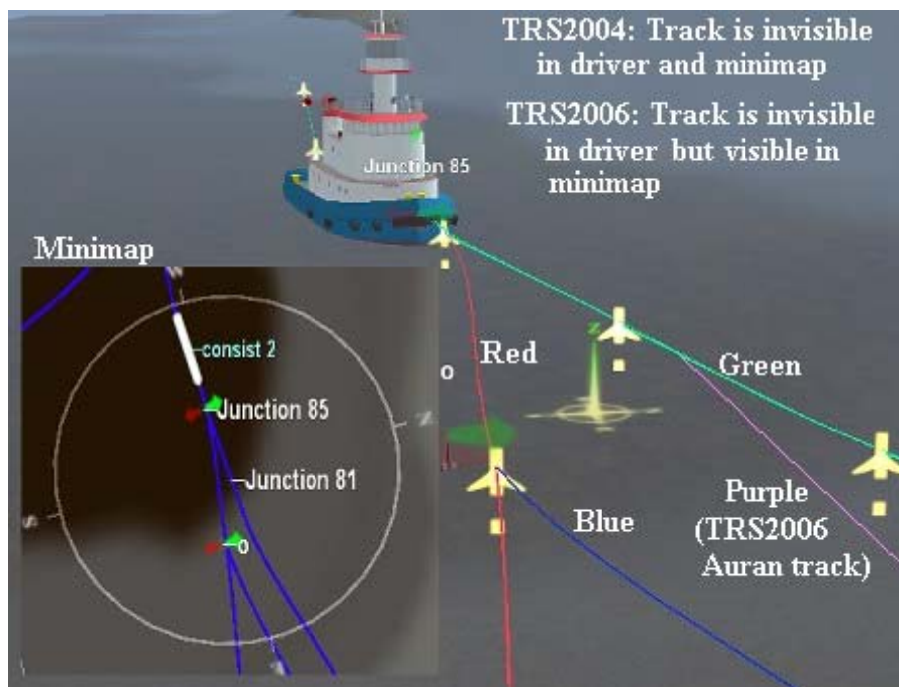# ianztrainz
freeware models for Trainz
content creation tutorials

Ships Locks and Docks

This project consists of Locks, Canals and Dry Docks for shipping. The Locks and Docks are made as transfer tables, and operate for ships operating on invisible track at either 7 metres below water or at ground level. Ships have to be designed for each of these operating levels - see the Shipping Download page for information. The most recent models operate with track 3 metres above water level, this is the standard for my future models.

Image	Description
	Coloured Track for Shipping Routes This is very thin coloured track that can be used for routes. It will show in Surveyor so it can be placed, but will not show in Driver, so it is suitable for placement above water level. It will also show in the minimaps for TRS2006, assisting navigation. **Red**, **Blue** and **Green** track is available, to distinguish different routes in your map. The line is very thin (my purple track has been included in TRS2006). The colours are now available on the Download Station. Coloured Track Pack

The Operating Ship Lock

The lock is able to raise ships 10 metres, and has operating gates, flashing lights and night lights.

Ships operating on invisible track at ground level or at a depth of 7 metres can both use the lock.

The lock is 20 metres wide and 80 metres long. Invisible track is joined to the lock at the upper and lower ends. There are two connection points at each end, one for invisible track at ground level and the other for a depth of 7 metres, to suit each height operating standard.

Operating Lock

Lower Lock Entrance

The loadable Rail Ferry is exiting the lower entrance.

Track is joined to the lock, and the water level is adjusted to be the same as that in the simulated surface of the lock. The water in the lock is a textured plane, and it lifts with the ship change of level. The colour has been chosen to be a typical canal colour. The water colour in Trainz should be adjusted to match as closely as possible.

If you wish to have a different colour, you may change the water.tga file in the model.

Upper Lock Entrance

The lock is placed aligned with the grid so water at the upper end finishes at the gates. You need to move the lock along the grid and test the water cutoff point. The water level is then adjusted to be 10 metres higher than at the lower end. The simulated water level in the lock will rise to this level.

The tug Marion is operating on the lower track and the Trawler is on track at normal ground level, the difference being about 7 metres. You determine the heights by using the "track height" tool to check the height of the attachment points at each end of the lock. Note that there are two different height connection points at each end.

Lock Night Lighting

This is a view of the night lights.

The lock gates have flashing lights, and the ship needs to be completely within the closed lock gates.

Coloured track has been used in the lock, purple for the ground level track and blue for the 7 metres depth track. This can be made invisible but will still show in the minimaps for navigating in TRS2006.

See the coloured track descriptions and usage above.

Operating Dry Dock for Shipping

The dry dock operates similarly to the lock, as a transfer table, the lock is filled, the gates opened, and the ship drives in.

