

EASTERN APPROACHES to THE SOLENT

Outer Nab 1 4 VQ (9) 10s; 50°38'-18N 00°56'-88W. Outer Nab 2 (VQ (3) 5s; 50°38'-43N 00°57'-70W. Nab Tower & FI 10s 17m 12M; Horn (2) 30s; RACON T; 50°40'-08N 00°57'-15W; 992351136. N 2 4 FI Y 2-5s. 6M; 50°41'-03N 00°56'-74W. N 1 4 Fl Y (4)10s; 50°41'-26N 00°56'-52W. N 4 4 FI Y 7-5s; 50°41'-86N 00°57'-24W. N 3 4 FI (3) Y 15s; 50°41'-63N 00°56'-74W. N 5 4 Fl Y 5s; 50°41' 99N 00°56' 97W. N 7 1 FI Y 2-5s; 50°42'-35N 00°57'-20W. New Grounds 4 VQ (3) 5s; 50°41'-84N 00°58'-49W. Nab End 4 FI R 5s; Whis; 50°42'-63N 00°59'-49W. Dean Tail A FI G 5s; 50°42′-99N 00°59′-17W. Dean Tail S / VQ (6) + L FI 10s; 50°43′-04N 00°59′-58W. Dean Tail N / Q; 50°43′-13N 00°59′-57W. Horse Tail A FI (2) G 10s; 50°43'-23N 01°00'-23W. Nab East = FI (2) R 10s; 50°42′-86N 01°00′-80W. Dean Elbow A FI (3) G 15s; 50°43'-69N 01°01'-88W. St Helens 😞 FI (3) R 15s; 50°43'-36N 01°02'-41W. Horse Elbow QG; 50°44'-26N 01°03'-88W. Cambrian Wreck & 50°44'-43N 01°03'-43W. Warner 4 QR; Whis; 50°43'-87N 01°03'-99W.

BEMBRIDGE

St Helen's Fort ☆ (IOW) FI (3) 10s 16m 8M; large ○ stone structure; 50°42'-30N 01°05'-05W. Bembridge Tide Gauge J., FI Y 2s 1M; 50°42′-46N 01°05′-02W.

SOUTH EAST COAST of the ISLE OF WIGHT

St Catherine's Point ☆ 50°34'-54N 01°17'-87W; FI 5s 41m 25M; vis: 257°-117°; FR 35m 13M (same Twr) vis: 099°-116°. Ventnor Haven W Bwtr 4 2 FR (vert) 3M; 50°35′-50N 01°12′-30W. Sandown Pier Hd ≤ 2 FR (vert) 7m 2M; 50°39'-05N 01°09'-18W. W Princessa (Q (9) 15s; 50°40′-16N 01°03′-65W. Bembridge Ledge & Q (3) 10s; 50°41'-15N 01°02'-81W

LANGSTONE and APPROACHES

Eastney Pt Fraser Trials Range & FR, Oc (2) Y 10s, and FY Lts (occas) when firing taking place; 50°47'-19N 01°02'-22W. Winner 1; 50°45'-10N 01°00'-10W. Roway Wk 1 FI (2) 5s; 50°46'-11N 01°02'-28W. Langstone Fairway 1. L FI 10s; 50°46′-32N 01°01′-36W. Eastney Pt Outfall & QR 2m 2M; 50°47′-23N 01°01′-68W. East Milton ≈ FI (4) R 10s; 50°48'-16N 01°01'-76W. NW Sinah A FI G 5s; 50°48′-14N 01°01′-58W.

CHICHESTER ENTRANCE

West Pole (tripod) & FI R 5s 14m 7M; 50°45'-45N 00°56'-59W. Bar 1 FI(2) R 10s 10m 4M; 50°45'-92N 00°56'-46W. Eastoke QR; 50°46′-68N 00°56′-11W. West Winner 1, QG; Tide gauge. 50°46'-88N 00°55'-98W.

EMSWORTH CHANNEL

Fishery & Q (6) + L FI 15s; 50°47'-38N 00°56'-07W. NW Pilsey & Fl G 5s; 50°47'-50N 00°56'-20W. Verner 1 FI R 10s; 50°48'-20N 00°56'-63W. Marker Pt 1 Fl (2) G 10s 8m; 50°48'-91N 00°56'-72W. Emsworth J. Q (6) + L Fl 15s; tide gauge; 50°49'-66N 00°56'-76W.

THORNEY CHANNEL

Camber I, Q (6) + L FI 15s; 50°47'-87N 00°54'-06W. Pilsey 1 Fl (2) R 10s; 50°47'-98N 00°54'-24W. Thorney 1 FI G 5s; 50°48'-20N 00°54'-28W.

CHICHESTER CHANNEL

NW Winner • FI G 10s; 50°47'-19N 00°55'-92W. N Winner & Fl (2) G 10s; 50°47'-31N 00°55'-83W. Mid Winner • FI (3) G 10s; 50°47'-38N 00°55'-69W. Stocker ≈ FI (3) R 10s; 50°47'-45N 00°55'-52W. Copyhold = FI (4) R 10s; 50°47'-50N 00°54'-93W. East Head Spit A FI (4) G 10s; 50°47'-45N 00°54'-82W. Snowhill A FI G 5s; 50°47'-52N 00°54'-34W. Sandhead a FI R 10s; 50°47'-67N 00°54'-25W. Chalkdock & Fl (2) G 10s; 50°48'-49N 00°53'-30W.

2.3 PASSAGE INFORMATION

More passage information is threaded between the harbours in this area. See 0.33 for distances across the central part of the English Channel. Admiralty Leisure Folio 5601 covers Exmouth to Christchurch, and 5600 covers The Solent & Approaches. Bibliography: Channel Havens (ACN/Endean); Shell Channel Pilot (Imray/Cunliffe); Channel Pilot (Admiralty NP27).

CROSSING THE ENGLISH CHANNEL - CENTRAL PART

(AC 2656) These notes cover the crossing (about 13hrs) Weymouth/Poole/Solent to Channel Is/Cherbourg/Le Havre and should help in compiling a cross-Channel passage plan. Distances are tabulated in 0.33.

Departure and destination factors to be considered include:

Portland/Weymouth: Good angle on the wind in SW/lies but passage extended by 7/81/2M respectively to clear the E end of The Shambles Bank. There is no advantage to closing Portland Bill and Portland Race which should be avoided. Portland Bill Light loom provides a good headmark on night N'ly crossing. Check the tidal streams and monitor course made good.

Poole: Leave on the ebb. At springs with a S/SE wind beware short steep seas in the Swash Channel. Studland Bay or Swanage Roads are useful departure &s. Anvil Pt Light and the Ferries provide useful visual cues on N'ly crossing. Off Handfast, Peveril and Anvil Pts overfalls occur with wind against tide.

Solent ports: Decide whether to leave to the East via Nab Tower, using the tide to gain a lift on the ebb past Bembridge Ledge and across St Catherine's Deep or west via the Needles.

▶The latter usually requires a fair tide through Hurst Narrows (HW Portsmouth −0100 to +0430) which dictates the ETD. ◀

The Easterly option has no tidal gate, but is longer if heading to Cherbourg or the Channel Islands and gives a less favourable angle on a SW'ly wind. It can offer better shelter initially in the lee of the loW, but often has an uncomfortable chop especially on a return passage. Loom of St Catherine's and the Needles are useful guides at night, but can be deceptively far away.

