NABO CRUISING NOTES

RIVER DEE & SHROPSHIRE UNION CANAL (DEE BRANCH)

Introduction

The River Dee (Afon Dyfrdwy in Welsh) is navigable by suitable craft from the sea up to its tidal limit at Chester. The tidal section can be hazardous and is industrial and unappealing.

The Shropshire Union Canal (Dee Branch) connects the main line of the canal to the tidal river 2 miles downstream from Chester Weir, via three locks. The locks only operate by prior arrangement with British Waterways.

Above Chester Weir the river Dee is suitable for all craft that can reach it. Passage over the weir is possible at High Water spring tides for craft drawing up to 3' (0.91m) and there is also a weir gate controlled by United Utilities (formerly North West Water) on spring tides and for which advance booking is required. The restricted width and depth of the gate limits the size of craft that can use the gate.

There is a footpath running along the east bank of the river from Farndon, crossing to the west bank at Iron Bridge and back across on the footbridge at Chester.

The countryside is open and attractive in the vicinity of Eaton Hall.

The river can be shallow around the confluence with the river Alyn and upstream to the ancient bridge at Farndon during the summer months.

It is possible for small craft and canoes to reach Bangor-on-Dee at times and there are records of Dee flats (trading barges) having been built there in the past.

The river also feeds the Shropshire Union (Welsh) Canal via the semicircular weir at the man-made Horseshoe Falls at Llangollen.

History

The river is an old navigation with the original Acts dated 1734, 1744 and 1791. Silting of the river led to the construction of the Chester Canal in 1771 as a barge canal to link the city with the Trent & Mersey Canal at Middlewich. Originally the Chester Canal joined the river Dee below Northgate Locks. The
canal was later extended to Ellesmere Port, and the bottom two locks of the Northgate staircase were removed. A two-lock branch (the Dee Branch) was built to link between Tower Wharf and the original river lock at the river Dee (Crane’s Wharf).

**SHROPSHIRE UNION CANAL (DEE BRANCH)**

**Navigation authority**

British Waterways, Tower Wharf, Raymond Street, Chester CH1 4EZ
Tel 01244 390372 Fax 01244 390351

A BW licence is required. Passage through the Dee Locks (Mon – Fri only) is by prior arrangement with BW at Tower Wharf. Contact Mr Neville Preece 01244 390372. 48 hours notice is required and passage is now free to all licence holders. It is not possible to use the locks at weekends.

Passage between the bottom lock and the tidal river at Crane’s Wharf is only possible with safety 1 hour either side of High Water.

A low concrete road bridge crosses over the river lock. British Waterways will explain the procedure for passing under this bridge.

**BW 24-hour emergency No 0800 47 999 47**

**Dimensions (Dee Branch)**

Maximum dimensions of craft: -

Length - 74’0” (22.55m)
Beam - 14’6” (4.42m)
Draught – 3’3” (1.00m)
Headroom – 8’8” (2.64m)

**RIVER DEE**

**Tides**
High water at Chester is normally reckoned to be about one hour later than Liverpool (Alfred). Obtain local tide tables and seek local advice for precise details.
At Crane’s Wharf, Chester spring tides rise 9’ (2.75m)

**Navigation Authorities**

**Chester Weir to Farndon**

Chester City Council is the navigation authority for the river between Chester Weir at the Old Dee Bridge and Farndon Bridge.

Address for enquiries:
Chester City Council, Parks & Open Spaces, Grosvenor Park, Chester CH1 1QQ
Tel 01244 325681 Fax 01244 348405
Web address [www.chestercc.gov.uk](http://www.chestercc.gov.uk)
Email d.gorrell@chestercc.gov.uk

All craft must be registered by Chester City Council to navigate on the waterway. Annual, weekly and daily certificates of registration are available by application to Grosvenor Park Lodge situated on the northern edge of the park.

All craft must have Third Party insurance cover.

The Boat Safety Scheme does NOT apply on the river.

A River Patrol operates.

**Chester Weir gate**

Passage through the Chester Weir gate is by prior arrangement with United Utilities (formerly North West Water) Tel “Customer Services” on 0845 7462200 and ask for Mr Norman Jones, Unit Controller, Wirral; alternatively contact United Utilities Tel 01925 234000 Contact: Ms Pat Nelder or Mr Jim Burkill.

