3.3	0557 3.9 1234 1.3 1900 3.8	0613 4.3 1234 1.3 1857 4.1	0632 4.7 1240 1.3 1915 4.5	0626 1.7 0702 5.3 1301 1.4 1941 5.2	0656 1.7 0725 5.8 1325 1.5 2007 5.7	0721 1.7 0744 5.8 1349 1.4 2027 5.7

<b>23</b> SA	0037 1.4 0650 3.4 1318 1.1 1935 3.3	0058 1.7 0714 3.8 1348 1.4 2010 3.8	0100 1.7 0719 4.2 1351 1.4 2009 4.2	0107 1.7 0739 4.6 1358 1.4 2022 4.5	0127 1.8 0808 5.2 1414 1.5 2045 5.2	0153 1.9 0835 5.7 1431 1.6 2113 5.7	0216 1.9 0858 5.7 1501 1.6 2134 5.7	<b>23</b> SA
<b>24</b> SU	0153 1.3 0758 3.4 1424 1.1 2042 3.4	0226 1.6 0826 3.9 1454 1.3 2111 4.0	0230 1.6 0834 4.2 1502 1.3 2118 4.3	0237 1.7 0850 4.6 1512 1.4 2129 4.7	0254 1.8 0917 5.3 1532 1.4 2156 5.3	0312 1.9 0947 5.8 1556 1.6 2222 5.8	0350 1.9 1009 5.8 1627 1.6 2242 5.8	<b>24</b> SU
<b>25</b> M	0259 1.1 0903 3.5 1524 1.0 2142 3.6	0329 1.4 0929 4.0 1550 1.2 2205 4.1	0339 1.4 0939 4.4 1601 1.2 2215 4.5	0349 1.4 0952 4.8 1614 1.3 2228 4.9	0412 1.5 1023 5.5 1637 1.4 2300 5.6	0440 1.7 1053 6.0 1705 1.5 2327 6.1	0507 1.6 1114 6.0 1731 1.4 2347 6.1	<b>25</b> M
<b>26</b> TU	0355 0.9 0958 3.7 1615 0.9 2231 3.8	0424 1.2 1025 4.2 1639 1.1 2253 4.3	0435 1.1 1033 4.6 1652 1.1 2303 4.7	0449 1.2 1047 5.0 1707 1.2 2319 5.1	0515 1.2 1121 5.7 1733 1.2 2352 5.8	0544 1.3 1151 6.3 1803 1.3	0609 1.2 1213 6.3 1829 1.2	<b>26</b> TU
<b>27</b> W	0442 0.7 1045 3.8 1657 0.9 2314 3.9	0512 1.0 1112 4.3 1722 1.1 2334 4.4	0523 0.9 1120 4.8 1735 1.0 2347 4.9	0540 0.9 1135 5.3 1752 1.1	0609 1.0 1210 6.0 1821 1.1	0621 6.4 0640 1.0 1240 6.6 1853 1.2	0642 6.4 0706 0.9 1302 6.6 1924 1.1	<b>27</b> W
<b>28</b> TH O	0524 0.6 1128 4.0 1734 0.8 2355 4.1	0555 0.8 1153 4.5 1800 1.0	0606 0.7 1203 5.0 1814 0.9	0625 0.7 1219 5.5 1830 1.0	0637 6.0 0659 0.8 1253 6.2 1904 1.0	0608 6.6 0731 0.8 1324 6.8 1938 1.1	0128 6.6 0800 0.7 1346 6.8 2014 1.1	<b>28</b> TH O
<b>29</b> F	0604 0.4 1209 4.1 1810 0.8	0612 4.5 0635 0.6 1234 4.6 1837 0.9	0627 5.1 0647 0.5 1244 5.1 1850 0.8	0646 5.5 0707 0.6 1300 5.7 1905 0.9	0619 6.2 0745 0.6 1335 6.4 1943 1.0	0151 6.8 0819 0.6 1406 7.0 2021 1.0	0211 6.7 0851 0.6 1427 7.0 2102 1.0	<b>29</b> F
<b>30</b> SA	0635 4.2 0645 0.3 1250 4.2 1847 0.7	0650 4.6 0715 0.5 1315 4.7 1915 0.8	0707 5.2 0727 0.4 1325 5.3 1929 0.8	0726 5.6 0748 0.4 1342 5.8 1943 0.8	0200 6.3 0828 0.5 1416 6.5 2021 0.9	0232 6.9 0904 0.5 1447 7.2 2103 0.9	0251 6.8 0938 0.4 1507 7.1 2146 0.9	<b>30</b> SA
<b>31</b> SU	0615 4.2 0726 0.2 1331 4.3 1925 0.7	0619 4.7 0754 0.4 1358 4.7 1955 0.8	0747 5.3 0808 0.3 1406 5.3 2009 0.7	0206 5.7 0828 0.3 1423 5.9 2024 0.8	0239 6.4 0909 0.3 1457 6.6 2103 0.8	0311 6.9 0947 0.3 1527 7.2 2145 0.8	0329 6.9 1022 0.2 1547 7.2 2227 0.8	<b>31</b> SU

# FEBRUARY 2021

TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> M	0155 4.2 0806 0.2 1413 4.3 2005 0.7	0209 4.7 0835 0.4 1441 4.7 2036 0.8	0226 5.3 0848 0.2 1448 5.3 2051 0.8	0245 5.7 0909 0.3 1505 5.9 2106 0.8	0318 6.4 0949 0.3 1538 6.6 2145 0.8	0349 7.0 1026 0.2 1608 7.2 2225 0.8	0406 7.0 1102 0.2 1627 7.2 2305 0.8
<b>2</b> TU	0234 4.2 0847 0.2 1455 4.2 2048 0.8	0248 4.7 0915 0.4 1522 4.6 2118 0.9	0304 5.3 0928 0.3 1530 5.2 2132 0.8	0323 5.7 0948 0.3 1547 5.7 2148 0.9	0356 6.4 1026 0.3 1620 6.4 2226 0.9	0426 6.9 1101 0.3 1649 7.1 2304 0.9	0443 6.9 1137 0.2 1708 7.0 2340 0.9
<b>3</b> W	0314 4.1 0929 0.3 1540 4.0 2134 0.9	0327 4.7 0957 0.5 1603 4.4 2201 1.0	0344 5.2 1007 0.4 1614 5.0 2216 1.0	0402 5.6 1026 0.4 1630 5.5 2231 1.0	0435 6.3 1102 0.4 1704 6.2 2307 1.0	0504 6.8 1134 0.4 1733 6.8 2342 1.1	0521 6.9 1207 0.4 1751 6.8
<b>4</b> TH ☾	0357 4.1 1016 0.4 1630 3.9 2227 1.0	0410 4.6 1042 0.6 1649 4.3 2250 1.1	0427 5.1 1051 0.6 1703 4.8 2304 1.1	0444 5.5 1106 0.6 1719 5.3 2319 1.1	0517 6.2 1139 0.6 1751 6.0 2351 1.2	0546 6.7 1208 0.6 1820 6.6	0604 6.7 1239 0.6 1839 6.5
<b>5</b> F	0447 3.9 1114 0.6 1727 3.7 2331 1.0	0501 4.5 1136 0.8 1745 4.1 2352 1.2	0517 4.9 1142 0.8 1759 4.6	0533 5.4 1156 0.8 1815 5.1	0605 6.0 1224 0.8 1847 5.7	0623 1.3 0635 6.6 1250 0.9 1916 6.3	0654 1.2 0653 6.6 1321 0.8 1936 6.3
<b>6</b> SA	0549 3.8 1222 0.7 1837 3.5	0604 4.3 1245 1.0 1901 4.0	0604 1.2 0619 4.8 1251 1.0 1908 4.5	0619 1.3 0635 5.1 1303 1.0 1924 4.9	0647 1.4 0708 5.8 1327 1.1 1954 5.5	0716 1.5 0735 6.4 1353 1.2 2022 6.1	0745 1.4 0755 6.4 1422 1.1 2046 6.1
<b>7</b> SU	0647 1.1 0710 3.7 1335 0.8 1959 3.5	0713 1.3 0727 4.2 1402 1.1 2023 4.0	0722 1.3 0736 4.6 1409 1.1 2030 4.4	0754 1.4 0824 5.0 1419 1.1 2044 4.8	0821 1.5 0824 5.6 1443 1.2 2112 5.4	0852 1.6 0852 6.2 1517 1.3 2139 6.0	0914 1.6 0914 6.2 1542 1.3 2200 6.0

<b>8</b> M	0208 0833 1448 2118	1.0 3.7 0.9 3.6	0237 0852 1516 2137	1.3 4.2 1.1 4.1	0246 0901 1524 2148	1.2 4.6 1.1 4.6	0257 0917 1536 2204	1.3 5.0 1.1 4.9	0324 0946 1603 2235	1.4 5.7 1.2 5.5	0357 1014 1636 2301	1.5 6.2 1.3 6.1	0425 1034 1704 2320	<b>8</b> M	0425 1034 1704 2320	1.5 6.3 1.3 6.1
<b>9</b> TU	0327 0943 1557 2220	3.8 3.8 0.9 3.8	0358 1010 1625 2241	1.1 4.3 1.1 4.3	0406 1017 1633 2253	1.0 4.8 1.0 4.8	0421 1033 1649 2311	1.1 5.2 1.1 5.2	0453 1104 1723 2342	1.2 5.9 1.1 5.8	0524 1132 1756	1.3 6.4 1.2	0556 1151 1828	<b>9</b> TU	0556 1151 1828	1.2 6.4 1.1
<b>10</b> W	0436 1041 1653 2311	0.6 4.0 0.8 4.0	0508 1112 1721 2332	0.8 4.5 1.0 4.5	0516 1119 1730 2346	0.8 5.0 1.0 5.0	0534 1134 1749	0.8 5.5 1.0	0609 1206 1825	0.9 6.1 1.0	0611 0644 1235 1903	6.4 0.9 6.7 1.1	0030 0714 1255 1932	<b>10</b> W	0030 0714 1255 1932	6.4 0.8 6.7 0.9
<b>11</b> TH	0530 1130 1739 2355	0.4 4.1 0.8 4.1	0602 1202 1806	0.6 4.6 0.9	0612 1208 1818	0.5 5.2 0.9	0632 1224 1838	0.5 5.7 0.9	0709 1256 1918	0.6 6.3 0.9	0745 1327 1956	6.6 0.6 7.0	0125 0812 1347 2024	<b>11</b> TH	0125 0812 1347 2024	6.6 0.5 7.0 0.8
<b>12</b> F	0616 1213 1819	0.3 4.2 0.8	0647 1245 1845	0.5 4.7 0.9	0658 1251 1858	0.4 5.2 0.8	0721 1306 1921	0.4 5.8 0.9	0759 1340 2002	0.4 6.5 0.9	0836 1411 2042	0.4 7.1 1.0	0212 0902 1432 2110	<b>12</b> F	0212 0902 1432 2110	6.8 0.3 7.1 0.8
<b>13</b> SA	0034 0657 1253 1857	4.2 0.2 4.2 0.7	0052 0726 1324 1920	4.6 0.5 4.6 0.9	0108 0738 1330 1936	5.2 0.4 5.2 0.8	0126 0802 1346 1959	5.6 0.3 5.8 0.9	0159 0841 1420 2040	6.3 0.4 6.5 0.9	0232 0919 1452 2119	6.9 0.4 7.1 1.0	0252 0945 1513 2150	<b>13</b> SA	0252 0945 1513 2150	6.8 0.3 7.1 0.8
<b>14</b> SU	0111 0733 1331 1931	4.2 0.3 4.1 0.8	0127 0800 1400 1953	4.7 0.5 4.6 0.9	0144 0813 1407 2010	5.2 0.4 5.2 0.9	0202 0837 1423 2030	5.7 0.4 5.7 0.9	0236 0916 1458 2112	6.3 0.4 6.4 0.9	0309 0954 1529 2149	7.0 0.5 7.1 1.0	0329 1022 1550 2224	<b>14</b> SU	0329 1022 1550 2224	6.9 0.3 7.0 0.9
<b>15</b> M	0146 0804 1408 2001	4.2 0.3 4.0 0.8	0202 0830 1433 2025	4.7 0.5 4.5 0.9	0218 0842 1442 2041	5.2 0.5 5.1 0.9	0236 0903 1459 2058	5.7 0.5 5.6 0.9	0311 1534 2138	6.3 6.3 1.0	0343 1604 2214	6.9 0.6 6.9 1.0	0402 1051 1624 2251	<b>15</b> M	0402 1051 1624 2251	6.9 0.5 6.9 0.9

# FEBRUARY 2021

TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> TU	0218 4.1 0831 0.4 1443 3.9 2030 0.8	0235 4.6 0858 0.6 1503 4.4 2057 1.0	0252 5.2 0908 0.5 1516 4.9 2111 1.0	0310 5.6 0924 0.6 1533 5.4 2203 1.0	0344 6.2 1002 0.6 1607 6.1 2203 1.0	0414 6.8 1035 0.6 1635 6.7 2239 1.1	0433 6.9 1111 0.6 1654 6.7 2313 1.0
<b>17</b> W	0251 4.0 0857 0.5 1517 3.8 2100 0.9	0307 4.5 0926 0.7 1533 4.3 2129 1.1	0325 5.0 0935 0.7 1549 4.7 2143 1.1	0342 5.5 0948 0.7 1606 5.2 2155 1.1	0414 6.1 1023 0.7 1637 5.9 2229 1.1	0444 6.7 1057 0.7 1705 6.5 2308 1.2	0504 6.7 1128 0.7 1724 6.5 2338 1.1
<b>18</b> TH	0325 3.9 0927 0.6 1552 3.6 2136 1.0	0340 4.4 0957 0.9 1606 4.1 2205 1.2	0357 4.9 1005 0.8 1622 4.6 2218 1.2	0414 5.3 1015 0.8 1638 5.0 2227 1.2	0445 5.9 1047 0.8 1709 5.6 2259 1.3	0515 6.5 1123 0.9 1736 6.2 2337 1.3	0535 6.5 1151 0.8 1755 6.2 2357 1.3
<b>19</b> F	0402 3.7 1003 0.8 1632 3.4 2221 1.1	0417 4.2 1034 1.1 1645 3.9 2249 1.4	0433 4.7 1040 1.1 1700 4.4 2300 1.4	0449 5.0 1046 1.0 1716 4.7 2306 1.4	0519 5.7 1115 1.1 1746 5.4 2335 1.5	0547 6.3 1150 1.1 1811 6.0	0606 6.2 1217 1.1 1830 5.9
<b>20</b> SA	0448 3.5 1053 1.0 1725 3.3 2324 1.3	0501 4.0 1122 1.3 1735 3.8 2348 1.6	0517 4.4 1125 1.3 1750 4.1 2356 1.6	0533 4.8 1126 1.3 1805 4.5 2359 1.6	0602 5.4 1152 1.4 1835 5.1	0602 5.4 1223 1.4 1858 5.7	0637 1.5 0648 6.0 1250 1.3 1916 5.7
<b>21</b> SU	0550 3.3 1215 1.2 1834 3.2	0559 3.8 1232 1.5 1850 3.6	0614 4.2 1234 1.6 1858 4.0	0632 4.5 1227 1.6 1913 4.4	0624 1.7 0703 5.2 1247 1.7 1942 5.0	0654 1.8 0724 5.7 1312 1.7 2005 5.5	0118 1.7 0741 5.7 1336 1.6 2025 5.4
<b>22</b> M	0058 1.3 0707 3.2 1342 1.3 1952 3.2	0117 1.6 0725 3.7 1403 1.5 2025 3.7	0120 1.7 0732 4.1 1412 1.6 2028 4.1	0125 1.7 0820 5.0 1418 1.7 2037 4.4	0138 1.8 0820 5.0 1422 1.8 2102 5.0	0200 2.0 0846 5.5 1434 2.0 2131 5.5	0219 1.9 0909 5.5 1458 1.9 2154 5.5

<b>23</b> TU	0219 0827 1454 2108	1.2 3.3 1.4 3.4	0247 0852 1517 2134	1.5 3.8 1.4 3.9	0257 0900 1531 2143	1.5 4.2 1.5 4.3	0306 0912 1542 2154	1.6 4.6 1.5 4.7	0325 0940 1601 2223	1.7 5.2 1.7 5.3	0347 1010 1626 2252	1.9 5.7 1.8 5.8	0420 1033 1652 2313	<b>23</b> TU	1.8 5.7 1.7 5.8
<b>24</b> W	0325 0933 1552 2206	0.9 3.5 1.0 3.6	0353 1000 1615 2229	1.2 4.0 1.2 4.2	0405 1007 1629 2239	1.2 4.5 1.2 4.6	0417 1019 1643 2254	1.2 4.9 1.3 5.0	0443 1050 1709 2326	1.3 5.5 1.4 5.6	0510 1120 1736 2356	1.4 6.1 1.5 6.2	0535 1142 1800	<b>24</b> W	1.4 6.1 1.4
<b>25</b> TH	0418 1025 1636 2253	0.7 3.8 0.9 3.9	0448 1053 1702 2315	0.9 4.3 1.1 4.4	0459 1100 1715 2326	0.9 4.7 1.1 4.9	0514 1113 1732 2343	0.9 5.2 1.1 5.3	0545 1146 1804	1.0 5.9 1.2	0614 1217 1834	1.0 6.5 1.2	0640 1237 1904	<b>25</b> TH	6.2 1.0 6.5 1.2
<b>26</b> F	0502 1109 1715 2335	0.5 4.0 0.8 4.0	0534 1137 1743 2356	0.7 4.5 0.9 4.5	0545 1144 1756	0.6 5.0 0.9	0604 1159 1815	0.6 5.5 0.9	0616 1233 1852	6.0 6.2 1.0	0647 0712 1304 1927	6.6 0.7 6.8 1.1	0741 1324 2001	<b>26</b> F	6.6 0.7 6.8 1.0
<b>27</b> SA O	0544 1151 1752	0.3 4.2 0.7	0616 1219 1821	0.5 4.6 0.8	0628 1226 1835	0.4 5.2 0.8	0649 1242 1855	0.4 5.8 0.8	0659 1316 1937	6.2 6.4 0.9	0712 1348 2016	6.8 0.5 7.1 1.0	0850 1407 2051	<b>27</b> SA O	6.8 0.4 7.1 0.9
<b>28</b> SU	0015 0625 1232 1831	4.2 0.2 4.3 0.6	0034 0656 1259 1900	4.7 0.4 4.8 0.7	0048 0709 1307 1915	5.3 0.2 5.4 0.7	0107 0732 1324 1936	5.7 0.2 5.9 0.7	0140 0813 1357 2019	6.4 0.3 6.6 0.8	0213 0852 1429 2101	7.0 0.2 7.3 0.8	0231 0923 1449 2137	<b>28</b> SU	7.0 0.2 7.2 0.7

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> M	0055 4.3 0706 0.1 1314 4.4 1910 0.6	0112 4.8 0735 0.3 1341 4.8 1940 0.7	0127 5.4 0749 0.1 1348 5.4 1956 0.6	0147 5.9 0812 0.1 1405 6.0 2017 0.6	0219 6.6 0854 0.1 1438 6.7 2059 0.7	0252 7.2 0935 0.1 1510 7.4 2142 0.7	0310 7.1 1007 0.0 1529 7.3 2218 0.6
<b>2</b> TU	0135 4.4 0745 0.1 1355 4.3 1949 0.6	0151 4.9 0814 0.2 1423 4.8 2019 0.7	0206 5.5 0828 0.1 1429 5.4 2036 0.6	0225 6.0 0851 0.1 1446 6.0 2057 0.6	0258 6.7 0932 0.1 1520 6.7 2138 0.7	0330 7.2 1012 0.1 1550 7.3 2220 0.7	0347 7.2 1046 0.0 1609 7.3 2256 0.6
<b>3</b> W	0214 4.4 0823 0.1 1437 4.2 2030 0.6	0229 4.9 0852 0.3 1502 4.7 2059 0.7	0244 5.5 0905 0.2 1510 5.3 2116 0.7	0303 6.0 0927 0.2 1527 5.8 2136 0.7	0336 6.6 1006 0.2 1600 6.5 2215 0.8	0407 7.2 1045 0.2 1630 7.1 2254 0.8	0425 7.2 1120 0.1 1649 7.1 2329 0.7
<b>4</b> TH	0253 4.3 0902 0.3 1520 4.0 2113 0.7	0308 4.8 0929 0.4 1540 4.5 2140 0.8	0323 5.4 0942 0.4 1552 5.1 2157 0.8	0341 5.9 1001 0.3 1608 5.6 2215 0.8	0415 6.5 1037 0.4 1641 6.2 2251 0.9	0445 7.1 1113 0.4 1711 6.8 2328 0.9	0503 7.1 1148 0.3 1730 6.8
<b>5</b> F	0335 4.2 0946 0.5 1606 3.8 2204 0.8	0350 4.7 1011 0.6 1622 4.3 2227 1.0	0405 5.2 1022 0.6 1638 4.8 2243 1.0	0422 5.7 1037 0.6 1654 5.3 2258 1.0	0455 6.3 1109 0.6 1725 5.9 2330 1.1	0525 6.9 1143 0.7 1754 6.5	0000 0.9 0545 6.9 1215 0.6 1815 6.4
<b>6</b> SA ☾	0424 4.0 1042 0.7 1701 3.6 2307 0.9	0440 4.5 1103 0.9 1716 4.1 2328 1.2	0455 5.0 1111 0.9 1733 4.5 2340 1.2	0511 5.4 1123 0.9 1748 4.9 2354 1.2	0542 6.1 1150 1.0 1817 5.6	0004 1.1 0613 6.7 1220 1.0 1847 6.1	0035 1.1 0633 6.7 1252 1.0 1909 6.1
<b>7</b> SU	0527 3.7 1154 0.9 1812 3.4	0546 4.2 1217 1.2 1836 3.9	0559 4.7 1222 1.2 1846 4.3	0614 5.1 1231 1.2 1859 4.7	0022 1.3 0645 5.7 1254 1.3 1927 5.3	0051 1.4 0712 6.3 1319 1.4 1953 5.8	0122 1.3 0734 6.3 1350 1.4 2018 5.8



<b>8</b> M	0026 1.0 0656 3.5 1317 1.1 1945 3.3	0055 1.3 0717 4.0 1345 1.3 2007 3.9	0102 1.3 0724 4.5 1350 1.4 2016 4.3	0112 1.3 0738 4.8 1358 1.4 2030 4.6	0137 1.5 0807 5.5 1419 1.6 2056 5.2	0204 1.6 0832 6.0 1453 1.7 2119 5.7	0232 1.5 0856 6.1 1517 1.6 2142 5.7	<b>8</b> M
<b>9</b> TU	0201 1.0 0828 3.6 1442 1.1 2110 3.5	0232 1.2 0852 4.1 1512 1.3 2128 4.0	0237 1.3 0858 4.5 1516 1.4 2140 4.5	0245 1.3 0912 4.9 1527 1.4 2158 4.8	0307 1.5 0939 5.5 1553 1.5 2227 5.4	0338 1.6 1005 6.0 1621 1.6 2255 5.9	0405 1.5 1024 6.1 1648 1.6 2311 5.9	<b>9</b> TU
<b>10</b> W	0330 0.8 0940 3.8 1553 1.0 2211 3.7	0402 1.0 1012 4.3 1622 1.2 2234 4.3	0408 1.0 1016 4.8 1629 1.2 2245 4.7	0421 1.1 1031 5.2 1642 1.2 2303 5.1	0451 1.2 1101 5.8 1716 1.3 2334 5.8	0519 1.3 1129 6.4 1747 1.3	0551 1.2 1146 6.4 1817 1.3	<b>10</b> W
<b>11</b> TH	0433 0.5 1036 4.0 1644 0.9 2259 3.9	0505 0.7 1109 4.5 1714 1.1 2324 4.4	0514 0.7 1114 5.0 1722 1.1 2334 5.0	0531 0.7 1129 5.5 1739 1.1 2352 5.4	0604 0.8 1200 6.2 1814 1.1	0638 0.8 1229 6.8 1849 1.1	0633 0.8 1247 6.7 1917 1.0	<b>11</b> TH
<b>12</b> F	0520 0.4 1120 4.1 1724 0.8 2339 4.0	0552 0.6 1155 4.6 1752 1.0	0602 0.5 1158 5.1 1804 1.0	0622 0.5 1213 5.6 1824 0.9	0657 0.5 1245 6.3 1901 1.0	0732 0.5 1316 7.0 1939 1.0	0757 0.4 1335 6.9 2006 0.8	<b>12</b> F
<b>13</b> SA	0559 0.3 1158 4.1 1759 0.7	0603 4.5 0630 0.5 1232 4.6 1825 0.9	0614 5.1 0641 0.4 1236 5.2 1840 0.9	0632 5.5 0703 0.4 1251 5.7 1902 0.9	0705 6.2 0740 0.5 1324 6.4 1942 0.9	0736 6.8 0817 0.4 1356 7.1 2020 0.9	0756 6.8 0842 0.3 1416 7.0 2049 0.8	<b>13</b> SA
<b>14</b> SU	0015 4.1 0633 0.3 1233 4.1 1833 0.7	0035 4.6 0702 0.5 1304 4.6 1857 0.8	0048 5.2 0714 0.4 1309 5.2 1913 0.8	0106 5.6 0737 0.4 1325 5.7 1936 0.8	0140 6.3 0815 0.4 1359 6.4 2018 0.9	0212 6.9 0853 0.5 1431 7.1 2056 0.9	0232 6.9 0920 0.3 1452 7.0 2126 0.8	<b>14</b> SU
<b>15</b> M	0047 4.2 0703 0.3 1306 4.1 1905 0.7	0104 4.7 0729 0.5 1333 4.5 1929 0.8	0119 5.3 0742 0.4 1341 5.2 1945 0.8	0138 5.7 0805 0.4 1358 5.7 2006 0.8	0212 6.4 0844 0.5 1432 6.4 2048 0.8	0244 7.0 0921 0.5 1503 7.0 2125 0.9	0305 7.0 0951 0.4 1525 7.0 2158 0.8	<b>15</b> M

