



Real Life Experiences of "Going Electric"

With Peter Chambers and Sarah Mules
Followed by a Q&A session with
Paul & Anthony (Narrowboat Life Unlocked)



Electric Narrowboat on The Tidal Trent

Adventures in Diesel Country

There is always a river you cannot do
- Dave Jesse

Keadby: that is Right Out !
- Peter

Peter Chambers
July 2026

picture credit: Author (2025)



How to use Celestial Mechanics to propel upriver

- Using the Rising Flood Tide – Gainsborough to Torksey
- Nautilus-Enterprise is a low-power boat
 - 10 kW (continuous) Bell Drivemaster-15w motor
 - 38.4 kWh battery (lead-carbon), 80% SoC on the day
 - 2 kW drive power (cf 1.6 kW on the cut)
 - 1 kW solar power on the day
 - Standard hull (not S-curve), 13x10 prop
- No diesel used on this run ! (5 kWh from the battery)

Safety !

- Plan / briefing / inform CRT Lock-operations
- Spreadsheet with start / boost / slack / arrival times
- Buoyancy Aids for all / man-overboard drill
- VHF Channel 74 & mobile phones (2 networks)
- Anchor prep / ready to deploy / lines
- Charts / time-line / shallows / marks / correct line(s)

Planning Spreadsheet – built/validated by the Author

Four hour run

delay	first seg (mi)	sec seg (mi)		distance	Mod-H	av.mph		start (H)	end (H.h)	minutes
1	2.6	12		14.6	3.84	3.65		5.0	8.8	50.1
0.75	3.25	11		14.25	3.93	3.56		4.8	8.7	40.8
0.5	3.9	10		13.9	4.03	3.48		4.5	8.5	31.7
0.25	4.55	9		13.55	4.13	3.39		4.3	8.4	23.0
0	5.2	8		13.2	4.24	3.30		4.0	8.2	14.5

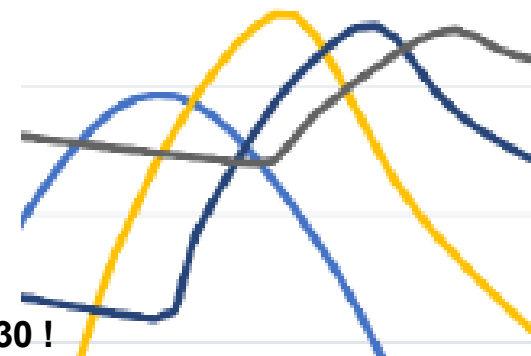
speeds	2.6	4
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Torksey km	72	0	Torksey delta-km	0.0	Delta-mi
Gainsborough km	89	17	GainsB delta-km	10.5	Delta-mi
West Stockwith km	94.6	23	WestS delta-km	14.0	Delta-mi