The dock has a crane that is animated, keyed to the opening or closing of the dock gates.
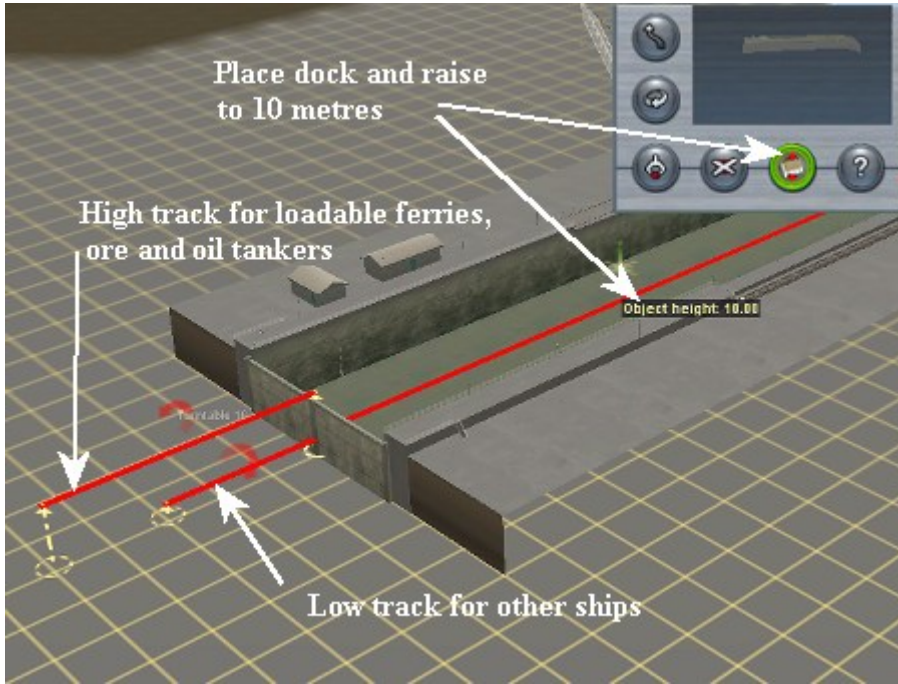
Dry Dock

Gates Closed

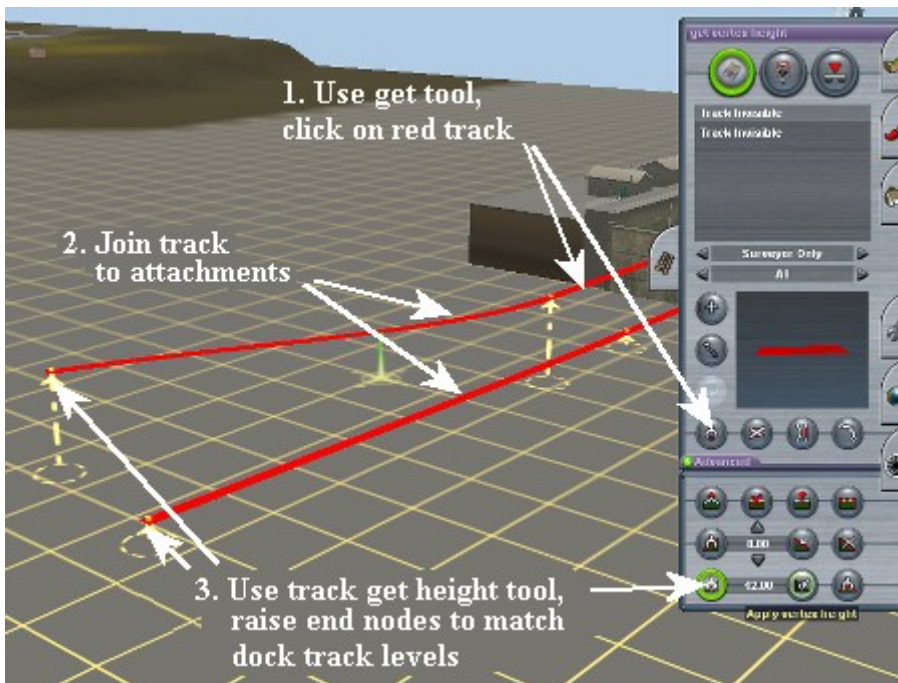The gates are closed and the water is emptied. The ship lowers to the floor of the dry dock.

No supports are provided for the ship hull in the dock - you will have to provide your own design.