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> TU	0118 4.2 0730 0.3 1339 4.0 1935 0.7	0135 4.7 0756 0.5 1400 4.5 2001 0.8	0151 5.3 0808 0.5 1412 5.1 2016 0.8	0209 5.7 0827 0.5 1429 5.6 2034 0.8	0243 6.4 0906 0.5 1503 6.3 2114 0.9	0314 7.0 0941 0.5 1533 6.9 2150 0.9	0335 7.0 1016 0.5 1553 6.9 2224 0.8
<b>17</b> W	0148 4.2 0754 0.4 1410 3.9 2003 0.7	0207 4.7 0822 0.6 1429 4.4 2031 0.9	0223 5.3 0833 0.6 1442 5.0 2045 0.9	0240 5.7 0849 0.5 1500 5.5 2101 0.9	0313 6.4 0926 0.6 1532 6.2 2139 0.9	0344 7.0 1001 0.6 1601 6.8 2216 0.9	0404 7.0 1034 0.6 1620 6.7 2247 0.9
<b>18</b> TH	0218 4.1 0818 0.5 1439 3.8 2031 0.8	0239 4.6 0848 0.7 1458 4.3 2100 1.0	0253 5.1 0859 0.7 1511 4.8 2114 1.0	0311 5.6 0912 0.6 1528 5.3 2128 0.9	0343 6.2 0947 0.7 1600 5.9 2203 1.0	0413 6.9 1024 0.7 1629 6.6 2242 1.0	0433 6.9 1053 0.7 1648 6.5 2311 1.0
<b>19</b> F	0250 3.9 0843 0.6 1509 3.7 2103 0.9	0310 4.4 0915 0.9 1529 4.2 2131 1.1	0323 5.0 0925 0.9 1541 4.7 2145 1.1	0341 5.4 0936 0.8 1557 5.1 2155 1.1	0412 6.0 1009 0.8 1628 5.7 2227 1.1	0443 6.6 1047 0.9 1657 6.3 2307 1.2	0503 6.6 1116 0.8 1716 6.3 2337 1.2
<b>20</b> SA	0323 3.8 0914 0.8 1544 3.5 2142 1.0	0343 4.2 0947 1.0 1603 4.0 2210 1.2	0355 4.8 0954 1.1 1614 4.5 2220 1.2	0412 5.2 1001 1.0 1630 4.9 2226 1.2	0442 5.8 1031 1.0 1659 5.5 2255 1.3	0513 6.4 1109 1.1 1728 6.1 2332 1.4	0534 6.4 1140 1.0 1748 6.0
<b>21</b> SU	0402 3.6 0954 1.0 1629 3.4 2232 1.1	0423 4.0 1030 1.3 1648 3.8 2303 1.4	0434 4.5 1031 1.3 1659 4.2 2308 1.4	0450 4.9 1034 1.3 1714 4.6 2311 1.4	0519 5.5 1100 1.3 1741 5.2 2336 1.5	0550 6.1 1136 1.3 1809 5.8	0610 6.1 1207 1.3 1829 5.8
<b>22</b> M	0454 3.4 1055 1.3 1735 3.2 2359 1.2	0518 3.8 1134 1.5 1750 3.6	0528 4.2 1129 1.6 1804 4.0	0543 4.6 1125 1.6 1817 4.4	0610 5.3 1148 1.6 1844 5.0	0638 5.8 1219 1.7 1907 5.5	0657 5.8 1247 1.6 1924 5.5

<b>23</b> TU	0610 1255 1901	3.2 1.4 3.1	0022 0633 1310 1928	1.5 3.7 1.6 3.6	0024 0641 1310 1932	1.6 4.1 1.8 4.0	0023 0657 1258 1944	1.6 4.4 1.8 4.3	0041 0726 1309 2010	1.7 5.0 1.9 4.9	0104 0747 1326 2035	1.8 5.6 2.0 5.4	<b>23</b> TU	0127 0803 1349 2056	1.7 5.5 1.9 5.3
<b>24</b> W	0138 0749 1419 2028	1.1 3.3 1.3 3.3	0203 0810 1440 2056	1.4 3.7 1.5 3.8	0210 0816 1452 2104	1.5 4.1 1.6 4.2	0219 0828 1500 2114	1.6 4.5 1.7 4.5	0229 0855 1512 2141	1.7 5.1 1.8 5.1	0244 0923 1537 2210	1.9 5.6 2.0 5.6	<b>24</b> W	0313 0946 1602 2231	1.8 5.6 1.9 5.6
<b>25</b> TH	0249 0902 1520 2133	0.9 3.5 1.1 3.6	0319 0929 1545 2157	1.2 4.0 1.3 4.1	0329 0935 1557 2207	1.2 4.4 1.3 4.6	0341 0945 1610 2221	1.2 4.8 1.4 4.9	0405 1014 1635 2253	1.4 5.5 1.5 5.6	0433 1043 1700 2322	1.5 6.1 1.6 6.1	<b>25</b> TH	0456 1104 1723 2341	1.4 6.0 1.5 6.1
<b>26</b> F	0346 0957 1607 2223	0.6 3.8 0.9 3.8	0417 1026 1635 2246	0.8 4.3 1.0 4.4	0427 1032 1703 2257	0.8 4.8 1.1 4.9	0443 1044 1703 2314	0.8 5.3 1.1 5.3	0513 1116 1735 2346	0.9 5.9 1.2 6.0	0541 1145 1804 2352	1.0 6.6 1.3 6.6	<b>26</b> F	0606 1205 1832	1.0 6.5 1.2
<b>27</b> SA	0433 1044 1647 2307	0.4 4.0 0.7 4.1	0549 1155 1758 2329	0.4 4.7 0.7 4.6	0601 1201 1813 2340	0.3 5.3 0.8 5.1	0623 1216 1835 2358	0.3 5.8 0.7 5.6	0031 0702 1350 1917	6.3 0.4 6.6 0.8	0102 0739 1321 1956	6.9 0.4 7.2 0.9	<b>27</b> SA	0034 0713 1255 1935	6.5 0.6 6.9 1.0
<b>28</b> SU	0517 1126 1727 2348	0.2 4.2 0.6 4.3	0549 1155 1758 2329	0.4 4.7 0.7 4.6	0601 1201 1813 2340	0.3 5.3 0.8 5.1	0623 1216 1835 2358	0.3 5.8 0.7 5.6	0031 0702 1350 1917	6.3 0.4 6.6 0.8	0102 0739 1321 1956	6.9 0.4 7.2 0.9	<b>28</b> SU	0120 0810 1341 2029	6.9 0.3 7.2 0.8
<b>29</b> M	0558 1209 1808	0.1 4.4 0.5	0007 0630 1236 1839	4.8 0.3 4.8 0.7	0020 0642 1243 1855	5.4 0.2 5.4 0.6	0039 0707 1259 1918	5.8 0.1 6.0 0.6	0112 0748 1333 2002	6.5 0.2 6.7 0.7	0144 0829 1404 2044	7.1 0.2 7.4 0.8	<b>29</b> M	0203 0900 1424 2116	7.1 0.1 7.3 0.7
<b>30</b> TU	0029 0639 1250 1849	4.4 0.0 4.4 0.5	0047 0709 1317 1920	4.9 0.2 4.8 0.6	0101 0723 1325 1936	5.5 0.1 5.5 0.5	0120 0748 1341 2001	6.0 0.1 6.1 0.6	0152 0830 1415 2045	6.7 0.1 6.8 0.6	0225 0912 1446 2127	7.4 0.1 7.4 0.6	<b>30</b> TU	0243 0943 1506 2159	7.3 0.0 7.3 0.5
<b>31</b> W	0110 0719 1333 1931	4.5 0.0 4.4 0.5	0127 0748 1359 2000	5.0 0.2 4.8 0.6	0140 0801 1406 2017	5.6 0.1 5.4 0.5	0200 0827 1423 2042	6.2 0.1 6.0 0.5	0232 0907 1456 2124	6.9 0.1 6.7 0.6	0304 0949 1527 2205	7.5 0.1 7.3 0.6	<b>31</b> W	0323 1022 1547 2238	7.5 0.1 7.3 0.5

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> TH	0150 4.5 0757 0.1 1415 4.2 2012 0.5	0209 5.0 0825 0.3 1438 4.7 2041 0.6	0221 5.6 0839 0.2 1448 5.3 2058 0.6	0240 6.1 0902 0.2 1505 5.8 2121 0.6	0313 6.9 0940 0.2 1538 6.5 2200 0.7	0344 7.5 1020 0.2 1608 7.1 2239 0.7	0403 7.5 1056 0.2 1628 7.0 2312 0.6
<b>2</b> F	0232 4.4 0836 0.3 1458 4.0 2057 0.6	0251 4.9 0903 0.5 1517 4.5 2123 0.7	0302 5.5 0916 0.5 1530 5.1 2139 0.7	0321 6.0 0935 0.4 1547 5.5 2159 0.7	0354 6.7 1009 0.5 1619 6.2 2235 0.8	0424 7.3 1047 0.5 1649 6.8 2312 0.8	0444 7.3 1123 0.4 1709 6.7 2344 0.7
<b>3</b> SA	0316 4.2 0921 0.6 1545 3.8 2148 0.7	0336 4.7 0945 0.7 1601 4.3 2212 0.9	0347 5.3 0956 0.8 1616 4.8 2226 0.9	0404 5.8 1011 0.7 1632 5.2 2242 0.9	0437 6.4 1042 0.8 1703 5.8 2314 1.0	0507 7.0 1118 0.8 1732 6.4 2348 1.0	0528 7.0 1152 0.8 1754 6.3
<b>4</b> SU ☾	0407 4.0 1018 0.9 1641 3.5 2251 0.8	0429 4.4 1039 1.1 1657 4.0 2318 1.1	0440 5.0 1048 1.1 1712 4.5 2325 1.1	0455 5.4 1058 1.1 1727 4.9 2338 1.1	0527 6.1 1125 1.2 1756 5.5	0556 6.7 1158 1.2 1824 6.0	0618 6.6 1230 1.1 1848 6.0
<b>5</b> M	0515 3.7 1132 1.1 1755 3.3	0539 4.1 1157 1.4 1818 3.8	0548 4.6 1201 1.5 1828 4.3	0602 5.0 1208 1.4 1842 4.6	0605 1.2 0633 5.7 1232 1.5 1909 5.2	0634 1.3 0658 6.3 1258 1.6 1932 5.7	0103 1.2 0722 6.2 1328 1.5 1958 5.7
<b>6</b> TU	0014 0.9 0647 3.5 1259 1.3 1928 3.3	0047 1.2 0713 4.0 1332 1.5 1949 3.8	0050 1.2 0716 4.4 1333 1.6 1959 4.2	0058 1.3 0729 4.8 1340 1.6 2014 4.5	0120 1.4 0756 5.4 1359 1.7 2039 5.1	0146 1.5 0820 6.0 1431 1.9 2103 5.6	0213 1.4 0844 1.8 1455 1.8 2124 5.6
<b>7</b> W	0154 0.9 0816 3.6 1428 1.2 2050 3.5	0227 1.1 0845 4.1 1500 1.4 2109 4.0	0229 1.2 0849 4.6 1503 1.5 2120 4.5	0237 1.2 0901 4.9 1511 1.5 2138 4.8	0255 1.4 0928 5.5 1536 1.6 2208 5.4	0322 1.5 0951 6.1 1602 1.7 2235 5.9	0346 1.4 1008 6.1 1626 1.6 2251 5.9

<b>8</b> TH	0319 0926 1536 2150	0.7 3.8 1.1 3.7	0349 0958 1605 2213	0.9 4.3 1.2 4.2	0356 1001 1612 2222	0.9 4.8 1.3 4.7	0410 1015 1624 2240	1.0 5.2 1.3 5.1	0439 1045 1655 2313	1.1 5.9 1.3 5.8	0504 1112 1723 2342	1.2 6.5 1.4 6.3	0533 1128 1751 2359	1.1 6.4 1.3 6.3
<b>9</b> F	0416 1017 1623 2236	0.5 4.0 0.9 3.9	0446 1052 1652 2301	0.7 4.5 1.1 4.4	0455 1054 1701 2309	0.7 5.0 1.1 4.9	0512 1109 1717 2328	0.7 5.5 1.1 5.4	0544 1140 1750	0.8 6.2 1.1	0615 1209 1822	0.8 6.8 1.1	0641 1228 1850	0.7 6.7 1.0
<b>10</b> SA	0458 1058 1659 2314	0.4 4.0 0.8 4.0	0529 1134 1727 2338	0.6 4.5 1.0 4.5	0538 1136 1739 2347	0.6 5.1 1.0 5.1	0557 1151 1759	0.6 5.6 1.0	0601 0631 1835	6.0 0.6 1.0	066 0705 1253 1910	6.6 0.6 7.0 1.0	0049 0730 1313 1938	6.6 0.5 6.9 0.9
<b>11</b> SU	0532 1134 1733 2347	0.4 4.1 0.7 4.1	0600 1208 1759	0.5 4.5 0.9	0611 1211 1814	0.5 5.1 0.9	0606 0632 1227 1835	5.5 0.5 5.6 0.9	0039 0708 1300 1913	6.2 0.6 6.3 0.9	010 0743 1331 1949	6.8 0.6 7.0 0.9	0130 0810 1351 2018	6.8 0.4 6.9 0.8
<b>12</b> M	0600 1207 1806	0.4 4.1 0.7	0627 1235 1832	0.5 4.5 0.8	0639 1242 1847	0.5 5.1 0.8	0638 0701 1258 1908	5.6 0.5 5.6 0.8	0112 0738 1332 1948	6.3 0.6 6.3 0.8	0144 0814 1403 2024	6.9 0.6 6.9 0.9	0204 0843 1424 2054	6.9 0.5 6.9 0.8
<b>13</b> TU	0017 0628 1238 1839	4.2 0.4 4.1 0.6	0035 0653 1259 1905	4.6 0.5 4.5 0.7	0050 0705 1311 1919	5.3 0.5 5.1 0.8	0108 0726 1328 1939	5.7 0.5 5.6 0.7	0142 0803 1401 2020	6.4 0.6 6.3 0.8	0214 0838 1432 2055	7.0 0.6 7.0 0.8	0235 0911 1453 2126	0.7 0.6 6.9 0.7
<b>14</b> W	0047 0655 1308 1910	4.2 0.4 4.0 0.6	0107 0721 1327 1937	4.7 0.6 4.5 0.7	0121 0732 1340 1950	5.3 0.6 5.1 0.8	0139 0749 1358 2008	5.8 0.5 5.6 0.7	0213 0826 1431 2048	6.5 0.6 6.3 0.8	0243 0901 1500 2123	7.1 0.6 6.9 0.8	0304 0935 1520 2154	0.7 0.6 6.8 0.7
<b>15</b> TH	0117 0720 1338 1938	4.2 0.5 4.0 0.6	0140 0748 1358 2007	4.6 0.6 4.5 0.8	0153 0759 1410 2020	5.3 0.7 5.0 0.8	0210 0814 1427 2036	5.7 0.6 5.5 0.8	0243 0850 1500 2114	6.4 0.6 6.2 0.8	0313 0926 1528 2151	7.1 0.6 6.8 0.8	0334 0956 1547 2220	0.7 0.6 6.8 0.8

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> <sup>F</sup>	0149 4.1 0743 0.6 1406 3.9 2006 0.7	0213 4.5 0815 0.7 1429 4.4 2036 0.9	0224 5.1 0825 0.8 1439 4.9 2049 0.9	0241 5.6 0838 0.7 1456 5.3 2104 0.9	0314 6.3 0914 0.7 1528 6.0 2139 0.9	0344 7.0 0952 0.7 1556 6.6 2217 0.9	0404 6.9 1020 0.7 1616 6.6 2246 0.9
<b>17</b> <sup>SA</sup>	0220 4.0 0809 0.7 1437 3.8 2038 0.7	0245 4.4 0843 0.9 1459 4.2 2108 1.0	0255 5.0 0851 0.9 1508 4.8 2119 1.0	0312 5.4 0902 0.8 1524 5.2 2131 1.0	0344 6.1 0935 0.9 1556 5.8 2203 1.0	0414 6.7 1015 0.9 1626 6.4 2241 1.1	0434 6.7 1044 0.9 1645 6.4 2311 1.0
<b>18</b> <sup>SU</sup>	0254 3.8 0840 0.8 1511 3.6 2114 0.8	0317 4.2 0915 1.0 1532 4.1 2145 1.1	0327 4.8 0920 1.1 1542 4.6 2152 1.1	0344 5.2 0927 1.0 1557 5.0 2201 1.1	0415 5.9 0958 1.1 1627 5.6 2228 1.2	0446 6.5 1037 1.1 1657 6.2 2304 1.2	0506 6.5 1109 1.0 1718 6.1 2336 1.1
<b>19</b> <sup>M</sup>	0332 3.7 0919 1.0 1554 3.5 2202 1.0	0357 4.1 0956 1.2 1615 3.9 2236 1.2	0406 4.6 1001 1.3 1625 4.4 2239 1.3	0422 5.0 1001 1.2 1640 4.7 2243 1.2	0452 5.7 1029 1.3 1708 5.4 2306 1.3	0523 6.2 1107 1.3 1736 5.9 2339 1.3	0543 6.2 1138 1.2 1757 5.9
<b>20</b> <sup>TU</sup>	0422 3.5 1015 1.3 1654 3.3 2318 1.1	0451 3.9 1057 1.5 1715 3.8 2350 1.3	0458 4.4 1051 1.6 1726 4.2 2348 1.4	0512 4.8 1052 1.5 1740 4.5 2348 1.4	0541 5.4 1116 1.5 1805 5.1	0610 6.0 1150 1.6 1831 5.6	0007 1.2 0629 6.0 1218 1.4 1849 5.6
<b>21</b> <sup>W</sup>	0530 3.3 1155 1.4 1816 3.2	0601 3.8 1221 1.6 1836 3.7	0608 4.2 1219 1.8 1847 4.1	0621 4.6 1213 1.8 1901 4.4	0605 1.5 0649 5.3 1228 1.8 1927 5.0	0031 1.5 0714 5.8 1252 1.9 1951 5.5	0056 1.4 0731 5.7 1317 1.7 2005 5.4
<b>22</b> <sup>TH</sup>	0058 1.0 0704 3.4 1334 1.3 1943 3.3	0122 1.3 0730 3.8 1355 1.5 2009 3.8	0126 1.4 0733 4.3 1400 1.7 2015 4.3	0135 1.4 0746 4.7 1408 1.7 2029 4.6	0145 1.5 0815 5.3 1423 1.8 2056 5.2	0153 1.7 0842 5.8 1442 2.0 2124 5.7	0217 1.6 0902 5.7 1508 1.9 2145 5.6

<b>23</b> <sub>F</sub>	0211 0.8	0240 1.0	0249 1.1	0301 1.1	0322 1.2	0351 1.4	0413 1.3
	0823 3.6	0850 4.1	0854 4.5	0904 5.0	0934 5.6	1002 6.2	1023 6.1
	1438 1.1	1507 1.2	1515 1.4	1526 1.4	1548 1.5	1617 1.6	1637 1.5
	2051 3.6	2115 4.1	2126 4.6	2140 5.0	2210 5.6	2239 6.2	2258 6.1
<b>24</b> <sub>SA</sub>	0309 0.5	0341 0.7	0350 0.7	0405 0.7	0433 0.8	0501 0.9	0522 0.9
	0922 3.9	0950 4.3	0956 4.9	1008 5.3	1039 6.0	1107 6.7	1127 6.6
	1529 0.9	1600 1.0	1611 1.1	1625 1.1	1654 1.1	1723 1.2	1747 1.2
	2146 3.9	2208 4.4	2219 4.9	2236 5.3	2308 6.0	2338 6.6	2356 6.6
<b>25</b> <sub>SU</sub>	0359 0.3	0431 0.5	0442 0.5	0500 0.5	0532 0.5	0604 0.6	0631 0.6
	1012 4.1	1040 4.6	1046 5.1	1100 5.6	1134 6.4	1202 7.0	1222 7.0
	1615 0.7	1647 0.8	1700 0.9	1717 0.9	1753 0.9	1827 1.0	1858 1.0
	2233 4.1	2253 4.6	2306 5.2	2324 5.7	2357 6.4		
<b>26</b> <sub>M</sub>	0445 0.2	0516 0.3	0528 0.3	0551 0.3	0626 0.3	0627 7.0	0046 7.0
	1058 4.3	1124 4.7	1132 5.3	1147 5.9	1221 6.6	0704 0.4	0736 0.3
	1659 0.6	1731 0.7	1746 0.7	1808 0.7	1848 0.8	1251 7.2	1310 7.2
	2318 4.3	2336 4.8	2349 5.4			1927 0.9	1959 0.8
<b>27</b> <sub>TU O</sub>	0529 0.1	0559 0.3	0613 0.2	0008 5.9	0041 6.6	0113 7.3	0132 7.3
	1142 4.4	1207 4.8	1215 5.4	0637 0.2	0716 0.2	0757 0.3	0829 0.2
	1744 0.5	1815 0.6	1832 0.6	1232 6.0	1306 6.7	1337 7.4	1357 7.3
				1856 0.6	1939 0.7	2020 0.7	2051 0.7
<b>28</b> <sub>W</sub>	0001 4.5	0018 4.9	0031 5.6	0052 6.1	0124 6.9	0157 7.5	0216 7.5
	0612 0.1	0641 0.2	0654 0.2	0721 0.2	0801 0.2	0843 0.2	0915 0.2
	1226 4.4	1250 4.8	1300 5.5	1317 6.0	1350 6.8	1421 7.4	1441 7.3
	1829 0.4	1859 0.5	1916 0.5	1943 0.5	2026 0.6	2106 0.6	2137 0.5
<b>29</b> <sub>TH</sub>	0044 4.6	0104 5.0	0116 5.7	0135 6.2	0208 7.0	0240 7.6	0259 7.6
	0653 0.2	0722 0.3	0735 0.2	0801 0.2	0840 0.3	0922 0.3	0956 0.2
	1310 4.4	1334 4.8	1344 5.4	1401 6.0	1434 6.7	1505 7.3	1525 7.2
	1914 0.4	1944 0.5	2000 0.5	2026 0.5	2108 0.5	2147 0.6	2218 0.4
<b>30</b> <sub>F</sub>	0128 4.6	0151 5.0	0200 5.7	0219 6.2	0252 7.0	0323 7.6	0343 7.5
	0735 0.3	0802 0.4	0815 0.4	0838 0.4	0915 0.4	0954 0.5	1031 0.4
	1355 4.2	1417 4.7	1428 5.3	1445 5.8	1517 6.5	1548 7.1	1608 7.0
	2000 0.4	2028 0.6	2043 0.5	2107 0.5	2147 0.6	2223 0.6	2255 0.5

