



## **PASSAGE OF THE RIVER CARRON – TIDES AND CURRENTS**

### **GENERAL**

- 1] Yacht skippers are reminded to keep clear of commercial traffic in the approaches to Grangemouth.
- 2] The following information is offered for guidance only, as the tidal regime in the Carron estuary is not yet fully monitored or predictable. Skippers must use care and discretion, and remember that they navigate entirely at their own risk.
- 3] At all times follow the charted directions in the Skipper's Guide.
- 4] Entry to the sea lock must be pre booked, and skippers should keep in touch with the sea lock during their approach passage (VHF Ch 74 - "Carron Sea Lock" / 01324 483034 / 01781 0794468).
- 5] Ensure that you know your vessel's draft and required headroom accurately, and have a reliable motor of sufficient power to give a minimum water speed of 4 knots against a chop and head wind.
- 6] Navigation of the River Carron as far as Grangemouth YC is straightforward, given sufficient rise of tide. The notes that follow apply to the river from this point to the Sea Lock.

### **RIVER CARRON - TIDAL REGIME**

As in many estuaries and confined bodies of water, the tidal pattern in the Forth and Carron estuaries is not predictable with great accuracy. Typically, it has a 'stand' at most high and low tides, with the rise and fall being compressed into a shorter time as a result. At spring tides the level is rising at around 1.6m per hour and the ebb will fall at up to 2.0m per hour. The combination of rapidly changing levels and strong currents makes accurate timing of passagemaking during spring tides important. During neap tides the pattern is similar, but as the

range is less, and one will be navigating near HW rather than at half tide, the problem is much less acute. In general this is the easiest and safest time to make the passage.

The tidal current in the river may be up to 2 knots on a spring flood and more, depending on river conditions, on the ebb.

During spates and/or some spring tides navigation may be suspended for a time, so it is essential to have pre-booked one's arrival and confirmed it a short time beforehand.

Currents at the sea lock are a little slacker than down river. Skippers should use the area upstream of the sea lock (which has adequate depth at least as far as the overhead cables) to manoeuvre, prepare for entering the lock area, or to prepare for a downstream passage. There are also waiting pontoons outside the lock.

### **HEIGHT AND DEPTH LIMITS**

Navigation is constrained by the headroom under the 4 fixed bridges over the R Carron, and by the depth of water at shallow points between the sea and the sea lock.

There is approximately 1.8m depth and 3.0m air draft (headroom) under this bridge - these being the canal dimensions - when the rise of tide is 4.15m above Chart Datum (CD), but to simplify matters depth and air draft gauges have been installed at various points on the river (see chart). **THEY ARE ALL CALIBRATED TO THE CHANNEL DIMENSIONS AT THE KERSE ROAD BRIDGE.** This means that both depth and headroom available at this critical point can be checked at the sea lock, near Grangemouth YC, and close to the bridges, before committing to the passage.

The river depth is shown in white figures on the black lower part of the column. The Kerse Bridge headroom is shown in black figures on the white upper part. The boundary between black and white is at **OPTIMUM TIDE LEVEL (+4.15CD = 1.8m depth and 3.0m air draft)**. To aid visual checking of headroom the column tops are at the same height as the underside of the Kerse Road Bridge.

Skippers should not hesitate to contact the sea lock keeper for information on water levels or general guidance if in any doubt about making a safe passage.

### **GOING UPSTREAM**

#### **FORTH ESTUARY TO CARRON SEA LOCK**

**NEAP TIDES** (less than 5.0m, HW occurring around 0900/2100 UT)

The optimum tide level will probably occur between 1.5 and 2.5 hours before HW, and again approximately 1.0 hour after HW. Tidal current will be slight.

As a general rule skippers should begin the up river passage on a flood tide as soon as they consider that there is sufficient depth. The river bed is mud and gravel, so touching it on a rising neap tide should not cause concern.

Passage upstream on a falling tide should only be considered by skippers of vessels of relatively small draft able to make good speed under power.

**SPRING TIDES** (more than 5.0m, HW occurring around 0300/1500 UT)

The optimum tide level will probably occur between 3.0 and 3.5 hours before HW, and again approximately 2.0 hours after HW. Tidal current will be strong.

Skippers going upstream on the flood should be prepared for a strong following current of up to 2.0 knots, which could cause problems if early passage resulted in a grounding, particularly if near a bridge. On the other hand, late passage will mean rapidly diminishing headroom and the possibility of being trapped between bridges, necessitating anchoring or holding station for some hours.

Passage on a falling spring tide should be regarded as potentially hazardous.

**TIDES AROUND 5.0m**

The above times can be interpolated.

### **GOING DOWNSTREAM**

#### **CARRON SEA LOCK TO FORTH ESTUARY**

**NEAP TIDES**

The above time information applies. Skippers should begin their down river passage as soon as they have adequate headroom on the ebb, or as early as there is sufficient depth on the flood.

Note that the downstream pipe bridge is almost as low as the Kerse Bridge. If making the downstream passage on a rising tide make sure that you pass under both bridges without delay.

**SPRING TIDES**

The above time information applies. Large spring tides will mean a strong adverse current and rapidly rising levels on the flood. On the ebb, the current may be even stronger, plus the hazard of very rapidly reducing depth.

Skippers should ensure that they have adequate time to make the passage before running out of depth or headroom, and should consult the sea lock keeper if they are in any doubt.

Passage on a falling spring tide should be regarded as potentially hazardous.

### **EMERGENCIES**

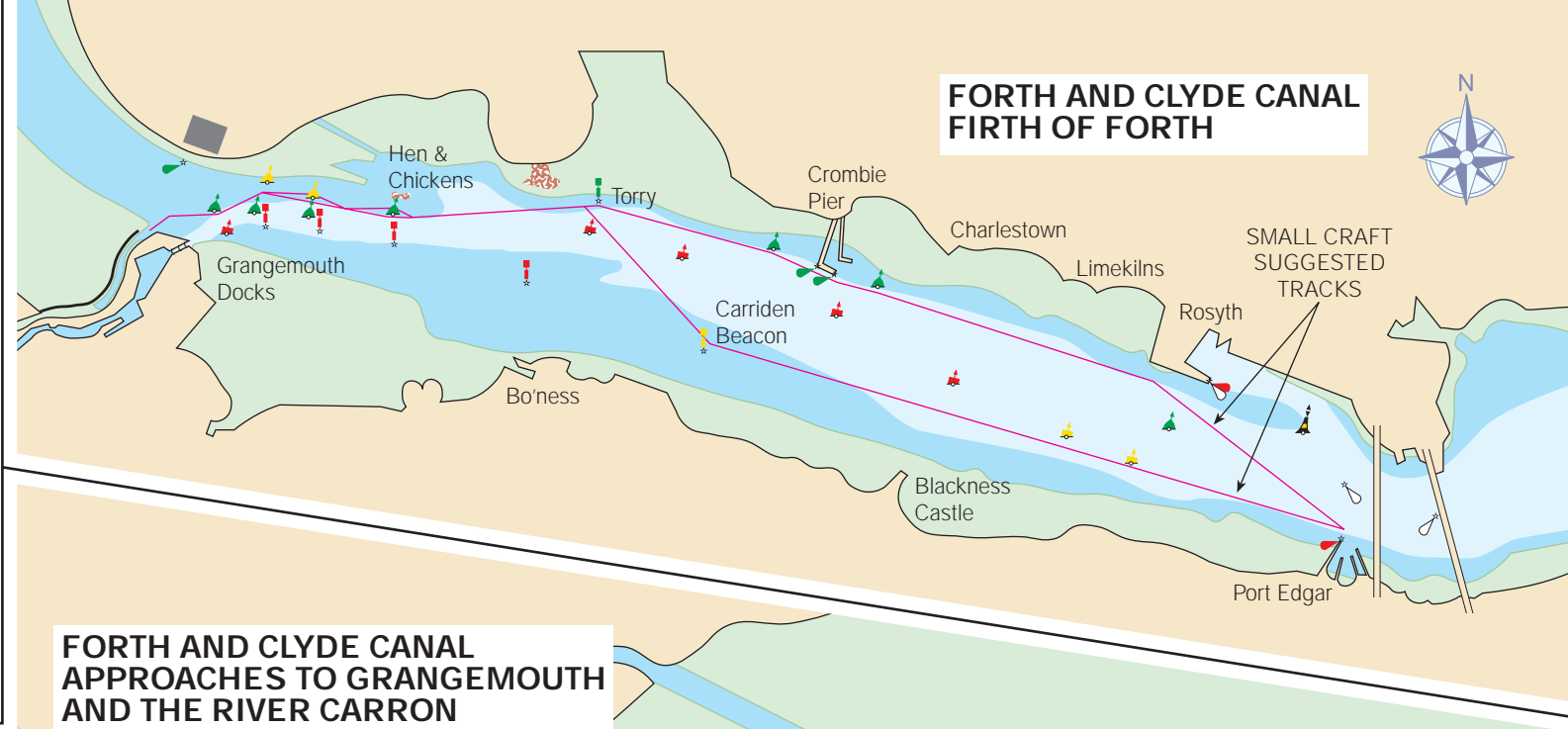
**British Waterways does not provide an emergency service. Should an emergency occur contact the Coastguard on VHF Channel 16.**