Gainsborough run plan for half-hour delay

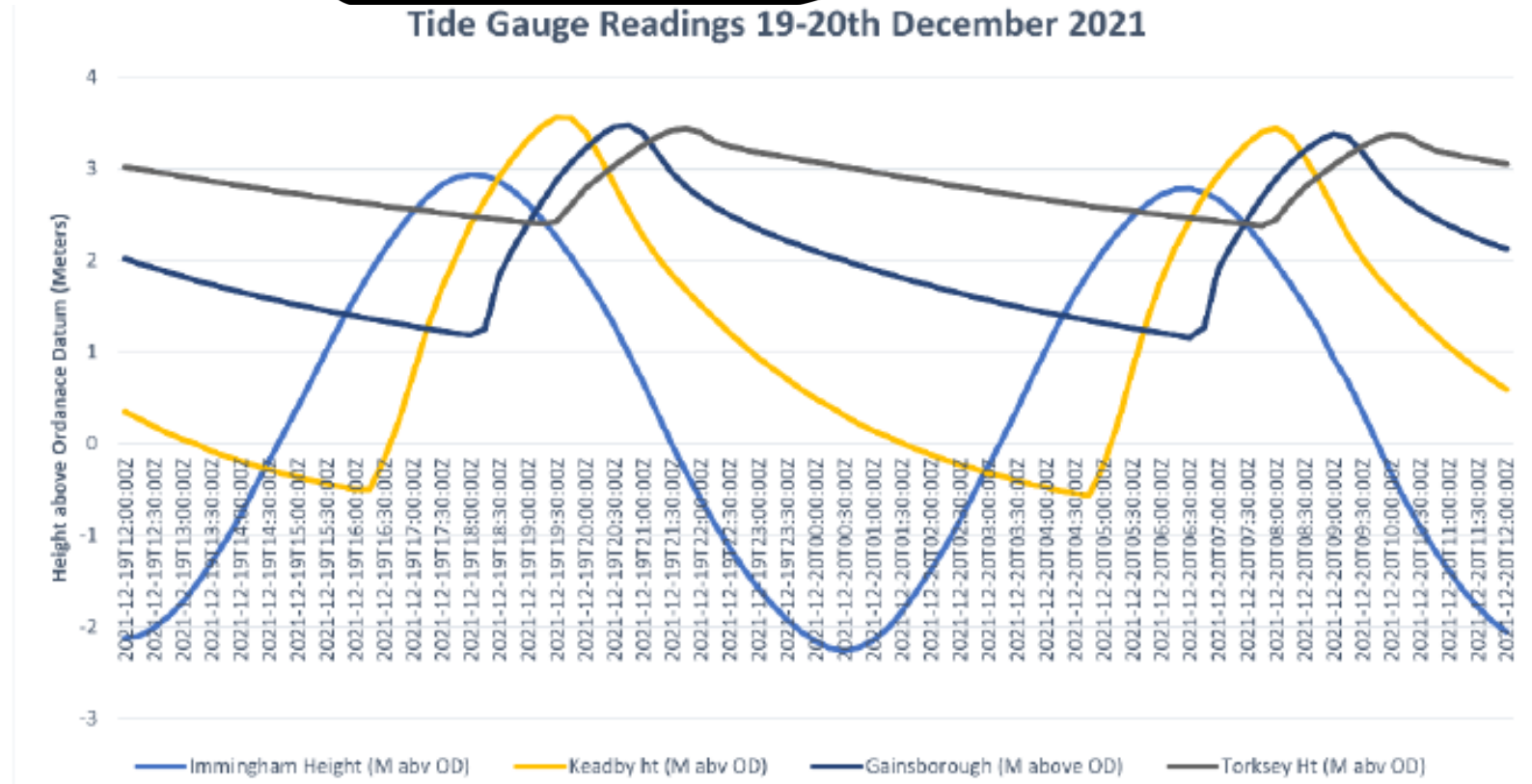
delay	first seg (mi)	sec seg (mi)		distance	Mod-H	av.mph		start (H)	end (H.h)	minutes
0.5	3.9	10		13.9	3.03	3.48		4.5	7.5	31.7

Must pass GainsB by 07:30 !



Info from “*Narrowboat on The Trent*” by John Lower
and “*The River Trent - And Its Tides*” by Nick Roberts

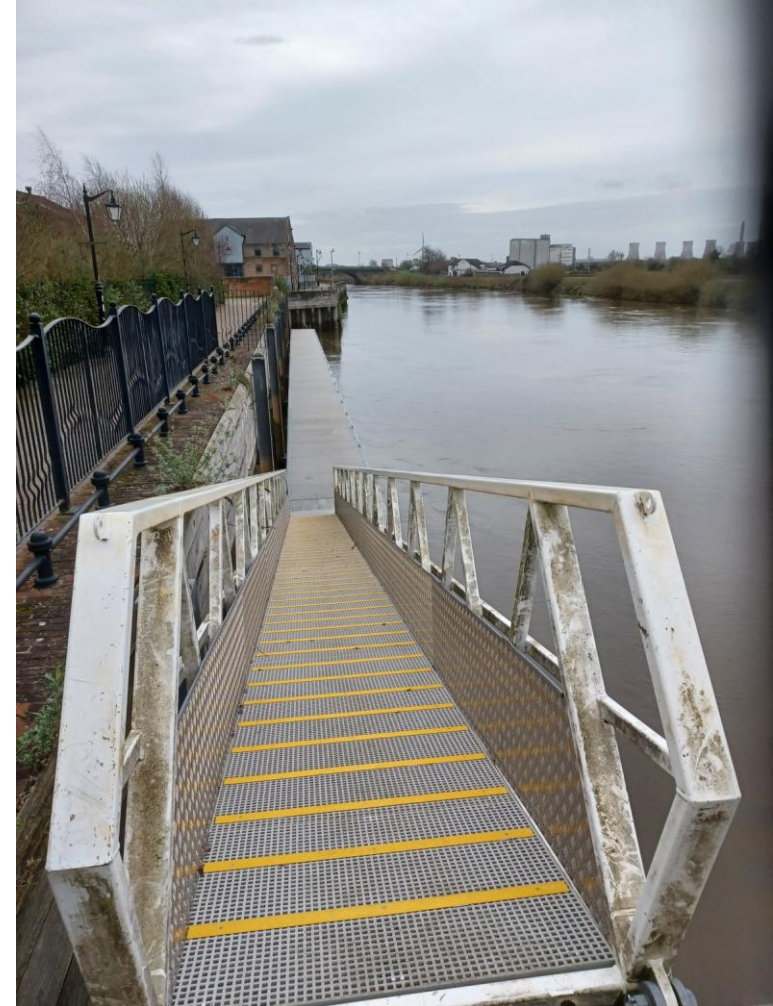
Tide shapes (measured)



