

ART. XII. – *Oak for the Navy: A Case Study, 1700-1703.*  
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UNTIL iron superseded wood as its principal material, shipbuilding vied with the construction industry for timber supplies from a diminishing stock of home-grown oak. Most Royal Dockyards were located near the more accessible and productive woodlands of southern England and publications have concentrated on that region.<sup>1</sup> Increasingly, the navy drew supplies from more remote areas and concern over shortages led to monitoring of stocks. From a 1663 census of trees growing on crown lands, including the Barony of Kendal, Charlotte Kipling concluded that timber trees were then scarce even around Windermere.<sup>2</sup> As there is a shortage of information from which detailed Cumbrian studies can be developed, this article will examine the sale and delivery to the navy of just one consignment of oak from Whinfell at the outset of the 18th century. Working methods and organizational problems are exposed and, by examining local sales of reject wood, tree quality can be assessed. In addition the role of individuals is revealed and related to other activities in the Vale of Eden.

Accounts kept for Thomas Carleton, Lord Thanet's steward at Appleby Castle, are preserved in the Hothfield Manuscripts at the Cumbria Record Office, Kendal.<sup>3</sup> Unfortunately they survive for only eight years scattered between 1690 and 1708, but those of 1703 include eleven pages of "An Account of the Seaventy and Seaven Trees Cutt downe in the Entry and two Blown Trees, for the use of the Navy . . .". Judging from the field names, Near Entry, Far Entry and Entry Bottom on a "Plan of Julian Bower or Whinfield Deer Park Farm" made in 1805,<sup>4</sup> the Entry occupied about 65 acres at the eastern extremity of Whinfell (Fig 1). It lay between the confluence of the Lyvennet and Eden rivers and Julian Bower where the "Keeper" lived, six miles east-south-east of Penrith.<sup>5</sup> In 1203 Whinfell formed part of King John's grant of the Barony of Westmorland to Robert de Veteripont who was not to "commit waste in the woods of Whinfell" so that timber would be preserved. It was fenced in by 1315 and descended by marriage to the Cliffords and then, on the death of Lady Anne Clifford in 1676, to the Tuftons, Earls of Thanet.<sup>6</sup>

Details in the accounts show that they were copied from vouchers which have not survived, so that items are not in time sequence and give the date of payment rather than of the actual activity. The earliest item, dated 1700, concerned 15s. 6d. expenses "for Mr Thos Netherton and his Sonn at the Castle from [Friday] 12th July to the 17th being sent by the Comm[issione]rs to view the Woods 7s. Expences with him in the Towne 2s. 6d., Two Horses Grass & Corne 4s., To Mark Gardner (Carpent:) to go with us to the Woods & [his] Horse one day 2s." The Nethertons' identity has not been established, but Mark Gardner was working almost full-time, from 15 April to 14 September 1700, at 9s. a week making "the Great Stair Case at Appleby Castle".<sup>7</sup> His experience of assessing good-quality standing timber would have been useful.

Although a contract is mentioned, it has not been found. By 30 October 1700, the

\* Note – Years are expressed in modern form.

