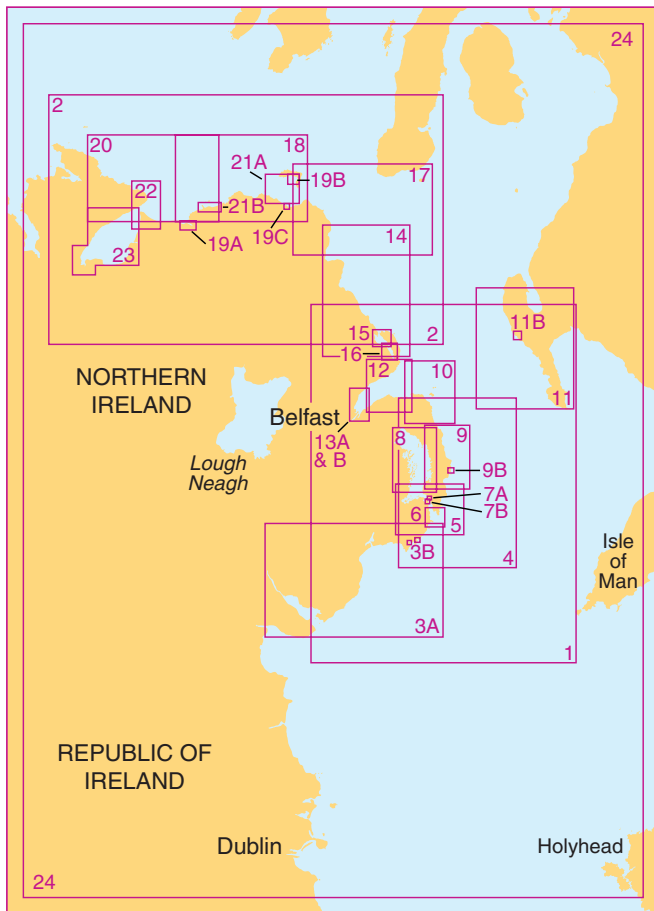




Northern Ireland - Carlingford Lough to Lough Foyle

Coverage Diagram



5612	Chart Title	Natural Scale 1:	New Edition Date
1	Southern Approaches to North Channel	200,000	11/11/2021
2	Western Approaches to North Channel	200,000	11/11/2021
3A	Carlingford Lough to Ardglass	100,000	11/11/2021
3B	Ardglass and Killough Harbours	15,000	11/11/2021
4	Ardglass to Donaghadee	100,000	11/11/2021
5	Strangford Lough Entrance	37,500	11/11/2021
6	Strangford Narrows - Southern Part	12,500	11/11/2021
7A	Strangford Narrows - Northern Part	12,500	11/11/2021
7B	Strangford	5,000	11/11/2021

5612	Chart Title	Natural Scale 1:	New Edition Date
8	Strangford Lough	37,500	11/11/2021
9A	Portavogie to Ballywalter	37,500	11/11/2021
9B	Portavogie	5,000	11/11/2021
10A	Approaches to Donaghadee Sound	37,500	11/11/2021
10B	Donaghadee Sound	15,000	11/11/2021
11A	Mull of Galloway to Craig Laggan	75,000	11/11/2021
11B	Portpatrick	4,000	11/11/2021
12A	Belfast Lough Entrance	37,500	11/11/2021
12B	Bangor Bay	17,500	11/11/2021
12C	Carrickfergus Marina	15,000	11/11/2021
13A	Approaches to Belfast	37,500	11/11/2021
13B	Belfast	12,500	11/11/2021
14A	Larne Lough to Cushendun Bay	75,000	11/11/2021
15	Larne Lough Northern Part	10,000	11/11/2021
16	Larne Lough Southern Part	10,000	11/11/2021
17	North Channel Northern Entrance	75,000	11/11/2021
18	Ballycastle to Portstewart including Rathlin Island	75,000	11/11/2021
19A	River Bann to Coleraine	20,000	11/11/2021
19B	Rathlin Harbour	2,500	11/11/2021
19C	Ballycastle	2,500	11/11/2021
20	Portrush to Culdaff including Entrance to Lough Foyle	75,000	11/11/2021
21A	Rathlin Sound	37,500	11/11/2021
21B	Approaches to Portrush	20,000	11/11/2021
21C	Portrush	2,500	11/11/2021
22A	Lough Foyle Entrance	25,000	11/11/2021
22B	Continuation to Moville	25,000	11/11/2021
23A	Lough Foyle	50,000	11/11/2021
23B	Culmore Point to Ballynagard	15,000	11/11/2021
23C	Ballynagard to Londonderry	15,000	11/11/2021
24	North Channel and Irish Sea (Western Part)	500,000	11/11/2021

Notes

Positions are referred to the WGS84 compatible datum, European Terrestrial Reference System 1989 Datum.

Depths are in metres and are reduced to Chart Datum, which is approximately the level of Lowest Astronomical Tide.

Heights are in metres. Underlined figures are drying heights above Chart Datum. Overhead clearance heights are above Highest Astronomical Tide. All other heights are above Mean High Water Springs.

Navigational marks: IALA Maritime Buoyage System-Region A (Red to port)

DATUM

All the charts are referred to the WGS84 compatible Datum ETRS89. Any positions taken from GPS (referred to WGS84) or from ADMIRALTY Notices to Mariners (referred to ETRS89) can be plotted directly on all charts.

CHART ACCURACY

Owing to the age and quality of the source information, some detail on these charts may not be positioned accurately. Particular caution is advised when navigating in the vicinity of dangers, even when using an electronic positioning system such as GPS.

OVERHEAD CABLES

Overhead cables may conduct high voltages; contact with or proximity to these poses extreme danger. Sufficient clearance must be allowed.

MARINE FARMS


Marine farms exist within the area of these charts. They may not all be shown individually and their positions may change frequently. Marine farms may be marked by lit or unlit buoys or beacons. Mariners are advised to avoid these structures and their associated moorings.

LADEN TANKERS

1. **North Channel** (55°20'N 6°00'W). Laden tankers of over 10 000 GT should avoid the area between the North Channel Traffic Separation Scheme and the adjacent coasts of Rathlin Island and the Mull of Kintyre. No laden tankers should use the narrow passage through Rathlin Sound.

2. **The Skerries** (53°25'N 4°37'W). Laden tankers should avoid the area between the Skerries Traffic Separation Scheme and the adjacent coast.

OMISSION OF DETAIL

Within the limit marked  and the coastline, this chart should only be used for planning purposes as features such as depths, platforms, wrecks, pipelines, minor aids to navigation and cables have been omitted. Larger scale ADMIRALTY charts are available for mariners intending to navigate in this area.

SUBMARINE CABLES AND PIPELINES

Mariners should not anchor, trawl or engage in seabed operations in the vicinity of submarine cables and pipelines. Submarine cables support national infrastructure; damage to them may affect critical services and can result in serious consequences, as well as creating a potential hazard to mariners. Wilful or neglectful damage to a cable may result in legal action. Pipelines are not always buried and their presence may significantly reduce the charted depth. They may also span seabed undulations and cause fishing gear to become irrecoverably snagged, putting a vessel in severe danger.

HISTORIC WRECKS

The sites of historic wrecks are protected from unauthorised interference.