**For this reason it is advisable that all craft carry an emergency VHF aerial to use when their mast is unstepped.**

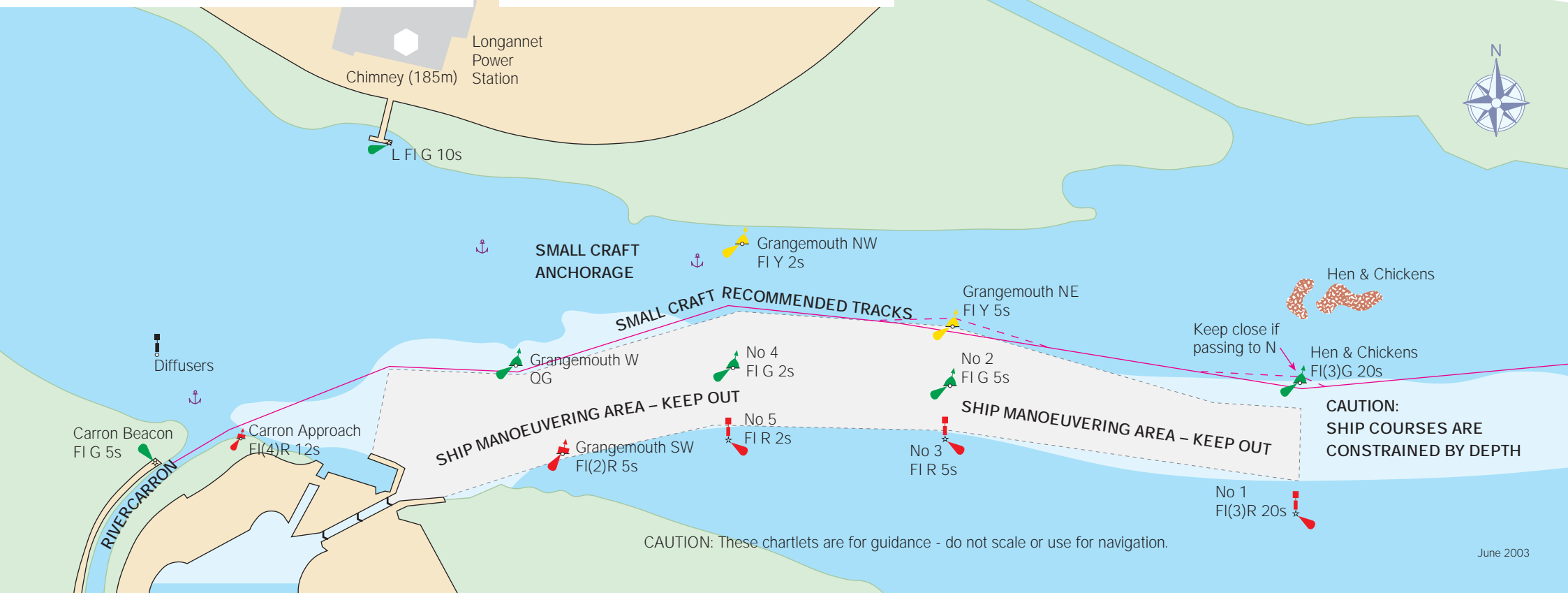
## PILOTAGE NOTES

- Passage from the River Carron entrance to the Forth & Clyde Canal Sea Lock is restricted by depth and overhead obstructions. Consult the Tides and Currents Information page, and the Tidal Predictions for Carron Sea Lock.
- Once the Carron access time window has been established, allow sufficient time for the passage (10 miles from Forth Road Bridge/ Port Edgar) to the river mouth, and then to the Sea Lock (a further 2.5 miles).
- Passage from Port Edgar/ Forth Bridges to the Torry Beacon may be made either on the north or south side of the main shipping channel.
- West of the Hen & Chickens the N side must be used.
- Vessels should monitor Grangemouth Locks on VHF Ch 14, but do not need to report, except in case of emergency or difficulty.
- Hen & Chickens Buoy, and Grangemouth NE Buoy, may be passed close to the north if ship traffic demands.
- Small craft may anchor in the positions shown, or in the mouth of the River Carron as depth permits, to await the tide.
- Charts: Admiralty Chart 737 and/or Imray Chart C27. Pilot: Forth Yacht Clubs' Assoc Pilot Handbook.