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> SA	0213 4.5 0817 0.5 1440 4.0 2047 0.5	0239 4.9 0843 0.6 1500 4.5 2114 0.6	0247 5.5 0855 0.6 1512 5.1 2128 0.6	0304 6.0 0913 0.6 1529 5.5 2148 0.6	0337 6.8 0946 0.7 1601 6.2 2223 0.7	0407 7.4 1024 0.7 1631 6.7 2258 0.7	0428 7.3 1101 0.6 1652 6.6 2329 0.6
<b>2</b> SU	0301 4.2 0905 0.8 1529 3.8 2139 0.6	0328 4.7 0928 0.9 1546 4.3 2207 0.8	0336 5.3 0939 0.9 1600 4.8 2217 0.8	0352 5.8 0952 0.9 1617 5.2 2231 0.8	0424 6.4 1023 1.0 1648 5.8 2303 0.9	0454 7.1 1059 1.0 1717 6.4 2335 0.9	0515 7.0 1133 0.9 1738 6.3
<b>3</b> M ☾	0356 3.9 1001 1.0 1626 3.6 2242 0.7	0423 4.4 1023 1.2 1642 4.1 2313 1.0	0432 4.9 1032 1.3 1657 4.6 2318 1.0	0446 5.4 1040 1.2 1713 4.9 2327 1.0	0518 6.1 1110 1.3 1742 5.5 2353 1.1	0545 6.7 1143 1.3 1809 6.0	0604 0.8 0608 6.6 1214 1.3 1832 6.0
<b>4</b> TU	0507 3.7 1110 1.2 1737 3.4	0533 4.1 1137 1.4 1758 3.9	0539 4.7 1141 1.5 1808 4.3	0553 5.0 1146 1.5 1825 4.7	0624 5.7 1213 1.6 1851 5.3	0622 1.1 0649 6.3 1242 1.7 1916 5.8	0650 1.0 0712 6.3 1311 1.6 1939 5.7
<b>5</b> W	0602 0.8 0628 3.6 1231 1.3 1857 3.4	0636 1.0 0859 4.0 1308 1.5 1921 3.9	0638 1.1 0859 4.5 1307 1.7 1930 4.3	0645 1.1 0713 4.9 1312 1.7 1947 4.7	0104 1.2 0738 5.5 1332 1.7 2011 5.3	0131 1.3 0804 6.1 1404 1.9 2037 5.8	0157 1.2 0824 6.1 1429 1.7 2056 5.7
<b>6</b> TH	0130 0.8 0748 3.6 1353 1.3 2014 3.5	0203 1.0 0818 4.1 1428 1.4 2032 4.0	0205 1.1 0822 4.6 1430 1.6 2045 4.5	0215 1.1 0834 5.0 1436 1.6 2103 4.8	0231 1.2 0859 5.6 1458 1.7 2132 5.4	0258 1.3 0923 6.2 1528 1.7 2158 6.0	0320 1.2 0939 6.1 1552 1.6 2212 5.9
<b>7</b> F	0249 0.6 0855 3.8 1502 1.1 2115 3.7	0314 0.8 0925 4.2 1529 1.3 2134 4.2	0322 0.9 0930 4.8 1537 1.4 2145 4.7	0335 0.9 0943 5.2 1546 1.4 2204 5.1	0400 1.1 1013 5.9 1614 1.4 2236 5.7	0420 1.1 1038 6.4 1642 1.5 2305 6.3	0441 1.0 1054 6.3 1707 1.4 2321 6.2



<b>8</b> SA	0845 0947 1551 2202	0.5 3.9 1.0 3.8	0409 1018 1616 2223	0.7 4.4 1.1 4.3	0419 1022 1627 2233	0.8 4.9 1.2 4.9	0435 1036 1641 2252	0.8 5.4 1.2 5.3	0503 1108 1712 2326	0.9 6.1 1.2 6.0	0529 1137 1741 2356	0.9 6.7 1.2 6.6	<b>8</b> SA	0554 1155 1809	1.1 6.5 1.1
<b>9</b> SU	0426 1028 1629 2241	0.5 4.0 0.9 4.0	0449 1100 1654 2301	0.7 4.4 1.0 4.4	0500 1104 1708 2312	0.7 5.0 1.1 5.0	0518 1119 1724 2331	0.7 5.4 1.0 5.4	0548 1152 1758	0.8 6.2 1.1	0617 1222 1830	0.8 6.8 1.1	<b>9</b> SU	0014 0645 1241 1859	6.5 0.7 6.7 1.0
<b>10</b> M	0457 1104 1704 2314	0.5 4.0 0.8 4.0	0519 1133 1730 2334	0.7 4.4 0.9 4.5	0531 1139 1745 2346	0.7 5.0 0.9 5.1	0550 1155 1803	0.7 5.5 0.9	0005 0622 1228 1839	6.1 0.7 6.2 0.9	0036 0655 1259 1913	6.7 0.8 6.8 1.0	<b>10</b> M	0055 0724 1319 1941	6.7 0.7 6.7 0.9
<b>11</b> TU ●	0525 1138 1813 2346	0.5 4.0 0.6 4.1	0549 1200 1805	0.6 4.5 0.8	0601 1210 1820	0.7 5.1 0.8	0004 0619 1227 1839	5.5 0.6 5.5 0.8	0039 0652 1300 1916	6.2 0.7 6.2 0.8	0111 0727 1331 1950	6.9 0.7 6.8 0.9	<b>11</b> TU ●	0131 0758 1352 2019	6.8 0.7 6.8 0.8
<b>12</b> W	0554 1209 1813	0.5 4.0 0.6	0620 1226 1841	0.6 4.5 0.7	0631 1241 1854	0.7 5.1 0.8	0648 1258 1913	0.6 5.5 0.7	0721 1331 1950	0.7 6.3 0.8	0142 0757 1401 2024	7.0 0.7 6.9 0.8	<b>12</b> W	0204 0828 1422 2053	7.0 0.7 6.8 0.7
<b>13</b> TH	0018 0624 1240 1847	4.1 0.5 4.0 0.6	0039 0651 1257 1915	4.6 0.6 4.5 0.7	0053 0701 1312 1926	5.2 0.7 5.1 0.7	0110 0716 1329 1945	5.7 0.6 5.5 0.7	0144 0750 1401 2022	6.4 0.7 6.3 0.8	0214 0826 1430 2056	7.1 0.7 6.9 0.8	<b>13</b> TH	0235 0857 1450 2125	7.0 0.7 6.8 0.7
<b>14</b> F	0050 0650 1311 1917	4.1 0.6 4.0 0.6	0114 0720 1331 1947	4.6 0.7 4.5 0.7	0126 0730 1343 1958	5.2 0.8 5.1 0.8	0143 0743 1400 2015	5.7 0.7 5.5 0.7	0217 0818 1433 2051	6.4 0.7 6.2 0.8	0246 0854 1500 2127	7.1 0.7 6.8 0.8	<b>14</b> F	0307 0924 1520 2156	7.0 0.7 6.7 0.7
<b>15</b> SA	0124 0716 1342 1948	4.1 0.7 3.9 0.6	0150 0749 1405 2019	4.5 0.8 4.4 0.8	0200 0757 1415 2029	5.1 0.9 5.0 0.8	0217 0810 1431 2045	5.6 0.8 5.4 0.8	0249 0844 1504 2120	6.3 0.8 6.0 0.8	0318 0922 1532 2156	7.0 0.8 6.6 0.9	<b>15</b> SA	0339 0952 1551 2225	6.9 0.8 6.6 0.8

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> SU	0157 4.0 0744 0.8 1415 3.8 2021 0.7	0225 4.4 0820 0.9 1439 4.3 2053 0.9	0234 5.0 0826 1.0 1448 4.8 2102 0.9	0250 5.4 0837 0.9 1504 5.2 2116 0.9	0322 6.1 0910 0.9 1535 5.9 2148 0.9	0352 6.8 0949 1.0 1604 6.4 2223 1.0	0412 6.7 1019 0.9 1624 6.4 2253 0.9
<b>17</b> M	0233 3.9 0819 0.9 1452 3.7 2100 0.7	0302 4.2 0856 1.0 1514 4.2 2133 0.9	0310 4.8 0859 1.1 1524 4.7 2139 1.0	0325 5.3 0909 1.0 1540 5.1 2150 0.9	0357 6.0 0939 1.1 1610 5.7 2217 1.0	0427 6.6 1018 1.1 1639 6.2 2251 1.0	0447 6.5 1049 1.0 1659 6.2 2321 0.9
<b>18</b> TU	0314 3.7 0902 1.0 1536 3.6 2149 0.8	0344 4.1 0940 1.2 1557 4.1 2224 1.0	0351 4.7 0941 1.3 1608 4.6 2226 1.1	0406 5.1 0948 1.2 1623 4.9 2232 1.1	0436 5.8 1016 1.2 1652 5.5 2256 1.1	0507 6.4 1053 1.2 1720 6.0 2328 1.1	0527 6.4 1123 1.1 1739 6.0 2356 1.0
<b>19</b> W	0404 3.6 0958 1.2 1632 3.5 2258 0.9	0435 4.0 1036 1.3 1652 4.0 2329 1.1	0442 4.6 1035 1.5 1704 4.4 2329 1.1	0456 5.0 1039 1.4 1719 4.7 2333 1.2	0525 5.7 1103 1.4 1746 5.4 2352 1.2	0555 6.2 1138 1.4 1813 5.9	0614 6.2 1206 1.3 1830 5.8
<b>20</b> TH	0506 3.5 1117 1.3 1742 3.4	0537 3.9 1146 1.4 1758 3.9	0546 4.5 1148 1.6 1813 4.4	0559 4.9 1150 1.6 1829 4.7	0628 5.6 1210 1.6 1857 5.3	0017 1.3 0656 6.1 1237 1.7 1923 5.8	0044 1.1 0712 6.0 1303 1.5 1937 5.7
<b>21</b> F	0020 0.8 0623 3.6 1244 1.2 1859 3.5	0046 1.0 0852 4.0 1308 1.4 1918 4.0	0050 1.1 0857 4.5 1312 1.5 1928 4.5	0100 1.1 0712 4.9 1322 1.5 1946 4.8	0116 1.2 0743 5.6 1344 1.6 2016 5.4	0129 1.3 0811 6.1 1404 1.7 2044 5.9	0156 1.2 0829 6.0 1430 1.6 2102 5.8
<b>22</b> SA	0131 0.6 0740 3.7 1354 1.1 2008 3.7	0200 0.8 0808 4.1 1423 1.2 2029 4.2	0207 0.9 0811 4.7 1429 1.4 2039 4.7	0220 0.9 0825 5.1 1440 1.3 2057 5.1	0242 1.0 0856 5.8 1504 1.4 2127 5.7	0309 1.1 0925 6.4 1534 1.5 2157 6.3	0331 1.0 0946 6.3 1556 1.4 2216 6.2

<b>23</b> SU	0231 0844 1451 2108	0.5 3.9 0.9 3.9	0302 0911 1524 2126	0.6 4.4 1.0 4.4	0310 0916 1532 2139	0.7 4.9 1.1 5.0	0324 0930 1545 2157	0.7 5.4 1.2 5.4	0350 1002 1614 2229	0.7 6.1 1.2 6.1	0420 1031 1644 2259	0.8 6.7 1.3 6.7	<b>23</b> SU	0441 1050 1707 2318	0.7 6.6 1.2 6.6
<b>24</b> M	0324 0940 1544 2201	0.3 4.1 0.8 4.2	0356 1005 1615 2218	0.5 4.5 0.8 4.6	0405 1013 1628 2232	0.5 5.1 0.9 5.2	0422 1028 1644 2251	0.5 5.6 0.9 5.7	0451 1101 1718 2323	0.5 6.3 1.0 6.4	0522 1130 1751 2354	0.6 6.9 1.1 7.0	<b>24</b> M	0546 1149 1820	0.5 6.9 1.0
<b>25</b> TU	0414 1030 1634 2250	0.2 4.2 0.6 4.4	0444 1054 1705 2307	0.4 4.6 0.7 4.8	0456 1103 1720 2320	0.4 5.3 0.8 5.4	0516 1119 1741 2339	0.4 5.8 0.8 5.9	0549 1153 1820	0.4 6.5 0.8	0623 1223 1857	0.5 7.1 0.9	<b>25</b> TU	0013 0655 1242 1929	7.0 0.4 7.1 0.8
<b>26</b> W O	0501 1118 1724 2337	0.2 4.3 0.5 4.5	0530 1141 1754 2357	0.4 4.7 0.6 4.9	0544 1151 1811	0.3 5.3 0.6	0607 1208 1836	0.3 5.9 0.6	0013 0644 1241 1917	6.6 0.4 6.6 0.7	0044 0723 1312 1956	7.3 0.4 7.2 0.7	<b>26</b> W O	0104 0756 1332 2026	7.3 0.4 7.1 0.6
<b>27</b> TH	0548 1206 1814	0.3 4.3 0.4	0616 1228 1843	0.4 4.7 0.5	0008 0630 1239 1900	5.6 0.4 5.4 0.5	0027 0655 1256 1926	6.1 0.3 5.9 0.5	0100 0734 1329 2008	6.8 0.4 6.6 0.6	0132 0815 1400 2047	7.5 0.5 7.2 0.6	<b>27</b> TH	0152 0847 1420 2116	7.5 0.4 7.1 0.5
<b>28</b> F	0023 0635 1252 1904	4.6 0.4 4.3 0.4	0048 0702 1314 1933	5.0 0.4 4.7 0.5	0057 0715 1326 1948	5.6 0.5 5.4 0.5	0115 0740 1343 2014	6.2 0.4 5.9 0.5	0148 0819 1415 2055	7.0 0.5 6.6 0.5	0220 0859 1447 2132	7.6 0.5 7.2 0.5	<b>28</b> F	0240 0932 1507 2201	7.5 0.5 7.1 0.4
<b>29</b> SA	0111 0721 1339 1953	4.6 0.5 4.2 0.4	0139 0747 1400 2022	4.9 0.6 4.7 0.5	0147 0759 1413 2036	5.6 0.6 5.3 0.5	0203 0821 1430 2059	6.2 0.6 5.7 0.5	0236 0859 1502 2138	6.9 0.6 6.4 0.5	0307 0937 1534 2213	7.6 0.7 7.0 0.5	<b>29</b> SA	0328 1012 1554 2243	7.5 0.6 6.9 0.4
<b>30</b> SU	0159 0806 1427 2043	4.4 0.7 4.1 0.4	0230 0844 1446 2112	4.8 0.8 4.5 0.6	0237 0844 1500 2123	5.5 0.8 5.1 0.6	0252 0901 1517 2143	6.0 0.8 5.5 0.6	0325 0936 1549 2219	6.7 0.8 6.2 0.6	0356 1012 1620 2251	7.4 0.9 6.7 0.6	<b>30</b> SU	0416 1048 1640 2321	7.3 0.8 6.6 0.5
<b>31</b> M	0250 0853 1516 2134	4.2 0.9 3.9 0.5	0320 0916 1532 2204	4.6 1.0 4.4 0.7	0328 0929 1548 2213	5.2 1.1 4.9 0.7	0343 0941 1606 2227	5.7 1.0 5.3 0.7	0416 1014 1637 2259	6.4 1.1 5.9 0.8	0445 1049 1707 2329	7.1 1.1 6.5 0.8	<b>31</b> M	0506 1123 1727 2359	7.0 1.0 6.4 0.7

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> TU	0346 4.0 0945 1.1 1611 3.7 2232 0.6	0414 4.4 1008 1.2 1625 4.2 2303 0.8	0422 5.0 1019 1.3 1641 4.7 2309 0.8	0437 5.4 1026 1.2 1659 5.1 2319 0.9	0510 6.1 1058 1.3 1730 5.7 2346 0.9	0537 6.7 1133 1.4 1757 6.2	0558 6.6 1204 1.3 1817 6.1
<b>2</b> W ☾	0449 3.8 1043 1.2 1711 3.6 2339 0.7	0517 4.2 1109 1.4 1730 4.1	0522 4.7 1117 1.5 1741 4.5	0537 5.2 1122 1.4 1800 4.9	0608 5.8 1152 1.5 1829 5.5	0014 1.0 0635 6.4 1224 1.6 1855 6.0	0042 0.9 0655 6.3 1253 1.5 1915 5.9
<b>3</b> TH	0556 3.7 1152 1.3 1816 3.6	0011 0.9 0629 4.1 1226 1.5 1842 4.0	0014 0.9 0628 4.6 1227 1.6 1849 4.5	0023 1.0 0644 5.0 1232 1.6 1908 4.8	0044 1.1 0711 5.7 1257 1.6 1934 5.4	0111 1.1 0738 6.2 1329 1.7 2001 5.9	0139 1.0 0757 6.1 1356 1.6 2019 5.9
<b>4</b> F	0050 0.7 0705 3.6 1305 1.3 1925 3.6	0122 0.9 0737 4.1 1342 1.5 1946 4.1	0124 1.0 0739 4.5 1342 1.6 1957 4.5	0133 1.0 0753 5.0 1347 1.6 2015 4.9	0152 1.1 0817 5.6 1409 1.7 2041 5.5	0220 1.2 0843 6.2 1442 1.7 2109 6.0	0245 1.0 0900 6.1 1508 1.6 2125 5.9
<b>5</b> SA	0158 0.7 0811 3.7 1412 1.2 2028 3.6	0224 0.9 0837 4.1 1443 1.4 2043 4.1	0229 1.0 0844 4.6 1450 1.5 2058 4.6	0239 1.0 0857 5.0 1455 1.5 2115 5.0	0258 1.1 0925 5.7 1519 1.5 2146 5.6	0326 1.1 0950 6.2 1552 1.6 2214 6.2	0348 1.0 1004 6.1 1616 1.5 2229 6.1
<b>6</b> SU	0257 0.7 0907 3.8 1509 1.1 2120 3.8	0316 0.9 0931 4.2 1535 1.2 2135 4.2	0325 1.0 0939 4.7 1546 1.3 2149 4.7	0336 0.9 0953 5.1 1554 1.3 2207 5.1	0358 1.0 1024 5.8 1621 1.4 2241 5.8	0425 1.1 1051 6.4 1653 1.4 2310 6.4	0446 0.9 1107 6.3 1717 1.3 2327 6.3
<b>7</b> M	0341 0.7 0953 3.8 1555 0.9 2203 3.9	0359 0.8 1016 4.3 1620 1.1 2221 4.3	0410 0.9 1025 4.8 1633 1.2 2234 4.9	0423 0.9 1040 5.2 1645 1.1 2252 5.3	0448 1.0 1113 5.9 1715 1.2 2327 6.0	0517 1.0 1142 6.5 1747 1.2 2357 6.6	0539 0.9 1200 6.4 1811 1.1

<b>8</b> TU	0417 1033 1636 2241	0.7 3.9 0.8 4.0	0.438 1.054 1.702 2.302	0.8 4.3 0.9 4.4	0.450 1.104 1.716 2.314	0.9 4.9 1.0 5.0	0.8 5.3 1.0 5.4	0.504 1.121 1.731 2.332	0.8 5.3 1.0 5.4	0.531 1.154 1.802	0.9 6.0 1.0	0.603 1.224 1.834	0.9 6.6 1.0	0.015 0.629 1.243 1.900	<b>8</b> TU	0015 0.8 6.5 0.9
<b>9</b> W	0452 1109 1715 2318	0.7 4.0 0.7 4.0	0.516 1.128 1.742 2.340	0.8 4.4 0.8 4.5	0.528 1.141 1.755 2.352	0.9 5.0 0.9 5.1	0.8 5.4 0.8	0.543 1.157 1.813	0.8 5.4 0.8	0.006 0.611 1.230 1.845	6.1 0.9 6.1 0.9	0.037 0.646 1.300 1.918	6.8 0.9 6.7 0.9	0.057 0.713 1.320 1.944	<b>9</b> W	0.7 0.8 0.6 0.8
<b>10</b> TH ●	0527 1144 1752 2354	0.7 4.0 0.6 4.1	0.552 1.201 1.821	0.8 4.4 0.8	0.605 1.216 1.833	0.8 5.0 0.8	0.5 0.8 0.8	0.009 0.619 1.232 1.851	5.5 0.8 5.4 0.8	0.044 0.649 1.305 1.925	6.3 0.9 6.2 0.8	0.114 0.724 1.335 1.958	6.9 0.9 0.8 0.8	0.136 0.753 1.356 2.025	<b>10</b> TH ●	6.9 0.8 0.7
<b>11</b> F	0600 1218 1828	0.7 4.0 0.6	0.016 0.626 1.234 1.857	4.5 0.8 4.5 0.7	0.029 0.638 1.250 1.908	5.1 0.9 5.1 0.7	5.6 0.8 5.5 0.7	0.046 0.652 1.307 1.926	5.6 0.8 5.5 0.7	0.120 0.723 1.340 2.001	6.3 0.9 6.2 0.8	0.150 0.758 1.409 2.034	7.0 0.9 6.8 0.8	0.212 0.829 1.429 2.103	<b>11</b> F	6.9 0.8 6.7 0.6
<b>12</b> SA	0029 0630 1252 1902	4.1 0.7 4.0 0.6	0.053 0.658 1.310 1.931	4.5 0.8 4.5 0.7	0.106 0.709 1.325 1.942	5.1 0.9 5.1 0.7	5.6 0.9 5.5 0.7	0.122 0.721 1.342 1.959	5.6 0.9 5.4 0.7	0.156 0.754 1.415 2.035	6.3 0.9 6.2 0.7	0.225 0.830 1.443 2.109	7.0 0.9 6.7 0.7	0.247 0.902 1.503 2.139	<b>12</b> SA	6.9 0.9 6.7 0.6
<b>13</b> SU	0106 0659 1328 1937	4.1 0.8 4.0 0.6	0.132 0.730 1.348 2.006	4.5 0.9 4.5 0.7	0.143 0.740 1.401 2.017	5.1 0.9 5.0 0.7	5.6 0.9 5.4 0.7	0.159 0.751 1.418 2.033	5.6 0.9 5.4 0.7	0.232 0.824 1.450 2.109	6.3 0.9 6.1 0.7	0.300 0.902 1.518 2.144	6.9 0.9 6.6 0.7	0.322 0.934 1.537 2.215	<b>13</b> SU	6.8 0.9 6.6 0.6
<b>14</b> M	0142 0732 1404 2014	4.0 0.8 3.9 0.6	0.211 0.805 1.425 2.044	4.4 0.9 4.4 0.7	0.220 0.813 1.438 2.054	5.0 1.0 5.0 0.7	5.5 0.9 5.3 0.7	0.236 0.824 1.454 2.109	5.5 0.9 5.3 0.7	0.308 0.857 1.526 2.144	6.2 0.9 6.0 0.8	0.337 0.935 1.554 2.217	6.8 1.0 6.5 0.8	0.357 1.008 1.613 2.249	<b>14</b> M	6.8 0.9 6.5 0.7
<b>15</b> TU	0221 0810 1443 2055	4.0 0.9 3.8 0.6	0.252 0.845 1.504 2.126	4.3 1.0 4.3 0.8	0.300 0.851 1.516 2.135	5.0 1.1 4.9 0.8	5.4 1.0 5.2 0.8	0.315 0.902 1.533 2.148	5.4 1.0 5.2 0.8	0.346 0.934 1.603 2.221	6.1 1.0 5.8 0.8	0.415 1.011 1.631 2.251	6.7 1.0 6.4 0.8	0.435 1.043 1.650 2.322	<b>15</b> TU	6.7 0.9 6.4 0.7

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WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> W	0303 3.9 0854 1.0 1526 3.8 2143 0.6	0334 4.3 0929 1.1 1545 4.3 2214 0.8	0357 5.3 0944 1.1 1615 5.1 2232 0.8	0428 6.0 1015 1.1 1644 5.7 2301 0.9	0457 6.6 1050 1.2 1713 6.3 2328 0.9	0516 6.6 1122 1.1 1731 6.2 2359 0.8
<b>17</b> TH	0351 3.8 0946 1.1 1616 3.7 2240 0.7	0421 4.2 1019 1.2 1632 4.2 2310 0.8	0444 5.2 1033 1.3 1704 5.0 2323 0.9	0515 5.9 1102 1.3 1733 5.7 2350 1.0	0544 6.5 1135 1.3 1801 6.2	0602 6.4 1205 1.2 1817 6.1
<b>18</b> F	0446 3.8 1049 1.2 1714 3.7 2346 0.6	0514 4.1 1118 1.3 1728 4.2	0539 5.1 1132 1.4 1801 5.0	0610 5.8 1200 1.4 1831 5.6	0613 1.0 0639 6.4 1228 1.5 1859 6.1	0642 0.9 0655 6.3 1257 1.3 1913 6.1
<b>19</b> SA	0550 3.7 1200 1.2 1819 3.7	0612 0.8 0617 4.1 1225 1.3 1833 4.2	0628 0.9 0641 5.1 1244 1.4 1907 5.0	0652 1.0 0714 5.8 1310 1.5 1939 5.7	0711 1.0 0742 6.4 1335 1.6 2007 6.2	0740 0.9 0800 6.2 1403 1.4 2023 6.1
<b>20</b> SU	0052 0.6 0701 3.8 1312 1.1 1928 3.8	0120 0.8 0727 4.2 1340 1.2 1943 4.3	0138 0.8 0819 5.2 1359 1.3 2016 5.2	0202 0.9 0821 5.8 1425 1.4 2048 5.8	0227 1.0 0851 6.4 1454 1.5 2119 6.4	0252 0.9 0912 6.3 1518 1.4 2138 6.3
<b>21</b> M	0154 0.5 0809 3.9 1417 1.0 2034 4.0	0225 0.7 0835 4.3 1448 1.1 2049 4.4	0244 0.7 0856 5.3 1509 1.2 2122 5.4	0310 0.8 0927 5.9 1538 1.3 2154 6.0	0340 0.9 0957 6.6 1609 1.4 2225 6.6	0403 0.8 1018 6.5 1635 1.3 2244 6.6
<b>22</b> TU	0252 0.4 0911 4.0 1517 0.8 2134 4.1	0323 0.6 0935 4.4 1548 0.9 2150 4.6	0346 0.6 0959 5.4 1616 1.0 2223 5.6	0414 0.7 1032 6.1 1649 1.1 2255 6.3	0446 0.7 1100 6.7 1721 1.1 2326 6.9	0510 0.7 1121 6.7 1750 1.1 2346 6.9