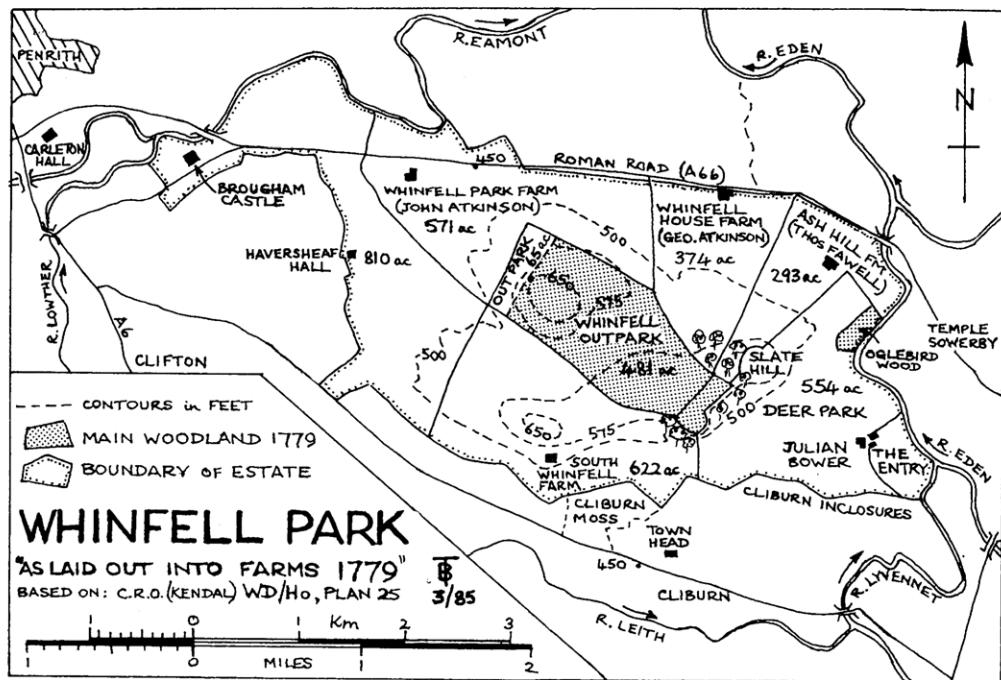


FIG. I. - Whinfell and its farms in 1779.

steward had begun preparations, for 7s. was claimed as "Expences by Mr Carleton in going to Carlisle & Rowcliffe to discourse the Merchants & Master-Builder & others about Conveying the Wood by Land & Water to Whitehaven". Details of the route, carriers, and shipping arrangements will be considered shortly. Carleton also claimed 2s. 6d. "Expences in goeing to Milne-thropp & Levens about the same" but, as Milnethorpe could accommodate "Vessels of eight to ten tons" only<sup>8</sup> and as Shap intervened, they would not have planned to ship the timber from there. Perhaps the Commissioners were buying timber from the Levens Hall and Dallam Tower estates.

Whatever plans might have been laid then, comments in undated entries for bark money show that felling was delayed until late spring 1701. For £33 15s., Thomas Carleton sold "the Barke of 54 . . . Trees first Cutt downe to Lancellott Robinson, Robt. Caile, Geo. Atkinson, Thos. Gibson, Thos. Elwood & Richd. Dent at 12s. 6d. for the Bark of each Tree". These men were tanners at Temple Sowerby.<sup>9</sup> Carleton also "Sold to them the Barke of the 23 Trees wee were forced to Cutt downe out of Sapp time to Serve the Navy (the former proving More faulty than was expected) for £4.". As the trees were transported to the coast in the late summer of 1702, this second batch of trees must have been felled during the winter of 1701-2 and yielded less than 3s. 6d. per tree, only 27·8 per cent of the earlier bark price. Coupled with the ease of fashioning timber and of peeling, these prices help to explain the frequent use of spring-felled oak for local buildings.<sup>10</sup> The Navy, however, required winter-felled wood to improve resistance to decay in timbers exposed to humid conditions on board ship, a frequent cause of conflict with suppliers. Payments in August 1702 show that Jacob Robinson

and others received 11s. "for 16 daies peeling of 23 Trees at 8d. per day". Presumably, he had 1s. as earnest money when he agreed to peel the second batch of trees. In addition he had 2s. 6d. "For 7 daies & a halfe Gathering & Stacking the barke at 4d. per day", so that the more skilled job was better paid, and peeling and stacking took one man about one day per tree.

On 11 August, several men were paid for felling and sawing at differing piecework and day rates. Robert Hullock had £2 6s. 9d. "for Cutting downe 63 Oak Trees at 9d. Each" and £5 3s. 5d. more "for Sawing 3267 foot at . . . 3s. 2d. per Hundred". This compared with £6 8s. 9d. paid "To Thos Clarke & Christopher Hutchinson for Sawing 4293 foot at 3s. per Hundred". Clark had 8s. more "for 8 daies Sawing after the feet above Ended", which suggests that two men could saw about 66 square feet of planks per day, the plank thickness having no influence on the labour input if the edges were untrimmed. On the same day, £7 1s. 2d. was paid "To Thos Ling & Clement Moorsby<sup>11</sup> for 122 daies Sawing & felling of Trees at 1s. 2d. per day", an underpayment of 1s. 2d., and "John Dalton Elder & John Dalton Younger [were paid] for Sawing 122 daies at 1s.". It is worth noting that, in 1700, John Dalton supplied floor boards and Robert Hullock provided "371 foot of Pannel boards" when the barn at Sockbridge Hall was built.<sup>12</sup>

To enable the four teams of sawyers to specialize on that activity, the accounts note that William Mattinson was paid 21s. "for 32 daies Making Saw Pitts at 8d. per day". He and Robert Stockdale were then paid 7s. 6d. "for filling up 15 pitts Made for Working up the said Wood at 6d. each pitt". Thus a pit took about 2 days to prepare and cost nearly 1s. 5d. In addition Robert Hullock had 2s. "for 2 daies Makeing Rollers & Side-trees" and Charles Gibson had 3s. "for 2 Cramps of Iron at 4d. per pound" to complete the saw pits. For processing the large timber, £13 6s. was paid on 6 August 1702 "to John Nicholson for the Squareing [of] 76 Load & Some Odd feet of Wood at 3s. 6d. per Load", so he was not paid for the odd feet.