WETREP

Tankers of more than 600 dwt carrying heavy crude oil, heavy fuel oil or bitumen and tar and their emulsions are required to participate in the Western European Tanker Reporting System (WETREP). See ADMIRALTY List of Radio Signals for further details.

OIL AND GAS FIELDS

Production platforms and associated structures, including tanker moorings, storage tankers and platforms on pipelines, generally exhibit Mo(U) lights, aircraft obstruction lights, and audible fog signals. Unauthorised navigation is prohibited within 500 metres of all such structures.

UNEXPLODED ORDNANCE

Potentially hazardous unexploded ordnance is reported to exist on the seabed, both along the route of the gas pipeline (54°51'3N 5°44'9W to 54°58'9N 5°10'8W) and also in the areas indicated adjacent to the limits of the Beaufort's Dyke Explosives Dumping Ground (54°43'0N 5°12'6W). It is recommended that any activity which is likely to disturb the seabed should not be carried out in these areas.

HIGH SPEED CRAFT

High speed craft operate in the area of these charts. Mariners are advised to maintain a good lookout. Some high speed craft generate large waves, which can have a serious impact on small craft and their moorings close to the shoreline and on shallow off-lying banks.

FIRING PRACTICE AREAS

No restrictions are placed on the right to transit the firing practice areas at any time. The firing practice areas are operated using a clear range procedure: exercises and firing only take place when the areas are considered to be clear of all shipping.

SHELLFISH BEDS

Vessels should avoid grounding in areas of shellfish beds.

VESSEL REPORTING

For details of the following vessel traffic services, see ADMIRALTY List of Radio Signals:

- Belfast VTS
- Larne VTS.

MARINE NATURE RESERVE

To avoid the risk of pollution and damage to the environment, Strangford Lough and its approaches has been designated a Marine Nature Reserve. Further details can be found on the Northern Ireland Environment Agency website at www.ni-environment.gov.uk.

HM Coastguard Services and Safety Information

VHF MARITIME RADIO

Coastguard Maritime Rescue Co-ordination Centres are on constant watch on Channel 16 - the distress, safety and calling channel. Initial calls should normally be on Ch 16.

HM COASTGUARD

BELFAST COASTGUARD (MRCC)

Tel. +44 (0) 2891 463933

MMSI: 002320021

e-mail: zone34@hmcg.gov.uk (FAO Belfast Coastguard)

MARITIME SAFETY INFORMATION

Maritime Safety Information (MSI) in the UK is broadcast by BELFAST COASTGUARD at 0210, 0510, 0810, 1110, 1410, 1710, 2010 and 2310. These will include gale warnings, local inshore forecasts and navigational warnings. Mariners should listen to the MSI announcement on VHF Channel 16 for details of the working channel to be used for the broadcast.

Distress and Safety Communication

Distress - Urgency

A Distress or Urgency message has absolute priority. Make a call on VHF Channel 16 and give the following essential information:

Distress Call **MAYDAY MAYDAY MAYDAY**

- Name and Call Sign and MMSI number
- Position
- Nature of Distress
- Type of assistance required
- Type of boat - number of crew - intentions

Urgency (eg. if you break down in bad weather or a crewman requires medical attention) Call **PANPAN PANPAN PANPAN** and give:

- Name and Call Sign and MMSI number
- Position
- Nature of Distress
- Type of assistance required
- Type of boat - number of crew - intentions

Other Distress Signals

Other recognised signals are:

- Red flares (parachute, multi stars or hand held)
- Orange smoke signal
- The flag signal NC
- The morse signal SOS ... --- ... by light
- An article of clothing on an oar
- Slowly and repeatedly raising and lowering outstretched arms
- A square flag with anything resembling a ball above or below it
- Continuous sounding of a siren or whistle will also be recognised, or smoke and flames from the vessel
- The carriage of an Emergency Position Indicating Radio Beacon (406 EPIRB) will improve your chances of being located if conventional means fail. 406 EPIRBs are detected by satellite, in addition to aircraft, and transmitted to a Coastguard Maritime Rescue Co-ordination Centre.

THE USE OF MOBILE TELEPHONES IN DISTRESS AND SAFETY COMMUNICATIONS

The use of mobile telephones in the marine environment offshore is now well established, with users in all areas of the commercial, fishing and leisure communities.

Incidents have occurred where vessels requiring assistance from rescue services have used the inland emergency service, or alternatively telephoned direct to request assistance. (e.g. Lifeboat services). This procedure through a mobile telephone is **strongly discouraged**.

Use of mobile telephones by-passes the existing dedicated well-established international marine distress communications systems.

Mobile telephone coverage offshore is limited and does not afford the same extensive safety coverage as VHF Channel 16. Consequently a greater risk exists of communications difficulties or even a complete breakdown if an accident should occur at the edge of a cell coverage area.

Subsequent on-scene communications would be restricted and delayed if mobile telephone communications were exclusively maintained throughout. There is always a risk that elements of vital information could be lost or misinterpreted by the introduction of further relay links in the communication chain. Mobile telephones are also highly susceptible to failure due to water ingress.

It is not possible to communicate direct to another vessel able to render assistance unless that vessel is also fitted with a mobile telephone and the telephone number is known. Requests for assistance cannot be monitored by other vessels in a position to render assistance. Valuable time would be lost whilst the relevant Coastguard Rescue Coordination Centre receives and then re-broadcasts the information to all ships on the appropriate distress channel(s).

In the interests of Safety Of Life At Sea (SOLAS), owners of vessels are urged to carry MARINE communications equipment onboard and to use this medium as the primary means of Distress and Safety communications.

Product Specifications

PRODUCT USAGE CAUTION

This product is specifically designed, in conjunction with other charts and publications, as an aid to the navigation of leisure craft and locally regulated workboats and fishing vessels and therefore should be used by competent (preferably qualified) maritime navigators. Although this product contains the best information available at the time of publication, the user should navigate with caution, particularly in areas of shallow or confined waters where the depth of water is likely to change due to local conditions. The information provided in this product comes from the latest source information held and is updated by Notice to Mariners upon receipt of new information critical to safe navigation. To help maintain this product for all users, users are asked to notify the United Kingdom Hydrographic Office of any differences found between what is depicted and actual conditions encountered.

KEEPING THIS CHART UPDATED

Updates for the charts are published using the Notices to Mariners Service on the ADMIRALTY Notices to Mariners page found on our website at admiralty.co.uk/msi. All updates for the latest edition of the chart are listed and can be quickly and easily downloaded. All the charts are derived from standard ADMIRALTY charts. No updates are applied to the charts by the United Kingdom Hydrographic Office or its agents after printing. For those who do not have internet access, please contact Tel. 01823 484444 for assistance.

TIDAL STREAMS

Full details of the tidal streams in the area covered by this folio are given in the following ADMIRALTY Tidal Stream Atlases: NP218 North Coast of Ireland and West Coast of Scotland, NP 222 Firth of Clyde and Approaches and NP 256 Irish Sea and Bristol Channel.