The weir gate is kept locked at all times and requests for passage through the
weir are infrequent and are not welcomed by United Utilities who have to specially organise a safety boat and manpower. The company have to pay their personnel for overtime working, etc. for which they will charge the “going rate”. Please give as much notice as possible and try to organise passage for a number of boats together in order to share the cost.

**Wilcox Point (Downstream of Chester Weir) to Point of Air**

The tidal river comes under the jurisdiction of the Environment Agency Wales, Llwyn Brain, Ffordd Penlan, Parc Menai, Bangor, Gwynedd LL57 4DE
Tel 01248 670770 Fax 01248 670561

The Agency is the conservancy authority and is responsible for the navigation aids and training walls.

Harbourmaster: Capt CHJ Allister, Dee Conservancy, c/o Strategic Marine Services Limited, Marine House, Station Road, Hoylake, Wirral CH47 4AA
Tel 0151 632 3733 Fax 0151 632 3399

The Dee Conservancy will be publishing a guidance booklet for users during the course of 2002.

The Port of Mostyn is responsible for pilotage in the estuary and is the harbour authority for Mostyn.

**Dimensions (River Dee)**

Maximum dimensions of craft using the river are as follows: -

Length and beam – all craft that can navigate the Dee Branch can travel to above Farndon Bridge.

Draught – below Chester 8' (2.44m) at HSWT; above Chester 3'6" (1.07m) (N.B. craft exceeding 2'6" (0.76m) draft may experience problems above Iron Bridge during summer dry periods.

Headroom - below Chester 12.5' (3.80m); above Chester 9'6" (2.8m)
Launching and moorings

A public slipway can be found at Sandy Lane, Boughton upstream from the city centre. Car parking and trailer parking is available at this location. Moorings are provided by boat companies, private residents and at the riverside hotels. Local enquiries to boat operators or Chester Motor Boat Club are necessary. The council does not provide any moorings.

Opening Times

There are no locks on the river and navigation is possible at all times.

By-laws

By-laws dated August 1983 are enforced by Chester City Council on the river between Chester Weir and Farndon. A speed limit of 6 MPH applies and is enforced by the Council which operates river patrols.

Navigation notes

i) Chester Weir

The passage through Chester Weir can be achieved only at High Spring Tides. Suitable tides normally occur over 3 successive days during the months of February, March, April, August, September and October when spring tides are at their maximum height.

Craft drawing up to 3’ (0.91m) can pass right over the weir on some tides. Deeper draughted vessels can use a unique water-gate or boat-pass located at the western end of the weir. The gate is situated immediately upstream of Dee Bridge near the water pumping station. The gate is about 10’ (3.05m) wide and can be opened by prior arrangement with United Utilities when the incoming tide makes a level with the river above. However, passage of boats using the gate is hampered by the riverbank which is parallel to the gate. The gate can be used by craft up to 70 ft (21.3m) and 9 ft (2.74m) beam with
A tide height of at least 31ft (9.4m) at Liverpool (Alfred) is required to safely operate the gate. Usually, craft wait for a tide of 33 feet (10.0m) at Liverpool (Alfred) and pass directly over the weir without needing to use the gate. Local advice should be sought because the amount of fresh water coming down the river affects the depth of water over the weir.

Passage through the gate or over the weir must be timed to coincide with High Water at the weir. Tidal flows make the passage difficult and dangerous when the tide is still running in or out. High Water at Chester Weir is 1 Hr later than Liverpool.

Various factors can reduce the tide below the predicted height at Chester Weir. These include offshore winds (which will hold the tide back), high barometric pressure or a combination of these factors. Always seek local advice before your voyage.

| Height of tide at Liverpool (Alfred) | Available draught | | | |
|-------------------------------------|-------------------|---|---|
|                                    | Using the weir gate * (at 7 ft beam) | Over the weir |
| 30 ft (9.1m)                       | 1'6" (0.46m)       | 0 |
| 31 ft (9.4m)                       | 2'6" (0.76m)       | 1'3" (0.38m) |
| 32 ft (9.7m)                       | 3'6" (1.07m)       | 2'3" (0.69m) |
| 33 ft (10m)                        | 4'6" (1.37m)       | 3'3" (1m) |
* Notes

i. The opening of the weir gate is carried out by United Utilities

ii. The gate cill is curved: It is deeper in the centre than at each end. Figures quoted give the draught available for 7 ft wide boats. For 9 ft beam deduct 0.20m from the available draught figures.

ii) Navigation above Chester Weir

The river Dee is a river navigation and like all such rivers it can become difficult or impassable at times of heavy flow.