Braye (Alderney) is accessible at all times, but allowance must be made to avoid being swept W to the Casquets at springs Plan and monitor the track so as to approach from well up-tide Braye Hbr is unsafe in fresh or strong E/NE'lies. From Braye you may make Guernsey, having negotiated the Alderney Race, or the Swinge. A direct passage is achievable off the Casquets or in benign conditions through Ortac Channel.

Cherbourg is accessible H24. Especially at springs, aim well uptide and approching the peninsula allow a large offset angle to maintain track, Harbours on the W side of the Cotentain (Diélette to Granville) are tidally constrained and exposed to the W but are options in E'lies if conditions in the Alderne Race permit on a W-going ebb tide or at slack water

To the E, Barfleur and St Vaast are sheltered from the prevailing W'lies, but are tidally constrained. Barfleur dries and yachts of St Vaast until the marina gates open. Further to the E Le Haves is a port of refuge although approach requires care.

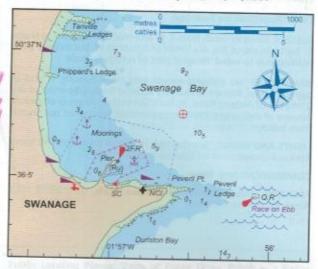
Thorough planning is a requirement for a safe and efficient crossing. Refer to 3.1, Passage Planning.

- Study the meteorological situation several days before departure so that advantageous wind and weather windows may be predicted and bad weather avoided.
- High pressure may provide quiescent conditions, but is often accompanied by reduced visibility owing to fog.
 Even if radar equipped and competent in its use, be wary of crossing if fog or poor visibility is forecast.
- For a yacht, consider the forecast wind direction, likely shifts and sea breezes which may affect the angle on the wind. Prevailing winds are SW/W, except in the spring when NE/E winds are equally likely. Check the tidal stream and the effect that this will have on Course to Steer. It is best to place the tide on the lee bow in order to gain the maximum benefit. It is very advantageous to get well to windward and up-tide of the destination. For example, from the Needles it may be beneficial initially to proceed W'wards, working the tides to advantage.
- For motor boats, windows with the wind in the N provide the best down sea conditions, maximising speed and reducing slamming.
- Choose the route, departure points and landfalls so that passage time out of sight of identifiable marks is minimised. This reduces the risk of navigational errors, anxiety and fatigue. A landfall at night or dawn/dusk is frequently easier due to the visibility of navigational marks on clear nights. The loom of a powerful lighthouse is often visible on the clouds at a distance greater than its nominal range.
- Consider tidal constraints at the points of departure and destination, and any tidal gates en route such as Hurst Narrows or the French coast between Cap Barfleur and Cap de la Hague.
- Calculate the hourly direction/rate of tidal streams expected during the crossing so as to lay off the total drift angle required to make good the desired track. Rarely do 6 hrs of E-going tide cancel out 6 hrs of W-going (or vice versa); streams off the French coast are usually stronger. Note times and areas of races/overfalls and keep well clear.
- Consider actions to be taken if fog sets in as the risk of collision is much increased. GPS may provide a position, but navigating 'blind' by radar demands intense attention. Other small boats and yachts may not be detected.
- AIS will only display vessels or marks which transmit.
- Cross on a heading as near 90° as practicable to the Traffic Routeing between the Casquets TSS and the Greenwich Meridian. Consider motoring to expedite such a crossing.
- Keep a very sharp lookout particularly when in the Traffic Routeing area in mid-Channel. Ensure the crew is aware of the directions from which to expect approaching traffic. It is commonsense and good seamanship to alter course early in order to keep well clear of large commercial ships. These may not alter for a small craft despite Rule 18 (a) (iv).
- Make use of additional navigational information such as soundings, noting when crossing distinctive seabed contours; the rising or dipping ranges of major lights; if equipped with radar, use clearly identifiable targets.
- Plan a harbour of refuge in case of fog, bad weather, accident or gear failure. For example, if unable to make Cherbourg in a strong SSW'ly and E-going tide, consider bearing away for St Vaast in the lee of the peninsula. Alternatively, in the event of engine failure identify a sheltered ±. In extremis heave to and stay at sea notifying the appropriate CG or safety service.

2.4 SWANAGE

Dorset 50°36'-70N 01°56'-55W ***

CHARTS AC 5601, 2615, 2172; Imray C10, C12, C4, 2300



TIDES HW Sp -0235 & +0125, Np -0515 & +0120 on Dover; ML 1.5

Standard Port POOLE HARBOUR (----)

Times			and the same of th	Н	eight (me	etres)	
High W	ater	0500	Water 1100	MHWS 2-2	MHWN		
	_	1700		2.2	1.7	1-2	0-6
Differences	SWA	NAGE					

NOTE: From Swanage to Christchurch double HWs occur except at neaps. HW differences refer to the higher HW and are approximate.

SHELTER Large, well sheltered bay with just 1-6m range at springs. Good ₺ in all winds except from NE to SE; Poole is closest port of refuge.

may be possible on the pier which is owned by a trust and used extensively in the summer by tourist boats, ferries and other commercial concerns. Seek advice at the gate on arrival. Gate closes at dusk Oct to Apr.

NAVIGATION WPT 50°36′-70N 01°56′-55W, 240°/0.3M to Pier Hd. Tidal races off Peveril Point to the south and Handfast Point to the north can be lively in strong onshore winds and an ebb tide. Do not cut inside Peveril Ledge buoy.

Beware of ruins of old pier south of the main pier; Tanville and Phippard's Ledges in west side of bay both dry. At night, main hazard is other boats which may be difficult to see against background lights.

LIGHTS AND MARKS 2 FR (vert) on the Pier, difficult to see due to back scatter of street lights. Peveril Ledge PHM buoy, Q.R, but can be hard to pick out by day.

COMMUNICATIONS (Code 01929) NMOC (01305) 760439; Police 101; Dr 422231; III 422202; Pier 427058. No VHF.

SWANAGE TO CHRISTCHURCH BAY

Studland Bay (AC 2172) is a good \$\precepter\$ especially in winds from the S and W. Poole Bay offers good sailing in waters sheltered from the W and N, with no off-lying dangers.

▶1M NE of Duriston Head, Peveril Ledge runs 21/2ca seaward, causing a significant race which extends nearly 1M eastwards, particularly on W-going stream against a SW wind. Proceeding towards the excellent shelter of Poole Harbour, overfalls may be met off Ballard Pt and Old Harry on the W-going stream.

(AC 2615) There is deep water quite close inshore between St. Alban's Hd and Anvil Pt.

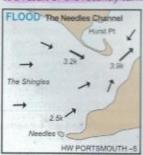
Tidal streams are weak North of a line between Handfast Point and Hengistbury Head and within Christchurch Bay. The tide runs hard over the ledge at springs, and there may be overfalls.

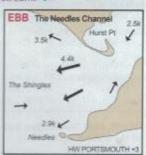
Hengistbury Hd is a dark reddish headland 5 of Christchurch Hbr with a groyne extending 1ca S and Beerpan Rks a further 100m E of groyne. Beware lobster pots in this area. Christchurch Ledge extends 2-75M SE from Hengistbury Hd. There is a passage between Christchurch Ledge and Dolphin Bank, some 11/2M further SE. A wreck hazardous to surface navigation (PA) has been reported in this chan (2013).