PROVIDE UPDATED INFORMATION

To help maintain this product users are asked to notify the United Kingdom Hydrographic Office of any differences found between what is depicted and actual conditions encountered. Users can do this by submitting a Hydrographic Note form, found on our website admiralty.co.uk/msi or by downloading our H-Note App. The H-Note App is freely available to download on Android and iOS devices. For more information please see here:



IMPROVEMENTS TO THIS PRODUCT

ADMIRALTY Small Craft Charts are designed for use on leisure craft and locally regulated workboats and fishing vessels, where the smaller format charts fit more conveniently into the limited space available. Users with specific suggestions for the improvement of this product or ideas for the expansion of the series are requested to forward their comments to:

Customer Services, The UK Hydrographic Office,
Admiralty Way, Taunton. +44(0)1823 484444
E-mail customerservices@ukho.gov.uk

To view all ADMIRALTY Products and services, visit admiralty.co.uk

Tidal Stream Information

5612_1

Tidal Streams referred to HW at LIVERPOOL

Hours	Geographical Position	A 54°49'·1 N 5 38·0 W	B 54°48'·0 N 5 17·0 W	C 54°41'·7 N 5 28·1 W	D 54°35'·6 N 4 50·1 W	E 54°32'·2 N 5 25·4 W	F 54°24'·4 N 5 21·3 W	G 54°18'·5 N 5 27·3 W									
Before High Water	Directions of streams (degrees)	-6	238	0.2 0.1	060	0.4 0.3	126	2.8 1.9	226	0.7 0.4	160	0.8 0.5	173	0.4 0.2	225	0.4 0.3	-6
		-5	162	0.8 0.4	130	1.1 0.6	136	3.4 2.3	108	1.4 0.8	160	1.9 1.0	174	0.9 0.5	206	0.8 0.5	-5
		-4	153	1.4 0.8	144	1.8 1.0	133	3.3 2.2	085	3.5 1.9	160	2.4 1.3	176	1.3 0.7	209	0.8 0.5	-4
		-3	151	1.8 0.9	141	2.0 1.2	125	3.0 2.0	085	4.4 2.4	160	2.1 1.1	180	1.3 0.7	221	0.5 0.3	-3
		-2	148	1.5 0.7	140	1.7 1.0	116	2.3 1.6	087	4.2 2.3	160	1.4 0.8	182	0.9 0.4	250	0.3 0.2	-2
		-1	149	1.0 0.5	149	1.2 0.7	064	1.2 0.8	090	2.9 1.6	160	0.3 0.2	187	0.4 0.2	306	0.2 0.1	-1
After High Water	Directions of streams (degrees)	0	078	0.2 0.2	215	0.6 0.4	008	1.9 1.2	111	1.3 0.7	313	0.8 0.4	331	0.5 0.3	356	0.3 0.2	0
		+1	351	0.7 0.4	291	1.1 0.6	343	2.4 1.6	217	1.4 0.8	340	1.7 0.9	357	0.9 0.5	028	0.5 0.3	+1
		+2	335	1.4 0.7	311	1.9 1.1	345	2.7 1.8	245	2.9 1.7	340	2.3 1.3	358	1.3 0.7	045	0.7 0.4	+2
		+3	335	1.8 0.9	320	2.1 1.2	351	2.4 1.5	247	3.6 2.1	340	2.1 1.1	359	1.3 0.7	065	0.8 0.5	+3
		+4	333	1.6 0.8	330	1.7 1.0	359	1.5 1.0	244	3.2 1.8	340	1.6 0.8	000	1.0 0.5	050	0.7 0.4	+4
		+5	334	1.2 0.6	341	1.2 0.7	072	0.7 0.5	248	2.7 1.5	340	0.6 0.3	003	0.5 0.2	337	0.4 0.2	+5
+6	318	0.3 0.2	025	0.4 0.3	119	2.0 1.3	241	1.2 0.7	187	0.5 0.3	145	0.2 0.1	249	0.3 0.2	+6		

5612_2

Tidal Streams referred to HW at OBAN

Hours	Geographical Position	A 55°27'·8 N 7 09·6 W	B 55°14'·0 N 6 54·0 W	C 55°29'·7 N 6 51·4 W			
Before High Water	Directions of streams (degrees)	256	0.9 0.5	013	1.9 0.9	306	0.8 0.5
		283	1.6 0.8	344	1.4 0.7	310	1.9 1.2
		294	2.1 1.1	325	1.4 0.7	298	2.6 1.6
		303	2.2 1.1	317	1.3 0.6	297	2.4 1.4
		308	2.0 1.0	302	0.7 0.3	322	1.7 1.0
		314	1.2 0.6	225	0.5 0.2	355	1.0 0.6
After High Water	Directions of streams (degrees)	005	0.3 0.1	173	0.8 0.4	081	1.0 0.6
		100	1.3 0.7	155	1.3 0.7	112	1.9 1.1
		104	2.5 1.3	137	1.4 0.7	128	2.4 1.4
		111	2.8 1.5	101	1.4 0.7	138	2.2 1.3
		127	2.2 1.2	061	1.3 0.7	142	1.9 1.1
		143	1.3 0.7	040	1.7 0.8	150	1.1 0.6
220	0.6 0.2	026	2.0 1.0	275	0.3 0.2		

5612_2

Tidal Streams referred to HW at GREENOCK

Hours	Geographical Position	D 55°24'·4 N 6 28·3 W	E 55°27'·2 N 6 04·8 W	F 55°22'·9 N 6 06·0 W	G 55°15'·1 N 5 37·3 W	H 54°49'·1 N 5 38·1 W					
Before High Water	Directions of streams (degrees)	139	1.2 0.7	164	0.8 0.5	128	1.6 0.8	095	2.5 1.5	155	1.1 0.6
		122	2.0 1.2	158	1.5 0.9	128	2.5 1.3	093	3.2 2.0	152	1.6 0.8
		114	2.6 1.5	147	1.8 1.1	121	2.5 1.3	091	3.3 2.0	150	1.8 0.9
		101	2.1 1.2	135	1.6 1.0	114	2.1 1.1	088	2.5 1.6	148	1.3 0.7
		091	1.3 0.8	125	1.0 0.6	105	1.3 0.7	076	0.5 0.3	146	0.7 0.3
		030	0.5 0.3	080	0.4 0.2	010	0.2 0.1	282	1.0 0.6	005	0.2 0.1
After High Water	Directions of streams (degrees)	326	1.3 0.7	344	0.7 0.4	301	1.5 0.8	276	2.1 1.3	336	1.0 0.5
		304	1.8 1.0	320	1.3 0.8	298	2.5 1.3	273	3.0 1.9	335	1.5 0.8
		295	2.2 1.3	313	1.8 1.1	300	2.7 1.4	270	3.3 2.0	333	1.8 0.9
		287	2.5 1.5	323	1.7 1.0	303	2.4 1.2	268	2.4 1.5	333	1.4 0.7
		270	1.7 1.0	335	1.2 0.7	302	1.5 0.7	262	1.3 0.8	332	0.9 0.4
		226	0.9 0.5	320	0.5 0.3	290	0.5 0.3	118	0.5 0.3	255	0.1 0.1
157	0.9 0.5	172	0.4 0.2	130	0.7 0.4	097	1.8 1.1	157	0.8 0.4		

