RAILWAY AND CANAL HISTORICAL SOCIETY
EARLY RAILWAY GROUP
Occasional Paper 238

TWO EARLY 18th C DESCRIPTIONS OF WAGGONWAYS

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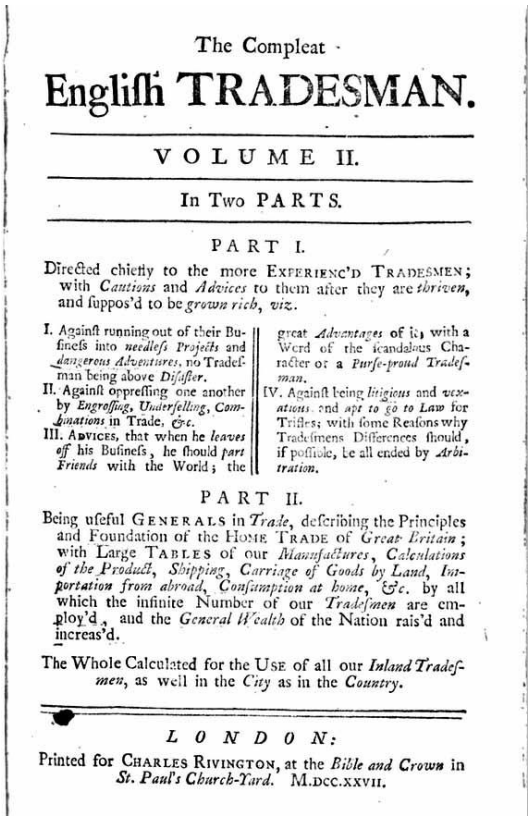
These two short accounts are interesting in that they join a select band of descriptions dating from the first half of the 18th century, and were published just one year apart. Both appear in publications that were pioneering in their respective fields, although neither was overtly concerned with industrial or engineering techniques.

1727: DANIEL DEFOE (*c*1660-1731)



The Compleat

English TRADESMAN.

VOLUME II.

In Two PARTS.

PART I.

Directed chiefly to the more EXPERIENC'D TRADESMEN; with *Cautions* and *Advices* to them after they are *thriven*, and ſuppos'd to be *grown rich*, *viz.*

I. Againſt running out of their Buſineſs into *needleſs Projects* and *dangerous Adventures*, no Tradeſman being above *Diſaſter*.
II. Againſt oppreſſing one another by *Engroſſing*, *Underſelling*, *Combinations* in Trade, *&c.*
III. ADVICES, that when he *leaves off* his Buſineſs, he ſhould *part Friends* with the World; the great *Advantages* of it; with a Word of the ſcandalous Character of a *Purſe-proud Tradeſman*.
IV. Againſt being *litigious* and *vexatious*, and *apt to go to Law* for Trifles; with ſome Reaſons why Tradeſmens Differences ſhould, if poſſible, be all ended by *Arbitration*.

PART II.

Being uſeful GENERALS in *Trade*, deſcribing the Principles and Foundation of the HOME TRADE of *Great Britain*; with Large TABLES of our *Manufactures*, *Calculations of the Product*, *Shipping*, *Carriage of Goods by Land*, *Importation from abroad*, *Conſumption at home*, *&c.* by all which the infinite Number of our *Tradeſmen* are employ'd, and the *General Wealth* of the Nation rais'd and increas'd.

The Whole Calculated for the USE of all our *Inland Tradeſmen*, as well in the *City* as in the *Country*.

LONDON:

Printed for CHARLES RIVINGTON, at the *Bible and Crown* in *St. Paul's Church-Yard*. M.DCC.XXVII.

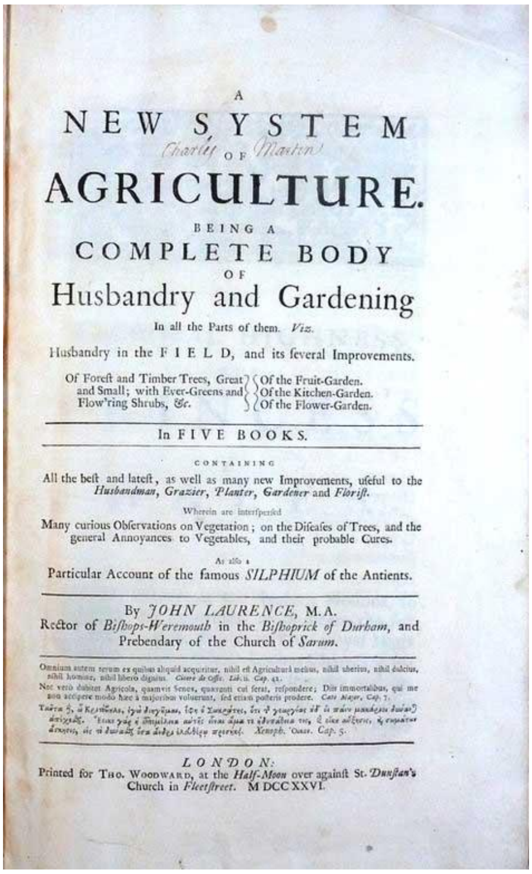
Defoe's *The Complete English Tradesman*[1] was an innovative manual on business practice, which emphasised the close control of debt, cash-flow awareness and careful bookkeeping practice.