Place dock and raise to 10 metres

High track for loadable ferries, ore and oil tankers

Object height: 10.00

Low track for other ships

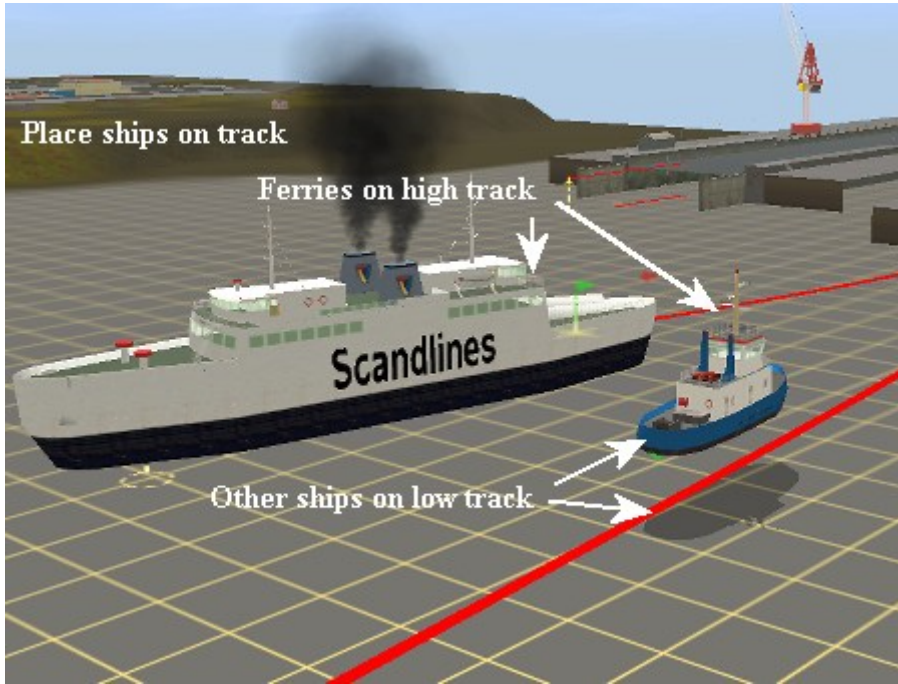## Tutorial for Placing the Dry Dock

The dock should be placed and the height set as shown in the diagram.

Note the attachment points for the track at ground level or at 7 metres below the water level. The track shown is the default Auran red track, alternative coloured track as mentioned earlier may be used.

1. Use get tool, click on red track

2. Join track to attachments

3. Use track get height tool, raise end nodes to match dock track levels
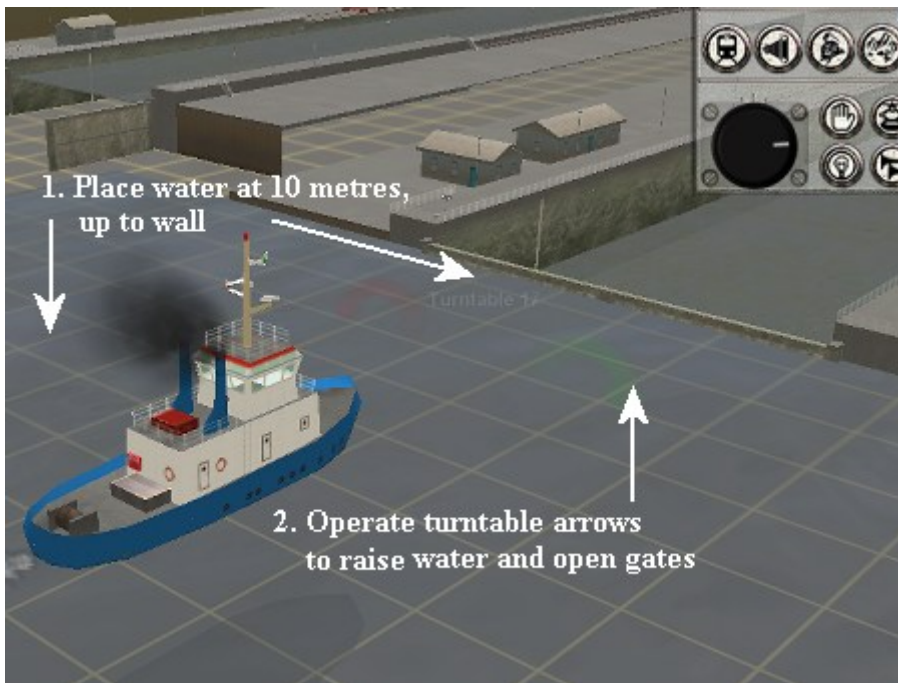
Attaching Track and Setting Levels

Attach the track at the points shown, either or both levels may be used. Use the track height setting tools in Surveyor to make the track level.

Ships Placed

Select an appropriate ship for the operating track level and place it on the correct track.