5612_2

Tidal Streams referred to HW at GREENOCK

Hours	Geographical Position	D 55°24'·4 N 6 28·3 W	E 55°27'·2 N 6 04·8 W	F 55°22'·9 N 6 06·0 W	G 55°15'·1 N 5 37·3 W	H 54°49'·1 N 5 38·1 W					
Before High Water	Directions of streams (degrees)	139	1.2 0.7	164	0.8 0.5	128	1.6 0.8	095	2.5 1.5	155	1.1 0.6
		122	2.0 1.2	158	1.5 0.9	128	2.5 1.3	093	3.2 2.0	152	1.6 0.8
		114	2.6 1.5	147	1.8 1.1	121	2.5 1.3	091	3.3 2.0	150	1.8 0.9
		101	2.1 1.2	135	1.6 1.0	114	2.1 1.1	088	2.5 1.6	148	1.3 0.7
		091	1.3 0.8	125	1.0 0.6	105	1.3 0.7	076	0.5 0.3	146	0.7 0.3
		030	0.5 0.3	080	0.4 0.2	010	0.2 0.1	282	1.0 0.6	005	0.2 0.1
After High Water	Directions of streams (degrees)	326	1.3 0.7	344	0.7 0.4	301	1.5 0.8	276	2.1 1.3	336	1.0 0.5
		304	1.8 1.0	320	1.3 0.8	298	2.5 1.3	273	3.0 1.9	335	1.5 0.8
		295	2.2 1.3	313	1.8 1.1	300	2.7 1.4	270	3.3 2.0	333	1.8 0.9
		287	2.5 1.5	323	1.7 1.0	303	2.4 1.2	268	2.4 1.5	333	1.4 0.7
		270	1.7 1.0	335	1.2 0.7	302	1.5 0.7	262	1.3 0.8	332	0.9 0.4
		226	0.9 0.5	320	0.5 0.3	290	0.5 0.3	118	0.5 0.3	255	0.1 0.1
157	0.9 0.5	172	0.4 0.2	130	0.7 0.4	097	1.8 1.1	157	0.8 0.4		

5612_4

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°32'21 N 5 25.47W	B 54°24'41 N 5 21.37W	C 54°18'51 N 5 27.37W
Before High Water	Directions of streams (degrees)	160	172	238
		160	174	201
		160	174	206
		160	178	214
		160	182	232
		160	183	278
High Water	Rates at spring tides (knots)	340	352	353
		340	356	024
		340	357	039
		340	358	055
		340	359	070
		340	002	023
After High Water	Rates at neap tides (knots)	160	020	265
		160	020	265
		160	020	265
		160	020	265
		160	020	265
		160	020	265

5612_5

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°18'5N 5 27.3W	B 54°19'8N 5 31.3W	C 54°21'7N 5 32.6W
Before High Water	Directions of streams (degrees)	238	201	206
		201	206	214
		206	214	232
		214	232	278
		232	278	353
		278	353	024
High Water	Rates at spring tides (knots)	03	08	09
		08	09	06
		09	06	04
		06	04	02
		04	02	01
		02	01	06
After High Water	Rates at neap tides (knots)	024	039	055
		039	055	070
		055	070	085
		070	085	05
		085	05	04
		05	04	03

5612_6

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°19'8N 5 31.3W				
Before High Water	Directions of streams (degrees)	North-going stream begins 3½ hours before HW Belfast. Maximum Spring rate 4-9 knots.				
		Rates at spring tides (knots)	Rates at neap tides (knots)	South-going stream begins 2½ hours after HW Belfast. Maximum Spring rate 7-6 knots.		
					160	160
					160	160
					160	160
					160	160
160	160					
After High Water	Rates at spring tides (knots)	Rates at neap tides (knots)				
			160	160		
			160	160		
			160	160		
			160	160		
			160	160		

5612_7A

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°21'7N 5 32.6W				
Before High Water	Directions of streams (degrees)	Maximum Spring rate of north-going stream 7-8 knots.				
		Rates at spring tides (knots)	Rates at neap tides (knots)	Maximum Spring rate of south-going stream 7-2 knots.		
					160	160
					160	160
					160	160
					160	160
160	160					
After High Water	Rates at spring tides (knots)	Rates at neap tides (knots)				
			160	160		
			160	160		
			160	160		
			160	160		
			160	160		

5612_9A

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°24'4N 5 21.4W	B 54°32'2N 5 25.5W
Before High Water	Directions of streams (degrees)	172	160
		174	160
		174	160
		178	160
		182	160
		183	160
High Water	Rates at spring tides (knots)	352	340
		356	340
		357	340
		358	340
		359	340
		002	340
After High Water	Rates at spring tides (knots)	020	160
		020	160
		020	160
		020	160
		020	160
		020	160

5612_10A

Tidal Streams referred to HW at BELFAST *Current included

Hours	Geographical Position	A 54°42'80N 5 37.36W	B *54°42'00N 5 35.46W	C *54°41'40N 5 33.96W	D 54°39'90N 5 32.76W	E 54°41'30N 5 31.76W	F *54°38'90N 5 31.16W
Before High Water	Directions of streams (degrees)	125	060	116	123	114	152
		133	072	115	125	116	175
		139	084	115	124	119	286
		144	095	114	122	122	334
		138	098	110	115	126	348
		156	083	071	082	296	355
High Water	Rates at spring tides (knots)	289	350	022	316	295	002
		317	326	05	299	293	357
		321	313	08	296	293	340
		322	311	07	298	295	337
		320	349	05	302	301	354
		342	030	07	312	097	028
After High Water	Rates at neap tides (knots)	115	053	118	123	109	141
		115	053	118	123	109	141
		115	053	118	123	109	141
		115	053	118	123	109	141
		115	053	118	123	109	141
		115	053	118	123	109	141

5612_10B

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	D 54°39'90N 5 32.76W
Before High Water	Directions of streams (degrees)	123
		125
		124
		122
		115
		082
High Water	Rates at spring tides (knots)	316
		299
		296
		298
		302
		312
After High Water	Rates at neap tides (knots)	123
		123
		123
		123
		123
		123

5612_11A

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°48'0N 5 17.1W
Before High Water	Directions of streams (degrees)	021
		134
		146
		141
		139
		141
High Water	Rates at spring tides (knots)	162
		298
		309
		317
		326
		338
After High Water	Rates at neap tides (knots)	345
		345
		345
		345
		345
		345

5612_12A

Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°44'10N 5 42.26W	B 54°42'50N 5 41.76W	C 54°42'80N 5 37.36W
Before High Water	Directions of streams (degrees)	202	152	125
		212	170	133
		214	178	139
		221	180	144
		226	218	138
		000	272	156
High Water	Rates at spring tides (knots)	031	308	289
		032	332	317
		033	353	321
		035	000	322
		046	020	320
		107	058	342
After High Water	Rates at neap tides (knots)	193	128	115
		193	128	115
		193	128	115
		193	128	115
		193	128	115
		193	128	115

5612_14 Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 55°08'8 N 6 00-6W	B 54°52'1 N 5 47-4W	C 54°49'1 N 5 38-1W
Before High Water	Directions of streams (degrees)	175	100	255
		171	126	157
		167	131	152
		170	135	152
		004	132	148
		356	124	149
High Water	Rates at spring tides (knots)	356	304	120
		358	304	340
		359	302	335
		359	306	336
		352	312	333
		359	332	334
After High Water	Rates at neap tides (knots)	132	000	325