## FORTH AND CLYDE CANAL FIRTH OF FORTH



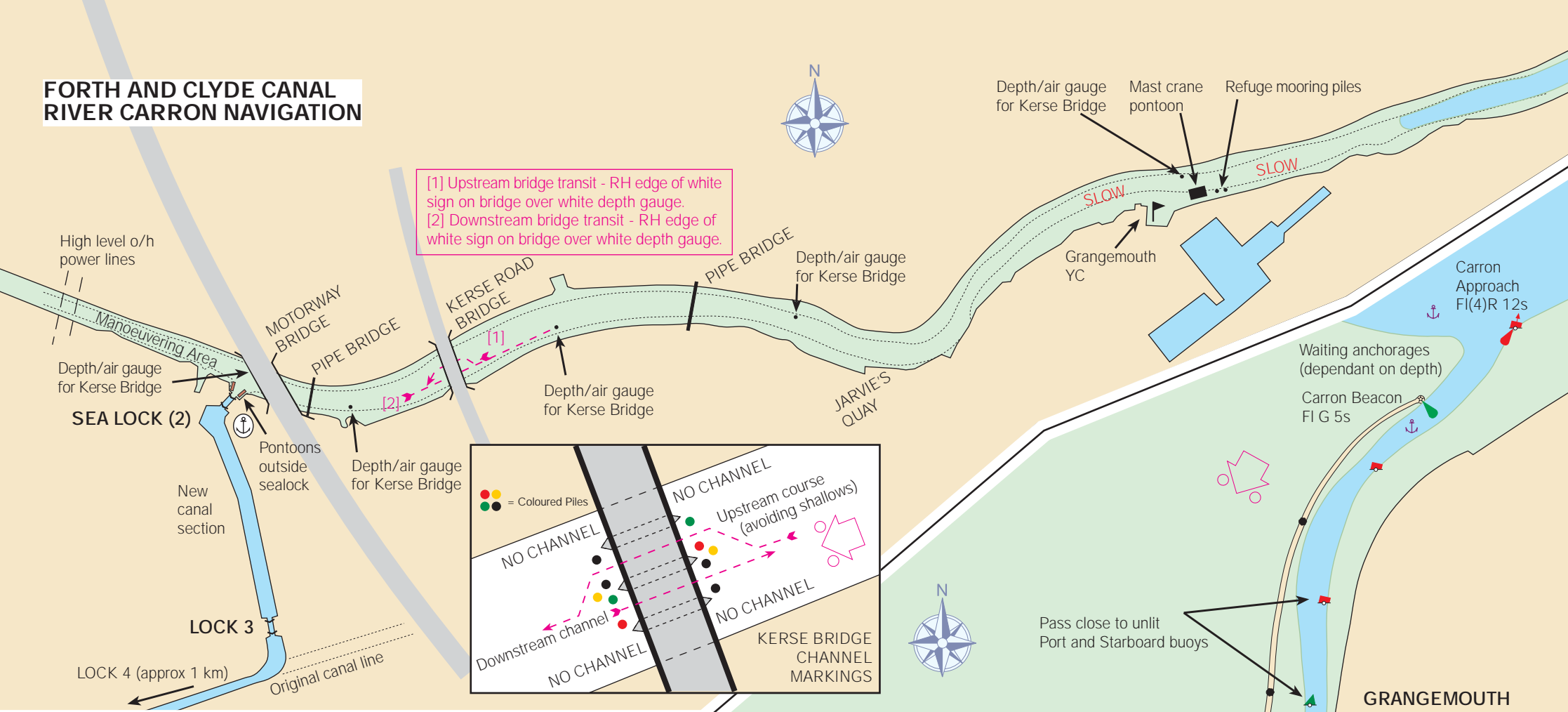
## FORTH AND CLYDE CANAL APPROACHES TO GRANGEMOUTH AND THE RIVER CARRON



**CAUTION:  
SHIP COURSES ARE  
CONSTRAINED BY DEPTH**

CAUTION: These chartlets are for guidance - do not scale or use for navigation.

# FORTH AND CLYDE CANAL RIVER CARRON NAVIGATION

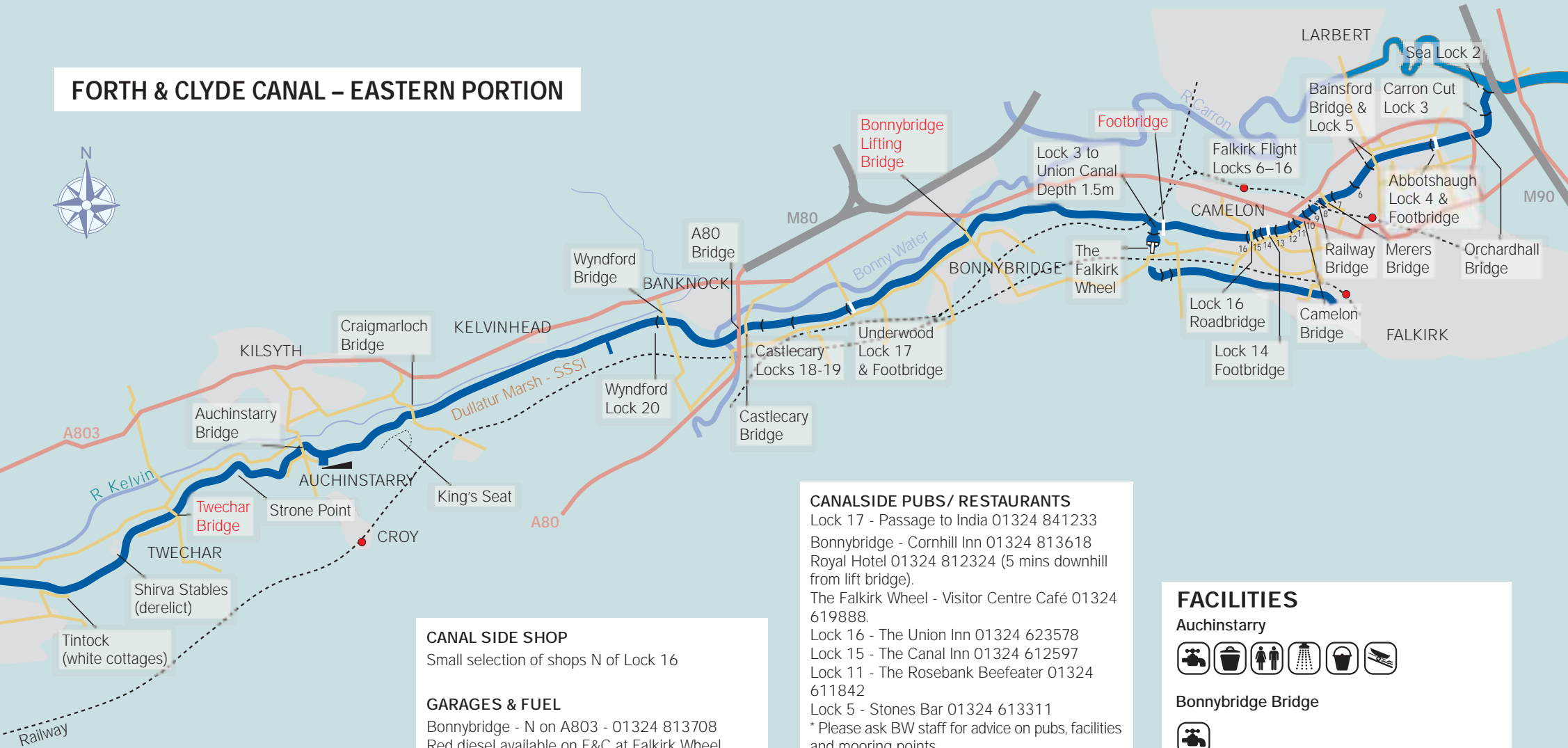


## PILOTAGE NOTES

- Passage will require to be booked in advance.
- Sea Lock - 4 hrs before to 1h30 after HW, 0800-2000 and daylight hours.
- Craft on passage can call the Sea Lock on VHF Ch 74, callsign "Carron Sea Lock".
- Consult the accompanying Tidal Data Sheet before planning your passage up or downstream.
- Masts should be unstepped before navigating upstream of Jarvie's Quay.
- The Kerse Road Bridge has approx 5.0 metres (16.5ft) from river bed to bridge underside, and the highest point of the river bed is at +2.3CD. It is the critical point in the navigation.
- Tide and headroom gauges in the R Carron refer to the Kerse Road Bridge, unless otherwise stated. Their tops are level with the underside of the Kerse Road Bridge.
- The Carron dries at LW. The bed is flat gravel, the banks are steep, soft mud.
- Temporary berthing at Grangemouth YC (by arrangement), or at the refuge posts nearby.
- BW staff will be available to assist and direct craft on passage.
- Boat Safety Checks will be carried out at the Sea Lock pontoon prior to entry.
- Canal Licences can be purchased at the Sea Lock.
- For further details see General Information Card.

CAUTION: These chartlets are for guidance - do not scale or use for navigation.

# FORTH & CLYDE CANAL - EASTERN PORTION



## VISITOR MOORINGS

(W to E) Auchinstarry, Craigmarloch, Bonnybridge, Falkirk Wheel (by prior arrangement), Lock 16, Lock 5, Lock 2.

## CASH POINT, POST OFFICE, SHOPS

Within 10 minutes walk.