[1] https://books.google.co.uk/books?id=Iqs_AAAAYAAJ (volume I was published in 1725, II in 1727)

Volume II, Part II, p29:
[On Newcastle coal sent by sea, having been brought up from the pit and deposited on 'the great heap]

> They are then loaded again into a great machine call'd a Waggon, which by the means of an artificial road call'd a *Waggon-way*, goes with the help of but one horse, and carries two Chaldron or more at a time; and this sometimes three or four miles to the nearest River or Water-carriage they come at, and there they are either thrown into or from a great store-house call'd a *Steth*, made so artificially, with one part close to or hanging over the Water, that the *Lighters* or *Keels* can come close to or under it, and the coals be at once shot out of the Waggon into the said Lighters, which carry them to the Ships…[2]

1726: JOHN LAURENCE (1668-1732)



A
NEW SYSTEM
OF
AGRICULTURE.
BEING A
COMPLETE BODY
OF
Husbandry and Gardening
In all the Parts of them. *Viz.*
Husbandry in the FIELD, and its several Improvements.
Of Forest and Timber Trees, Great and Small; with Ever-Greens and Flow'ring Shrubs, *&c.*
Of the Fruit-Garden.
Of the Kitchen-Garden.
Of the Flower-Garden.
In FIVE BOOKS.
CONTAINING
All the best and latest, as well as many new Improvements, useful to the *Husbandman*, *Grazier*, *Planter*, *Gardener* and *Florist.*
Wherein are interspersed
Many curious Observations on Vegetation; on the Diseases of Trees, and the general Annoyances to Vegetables, and their probable Cures.
As also a
Particular Account of the famous *SILPHIUM* of the Antients.
By *JOHN LAURENCE*, M.A.
Rector of *Bishops-Weremouth* in the *Bishoprick of Durham*, and Prebendary of the Church of *Sarum*.
Omnium autem rerum ex quibus aliquid acquiritur, nihil est Agricultura melius, nihil uberius, nihil dulcius, nihil homine, nihil libero dignius. *Cicero de Offic. Lib.* ii. *Cap.* 42.
Nec vero dubitet Agricola, quamvis Senex, quaerenti cui serat, respondere; Diis immortalibus, qui me non accipere modo haec a majoribus voluerunt, sed etiam posteris prodere. *Cato Major, Cap.* 7.
[illegible] *Xenoph.* 'Oecon. *Cap.* 5.
LONDON:
Printed for THO. WOODWARD, at the *Half-Moon* over against St. *Dunstan's* Church in *Fleetstreet*. M DCC XXVI.

John Laurence was a pioneering author on horticulture. When he wrote his *New System of Agriculture*[3] he was the Rector of Bishopwearmouth (or Bishop Wearmouth, Bishops Wearmouth), the Sunderland parish on the south side of the River Wear.

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[2] Defoe's *A Tour Through the Whole Island of Great Britain* includes an account of the waggonway at Prior Park near Bath, but only in editions published after his death, and presumably not written by Defoe himself.
[3] https://books.google.co.uk/books?id=bSFhAAAAcAAJ (the Dublin edition of 1727)

Laurence was not a north-country man, having spent two decades as vicar of a parish in Northamptonshire. Appointed to Bishopwearmouth in 1722, he notes in his Preface to the book,

> For if Trade, and a Multitude of Inhabitants; if the natural Riches of the Country, and Wealth, acquired and improved by the hasty Diligence of a wife and polite People; if the natural Goodness of the Soil, and the Situation of the greatest Part of the County; if any, or all of these, tend to make Improvements both in the Field and Garden; here we may see them all, growing and increasing every Day into such Beauties, as raise a very agreeable Surprize in Strangers, too often prejudiced against the North. These Things have opened to me a new and different Scene, and have given me Opportunities (as the Reader will observe) to take Notice of many Things worthy of Imitation, and to ingraft upon them some other Improvements, not yet put in Practice.