On 2 September 1702, 7s. was "paid to Peter Robinson for two daies apprizeing the said Trees and Refuge Wood". He was a local millwright, mentioned many times in these and the Lowther estate accounts. His experience of selecting suitable timber for mills generated similar work, for example on 27 May 1699, he was paid 9s. 3d. "for marking the 37 Oak Trees bought at Newbegin" near Penrith for use at Sockbridge barn.<sup>13</sup>

The accounts state that the Navy was to pay £222 os. 4d. "For Thick Stuffe [ie main beams] According to the [contract] Article, Containing 20 Loads & 19 feet [plus] 4 Inch plank Containing 19 Loads & 49 feet four Inches, in all, 40 Load 18 feet & four Inch at Five pounds Tenn per Load". Hence, there were 12 inches (each 1 foot square) in a foot and 50 (cubic) feet in a load. In addition "3 Inch Plank 20 Loads & 9 Inches [at] £5 per Load" brought in £100 1s. 6d., "But the Commissioners of the Navy Alledging want of Measure" reduced the total payment by 8s. 1od.!

The way in which the timber was transported to the coast is less well recorded than one would wish. On 16 September 1702, £62 10s. was "paid to Thos Dobson, Richd Furness, Thos Harrison & Robert Dent, Tenants of Kings Meaburne,<sup>14</sup> for the Carriage of 60 Loads of Wood Containing 75 Tunn from the Entry in Whinfell to Heskett being 13 Miles at 5d. per foot or 16s. 8d. per Tunn". Hence there were 40 cubic feet per ton and each load weighed 1½ tons. This payment was delayed some weeks for, on 26 August,

£56 5s. had already been "paid to Wm. Watt & John Barnefather for Carriage of it from Heskett to Rowcliffe being 12 Miles at 4½d. per foot or 15s. per Tunn". Hired hauliers might have been less tolerant of delayed payment than estate tenants. There is no evidence of transport co-ordination but, in summer conditions, a pole-wagon might have reached Hesket in a day. A fresh team could take it on to Rockcliffe next day while the

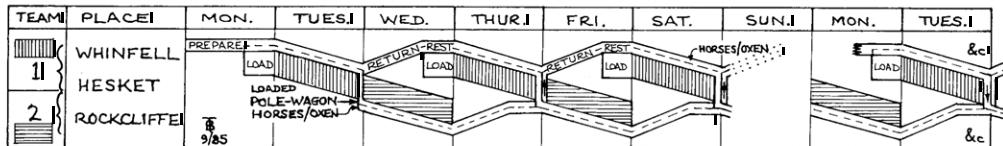


FIG. 2. – Diagram of how two carriers, hauling equal distances with one vehicle each, might have organized the transport of timber from Whinfell to Rockcliffe if the loaded speed was about 1½ miles per hour and the timber carriage was not unloaded at the mid-point.

first team returned, rested and reloaded a second wagon (Fig. 2). Next day that load could meet the team returning with the empty wagon from Rockcliffe where "vessels of 60 tons burthen could lie to receive and discharge their cargoes". The river was "perplexed by shoals" further up stream<sup>15</sup> and 75 tons of timber would need two ships.

In October 1702, "Expences by Mr Atkinson in going 2 times to Rowcliffe & Whitehaven to Contract for Water Carriage" amounted to 14s. He gave a shilling as "Earnest to Mr Crofts when the Contract was Made for the Water Carriage" and another shilling for a "Guide over the Water", presumably as he crossed the river Eden on the direct route between the two settlements. Things did not run smoothly, however, because 3s. was claimed as "Expences by Mr Carleton & Mr Atkinson<sup>16</sup> with Mr Lawrence (Master of One of the Shipp) at Thos Milners [Inn?] when he Came to Appleby & Threatened to Leave it for want of Assistance". Perhaps the agents had misjudged the difficulty of hiring enough labour so far from Appleby, for they paid £2 17s., on 10 December 1702, "to Clement Moresby & Several others, to Assist to put the said Wood into the Shipp at Rowcliffe 46 daies, and for Rowlers &c". Then, on 15 December, £28 2s. 6d. was paid for "Fraught from Rowcliffe to Whitehaven 75 Tunn" at 7s. 6d. a ton. Probably both payments were delayed, as was £2 10s. given, on 30 January, "to Geo. Robinson, Son [-in-law?] of Wm Brown (Smith at Rowcliffe) for his paines & Care of the Wood to prevent Losse by Tides, Theft; and Assisting to Load it".