Note that ferries able to be loaded with rolling stock operate on the higher level track.
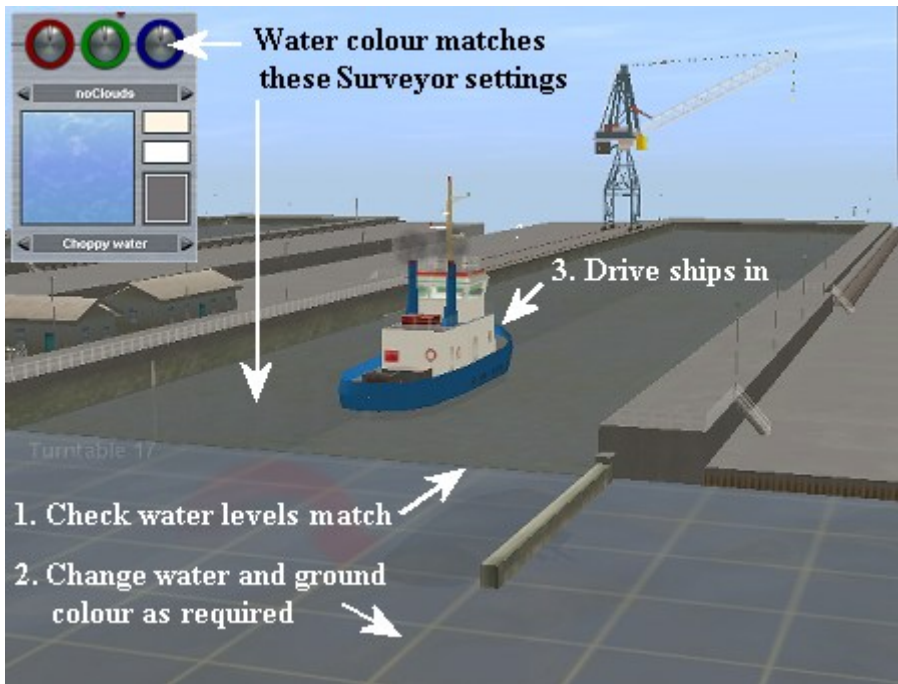

Water Placed

When the dock is initially placed, the dock is empty. Place the water outside the dock at 10 metres. The dock will line up on a grid line, so water should not appear inside the dock area.

In Driver, operate the red transfer table arrows to fill the dock with water and to open the gates. The ship may be driven in.

Operate the arrows again to close the gates and empty the dock. You may need to place separate cradles on the dock floor to "support" your ship (cradles have not been modeled or supplied).

Water colour matches these Surveyor settings

3. Drive ships in

1. Check water levels match

2. Change water and ground colour as required

Adjusting Water and Seabed Colour

When the dock is full, check that the external water at 10 metres matches the height of the water inside the dock. You may need to adjust the water level, or the dock level to match water levels.

Change the water colour or the seabed texture colour to match the water colour inside the dock if possible. Alternatively, change the texture file for the model to suit your needs.
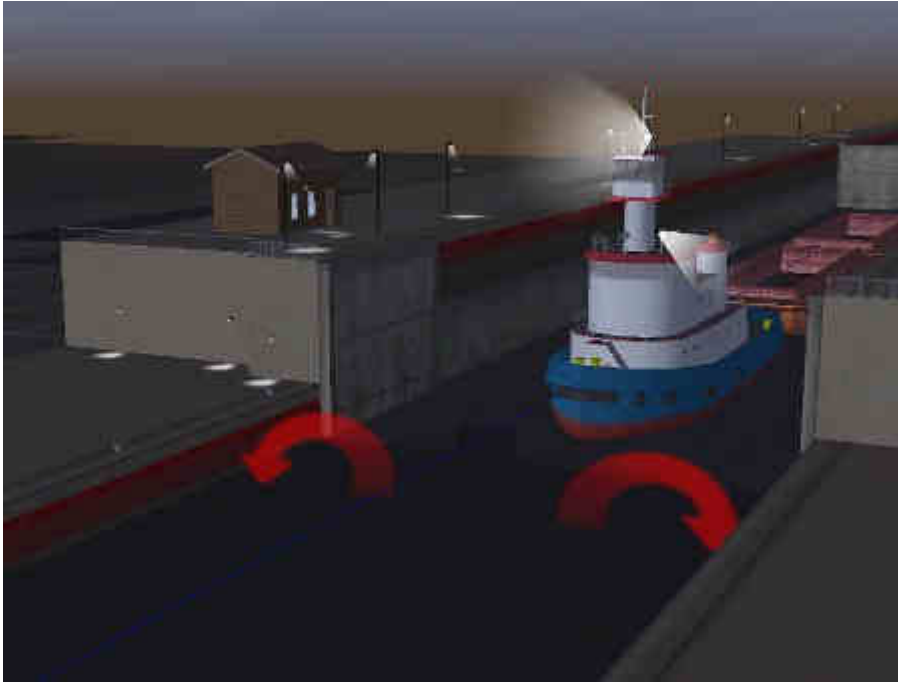
Dry dock with Ship Under Construction 1

This is a dry dock with a partly constructed ship in the dock, as part of the model asset. It has a different crane on the dock wall, and scaffolding and supports around the hull.

The dock will operate, but the ship may not be moved from the model.