Auchinstarry Basin - in Kilsyth (20 min walk).  
Bonnybridge - N on A803. Lock 16 - N on Camelon Main Street. Lock 5 - S into Falkirk town centre. Lock 2 - service station shop at M9 junction.

## CANAL SIDE SHOP

Small selection of shops N of Lock 16

## GARAGES & FUEL

Bonnybridge - N on A803 - 01324 813708  
Red diesel available on F&C at Falkirk Wheel

## ACCIDENT & EMERGENCY

Falkirk Royal Infirmary 01324 624000

## TRANSPORT INFORMATION

First Bus 01324 613777  
National Rail 08457 484950

## CANALSIDE PUBS/ RESTAURANTS

Lock 17 - Passage to India 01324 841233  
Bonnybridge - Cornhill Inn 01324 813618  
Royal Hotel 01324 812324 (5 mins downhill from lift bridge).  
The Falkirk Wheel - Visitor Centre Café 01324 619888.  
Lock 16 - The Union Inn 01324 623578  
Lock 15 - The Canal Inn 01324 612597  
Lock 11 - The Rosebank Beefeater 01324 611842  
Lock 5 - Stones Bar 01324 613311  
\* Please ask BW staff for advice on pubs, facilities and mooring points.

## BOAT REPAIRS AND SERVICES

Forth Yacht Marina, Grangemouth. 01324 665071  
FCS (Scotland), Grangemouth. 01324 953288 & 07833 953288

## FACILITIES

### Auchinstarry



### Bonnybridge Bridge



### At The Falkirk Wheel



### Lock 16



### Lock 2



## FACILITIES

### Bowling \*



### Drop Lock



### Lock 35



### Lock 27



\* De-masting facilities available at Bowling are included in licence fee.

## VISITOR MOORINGS

Bowling; Drop Lock; W of Lock 27; Applecross St; E of Balmuiddy Bridge; E of Cadder Bridge; E of Southbank Slipway (Kirkintilloch).

### CASH POINT, POST OFFICE, SHOPS

Within 10 minutes walk.

Drop Lock - east on Dumbarton Road.

Argyle Road Bridge, Clydebank (shopping complex).

Lock 35 - Canalside shop.

Bard Ave Bascule Br - Canalside shop.

Lock 27 - S along Crow Rd to safeway and Anniesland shops.

Applecross St - 15 mins walk to Glasgow centre.

Kirkintilloch - all main street shops adjacent to canal.

### FUEL ADJACENT TO CANAL

Red diesel available from BW at Bowling Basin.

Service stations near Drop Lock, Argyle Rd

Clydebank, Lock 27.

### ACCIDENT & EMERGENCY

Bowling to Lock 36 - Vale of Leven 01389 754121

E of Lock 36 - Western Infirmary 0141 211 2000;

Glasgow Royal Infirmary 0141 211 4000; Stobhill

Hospital 0141 201 3000.

## TRANSPORT INFORMATION

Traveline 0870 6082608

National Rail 08457 484950

### CANALSIDE PUBS/ RESTAURANTS

Clydebank - McMonagle's Sail Thru' Fish & Chips

0141 951 2444. Also Pizza Hut / MacDonalds

within Clydebank Retail Park.

Temple - Lock 27 0141 958 0853 and The

Canal 0141 954 5333

Glasgow Road Bridge - The Stables 0141 777

6088 (Closed for refurbishment: opens Jul '03)

### PUBS WITHIN A FEW MINUTES WALK

Bowling - The Railway Inn 01389 875833 & The

Littlemill Inn 01389 875833

Applecross St - 15 mins walk to Glasgow centre.

Kirkintilloch - Bar Bliss 0141 776 0988

### BOAT REPAIRS AND SERVICES

Chandlers - Hulley Marine, Dumbarton 01389

742438 & Duncan Yacht Chandlers, Glasgow

0141 429 6044

Boat repairs - John S Hill, Clyde River Boatyard

0141 886 5974.

Engine repairs - J N Macdonald & Co 0141 334

6171

## FACILITIES

### Applecross Street



### Glasgow Road Bridge



### Townhead Bridge, Kirkintilloch



Bowling Old Railway Bridge

Bowling Basin & Sealock

BOWLING

Ferrydyke Bascule Bridge

OLD KILPATRICK

Ferry Road Bridge

Dalmuir Drop Lock & Bridge

Kilbowie Road Bridge

Sylvania Way Footbridges (2)