To ensure better organization at the next stage in the operation, Mr Atkinson was paid £2 for "going to Whitehaven & Staying there 18 daies to See [the timber] Landed". On 15 December, 16s. was given "To 4 Labourers each 6 daies Work to Assist to Unload Mr Lawrence's Shipp" and 9s. 9d. was paid for his "Custome House fees at Carlisle and Whitehaven". Similarly, 16s. was paid "to 4 Labourers each 4 daies to Unload Mr Croft's Shipp & Load the Carts" plus 11s. 11d. for his custom house fees. "For Extraordinary help in Getting the Large Timber Landed, and for Ale to Seamen and Labourers" a further 6s. 6d. was paid on 18th January 1703 as well as £1 8s. 6d. "To the Carter for Loading it". Once the timber was landed, 5s. was "paid to Thos Scaife for Looking to it till the Queen's Shipp Come for it".

Then, for re-loading, 2s. 6d. was given on 15 December, "in Earnest to the 2 Carters on [agreeing] the Contract to Carry the Timber back to the Queen's Shipp, 75 Tunn at 1s. per Tunn". However, John Gainsforth and his partners were not paid for this work

until 14 May 1703, when £1 16s. was also "paid to Thos Scaife & his 2 partners for Assisting the Carriage Men to Load the Wood & Shipp it at 1s. 6d. per day . . . each 8 daies". In addition 10s. was "Given by Mr Carleton to the Seamen to Encourage them to Assist to Load the Timber" and 3s. more was "Given them in Ale by Mr Gale after Mr Carleton Came away". On 22 May £1 2s. 6d. was booked as "Expences by Mr Carleton in going to Whitehaven to adjust the Measurement of the Wood And Contract for the Shipping [of] it &c And Stay 3 daies there, being 6 daies out" from home. A further £1 2s. 6d. was "paid to Clement Moresby (Carpenter) in Assisting to Measure the Wood and Shipp it, being 16 daies . . . at 1s. 6d. per day". This discrepancy of a day's wages was more than compensated by 2s. 6d. paid to him "in part of his Wages by Mr Gale".

Despite all this effort, the 75 ton consignment was sufficient only for about one per cent of a 120 gun, three-deck, ship-of-the-line or two-and-a-half per cent of a frigate,<sup>17</sup> and yet this quantity exceeded the capacity of local coastwise ships. Trans-shipment at Whitehaven was clearly a tedious process and the organization of transport and labour caused considerable trouble. With 8s. 6d. "Charges of Post Letters from all places about the Navy Wood and Messengers" and "Proclamations 1s. 4d." for advertising work and sales of surplus wood, expenses amounted to more than £214 (Table 1). Receipts for bark and navy wood came to nearly £360, but the rejection of many of the trees first cut down, produced a useful source of extra income.

In May 1702, expenses "for Mr Hall, Mr Carleton, Mr Atkinson, Peter Robinson & others, when wee vallued [the navy wood] the 1st day & the Refuge Wood & Sold it the 2nd day" came to 8s.<sup>18</sup> The sales of "Refuge Wood" appear on a page dated 14 October 1702. For £40 they "Sold Eight Large trees Uncutt that remained after the Navy was Served . . . To Richd. Pinder & Robt. Grear of Wharton Hall" 20 miles away near Kirkby Stephen. "Phillipp Lancaster<sup>19</sup> & 3 others [bought] the 79 large Oak Topps for £34.", "Thos Fawell & Robt Caile<sup>20</sup> [bought] the 12 Butts remaining for £4 10s." and "John Martindall of Warcop & 2 others [bought] the 108 Slabbs that remained" for £20.