Dry Dock 2

Lock Night Lighting

The lock has lighting on the pavements at the top and front of the lock. You can see the turntable (lift or transfer table) operating arrows for the lock at the lower level.
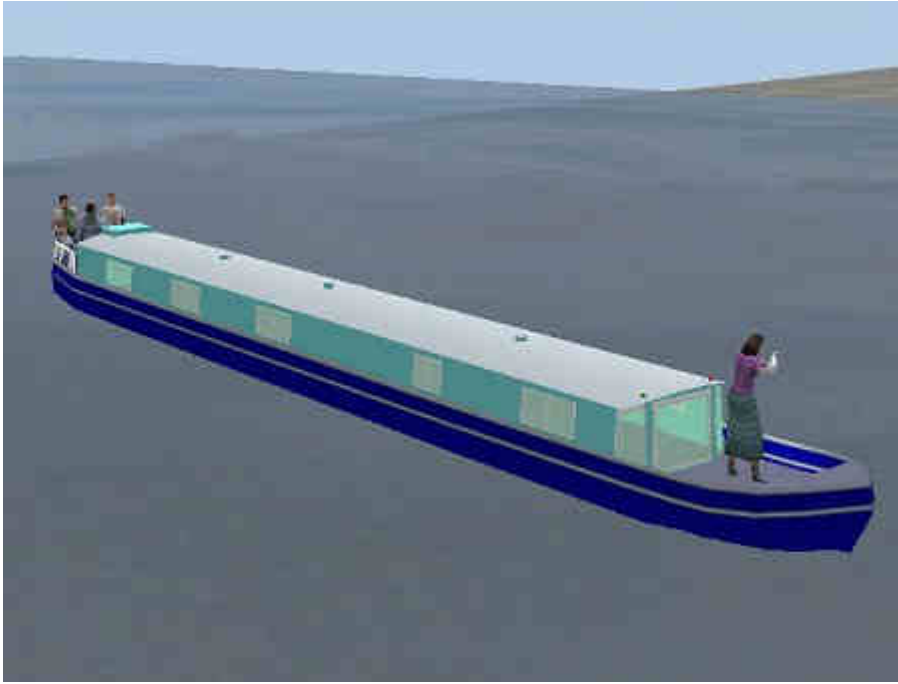
In order that these arrows may be operated, without being underwater, the origin of the model is near the doors at the lower level. This is the Surveyor rotation point for the model. The lock snaps to the grid.

Canal Boat 1

These are a based on the typical English Narrow boat common on small canals. These are required for the next project, the Falkirk Wheel Lift, see below.

There are three models, two 60 feet long and a smaller model. They are passenger enabled, and load and unload at the new docks and loading landings.

Canal Boat 2

Similar to the one above, different colour scheme, also passenger enabled. Canal boats are only 2 metres wide on average, so new docks are required to act as pick up points for passengers.

Small Canal Lock 1

The small canal lock to suit the canal boats. It operates as a transfer table (lateral turntable) and raises the water level and the boats 3 metres, and has night lighting. The gates open in the correct direction against the water flow, and are slightly angled to resist water pressure.

Canal Boat 3 and Canal Spline

Two small canal splines, one in concrete and the other a cobbled surface. They are wide enough so you can place water to the level to suit (canal boats operate 3 metres above water level). On curves you need to raise the ground at the canal edge to cover any water projecting at the sides.

Invisible track is placed separately outside the canal, height adjusted as required, and then moved over into the canal. It may be necessary to hold the Shift key down when moving the track to stop it joining to the canal spline itself.

Canal Landing 3 for Canal Boats

A passenger enabled landing to suit the canal boats. It has two tracks placed at 1 metre and 3 metres from the landing. This suits the canal boats at 2 metres wide and wider boats can use the second track.

Canal Landing 2 Parallel to the Canal, at Night

A second passenger enabled landing to suit the canal boats, but placed parallel to the canal edge or embankment. It also has two track attachments.
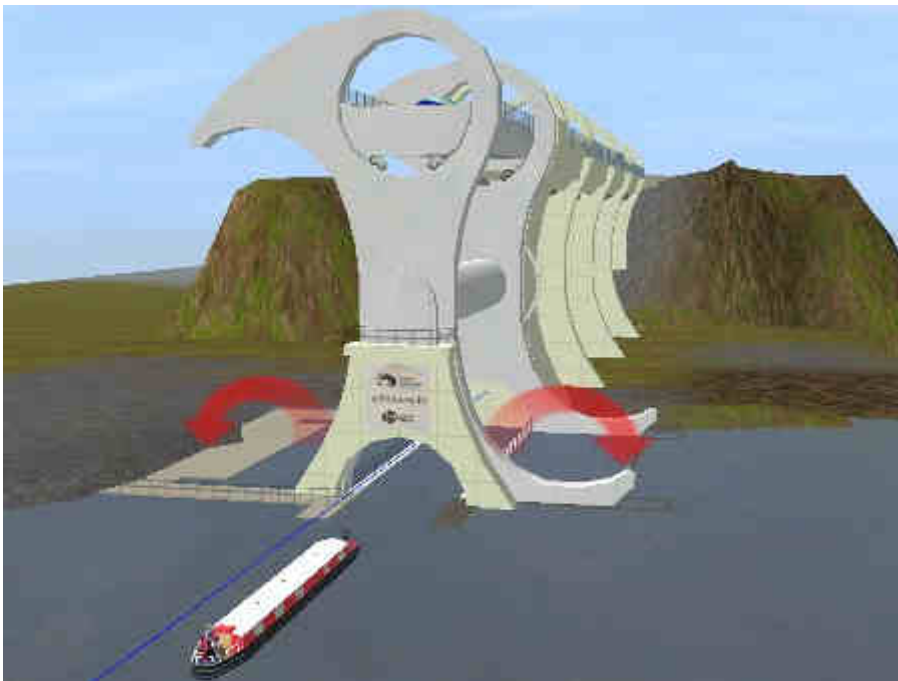