Lock 32 Footbridge

BEARSDEN

Cloberhill Locks 28-32

Westerton Footbridge

Netherton Swingbridge

Stockingfield Junction

BALMUIDDY

Cadder Bridge

BISHOPBRIGGS

Hungryside Bridge

Glasgow Road Bridge

KIRKINTILLOCH

Ruchill Street Bridge

Murano Street Footbridge

Firhill Road (Nolly) Bridge

Bowling Bascule Bridge

Lock 38

Erskine Bridge

Lock 37

Farm Road Bascule Bridge

DALMUIR

Trafalgar Street Pedestrian Bridge

Argyll Road Bridge

Linnvale Bascule Bridge

Lock 32

Great Western Rd Bridge

SPENCER STREET

Temple Rd Br

Clevedon Road Bridge

MARYHILL

Lambhill Bridge

LAMBHILL

Stockingfield Junction

BALMUIDDY

Cadder Bridge

BISHOPBRIGGS

Hungryside Bridge

Glasgow Road Bridge

KIRKINTILLOCH

Ruchill Street Bridge

Murano Street Footbridge

Firhill Road (Nolly) Bridge

Old Basin Bascule Bridge and BW Scotland HQ

Bowling Basin & Sealock

Bowling Bascule Bridge

Lock 38

Erskine Bridge

Lock 37

Farm Road Bascule Bridge

DALMUIR

Trafalgar Street Pedestrian Bridge

Argyll Road Bridge

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Lock 32

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Temple Rd Br

Clevedon Road Bridge

MARYHILL

Lambhill Bridge

LAMBHILL

Stockingfield Junction

BALMUIDDY

Cadder Bridge

BISHOPBRIGGS

Hungryside Bridge

Glasgow Road Bridge

KIRKINTILLOCH

Ruchill Street Bridge

Murano Street Footbridge

Firhill Road (Nolly) Bridge

Old Basin Bascule Bridge and BW Scotland HQ

Bowling Bascule Bridge

Lock 38

Erskine Bridge

Lock 37

Farm Road Bascule Bridge

DALMUIR

Trafalgar Street Pedestrian Bridge

Argyll Road Bridge

Linnvale Bascule Bridge

Lock 32

Great Western Rd Bridge

SPENCER STREET

Temple Rd Br

Clevedon Road Bridge

MARYHILL

Lambhill Bridge

LAMBHILL

Stockingfield Junction

BALMUIDDY

Cadder Bridge

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Glasgow Road Bridge

KIRKINTILLOCH

Ruchill Street Bridge

Murano Street Footbridge

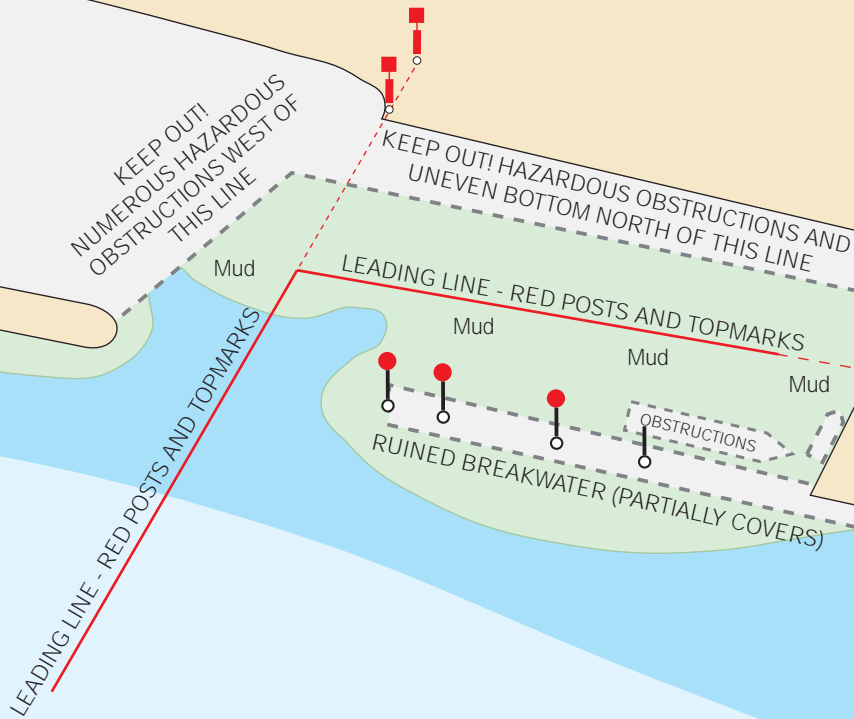
Firhill Road (Nolly) Bridge

Old Basin Bascule Bridge and BW Scotland HQ

Bowling Bascule Bridge

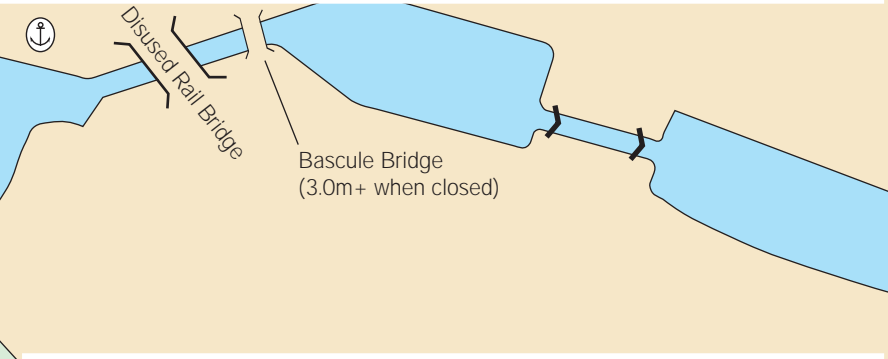
Lock 38

# FORTH AND CLYDE CANAL BOWLING HARBOUR NAVIGATION



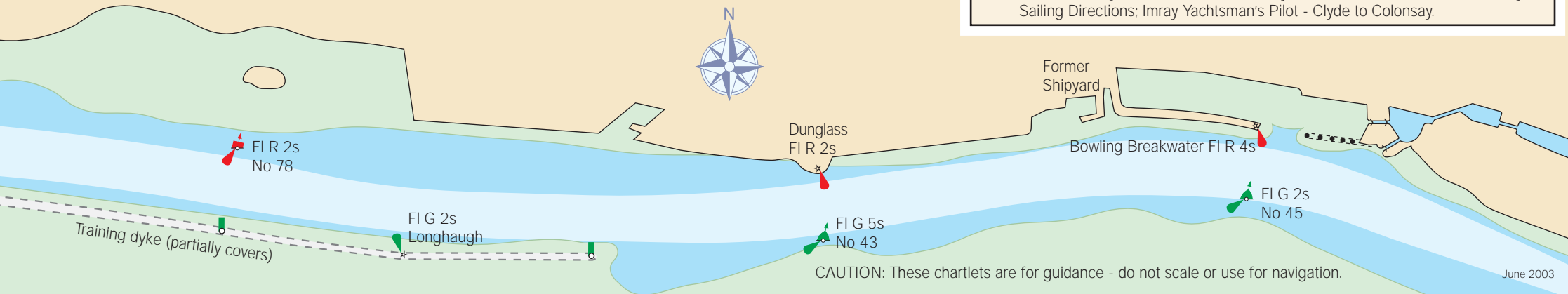
## BOWLING INFORMATION

- Radio: VHF Ch 16/74 "Bowling Basin" during sealock opening hours 2h–HW–2h only. Otherwise telephone: 01389 877969. Locking should be booked in advance.
- Bowling harbour is hazardous due to a large number of unmarked wrecks. Keep strictly to leading lines.
- Follow lock keepers instructions when entering lock, normally mooring on the port side. Two long warps and 3–4 fenders will be needed. A canvas sheet between the fenders and the hull will help reduce scuffing. BW staff will operate the lock.
- BW operated mast unstepping and stepping facilities are available at Bowling.
- Boat Safety Checks will be carried out at the Sea Lock prior to entry.
- Canal Licences can be purchased at the Sea Lock.
- For further details see General Information Card.



## ESTUARY INFORMATION

- Vessels intending to proceed to or from Bowling Harbour via the River Clyde are required to contact Estuary Control (VHF Ch 12 or 01475 726221).
- Arriving from seaward: Contact Estuary Control Tower (ECT) prior to arrival at No 1 River Buoy off Greenock Container Terminal.
- Arriving from any other location on the River Clyde east of No 1 buoy (ie between Greenock and Glasgow): Contact ECT before leaving your berth or before entering the River Clyde Channel.
- Departing Bowling Harbour: Contact ECT prior to departure.
- Keep to the buoyed Clyde navigation channel, and maintain a look-out for shipping.
- Monitor VHF Ch 12.
- Charts: Admiralty Chart 2007 and/or Imray Chart C63. Pilots: CCC Firth of Clyde Sailing Directions; Imray Yachtsman's Pilot - Clyde to Colonsay.





Welcome to the Falkirk Interchange.  
This information will help you through the Wheel smoothly and safely.

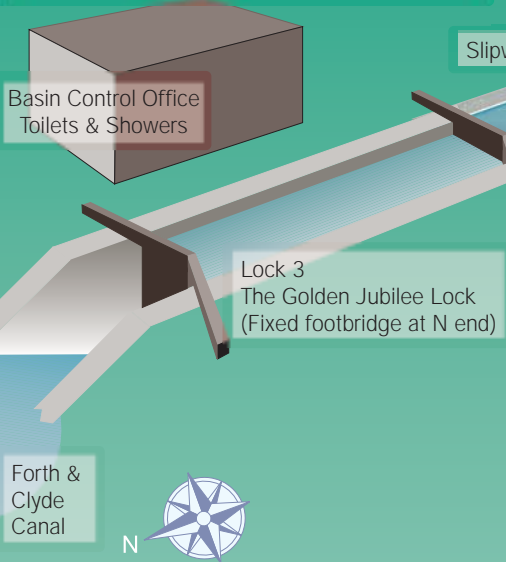
**VOYAGING THROUGH THE FALKIRK WHEEL**

- 1) There is no extra charge for BW licence holders who wish to take their craft through the Wheel.
- 2) You should contact the Basin Controller on 01324 676912 up to 24 hours in advance to book your time. Giving us notice will speed your transit.
- 3) Skippers approaching on the Union Canal should 'phone to re-confirm when exiting the Falkirk Tunnel. This will enable Locks 1 & 2 to be prepared.
- 4) Skippers approaching from the F&C Canal should 'phone to re-confirm when leaving Lock 16 (Westbound) or Bonnybridge (Eastbound).
- 5) Locks are available 0830 to 1930. Transits of the wheel are available from 0900 to 1800 (1900 Sats).

**ROUTE OPTIONS FOR LICENCE HOLDERS**

- These are
- 1) From one canal to the other.
  - 2) Through the Wheel and back to the same canal.
- Vessels may turn at the Station Winding Hole (Union Canal), one kilometre from the Interchange.