5612_15 Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 54°51'35 N 5 47-53W	B 54°50'77 N 5 47-61W	C 54°50'55 N 5 47-73W	D 54°50'55 N 5 47-54W	E 54°50'47 N 5 47-27W	
Before High Water	Directions of streams (degrees)	200	166	162	288	318	-6
		202	172	147	147	127	-5
		203	174	164	145	120	-4
		198	173	167	149	115	-3
		206	171	169	148	357	-2
		246	186	169	156	359	-1
High Water	Rates at spring tides (knots)	350	196	160	169	339	0
		006	001	012	009	331	+1
		013	009	004	001	329	+2
		008	011	357	000	327	+3
		012	001	000	346	318	+4
		008	353	336	343	297	+5
After High Water	Rates at neap tides (knots)	008	000	333	314	313	+6

5612_17 Tidal Streams referred to HW at BELFAST

Hours	Geographical Position	A 55°12'3 N 6 02-3W	B 55°08'8 N 6 00-6W	C 55°15'1 N 5 37-3W
Before High Water	Directions of streams (degrees)	148	175	243
		150	171	100
		148	167	095
		148	170	092
		148	004	090
		151	356	087
High Water	Rates at spring tides (knots)	323	356	065
		327	358	283
		328	359	277
		329	359	274
		331	352	270
		328	359	268
After High Water	Rates at neap tides (knots)	132	132	262

5612_18 Tidal Streams referred to HW at OBAN

Hours	Geographical Position	A 55°24'4 N 6 28-3W
Before High Water	Directions of streams (degrees)	341
		312
		296
		294
		277
		255
High Water	Rates at spring tides (knots)	183
		134
		121
		111
		099
		088
After High Water	Rates at neap tides (knots)	010

5612_20 Tidal Streams referred to HW at OBAN

Hours	Geographical Position	A 55°11'9 N 6 58-6W	B 55°14'0 N 6 54-0W
Before High Water	Directions of streams (degrees)	057	013
		053	344
		045	325
		240	317
		247	302
		249	225
High Water	Rates at spring tides (knots)	244	173
		240	155
		180	137
		070	101
		068	061
		067	040
After High Water	Rates at neap tides (knots)	062	026

5612_22A Tidal Streams referred to HW at RIVER FOYLE (LISAHALLY)

Hours	Geographical Position	A 55°14'00 N 6 53-95W	B 55°11'90 N 6 58-65W
Before High Water	Directions of streams (degrees)	325	253
		317	242
		298	247
		238	249
		177	245
		154	240
High Water	Rates at spring tides (knots)	135	155
		100	072
		061	069
		040	067
		024	061
		355	055
After High Water	Rates at neap tides (knots)	332	153

5612_22B Tidal Streams referred to HW at RIVER FOYLE (LISAHALLY)

Hours	Geographical Position	55°10'70N 7 02'45W	55°10'10N 7 03'15W
Before High Water	Directions of streams (degrees)	247	0 0 0 0
		246	0 9 0 4
		244	1 7 0 8
		245	2 1 1 0
		245	2 3 1 1
High Water	Rates at spring tides (knots)	155	0 8 0 4
		067	0 8 0 4
		064	1 5 0 7
		063	2 0 1 0
		065	2 3 1 1
After High Water	Rates at neap tides (knots)	068	2 0 1 0
		069	0 8 0 4
		055	1 1 0 6
		052	1 7 0 8
		054	1 5 0 8

5612_23A Tidal Streams referred to HW at RIVER FOYLE (LISAHALLY)

Hours	Geographical Position	55°11'90N 6 58'65W	55°10'70N 7 02'45W	55°10'10N 7 03'15W	55°09'20N 7 06'25W
Before High Water	Directions of streams (degrees)	253	0 1 0 0	247	0 0 0 0
		242	1 7 0 8	145	0 4 0 2
		247	2 9 1 4	235	0 8 0 4
		249	3 2 1 6	244	2 1 1 0
		245	3 4 1 7	246	2 3 1 1
High Water	Rates at spring tides (knots)	240	2 3 1 2	245	1 7 0 9
		155	1 3 0 7	231	1 6 0 8
		072	1 9 0 9	147	0 6 0 3
		069	2 9 1 4	064	1 5 0 7
		067	3 2 1 6	063	2 0 1 0
After High Water	Rates at neap tides (knots)	061	2 8 1 4	065	2 3 1 1
		055	2 1 1 1	068	2 0 1 0
		153	0 8 0 4	069	0 8 0 4
		055	1 1 0 6	055	1 1 0 6
		038	0 5 0 3	038	0 5 0 3

5612_23B Tidal Streams referred to HW at RIVER FOYLE (LISAHALLY)

Hours	Geographical Position	55°02'70N 7 15'25W	55°02'60N 7 15'75W
Before High Water	Directions of streams (degrees)	089	0 9 0 4
		180	0 6 0 3
		240	1 1 0 5
		239	1 6 0 7
		231	1 7 0 8
High Water	Rates at spring tides (knots)	238	1 3 0 6
		290	0 7 0 3
		200	0 8 0 4
		072	1 3 0 6
		075	1 7 0 8
After High Water	Rates at neap tides (knots)	072	1 7 0 8
		075	1 4 0 7
		085	1 1 0 5
		045	1 7 0 9
		045	1 3 0 7

5612_23C Tidal Streams referred to HW at RIVER FOYLE (LISAHALLY)

Hours	Geographical Position	55°00'80N 7 17'55W	55°00'70N 7 17'95W
Before High Water	Directions of streams (degrees)	042	1 1 0 6
		134	0 6 0 3
		216	0 7 0 3
		208	1 3 0 6
		210	1 4 0 7
High Water	Rates at spring tides (knots)	208	1 4 0 7
		213	1 1 0 6
		163	0 7 0 3
		079	0 9 0 4
		052	1 4 0 7
After High Water	Rates at neap tides (knots)	053	1 4 0 7
		049	1 3 0 6
		043	1 2 0 6
		086	1 7 0 9
		086	1 7 0 9