WESTERN APPROACHES TO THE SOLENT

(AC 2035) The Needles are distinctive rocks at the W end of the Isle of Wight. The adjacent chalk cliffs of High Down are conspic from afar, but the Lt Ho may not be seen by day until relatively close. Goose Rk, and dries, is about 50m WNW of the Lt Ho, 100-150m WSW of which is a drying wreck. When rounding the Needles an offing of 11/2ca will clear these. The NW side of Needles Chan is defined by the Shingles bank, parts of which dry and on which the sea breaks violently in the least swell. The SE side of the bank is fairly steep-to; the NW side shelves more

The ENE-going flood runs from HW Portsmouth +0500 until HW -0130, Sp rates 3.1kn at The Bridge, a reef which runs 8ca W of the Lt ho and is marked by WCM, and 3.9kn at Hurst. The WSW-going ebb runs from HW -0100 until HW +0430, sp rates 4.4kn at Hurst, 3.4kn WSW across the Shingles and at The Bridge The Needles Chan is well marked and in fair weather presents no significant problems, but in a SW 4 or above over the ebb, a breaking seas occur near The Bridge and 5W Shingles. In bad' weather broken water and overfalls extend along The Bridge. 5 to W gales against the ebb raise very dangerous breaking seas in the Needles Chan and approaches. The sea state can be at its worst shortly after LW when the flood has just begun. There is then no wind-over-tide situation, but a substantial swell is raised. Shoal-draught boats can explore the estuaries at the top of the as a result of the recently turned stream.





In such conditions use the E route to the Solent, S of the IoW and via Nab Tower; or find shelter at Poole or Studland.

In strong winds the North Channel, N of the Shingles, is preferable to the Needles Channel. The two join S of Hurst Pt, where overfalls and tide rips may be met. Beware The Trap, a very shallow gravel shoal spit, 150m SE of Hurst Castle.

In E winds Alum Bay, with its coloured cliffs close NE of the Needles, is an attractive daytime \$ but beware Long Rk (dries) in the middle of the bay, and Five Fingers Rock 11/2ca SW of Hatherwood Pt on N side. Totland Bay is good & in settled weather, but avoid Warden Ledge.

THE SOLENT

(AC 2035, 2036, 2037) There are few dangers in mid-chan. The most significant is Bramble Bank (dries) between Cowes and Calshot. The main fairway (buoyed) passes S and W of the Brambles, but yachts can use the North Chan to the NE of the Brambles at any state of tide.

▶ Tidal streams are strong at Sp, see 2.14. <</p>

A Precautionary Area between Cowes and Calshot provides priority and safety for large commercial shipping. There are many yacht racing buoys (seasonal, Mar-Dec) in the Solent and Southampton Water. Most are fitted with a FI Y 4s light.

Several inshore spits, banks, rocks and ledges include: Pennington and Lymington Spits on the N shore; Black Rk 4ca W of entrance to Yarmouth; Hamstead Ledge 8ca W of entrance to Newtown River and Saltmead Ledge 1-5M to E; Gurnard Ledge 1-5M W of Cowes; Lepe Middle and Beaulieu Spit, S and W of the ent to Beaulieu R; the shoals off Stone Pt, marked by Lepe Spit SCM buoy; Shrape Mud, which extends N from the breakwater of Cowes Hbr and along to Old Castle Pt; the shoals and isolated rks which fringe the island shore from Old Castle Pt to Ryde, including either side of the ent to Wootton Creek; and Calshot Spit which extends almost to the deep water chan into Southampton Water.

Southampton Water is a commercial waterway with large tankers, container ships, frequent Ro-Ro and High Speed ferries. Yachts should monitor VHF Ch 12 (Southampton VTS) for shipping movements. Between the Fawley Marine Terminal and the BP jetty on the E side the fairway is narrow with little room for yachts to take refuge. To the N there is adequate water for yachts close outboard of the main buoyed channel; the banks are of gently shelving soft mud, apart from foul ground between Hythe and Marchwood. At night, unlit marks and large mooring buoys may be hard to see against the many shore lights. Except in strong N'lies, Southampton Water and the R Test and Itchen provide sheltered sailing. The R Hamble is convenient, but crowded.

Depending on the wind direction, there are many good \$5: in W winds on E side of Hurst, as close inshore as depth permits, NE of Hurst It; in 5 winds, or in good weather, W of Yarmouth Harbour entrance, as near shore as possible; in winds between W and N in Stanswood Bay, about 1M NE of Stansore Pt. Just N of Calshot Spit there is shelter from SW and W, while Osborne Bay, 2M E of Cowes, is sheltered from winds between S and W; in E winds Gurnard Bay, to the W of Cowes, is preferable. Stokes Bay is well sheltered from the N, and at the E end of the IoW there is good & in Priory Bay off Bembridge in winds from S, SW or W; but clear out if wind goes into E.

tide: Ashlett Creek between Fawley and Calshot, Eling up the R Test, and the upper reaches of the R Medina.

ISLE OF WIGHT - SOUTH COAST

(AC 2045) From the Needles eastward to Freshwater Bay the cliffs can be approached to within 1ca, but beyond the E end of the chalk cliffs there are ledges off Brook and Atherfield which require at least 5ca offing.

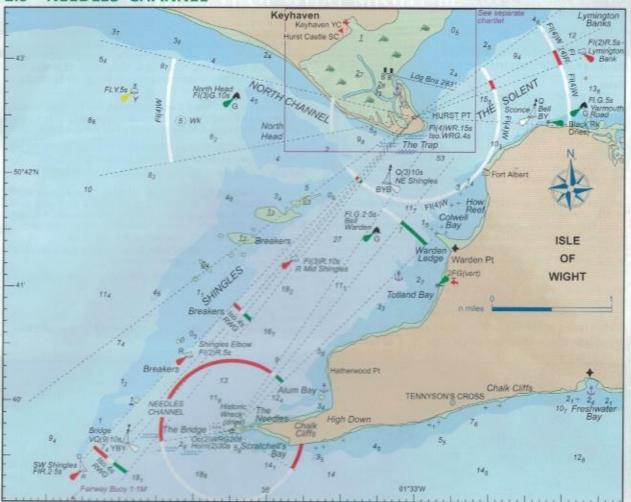
▶ The E-going stream sets towards these dangers. 4M SSW of the Needles the stream turns NNE at HW Portsmouth +0500, and W at HW -0030, Sp rate 2kn. It is safe to pass 2ca off St Catherine's It ho (conspic), but a race occurs off the point and can be very dangerous at or near Sp against a strong wind, particularly SE of the point on a W-going stream. St Catherine's should then be rounded at least 2M off. 1-25M SE of the point the stream turns E at HW Portsmouth +0520, and W at HW −0055, sp rate 3.75kn. ◀

Rocks extend about 21/2ca either side of Dunnose where a race occurs. In Sandown Bay & off Shanklin or Sandown where the tidal streams are weak inshore.

▶Off the centre of the Bay they turn NE x E at HW Portsmouth +0500, and SW x W at HW −0100, sp rates 2 kn. 4

The Yarborough Monument is conspicuous above Culver Cliff. Whitecliff Bay provides & in winds between W and N. From here to Foreland (Bembridge Pt) the coast is fringed by a ledge of drying rocks extending up to 3ca offshore, and it is advisable to keep to seaward of Bembridge Ledge ECM It buoy.