Above Chester Weir depths are usually satisfactory except in the Dee Fords area where the shallows require deeper-draughted craft to navigate nearer to The Meadows, keeping away from the Sandy Lane bank.

The Crook of Dee is a sharp horse-shoe bend in the river; and upstream of Iron Bridge there are several more sharp bends. All the sharp bends require care, especially when navigating at times of higher river flows, and by longer craft.

The river becomes shallower near the mouth of the river Alyn and the deepest water can be found near the left bank going upstream towards Farndon (the tidal limit on spring tides).

Navigation through and above Farndon Bridge can be difficult during periods of low summer flows, or at times of flood.

Farndon Bridge is the official end of the navigation administered by Chester City Council. Navigation above Farndon Bridge is possible, but the river becomes progressively more narrow, shallow and difficult to navigate. Above the sharp bend at Crewe Hall 70 ft craft will have difficulty in finding sufficient width of river in which to turn.

It is possible for small craft and canoes to reach Bangor-on-Dee at times of sufficient river levels.
<table>
<thead>
<tr>
<th>Distance above Chester Weir</th>
<th>Location</th>
<th>Navigation notes</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 miles</td>
<td>Holt Castle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 miles</td>
<td>Farndon Bridge</td>
<td>Car park, public toilets, riverside pub / restaurant (The Boat House)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Denemere Bungalow</td>
<td>Townfield Lane</td>
<td>Beware of tight bends</td>
</tr>
<tr>
<td>10 miles</td>
<td>Almere Ferry</td>
<td>Confluence with River Alyn. Shallow water at river mouth – keep to left hand bank when heading upstream</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aldford Hall</td>
<td></td>
<td>Beware of tight bends</td>
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<tr>
<td>8 miles</td>
<td>Pulford Brook</td>
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<td></td>
</tr>
<tr>
<td>6 miles</td>
<td>Iron Bridge</td>
<td>Eaton Park estate</td>
<td></td>
</tr>
<tr>
<td>5 miles</td>
<td>Crook of Dee</td>
<td>Sound horn on approach (by-law requirement)</td>
<td>Horse-shoe bend – restricted visibility</td>
</tr>
<tr>
<td></td>
<td>Ecclestone Lodge</td>
<td>Sound horn on approach (by-law requirement)</td>
<td>Sharp bend – restricted visibility</td>
</tr>
<tr>
<td>4 miles</td>
<td>Ecclestone Ferry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Note</td>
<td>Location</td>
<td>Note</td>
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</tr>
<tr>
<td>Heronbridge</td>
<td>Sound horn on approach (by-law requirement)</td>
<td>Sharp bend – restricted visibility</td>
<td></td>
</tr>
<tr>
<td>Dee Fords</td>
<td>Shallows – keep to The Meadows side away from Sandy Lane bank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mile</td>
<td>Sandy Lane</td>
<td>Local authority slipway</td>
<td></td>
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<tr>
<td>The Groves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queens Bridge</td>
<td>Suspension footbridge &amp; public toilets</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
<td>Chester Weir</td>
<td>Passage through weir gate by prior arrangement with United Utilities</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>River is fully tidal below the weir</td>
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<tr>
<td></td>
<td>Old Dee Bridge</td>
<td>Dates from 1282 Remains of old Roman bridge</td>
<td></td>
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<tr>
<td>Distance below Chester Weir</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mile</td>
<td>Grosvenor Bridge</td>
<td>Single navigation arch</td>
<td>A.483 Grosvenor Road</td>
</tr>
<tr>
<td></td>
<td>Chester Race Course</td>
<td>The Roodee – formerly the course of the old river</td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td>Location</td>
<td>Details</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2 miles</td>
<td>Dee Lock, Crane Wharf</td>
<td>Entrance to Dee Branch of Shropshire Union Canal on north bank River lock available –1 hr to + 1 hr HW Dee Branch – _ mile long with 3 locks (incl river lock) 48 hours notice required. No charge for use of locks</td>
<td></td>
</tr>
<tr>
<td>2 miles</td>
<td>Saltney</td>
<td>Footbridge. Headroom 4m+</td>
<td></td>
</tr>
<tr>
<td>5 miles</td>
<td>Broughton/ Sandycroft</td>
<td>Airbus load-out and lay-by at Broughton on south bank. Keep clear of piled submerged supporting structure marked by 2 fixed green vertical lights with green cone-shaped topmarks and illuminated warning notices at each end.</td>
<td></td>
</tr>
<tr>
<td>6 miles</td>
<td>Buried pipeline</td>
<td>Marked by notice board on north bank</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2 Disused jetties on south bank 750m upstream from bridge</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Keep clear</td>
<td></td>
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<td></td>
<td></td>
<td>Concrete bridge pier north side</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Navigation light Fl R 5s each end</td>
<td></td>
</tr>
<tr>
<td>7 miles</td>
<td>Queensferry road bridges</td>
<td>A 494 road bridge 3.8m (12.5’) headroom Blue Bridge B 5441 double bascule bridge</td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td>Feature</td>
<td>Description</td>
<td></td>
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<tr>
<td>----------</td>
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<td>-------------</td>
<td></td>
</tr>
<tr>
<td>South side pier</td>
<td>Concrete bridge</td>
<td>Navigation light Fl G 5s each end</td>
<td></td>
</tr>
<tr>
<td>North side pier</td>
<td>North bridge pier</td>
<td>Navigation light Fl R 5s each end</td>
<td></td>
</tr>
<tr>
<td>7 miles</td>
<td>Hawarden Railway bridge</td>
<td>Seacombe (Birkenhead) to Wrexham railway line. Swingbridge now fixed span 4.5m (14.7’) headroom Bridge has navigation lights white flashing morse letter “A” (.-) on main span in centre of channel</td>
<td></td>
</tr>
<tr>
<td>8 miles</td>
<td>Connah’s Quay</td>
<td>Start of open estuary and training walls Slipway south bank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>East groyne</td>
<td>North bank Extends 130m into river 2 pole perches with red topmarks and lighted perch Fl R 4s with red topmark at outer end</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corus jetty</td>
<td>North bank Ends marked by lights 2 FR vertical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timber structure</td>
<td>South bank Intake for former power station Fl G 4s</td>
<td></td>
</tr>
</tbody>
</table>
### A.548 road bridge