5612_24

Tidal Streams referred to HW at DOVER

Hours	Geographical Position	55°34'2N 7 07'2W	55°24'4N 6 28'2W	55°22'9N 6 05'9W	55°15'1N 5 37'2W	54°49'1N 5 38'0W	54°48'0N 5 17'0W	54°31'6N 4 36'8W	54°24'4N 5 21'3W	53°40'2N 5 09'3W									
Before High Water	Directions of streams (degrees)	018	0 5 0 3	218	0 8 0 4	284	0 2 0 1	201	0 3 0 2	214	0 1 0 1	077	0 2 0 1	197	0 4 0 2	174	0 4 0 2	231	1 0 0 5
		112	0 9 0 5	153	1 0 0 5	128	1 2 0 6	096	2 0 1 2	157	0 9 0 5	138	1 0 0 6	100	1 3 0 8	175	0 9 0 5	275	0 5 0 3
		133	1 8 1 1	124	1 7 1 0	129	2 4 1 2	093	3 3 2 0	152	1 5 0 8	146	1 9 1 1	093	2 8 1 6	176	1 3 0 7	350	0 6 0 3
		141	2 6 1 6	119	2 5 1 5	124	2 7 1 3	091	3 4 2 1	152	1 8 0 9	140	2 2 1 2	091	3 4 1 9	180	1 4 0 8	025	1 3 0 7
		155	2 2 1 4	104	2 4 1 4	117	2 4 1 2	089	3 0 1 8	148	1 5 0 8	140	1 8 1 0	091	2 9 1 7	182	1 1 0 6	033	1 9 1 0
High Water	Rates at spring tides (knots)	163	1 6 1 0	094	1 7 1 0	109	1 6 0 8	085	1 3 0 8	149	1 0 0 5	143	1 4 0 8	092	1 6 0 9	185	0 4 0 2	039	1 7 0 9
		190	0 8 0 5	074	0 6 0 4	085	0 4 0 2	000	0 2 0 1	099	0 1 0 1	182	0 4 0 2	177	0 4 0 2	354	0 3 0 2	043	1 1 0 6
		306	0 9 0 5	337	1 1 0 5	305	1 1 0 6	278	1 4 0 8	339	0 8 0 4	301	1 0 0 6	243	1 7 1 0	356	0 9 0 5	130	0 1 0 1
		325	1 8 1 1	310	1 6 0 9	298	2 4 1 2	275	2 4 1 5	335	1 4 0 7	311	2 0 1 1	247	3 0 1 7	357	1 3 0 7	207	0 6 0 3
		322	2 3 1 4	295	2 1 1 3	298	2 8 1 4	272	3 3 2 0	336	1 8 0 9	320	2 3 1 3	251	3 4 1 9	358	1 4 0 8	213	1 2 0 6
After High Water	Rates at neap tides (knots)	325	2 2 1 3	294	2 4 1 5	301	2 6 1 3	270	3 1 1 9	333	1 6 0 8	330	1 8 1 0	252	3 0 1 7	358	1 1 0 6	215	1 5 0 8
		335	1 5 0 9	276	2 0 1 2	303	1 9 0 9	267	2 2 1 3	334	1 2 0 6	341	1 3 0 7	251	2 0 1 1	002	0 6 0 3	218	1 7 0 9
		353	0 9 0 5	251	1 1 0 6	300	0 8 0 4	255	0 8 0 5	320	0 3 0 2	356	0 5 0 3	232	0 7 0 4	171	0 1 0 0	223	1 4 0 7

5612_24 continued

53°28'5N 4 45'1W	53°26'0N 5 33'0W	
205	0 3 0 2	-6
055	1 5 0 8	-5
050	3 2 1 6	-4
046	3 8 1 9	-3
049	3 0 1 5	-2
053	1 6 0 8	-1
125	0 1 0 1	0
226	1 5 0 8	+1
231	2 9 1 5	+2
231	3 7 1 8	+3
230	2 9 1 5	+4
228	1 9 0 9	+5
223	0 8 0 4	+6

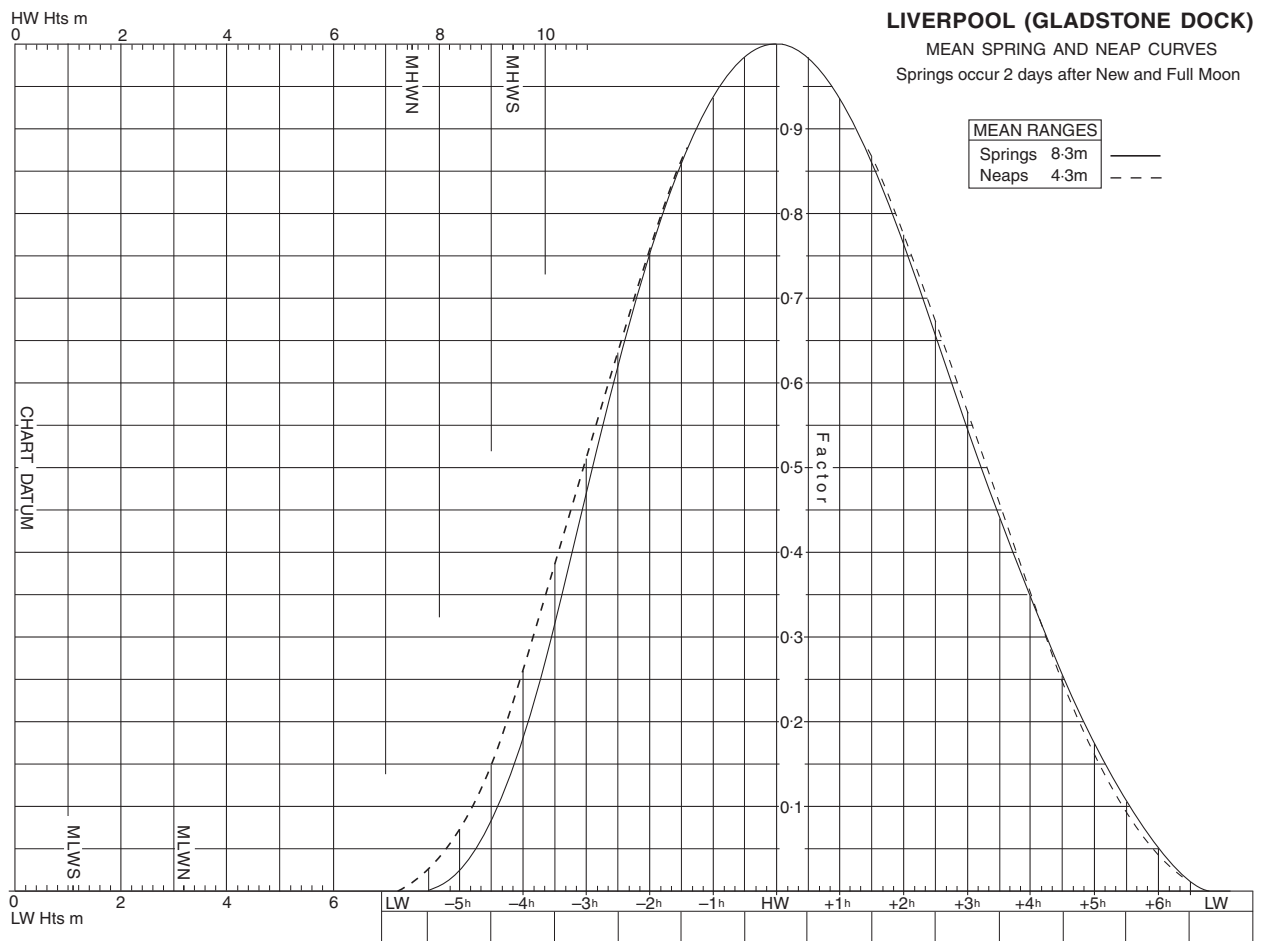
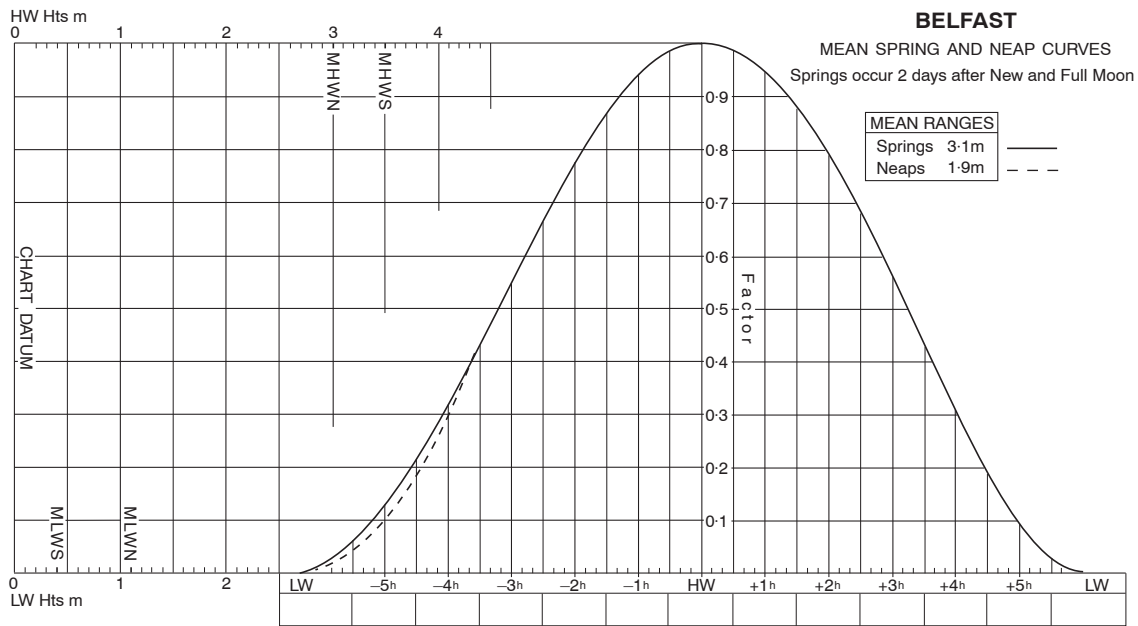
TIME & HEIGHT DIFFERENCES FOR PREDICTING THE TIDE AT SECONDARY PORTS