This passage may suggest how a book on 'the field and garden' comes to include a description of waggonways. Not being from the area, he saw the coal trade, mainstay of the region, with fresh and interested eyes, and, as will be seen in the extracts below, they had an effect on its horticulture, specifically in the use of timber. In common with many other books of the period, his text is rich with musings on religion, the national and local economy, and much more besides. Encompassed are general and local accounts of the minerals and their processing, including a summary description "of COALS and COWKE":

p132:

> …But that which calls for our greatest Regard and Notice in this Article of Coals, is the surprising Quantity of them, and the ingenious Method of conveying them to the navigable Rivers in the Bishoprick of Durham, and the Parts about Newcastle

p133:

> But besides the Ingenuity used in applying the *Powers of Nature* for the gaining these Coals, *mechanical Powers* are also used with no less Art for the conveying these Coals to the several Parts of navigable Rivers. For the *Waggons* and *Waggon-Ways* are so curiously contrived, and so rightly adjusted, that one Horse is able to draw Four Thousand Five Hundred Weight of Coal [a weight later amended] at Four Miles Distance, and to go backwards and forwards four times in a Summer's Day. The Waggon-Ways are contrived and made to be as near an horizontal Level as is practicable, and to run with two parallel Lines made of Oak Spars, kept steady by cross Pieces; and at the exact Distances of the Waggon-Wheels, which press upon them, not in an exact Plane, but a little *obliquely*, the better to keep them in their Places.[4] The Waggons are made square and tall, wider at the top than at the bottom, and are carried by four Wheels, of about two Foot diameter, made of solid Oak.
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> But because *Wood* pressed upon by *Iron*, would quickly wear out, therefore the Wheels are not *shod*, except sometimes in such Places where there is found some Decay. On which account however, the *Motion* being sometimes violent, and the *Friction* very great, there is found some Hazard of the Wheels being set on Fire. To prevent which, and the violent Motion on every little Declivity, they
>
> are forced to take out the Horse, and to let him *Follow*; and to make the Friction fall in more Places than one, as well as to hinder too violent a Motion forward, there is also a Contrivance of a strong Piece of Wood fixed on one side of the

[4] The statement that wheels were set 'a little obliquely' is somewhat curious, and difficult to reconcile with the usual regional practice of fixed wheels on revolving axles. Might it suggest an early form of coning? (My thanks to Dr MJT Lewis for these comments)

> Waggon on a Centre in the middle, called a *Convoy*: Which *Convoy* in the Hands of the Governor is pressed upon more or less, like a *Leaver*, and is so contrived as to occasion the other end to press upon the edges of the Wheel; whereby a greater or lesser Friction being made, the Motion of the Waggon is regulated as Circumstances and Necessity require.
>
> After the Coals are thus with safety *convoy'd* to the *Steaths*, or Keys by the River-side, where they are to be unloaded into the Keels, *here* also there is no less Ingenuity and Mechanism used for Dispatch and Expedition; for the Steaths being made in the Form of wooden Bridges, the Horse by an easy Ascent draws up his Load to the top, which is sometimes twenty Foot above the Surface of the Water. *There* the Horse is loosed, and the loaded Waggon by one Man is moved into its proper Place designed for unloading; the Foundation whereof being contrived to turn altogether on a Centre, the Whole is turned *half round*, and by pulling a Board out of the bottom of the Waggon, the Coals immediately tumble out into a Spout, which conveys them next way into the Keel lying in the River. And although, as I said, each Waggon contains no less than Forty Four, or Forty Five Hundred Weight, [a correction of his earlier figures] they are all emptied into the Keel in less than half a Minute. The Reason of the Waggon's being turned *half round* upon a Centre is, to put it into a Posture of going off empty on another Frame of Wood side-ways. By this Means there is a constant Succession of loaded and unloaden Waggons, from Morning to Night, coming and going without any Interruption.

p134 (a humorous aside):

> …you frequently see here the *Cart before the Horse*… when the Coals are going down-hill; they are forced to take the Horse out, and let them *follow* the Cart, which of itself, tho' loaden, goes upon the Frames fast enough (sometimes too fast) when there is a considerable Declivity.

p160:

> THE SYCAMORE-TREE
>
> ….It is a Tree mightily propagated and planted in the Bishoprick of *Durham*; where it thrives and resists the strongest Winds this Country is subjected to: And besides, not being fit for any of the uses of the *Waggon-ways* for Coals, they have escaped the common plunder and demand for Timber; which is *almost* the only thing desirable in Life this Country is destitute of for real Use and Ornament.[5]

September 2017

[5] An interesting insight into the apparent depredations being visited on Durham's woodland in the search for waggonway timber.