- Tides have Flood and Ebb over a small period of the cycle
- There is a long slack period between Ebb and Low Water
- Low power boats have issues moving long distances in the Slack

Soft Launch Phase - Gainsborough pontoon

- Slack Low Water (SLW) 07:20 BST
- Cast Off 10 minutes before LW prediction
- Turn upstream against 'Fresh' Flow
- 800 RPM, 40 Amps, 2 kW
- (Would be 2.2 MPH on the Cut)
- 3.3 MPH SOG on the slack Trent
- Wide and deep river
- Picture credit: Author



Boost Phase – After the the Gainsborough Bridge

- Flood Arrives 07:30 – Boost
- 4.3 MPH SOG (GPS)
- Bridge stops an Aegir ! (tidal bore)
- Run ~2.5 hours duration
- About 10 miles to Torksey
- Flood still running ...
- ... But slackening at Torksey
- Picture credit: Author



Terminal Phase

Arrival at Torksey / Viaduct

- ◆ Flood slackened
- ◆ 4.1 MPH SOG @ Viaduct
- ◆ Reduce throttle near inlet
- ◆ Constant bearing path ...
- ◆ then a 'Slide Turn' in ...
- ◆ Slack water – Moor up

- Picture credit: Author



On the Witham

- Weed season (Pennywort)
- 3 weeks per year
- Agricultural run-off and sewage
- Locals dismiss it (Act of God ?)
- Open-cycle boats cannot move!
- We are closed-cycle cooled
- With a heat-exchanger
- picture credits: Author (2025)



On the Sleaford Navigation

- Slowed to a halt nowhere
- Failed to reach Silver Propeller !
- Painful reverse out
- Low battery SoC
- Dare not run generator
- picture credits: Author (2025)





References

- **Try The Trent**
<https://www.facebook.com/groups/666937220961360/>
- **Try The Trent** <https://trythetrent.wordpress.com/>
- **Narrowboat on the Trent** <https://chesterfield-canal-trust.org.uk/shop/narrowboat-on-the-trent/>

What, no ice for the G and T Darling!