Canal Landing 1

A concrete landing to suit longer boats. Again, it has two tracks placed at 1 metre and 3 metres from the landing. It is lit at night.

Canal Barge

A wider canal barge, passenger enabled, under development.

Falkirk Water Lift

This is the model of the Falkirk Wheel in Scotland, as an operating lift table. It raises the canal boats 25 metres.

Note the operating arrows for the wheel. The lift rotates a full 360 degrees in either direction, however once that is done, it must them be rotated in the reverse direction to continue operations. It does not continuously operate in the one direction.

The model operates in TRS2004 and 2006.

Falkirk Water Lift from the Top

This wheel has attached viaduct channel. The water in the gondolas and the channel is a textured surface to match the water in Trainz when the RGB controls are placed in the 12 o'clock position.

The wheel snaps to the grid, and you need to place and match the water levels at the top and bottom. Track is already placed in the model and invisible track is connected at the top and bottom for the canal boats to operate.

Falkirk Water Lift with Canal Boats

Note the canal boats entering at the bottom and one already in the gondola at the top. Either or both of the gondolas may be used, as the wheel is balanced in all cases, either with a boat plus water or just water - a boat displaces its own mass of water.

The blue line is the invisible track, visible in Surveyor, invisible in Driver, but visible in TRS2006 in the Minimap for navigating.

Falkirk Water Lift Rotating

This shows the wheel rotating to change the levels of the canal boats.

The Falkirk takes 15 minutes to rotate the 180 degrees to change the levels. The model operates faster than this to keep the animation file size reasonable.

Falkirk Water Lift Gondola

A view of one of the gondolas, with canal boat. The real wheel allows the gondola to remain level as it rotates, on the wheels shown. The model does the same.

Falkirk Water Lift at Night

The real wheel is floodlight at night in different colours. I have included the lighting on the approach viaduct, the wheels and flood lights on the walkway areas and along the viaduct.

The gondolas are not lit. Some animated searchlights have been added, but are not used on the real wheel.

Drivable Trawler 1

The Sea Wasp II is a drivable version of the static model and is passenger enabled, operating on track paced 3 metres above water level.
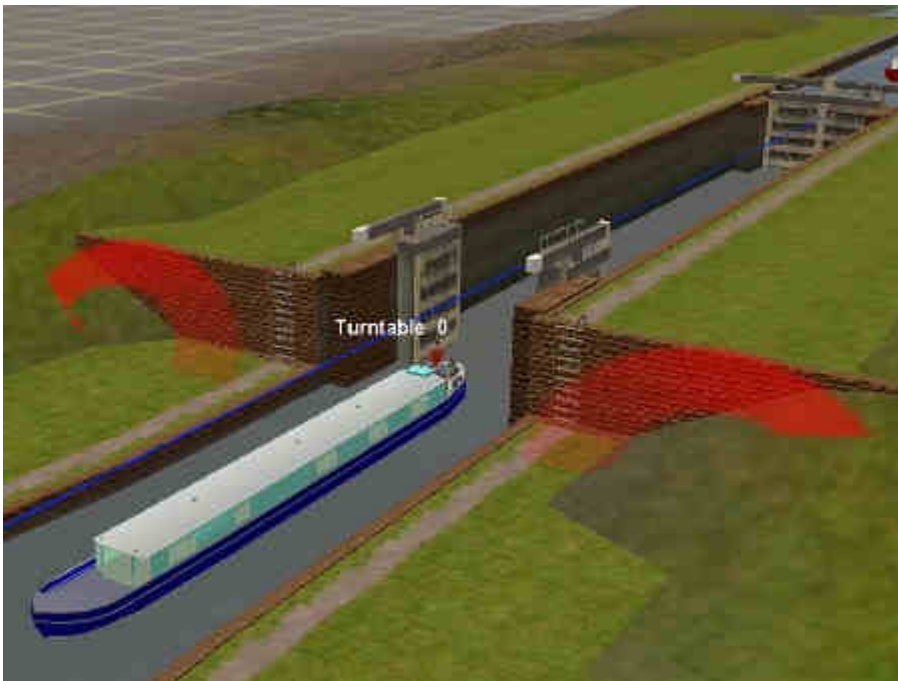
Sea Wasp II

Drivable Trawler 2

The Sea Conquest II is a drivable version of the static model and has nets spread from buoys for trawling. It has a simulated wake around the nets when moving.