Another sale of reject wood involved the owners of Carleton Hall near Penrith. For £43 12s. 8d. "62 peices of three Inch plank & 27 peices of four Inch plank Containing both 805 foot & a halfe at about 13d. per foot" were sold to Robert Carleton. As pieces averaged 9·05 cubic feet, they would have been about 18 or 24 feet long if about 18 inches wide. This last batch of timber totalled over 16 loads, about 40 per cent of the quantity of planking bought by the navy. It was sold for £2 14s. 2d. a load, about half the price the navy paid, but the estate had no transport charge to set against it. Its intended use is probably indicated in the Yanwath and Eamont Bridge Manor Court verdicts for 20 October 1703:<sup>21</sup> "Wee doe finde Mr Robt Carleton's House out of Repair & therefore do order that he repair it in 2 years time upon pain of 40s.". He had already died however. In the Appleby Estate accounts for 1704, one outstanding debt involved "Robert Lowther Esq and Joan his Wife, Widdow & Administratrix of Mr Robert Carleton late of Carleton Hall<sup>22</sup> 805 foot & a halfe of the plank that [was] Spared of the Navy Wood £43 12s. 8d.". Another debt was £7 15s. owed by "Lancelot Robinson & 5 others, part of the £37 15s. Charged for the Barke there". A later item in the estate accounts, dated 28 October 1707, noted: "Received of John Thornbarrow for one piece of the Seven pieces of the Wood remaining of the Navy Wood in the Entry

TABLE I - *Summary Account*

<b>Income</b>		£ s. d.	£ s. d.
<i>Navy</i>	Thick stuff	112 1 9½	
	4 inch plank	109 18 6½	
	3 inch plank	100 1 6	
	deduction	<u>8 10</u>	
			321 13 0
<i>Local</i>	Bark*	37 15 0	
	Tops	34 0 0	
	Planks to Robt Carleton†	43 12 8	
	Other wood‡	<u>65 17 0</u>	
			<u>181 4 8</u>
			<u>502 17 8</u>
<b>Expenditure</b>			
	Felling, peeling, sawing etc.	43 3 1	
	Carriage to Rockcliffe	118 17 0	
	Loading etc. at Rockcliffe	5 7 0	
	Carriage Rockcliffe to Whitehaven	28 4 6	
	Trans-shipment at Whitehaven	11 13 6	
	Customs, travel, expenses, postage	<u>7 11 0</u>	
	Excess of Income over Expenditure		214 16 1
	Nett income per tree:	<u>3 12 11</u>	288 1 7

Notes: \* £7 15s. still unpaid in 1704.

† Still unpaid in 1704.

‡ Includes 27s. for Thornbarrow's piece of wood but not the other six pieces mentioned in 1707.

containing 30 Foot in length, Eight Inches Broad and 8 Inches thick sold for £1 7s.", or 2s. per cubic foot. What happened to the other six pieces has not been discovered.

It is possible to assess the size, age and quality of the trees and compare them with other sales made from Whinfell and Flakebridge. Of the 79 trees felled, eight were sold in the round to Wharton Hall and two more could have supplied the seven pieces of wood mentioned in 1707. Thus about 69 trees yielded over 76 loads of finished timber (an average of 55 cubic feet per tree) in addition to the tops, butts and slabs. As one rejected beam was 30 feet long by 8 inches square (13·33 cub. ft.) and the average tree produced four times this volume, it is certain that these were prime specimens, probably already growing before the reign of Elizabeth I. They were not quite the best trees from the estate, however. Had the first batch of 54 satisfied the navy's needs they would have yielded nearly £6 each before expenses, compared with over £8 for the best trees sold in "the Great Bargain" at Whinfell in September 1695 (Table 2). After adding 10 per cent for the value of bark and a proportion for tops, butts and slabs and after deducting transportation and a proportion for processing, the profit would have been about £200 or £3·7 per tree. This was similar to the overall figure in Table 1, but was more than twice the average value of local oak sales listed in Table 2. Although local sales would have been less troublesome and without overheads, the price per oak tree varied by a factor of more than twenty and it can be assumed that most parcels, particularly from

TABLE 2 – *Sales of oak and birch wood from the Appleby Castle estate 1686-1707. This list is incomplete because accounts survive for only eight years commencing in 1690. The earlier transactions were mentioned when instalments were paid.*