0348	0.4	0417	0.6	0428	0.6	0447	0.6	0518	0.6	0551	0.7	0621	0.6	<b>23</b> W
1009	4.1	1031	4.5	1041	5.1	1057	5.5	1131	6.2	1200	6.8	1220	6.8	
1615	0.7	1644	0.8	1700	0.8	1720	0.8	1758	0.9	1832	0.9	1903	0.8	
2228	4.3	2248	4.7	2300	5.3	2318	5.8	2352	6.5					
0442	0.5	0509	0.6	0522	0.6	0544	0.6	0620	0.6	0022	7.1	0043	7.1	<b>24</b> TH
1101	4.2	1122	4.6	1135	5.2	1151	5.6	1225	6.3	0657	0.7	0730	0.6	O
1711	0.5	1740	0.7	1756	0.6	1820	0.6	1900	0.7	1254	7.0	1315	6.9	
2320	4.4	2344	4.8	2354	5.5					1937	0.7	2006	0.6	
0534	0.5	0600	0.6	0614	0.6	0010	6.0	0044	6.7	0115	7.3	0136	7.3	<b>25</b> F
1151	4.2	1212	4.6	1226	5.3	0637	0.6	0717	0.7	0755	0.7	0827	0.6	
1806	0.4	1835	0.6	1851	0.5	1242	5.7	1315	6.4	1346	7.0	1406	7.0	
						1915	0.5	1956	0.5	2033	0.5	2101	0.4	
0009	4.5	0038	4.9	0046	5.5	0102	6.1	0135	6.8	0207	7.5	0228	7.4	<b>26</b> SA
0625	0.6	0650	0.7	0704	0.7	0727	0.7	0808	0.7	0846	0.8	0917	0.6	
1240	4.2	1300	4.7	1315	5.3	1331	5.7	1404	6.4	1435	7.0	1456	7.0	
1900	0.4	1929	0.5	1943	0.4	2007	0.4	2048	0.4	2125	0.4	2152	0.3	
0059	4.5	0130	4.9	0138	5.5	0153	6.1	0226	6.8	0257	7.5	0318	7.4	<b>27</b> SU
0712	0.7	0737	0.7	0751	0.8	0812	0.8	0853	0.8	0930	0.9	1002	0.7	
1327	4.2	1347	4.7	1402	5.3	1419	5.7	1451	6.4	1523	7.0	1543	6.9	
1950	0.3	2019	0.5	2033	0.4	2056	0.4	2135	0.4	2211	0.4	2238	0.3	
0148	4.4	0220	4.8	0227	5.4	0242	6.0	0316	6.7	0347	7.4	0407	7.2	<b>28</b> M
0757	0.8	0821	0.9	0836	0.9	0854	0.9	0934	0.9	1009	1.0	1043	0.9	
1414	4.2	1442	4.6	1447	5.2	1505	5.6	1538	6.3	1609	6.9	1629	6.8	
2038	0.4	2107	0.5	2120	0.5	2140	0.5	2218	0.5	2252	0.5	2320	0.4	
0238	4.2	0309	4.6	0316	5.3	0331	5.8	0406	6.5	0435	7.1	0455	7.0	<b>29</b> TU
0840	0.9	0903	1.0	0919	1.1	0933	1.0	1011	1.1	1046	1.1	1120	1.0	
1501	4.1	1516	4.5	1532	5.1	1551	5.5	1624	6.1	1654	6.7	1713	6.6	
2124	0.4	2153	0.6	2204	0.6	2221	0.6	2256	0.6	2327	0.7	2357	0.5	
0329	4.0	0358	4.4	0405	5.0	0420	5.5	0455	6.2	0522	6.8	0542	6.7	<b>30</b> W
0923	1.0	0946	1.1	1001	1.2	1011	1.2	1047	1.2	1122	1.3	1155	1.1	
1548	3.9	1602	4.4	1618	4.9	1637	5.3	1710	5.9	1738	6.5	1757	6.4	
2211	0.5	2239	0.7	2247	0.7	2301	0.7	2332	0.8					

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> TH ☾	0422 3.9 1010 1.1 1637 3.8 2300 0.6	0449 4.3 1033 1.3 1651 4.3 2330 0.9	0455 4.8 1045 1.3 1707 4.8 2334 0.9	0511 5.3 1054 1.3 1726 5.1 2344 0.9	0544 6.0 1129 1.4 1758 5.7	0001 0.8 0611 6.5 1202 1.4 1825 6.3	0031 0.7 0630 6.5 1233 1.3 1843 6.2
<b>2</b> F	0517 3.7 1104 1.2 1730 3.7 2355 0.7	0546 4.1 1128 1.4 1750 4.2	0548 4.6 1136 1.5 1800 4.6	0605 5.0 1144 1.4 1821 5.0	0011 0.9 0635 5.7 1216 1.5 1851 5.6	0040 1.0 0702 6.3 1247 1.6 1917 6.1	0109 0.8 0721 6.2 1317 1.4 1936 6.1
<b>3</b> SA	0614 3.6 1208 1.3 1826 3.6	0027 1.0 0646 4.0 1239 1.5 1853 4.1	0028 1.0 0645 4.5 1239 1.6 1900 4.5	0035 1.0 0702 4.9 1247 1.5 1920 4.9	0059 1.1 0729 5.6 1313 1.6 1948 5.5	0127 1.1 0756 6.1 1342 1.7 2015 6.0	0156 1.0 0814 6.0 1412 1.6 2034 6.0
<b>4</b> SU	0053 0.8 0714 3.5 1315 1.3 1928 3.6	0127 1.1 0744 4.0 1351 1.5 1953 4.1	0128 1.1 0748 4.4 1353 1.6 2003 4.5	0135 1.1 0802 4.8 1357 1.6 2021 4.9	0156 1.2 0827 5.5 1420 1.6 2050 5.5	0224 1.2 0853 6.0 1449 1.7 2117 6.0	0253 1.1 0910 6.0 1520 1.6 2135 6.0
<b>5</b> M	0151 0.9 0816 3.6 1419 1.2 2029 3.6	0224 1.1 0840 4.0 1452 1.4 2051 4.1	0227 1.2 0848 4.5 1500 1.5 2104 4.6	0236 1.1 0902 4.9 1506 1.5 2120 5.0	0256 1.2 0929 5.5 1528 1.5 2151 5.6	0326 1.3 0954 6.0 1600 1.6 2219 6.2	0352 1.1 1009 6.0 1626 1.5 2236 6.1
<b>6</b> TU	0248 0.9 0913 3.7 1518 1.1 2124 3.7	0316 1.1 0932 4.1 1546 1.2 2145 4.2	0324 1.1 0943 4.6 1558 1.3 2158 4.7	0334 1.1 0957 5.0 1607 1.3 2213 5.1	0355 1.2 1028 5.6 1632 1.3 2247 5.8	0426 1.3 1054 6.2 1703 1.4 2316 6.4	0450 1.1 1110 6.1 1726 1.3 2335 6.3
<b>7</b> W	0340 0.9 1001 3.8 1610 0.9 2211 3.8	0404 1.0 1020 4.2 1636 1.1 2235 4.3	0416 1.1 1032 4.7 1648 1.1 2246 4.8	0428 1.1 1047 5.1 1702 1.1 2302 5.3	0451 1.1 1119 5.8 1729 1.1 2337 6.0	0522 1.2 1147 6.4 1759 1.1	0545 1.0 1206 6.3 1822 1.0



<b>8</b> TH	0426	0.9	0.449	1.0	0.503	1.0	0.517	1.0	0.542	1.1	0.006	6.6	0.027	6.6	<b>8</b> TH
	1044	3.9	1.103	4.3	1.116	4.9	1.132	5.3	1.204	6.0	0.615	1.1	0.639	1.0	
	1655	0.8	1.722	0.9	1.734	0.9	1.750	0.9	1.819	0.9	1.233	6.5	1.254	6.5	
	2255	3.9	2.319	4.4	2.330	4.9	2.346	5.4	1.819	0.9	1.850	0.9	1.915	0.8	
<b>9</b> F	0507	0.8	0.530	1.0	0.545	1.0	0.600	1.0	0.021	6.1	0.051	6.7	0.113	6.7	<b>9</b> F
	1124	4.0	1.141	4.4	1.156	5.0	1.212	5.4	0.628	1.0	0.701	1.1	0.728	1.0	
	1735	0.7	1.803	0.8	1.815	0.8	1.833	0.8	1.245	6.1	1.315	6.7	1.336	6.6	
	2335	4.0	2.359	4.4	1.815	0.8	1.833	0.8	1.905	0.8	1.936	0.8	2.003	0.7	
<b>10</b> SA	0544	0.8	0.607	0.9	0.011	5.0	0.027	5.5	0.101	6.2	0.132	6.8	0.154	6.8	<b>10</b> SA
	1202	4.0	1.217	4.5	0.622	1.0	0.637	1.0	0.708	1.0	0.741	1.1	0.813	1.0	
	1812	0.6	1.841	0.7	1.234	5.1	1.252	5.5	1.325	6.1	1.355	6.7	1.416	6.7	
	0014	4.1	0.037	4.5	1.853	0.7	1.912	0.7	1.947	0.7	2.019	0.7	2.048	0.6	
<b>11</b> SU	0618	0.8	0.642	0.9	0.050	5.1	0.107	5.6	0.140	6.3	0.211	6.9	0.233	6.9	<b>11</b> SU
	1239	4.1	1.254	4.5	0.656	1.0	0.709	1.0	0.743	1.0	0.818	1.1	0.854	1.0	
	1850	0.5	1.918	0.7	1.312	5.1	1.330	5.5	1.403	6.2	1.433	6.8	1.454	6.7	
	0053	4.1	0.116	4.5	1.931	0.6	1.949	0.6	2.026	0.7	2.100	0.7	2.131	0.5	
<b>12</b> M	0650	0.8	0.716	0.9	0.129	5.2	0.145	5.6	0.219	6.3	0.249	7.0	0.310	6.9	<b>12</b> M
	1317	4.1	1.333	4.6	0.730	1.0	0.742	0.9	0.817	1.0	0.855	1.0	0.933	0.9	
	1928	0.5	1.955	0.6	1.350	5.2	1.408	5.5	1.441	6.2	1.510	6.8	1.530	6.7	
	0131	4.1	0.158	4.6	2.009	0.6	2.026	0.6	2.105	0.6	2.140	0.6	2.213	0.4	
<b>13</b> TU	0725	0.8	0.754	0.9	0.208	5.2	0.225	5.7	0.257	6.4	0.327	7.0	0.347	6.9	<b>13</b> TU
	1355	4.1	1.412	4.6	0.807	0.9	0.818	0.9	0.855	0.9	0.933	1.0	1.012	0.9	
	2007	0.4	2.034	0.6	1.428	5.1	1.446	5.5	1.518	6.2	1.547	6.7	1.605	6.7	
	0210	4.1	0.240	4.5	2.048	0.6	2.105	0.5	2.144	0.6	2.219	0.5	2.252	0.4	
<b>14</b> W	0803	0.8	0.834	0.9	0.249	5.1	0.304	5.6	0.336	6.3	0.405	7.0	0.425	6.9	<b>14</b> W
	1434	4.0	1.451	4.5	0.847	1.0	0.859	0.9	0.937	0.9	1.013	1.0	1.051	0.9	
	2046	0.5	2.115	0.6	1.506	5.1	1.524	5.5	1.555	6.1	1.624	6.7	1.641	6.6	
	0251	4.0	0.321	4.4	2.128	0.6	2.145	0.6	2.223	0.6	2.255	0.6	2.328	0.4	
<b>15</b> TH	0844	0.9	0.916	1.0	0.330	5.0	0.345	5.5	0.417	6.2	0.446	6.9	0.504	6.8	<b>15</b> TH
	1513	4.0	1.529	4.5	0.929	1.1	0.941	1.0	1.018	1.0	1.053	1.1	1.127	1.0	
	2128	0.5	2.158	0.6	1.545	5.0	1.602	5.4	1.633	6.0	1.702	6.6	1.719	6.5	
	0251	4.0	0.321	4.4	2.208	0.6	2.225	0.6	2.301	0.7	2.330	0.6	2.330	0.6	

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WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> <sup>F</sup>	0335 4.0 0930 1.0 1556 4.0 2215 0.5	0403 4.3 1000 1.1 1611 4.4 2245 0.7	0428 5.4 1025 1.1 1644 5.3 2306 0.7	0500 6.1 1100 1.2 1715 5.9 2339 0.8	0529 6.7 1133 1.2 1744 6.5	0000 0.5 0547 6.6 1204 1.1 1800 6.5
<b>17</b> <sup>SA</sup>	0424 3.9 1022 1.1 1645 3.9 2310 0.6	0449 4.3 1049 1.2 1658 4.4 2338 0.8	0516 5.3 1113 1.2 1732 5.3 2354 0.8	0548 6.0 1145 1.3 1803 5.9	0005 0.8 0617 6.5 1216 1.4 1832 6.4	0034 0.6 0634 6.5 1246 1.2 1848 6.4
<b>18</b> <sup>SU</sup>	0520 3.8 1124 1.1 1743 3.9	0542 4.2 1147 1.2 1755 4.4	0611 5.2 1211 1.3 1831 5.2	0623 0.9 0643 5.8 1240 1.4 1902 5.8	0048 0.9 0712 6.4 1309 1.5 1930 6.4	0116 0.8 0729 6.3 1337 1.4 1946 6.3
<b>19</b> <sup>M</sup>	0014 0.6 0626 3.7 1235 1.1 1852 3.8	0040 0.8 0647 4.1 1300 1.3 1905 4.3	0056 0.9 0714 5.1 1323 1.4 1940 5.2	0121 1.0 0747 5.7 1350 1.5 2012 5.8	0145 1.0 0816 6.3 1419 1.6 2041 6.4	0213 0.9 0838 6.2 1444 1.5 2101 6.3
<b>20</b> <sup>TU</sup>	0122 0.7 0738 3.7 1349 1.1 2007 3.9	0150 0.9 0802 4.2 1418 1.2 2021 4.3	0208 0.9 0825 5.1 1440 1.3 2054 5.2	0232 1.0 0856 5.7 1508 1.4 2125 5.9	0303 1.1 0926 6.3 1540 1.5 2155 6.4	0328 1.0 0948 6.2 1607 1.4 2216 6.5
<b>21</b> <sup>W</sup>	0228 0.7 0851 3.8 1459 0.9 2116 4.0	0257 0.9 0913 4.2 1529 1.1 2135 4.4	0319 0.9 0937 5.1 1555 1.1 2204 5.4	0345 1.0 1009 5.8 1627 1.2 2236 6.1	0418 1.1 1036 6.3 1659 1.3 2305 6.6	0443 1.0 1058 6.3 1728 1.2 2326 6.7
<b>22</b> <sup>TH</sup>	0332 0.7 0956 3.9 1606 0.7 2217 4.2	0400 0.8 1016 4.4 1635 0.9 2242 4.6	0427 0.9 1045 5.3 1708 0.9 2308 5.6	0458 1.0 1117 5.9 1744 0.9 2341 6.3	0530 1.0 1145 6.5 1817 1.0	0559 0.9 1205 6.5 1848 0.9

<b>23</b> F	0432 0.7 1053 4.0 1708 0.6 2312 4.3	0458 0.8 1113 4.5 1738 0.7 2341 4.7	0512 0.9 1127 5.0 1753 0.7 2350 5.3	0532 0.9 1144 5.5 1814 0.7	0608 0.9 1216 6.1 1851 0.7	0010 6.9 0643 0.9 1245 6.7 1927 0.7	0031 6.9 0715 0.8 1306 6.7 1956 0.5	<b>23</b> F
<b>24</b> SA O	0527 0.7 1144 4.1 1805 0.4	0552 0.8 1203 4.6 1834 0.6	0608 0.9 1219 5.2 1849 0.5	0005 5.8 0628 0.8 1236 5.6 1911 0.5	0038 6.5 0708 0.9 1307 6.3 1950 0.5	0108 7.1 0745 0.9 1339 6.8 2027 0.5	0129 7.1 0815 0.8 1359 6.8 2053 0.3	<b>24</b> SA O
<b>25</b> SU	0002 4.4 0616 0.7 1230 4.2 1856 0.3	0033 4.8 0641 0.8 1249 4.7 1924 0.5	0041 5.4 0657 0.9 1305 5.3 1939 0.4	0056 5.9 0719 0.8 1322 5.7 2002 0.3	0129 6.7 0800 0.9 1355 6.4 2042 0.3	0200 7.3 0839 0.9 1427 7.0 2119 0.3	0221 7.2 0907 0.7 1447 6.9 2144 0.2	<b>25</b> SU
<b>26</b> M	0049 4.4 0701 0.8 1315 4.3 1942 0.3	0122 4.8 0725 0.8 1333 4.7 2009 0.4	0129 5.4 0743 0.9 1348 5.3 2024 0.4	0144 6.0 0805 0.8 1406 5.8 2048 0.3	0217 6.7 0846 0.9 1439 6.4 2127 0.3	0249 7.4 0925 0.9 1511 7.0 2204 0.3	0310 7.3 0954 0.7 1531 7.0 2230 0.1	<b>26</b> M
<b>27</b> TU	0135 4.3 0742 0.8 1357 4.3 2023 0.3	0208 4.7 0805 0.9 1414 4.7 2050 0.5	0214 5.4 0824 0.9 1430 5.3 2105 0.4	0229 5.9 0845 0.9 1448 5.7 2127 0.4	0303 6.7 0926 0.9 1522 6.4 2206 0.4	0334 7.3 1004 1.0 1553 7.0 2242 0.4	0355 7.2 1035 0.8 1612 6.9 2308 0.2	<b>27</b> TU
<b>28</b> W	0220 4.2 0819 0.9 1437 4.2 2100 0.4	0251 4.6 0842 1.0 1453 4.7 2126 0.6	0257 5.3 0901 1.0 1509 5.2 2140 0.5	0313 5.8 0920 1.0 1528 5.6 2200 0.5	0348 6.5 1000 1.0 1602 6.3 2237 0.5	0418 7.2 1037 1.1 1632 6.9 2311 0.6	0437 7.1 1109 0.9 1651 6.8 2340 0.4	<b>28</b> W
<b>29</b> TH	0303 4.1 0855 1.0 1517 4.1 2134 0.5	0331 4.5 0918 1.1 1531 4.6 2201 0.7	0339 5.1 0936 1.1 1548 5.1 2212 0.7	0355 5.6 0951 1.1 1606 5.5 2226 0.7	0430 6.3 1030 1.1 1641 6.1 2302 0.7	0458 6.9 1105 1.1 1709 6.7 2333 0.7	0518 6.8 1139 1.0 1728 6.7	<b>29</b> TH
<b>30</b> F	0347 3.9 0932 1.1 1556 4.0 2210 0.7	0408 4.3 0955 1.2 1608 4.5 2237 0.9	0419 4.9 1011 1.2 1627 4.9 2244 0.9	0436 5.3 1023 1.2 1646 5.3 2254 0.8	0510 6.0 1100 1.2 1718 5.9 2327 0.9	0537 6.6 1134 1.3 1746 6.5 2358 0.9	0004 0.6 0657 6.5 1205 1.2 1805 6.5	<b>30</b> F
<b>31</b> SA C	0431 3.7 1013 1.2 1640 3.8 2254 0.8	0447 4.1 1036 1.3 1650 4.3 2320 1.1	0501 4.6 1049 1.4 1710 4.7 2324 1.1	0518 5.1 1100 1.3 1728 5.1 2331 1.0	0550 5.7 1134 1.4 1800 5.7	0616 6.3 1207 1.4 1825 6.3	0028 0.8 0635 6.2 1236 1.3 1846 6.2	<b>31</b> SA C

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> SU	0519 3.5 1105 1.3 1731 3.7 2350 1.0	0534 4.0 1127 1.5 1742 4.1	0546 4.4 1136 1.5 1900 4.5	0605 4.8 1146 1.5 1820 4.9	0000 1.1 0634 5.5 1216 1.6 1850 5.5	0030 1.1 0659 6.0 1247 1.6 1915 6.0	0058 1.0 0718 6.0 1313 1.5 1936 6.0
<b>2</b> M	0613 3.4 1215 1.3 1830 3.5	0016 1.3 0639 3.8 1239 1.6 1852 3.9	0017 1.3 0641 4.3 1240 1.7 1902 4.4	0022 1.3 0659 4.6 1249 1.7 1923 4.7	0046 1.3 0725 5.3 1313 1.7 1951 5.4	0112 1.4 0751 5.8 1339 1.8 2018 5.9	0139 1.2 0811 5.8 1405 1.7 2040 5.8
<b>3</b> TU	0055 1.1 0716 3.4 1330 1.3 1939 3.5	0128 1.4 0749 3.8 1405 1.6 2005 3.9	0129 1.4 0750 4.2 1407 1.6 2015 4.3	0135 1.5 0804 4.6 1414 1.7 2031 4.7	0151 1.5 0828 5.2 1432 1.8 2100 5.3	0212 1.6 0854 5.7 1454 1.9 2127 5.8	0243 1.5 0914 5.7 1528 1.8 2148 5.8
<b>4</b> W	0203 1.2 0826 3.5 1441 1.2 2048 3.6	0235 1.4 0852 3.9 1512 1.4 2113 4.0	0243 1.5 0901 4.3 1521 1.5 2124 4.5	0252 1.5 0913 4.7 1531 1.5 2137 4.9	0310 1.6 0939 5.3 1552 1.6 2208 5.5	0335 1.7 1004 5.8 1620 1.7 2236 6.0	0404 1.5 1022 5.8 1646 1.5 2257 6.0
<b>5</b> TH	0310 1.1 0929 3.6 1544 1.0 2146 3.7	0335 1.3 0950 4.1 1610 1.2 2212 4.2	0348 1.4 1001 4.5 1622 1.2 2222 4.7	0400 1.4 1015 4.9 1635 1.2 2235 5.1	0421 1.5 1046 5.5 1659 1.3 2309 5.8	0448 1.6 1112 6.1 1727 1.3 2338 6.3	0512 1.4 1132 6.0 1750 1.2 2359 6.3
<b>6</b> F	0406 1.0 1020 3.8 1634 0.8 2235 3.9	0427 1.2 1040 4.3 1701 1.0 2302 4.3	0443 1.2 1052 4.8 1713 1.0 2311 4.8	0457 1.2 1108 5.1 1729 1.0 2325 5.3	0522 1.3 1140 5.8 1757 1.0	0550 1.4 1209 6.4 1825 1.0	0613 1.2 1230 6.3 1849 0.9
<b>7</b> SA	0450 1.0 1104 3.9 1716 0.7 2318 4.0	0512 1.1 1123 4.4 1744 0.8 2343 4.4	0529 1.1 1137 4.9 1757 0.8 2354 5.0	0545 1.1 1154 5.3 1816 0.8	0000 6.0 0614 1.2 1227 6.0 1848 0.8	0029 6.6 0644 1.2 1256 6.6 1918 0.8	0051 6.6 0710 1.1 1317 6.6 1944 0.7