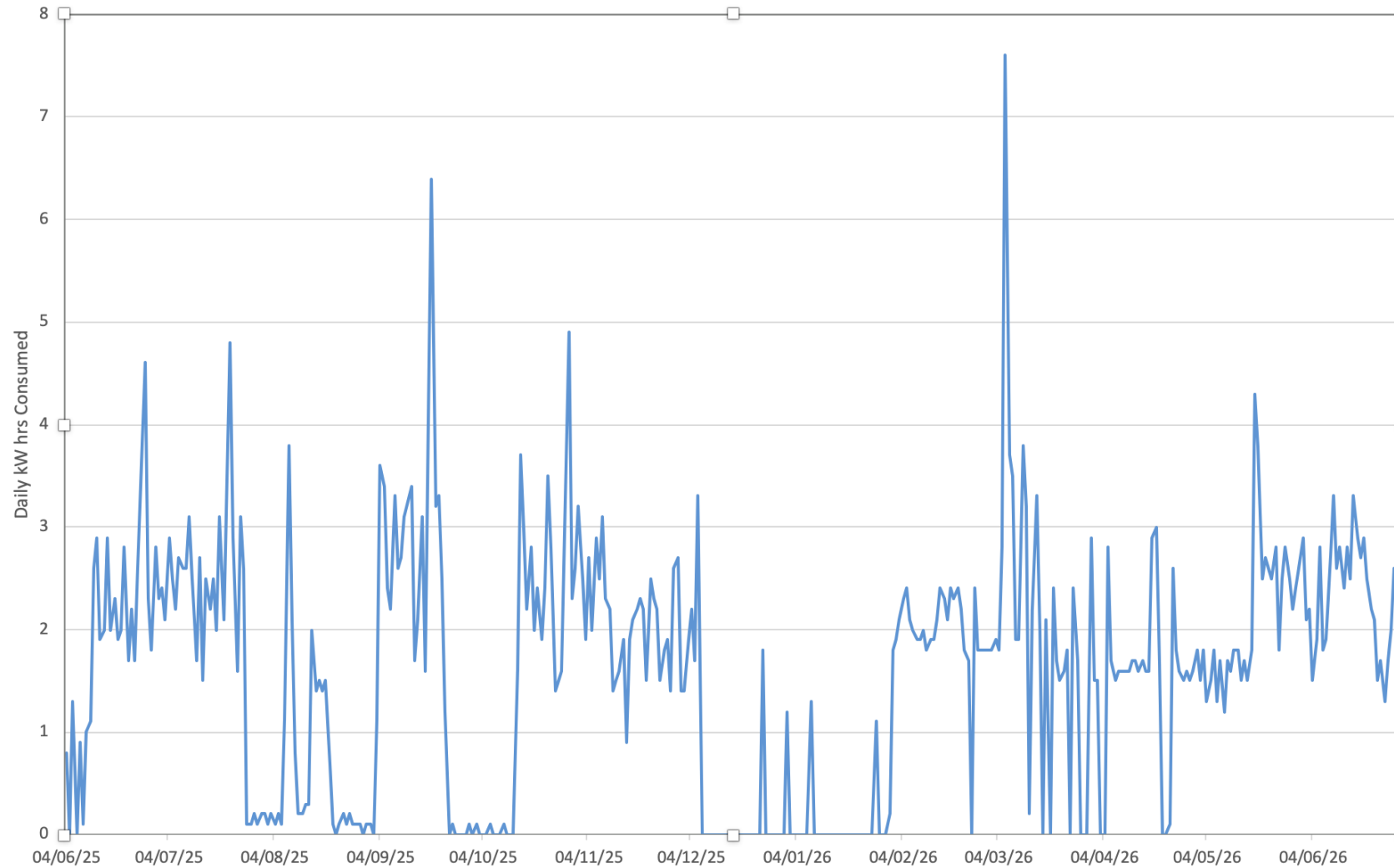
A Year on Narrow Boat Jenny Wren



Photo Caroline Badger



Jenny Wren - Daily kWh use for Hot Water - from June 25 to June 26



Hot Water System

The amount of energy used for heating hot water is dependent on a number of factors such as:

- Existing temperature of the water when turning the element on
- Amount of hot water used (for showering, washing up, etc)
- Thermal efficiency of the calorifier tank insulation
- Ambient temperature

Hot Water System

Timed use for past year.

6.30am - 8.30pm

5.30pm – 7.00pm

Average usage 2.4kwh per day = 6% battery

New Times use

7.00am - 8.00pm

6.00pm – 6.30pm

Average usage 1.2kwh per day = 3% battery



Impact on State of Charge (estimates only)

This is based on Jenny Wren's 48 kwh battery bank.

- Percentages are based on 90 % of power available (as batteries must not go below 10%)
- Figures are not 100% accurate as there are losses in converting DC power from the batteries to AC power via the inverter, so it is not strictly the same as looking at consumption in a house - which has a mains AC power supply.
- There are lots of variables when working out calculations:
- For a kettle, it depends how much water you are boiling and the efficiency of the kettle
- For a fridge or freezer, it will depend on the ambient temperature, how fully or empty it is, how often the door is opened, what temperature the things are that you put in there!
- For an oven it will depend on the temperature you select, how long it is on for, how often you open the door, the ambient temperature.
- For a washing machine, it depends on the temperature, size of load, length of wash, etc!

Thank you Caroline Badger for the information

Quettle 4 in 1 tap – 2 litre model

1000w

20 minutes of use per day
(depending on how much tea
you drink)

Uses about 1% of power



Hair dryer

5 minutes of drying using 1700w
uses 0.18kw hrs – so negligible
impact on state of charge



Air Fryer

2470W for 20 mins
0.82kw or
about 2% of battery



Dri Buddi – compact clothes dryer

850w = 0.82kw about 2%
for every hour run.



Ice Maker

Usage between 15 mins and 12 hours depending on the heat outside and need for cool drinks

170w 15 mins - 0.04kwh - negligible impact on the charge state.

12hours uses 5% of battery



Iron

3000w = 7% of
battery for hour!







Q&A Session with Paul & Anthony