2.9 NEEDLES CHANNEL



- The NW side of the Needles Channel is defined by the Shingles, a bank parts of which dry, and on which seas breaks in the least swell. The SE side of the bank is fairly steep-to, the NW side is less defined. Dredgers work on the Pot Bank, 4ca S of Bridge WCM.
- On the ebb the stream sets very strongly (3-4kn) WSW across the Shingles. The Needles Channel is well lit and buoyed and in fair weather presents no significant problems. Be aware that even a SW Force 4 against the ebb will raise breaking seas near Bridge and SW Shingles buoys. Contact National Coastwatch Needles on VHF Ch 65 for local conditions.
- In strong winds the North Channel, N of the Shingles, is preferable to the Needles Channel. The two join S off Hurst Point where overfalls and tide rips may be met. Beware The Trap, a shoal spit extending 150m SE of Hurst Castle.
- In bad weather broken water and overfalls extend along The Bridge, a reef which runs 8ca W of the It ho. Lt's W extremity is marked by Bridge WCM It buoy, but in calm weather it is feasible to pass E of Bridge buoy to avoid the worst of the ebb stream.
- Gales from S-W raise very dangerous breaking seas against the ebb in the Needles Chan, at points only 250m wide. The sea state can be at its worst shortly after LW when the flood has just begun. Although wind is with tide a substantial swell is raised as a result of turbulence in the recently turned stream. In such conditions consider using North Channel; the E route to the Solent, S of the loW and via Nab Tower; or find shelter at Poole or Studland.

The Needles are distinctive rocks at the W end of the Isle of Wight (see AC 5600, 2035, 2021). By day the chalk cliffs of High Down are conspic from afar but the It ho may not be seen by day until relatively close. Goose Rk, dries, is about 50m WNW of the It ho, 100-150m WSW of which is a drying wreck.

ANCHORAGES BETWEEN THE NEEDLES AND YARMOUTH

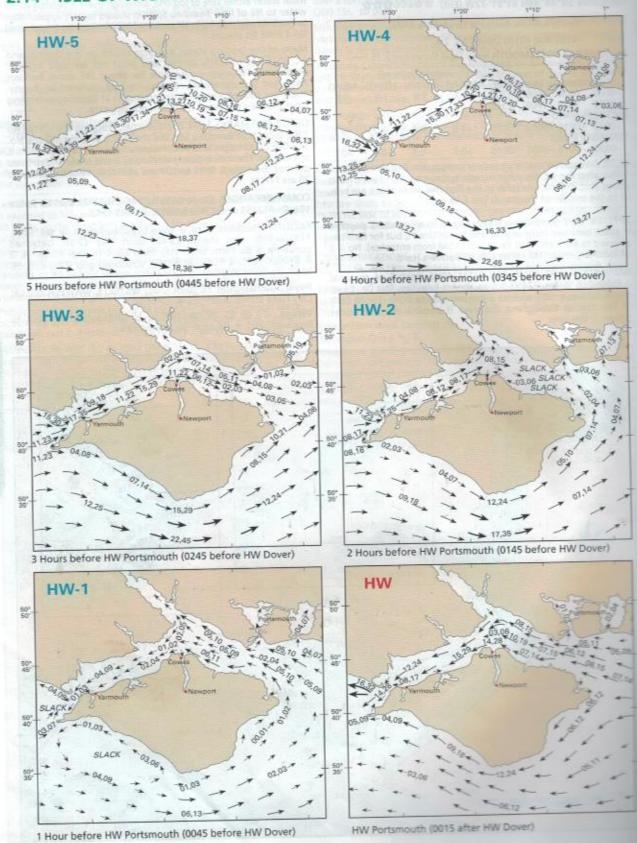
ALUM BAY, 50°40′-10N 01°34′-33W. AC 5600, 2021. Tides as for Totland Bay. Very good shelter in E and S winds, but squally in gales. Distinctive white cliffs to S and multi-coloured cliffs and chairlift to E. Appr from due W of chairlift to clear Five Fingers Rk, to the N and Long Rk, a reef drying 0-9m at its E end, to the S. ± in about 4m.

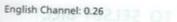
TOTLAND BAY, 50°40′-98N 01°32′-86W. AC 5600, 2035. ML 1-9m. Good shelter in E'lies in wide shelving bay between Warden Ledge (rks 4ca offshore) to the N, and Hatherwood Pt to the SW. Appr W of Warden SHM buoy Fl G 2-5s to ± out of the stream in 2m between pier (2FG vert) and old LB house; good holding. Colwell Bay, to the N between Warden Pt and Fort Albert, is generally rocky and shallow.

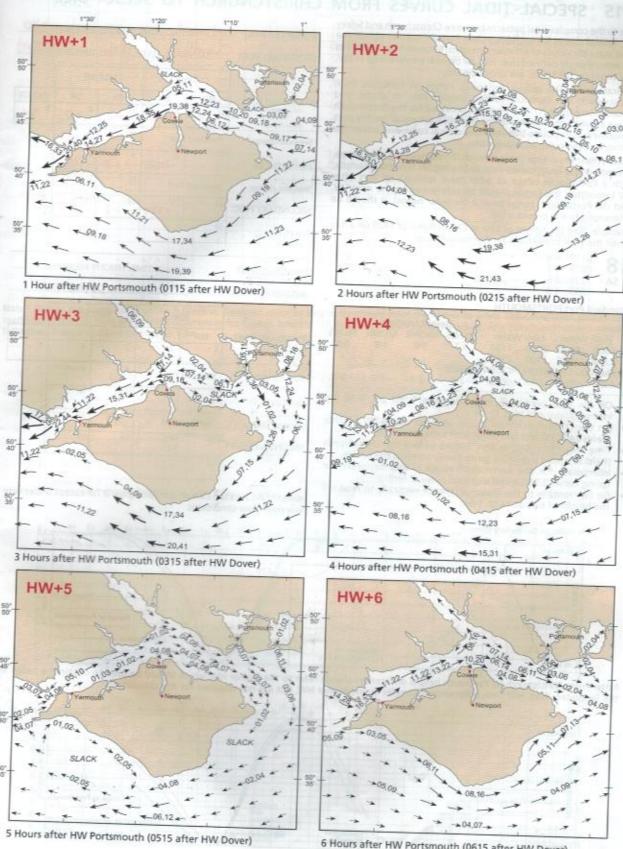
ANCHORAGE EAST OF THE NEEDLES, SOUTH IOW

FRESHWATER BAY, 50°40'-07N 01°30'-61W. AC 5600, 2021. ML 1-6m. Good shelter from the N, open to the S. The bay is 3-2M E of Needles Lt ho and 1-2M E of Tennyson's Cross. Conspic marks: Redoubt Fort on W side; a hotel on N side; Stag and Mermaid Rks to the E. The bay is shallow, with rocky drying ledges ¾ca either side and a rock (dries 0-1m) almost in the centre. Best to ± in about 2m just outside the bay.