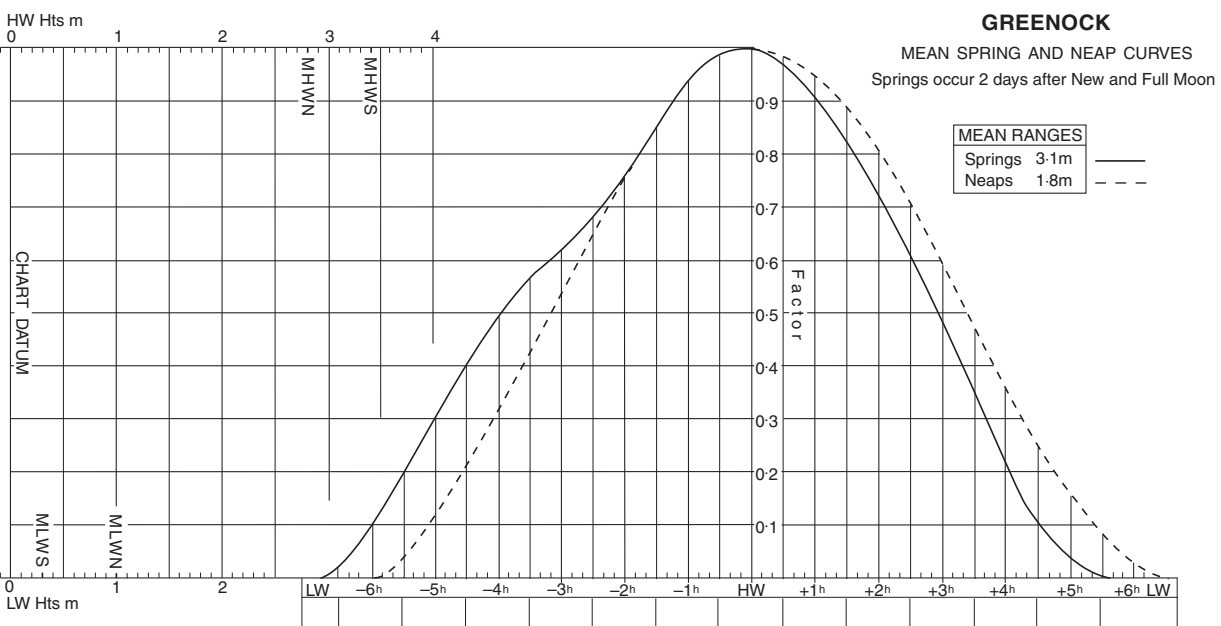
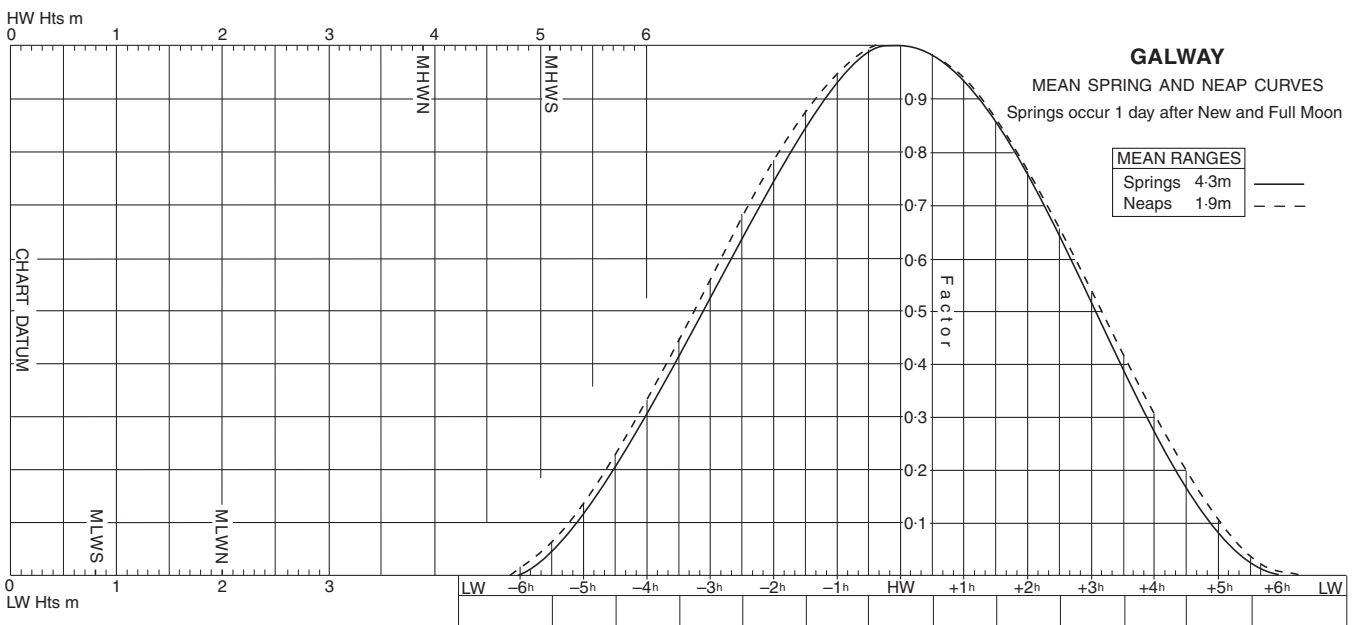
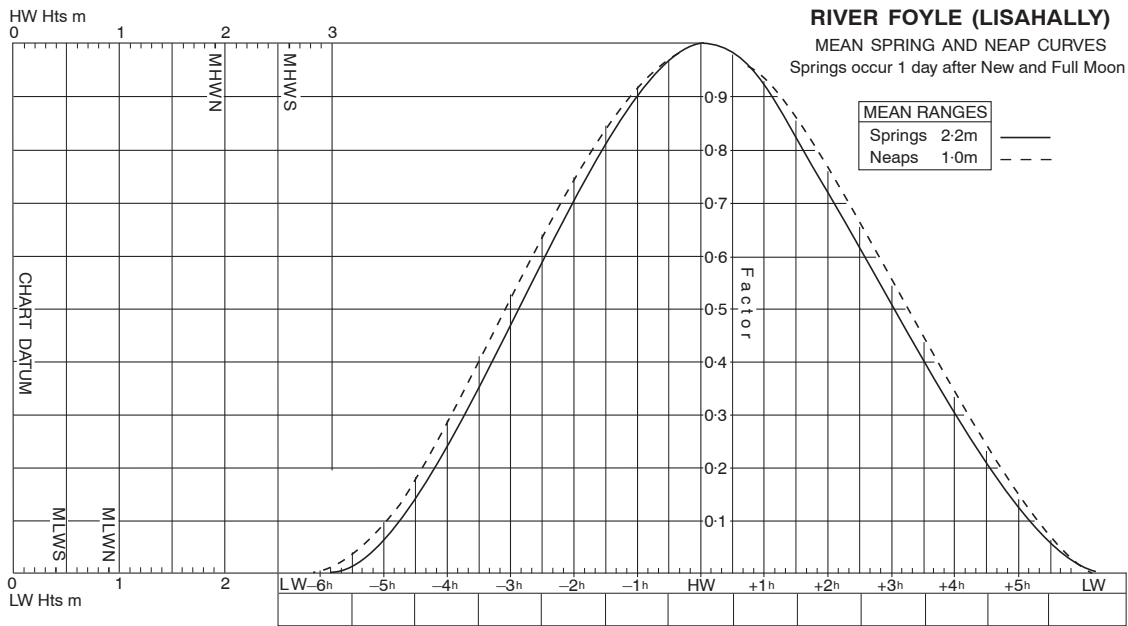
PLACE	Lat. N	Long. W	TIME DIFFERENCES				HEIGHT DIFFERENCES (IN METRES)				
			High Water Zone UT(GMT)	Low Water	MHWS	MHWN	MLWN	MLWS			
BELFAST	54 36	5 55	0100 and 1300	0700 and 1900	0000 and 1200	0600 and 1800	3.5	3.0	1.1	0.4	
NORTHERN IRELAND											
Kilkeel	54 03	5 59	+0040	+0030	+0010	+0010	+1.2	+1.1	+0.4	+0.4	
Newcastle	54 12	5 53	+0025	+0035	+0020	+0040	+1.6	+1.1	+0.4	+0.1	
Killough Harbour	54 15	5 38	0000	+0020	○	○	+1.8	+1.6	○	○	
Ardglass	54 16	5 36	+0010	+0015	+0005	+0010	+1.7	+1.2	+0.6	+0.3	
<i>Strangford Lough</i>											
Killard Point	54 19	5 31	+0011	+0021	+0005	+0025	+1.0	+0.8	+0.1	+0.1	
Strangford	54 22	5 33	+0147	+0157	+0148	+0208	+0.1	+0.1	-0.2	0.0	
Quoile Barrier	54 22	5 41	+0150	+0200	+0150	+0300	+0.2	+0.2	-0.3	-0.1	
Killyleagh	54 24	5 39	+0157	+0207	+0211	+0231	+0.3	+0.3	○	○	
South Rock	54 24	5 25	+0023	+0023	+0025	+0025	+1.0	+0.8	+0.1	+0.1	
Portavogie	54 27	5 26	+0010	+0020	+0010	+0020	+1.2	+0.9	+0.3	+0.2	
Donaghadee	54 39	5 32	+0020	+0020	+0023	+0023	+0.5	+0.4	0.0	+0.1	
Bangor	54 40	5 40	+0001	+0001	-0001	+0001	0.0	-0.1	0.0	+0.1	
BELFAST	54 36	5 55	STANDARD PORT								
Carrickfergus	54 43	5 48	+0005	+0005	+0005	+0005	-0.3	-0.3	-0.2	-0.1	
LARNE	54 51	5 48	STANDARD PORT				See Table of NON-REFERENCE STANDARD PORTS				
Red Bay	55 04	6 03	+0022	-0010	+0007	-0017	-1.9	-1.5	-0.8	-0.2	
Cushendun	55 08	6 02	+0010	-0030	0000	-0025	-1.7	-1.5	-0.6	-0.2	
RIVER FOYLE (LISAHALLY)	55 03	7 16	0100 and 1300	0800 and 2000	0200 and 1400	0700 and 1900	2.6	1.9	0.9	0.4	