Sale Date	Buyers of OAK	Trees	Price £ s. d,	£ per tree	Source
Jan 1686	James Swingler, Thos Langstaffe	?	340 0 0*	?	Whinfield
Apr 1688	Edw. Wilson, Henry Rayne, Geo. Gosling	117	74 0 0	0·632	Flakebridge
Apr 1689	do do do	260	143 15 0	0·553	Flakebridge
Apr 1689	James Swingler, Matthew Walton &c	180	139 0 0	0·772	Whinfield
Apr 1690	John Holme & others	130	149 0 0	1·146	Whinfield
26 Sep 1695	John Airey & partners ("Great Bargain")	150	1250 0 0	8·333	Whinfell
20 Apr 1700	Edw. Addison, Thos Robinson &c	517	328 0 0	0·634	Greenbank
23 Apr 1703	Richard & John Dalton, Thos Seetree, Philip Lancaster	100	170 0 0	1·700	Slate quarry hill on Browneward, Whinfield
12 Apr 1704	Thos Seetree, Philip Lancaster, Robert Wilson & Henry Hayton	102	600 0 0	5·882	Whinfell
27 Apr 1704	Edward Wilson, George Gosling	400	140 0 0	0·350	Flakebridge
		Total	1956	2994 15 0 omitting*	1·531
Buyers of BIRCH					
Feb 1687	Wm Horne, John Webster & others	339	54 9 6	0·160	Whinfield
Nov 1689	Thomas Elliott	580	18 10 0	0·032	Flakebridge
1694	Thomas Elliott (Leadworks)	620	18 0 0	0·029	Flakebridge
1694	? ?	670	23 0 0	0·034	Flakebridge
1700	Luke Simpson of Penrith & others	1031	40 16 6	0·040	?
16 Apr 1707	? ?	1213	54 1 0	0·045	Woodside
		Total	4453	208 17 0	0·047

Flakebridge, were of relatively poor quality and size. Similarly, birches from Flakebridge earned only a fifth of the Whinfell price but, if they were all bought by Thomas Elliott "for the use of the Leadworks" near Dufton, they were probably small and used for fuel. The accounts record no other species in quantity.

The payment of Peter Robinson to select trees and of William Mattinson to make 15 saw pits, each used to process fewer than five trees, suggests that good trees grew only sporadically in the 65 acre Entry and that the pits were located to reduce carriage of unworked timber and allow waste to rot *in situ*. Certainly, land transport was very costly. Of the income derived from the navy and from a proportion of the bark, slabs and tops,<sup>23</sup> only 12 per cent was spent on processing the timber compared to 45 per cent on getting it from Whinfell to Whitehaven. Haulage to Rockcliffe alone accounted for 32 per cent and Figure 3 compares the land and water-borne transport rates. From some locations and despite trans-shipment costs, long lakes like Ullswater, Coniston Water or Windermere could allow considerable savings but not in this case.<sup>24</sup> The activities of Mr Atkinson, George Robinson, Thomas Scaife and, especially, Clement Moresby suggest that transport and loading onto ships was arranged on an *ad hoc* basis.

Similarly, woodland management was low-key. Harvesting was undertaken by house carpenters and millwrights who also joined the teams (see note 18) which sought out,

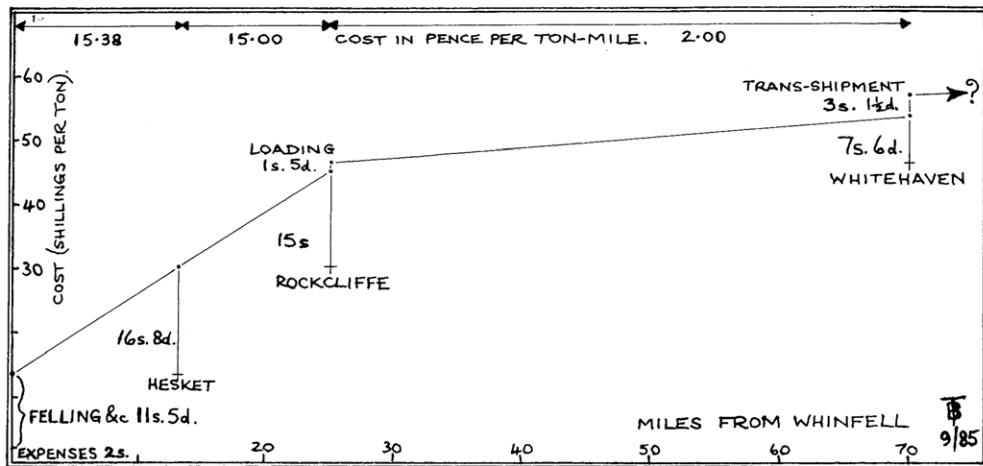


FIG. 3. – Comparative costs of transporting ship timber from Whinfell to Whitehaven in 1702. Note: As the Navy required extra timber to be felled, the preparation cost includes that of the rejected produce.