2.14 ISLE OF WIGHT AND SOLENT TIDAL STREAMS







6 Hours after HW Portsmouth (0615 after HW Dover)

STANDARD TIME (UT)

For Summer Time add ONE hour in non-shaded areas

SOUTHAMPTON LAT 50°53'N LONG 1°24'W

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

Dates in red are SPRINGS Dates in blue are NEAPS

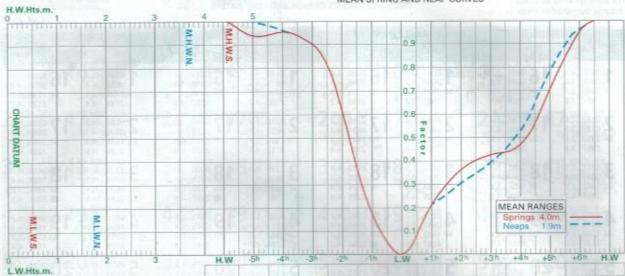
YEAR 2017

MAY	JUNE	JUNE Time m Time m		JULY Time m Time m		AUGUST	
1 0204 4.5 16 0119 4. M 1444 4.4 TU 1412 4.	1 0358 4.1 16 02 0920 1.3 16 08 TH 1556 4.1 F 15	25 4.1 27 1.3 25 4.2	1 0341 3.9 0947 1.4 SA 1619 4.0	16 0252 4.2 50 0857 1.2 50 1552 4.3	1 0447 3.6 1104 1.9 TU 1722 3.8	16 0423 3.9 1035 1.7 W 1700 4.0	
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3 0337 3.9 18 0245 3. W 1623 4.0 TH 1553 4. O 2226 1.7 2123 1.	SA 1750 3.9 5U 17	114 3.9 133 1.5 126 4.1 112 1.7	3 0534 3.6 1148 1.8 M 1807 3.8	18 0449 3.9 1106 1.5 TU 1806 4.2 2348 1.6	3 0048 1.9 0758 3.7 TH 1317 2.0 1926 3.8	18 0055 1.6 0700 3.9 F 1328 1.6 1936 4.1	
4 0444 3.8 19 0338 3. 1101 1.6 19 0957 1. 11 1728 3.9 F 1658 3. 2341 1.8 2240 1.	SU 1230 1.6 M 17	18 3.8 43 1.5 55 4.0		19 0554 3.9 1220 1.5 W 1837 4.1	4 0151 1.8 0803 3.7 F 1415 1.8 2027 3.9	19 0204 1.3 0813 4.1 SA 1430 1.4 2038 4.3	
5 0551 3.7 20 0437 3. F 1827 3.9 SA 1723 3. 2354 1.	M 1329 1.5 TU 12	50 1.3	W 1348 1.7	20 0102 1.4 0711 4.0 TH 1332 1.4 1948 4.3		20 0258 1.0 0907 4.3 SU 1521 1.0 2127 4.5	
6 0048 1.7 21 0549 3. 5A 1314 1.5 SU 1834 3. 1926 3.9	TU 1421 1.4 W 13	26 1.3 38 4.1 52 1.1 112 4.4	TH 1440 1.5	21 0209 1.2 0820 4.2 F 1435 1.2 2049 4.5		21 0346 0.7 1026 4.6 M 1608 0.8 • 2237 4.6	
7 0145 1.5 22 0101 1. 0750 3.8 22 0707 3. SU 1407 1.3 M 1327 1. 2022 4.1 1946 4.	W 1508 1.2 TH 14	25 1.0 39 4.4 49 0.9 03 4.6	7 0307 1.3 0918 4.0 F 1527 1.4 2140 4.2	22 0306 0.9 0919 4.4 SA 1530 0.9 2141 4.6	7 0408 1.1 7 1031 4.3 M 1628 1.2 O 2239 4.3	TU 1651 0.6	
8 0234 1.2 23 0200 1. 8 0937 4.0 20 0811 4. M 1454 1.0 TU 1423 0. 2202 4.3 2041 4.	TH 1552 1.1 F 15	118 0.7 130 4.5 141 0.7 152 4.7	SA 1610 1.3	23 0357 0.6 1034 4.6 5U 1620 0.7 2250 4.7	8 0446 0.9 1104 4.4 TU 1705 1.0 2315 4.4	23 0513 0.3 1149 4.6 W 1734 0.5 2359 4.6	
9 0318 0.9 24 0951 0. TU 1537 0.8 W 1513 0. 2228 4.3 2128 4.	F 1633 1.1 SA 16	08 0.4 042 4.7 030 0.5 02 4.8	9 0431 1.1 1046 4/2 5U 1650 1.2 0 2258 4.3	24 0445 0.4 1119 4.6 M 1706 0.5 2334 4.7	9 0522 0.8 1136 4.4 W 1739 1.0 2344 4.4	24 0554 0.3 1232 4.6 TH 1815 0.6	
10 0401 0.8 25 0339 0. W 1619 0.8 TH 1600 0. O 2227 4.3 2234 4.	SA 1711 1.1 SU 17	18 0.5		25 0530 0.3 1205 4.6 TU 1751 0.5	10 0556 0.7 1233 4.5 TH 1813 0.9		
11 0441 0.7 1122 4.2 TH 1659 0.8 2302 4.3 26 0425 0. F 1646 0. 2318 4.	SU 1743 1.2 M 18		11 0541 1.0 1233 4.4 TU 1757 1.2	26 0018 4.6 0614 0.3 W 1252 4.6 1835 0.6	11 0022 4.5 0630 0.7 F 1307 4.6 1848 0.9	SA 1403 4.4	
12 0518 0.8 27 0510 0. F 1735 1.0 SA 1732 0.	M 1810 1.3 TU 13			TH 1343 4.5	12 0121 4.6 0706 0.7 SA 1348 4.6 1927 0.9		
13 0009 4.4 0549 0.9 28 0555 0. 5A 1232 4.3 5U 1232 4. 1804 1.1 1817 0.	TU 1316 4.3 W 14	26 4.5 15 0.6 108 4.5 139 0.9	13 0039 4.3 0646 0.9 TH 1330 4.4 1906 1.1	28 0152 4.3 0739 0.7 F 1357 4.3 2002 1.0	13 0204 4.5 0745 0.8 5U 1433 4.5 2010 1.1	28 0259 4.1 0830 1.4 M 1441 4.0 2052 1.6	
14 0038 4.3 29 0053 4. 5U 1300 4.3 M 1326 4. 1827 1.2 1905 0.	W 1352 4.3 TH 14	21 4.3 102 0.8 131 4.3 129 1.2	14 0142 4.4 0723 0.9 F 1412 4.4 1946 1.2	29 0245 4.2 0823 1.0 5A 1448 4.2 2048 1.3	14 0253 4.4 0831 1.1 M 1526 4.4 2100 1.3	29 0256 3.7 0915 1.8 TU 1522 3.8 © 2144 1.9	
15 0109 4,3 0639 1.1 M 1333 4.2 1856 1.3 TU 1430 4. 1956 1.	TH 1435 4.3 F 15		15 0227 4.3 0806 1.0 SA 1459 4.4 2033 1.3	30 0300 3.9 0910 1.4 50 1537 4.0 € 2138 1.5	15 0349 4.2 0924 1.4 TU 1628 4.2 0 2203 1.6	30 0340 3.5 1017 2.1 W 1609 3.6 2252 2.1	
31 0249 4. 0822 1. W 1456 4. 2053 1.	7			31 0353 3.7 1004 1.7 M 1629 3.9 2236 1.8		31 0431 3.3 1130 2.2 TH 1712 3.5	

Chart Datum: 2-74 metres below Ordnance Datum (Newlyn). HAT is 5-0 metres above Chart Datum.