**VISITOR CENTRE**  
(01324 619888)  
0900 – 1800  
Information Desk  
Exhibition Area  
Shop  
Café  
Ticket Office  
Toilets



**MAXIMUM DIMENSIONS GOLDEN JUBILEE LOCK 3**  
(From F&C to Basin)

Length:	21.3m (70ft)
Beam:	3.83m (12ft 7ins)
Draft:	1.5m (5ft)

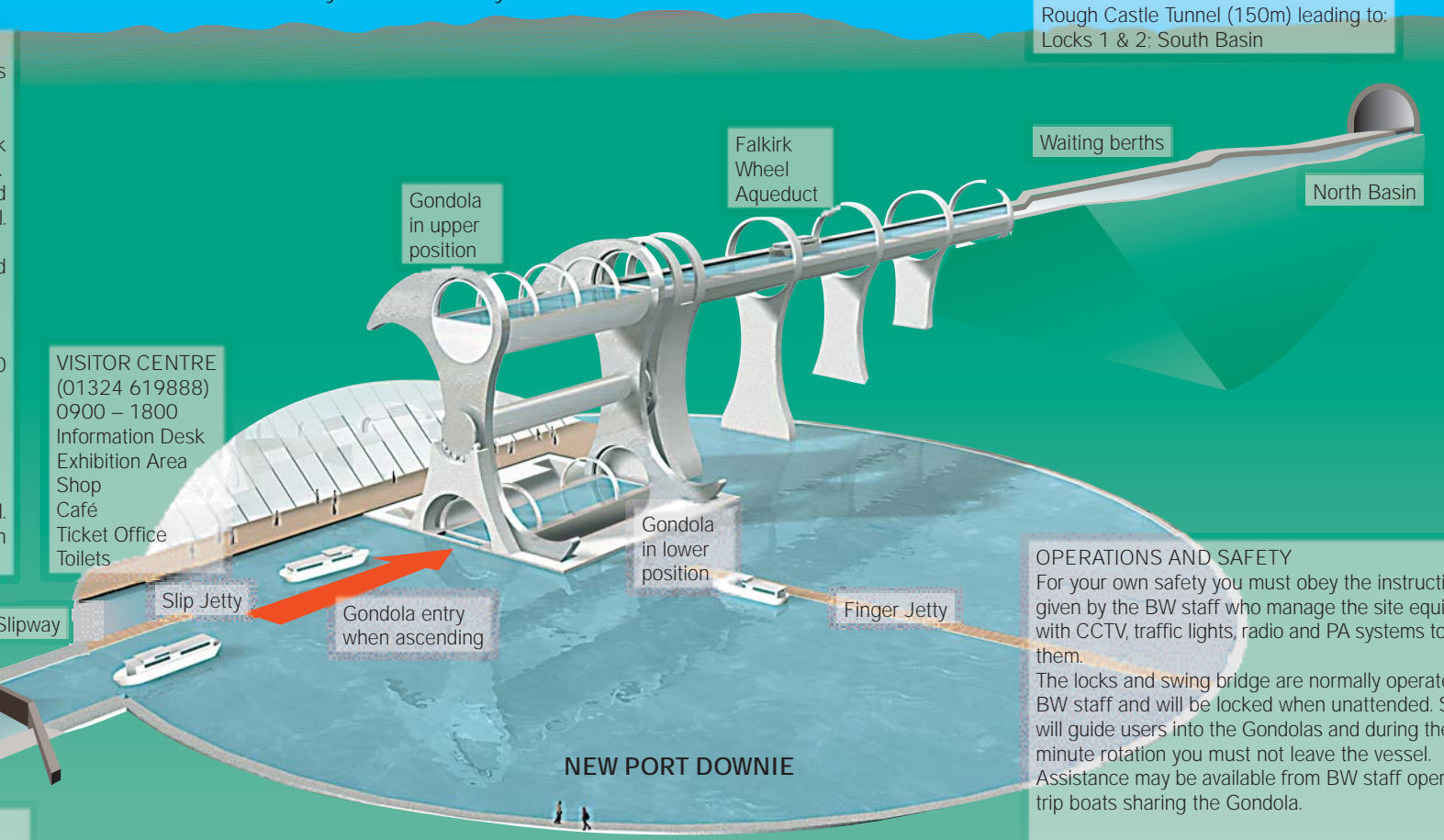
Water levels fluctuate – allow adequate draft tolerance.

**MAXIMUM DIMENSIONS UNION CANAL AND FALKIRK WHEEL**

Length:	21.33m (70ft)
Beam:	3.81m (12ft 6ins)
Union Canal Draft:	1.066m (3ft 6ins)
Wheel & Tunnel Draft:	1.5m (5ft)

Water levels fluctuate – allow adequate draft tolerance.

Rough Castle Tunnel (150m) leading to:  
Locks 1 & 2: South Basin



**OPERATIONS AND SAFETY**  
For your own safety you must obey the instructions given by the BW staff who manage the site equipped with CCTV, traffic lights, radio and PA systems to help them.  
The locks and swing bridge are normally operated by BW staff and will be locked when unattended. Staff will guide users into the Gondolas and during the 15-minute rotation you must not leave the vessel. Assistance may be available from BW staff operating trip boats sharing the Gondola.

**POINTS TO NOTE**

- Each Gondola is controlled by an operator, whose instructions must be followed.
- The operator will select vessels to make optimum use of Gondola capacity.
- Have your stern and bow lines ready to control the vessel in the Gondola.
- Do not allow anyone near the bow or stern when these are adjacent to the north end of the Gondola.
- Do not leave the vessel except if directed, or in an emergency.



# UNION CANAL – WESTERN PORTION



## FACILITIES

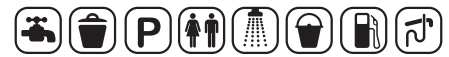
### Linlithgow (LUCS)\*



### Greenbank



### Below The Falkirk Wheel



\* LUCS – please 'phone ahead (01506 671215) if you require services. Local charges will apply.

## VISITOR MOORINGS

Linlithgow – E of Bridge 43; Brightons – W of Br 54; Grange Centre – E of Br 55 (from July '03); Above Lock 3 at Falkirk Wheel.

## CASH POINT, POST OFFICE, SHOPS

Within 10 minutes walk.  
 Linlithgow - N of Manse Rd Basin.  
 Brightons - S of Bridge 54.  
 Falkirk Town Centre - 1.2km from Walkers Bridge (62), or bus from Falkirk Wheel.

## CANAL SIDE SHOP

Linlithgow Union Canal Society (LUCS): Tearoom, Shop and Museum at Manse Road Basin.

CAUTION:  
Causewayend Basin Entrance

## GARAGES & FUEL

Linlithgow - red diesel available ('phone ahead) through LUCS at Manse Rd Basin.

## ACCIDENT & EMERGENCY

Falkirk Royal Infirmary 01324 624000

## TRANSPORT INFORMATION

Traveline (Bus) 08706082608  
 National Rail 08457 484950

\* Please ask BW staff for advice on pubs, facilities and mooring points.

## SOME PUBS WITHIN 10 MINS WALK

Linlithgow  
 The Star & Garter Hotel 01506 843362  
 The Auld Hole ' The Wa' 01506 844591  
 Polmont & Brightons  
 Gadgersbrae 01324 720726  
 Beancross Farm 01324 718333  
 Falkirk  
 Numerous pubs, cafés and restaurants in town centre.

## BOAT REPAIRS AND SERVICES

Forth Yacht Marina, Grangemouth. 01324 665071  
 FCS (Scotland), Grangemouth. 01324 953288  
 LUCS, Linlithgow. See facilities panel.