<b>8</b> SU	0528 1144 1754 2358	0.9 4.1 0.5 4.1	0550 1201 1824	1.0 4.5 0.7	0608 1216 1837	1.1 5.1 0.7	0009 0825 1235 1857	5.5 1.1 5.5 0.6	0043 0658 1308 1933	6.2 1.1 6.2 0.7	0114 0730 1339 2006	6.8 1.2 6.8 0.7	0136 0801 1359 2034	<b>8</b> SU	0136 0801 1359 2034	6.8 1.1 6.7 0.5
<b>9</b> M	0602 1223 1832	0.9 4.2 0.4	0021 0626 1237 1901	4.6 0.9 4.6 0.6	0033 0643 1255 1915	5.1 1.0 5.2 0.5	0050 0700 1314 1936	5.6 1.0 5.6 0.5	0123 0738 1347 2015	6.3 1.1 6.3 0.5	0155 0813 1418 2050	6.9 1.1 6.8 0.5	0216 0847 1438 2120	<b>9</b> M	0216 0847 1438 2120	6.9 1.0 6.8 0.4
<b>10</b> TU	0037 0636 1301 1911	4.2 0.8 4.2 0.4	0100 0702 1315 1939	4.6 0.9 4.7 0.5	0112 0719 1333 1954	5.3 0.9 5.3 0.4	0129 0735 1352 2015	5.8 0.9 5.7 0.4	0202 0815 1424 2055	6.5 1.0 6.3 0.4	0234 0854 1456 2132	7.1 1.0 6.9 0.4	0254 0931 1515 2203	<b>10</b> TU	0254 0931 1515 2203	7.0 0.9 6.9 0.2
<b>11</b> W	0115 0712 1338 1949	4.3 0.8 4.3 0.3	0141 0739 1354 2017	4.7 0.8 4.7 0.5	0151 0756 1410 2032	5.3 0.9 5.3 0.4	0208 0813 1429 2053	5.8 0.9 5.7 0.4	0241 0854 1501 2134	6.5 0.9 6.4 0.4	0311 0934 1532 2211	7.1 0.8 7.0 0.3	0331 1012 1550 2243	<b>11</b> W	0331 1012 1550 2243	7.1 0.8 6.9 0.2
<b>12</b> TH	0154 0749 1416 2026	4.3 0.8 4.3 0.4	0222 0818 1431 2055	4.7 0.8 4.7 0.5	0231 0835 1447 2109	5.3 0.9 5.3 0.4	0247 0852 1506 2130	5.8 0.8 5.7 0.4	0320 0934 1537 2210	6.5 0.9 6.4 0.4	0349 1013 1607 2246	7.1 0.9 6.9 0.4	0409 1050 1624 2319	<b>12</b> TH	0409 1050 1624 2319	7.1 0.8 6.9 0.2
<b>13</b> F	0234 0827 1453 2103	4.2 0.8 4.2 0.4	0301 0857 1508 2133	4.6 0.9 4.7 0.6	0310 0914 1523 2145	5.2 0.9 5.2 0.5	0326 0932 1542 2205	5.7 0.9 5.6 0.5	0359 1012 1613 2244	6.4 1.0 6.3 0.5	0427 1049 1642 2317	7.0 1.0 6.9 0.5	0446 1124 1700 2348	<b>13</b> F	0446 1124 1700 2348	6.9 0.9 6.8 0.4
<b>14</b> SA	0315 0908 1532 2144	4.1 0.9 4.2 0.5	0339 0937 1546 2213	4.5 1.0 4.6 0.7	0350 0954 1602 2223	5.1 1.1 5.2 0.7	0406 1011 1619 2240	5.5 1.0 5.6 0.7	0438 1049 1651 2315	6.2 1.1 6.2 0.7	0507 1124 1721 2345	6.8 1.1 6.8 0.7	0525 1155 1738	<b>14</b> SA	0525 1155 1738	6.7 1.0 6.7
<b>15</b> SU	0400 0956 1616 2235	3.9 1.0 4.1 0.7	0419 1021 1631 2300	4.3 1.1 4.5 0.8	0434 1038 1647 2307	4.9 1.2 5.1 0.9	0449 1053 1703 2320	5.3 1.2 5.5 0.9	0521 1127 1735 2349	6.0 1.3 6.1 0.9	0550 1159 1804	6.5 1.3 6.6	0015 0608 1229 1823	<b>15</b> SU	0015 0608 1229 1823	6.6 6.5 1.2 6.6

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> M	0451 3.8 1054 1.1 1712 3.9 2340 0.8	0508 4.2 1115 1.2 1727 4.4	0525 4.7 1130 1.3 1743 4.9	0540 5.1 1144 1.3 1759 5.3	0610 5.7 1214 1.4 1829 5.9	0018 0.9 0640 6.3 1243 1.5 1859 6.4	0048 0.8 0658 6.2 1312 1.4 1917 6.4
<b>17</b> TU	0555 3.6 1207 1.1 1824 3.8	0002 1.0 0613 4.0 1230 1.3 1840 4.3	0008 1.1 0628 4.5 1241 1.4 1855 4.7	0018 1.1 0643 4.9 1255 1.4 1911 5.1	0041 1.2 0713 5.5 1322 1.5 1942 5.7	0106 1.2 0742 6.0 1348 1.7 2009 6.2	0136 1.1 0803 6.0 1414 1.5 2031 6.2
<b>18</b> W	0057 1.0 0715 3.5 1331 1.1 1952 3.7	0123 1.2 0739 4.0 1359 1.3 2010 4.2	0129 1.2 0748 4.4 1408 1.4 2022 4.7	0140 1.3 0802 4.8 1420 1.4 2037 5.0	0201 1.4 0830 5.4 1447 1.5 2106 5.7	0231 1.5 0858 5.9 1518 1.6 2134 6.2	0257 1.4 0922 5.9 1544 1.6 2156 6.2
<b>19</b> TH	0214 1.0 0842 3.6 1453 1.0 2111 3.9	0243 1.2 0900 4.1 1524 1.2 2135 4.3	0250 1.3 0912 4.5 1533 1.2 2145 4.8	0303 1.3 0927 4.9 1546 1.2 2159 5.2	0327 1.4 0957 5.5 1616 1.3 2230 5.9	0359 1.5 1021 6.0 1646 1.4 2257 6.4	0424 1.4 1042 6.0 1715 1.3 2317 6.4
<b>20</b> F	0327 1.0 0953 3.8 1609 0.7 2215 4.1	0355 1.1 1011 4.3 1639 0.9 2245 4.5	0406 1.2 1025 4.8 1651 0.9 2253 5.1	0421 1.2 1043 5.1 1707 0.9 2308 5.5	0453 1.3 1114 5.7 1741 1.0 2340 6.2	0521 1.3 1142 6.3 1814 1.0	0552 1.3 1200 6.3 1845 0.8
<b>21</b> SA	0430 0.9 1049 4.0 1709 0.5 2308 4.2	0456 1.0 1109 4.5 1738 0.7 2341 4.7	0511 1.1 1122 5.0 1753 0.6 2348 5.3	0527 1.1 1141 5.4 1812 0.6	0603 1.1 1212 6.0 1847 0.6	0008 6.8 0637 1.1 1242 6.6 1923 0.6	0028 6.7 0708 1.1 1301 6.6 1950 0.4
<b>22</b> SU	0519 0.9 1136 4.1 1758 0.4 2354 4.3	0546 1.0 1156 4.6 1827 0.5	0602 1.0 1210 5.2 1842 0.4	0003 5.8 0621 1.0 1229 5.6 1903 0.4	0035 6.4 0700 1.0 1300 6.2 1942 0.4	0105 7.1 0737 1.0 1331 6.8 2018 0.3	0125 7.0 0805 0.8 1351 6.8 2043 0.2

<b>23</b> M	0602 1218 1841	0.8 4.2 0.3	0027 0628 1237 1909	4.8 0.9 4.7 0.5	0033 0646 1251 1925	5.4 0.9 5.3 0.4	0049 0708 1310 1948	5.9 0.9 5.7 0.3	0121 0749 1342 2028	6.6 0.9 6.4 0.3	0152 0827 1414 2105	7.2 0.9 7.0 0.3	<b>23</b> M	0213 0854 1434 2129	7.2 0.7 7.0 0.1
<b>24</b> TU	0036 0642 1256 1921	4.3 0.8 4.3 0.3	0109 0706 1314 1946	4.8 0.9 4.8 0.5	0115 0726 1329 2003	5.4 0.9 5.3 0.4	0130 0749 1347 2027	5.9 0.9 5.8 0.3	0203 0831 1420 2107	6.6 0.9 6.4 0.3	0235 0910 1453 2144	7.3 0.9 7.1 0.3	<b>24</b> TU	0256 0937 1513 2210	7.2 0.7 7.0 0.1
<b>25</b> W	0115 0719 1332 1955	4.3 0.8 4.3 0.4	0147 0741 1349 2019	4.7 0.9 4.8 0.5	0153 0803 1404 2036	5.3 0.9 5.4 0.5	0209 0826 1423 2100	5.9 0.9 5.8 0.4	0243 0908 1457 2139	6.6 0.9 6.5 0.4	0314 0946 1529 2216	7.3 0.9 7.1 0.4	<b>25</b> W	0335 1016 1548 2243	7.2 0.8 7.1 0.3
<b>26</b> TH	0154 0753 1407 2024	4.2 0.8 4.3 0.5	0222 0815 1423 2049	4.6 0.9 4.7 0.6	0230 0836 1439 2104	5.2 1.0 5.3 0.6	0246 0857 1458 2125	5.8 0.9 5.8 0.6	0321 0939 1532 2203	6.5 1.0 6.4 0.6	0351 1015 1602 2237	7.1 1.0 7.0 0.6	<b>26</b> TH	0412 1048 1622 2309	7.0 0.8 7.0 0.5
<b>27</b> F	0231 0825 1440 2051	4.1 0.9 4.2 0.6	0253 0848 1456 2116	4.5 1.0 4.7 0.8	0306 0907 1513 2129	5.1 1.1 5.2 0.8	0322 0925 1531 2144	5.6 1.0 5.6 0.7	0356 1005 1604 2221	6.3 1.1 6.3 0.7	0425 1039 1634 2254	6.9 1.1 6.9 0.7	<b>27</b> F	0445 1112 1654 2325	6.8 1.0 6.8 0.6
<b>28</b> SA	0306 0855 1514 2118	3.9 1.0 4.0 0.7	0322 0920 1530 2146	4.3 1.1 4.5 0.9	0339 0937 1547 2156	4.9 1.2 5.0 0.9	0356 0951 1604 2207	5.3 1.1 5.4 0.9	0428 1028 1636 2241	6.0 1.2 6.1 0.9	0456 1103 1706 2315	6.6 1.1 6.6 0.9	<b>28</b> SA	0515 1134 1726 2344	6.5 1.1 6.6 0.8
<b>29</b> SU	0341 0929 1552 2152	3.7 1.1 3.9 0.9	0353 0954 1606 2220	4.2 1.2 4.3 1.1	0412 1010 1623 2229	4.7 1.3 4.8 1.2	0428 1021 1640 2236	5.1 1.3 5.2 1.1	0459 1055 1710 2306	5.7 1.3 6.4 1.2	0526 1131 1738 2341	6.3 1.4 6.4 1.2	<b>29</b> SU	0545 1159 1759	6.3 1.3 6.3
<b>30</b> M	0421 1011 1637 2239	3.6 1.2 3.7 1.2	0431 1036 1649 2306	4.0 1.4 4.1 1.4	0449 1049 1706 2311	4.5 1.5 4.5 1.4	0504 1058 1723 2313	4.8 1.4 4.9 1.4	0534 1128 1752 2340	5.5 1.5 5.5 1.5	0559 1202 1818	6.0 1.6 6.1	<b>30</b> M	0607 0619 1228 1839	1.1 6.0 1.5 6.0
<b>31</b> TU	0511 1111 1736 2357	3.4 1.3 3.4 1.4	0519 1132 1746	3.8 1.6 3.9	0536 1141 1802	4.2 1.7 4.3	0551 1148 1820	4.6 1.7 4.6	0619 1214 1849	5.2 1.7 5.2	0619 1243 1912	6.0 1.8 5.7	<b>31</b> TU	0619 0701 1306 1931	6.0 5.7 1.7 5.7

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> W	0617 3.3 1239 1.4 1852 3.3	0014 1.6 0633 3.7 1302 1.7 1908 3.8	0017 1.7 0643 4.1 1303 1.8 1920 4.1	0011 1.7 0658 4.4 1310 1.8 1938 4.5	0032 1.8 0724 5.0 1324 1.9 2005 5.1	0056 1.9 0746 5.5 1346 2.0 2030 5.6	0120 1.7 0804 5.4 1406 1.9 2052 5.5
<b>2</b> TH	0124 1.4 0736 3.3 1401 1.3 2014 3.4	0150 1.7 0808 3.7 1433 1.5 2038 3.8	0159 1.8 0814 4.1 1442 1.6 2049 4.2	0204 1.9 0823 4.4 1451 1.7 2059 4.6	0204 2.0 0846 5.0 1509 1.8 2126 5.2	0216 2.1 0912 5.5 1535 1.9 2155 5.7	0243 2.0 0933 5.4 1605 1.8 2217 5.6
<b>3</b> F	0241 1.3 0854 3.5 1513 1.1 2120 3.6	0305 1.6 0919 4.0 1540 1.3 2148 4.1	0321 1.6 0929 4.4 1552 1.3 2156 4.5	0332 1.7 0941 4.7 1605 1.3 2207 4.9	0350 1.9 1008 5.3 1630 1.4 2238 5.6	0415 2.0 1035 5.8 1656 1.5 2306 6.1	0438 1.9 1056 5.7 1719 1.4 2328 6.0
<b>4</b> SA	0342 1.2 0952 3.7 1607 0.8 2212 3.9	0404 1.3 1014 4.2 1635 1.0 2240 4.3	0420 1.4 1025 4.7 1647 1.0 2248 4.8	0434 1.4 1041 5.0 1702 1.0 2301 5.3	0501 1.6 1111 5.6 1732 1.1 2333 5.9	0525 1.6 1140 6.2 1758 1.1	0547 1.5 1201 6.1 1822 1.0
<b>5</b> SU	0427 1.0 1038 3.9 1650 0.6 2255 4.0	0451 1.2 1100 4.4 1719 0.8 2322 4.5	0506 1.2 1111 4.9 1732 0.8 2331 5.0	0523 1.2 1129 5.3 1751 0.8 2345 5.5	0554 1.3 1201 6.0 1824 0.8	0602 6.5 0622 1.4 1230 6.6 1854 0.8	0623 6.5 0648 1.2 1251 6.5 1920 0.7
<b>6</b> M	0504 0.9 1118 4.1 1728 0.5 2335 4.2	0529 1.0 1139 4.6 1759 0.6	0546 1.1 1152 5.1 1813 0.6	0605 1.1 1210 5.5 1834 0.6	0618 6.2 0641 1.1 1243 6.2 1912 0.6	0649 6.8 0712 1.2 1314 6.8 1945 0.6	0610 6.8 0741 1.1 1333 6.7 2013 0.5
<b>7</b> TU	0538 0.8 1157 4.2 1806 0.4	0600 4.6 0606 0.9 1214 4.7 1837 0.5	0610 5.2 0622 1.0 1230 5.3 1851 0.5	0625 5.7 0643 1.0 1249 5.7 1914 0.4	0659 6.4 0723 1.1 1321 6.4 1955 0.5	0730 7.0 0758 1.1 1353 7.0 2031 0.4	0751 7.0 0830 1.0 1413 6.9 2100 0.3



<b>8</b> W	0013 0614 1235 1845	4.3 0.8 4.4 0.3	0037 0642 1251 1914	4.8 0.8 4.8 0.4	0048 0659 1307 1929	5.4 0.9 5.4 0.4	0105 0720 1326 1953	5.9 0.9 5.9 0.3	0138 0803 1358 2035	6.6 1.0 6.5 0.4	0209 0842 1430 2113	7.2 1.0 7.1 0.3	<b>8</b> W	0230 0915 1449 2144	7.1 0.9 7.1 0.2
<b>9</b> TH	0052 0650 1313 1922	4.4 0.7 4.4 0.3	0116 0719 1328 1951	4.8 0.8 4.9 0.4	0127 0737 1343 2006	5.4 0.8 5.5 0.3	0144 0759 1403 2030	6.0 0.8 5.9 0.3	0217 0842 1435 2112	6.7 0.9 6.6 0.3	0248 0923 1507 2151	7.3 0.9 7.2 0.3	<b>9</b> TH	0308 0957 1525 2223	7.2 0.8 7.2 0.1
<b>10</b> F	0132 0728 1350 1957	4.4 0.7 4.4 0.3	0156 0757 1405 2026	4.8 0.8 4.9 0.5	0206 0816 1420 2041	5.4 0.8 5.5 0.4	0223 0838 1440 2105	6.0 0.8 6.0 0.4	0256 0921 1512 2146	6.6 0.9 6.6 0.4	0326 1001 1542 2242	7.3 0.9 7.2 0.3	<b>10</b> F	0346 1035 1601 2258	7.2 0.7 7.2 0.2
<b>11</b> SA	0211 0806 1428 2033	4.3 0.7 4.4 0.4	0234 0835 1442 2102	4.7 0.8 4.8 0.6	0244 0854 1456 2116	5.3 0.9 5.4 0.5	0301 0916 1516 2137	5.8 0.9 5.9 0.5	0334 0957 1549 2216	6.5 0.9 6.5 0.6	0404 1035 1618 2251	7.1 0.9 7.1 0.6	<b>11</b> SA	0423 1109 1637 2325	7.0 0.8 7.1 0.5
<b>12</b> SU	0251 0847 1507 2112	4.1 0.8 4.3 0.6	0310 0915 1522 2140	4.5 0.9 4.7 0.8	0324 0934 1536 2153	5.1 1.0 5.3 0.8	0340 0954 1554 2210	5.6 1.0 5.7 0.8	0413 1032 1627 2244	6.2 1.1 6.4 0.8	0442 1108 1657 2317	6.8 1.1 7.0 0.8	<b>12</b> SU	0501 1140 1716 2350	6.7 1.0 6.9 0.8
<b>13</b> M	0334 0934 1552 2203	3.9 0.9 4.1 0.8	0350 0958 1609 2203	4.4 1.0 4.6 1.0	0406 1016 1622 2237	4.9 1.1 5.1 1.0	0422 1034 1710 2249	5.3 1.1 5.5 1.1	0454 1108 1710 2318	5.9 1.2 6.2 1.1	0523 1141 1741 2349	6.5 1.3 6.7 1.1	<b>13</b> M	0543 1211 1801 2551	6.4 1.2 6.7 6.3
<b>14</b> TU	0424 1033 1649 2314	3.7 1.0 3.9 1.1	0440 1054 1709 2335	4.2 1.2 4.3 1.3	0457 1109 1722 2341	4.6 1.3 4.8 1.4	0511 1125 1736 2351	5.0 1.3 5.2 1.4	0541 1154 1806 2318	5.6 1.4 5.8 1.1	0610 1222 1836 2349	6.2 1.5 6.4 1.1	<b>14</b> TU	0621 0631 1851 1857	1.1 6.1 1.4 6.3
<b>15</b> W	0530 1150 1811	3.5 1.1 3.7	0550 1216 1833	3.9 1.4 4.1	0605 1225 1843	4.4 1.4 4.6	0618 1238 1857	4.7 1.4 4.9	0013 0645 1304 1926	1.5 5.3 1.6 5.6	0036 0712 1327 1951	1.5 5.8 1.7 6.1	<b>15</b> W	0108 0736 1353 2015	1.4 5.8 1.6 6.1

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> <sup>TH</sup>	0041 1.3 0702 3.4 1324 1.1 1950 3.7	0108 1.5 0726 3.9 1354 1.3 2012 4.1	0113 1.6 0734 4.3 1401 1.4 2020 4.6	0122 1.6 0749 4.6 1411 1.4 2033 4.9	0143 1.8 0813 5.1 1435 1.6 2100 5.5	0212 1.9 0838 5.7 1505 1.7 2124 6.1	0236 1.8 0904 5.6 1529 1.6 2147 6.0
<b>17</b> <sup>F</sup>	0207 1.3 0836 3.5 1454 0.9 2110 3.9	0239 1.4 0953 4.0 1527 1.1 2140 4.4	0245 1.5 0906 4.4 1534 1.1 2145 4.9	0256 1.6 0923 4.8 1548 1.2 2159 5.2	0319 1.7 0952 5.3 1618 1.3 2229 5.9	0348 1.8 1017 5.8 1643 1.4 2254 6.4	0411 1.7 1034 5.8 1714 1.3 2312 6.3
<b>18</b> <sup>SA</sup>	0324 1.2 0944 3.8 1606 0.6 2210 4.1	0353 1.3 1005 4.3 1636 0.8 2244 4.6	0403 1.4 1016 4.8 1648 0.8 2248 5.1	0417 1.4 1035 5.1 1705 0.8 2303 5.6	0450 1.4 1106 5.7 1739 0.8 2334 6.3	0516 1.5 1135 6.3 1810 0.9	0546 1.4 1152 6.2 1838 0.7
<b>19</b> <sup>SU</sup>	0420 1.0 1036 4.0 1657 0.4 2258 4.3	0449 1.1 1100 4.5 1728 0.6 2333 4.7	0502 1.2 1110 5.0 1741 0.6 2336 5.3	0518 1.2 1129 5.5 1801 0.5 2352 5.8	0553 1.2 1201 6.1 1836 0.5	0602 6.9 0625 1.1 1230 6.7 1910 0.5	0620 6.8 0654 1.0 1249 6.6 1935 0.3
<b>20</b> <sup>M O</sup>	0503 0.9 1119 4.2 1740 0.4 2338 4.3	0531 1.0 1143 4.6 1809 0.5	0547 1.0 1153 5.2 1824 0.5	0606 1.0 1212 5.6 1845 0.4	0624 6.5 0644 1.0 1244 6.3 1923 0.4	0653 7.1 0719 1.0 1315 6.9 1958 0.3	0713 7.0 0746 0.8 1334 6.8 2023 0.2
<b>21</b> <sup>TU</sup>	0541 0.8 1156 4.3 1816 0.3	0613 4.7 0607 0.9 1217 4.7 1844 0.5	0617 5.4 0625 1.0 1229 5.3 1859 0.5	0632 5.9 0647 0.9 1248 5.7 1923 0.4	0656 6.6 0727 0.9 1321 6.4 2002 0.4	0716 7.2 0804 0.9 1353 7.0 2038 0.4	0756 7.1 0832 0.8 1413 7.0 2103 0.2
<b>22</b> <sup>W</sup>	0614 4.3 0617 0.8 1230 4.3 1849 0.4	0647 4.7 0701 0.9 1247 4.8 1913 0.5	0652 5.3 0701 0.9 1301 5.4 1930 0.5	0708 5.9 0725 0.9 1320 5.8 1956 0.5	0741 6.6 0806 0.9 1354 6.5 2034 0.5	0713 7.2 0844 0.9 1426 7.1 2111 0.5	0734 7.1 0912 0.8 1447 7.0 2138 0.3

<b>23</b> TH	0049 0652 1302 1918	4.3 0.8 4.3 0.4	0117 0715 1318 1942	4.7 0.9 4.8 0.6	0125 0735 1333 1958	5.3 0.9 5.4 0.6	0141 0759 1352 2022	5.8 0.9 5.9 0.6	0215 0841 1426 2101	6.5 0.9 6.5 0.6	0247 0917 1457 2136	7.2 0.9 7.2 0.6	0308 0947 1519 2207	<b>23</b> TH
<b>24</b> F	0123 0725 1332 1944	4.2 0.8 4.3 0.6	0144 0748 1351 2009	4.6 0.9 4.8 0.7	0157 0807 1406 2023	5.2 0.9 5.4 0.7	0214 0829 1424 2042	5.7 0.9 5.8 0.7	0247 0911 1457 2121	6.4 0.9 6.5 0.7	0318 0945 1528 2121	7.1 0.8 7.1 0.7	0339 1017 1549 2226	<b>24</b> F
<b>25</b> SA	0155 0755 1403 2008	4.1 0.8 4.2 0.7	0212 0820 1424 2035	4.5 0.9 4.7 0.8	0228 0837 1438 2047	5.1 1.0 5.2 0.8	0245 0856 1456 2103	5.6 1.0 5.7 0.8	0318 0936 1529 2139	6.3 1.0 6.4 0.8	0348 1009 1559 2212	6.9 1.0 7.0 0.8	0407 1040 1620 2242	<b>25</b> SA
<b>26</b> SU	0225 0823 1435 2031	4.0 0.9 4.1 0.8	0241 0850 1456 2102	4.4 1.0 4.5 1.0	0257 0905 1510 2113	4.9 1.1 5.1 1.0	0314 0921 1527 2125	5.4 1.1 5.5 1.0	0346 0958 1559 2158	6.1 1.1 6.1 1.0	0415 1033 1629 2234	6.7 1.1 6.8 1.0	0435 1101 1650 2303	<b>26</b> SU
<b>27</b> M	0254 0854 1509 2100	3.8 1.0 3.9 1.0	0312 0920 1530 2132	4.3 1.2 4.3 1.2	0327 0935 1543 2141	4.7 1.2 4.8 1.2	0342 0948 1559 2148	5.2 1.2 5.2 1.2	0414 1021 1630 2219	5.8 1.3 5.9 1.3	0442 1057 1700 2255	6.4 1.3 6.5 1.3	0502 1125 1721 2326	<b>27</b> M
<b>28</b> TU	0327 0931 1548 2137	3.6 1.1 3.7 1.2	0346 0956 1610 2213	4.1 1.3 4.1 1.5	0359 1009 1621 2216	4.5 1.4 4.6 1.5	0412 1018 1636 2219	4.9 1.4 5.0 1.5	0443 1047 1705 2245	5.5 1.4 5.6 1.5	0511 1121 1734 2320	6.1 1.5 6.2 1.5	0531 1150 1756 2350	<b>28</b> TU
<b>29</b> W	0409 1020 1639 2234	3.4 1.2 3.4 1.5	0430 1046 1703 2313	3.9 1.5 3.9 1.7	0441 1054 1712 2310	4.3 1.6 4.3 1.8	0453 1100 1726 2307	4.7 1.6 4.7 1.8	0520 1123 1754 2328	5.3 1.6 5.3 1.9	0547 1152 1820 2358	5.8 1.6 5.8 1.9	0607 1219 1839 1941	<b>29</b> W
<b>30</b> TH	0512 1141 1756	3.2 1.3 3.3	0530 1203 1815	3.7 1.6 3.7	0543 1205 1825	4.0 1.7 4.1	0553 1207 1840	4.4 1.8 4.4	0619 1224 1907	5.0 1.9 5.0	0640 1243 1926	5.5 1.9 5.5	0025 0657 1303	<b>30</b> TH