MEAN SPRING AND NEAP CURVES



2.18 SOUTHAMPTON

Hampshire 50°52′-65N 01°23′-37W ●●● 600 000

CHARTS AC 5600, 2036, 2041; Imray C3, C15, 2200

TIDES HW (1st) -0001 Dover; ML 2-9

Standard Port SOUTHAMPTON (

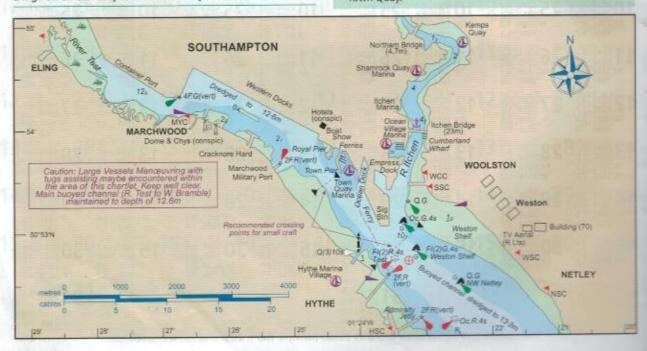
Times				Height (metres)				
High Water Low			Water	MHWS	MHWN	MLWN	MLWS	
0400	1100	0000	0600	4-5	3.7	1-8	0.5	
1600	2300	1200	1800					
Difference	ces RED	BRIDGE	E					
_0020	+0005	0000	-0005	-0-1	-0-1	-0.1	-0.1	

NOTE: At springs there are two separate HWs about 2hrs apart; at neaps there is a long stand. Predictions are for the first HW when there are two, otherwise for the middle of the stand. NE gales and a high barometer may lower sea level by 0-6m.

SHELTER Good in most winds, although a choppy sea builds in SE winds >F4, when it may be best to shelter in marinas. beths available in Hythe, Town Quay, Ocean Village, Shamrock Quay and Kemp's Marinas. No specific yacht anchorages but temporary & is permitted (subject to HM) off club moorings at Netley, Hythe, Weston and Marchwood in about 2m. Keep clear of all channels and Hythe Pier. Public moorings for larger yachts opposite Royal Pier near Gymp Elbow PHM buoy in 4m (contact HM); nearest landing is at Town Quay Marina.

NAVIGATION WPT 50°50'-0N 01°18'-6W, just S of Hamble Point SCM, to Weston Shelf SHM buoy 312°/4M. Main channels are well marked.

- · For a Yachtsman's Guide see www.southamptonvts.co.uk.
- Yachts should keep just outside the buoyed lit fairway and when crossing it should do so at 90°, abeam Fawley chy, at Cadland and Greenland buoys, abeam Hythe and abeam Town Quay.



SOUTHAMPTON continued

- Caution: several large unlit mooring buoys off Hythe, both sides of the main chan, and elsewhere.
- Frequent hi-speed & Ro-Ro ferries operate through the area.
- Essential to keep clear of very large tankers operating from Fawley and commercial shipping from Southampton. NB Precautionary Area between Cowes and Calshot.

R Test There is foul ground at Marchwood and Royal Pier; extensive container port further upstream. Eling Chan dries.

R Itchen Care is necessary, particularly at night. Above Itchen Bridge the chan bends sharply to port and favours the W bank. There are unlit moorings in the centre of the river. Navigation above Northam Bridge (4-7m clearance) is not advisable. Speed limit 6kn in both rivers N of a line Hythe Pier to Weston Shelf.

LIGHTS AND MARKS See 2.2. Main lights shown on chartlet. Fawley chimney (198m, R lts) is conspic by day and night.

Hythe Marina Village, close NW of Hythe Pier: appr chan marked by ECM lit Bn and PHM lit Bn.

Southampton Water divides into Rivers Test and Itchen at Dock Head which is easily identified by conspic silos and a high lattice mast showing traffic sigs which are mandatory for commercial vessels, but may be disregarded by yachts outside the main chans. Beware large ships manoeuvring off Dock Head, and craft leaving either river.

Ent to R Itchen marked by SHM Oc G 4s, beyond which piles with G Its mark E side of chan Idg to Itchen bridge (24-4m); a FW It at bridge centre marks the main chan.

Above Itchen Bridge, marked by 2 FR (vert) and 2 FG (vert), the principal marks are: Crosshouse lit Bn; Chapel lit Bn. Caution: 8 large unlit mooring buoys in middle of river.

COMMUNICATIONS (Code 02380) NMOC (02392) 552100; Police 101; Hythe Medical Centre 2845955; ℍ 777222. HM ABP & VTS 330022 (339733 outside HO).

Vessel Traffic Services Call: Southampton VTS Ch 12 14 16 (H24). Small craft traffic info broadcast on Ch 12 on the hour 0600-2200 Fri-Sun and Bank Holidays from Easter to last weekend in Oct. From 1 Jun to 30 Sep broadcasts are every day at the same times.

Southampton Hbr Patrol Call: Southampton Patrol VHF Ch 12 16, 01-28, 60-88 (H24). Marinas VHF Ch 80 M.

Fuel barges in R Itchen, call Wyefuel Ch 08.

FACILITIES Marinas:

Hythe Marina Village № 207073 Ch 80 (call ahead), dredged 2-5m. Access H24 IPTS at lock (2 • over ○ = free flow) (lock width 8m; max LOA 18m), Waiting pontoon outside lock. Ferries from Hythe pier to Town Quay and Ocean Village. 210 ○ + • £3.60<12.5m>£4.50<18m (inc ①), ⑤ Þ • • • ○ ② ⑥ ③ ④ ④(30t) □ (12t) ⑤ X □.

Itchen Marina (50) **26**31500, VHF Ch 12. No **3** berths, but will assist a vessel in difficulty, **1** R **3**(40t).

Kemps Quay 2632323, 260 (all but 50 dry) welcome £4-26, ↓ ♣ ♠ (all but 50 dry) welcome £4-26,

Saxon Wharf 2339490 Superyacht service centre and dry-stack.

• □ ♣ ♣ ♠ ♠ ♠ ♠ ♠ № Å.

Fuel from Itchen Marina 28063 1500 above Itchen Bridge, nearest petrol by hose is from Hythe marina.

Hards at Hythe, Cracknore, Eling, Mayflower Park (Test), Northam (Itchen). Public landings at Cross House hard, Cross House slip, Block House hard (Itchen), Carnation public hard & Cowporters.

City All facilities services ₹ +, Car ferry/passenger catamaran to IoW, 2019192; ferry Town Quay to Hythe 2840722.

Reference ABP publish a Yachtsman's Guide to Southampton Water obtainable from VTS Centre, Berth 37, Eastern Docks, Southampton SO1 1GG. Please send sae.

YACHT CLUBS

Royal Southampton YC 2223352, ★ ♣ ♣ ₺ ₺ X □. Southampton SC 2446575.

Netley SC 28454272; Weston SC 28452527; Eling SC 2863987. Hythe SC 2846563; Marchwood YC 26666141, A A (10t)

2.19 RIVER HAMBLE

Hampshire 50°51'-0N 01°18'-50W ♦♦♦००० 🗘 🗘 🗘

CHARTS AC 5600, 2036, 2022; Imray C3, C15, 2200

TIDES +0020, -0010 Dover; ML 2-9 Ottobe

Standard Port SOUTHAMPTON (

Times				Height (metres)				
High!	Water	Low	Water	MHWS	MHWN	MLWN	MLWS	
	1100		0600		3.7	1-8	0.5	
1600	2300	1200	1800 .					
Difference	es WA	RSASH	nex-	+ 1111	13LE 1	lann	a	
+0020	+0010	+0010	0000	0.0	+0-1	+0-1	+0-3	
BURSLED	ON E	ND	river-	HAMBI	E			
+0020				+0-1		+0-2	+0-2	
CALSHO'	T CASTI	EWI	teadle	anol				
0000	+0025	0000	0000	0.0	0.0	+0.2	+0.3	

NOTE: Double HWs occur at or near sp; at other times there is a stand of about 2hrs. Predictions are for the first HW if there are two or for the middle of the stand. NE gales can decrease depths by 0-6m.