## UNION CANAL – EASTERN PORTION

### VISITOR MOORINGS

Leamington Lift Bridge; Ashley Terrace; Prince Charles Aqueduct; E of Bells Mill Bridge No 31; E of Ratho Bridge 15; Port Buchan W of Bridge.

### CASH POINT, POST OFFICE, SHOPS

Within 10 minutes walk  
N of Ashley Terrace Bridge; Wester Hailes Shell Garage S of Br 7; Ratho; Winchburgh High St (N of Br 32); Port Buchan (S of Br).

### GARAGES & FUEL

Esso N of Bridge 4; Shell N of Br 7; red diesel from Bridge Inn at Ratho (phone in advance 0131 333 1320)

### ACCIDENT & EMERGENCY

Royal Infirmary of Edinburgh 0131 536 1000

### SOME PUBS WITHIN 10 MINS WALK

Edinburgh: Leamington Lift Bridge, or short bus journey into city centre.  
Winchburgh: Tally Ho Inn 01508 890221.  
Port Buchan: The Grenadier Bar 01508 856327.

### CANALSIDE PUB

Ratho: The Bridge Inn.

### TRANSPORT INFORMATION

Traveline (Bus) 08706082608  
National Rail 08457 484950

### BOAT REPAIRS AND SERVICES

Bridge Inn, Ratho provides the following facilities:  
Fuel, Gas, Pump-out.  
Phone 0131 333 1320 in advance.  
The Bosun's Locker, Port Edgar 0131 331 4496  
Sea Span, Granton 0131 552 2224

### FACILITIES

#### Harrison Park



#### Ratho (Phone: 0131 333 1320)



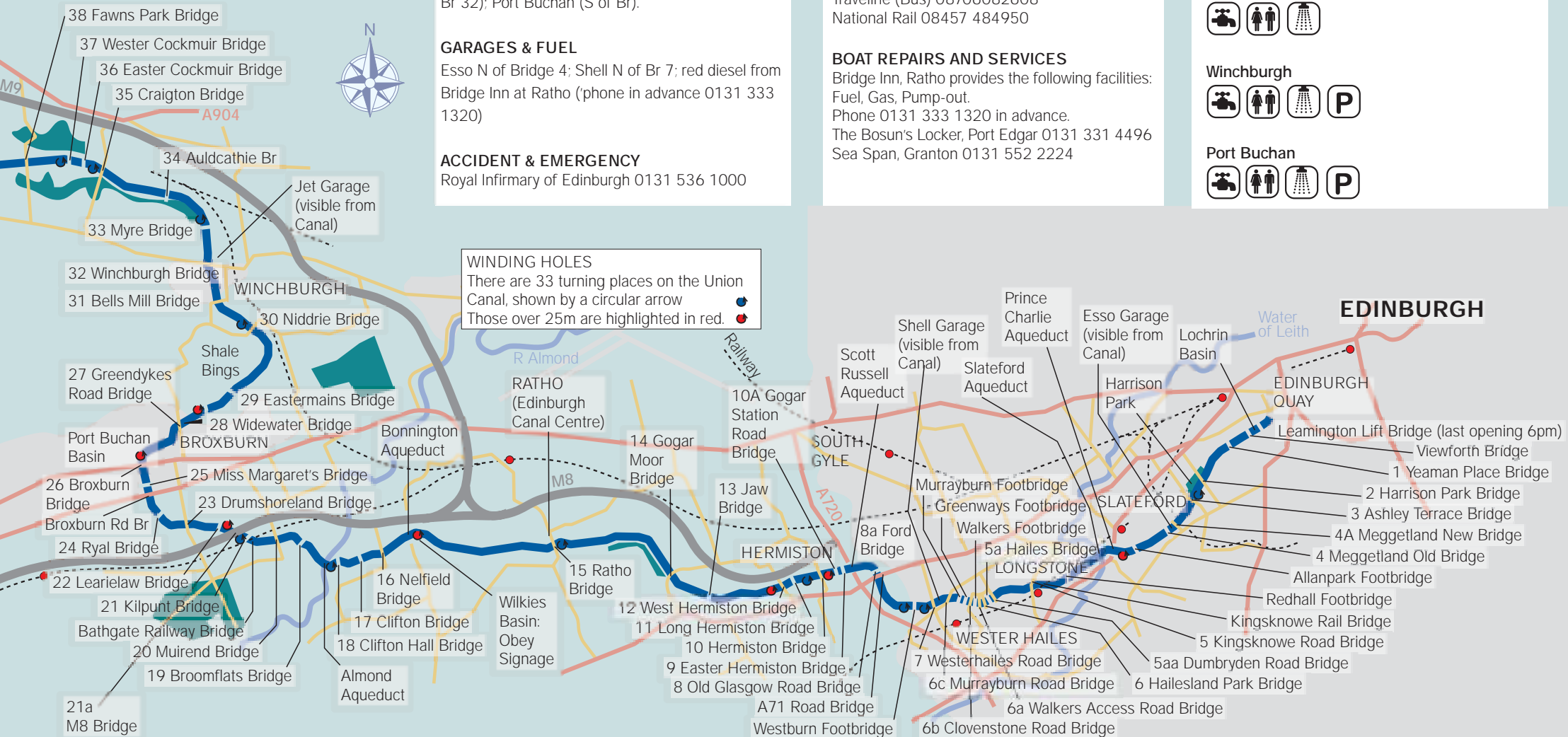
#### Drumshoreland



#### Winchburgh



#### Port Buchan

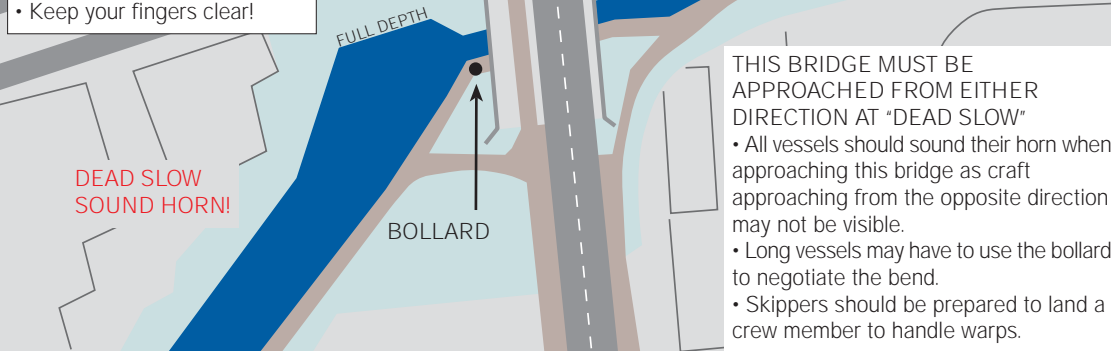


## GREENDYKES ROAD BRIDGE 27

### CAUTION

Take care when using bollard for swinging a vessel!