New suspension bridge with single inverted Y-shaped support tower 18m (59’)
headroom

### Flint

Slipway south bank

### Bagillt

Slipway and moorings south bank

### Holywell

Slipway and moorings south bank

### Greenfield

Slipway and moorings south bank

### Mostyn

Commercial docks and ferry port

| 23 miles | Point of Air |

#### iii) Passage from Chester to the sea

Recent local knowledge is essential for the tidal section of river together with
British Admiralty charts numbers 1953 (larger scale) and 1978. A Leisure
edition of the latter chart is available.

The Environment Agency publishes an excellent guidebook entitled Marine
Safety in the Dee Conservancy – A guide to safe navigation. Boat owners
intending to make the passage into the river should obtain a copy and read it thoroughly.

The outer estuary dries to extensive sandbanks and a cockle fishery exists. The channel into Mostyn Docks is used by large ships and the Dee River Craft “Afon Dyfrdwy” transporting aircraft wings and components between Broughton and Mostyn.

The tidal river is open and exposed with the landscape dominated by industry and electricity pylons.

The spring tidal rise is about 8.0 metres (26.2’) near the entrance to the estuary and this corresponds to a rise of about 3.0 metres (9.8’) at Chester. The in-going (flood) tidal stream runs for about 5.5 hours and the outgoing (ebb) for about 6.5 hours in the outer estuary. In the canalised section of river the in-going stream runs for about 2 hours followed by the outgoing ebb for 10 hours.

On high spring tides the incoming tide creates a tidal bore or wall of water up to 0.5 metres (1.6’) high and tidal streams can be strong. Floating debris can be a particular hazard in the confined canalised section of river and passage at night is best avoided for reasons of safety.

Always keep a sharp look-out for commercial shipping movements, particularly the Dee River Craft “Afon Dyfrdwy” transporting aircraft wings and components between Broughton and Mostyn. This large vessel navigates the estuary and river at night according to tide times and may enter or leave its berth at Broughton around high water and may be encountered lying on its supporting structure with its bows projecting up to 15 metres (49 feet) into the river. At night this vessel displays a red warning light from it bow when protruding into the channel.

The following navigation marks are believed to exist but up-to-date charts must be obtained to confirm their existence, markings and light characteristics.

The approach from seaward from the west is via a buoyed channel between the North Wales coastline and the outlying banks leading to the Dee south cardinal light buoy. From the north entry is via Hilbre Swash buoyed channel past HE1 cardinal buoy, turning south to leave Hilbre Island beacon to port.
Hilbre Swash to River Dee

HE2 light buoy Q R R can with radar reflector

HE1 light buoy Q (3) 10s BYB east cardinal pillar with radar reflector

HE3 light buoy Fl G 2.5s G conical

SE Hoyle R can buoy in Welshman’s Gut

Welshman light buoy Q (3) 10s BYB east cardinal pillar

The channels frequently shift and the buoys are moved to suit.