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> F	0035 1.6 0643 3.2 1318 1.3 1935 3.3	0045 1.9 0706 3.6 1345 1.6 1953 3.8	0048 2.0 0712 4.0 1354 1.7 2001 4.1	0033 2.1 0723 4.3 1402 1.7 2012 4.5	0043 2.2 0746 4.8 1411 1.9 2037 5.1	0058 2.2 0805 5.3 1421 2.1 2103 5.6	0119 2.1 0819 5.2 1446 2.0 2124 5.5
<b>2</b> SA	0204 1.5 0808 3.3 1432 1.1 2046 3.6	0227 1.7 0837 3.8 1503 1.3 2112 4.1	0241 1.8 0846 4.2 1513 1.3 2120 4.4	0250 2.0 0856 4.5 1525 1.4 2128 4.9	0255 2.1 0921 5.1 1550 1.5 2156 5.5	0317 2.3 0848 5.5 1617 1.6 2224 6.0	0342 2.2 1010 5.4 1639 1.6 2245 5.9
<b>3</b> SU	0307 1.3 0913 3.6 1529 0.8 2139 3.9	0332 1.4 0938 4.1 1559 1.0 2207 4.4	0346 1.5 0948 4.6 1610 1.0 2214 4.8	0359 1.6 1003 4.9 1626 1.0 2226 5.3	0423 1.7 1032 5.5 1656 1.1 2257 5.9	0446 1.9 1101 6.0 1722 1.1 2325 6.5	0507 1.8 1121 5.9 1744 1.1 2345 6.4
<b>4</b> M	0353 1.1 1002 3.9 1615 0.6 2224 4.1	0420 1.2 1026 4.4 1646 0.8 2251 4.6	0433 1.3 1037 4.9 1657 0.7 2259 5.1	0449 1.3 1053 5.3 1716 0.7 2312 5.6	0520 1.4 1125 5.9 1750 0.7 2346 6.3	0545 1.5 1155 6.5 1818 0.8	0610 1.4 1214 6.4 1845 0.7
<b>5</b> TU	0431 0.9 1044 4.1 1655 0.4 2305 4.3	0500 1.0 1106 4.6 1727 0.6 2330 4.7	0514 1.1 1118 5.1 1740 0.5 2338 5.3	0533 1.1 1136 5.6 1802 0.5 2354 5.8	0608 1.1 1209 6.2 1839 0.5	0014 6.9 0639 1.2 1239 6.8 1912 0.6	0034 6.8 0709 1.2 1258 6.8 1941 0.5
<b>6</b> W ●	0508 0.8 1124 4.3 1734 0.3 2345 4.4	0538 0.9 1143 4.8 1806 0.5	0554 0.9 1156 5.3 1820 0.4	0615 1.0 1216 5.8 1844 0.4	0028 6.5 0655 1.0 1248 6.5 1924 0.4	0058 7.2 0730 1.1 1320 7.1 2000 0.4	0118 7.1 0802 1.0 1339 7.0 2031 0.4
<b>7</b> TH	0546 0.7 1204 4.5 1813 0.2	0007 4.8 0617 0.8 1219 4.9 1843 0.4	0018 5.4 0633 0.8 1235 5.5 1858 0.3	0034 6.0 0656 0.9 1255 6.0 1923 0.3	0108 6.7 0739 0.9 1327 6.7 2005 0.4	0139 7.3 0818 1.0 1359 7.3 2044 0.4	0159 7.2 0850 0.9 1418 7.2 2116 0.3

<b>8</b> F	0025 0625 1243 1851	4.5 0.6 4.6 0.3	0046 0655 1257 1920	4.9 0.7 5.0 0.4	0057 0713 1313 1935	5.5 0.7 5.6 0.3	0115 0738 1333 2001	6.1 0.8 6.1 0.3	0149 0822 1406 2042	6.7 0.8 6.8 0.4	0220 0902 1438 2123	7.4 0.9 7.4 0.4	0240 0934 1457 2156	7.3 0.8 7.4 0.3
<b>9</b> SA	0106 0706 1323 1927	4.4 0.6 4.6 0.4	0125 0735 1338 1957	4.9 0.7 5.0 0.5	0137 0754 1352 2011	5.4 0.7 5.6 0.4	0155 0819 1412 2036	6.0 0.8 6.1 0.5	0229 0902 1445 2115	6.7 0.8 6.8 0.5	0300 0941 1517 2154	7.3 0.8 7.4 0.5	0320 1014 1536 2230	7.2 0.7 7.4 0.4
<b>10</b> SU	0147 0747 1404 2005	4.3 0.6 4.5 0.5	0204 0815 1420 2034	4.8 0.8 4.9 0.6	0218 0834 1432 2048	5.3 0.7 5.5 0.6	0236 0859 1452 2109	5.9 0.8 6.0 0.7	0309 0939 1525 2145	6.5 0.8 7.3 0.7	0340 1017 1556 2221	7.1 0.9 7.3 0.7	0400 1050 1616 2259	7.0 0.8 7.3 0.9
<b>11</b> M	0229 0830 1446 2047	4.2 0.7 4.4 0.8	0244 0857 1506 2115	4.6 0.8 4.8 0.9	0258 0915 1516 2127	5.1 0.8 5.3 0.9	0317 0937 1535 2143	5.6 0.9 5.8 0.9	0350 1015 1607 2216	6.2 1.0 6.5 1.0	0419 1049 1638 2250	6.8 1.0 7.1 1.0	0439 1122 1658 2326	6.7 0.9 7.0 0.9
<b>12</b> TU	0313 0920 1535 2143	3.9 0.8 4.1 1.0	0328 0944 1559 2206	4.4 1.0 4.6 1.2	0343 1000 1608 2215	4.9 1.0 5.1 1.2	0359 1019 1623 2228	5.3 1.0 5.5 1.3	0431 1053 1655 2256	5.9 1.1 6.2 1.3	0501 1124 1725 2328	6.4 1.1 6.8 1.3	0522 1155 1746	6.3 1.0 6.7
<b>13</b> W	0404 1021 1638 2257	3.7 0.9 3.8 1.3	0421 1045 1704 2318	4.2 1.1 4.3 1.5	0436 1057 1713 2325	4.6 1.1 4.7 1.6	0451 1112 1726 2334	5.0 1.2 5.2 1.6	0520 1142 1756	5.5 1.3 5.8	0549 1208 1823	6.1 1.4 6.4	0601 0612 1236 1847	1.3 6.0 1.2 6.3
<b>14</b> TH	0515 1142 1808	3.4 1.0 3.6	0536 1212 1833	3.9 1.3 4.1	0549 1218 1838	4.3 1.3 4.5	0602 1229 1852	4.6 1.4 4.9	0600 0628 1253 1919	1.7 5.2 1.5 5.5	0022 0654 1315 1944	1.8 5.7 1.6 6.1	0053 0718 1340 2008	1.7 5.7 1.5 6.0
<b>15</b> F	0025 0650 1316 1941	1.4 3.4 0.9 3.7	0056 0712 1350 2011	1.6 3.9 1.2 4.2	0100 0721 1354 2013	1.7 4.2 1.2 4.6	0107 0738 1406 2026	1.8 4.6 1.3 5.0	0128 0801 1426 2051	1.9 5.1 1.4 5.6	0156 0825 1453 2114	2.0 5.6 1.6 6.1	0219 0849 1516 2133	2.0 5.6 1.5 6.1

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TIME ZONE UT(GMT)

WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> SA	0151 1.4 0817 3.5 1442 0.8 2056 3.9	0228 1.5 0836 4.1 1514 1.0 2129 4.4	0232 1.6 0848 4.5 1522 1.0 2131 4.9	0242 1.7 0907 4.8 1538 1.0 2145 5.3	0304 1.8 0935 5.4 1607 1.1 2214 6.0	0354 1.8 1015 5.8 1658 1.1 2254 6.4
<b>17</b> SU	0306 1.2 0922 3.8 1548 0.6 2152 4.1	0337 1.3 0945 4.3 1617 0.7 2226 4.6	0345 1.4 0954 4.8 1627 0.7 2229 5.1	0358 1.4 1014 5.2 1646 0.7 2244 5.6	0429 1.5 1045 5.8 1719 0.8 2315 6.3	0522 1.4 1129 6.2 1814 0.7
<b>18</b> M	0359 1.1 1012 4.0 1635 0.5 2236 4.2	0428 1.2 1037 4.5 1704 0.6 2312 4.7	0439 1.2 1045 5.0 1716 0.6 2314 5.2	0455 1.2 1105 5.5 1736 0.6 2330 5.8	0528 1.2 1138 6.1 1810 0.6	0000 6.8 0627 1.1 1224 6.6 1908 0.4
<b>19</b> TU	0439 1.0 1053 4.1 1713 0.4 2314 4.2	0507 1.1 1117 4.6 1740 0.6 2348 4.7	0521 1.1 1125 5.1 1753 0.6 2351 5.2	0541 1.1 1145 5.6 1816 0.6	0601 6.5 0617 1.0 1218 6.2 1851 0.6	0050 7.0 0718 0.9 1308 6.8 1951 0.4
<b>20</b> W O	0515 0.9 1128 4.2 1744 0.5 2348 4.2	0540 0.9 1149 4.7 1808 0.6	0558 1.0 1158 5.2 1824 0.6	0607 5.8 0620 1.0 1219 5.7 1848 0.6	0640 6.5 0658 1.0 1252 6.3 1924 0.6	0131 7.0 0801 0.8 1345 6.9 2027 0.5
<b>21</b> TH	0549 0.8 1159 4.3 1813 0.5	0616 4.7 0814 0.9 1216 4.7 1836 0.6	0622 5.2 0632 0.9 1230 5.3 1851 0.6	0640 5.8 0656 0.9 1249 5.8 1915 0.6	0713 6.4 0735 0.9 1323 6.4 1952 0.6	0206 7.0 0840 0.8 1416 7.0 2058 0.6
<b>22</b> F	0019 4.2 0624 0.7 1229 4.3 1841 0.6	0040 4.7 0649 0.8 1248 4.8 1905 0.7	0052 5.2 0706 0.8 1301 5.4 1918 0.7	0110 5.7 0729 0.8 1320 5.8 1938 0.7	0144 6.4 0810 0.8 1354 6.5 2016 0.7	0237 6.9 0913 0.8 1447 7.1 2121 0.7

<b>23</b> SA	0050 0658 1300 1907	4.2 0.7 4.3 0.7	0106 0723 1321 1933	4.6 0.8 4.7 0.8	0122 0738 1334 1945	5.2 0.8 5.3 0.8	0139 0800 1425 2002	5.7 0.8 5.8 0.8	0213 0840 1435 2038	6.4 0.8 6.5 0.8	0243 0912 1456 2110	7.0 0.9 7.2 0.8	0304 0942 1517 2141	<b>23</b> SA	6.9 0.8 7.1 0.8
<b>24</b> SU	0120 0728 1331 1930	4.1 0.7 4.2 0.8	0137 0755 1355 2000	4.6 0.9 4.6 0.9	0152 0808 1406 2011	5.1 0.9 5.2 0.9	0209 0828 1424 2025	5.6 0.9 5.7 0.9	0242 0906 1457 2100	6.3 0.9 6.4 0.9	0312 0938 1527 2134	6.9 0.9 7.1 0.9	0331 1007 1548 2203	<b>24</b> SU	6.8 0.9 7.0 0.9
<b>25</b> M	0149 0756 1404 1954	4.0 0.8 4.1 0.9	0208 0824 1428 2027	4.5 0.9 4.5 1.1	0221 0837 1438 2036	5.0 1.0 5.0 1.1	0237 0854 1455 2047	5.4 1.0 5.5 1.1	0311 0930 1528 2121	6.1 1.0 6.2 1.1	0340 1003 1558 2158	6.7 1.0 6.8 1.1	0359 1032 1619 2228	<b>25</b> M	6.6 1.0 6.8 1.0
<b>26</b> TU	0218 0826 1437 2023	3.9 0.8 3.9 1.0	0238 0854 1502 2058	4.3 1.1 4.3 1.2	0251 0906 1511 2104	4.8 1.1 4.8 1.3	0305 0921 1527 2112	5.2 1.1 5.3 1.3	0339 0953 1559 2141	5.9 1.2 5.9 1.3	0408 1027 1629 2220	6.5 1.2 6.6 1.3	0428 1056 1651 2252	<b>26</b> TU	6.4 1.1 6.5 1.2
<b>27</b> W	0250 0901 1515 2059	3.7 0.9 3.7 1.2	0310 0930 1542 2137	4.2 1.2 4.1 1.4	0323 0938 1549 2139	4.6 1.2 4.6 1.5	0336 0950 1604 2144	5.0 1.2 5.0 1.5	0407 1015 1634 2209	5.7 1.3 5.7 1.5	0437 1049 1704 2247	6.2 1.3 6.3 1.5	0457 1119 1725 2318	<b>27</b> W	6.2 1.2 6.2 1.4
<b>28</b> TH	0329 0946 1601 2150	3.6 1.0 3.5 1.4	0351 1017 1633 2233	4.0 1.3 3.9 1.7	0402 1021 1638 2229	4.4 1.4 4.4 1.7	0414 1028 1651 2230	4.8 1.4 4.8 1.7	0444 1048 1720 2251	5.4 1.4 5.4 1.7	0511 1119 1748 2326	6.0 1.4 6.0 1.7	0532 1147 1808 2354	<b>28</b> TH	5.9 1.3 6.0 1.6
<b>29</b> F	0424 1054 1705 2315	3.4 1.2 3.4 1.6	0448 1124 1738 2351	3.8 1.4 3.8 1.8	0458 1124 1743 2348	4.2 1.5 4.2 1.9	0509 1127 1756 2341	4.6 1.6 4.6 2.0	0536 1141 1823 2355	5.2 1.6 5.2 2.0	0600 1205 1847 2009	5.7 1.6 5.8 5.7	0619 1228 1904 2025	<b>29</b> F	5.6 1.5 5.7 5.7
<b>30</b> SA	0544 1231 1839	3.2 1.1 3.4	0603 1253 1902	3.7 1.4 3.8	0616 1259 1905	4.1 1.5 4.2	0627 1306 1919	4.4 1.6 4.6	0651 1314 1946	5.0 1.7 5.2	0021 0712 1315 2009	2.0 5.5 1.8 5.7	0044 0724 1333 2025	<b>30</b> SA	1.9 5.4 1.7 5.6
<b>31</b> SU	0110 0715 1346 1958	1.5 3.3 1.0 3.6	0127 0740 1415 2025	1.8 3.8 1.2 4.1	0131 0745 1425 2026	1.9 4.2 1.3 4.5	0137 0759 1437 2038	2.0 4.5 1.3 4.9	0146 0824 1457 2106	2.1 5.1 1.5 5.5	0148 0850 1524 2134	2.2 5.5 1.6 6.1	0210 0906 1545 2153	<b>31</b> SU	2.1 5.4 1.6 5.9

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	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> M	0218 1.3 0824 3.6 1445 0.7 2057 3.9	0245 1.5 0850 4.1 1517 0.9 2125 4.4	0254 1.6 0858 4.5 1526 0.9 2129 4.8	0303 1.7 0913 4.9 1541 1.0 2141 5.3	0321 1.8 0941 5.4 1608 1.1 2211 5.9	0347 1.9 1010 6.0 1635 1.1 2239 6.5	0407 1.9 1029 5.8 1655 1.1 2258 6.4
<b>2</b> TU	0309 1.1 0919 3.8 1534 0.5 2146 4.1	0340 1.2 0943 4.4 1607 0.7 2213 4.6	0349 1.3 0953 4.8 1617 0.7 2219 5.1	0403 1.4 1009 5.2 1634 0.7 2233 5.6	0429 1.4 1041 5.9 1705 0.7 2306 6.3	0455 1.5 1110 6.5 1733 0.8 2335 6.9	0517 1.5 1116 6.3 1756 0.8 2353 6.8
<b>3</b> W	0353 0.9 1006 4.1 1618 0.4 2231 4.3	0425 1.0 1027 4.6 1651 0.5 2256 4.8	0437 1.1 1039 5.1 1702 0.5 2304 5.3	0454 1.1 1057 5.6 1723 0.5 2320 5.8	0526 1.2 1130 6.2 1757 0.5 2354 6.5	0555 1.2 1200 6.9 1828 0.6	0622 1.2 1219 6.8 1857 0.6
<b>4</b> TH ●	0435 0.8 1050 4.3 1701 0.3 2315 4.4	0508 0.9 1108 4.8 1732 0.5 2336 4.8	0522 0.9 1121 5.4 1745 0.4 2346 5.4	0542 0.9 1140 5.9 1809 0.4	0619 1.0 1214 6.5 1845 0.5	0623 7.2 0654 1.1 1245 7.2 1922 0.5	0042 7.1 0726 1.1 1304 7.1 1954 0.5
<b>5</b> F	0519 0.7 1134 4.5 1742 0.3 2359 4.5	0550 0.8 1148 4.9 1812 0.4	0606 0.8 1203 5.5 1827 0.4	0604 6.0 0630 0.8 1223 6.1 1851 0.4	0638 6.7 0711 0.9 1257 6.8 1930 0.4	0709 7.3 0749 0.9 1329 7.4 2010 0.5	0129 7.2 0820 0.9 1348 7.4 2044 0.4
<b>6</b> SA	0603 0.6 1217 4.6 1823 0.3	0016 4.9 0633 0.7 1231 5.0 1852 0.5	0029 5.4 0650 0.6 1246 5.7 1907 0.4	0048 6.0 0716 0.7 1306 6.2 1932 0.5	0122 6.7 0759 0.8 1340 6.9 2011 0.5	0154 7.3 0838 0.8 1412 7.6 2051 0.5	0213 7.2 0909 0.8 1432 7.5 2127 0.5
<b>7</b> SU	0042 4.4 0648 4.6 1300 4.5 1905 0.5	0058 4.9 0717 0.6 1318 5.0 1933 0.6	0113 5.4 0734 0.6 1330 5.7 1947 0.5	0131 6.0 0801 0.7 1350 6.2 2010 0.6	0206 6.7 0843 0.7 1423 6.9 2047 0.6	0237 7.3 0921 0.7 1456 7.6 2126 0.7	0257 7.2 0953 0.7 1516 7.5 2205 0.6



<b>8</b> M	0126 0734 1345 1948	4.3 0.5 4.5 0.7	0141 0801 1408 2015	4.8 0.7 4.9 0.8	0157 0818 1417 2027	5.3 0.6 5.5 0.7	0215 0844 1435 2047	5.8 0.7 6.1 0.8	0249 0924 1508 2121	6.5 0.7 6.8 0.8	0320 1000 1540 2157	7.1 0.7 7.4 0.8	0340 1032 1600 2238	7.0 0.7 7.4 0.8	<b>8</b> M
<b>9</b> TU	0211 0821 1433 2035	4.2 0.6 4.4 0.9	0226 0848 1459 2100	4.6 0.7 4.8 1.0	0241 0903 1506 2111	5.1 0.7 5.3 1.0	0259 0926 1523 2127	5.6 0.7 5.9 1.1	0333 1004 1556 2159	6.2 0.8 6.5 1.1	0404 1036 1626 2234	6.8 0.8 7.2 1.1	0424 1108 1647 2311	6.7 0.7 7.1 1.1	<b>9</b> TU
<b>10</b> W	0258 0914 1526 2132	3.9 0.6 4.1 1.1	0314 0940 1555 2153	4.4 0.8 4.5 1.3	0329 0952 1602 2204	4.9 0.8 5.0 1.3	0346 1010 1616 2215	5.3 0.9 5.5 1.4	0418 1045 1648 2246	5.9 0.9 6.2 1.4	0484 1113 1717 2318	6.4 1.0 6.8 1.4	0509 1144 1739 2351	6.3 0.9 6.7 1.4	<b>10</b> W
<b>11</b> TH D	0353 1017 1633 2240	3.7 0.7 3.8 1.3	0409 1044 1701 2303	4.2 1.0 4.3 1.5	0425 1052 1707 2312	4.6 1.0 4.8 1.6	0440 1105 1721 2319	5.0 1.0 5.2 1.6	0510 1135 1752 2348	5.6 1.1 5.8 1.7	0538 1200 1818	6.1 1.2 6.4	0601 1229 1841	6.0 1.1 6.4	<b>11</b> TH D
<b>12</b> F	0503 1134 1754 2359	3.5 0.8 3.7 1.4	0520 1204 1825	4.0 1.1 4.2	0534 1209 1825	4.4 1.1 4.6	0550 1221 1840	4.8 1.2 5.0	0618 1244 1906	5.3 1.2 5.6	0614 0643 1306 1933	6.1 5.8 1.3 6.2	0044 0706 1332 1954	1.7 5.8 1.3 6.1	<b>12</b> F
<b>13</b> SA	0624 1256 1914	3.5 0.8 3.7	0633 0648 1329	1.7 4.0 1.0	0035 0655 1333	1.7 4.3 1.0	0042 0715 1347	1.8 4.7 1.1	0105 0737 1407	1.9 5.3 1.2	0134 0805 1434	2.0 5.8 1.3	0159 0824 1455	1.9 5.7 1.3	<b>13</b> SA
<b>14</b> SU	0119 0743 1413 2026	1.4 3.6 0.7 3.9	0158 0815 1443 2058	1.6 4.1 0.9 4.4	0200 0834 1450 2101	1.6 4.5 0.9 4.8	0208 0834 1506 2114	1.7 4.9 1.0 5.3	0229 0900 1531 2143	1.8 5.4 1.1 5.9	0300 0925 1555 2206	1.9 5.8 1.1 6.5	0323 0941 1614 2221	1.8 5.8 1.1 6.3	<b>14</b> SU
<b>15</b> M	0231 0848 1517 2122	1.3 3.8 0.6 4.0	0304 0907 1542 2154	1.4 4.2 0.8 4.5	0310 0919 1551 2157	1.5 4.7 0.8 5.0	0321 0938 1610 2212	1.5 5.1 0.8 5.5	0348 1009 1640 2243	1.6 5.7 0.9 6.1	0416 1036 1704 2310	1.6 6.2 0.9 6.7	0440 1051 1729 2327	1.5 6.1 0.8 6.6	<b>15</b> M