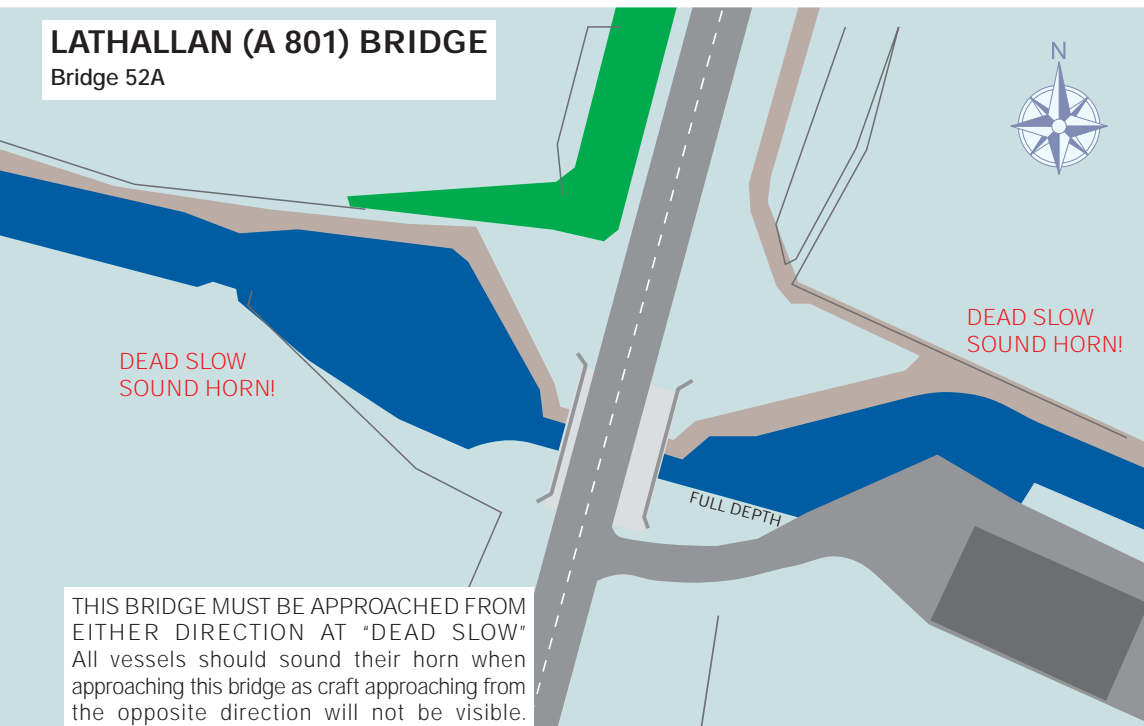
- Someone should land to handle the warp (rope).
- Wrap the warp round the bollard a few times - do not tie a knot.
- Control the friction with the bollard to control the boat – more load, more turns.
- Keep your fingers clear!



THIS BRIDGE MUST BE APPROACHED FROM EITHER DIRECTION AT "DEAD SLOW"

- All vessels should sound their horn when approaching this bridge as craft approaching from the opposite direction may not be visible.
- Long vessels may have to use the bollard to negotiate the bend.
- Skippers should be prepared to land a crew member to handle warps.

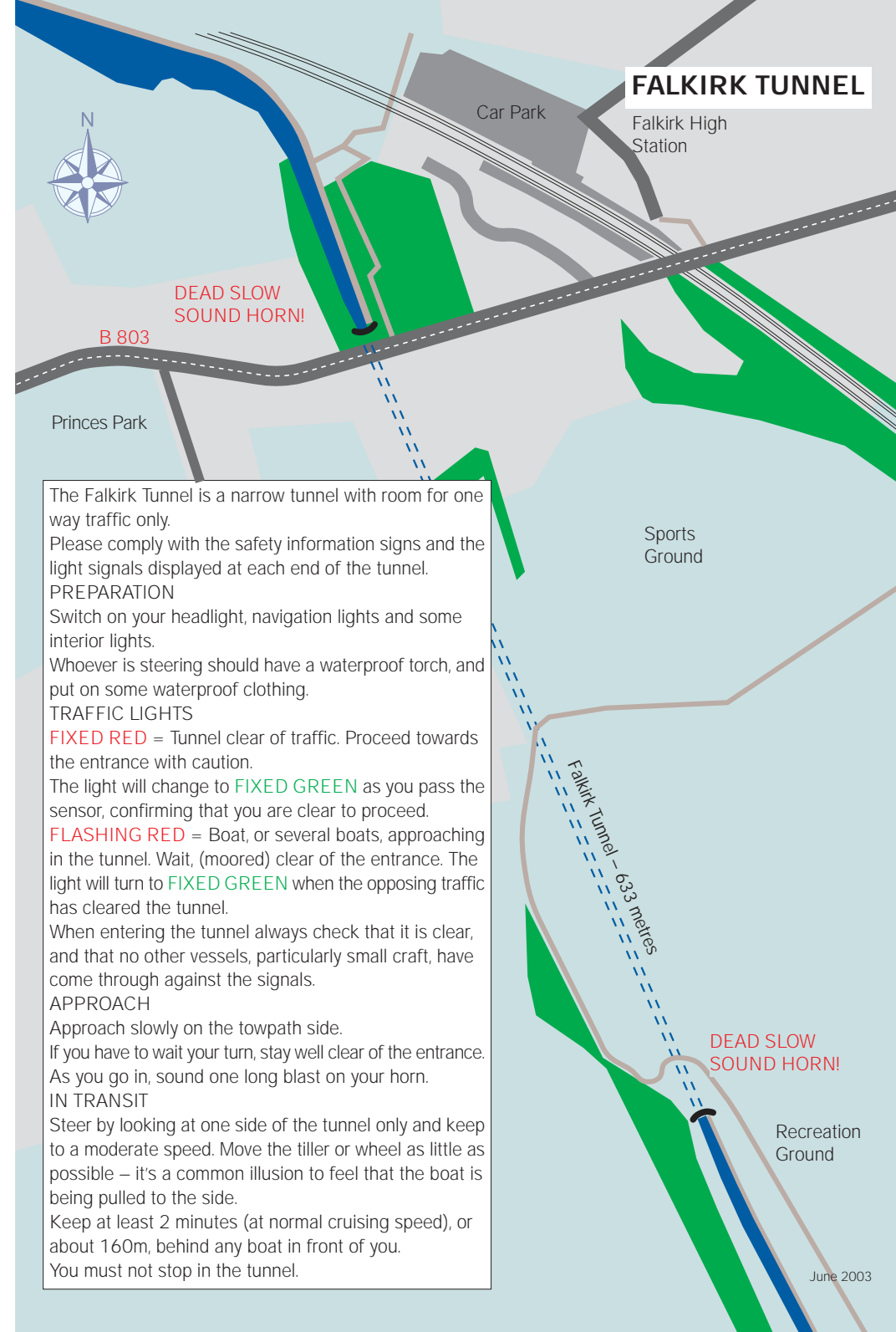
## LATHALLAN (A 801) BRIDGE Bridge 52A



THIS BRIDGE MUST BE APPROACHED FROM EITHER DIRECTION AT "DEAD SLOW"

All vessels should sound their horn when approaching this bridge as craft approaching from the opposite direction will not be visible.

## FALKIRK TUNNEL



The Falkirk Tunnel is a narrow tunnel with room for one way traffic only. Please comply with the safety information signs and the light signals displayed at each end of the tunnel.

### PREPARATION

Switch on your headlight, navigation lights and some interior lights.

Whoever is steering should have a waterproof torch, and put on some waterproof clothing.

### TRAFFIC LIGHTS

**FIXED RED** = Tunnel clear of traffic. Proceed towards the entrance with caution.

The light will change to **FIXED GREEN** as you pass the sensor, confirming that you are clear to proceed.

**FLASHING RED** = Boat, or several boats, approaching in the tunnel. Wait, (moored) clear of the entrance. The light will turn to **FIXED GREEN** when the opposing traffic has cleared the tunnel.

When entering the tunnel always check that it is clear, and that no other vessels, particularly small craft, have come through against the signals.

### APPROACH

Approach slowly on the towpath side.

If you have to wait your turn, stay well clear of the entrance. As you go in, sound one long blast on your horn.

### IN TRANSIT

Steer by looking at one side of the tunnel only and keep to a moderate speed. Move the tiller or wheel as little as possible – it's a common illusion to feel that the boat is being pulled to the side.

Keep at least 2 minutes (at normal cruising speed), or about 160m, behind any boat in front of you.

You must not stop in the tunnel.