Approaches to River Dee – Inner Passage and Welsh Channel

W Constable light buoy VQ (9) 15s YBY west cardinal pillar

N Rhyl light buoy Q north cardinal pillar

Middle Patch Spit light buoy Fl R 5s can buoy

Chester Flat light buoy Fl (2) R 5s red can buoy

S Hoyle light buoy Fl (3) R 10s red can buoy

Earwig light buoy Fl (2) G 5s green conical buoy with bell in Welsh Channel

East Hoyle light buoy Fl (4) R 15s red can in Welsh Channel

Talacre buoy G conical with radar reflector

Air buoy G conical with radar reflector

Dee light buoy Q (6) + L Fl 15s YB south cardinal pillar
River Dee

W Bar red can buoy

NE Mostyn light buoy Fl (3) g 10s green conical

Mostyn light buoy Fl (4) G 15s green conical with radar reflector

Bank light buoy Fl R 5s red can

S Salisbury red can buoy

Barron Hill mast on wreck

Hilbre Island, north end Fl R 3s W frame tower

Mostyn Dock & River Dee

High water at Connah’s Quay is at approximately the same time as HW Liverpool.

Harbourmaster Tel 01745 560335 Fax 01745 560324 VHF Ch 16, 14

Pilotage: for River Dee, Shotton & Connah’s Quay arrive HW Liverpool –2/2_ hrs at Dee Buoy. Vessels up to 5.6m draft can reach Mostyn at HW Springs. Gutway to Mostyn marked by 4 F RW diamond marks in inner harbour forming leading line. Buoyed channel into Mostyn Dock.

Signals: Large square red flag by day or F R light by night = No vessel can enter. Pleasure craft are not welcomed.

Anchorage: In 9m LWST at Dee Bay, SE Air buoy, NE Mostyn buoy

Mostyn Training Wall Fl R 1.3s B mast

Outer F W W Pile. Also 3 F R shown from piles in channel.
Leading lights \( 215^\circ \) (Front) F R B mast white diamond topmark, (Rear) F R B mast W diamond topmark.

Dee Nos 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 lighted buoys mark the high water channel from the outer estuary into the canalised section of river.

N Training Wall Fl R 10s on light tower at seaward end.

12 pole perches each with red (port hand) topmarks.

Upstream end of training wall marked by lighted perch Fl R 5s with red topmark

Outfall Fl G 10s

S Training Wall marked by 9 pole perches with green (starboard hand) topmarks.

Light structure near seaward end marks position of intake for Kelsterton gas-fired power station. Fl G 5s with green conical daymark.

Summersby Wharf F R

Connah’s Quay 2 F R vertical lights

Dee No 1 buoy RWVS spherical buoy

Dee No 2, 3, 4, 5, 6, 7, 8, 9, and 10 buoys RWVS spherical mark the channel from Mostyn towards Flint.

Sources of information

Laver’s Liverpool & Irish Sea Tide Table published by Laver Publishing Tel 0151 475 7949 website: [www.laverpublishing.com](http://www.laverpublishing.com)

“Byelaws with respect to pleasure boats and vessels on the River Dee at Chester” published August 1983 by the Council of the City of Chester
Private launches – general information sheet, Chester City Council

River Dee Emergency Plan, Cheshire County Council


Thanks and gratitude are extended to the following persons who have provided invaluable information to help in the compilation of these notes:

Ms Dianne Gorrell, Chester City Council, Parks & Open Spaces
Mr Neville Preece, British Waterways, Tower Wharf, Chester
Capt CHJ Allister, Harbourmaster, Dee Conservancy
Members of NABO with local knowledge.

Further information

Further information and guidance is available from the River Users’ Co-ordinator exclusively to NABO members.

Legal Note

Although the greatest care and diligence has been taken in the compilation of these pilotage notes the National Association of Boat Owners accepts no responsibility for any errors, omissions, or alterations in this publication, or for any consequences ensuing upon the use of, or reliance upon, any information given. It must be emphasised that these pilotage notes give only general advice and that the master of the vessel is at all times responsible for the safety of his craft and all aboard.

NABO welcomes any corrections or new information from users of these notes.

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