SHELTER Excellent, with **0**'s berths at five main marinas, and at YCs, SCs, BYs and on some Hbr Authority pontoons. Jetty in front of B/W HM's Office Warsash has limited **0**'s berths and some **0**'s berths at Public Jetty on W bank near Bugle Inn car park. Pontoons at all marinas are lettered A, B et seq from the S end. In mid-stream between Warsash and Hamble Pt Marina is a clearly marked **0** pontoon, between piles B1 to B6.

NAVIGATION WPT Hamble Point SCM buoy, 50°50° 15N 01° 18° 66W, is in the centre of the W sector of Dir 352°, Oc (2) WRG 12s; Nos 1, 3, 5, piles are on the E edge of the G sector.

River can be very crowded and \$\psi\$ is prohibited below the bridges. Unlit piles and buoys are a danger at night. Yachts are advised not to use spinnakers above Warsash Maritime Academy jetty.

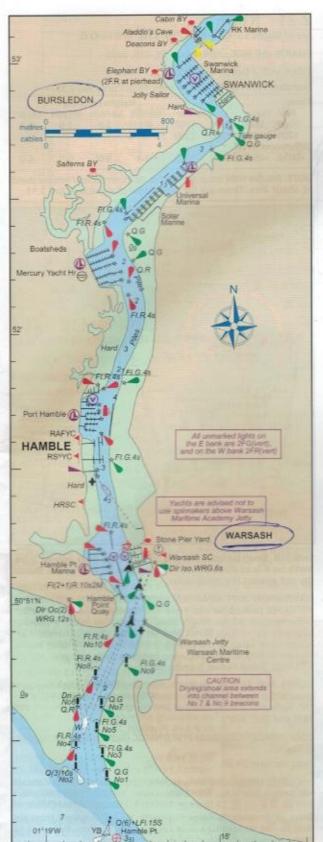
Bridge clearances: Road 3-5m; Rly 5-5m; M27 3-8m.

LIGHTS AND MARKS Dir ★, Oc (2) WRG 12s, 351°-W-353°, leads 352° into river ent. and when midway between No 5 and 7 bns alter 028° in the white sector, 027°-W-029°, of Dir ★, Iso WRG 6s. Piles Nos 1–10 (to either side of the above 352° and 028° tracks) are lit and fitted with radar refl.

Above Warsash, pontoons and jetties on the E side are marked by 2FG (vert) Its, and those on the W side by 2FR (vert) Its. Lateral piles are mostly FI G 4s or FI R 4s (see chartlet).

COMMUNICATIONS (Code 02380) NMOC 02392 552100; Police 101; Seastart 0800 885500. HM 01489 576387, HM patrol mob 07718 146380/81/99.

Commercial/all vessels >20m call: Hamble Harbour Radio Ch 68 (Apr-Sep: daily 0600-2200. Oct-Mar: daily 0800-1800). Marinas Ch 80 M. Water Taxi 207827157155, Ch 77. See also The Central Solent for VTS and info broadcasts.



FACILITIES Marinas from seaward:

Stone Pier Yard 201489 579589, access H24, 56 2 £4-00, <4hrs £8; ♣ ₺ ≮ ♠ ♠ ♀ △(10t) ₾. Nearby: ☒ ₺ ௧.

The Hbr Authority jetty in front of the conspic B/W HM's Office at Warsash has limited ⊆ (£2), also ♥ pontoons in mid-stream (both £1.50), ₺ toilets ashore. Public Jetty on W bank near the Bugle Inn car park (£1.75). See www.hants.gov.uk/hamble harbour.

YACHT CLUBS

Hamble River SC 22452070

RAFYC 22452208, ► X []

Royal Southern YC 2450300

Warsash SC 201489 583575.

SERVICES Wide range of marine services available; consult marina/ HM for locations. Hamble River Guide available from HM.

Hards At Warsash, Hamble and Swanwick.

Slips at Warsash, Hamble, Bursledon and Lower Swanwick.

Maintenance piles at Warsash by HM's slipway; on W bank upriver of public jetty near Bugle; by slip opposite Swanwick Marina.

□ (Hamble, Bursledon, Warsash and Lower Swanwick); (Hamble,

ADJACENT HARBOURS

ASHLETT CREEK, Hants, 50°50'-01N 01°19'-49W. AC 5600, 2038, 2022. Tides approx as Calshot Castle (opposite). Small drying (2-1m) inlet across from R Hamble; best for shoal-draught vessels. Appr at HW close to Fawley Marine Terminal. Unlit chan, marked by 3 PHM buoys, then in sequence a pair of PHM and SHM buoys, a PHM beacon and SHM buoy (No 7). Then follow PHM and SHM beacons. The single dog leg is indicated by an arrow on a PHM. A final SHM buoy leads to the drying sailing club pontoon or the drying quay. Ldg bns are hard to find; local knowledge desirable. Berth at drying quay. Facilities:

HILL HEAD, Hants, 50°49'-08N 01°14'-54W. AC 5600, 2036, 2022. HW +0030 on Dover; use LEE-ON-SOLENT differences. Short term \$\(\psi\) for small craft at mouth of R Meon. Bar dries \(\frac{1}{2}\)M offshore. Ent dries \(\frac{1}{2}\)Cm at MLWS. Appr on 030° towards Hill Head SC ho (W, conspic); Small hbr to W inside ent (very narrow due to silting) where small yachts can lie in soft mud alongside wall. Facilities: Hill Head SC \(\mathbb{E}\)(01329) 664843. Hill Head village \(\mathbb{T}\) \(\mathbb{T}\) \(\mathbb{D}\) \(\mathbb{E}\) \(\mathbb{Z}\).

STANDARD TIME (UT)