Ballycastle Bay	55 12	6 14	+0126	-0112	-0053	+0128	-1.3	-0.9	-0.2	0.0	
Portrush	55 12	6 40	-0046	-0052	-0117	-0057	-0.5	-0.3	+0.1	+0.1	
Coleraine	55 08	6 40	-0004	-0106	-0109	-0005	-0.4	-0.1	0.0	0.0	
IRELAND											
<i>Lough Foyle</i>											
Warren Lighthouse.....	55 13	6 57	-0055	-0115	-0155	-0117	-0.3	0.0	○	○	
Moville	55 11	7 03	-0042	-0057	-0127	-0058	-0.3	0.0	+0.1	0.0	
Quigley's Point	55 08	7 11	-0020	-0027	-0040	-0027	-0.3	-0.1	0.0	-0.1	
NORTHERN IRELAND											
Culmore Point	55 03	7 15	-0002	-0003	-0003	-0002	-0.1	-0.1	+0.1	0.0	
<i>River Foyle</i>											
RIVER FOYLE (LISAHALLY)	55 03	7 16	STANDARD PORT								
Londonderry	55 00	7 19	+0033	+0035	+0032	+0032	+0.1	+0.2	+0.3	+0.2	
IRELAND											
Culdaff Bay	55 18	7 09	-0103	-0121	-0134	-0114	+0.2	+0.4	○	○	
GALWAY	53 16	9 03	0200 and 1400	0900 and 2100	0200 and 1400	0800 and 2000	5.1	3.9	2.0	0.8	
Inishtrahull	55 26	7 14	+0100	+0100	+0115	+0200	-1.8	-1.4	-0.4	-0.4	
SCOTLAND											
LIVERPOOL (GLADSTONE DOCK)	53 27	3 01	0000 and 1200	0600 and 1800	0200 and 1400	0800 and 2000	9.4	7.5	3.2	1.1	
Portpatrick	54 51	5 07	+0038	+0032	+0009	-0008	-5.5	-4.4	-2.0	-0.6	
GREENOCK	55 57	4 46	0000 and 1200	0600 and 1800	0000 and 1200	0600 and 1800	3.4	2.8	1.0	0.3	
<i>Firth of Clyde</i>											
Southend, Kintyre	55 19	5 38	-0030	-0010	+0005	+0035	-1.3	-1.2	-0.5	-0.2	

○ No Data

Non-Reference Standard Ports				
STANDARD PORT	MHWS	MHWN	MLWN	MLWS
LARNE	2.8	2.5	0.8	0.4

Tidal Curve Diagrams





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