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> TU	0327 1.1 0939 3.9 1603 0.6 2207 4.1	0355 1.2 1000 4.4 1627 0.8 2239 4.5	0405 1.3 1010 4.9 1638 0.8 2242 5.0	0420 1.3 1030 5.3 1658 0.8 2258 5.6	0450 1.3 1103 6.0 1729 0.8 2331 6.2	0519 1.3 1132 6.5 1758 0.8	0546 1.3 1149 6.4 1824 0.7
<b>17</b> W	0410 1.0 1021 4.0 1639 0.6 2245 4.1	0436 1.1 1042 4.5 1701 0.8 2315 4.6	0449 1.1 1051 5.0 1714 0.8 2320 5.1	0507 1.1 1111 5.5 1735 0.8 2337 5.6	0540 1.2 1145 6.1 1807 0.8	0600 6.9 0611 1.2 1215 6.7 1839 0.8	0618 6.7 0640 1.1 1234 6.6 1908 0.7
<b>18</b> TH	0447 0.9 1056 4.1 1709 0.6 2319 4.1	0513 1.0 1116 4.6 1731 0.8 2343 4.6	0528 1.0 1127 5.1 1745 0.8 2352 5.1	0548 1.0 1146 5.6 1806 0.8	0610 6.3 0623 1.0 1220 6.2 1838 0.8	0640 6.9 0655 1.0 1252 6.9 1911 0.8	0700 6.8 0725 1.0 1312 6.8 1942 0.8
<b>19</b> F O	0523 0.7 1129 4.2 1738 0.6 2352 4.1	0549 0.9 1149 4.6 1802 0.8	0605 0.8 1200 5.2 1815 0.8	0625 0.9 1219 5.7 1834 0.8	0643 6.3 0702 0.9 1253 6.3 1907 0.8	0714 6.9 0734 0.9 1324 7.0 1940 0.8	0735 6.8 0804 0.9 1346 6.9 2012 0.8
<b>20</b> SA	0559 0.7 1200 4.2 1809 0.7	0608 4.6 0626 0.8 1222 4.7 1834 0.8	0622 5.1 0640 0.8 1234 5.2 1846 0.8	0640 5.6 0701 0.8 1251 5.7 1902 0.8	0713 6.3 0738 0.8 1325 6.4 1935 0.8	0744 6.9 0809 0.8 1356 7.1 2008 0.9	0805 6.8 0838 0.8 1418 7.0 2040 0.8
<b>21</b> SU	0622 4.1 0634 0.6 1233 4.2 1837 0.8	0637 4.6 0714 0.8 1257 4.6 1904 0.9	0653 5.1 0714 0.7 1308 5.2 1915 0.9	0710 5.6 0733 0.8 1325 5.7 1929 0.9	0744 6.3 0810 0.8 1358 6.5 2002 0.9	0813 6.9 0841 0.8 1428 7.1 2036 0.9	0834 6.8 0910 0.8 1450 7.0 2107 0.9
<b>22</b> M	0652 4.1 0706 0.7 1306 4.1 1902 0.9	0710 4.6 0734 0.8 1332 4.6 1933 1.0	0724 5.1 0745 0.8 1342 5.1 1942 1.0	0741 5.6 0803 0.8 1359 5.6 1955 1.0	0815 6.3 0839 0.9 1432 6.4 2028 1.0	0843 6.9 0910 0.8 1501 7.0 2103 1.0	0903 6.8 0940 0.8 1522 6.9 2134 1.0

<b>23</b> TU	0123 4.0 0736 0.7 1340 4.0 1928 0.9	0143 4.5 0804 0.9 1408 4.4 2003 1.1	0156 5.0 0815 0.8 1416 5.0 2010 1.1	0212 5.4 0832 0.9 1433 5.5 2021 1.1	0246 6.1 0907 0.9 1505 6.2 2053 1.1	0314 6.7 0939 0.9 1534 6.8 2131 1.1	<b>23</b> TU	0333 6.7 1009 0.9 1555 6.8 2201 1.1
<b>24</b> W	0154 3.9 0808 0.7 1416 3.9 2001 1.0	0217 4.4 0837 0.9 1445 4.3 2037 1.2	0229 4.9 0846 0.9 1451 4.9 2042 1.2	0243 5.3 0902 1.0 1507 5.3 2051 1.2	0317 5.9 0934 1.0 1539 6.0 2120 1.2	0345 6.5 1007 1.0 1609 6.6 2159 1.2	<b>24</b> W	0405 6.5 1037 1.0 1629 6.6 2230 1.2
<b>25</b> TH	0229 3.8 0844 0.8 1454 3.8 2040 1.1	0250 4.3 0914 1.0 1525 4.2 2118 1.3	0303 4.7 0922 1.0 1530 4.7 2121 1.3	0317 5.1 0935 1.0 1545 5.2 2127 1.4	0349 5.8 1001 1.1 1617 5.8 2153 1.4	0418 6.3 1034 1.1 1646 6.5 2231 1.4	<b>25</b> TH	0438 6.3 1103 1.1 1707 6.4 2302 1.3
<b>26</b> F	0309 3.7 0928 0.8 1540 3.7 2129 1.3	0330 4.1 1000 1.1 1612 4.1 2208 1.5	0342 4.6 1005 1.1 1617 4.5 2209 1.5	0356 5.0 1014 1.1 1631 5.0 2212 1.6	0426 5.6 1035 1.2 1701 5.7 2236 1.5	0454 6.1 1106 1.2 1730 6.3 2312 1.5	<b>26</b> F	0514 6.1 1134 1.1 1750 6.2 2340 1.5
<b>27</b> SA C	0359 3.5 1027 0.9 1635 3.6 2235 1.4	0421 4.0 1058 1.2 1708 4.0 2312 1.6	0432 4.4 1100 1.2 1714 4.4 2312 1.7	0445 4.8 1105 1.3 1727 4.9 2313 1.7	0514 5.4 1122 1.3 1757 5.5 2332 1.7	0541 5.9 1149 1.3 1824 6.1	<b>27</b> SA C	0559 5.9 1215 1.2 1841 6.1
<b>28</b> SU	0503 3.5 1142 0.9 1745 3.6	0521 3.9 1209 1.2 1815 4.0	0535 4.3 1211 1.2 1821 4.4	0548 4.7 1219 1.3 1835 4.9	0616 5.3 1232 1.4 1906 5.5	0642 5.8 1248 1.4 1932 6.1	<b>28</b> SU	0656 5.7 1312 1.3 1946 6.0
<b>29</b> M	0000 1.4 0619 3.5 1257 0.8 1903 3.7	0026 1.6 0635 3.9 1322 1.1 1931 4.1	0029 1.7 0647 4.3 1331 1.1 1931 4.5	0035 1.8 0703 4.7 1343 1.2 1948 5.0	0052 1.8 0733 5.3 1402 1.3 2019 5.6	0112 1.9 0758 5.8 1416 1.4 2047 6.2	<b>29</b> M	0137 1.8 0809 5.7 1440 1.3 2106 6.1
<b>30</b> TU	0120 1.3 0732 3.6 1359 0.7 2010 3.8	0146 1.5 0752 4.1 1429 0.9 2039 4.3	0151 1.6 0800 4.5 1437 0.9 2040 4.7	0201 1.6 0819 4.9 1451 0.9 2055 5.2	0222 1.7 0849 5.5 1515 1.0 2126 5.9	0244 1.8 0918 6.0 1542 1.1 2156 6.5	<b>30</b> TU	0307 1.8 0936 5.9 1603 1.1 2215 6.4

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>1</b> W	0222 1.1 0834 3.8 1453 0.5 2108 4.0	0254 1.3 0855 4.3 1525 0.7 2135 4.5	0300 1.3 0904 4.8 1534 0.7 2139 5.0	0312 1.4 0923 5.2 1549 0.7 2155 5.5	0337 1.5 0954 5.8 1617 0.8 2227 6.1	0404 1.6 1025 6.4 1645 0.8 2257 6.8	0427 1.6 1043 6.4 1708 0.8 2316 6.7
<b>2</b> TH	0316 0.9 0930 4.1 1543 0.4 2201 4.2	0349 1.1 0948 4.5 1615 0.6 2224 4.7	0359 1.1 1000 5.1 1625 0.5 2232 5.2	0413 1.2 1019 5.5 1643 0.6 2248 5.7	0444 1.2 1051 6.2 1714 0.6 2323 6.3	0513 1.3 1123 6.8 1744 0.7 2352 7.0	0539 1.3 1142 6.8 1812 0.7
<b>3</b> F	0407 0.8 1020 4.3 1631 0.4 2250 4.3	0438 0.9 1038 4.7 1701 0.5 2310 4.7	0452 0.9 1050 5.3 1714 0.5 2321 5.3	0511 1.0 1110 5.8 1735 0.5 2338 5.8	0547 1.0 1143 6.5 1808 0.6	0619 1.1 1215 7.1 1843 0.6	0611 6.9 0650 1.1 1234 7.1 1917 0.6
<b>4</b> SA ●	0457 0.6 1109 4.5 1718 0.4 2338 4.4	0527 0.8 1127 4.9 1747 0.6 2356 4.8	0543 0.7 1138 5.5 1801 0.5	0606 0.8 1158 6.0 1824 0.5	0613 6.5 0646 0.8 1232 6.7 1901 0.6	0643 7.1 0722 0.9 1304 7.4 1939 0.6	0703 7.1 0753 0.9 1324 7.3 2015 0.6
<b>5</b> SU	0547 0.5 1157 4.6 1805 0.5	0616 0.7 1217 5.0 1833 0.6	0609 5.3 0632 0.6 1228 5.6 1846 0.5	0626 5.9 0658 0.7 1246 6.2 1911 0.6	0740 0.7 1321 6.9 1950 0.6	0722 0.9 1304 7.4 1939 0.6	0743 7.1 0817 0.7 1413 7.5 2104 0.7
<b>6</b> M	0625 4.4 0638 0.4 1244 4.6 1853 0.6	0641 4.8 0707 0.6 1309 5.0 1919 0.7	0657 5.3 0721 0.5 1318 5.6 1932 0.6	0714 5.9 0748 0.6 1335 6.2 1955 0.7	0749 6.5 0830 0.6 1409 6.9 2034 0.7	0721 7.1 0907 0.6 1442 7.6 2111 0.8	0741 7.0 0937 0.6 1502 7.5 2149 0.8
<b>7</b> TU	0712 4.3 0729 0.4 1333 4.5 1941 0.8	0728 4.7 0817 0.6 1402 4.9 2005 0.9	0745 5.3 0810 0.4 1409 5.5 2018 0.8	0802 5.8 0836 0.5 1425 6.1 2038 0.9	0836 6.4 0917 0.5 1459 6.8 2115 0.9	0741 7.0 0952 0.6 1531 7.5 2150 0.9	0828 6.9 1022 0.5 1551 7.3 2229 0.9

<b>8</b> W	0200 0820 1424 2030	4.2 0.4 4.3 0.9	0216 0847 1455 2052	4.7 0.6 4.8 1.0	0232 0859 1501 2105	5.2 0.5 5.3 1.0	0250 0922 1516 2120	5.6 0.6 5.9 1.1	0324 1001 1550 2156	6.3 0.6 6.6 1.1	0356 1033 1621 2230	6.8 0.6 7.2 1.1	0416 1105 1642 2308	6.7 0.6 7.1 1.1
<b>9</b> TH	0249 0912 1519 2121	4.0 0.5 4.1 1.1	0304 0940 1549 2143	4.5 0.7 4.6 1.2	0321 0950 1555 2156	5.0 0.6 5.1 1.2	0339 1009 1610 2207	5.4 0.7 5.6 1.3	0413 1045 1644 2241	6.0 0.7 6.3 1.3	0443 1113 1713 2314	6.6 0.7 6.9 1.4	0503 1145 1734 2349	6.5 0.7 6.8 1.3
<b>10</b> F	0343 1009 1620 2217	3.9 0.5 3.9 1.2	0356 1038 1654 2241	4.4 0.8 4.3 1.4	0413 1045 1654 2251	4.8 0.7 4.8 1.4	0430 1101 1709 2301	5.2 0.8 5.3 1.5	0504 1132 1742 2333	5.8 0.8 6.0 1.5	0533 1158 1809 2353	6.3 0.9 6.6 1.5	0552 1229 1829 2355	6.3 0.8 6.5 1.5
<b>11</b> SA D	0442 1113 1726 2322	3.7 0.6 3.8 1.4	0458 1143 1759 2352	4.2 0.9 4.2 1.6	0511 1146 1758 2356	4.6 0.8 4.7 1.6	0529 1201 1815 1923	5.0 0.9 5.1 5.0	0601 1228 1843 1948	5.6 1.0 5.8 5.7	0003 0629 1252 1911	1.6 6.1 1.1 6.4	0035 0648 1320 1930	1.5 6.1 1.0 6.3
<b>12</b> SU	0546 1220 1834	3.6 0.7 3.7	0610 1252 1908	4.1 0.9 4.2	0617 1253 1908	4.5 0.9 4.6	0637 1308 1923	1.6 4.9 1.0	0705 1330 1948	1.7 5.5 5.7	0103 0732 1357 2015	1.7 6.0 1.1 6.3	0133 0751 1422 2032	1.7 5.9 1.1 6.2
<b>13</b> M	0033 0655 1326 1942	1.4 3.6 0.7 3.7	0110 0718 1356 2011	1.6 4.1 1.0 4.2	0110 0726 1400 2015	1.6 4.5 1.0 4.6	0118 0747 1412 2030	1.7 4.9 1.0 5.0	0142 0812 1434 2056	1.7 5.5 1.1 5.7	0213 0840 1502 2121	1.8 6.0 1.2 6.2	0241 0857 1524 2136	1.7 5.9 1.1 6.2
<b>14</b> TU	0142 0802 1429 2043	1.3 3.6 0.7 3.8	0217 0818 1452 2108	1.5 4.1 1.0 4.2	0221 0831 1459 2115	1.5 4.5 1.0 4.7	0228 0850 1512 2129	1.6 5.0 1.0 5.1	0252 0918 1535 2159	1.7 5.6 1.1 5.8	0325 0946 1602 2225	1.7 6.1 1.1 6.3	0350 1001 1623 2239	1.7 6.0 1.0 6.2
<b>15</b> W	0244 0859 1520 2133	1.2 3.7 0.8 3.9	0313 0914 1540 2158	1.4 4.2 1.0 4.3	0323 0927 1549 2204	1.4 4.6 1.0 4.7	0332 0946 1603 2221	1.5 5.1 1.0 5.2	0358 1018 1628 2252	1.5 5.7 1.1 5.9	0429 1046 1656 2321	1.6 6.3 1.1 6.4	0454 1102 1719 2338	1.5 6.2 1.0 6.3

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TIME ZONE UT(GMT)

	WALTON-ON-THE-NAZE	MARGATE	SHIVERING SAND	SOUTHEND-ON-SEA	TILBURY	NORTH WOOLWICH	LONDON BRIDGE (TOWER PIER)
	Time m	Time m	Time m	Time m	Time m	Time m	Time m
<b>16</b> <sup>TH</sup>	0336 1.1 0945 3.8 1601 0.8 2215 3.9	0402 1.2 1004 4.3 1621 1.0 2239 4.4	0414 1.2 1015 4.8 1632 0.9 2247 4.8	0427 1.3 1033 5.2 1647 1.0 2304 5.3	0456 1.3 1107 5.9 1713 1.0 2337 6.0	0526 1.4 1137 6.5 1744 1.1	0552 1.3 1155 6.4 1810 1.0
<b>17</b> <sup>F</sup>	0421 0.9 1026 3.9 1637 0.8 2254 4.0	0447 1.1 1048 4.4 1659 0.9 2314 4.4	0500 1.0 1057 4.9 1711 0.9 2325 4.9	0516 1.1 1115 5.3 1727 1.0 2342 5.4	0546 1.1 1150 6.0 1754 1.0	0606 6.5 0616 1.1 1220 6.6 1827 1.0	0605 6.5 0644 1.1 1240 6.6 1856 1.0
<b>18</b> <sup>SA</sup>	0501 0.8 1103 4.0 1712 0.8 2329 4.0	0528 0.9 1127 4.5 1736 0.9 2346 4.5	0541 0.8 1136 5.0 1749 0.9	0559 0.9 1153 5.5 1804 0.9	0615 6.0 0631 1.0 1228 6.2 1853 1.0	0645 6.6 0701 1.0 1258 6.8 1907 1.0	0705 6.6 0729 0.9 1320 6.8 1937 1.0
<b>19</b> <sup>SU</sup> <sup>O</sup>	0539 0.7 1139 4.0 1747 0.8	0608 0.8 1204 4.5 1811 0.9	0600 5.0 0619 0.7 1214 5.0 1824 0.9	0617 5.4 0638 0.8 1230 5.5 1838 1.0	0650 6.1 0711 0.8 1304 6.2 1908 1.0	0720 6.7 0741 0.9 1334 6.9 1942 1.0	0741 6.7 0810 0.8 1357 6.8 2014 1.0
<b>20</b> <sup>M</sup>	0602 4.0 0616 0.6 1214 4.1 1819 0.9	0618 4.5 0644 0.8 1239 4.5 1844 1.0	0634 5.0 0655 0.7 1250 5.1 1855 0.9	0651 5.5 0713 0.8 1306 5.6 1908 1.0	0724 6.2 0748 0.8 1340 6.3 1940 1.0	0754 6.8 0818 0.8 1410 6.9 2013 1.0	0815 6.7 0848 0.8 1432 6.8 2047 1.0
<b>21</b> <sup>TU</sup>	0636 4.1 0650 0.6 1250 4.1 1847 0.9	0652 4.6 0718 0.7 1316 4.5 1915 1.0	0708 5.1 0728 0.7 1326 5.1 1925 1.0	0725 5.5 0746 0.7 1342 5.6 1936 1.0	0758 6.2 0821 0.8 1415 6.3 2009 1.0	0828 6.7 0852 0.8 1445 6.9 2044 1.1	0848 6.7 0924 0.8 1506 6.8 2119 1.1
<b>22</b> <sup>W</sup>	0109 4.0 0723 0.6 1326 4.0 1916 0.9	0128 4.5 0751 0.7 1354 4.5 1948 1.0	0143 5.0 0601 0.7 1402 5.0 1956 1.0	0159 5.5 0618 0.7 1418 5.5 2007 1.0	0232 6.1 0854 0.8 1451 6.2 2039 1.0	0301 6.7 0926 0.8 1520 6.8 2117 1.1	0321 6.6 0959 0.8 1541 6.8 2151 1.1

<b>23</b> TH	0144 0758 1402 1950	4.0 0.6 4.0 0.9	0204 0825 1432 2024	4.5 0.8 4.4 1.1	0234 0852 1455 2042	5.4 0.7 5.4 1.1	0306 0928 1527 2114	6.0 0.8 6.1 1.1	0335 0959 1556 2152	6.6 0.8 6.7 1.1	<b>23</b> TH	0355 1033 1617 2225	6.6 0.8 6.7 1.1
<b>24</b> F	0220 0835 1441 2030	3.9 0.6 3.9 1.0	0240 0904 1512 2105	4.4 0.8 4.3 1.2	0309 0929 1534 2121	5.3 0.8 5.3 1.2	0341 1002 1605 2151	5.9 0.8 6.0 1.2	0410 1032 1635 2228	6.5 0.8 6.7 1.2	<b>24</b> F	0430 1105 1655 2301	6.4 0.8 6.6 1.2
<b>25</b> SA	0259 0916 1524 2115	3.8 0.6 3.8 1.1	0317 0947 1554 2149	4.3 0.8 4.2 1.3	0347 1008 1616 2203	5.2 0.9 5.2 1.3	0419 1037 1647 2231	5.8 0.9 5.9 1.3	0447 1106 1717 2307	6.4 0.9 6.5 1.3	<b>25</b> SA	0506 1136 1736 2339	6.3 0.9 6.5 1.3
<b>26</b> SU	0342 1003 1612 2207	3.8 0.7 3.8 1.2	0359 1035 1640 2240	4.2 0.9 4.1 1.4	0429 1050 1704 2252	5.1 0.9 5.1 1.4	0500 1115 1735 2317	5.7 1.0 5.8 1.4	0529 1143 1804 2352	6.2 1.0 6.4 1.5	<b>26</b> SU	0547 1212 1822	6.2 0.9 6.4
<b>27</b> M	0432 1100 1709 2311	3.7 0.7 3.7 1.3	0448 1130 1734 2340	4.2 0.9 4.1 1.4	0519 1141 1800 2352	5.0 1.0 5.1 1.5	0550 1203 1831	5.6 1.0 5.7	0618 1229 1859	6.2 1.1 6.3	<b>27</b> M	0635 1256 1915	6.1 1.0 6.2
<b>28</b> TU	0532 1206 1815	3.7 0.7 3.7	0546 1233 1837	4.2 0.9 4.1	0618 1245 1904	5.0 1.0 5.1	0650 1305 1936	5.6 1.1 5.7	0716 1327 2005	6.1 1.1 6.3	<b>28</b> TU	0731 1353 2022	6.1 1.0 6.2
<b>29</b> W	0024 0641 1313 1926	1.2 3.7 0.6 3.7	0049 0653 1340 1951	1.4 4.2 0.9 4.2	0105 0727 1358 2012	1.5 5.0 0.9 5.1	0128 0800 1420 2044	1.6 5.6 1.1 5.7	0154 0827 1444 2115	1.7 6.2 1.1 6.3	<b>29</b> W	0220 0843 1509 2135	1.6 6.1 1.1 6.3
<b>30</b> TH	0138 0753 1415 2034	1.1 3.8 0.6 3.9	0207 0808 1445 2059	1.3 4.3 0.8 4.3	0225 0840 1506 2120	1.4 5.2 0.8 5.2	0250 0912 1532 2152	1.5 5.8 0.9 5.9	0317 0943 1602 2222	1.6 6.3 1.0 6.5	<b>30</b> TH	0342 1002 1627 2243	1.6 6.3 1.0 6.5
<b>31</b> F	0245 0859 1514 2136	1.0 4.0 0.5 4.0	0315 0916 1544 2159	1.1 4.4 0.8 4.4	0339 0947 1610 2223	1.2 5.4 0.8 5.4	0408 1018 1639 2257	1.3 6.0 0.8 6.0	0438 1050 1710 2326	1.4 6.6 0.9 6.7	<b>31</b> F	0505 1110 1738 2346	1.4 6.6 0.8 6.6

## 2021 Sunrise and Sunset times for London

Times in GMT Latitude 51° 30' N Longitude 0° 10' W

JANUARY			FEBRUARY			MARCH			APRIL		
RISE	SET		RISE	SET		RISE	SET		RISE	SET	
h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
1 08 06	16 03	16 07 59	1 07 39	16 50	16 07 12	1 06 45	17 41	16 06 12	1 05 36	18 34	16 05 03
2 08 06	16 04	17 07 58	2 07 37	16 52	17 07 10	2 06 43	17 43	17 06 10	2 05 33	18 36	17 05 00
3 08 06	16 05	18 07 57	3 07 35	16 54	18 07 08	3 06 41	17 45	18 06 08	3 05 31	18 38	18 04 58
4 08 06	16 06	19 07 56	4 07 34	16 56	19 07 06	4 06 39	17 47	19 06 05	4 05 29	18 39	19 04 56
5 08 05	16 07	20 07 55	5 07 32	16 58	20 07 04	5 06 37	17 48	20 06 03	5 05 27	18 41	20 04 54
6 08 05	16 08	21 07 53	6 07 31	17 00	21 07 02	6 06 35	17 50	21 06 01	6 05 24	18 43	21 04 52
7 08 05	16 10	22 07 52	7 07 29	17 01	22 07 00	7 06 32	17 52	22 05 59	7 05 22	18 44	22 04 50
8 08 04	16 11	23 07 51	8 07 27	17 03	23 06 58	8 06 30	17 53	23 05 56	8 05 20	18 46	23 04 48
9 08 04	16 12	24 07 50	9 07 25	17 05	24 06 56	9 06 28	17 55	24 05 54	9 05 18	18 48	24 04 46
10 08 03	16 14	25 07 49	10 07 24	17 07	25 06 54	10 06 26	17 57	25 05 52	10 05 16	18 49	25 04 44
11 08 02	16 15	26 07 47	11 07 22	17 09	26 06 52	11 06 23	17 59	26 05 49	11 05 13	18 51	26 04 42
12 08 02	16 17	27 07 46	12 07 20	17 11	27 06 50	12 06 21	18 00	27 05 47	12 05 11	18 53	27 04 40
13 08 01	16 18	28 07 45	13 07 18	17 12	28 06 48	13 06 19	18 02	28 05 45	13 05 09	18 54	28 04 38
14 08 00	16 20	29 07 43	14 07 16	17 14		14 06 17	18 04	29 05 43	14 05 07	18 56	29 04 36
15 07 59	16 21	30 07 42	15 07 14	17 16		15 06 14	18 06	30 05 40	15 05 05	18 58	30 04 34
		31 07 40						31 05 38			18 33

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2021 Sunrise and Sunset times for London  
Times in GMT Latitude 51° 30' N Longitude 0° 10' W