For Summer Time add ONE hour in non-shaded areas

PORTSMOUTH LAT 50°48'N LONG 1°07'W

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

Dates in red are SPRINGS Dates in blue are NEAPS

YEAR 2017

MAY Time m Time m			JNE Time m	JULY Time m Time m		AUGUST	
1 0234 4.7 0752 0.9 M 1518 4.6 2019 1.2	SOUTH STATE OF THE	1 0419 4.3 0940 1.4 TH 1708 4.4	16 0319 4.1 0837 1.3 F 1604 4.2 2106 1.6	1 0447 4.1	16 0345 4.2 50 1632 4.3 0 2136 1.4	1 0600 3.8 1130 1.9 TU 1829 3.9	16 0534 4.1 1050 1.6 W 1813 4.2 2342 1.6
2 0336 4.4 0850 1.2 TU 1625 4.4 2128 1.5	17 0256 4.2 0808 1.4 W 1533 4.2 2034 1.7		17 0415 4.0 0932 1.4 SA 1701 4.2 3 2209 1.7	2 0545 4.0 1110 1.7 5U 1821 4.1 2343 1.8	17 0448 4.1 1004 1.4 M 1731 4.3 2244 1.5	W 1233 2.0	17 0650 4.0 1222 1.7 TH 1926 4.2
3 0442 4.2 1008 1.5 W 1730 4.2 © 2250 1.7	18 0345 4.0 0859 1.6 TH 1627 4.0 2132 1.8		18 0519 4.0 1040 1.5 SU 1803 4.2 2323 1.6	3 0647 3.9 1210 1.7 M 1921 4.1	18 0556 4.1 1118 1.5 TU 1836 4.3	3 0106 1.9 0822 3.8 TH 1332 1.9 2043 4.0	18 0102 1.5 0803 4.2 F 1334 1.5 2031 4.3
4 0552 4.0 1125 1.6 TH 1840 4.1			19 0627 4.0 1156 1.5 M 1907 4.3	4 0043 1.8 0749 3.9 TU 1308 1.7 2018 4.1	19 0002 1.5 0705 4.1 W 1235 1.5 1941 4.3	4 0203 1.7 0920 4.0 F 1426 1.8 2134 4.2	19 0207 1.3 0907 4.4 SA 1434 1.3 2126 4.5
5 0001 1.8 0703 3.9 F 1231 1.6 1953 4.2	20 0553 3.8 1129 1.7 5A 1842 4.0	5 0124 1.6 0827 4.0 M 1345 1.5 2058 4.3	20 0036 1.5 0732 4.2 TU 1304 1.3 2006 4.4	W 1401 1.7 2110 4.2	20 0113 1.4 0811 4.2 TH 1341 1.3 2042 4.5	SA 1513 1.6 2218 4.3	20 0302 1.0 1000 4.6 SU 1527 1.1 2214 4.7
6 0105 1.7 0810 4.0 5A 1329 1.5 2105 4.3	21 0016 1.8 0707 3.9 50 1244 1.5 1950 4.2		21 0137 1.2 0830 4.3 W 1402 1.1 2100 4.6	TH 1450 1.5	21 0215 1.1 0912 4.4 F 1440 1.1 2136 4.6	6 0335 1.3 1049 4.4 5U 1556 1.4 2256 4.4	21 0351 0.7 1048 4.7 M 1614 0.8 • 2259 4.8
	22 0118 1.5 0809 4.1 M 1341 1.3 2042 4.5		22 0232 1.0 0924 4.5 TH 1455 0.9 2150 4.8	7 0316 1.4 1027 4.3 F 1535 1.4 2239 4.4	22 0311 0.9 1006 4.6 SA 1535 1.0 2226 4.8		22 0437 0.6 1133 4.8 TU 1659 0.7 2343 4.8
8 0247 1.3 0943 4.3 M 1506 1.1 2209 4.5	23 0210 1.2 0900 4.4 TU 1431 1.0 2128 4.7	TH 1600 1.2	23 0324 0.8 1015 4.7, F 1547 0.8 2239 4.9	8 0358 1.2 1110 4.4 SA 1617 1.3 2318 4.5		8 0452 0.9 1202 4.6 TU 1712 1.1	23 0520 0.5 1219 4.8 W 1741 0.6
9 0331 1.1 1022 4.4 TU 1548 1.0 2245 4.5	24 0259 0.9 W 1520 0.7 2213 4.8		24 0414 0.6 1106 4.8 SA 1637 0.7 2326 4.9	9 0437, 1.1 1150 4.5 SU 1655 1.2 2355 4.5	24 0451 0.5 1148 4.8 M 1713 0.7	9 0005 4.5 0528 0.8 W 1236 4.6 1746 1.0	24 0027 4.7 0601 0.5 TH 1306 4.8 1822 0.7
10 0411 1.0 1104 4.4 W 1628 1.0 O 2323 4.6	25 0345 0.6 1033 4.8 TH 1606 0.6 2257 5.0		25 0503 0.5 1158 4.8 5U 1725 0.6	10 0513 1.0 1226 4.5 M 1731 1.2	25 0000 4.8 0536 0.5 TU 1238 4.8 1758 0.7	10 0038 4.6 0603 0.8 TH 1310 4.6 1821 0.9	25 0113 4.7 0641 0.7 F 1353 4.7 1901 0.9
11 0449 0.9 1145 4.5 TH 1705 1.0		SU 1247 4.5	26 0015 4.9 0.5 M 1252 4.8 1812 0.7		26 0048 4.8 0621 0.5 W 1332 4.8 1842 0.8	11 0111 4.5 0637 0.8 F 1346 4.6 1857 0.9	26 0159 4.5 0719 0.9 SA 1436 4.6 1939 1.1
12 0001 4.6 0523 0.9 F 1226 4.5 1738 1.1	27 0517 0.4 1209 4.9 SA 1739 0.5	12 0049 4.5 0604 1.1 M 1321 4.5 1821 1.3	27 0105 4.8 0636 0.6 TU 1352 4.8 1900 0.8	12 0101 4.5 0621 1.0 W 1335 4.5 1839 1.1	27 0137 4.7 0704 0.7 TH 1429 4.7 1927 0.9	12 0147 4.5 0.8 5A 1425 4.6 1934 1.0	27 0244 4.4 0756 1.2 SU 1514 4.5 2016 1.4
13 0038 4.5 0554 1.0 SA 1304 4.5 1809 1.1	28 0030 5.0 0603 0.4 5U 1302 4.9 1825 0.6	13 0120 4.4 0636 1.1 TU 1354 4.4 1855 1.3	28 0158 4.7 0724 0.7 W 1459 4.7 1949 1.0	13 0134 4.4 0656 1.0 TH 1411 4.5 1915 1.2	28 0228 4.5 0748 0.9 F 1517 4.6 2011 1.2	13 0228 4.5 0753 0.9 5U 1510 4.5 2017 1.1	28 0326 4.2 0833 1.5 M 1550 4.3 2056 1.6
14 0110 4.5 50 1336 4.4 1839 1.2	29 0121 4.9 0650 0.6 M 1402 4.8 1914 0.9	14 0154 4.4 0711 1.2 W 1431 4.4 1932 1.4	29 0255 4.5 0814 1.0 TH 1551 4.6 2041 1.3	14 0210 4.4 0733 1.0 - F 1452 4.4 1955 1.2	29 0320 4.4 0833 1.2 5A 1559 4.5 2059 1.4	14 0319 4.3 0838 1.1 M 1603 4.4 2108 1.3	29 0407 4.0 0918 1.8 TU 1629 4.1 © 2148 1.9
15 0140 4.4 0653 1.1 M 1409 4.4 1911 1.4	30 0216 4.7 0740 0.8 TU 1512 4.7 2007 1.2	15 0233 43 0750 1.2 TH 1514 4.3 2015 1.5	30 0351 4.3 0908 1.2 F 1637 4.4 2139 1.5	15 0253, 4.3 0815 1.1 SA 1538 4.4 2041 1.3	30 0409 4.2 0923 1.5 5U 1641 4.3 € 2153 1.7	15 0422 4.2 0934 1.4 TU 1704 4.3 0 2214 1.5	30 0455 3.8 1031 2.1 W 1718 3.8 2316 2.1
	31 0317 4.5 0835 1.1 W 1612 4.5 2108 1.4				31 0500 4.0 1023 1.7 M 1728 4.1 2257 1.9		31 0618 3.6 1201 2.2 TH 1848 3.7

Chart Datum: 2-73 metres below Ordnance Datum (Newlyn). HAT is 5-1 metres above Chart Datum.