valued and marked suitable trees. The emphasis was on exploitation. Regeneration was left to Nature or to casual labourers who placed temporary fencing round felled stumps to deter grazing animals from eating coppice shoots. At Hartsop, for example, after trees were felled for use at Sockbridge Barn, a Richard Dockeray was paid 10s. "for hedging about the Roots of 30 Oakes where the Timber Trees were Cutt down . . . at 4d. a Root" on 27 June 1699. To judge from similar work done by others at Westcow and Moorside near Penrith, he would have used garsil.<sup>25</sup>

It is rewarding to identify so many workmen with other local activities, for their individuality begins to emerge despite their humble station. In addition, the influence of Whinfell on woodland-based industries, like tanning at Temple Sowerby, is made clearer. Despite incomplete information, the manner and difficulties of producing and delivering ship timber from a location only 25 miles from the coast is described in considerable detail and explains the Navy's preference for exploiting woodlands near sheltered southern estuaries. Much more research will be needed, however, if the history of Cumbrian forestry and timber production is to be given the attention it deserves.

### Acknowledgement

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### Postscript

This article clarifies and expands parts of Sir John Clerk's description of Whinfell which he visited in August 1731. He noted that "All the higher grounds of this forest are fill'd with birtch trees of a vast hight", especially on the dry and rocky parts and that there was "prodigious rich and deep soil. . . especially where the large oaks grow".

The latter were “the largest oakes I ever saw. . .for there are hundreds. . .above 12 ft about and 60 or 70 ft high as streight as an arrow”. Near the gamekeeper’s lodge he observed

. . .seven or eight acres covered with very fine oaks, large and streight. Their number is about 4,000. . .valeued at £11,000. . .which is one with another between £2 and £3, but I saw several valeued at £20. . .numbered in order to be sold. . .a square piece of bark cut off each tree and a number cut into the wood so that there can be no mistake in the computation. These oaks are intended for the fleet and I saw some of them cut into large planks in order to be caried to Whitehaven by land or to Carlyle river.<sup>26</sup>

Although the value of the oaks was less than the £3.48 average for the Whinfell oaks listed in Table 2, Clerk’s 4,000 fine trees must surely have been scattered over the *whole* of Whinfell’s lower land. A crop of 500 oaks per acre would require tree crowns to occupy less than ten square yards each with a crown radius of only  $1\frac{3}{4}$  yards, which is ridiculous. In modern forestry, oaks 100 feet tall overall would need a stocking density of about thirty per acre for the final crop, though shade-bearing species like beech could thrive at twice that density. Eight acres might have carried about 400 mature oaks, but they would not have been worth £11,000 and more overcrowded trees would be drawn upwards at the expense of girth (and hence volume) increment. Though the resultant timber would have more annual growth rings per inch and be stronger (stiffer rather than more flexible), large, straight, freely-grown specimens would occur only sporadically as suggested by the 1700-3 evidence.

## Notes and References

<sup>1</sup> For example, A. J. Holland, *Ships of British Oak*, (1971); Philip Banbury, *Shipbuilders of the Thames and Medway*, (1971).

<sup>2</sup> C. Kipling, “Some Documentary Evidence on Woodlands . . .”, CW2, lxxiv, 65-88.

<sup>3</sup> C.R.O., Kendal, WD/Ho, box 23. Thomas, 6th Earl of Thanet (1644-1729), inherited from his brother in 1684. Thomas Carleton (1660-1731) was the son of Thomas Carleton (d. 1674). He was steward at the Castle from at least 1690. In 1686 he married Dorothy Nelson of Penrith and became Town Clerk of Appleby. He was Mayor of Appleby in 1685, 1696, 1709 and 1710. R. S. Boumphrey, C. R. Hudleston and J. Hughes, *An Armorial for Westmorland and Lonsdale*, (1975), 301-2 and 66.

<sup>4</sup> C.R.O., Kendal, Estate Plans Catalogue No. 23. Number 25 is a “Plan of Whinfield Park as laid out into farms 1779” which forms the basis for Figure 1. The Estate Accounts for 1780 (WD/Ho, box 23) include £35 16s. 2d. paid to “Mr Cowper for surveying Whinfield and Brougham park and farms and for plans” on 29 December 1779.