The ship operates on track paced 3 metres above water level. It is passenger enabled.
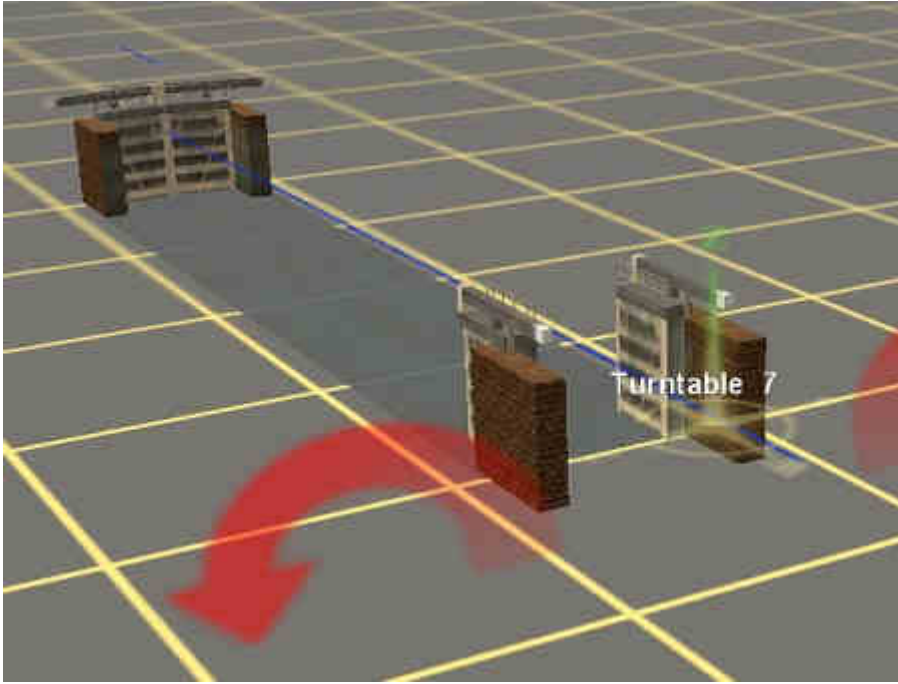
Sea Conquest II

Small Canal Lock 2 and Walls

This is a small lock, 40 metres long by 6 metres wide between pillars, but only 4 metres wide between the gates. It lifts small boats 3 metres. The lock has timber gates of an older English design and operates as a transfer table.

The lock walls shown are a separate spline, textured to match the lock, see below.

Note the turntable operating arrows. These are clicked to open and shut gates automatically, and raise or lower the lock water. It is best to click on the arrows from the side, not when looking directly at the entrance.

Small Canal Lock 2 Basic Model

This is the basic model of the lock, with support pillars, water platform and gates only. Any suitable wall spline may be added to suit, see models below.

The rising water platform is textured to match Auran water with the RGB setting arrows placed at the 12 o'clock position. If you wish the water to be a different colour, you will need to change the texture file water5.tga in the models.
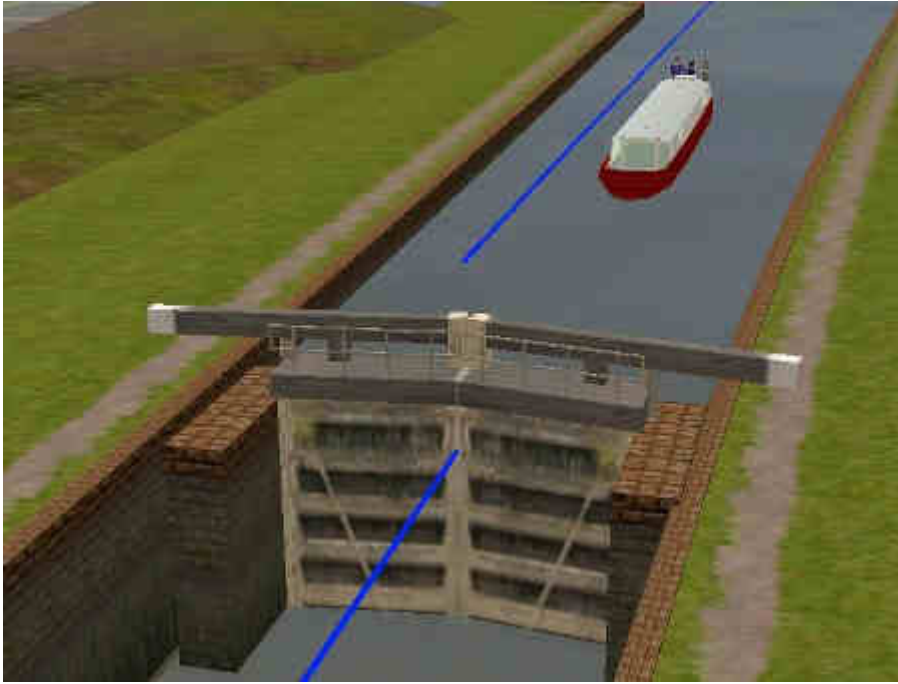
Ground below the platform should be textured with a gray pattern to give the best water colour match.