MAY			JUNE			JULY			AUGUST		
RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET
h m	h m	h m h m	h m	h m	h m h m	h m	h m	h m h m	h m	h m	h m h m
1 04	19 24	16 04 07 19 48	1 03	49 20 09	16 03 43 20 20	1 03	48 20 21	16 04 02 20 10	1 04	25 19 48	16 04 48 19 21
2 04	30 19 26	17 04 06 19 49	2 03	48 20 10	17 03 43 20 21	2 03	49 20 21	17 04 04 20 09	2 04	26 19 47	17 04 50 19 19
3 04	29 19 27	18 04 04 19 51	3 03	48 20 11	18 03 43 20 21	3 03	49 20 20	18 04 05 20 08	3 04	28 19 45	18 04 51 19 17
4 04	27 19 29	19 04 03 19 52	4 03	47 20 12	19 03 43 20 21	4 03	50 20 20	19 04 06 20 07	4 04	29 19 43	19 04 53 19 15
5 04	25 19 31	20 04 02 19 54	5 03	46 20 13	20 03 43 20 21	5 03	51 20 19	20 04 08 20 06	5 04	31 19 42	20 04 54 19 13
6 04	23 19 32	21 04 00 19 55	6 03	46 20 13	21 03 43 20 22	6 03	52 20 19	21 04 09 20 04	6 04	32 19 40	21 04 56 19 10
7 04	22 19 34	22 03 59 19 56	7 03	45 20 14	22 03 44 20 22	7 03	53 20 18	22 04 10 20 03	7 04	34 19 38	22 04 57 19 08
8 04	20 19 36	23 03 58 19 58	8 03	45 20 15	23 03 44 20 22	8 03	54 20 17	23 04 12 20 02	8 04	35 19 36	23 04 59 19 06
9 04	18 19 37	24 03 57 19 59	9 03	44 20 16	24 03 44 20 22	9 03	55 20 17	24 04 13 20 01	9 04	37 19 34	24 05 01 19 04
10 04	16 19 39	25 03 56 20 00	10 03	44 20 17	25 03 45 20 22	10 03	56 20 16	25 04 14 19 59	10 04	38 19 32	25 05 02 19 02
11 04	15 19 40	26 03 55 20 02	11 03	44 20 17	26 03 45 20 22	11 03	57 20 15	26 04 16 19 58	11 04	40 19 31	26 05 04 19 00
12 04	13 19 42	27 03 54 20 03	12 03	43 20 18	27 03 45 20 22	12 03	58 20 14	27 04 17 19 56	12 04	42 19 29	27 05 05 18 58
13 04	12 19 43	28 03 53 20 04	13 03	43 20 19	28 03 46 20 22	13 03	59 20 13	28 04 19 19 55	13 04	43 19 27	28 05 07 18 55
14 04	10 19 45	29 03 52 20 05	14 03	43 20 19	29 03 47 20 21	14 04	00 20 12	29 04 20 19 53	14 04	45 19 25	29 05 09 18 53
15 04	09 19 46	30 03 51 20 06	15 03	43 20 20	30 03 47 20 21	15 04	01 20 11	30 04 22 19 52	15 04	46 19 23	30 05 10 18 51
		31 03 50 20 08						31 04 23 19 50			31 05 12 18 49

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## 2021 Sunrise and Sunset times for London

Times in GMT    Latitude 51° 30' N    Longitude 0° 10' W

<b>SEPTEMBER</b>			<b>OCTOBER</b>			<b>NOVEMBER</b>			<b>DECEMBER</b>		
RISE	SET		RISE	SET		RISE	SET		RISE	SET	
h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
1 05	13 18	47	16 05	17 38	16	10 54	16 33	16	07 44	15 55	16
2 05	15 18	44	17 05	17 36	17	2 06	16 32	17	2 07	15 54	17
3 05	17 18	42	18 05	17 33	18	3 06	16 30	18	3 07	15 54	18
4 05	18 18	40	19 05	17 31	19	4 07	16 28	19	4 07	15 53	19
5 05	20 18	38	20 05	17 29	20	5 08	16 26	20	5 07	15 53	20
6 05	21 18	35	21 05	17 27	21	6 09	16 25	21	6 07	15 53	21
7 05	23 18	33	22 05	17 25	22	7 10	16 23	22	7 07	15 52	22
8 05	25 18	31	23 05	17 22	23	8 11	16 21	23	8 07	15 52	23
9 05	26 18	29	24 05	17 20	24	9 12	16 20	24	9 07	15 52	24
10 05	28 18	26	25 05	17 18	25	10 13	16 18	25	10 07	15 52	25
11 05	29 18	24	26 05	17 16	26	11 14	16 17	26	11 07	15 52	26
12 05	31 18	22	27 05	17 14	27	12 15	16 15	27	12 07	15 51	27
13 05	33 18	19	28 05	17 11	28	13 16	16 14	28	13 07	15 52	28
14 05	34 18	17	29 05	17 09	29	14 17	16 12	29	14 07	15 52	29
15 05	36 18	15	30 06	17 07	30	15 18	16 11	30	15 08	15 52	30
					31	16 19	16 11	31			31
											08 06 16 01

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## 2021 Moonrise and Moonset times for London

Times in GMT    Latitude 51° 30' N    Longitude 0° 10' W

<b>JANUARY</b>			<b>FEBRUARY</b>			<b>MARCH</b>			<b>APRIL</b>		
RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET
h m	h m	h m    h m	h m	h m	h m    h m	h m	h m	h m    h m	h m	h m	h m    h m
1 18 26	10 04	16 10 10 20 13	1 21 31	09 42	16 09 17 22 36	1 20 36	08 04	16 07 37 21 30	1 23 59	07 31	16 07 01 23 51
2 19 44	10 34	17 10 28 21 26	2 22 53	10 00	17 09 32 23 44	2 22 01	08 22	17 07 53 22 39	2 **	** 08 05	17 07 34 ** **
3 21 03	10 58	18 10 44 22 36	3 ** **	10 18	18 09 49 ** **	3 23 26	08 41	18 08 11 23 48	3 01	18 08 50	18 08 16 00 52
4 22 23	11 18	19 10 58 23 44	4 00	16 10 37	19 10 08 00 53	4 ** **	09 04	19 08 33 ** **	4 02	25 09 47	19 09 10 01 45
5 23 43	11 36	20 11 13 ** **	5 01	39 11 01	20 10 33 02 01	5 00 51	09 32	20 09 01 00 56	5 03	16 10 55	20 10 15 02 28
6 ** **	11 53	21 11 28 00 51	6 03	02 11 31	21 11 05 03 09	6 02 13	10 08	21 09 37 02 00	6 03	54 12 08	21 11 28 03 02
7 01 04	12 12	22 11 46 01 59	7 04	21 12 10	22 11 46 04 12	7 03 26	10 56	22 10 25 02 59	7 04	22 13 24	22 12 47 03 29
8 02 27	12 33	23 12 08 03 08	8 05	32 13 02	23 12 40 05 08	8 04 27	11 55	23 11 25 03 49	8 04	44 14 38	23 14 09 03 51
9 03 52	12 59	24 12 35 04 17	9 06	30 14 06	24 13 46 05 55	9 05 14	13 05	24 12 35 04 29	9 05	01 15 50	24 15 33 04 10
10 05 16	13 32	25 13 11 05 24	10 07	14 15 19	25 15 02 06 33	10 05 49	14 20	25 13 53 05 01	10 05	16 17 01	25 17 00 04 27
11 06 36	14 17	26 13 59 06 25	11 07	47 16 36	26 16 23 07 02	11 06 16	15 35	26 15 16 05 27	11 05	30 18 10	26 18 29 04 45
12 07 44	15 15	27 14 59 07 18	12 08	12 17 52	27 17 47 07 26	12 06 36	16 50	27 16 41 05 48	12 05	44 19 27	20 00 05 05
13 08 38	16 25	28 16 09 08 01	13 08	31 19 06	28 19 11 07 46	13 06 53	18 02	28 18 07 06 07	13 05	59 20 27	28 21 31 05 29
14 09 18	17 41	29 17 27 08 35	14 08	48 20 18		14 07 08	19 12	29 19 34 06 25	14 06	15 21 37	29 22 58 05 59
15 09 47	18 58	30 18 48 09 01	15 09	03 21 27		15 07 23	20 22	30 21 03 06 44	15 06	35 22 45	30 ** ** 06 40
		31 20 10 09 23						31 22 32 07 05			

\*\*\* indicates that the phenomenon does not occur.

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## 2021 Moonrise and Moonset times for London

Times in GMT Latitude 51° 30' N Longitude 0° 10' W

MAY			JUNE			JULY			AUGUST					
RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET			
h m	h m	h m h m	h m	h m	h m h m	h m	h m	h m h m	h m	h m	h m h m			
1 00	14 07	34 16	07 03	** **	1 00	56 10	12 16	09 33	00 01	1 **	** 11	37 16	11 17	23 17
2 01	13 08	41 17	08 03	00 28	2 01	17 11	28 17	10 50	00 21	2	00	08 12	47 17	12 38 23 34
3 01	57 09	55 18	09 13	01 04	3 01	33 12	40 18	12 09	00 38	3	00	21 13	56 18	14 01 23 54
4 02	28 11	12 19	10 28	01 33	4 01	47 13	50 19	13 31	00 54	4	00	36 15	05 19	15 28 ** **
5 02	51 12	27 20	11 46	01 55	5 02	01 14	59 20	14 54	01 11	5	00	52 16	14 20	16 54 00 19
6 03	10 13	40 21	13 07	02 15	6 02	14 16	07 21	16 22	01 29	6	01	12 17	23 21	18 15 00 54
7 03	25 14	51 22	14 29	02 32	7 02	29 17	16 22	17 52	01 52	7	01	38 18	30 22	19 23 01 41
8 03	39 16	00 23	15 54	02 49	8 02	47 18	25 23	19 19	02 21	8	02	11 19	31 23	20 16 02 44
9 03	52 17	09 24	17 23	03 07	9 03	08 19	34 24	20 37	03 02	9	02	54 20	24 24	20 54 04 00
10 04	06 18	17 25	18 54	03 27	10 03	36 20	39 25	21 39	03 58	10	03	49 21	07 25	21 21 05 22
11 04	22 19	26 26	20 26	03 54	11 04	12 21	38 26	22 25	05 08	11	04	54 21	40 26	21 42 06 44
12 04	41 20	36 27	21 50	04 29	12 04	58 22	27 27	22 57	06 28	12	06	06 22	06 27	21 58 08 03
13 05	04 21	43 28	23 00	05 17	13 05	56 23	06 28	23 20	07 49	13	07	22 22	27 28	22 13 09 18
14 05	34 22	46 29	23 52	06 20	14 07	03 23	37 29	23 39	09 09	14	08	40 22	45 29	22 27 10 31
15 06	13 23	42 30	** ** 07 34		15 08	16 ** ** 30	23 54 10 25			15	09	58 23	01 30	22 41 11 41
			31 00 29 08 54											31 22 57 12 51

\*\* \*\* indicates that the phenomenon does not occur.

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## 2021 Moonrise and Moonset times for London

Times in GMT    Latitude 51° 30' N    Longitude 0° 10' W

<b>SEPTEMBER</b>			<b>OCTOBER</b>			<b>NOVEMBER</b>			<b>DECEMBER</b>		
RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET	RISE	SET	RISE SET
h m	h m	h m    h m	h m	h m	h m    h m	h m	h m	h m    h m	h m	h m	h m    h m
1	23 26	16 09	16 16	51	** **	1	01 53	15 38	16 15	20	03 52
2	** **	16 59	17 17	24	00 40	2	03 15	15 53	17 15	34	05 03
3	00 24	17 40	18 17	49	02 00	3	04 39	16 10	18 15	50	06 14
4	01 32	18 11	19 18	08	03 20	4	06 07	16 28	19 16	10	07 25
5	02 47	18 36	20 18	23	04 38	5	07 38	16 51	20 16	35	08 35
6	04 07	18 56	21 18	38	05 53	6	09 10	17 22	21 17	08	09 42
7	05 28	19 13	22 18	51	07 06	7	10 38	18 04	22 17	51	10 42
8	06 49	19 29	23 19	05	08 18	8	11 54	19 02	23 18	45	11 32
9	08 12	19 45	24 19	21	09 29	9	12 52	20 13	24 19	49	12 12
10	09 36	20 03	25 19	40	10 40	10	13 33	21 33	25 21	00	12 43
11	11 02	20 25	26 20	04	11 50	11	14 02	22 54	26 22	14	13 07
12	12 28	20 52	27 20	35	12 58	12	14 23	** **	27 23	30	13 27
13	13 51	21 30	28 21	16	14 00	13	14 40	00 13	28 **	**	13 43
14	15 05	22 20	29 22	08	14 53	14	14 54	01 28	29 00	48	13 58
15	16 06	23 24	30 23	11	15 37	15	15 07	02 41	30 02	08	14 13
									31 00	34	15 21
											31 05 26 13 42

\*\*\* indicates that the phenomenon does not occur.

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## CONVERSION TABLE, FEET TO METRES

Feet	Metres	Feet	Metres	Feet	Metres	Feet	Metres
5' 0"	1.52	17' 0"	5.18	29' 0"	8.84	41' 0"	12.50
3"	1.60	3"	5.26	3"	8.92	3"	12.57
6"	1.68	6"	5.33	6"	8.99	6"	12.65
9"	1.75	9"	5.41	9"	9.07	9"	12.73
6' 0"	1.83	18' 0"	5.49	30' 0"	9.14	42' 0"	12.80
3"	1.91	3"	5.56	3"	9.22	3"	12.88
6"	1.98	6"	5.64	6"	9.30	6"	12.95
9"	2.06	9"	5.71	9"	9.37	9"	13.03
7' 0"	2.13	19' 0"	5.79	31' 0"	9.45	43' 0"	13.11
3"	2.21	3"	5.87	3"	9.52	3"	13.18
6"	2.29	6"	5.94	6"	9.60	6"	13.26
9"	2.36	9"	6.02	9"	9.68	9"	13.33
8' 0"	2.44	20' 0"	6.10	32' 0"	9.75	44' 0"	13.41
3"	2.51	3"	6.17	3"	9.83	3"	13.49
6"	2.59	6"	6.25	6"	9.91	6"	13.56
9"	2.67	9"	6.32	9"	9.98	9"	13.64
9' 0"	2.74	21' 0"	6.40	33' 0"	10.06	45' 0"	13.72
3"	2.82	3"	6.48	3"	10.13	3"	13.79
6"	2.90	6"	6.55	6"	10.21	6"	13.87
9"	2.97	9"	6.63	9"	10.29	9"	13.94
10' 0"	3.05	22' 0"	6.71	34' 0"	10.36	46' 0"	14.02
3"	3.12	3"	6.78	3"	10.44	3"	14.10
6"	3.20	6"	6.86	6"	10.52	6"	14.17
9"	3.28	9"	6.93	9"	10.59	9"	14.25
11' 0"	3.35	23' 0"	7.01	35' 0"	10.67	47' 0"	14.33
3"	3.43	3"	7.09	3"	10.74	3"	14.40
6"	3.51	6"	7.16	6"	10.82	6"	14.48
9"	3.58	9"	7.24	9"	10.90	9"	14.55
12' 0"	3.66	24' 0"	7.32	36' 0"	10.97	48' 0"	14.63
3"	3.73	3"	7.39	3"	11.05	3"	14.71
6"	3.81	6"	7.47	6"	11.13	6"	14.78
9"	3.89	9"	7.54	9"	11.20	9"	14.86
13' 0"	3.96	25' 0"	7.62	37' 0"	11.28	49' 0"	14.93
3"	4.04	3"	7.70	3"	11.35	3"	15.01
6"	4.11	6"	7.77	6"	11.43	6"	15.09
9"	4.19	9"	7.85	9"	11.51	9"	15.16
14' 0"	4.27	26' 0"	7.92	38' 0"	11.58	50' 0"	15.24
3"	4.34	3"	8.00	3"	11.66	3"	15.32
6"	4.42	6"	8.08	6"	11.73	6"	15.39
9"	4.50	9"	8.15	9"	11.81	9"	15.47
15' 0"	4.57	27' 0"	8.23	39' 0"	11.89	51' 0"	15.54
3"	4.65	3"	8.31	3"	11.96	3"	15.62
6"	4.72	6"	8.38	6"	12.04	6"	15.70
9"	4.80	9"	8.46	9"	12.12	9"	15.77
16' 0"	4.88	28' 0"	8.53	40' 0"	12.19	52' 0"	15.85
3"	4.95	3"	8.61	3"	12.27	3"	15.93
6"	5.03	6"	8.69	6"	12.34	6"	16.00
9"	5.11	9"	8.76	9"	12.42	9"	16.08

**Metric to Imperial Conversion  
Kilowatts to Horsepower**

1	*	1.341
Kilowatts		Horsepower
200	=	268.2
300	=	402.3
400	=	536.4
500	=	670.5
600	=	804.6
700	=	938.7
800	=	1,072.8
900	=	1,206.9
1000	=	1,341.0
2000	=	2,682.0
3000	=	4,023.0

**Imperial to Metric Conversion  
Horsepower to Kilowatt**

1	/	1.341
Horsepower		Kilowatts
200	=	149.1
300	=	223.7
400	=	298.3
500	=	372.9
600	=	447.4
700	=	522.0
800	=	596.6
900	=	671.1
1000	=	745.7
2000	=	1,491.4
3000	=	2,237.1

# PLA MARINE SERVICES



PLA's dedicated Marine Services team provides essential support to commercial and leisure users of the river. Salvage, mooring maintenance, diving, underwater inspections, driftwood and rubbish clearance and pollution response: all of these, and more, are the responsibility of the Marine Services team along the 95-mile stretch of the river Thames.

Marine Services crews maintain more than 60 aids to navigation, including buoys and inspect and overhaul more than 230 moorings along the river. They are also involved in laying temporary moorings for project work plus prestigious, annual events such as the University Boat Race and the New Year's Eve fireworks display in London.

For more information please contact:



Michael Russell on **01474 562415**  
or e-mail **michael.russell@pla.co.uk**

**[www.pla.co.uk](http://www.pla.co.uk)**



# PLA DENTON WHARF



The Marine Services base at Denton Wharf, Gravesend provides a purpose built facility to undertake a wide range of marine operations both in support of the PLA and also for third parties.

Fully equipped with a 30 tonne heavy lift crane the jetty can be used for the load out of materials bound for river based projects. There is also a dockway that is independently served by two boatlifts – one with a capacity of 70 tonnes and the other 35 tonnes as well as a self propelled boat mover.

The PLA has invested more than £10 million in Denton Wharf over the last ten years including the jetty development, construction of Marine House and progressive strengthening of the quay to allow larger lifts to be handled.

For information on the lift out facility and use of the jetty for load out or project support contact Daniel Marsh on **01474 562462** or e-mail **daniel.marsh@pla.co.uk**



For PLA moorings: Barbara Jewiss on **01474 562421**  
or e-mail **barbara.jewiss@pla.co.uk**  
**www.pla.co.uk**



# MARINE SURVEYORS

## How can we be of service?

The PLA's Marine Surveyors survey over 730 commercially operated vessels annually. In addition to the PLA's statutory work, our Marine Surveyors are able to undertake a variety of services for third parties on commercial vessels which include:

- Insurance
- New Build Consultancy Services
- Inland Waterways Certification

Surveys may be undertaken anywhere in the UK and Europe and can usually be completed within two weeks of receiving instruction.

**PORT OF  
LONDON**  
AUTHORITY

For further information contact  
Tom Parham on **01474 562441** or  
e-mail **vesselsurvey@pla.co.uk**

**[www.pla.co.uk](http://www.pla.co.uk)**



# RECREATIONAL RIVER USERS JOIN THE FREE NAVIGATORS' CLUB

## Members will receive:

- Regular up-dated river safety information tailored to your type of activity
- Tide Tables and Port Information handbook
- PLA Recreational Users' Guide
- Tidal Thames e-Newsletter
- Early notification of PLA Events, such as Seminars, Briefings and River Trips
- Members Online Forum

You will be able to tell the PLA about the activities you undertake on the river and the areas of the tidal Thames you regularly use.

As a boat owner it will also give you the increased security of knowing that the Harbour Master can get in touch with you very easily should anything happen to your boat whilst you are ashore.



Join via the PLA's dedicated recreational users' web-site:

[www.boatingonthames.co.uk](http://www.boatingonthames.co.uk)

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Contact: +44 7930 128336      James Green  
Fax: 01474 350339

**Van Oord** is one of the UK's leading dredging and marine contractors. We specialise in capital and maintenance dredging, land reclamation, coastal defences and port developments.

We have been deploying Water Injection Dredgers on the River Thames for over 30 years; these providing environmentally friendly, economic solutions to our clients' maintenance dredging requirements.



**Van Oord** | Bankside House | Henfield Road | Small Dole | West Sussex BN5 9XQ

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# SVITZER



## SVITZER: YOUR TOWAGE PROVIDER ON THE RIVER THAMES

With 10 tugs on the river from Tower Bridge to the Havens and the Port of Sheerness to Chatham, Svitzer are available 24/7 365 days a year. Based in Gravesend at Denton Wharf our tugs are manned by professional crews with over 30 years experience on the river.

Svitzer operate a fleet of more than 500 vessels in over 40 countries worldwide. Throughout its history of more than 175 years experience, Svitzer has been at the forefront of specialised marine activities including Harbour/ Coastal/Ocean Towage/ LNG Terminal Towage as well as Salvage operations and Standby - rescue services. With a diverse fleet built to the highest standards, Svitzer stands ready to serve you on the River Thames and worldwide.

For further information please visit [www.svitzer.com](http://www.svitzer.com).

Svitzer Marine Ltd. | Marine House, Denton Wharf | Mark Lane | Gravesend | DA12 2PL | United Kingdom  
Office Tel: +44 (0) 1642 258361 | Tug Order Tel: +44 (0) 845 608 1346

# SVITZER

# CREATING NEW HORIZONS

| RSPB CLIFFE POOLS - THAMES OILPORT MAINTENANCE 2020



**Boskalis Westminster has over 80 years' experience providing innovative and competitive solutions in the UK. Our extensive knowledge and expertise within the marine environment, combined with the support of the wider Boskalis group ensures we have the capability to undertake complex and challenging dredging or marine construction work.**

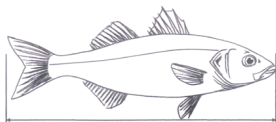
We are UK leaders in:

- Design, construction and maintenance of ports and harbours
- Capital and maintenance dredging
- Land reclamation
- Coastal defence
- Marine Services supporting terminals, harbours and MoD operations
- Heavy lifting, subsea services and marine salvage
- Detection and removal of unexploded marine ordnance

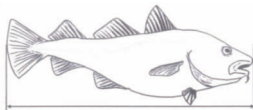
# Key Minimum Sizes

No person shall retain species that measure less than the sizes specified but shall return them immediately to the sea\*

\*except commercial fishing for species subject to Landing Obligation Reg (EU) 1380/2013



**Bass 42cm** (recreational restrictions apply, see website)



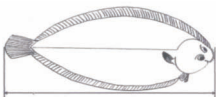
**Cod 35cm**



**Whiting 27cm**



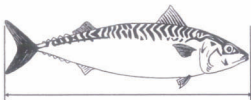
**Plaice 27cm**



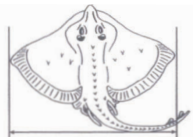
**Sole 24cm**



**Mullet 30cm**



**N. Sea Mackerel 30cm**



**Other Mackerel 20cm**

**Skates and Rays 40cm**

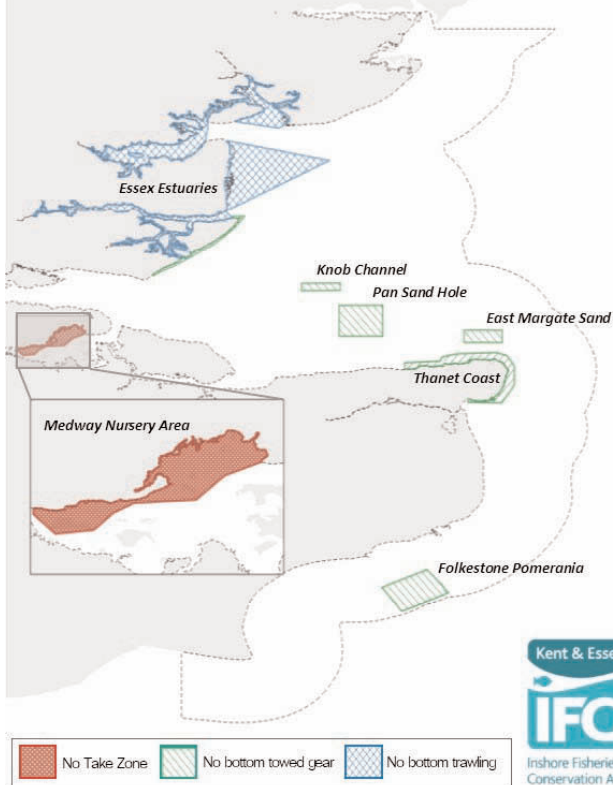
For further information on legislation and species visit:

[www.kentandessex-ifca.gov.uk](http://www.kentandessex-ifca.gov.uk)



# Marine Protected Area Management

To meet Marine Protected Area (MPA) conservation objectives, Kent and Essex IFCA have introduced a range of fisheries management measures, protecting species and habitats of national and international importance.



## SHIP'S BRIDGE SIMULATOR



Port of London Full Mission Bridge Simulator recently upgraded to include separate tug bridge station. Courses include Basic Principles of Ship Handling, Azimuth Control Device training and bespoke courses to client's requirements. All training conducted by authorised Class 1 Unrestricted Pilots.

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## RAINHAM HABITAT CREATION AND COLDHARBOUR LANE JETTY

- 1.2m<sup>3</sup> habitat creation scheme
- Disposal and reuse facility
- Consented environmental permit
- Direct river access
- Road access
- Logistics hub for the River Thames



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