Wall Spline for the Lock

The wall shown has a grass slab 10 metres wide on the top, to enable the sloping ground to be covered. The colour matches one of the Auran grass textures in TRS2006.
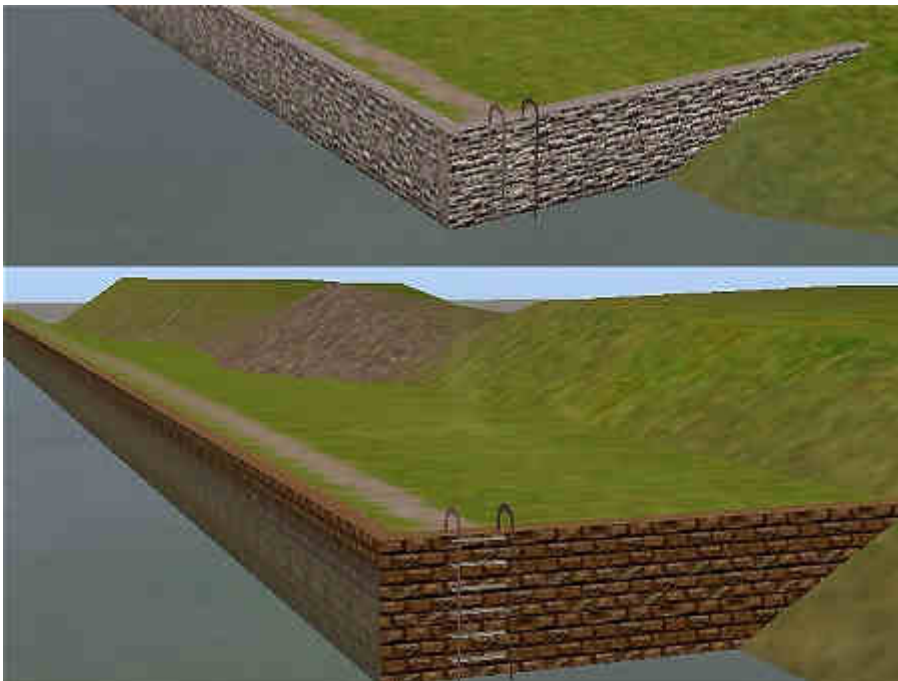
The wall also has terminators (end walls) with a ladder, so when the spline is placed at a lower level, there is some way to get to that level from the footpath. Splines are placed by holding the Shift key down when dragging them into alignment with an already placed spline (so they do not join).

Lock Top Gate

A narrow canal boat is waiting to enter the lock, after the water rises to the top level. Note the invisible track placed 3 metres above water level for the ships to operate.

The canal wall spline my be placed separately on each side as shown to make a canal.

Canal Walls

Two canal wall splines are available, these have the grass texture at the top, with a footpath and have end wall terminators.

This makes them easy to place at different levels, yet butt up together without joining (hold the Shift key down when moving or placing near a previous placed wall).

The canal wall spline my be placed separately on each side as shown to make a canal, and are placed with the canal locks 2 and 3 to make the side lock walls.

Small Canal Lock 3 (double)

A small double canal lock designed to raise small boats from one water level to another.It lifts boats 6 metres in two locks. This model is the gates and end columns only, suitable wall splines need to be placed to make the lock sides.

The double lock operates using the turntable arrows, one click will make the lower lock fill, to the level of the second. When the gates between locks open, the ship is driven into the second lock.

Another click on the arrow will make the higher lock fill to the top level.

Ferry John Oxley

A small passenger ferry based on the Brisbane river Ferry Guyandah, but the ferry is named for the similar John Oxley, used for cross river passengers.

It is passenger enabled and operates on track 3 metres above water level.

Small Landing 4

The ferry landing passengers at the Small Landing 4 dock. This is a pontoon type landing with an aluminum ramp from the river bank. It is common in Australia, as a private river landing area.

Ferry Mermaid

A small passenger ferry Mermaid used on the Brisbane river.

It is passenger enabled and operates on track 3 metres above water level.

Canal Swing Bridge

A small canal bridge that operates as a mocrossing and swings out of the way when a canal boat approaches. It has a clearance of 5 metres between abutments.

It has road attachment points on the abutments, so a track may be attached, but it has no traffic.