<sup>5</sup> On 6 April 1696, “Ralphe Hall (Keeper of Whinfell)” was buried at Temple Sowerby and, on 26 December 1705, “Ann Hall Widdow (ye relict of Ralph Hall late of Julian Bower)” was buried at Kirkby Thore. Hall’s salary was £12 a year and he rented Whinfield for £80 a year. His executor, William Burrow (Burrough) succeeded him but left at Lady Day 1698, the buildings and fences at Julian Bower having fallen into decay. After five lawsuits, a settlement was arranged (1700 a/c, p. 4) so that the 1703 accounts include an instalment of £12 10s. paid by “Mr Burroughs (Salt Officer) at Sheilds for Repaires and Misdemeanours att Whinfell”. He was followed by William Nicholson who had mortgaged his tenement at Moorhouses to the Earl of Thanet for £80 (1703, pp. 3 and 30) and who withheld £5 rent for disturbance during the timber operations. Later Keepers included Jonathan Nicholson (d. 1744) and Thomas Todhunter (d. 1763) followed by John Clark.

<sup>6</sup> Nicolson and Burn, i, 398 and 265-306.

<sup>7</sup> C.R.O., Kendal, WD/Ho, box 23. For an outline of his life and other carpentry work, including the Red House in 1717, see B. Tyson, “Two Appleby Houses . . .”, CW2, lxxxv, 193-218

<sup>8</sup> Revd Thomas Machell (1692) in J. M. Ewbank, *Antiquary on Horseback*, (1963), 54.

<sup>9</sup> The parish registers record both Atkinson and Dent as tanners there between 1701 and 1716. Robert Caile was buried there in 1723. In 1699 Thomas Gibson bought the bark of 30 trees felled at Hartsop for the great barn at Sockbridge Hall. B. Tyson, "Building Work at Sockbridge Hall . . .", CW2, lxxxiii, 107-24.

<sup>10</sup> See B. Tyson, "Low Park Barn, Rydal . . .", CW2, lxxix, 85-97 and "Rydal Hall Farmyard . . .", CW2, lxxx, 113-29 for elaboration.

<sup>11</sup> Clement Moresby was tenant of the "Coney Warren at Langton field" near Appleby, paying a rent of 35s. a year, but worked as a carpenter. In 1689 he worked with Peter Robinson repairing the Bongate mill dam at Appleby and, in 1692, "Set a new roof on the stable which was burned by accident in Flakebrigg". As "Clement Moresby & two sons" made a gate for Southfield Farm, a mile south of Appleby, in August 1693, he probably married Margaret Marshall at St Michael's, Bongate on 28 February 1659/60, and so would have been aged over 60 in 1702.

<sup>12</sup> Several generations of "John Dalton, carpenter" are recorded in the Cliburn parish registers from the mid-17th to the 19th century. They lived at Town Head immediately south of Whinfell (Fig. 1). See also B. Tyson, CW2, lxxxiii (see n. 9 above).

<sup>13</sup> Likewise, on 9 July 1703, he had 7s. more "for 2 daies Apprizing Oak Wood in Whinfell & Flaikbrigg", 1½ miles north-east of Appleby, apparently for a different purpose. See also CW2, lxxxiii (as in n. 9 above).

<sup>14</sup> The Morland parish registers indicate that Richard Furness was tenant of Great Strickland Hall and that Robert Dent occupied Kings Meaburn Mill.

<sup>15</sup> W. Parson and W. White, *Directory of Cumberland & Westmorland*, 1829, 361; J. Bailey and G. Culley, *View of the Agriculture of . . . Cumberland*, (1805), 203.

<sup>16</sup> Mr Atkinson was undoubtedly "Mr Richd Atkinson (Steward of ye Lead Works) & Wood Ward" paid £20 a year salary, compared to £30 a year paid to Thomas Carleton. From 1704 John Bland took over the job at £10 a year as "Bailiff . . .".

<sup>17</sup> N. D. G. James, *A History of English Forestry*, (1981), 147.

<sup>18</sup> As Lord Thanet was the Hereditary Sheriff of Westmorland, Mr Hall was probably "Mr John Hall (Undersheriffe)" mentioned in the accounts several times. He held that office for 22 years and died in 1719 at Appleby (*Armorial for Westmorland*, 145). In March 1707, similar valuation teams comprised Hall, Carleton, John Bland (n. 16) and Anthony Robinson (a millwright) accompanied in turn by "John Stephenson, & Mr Carleton son & Clerk & the Hinde in Viewing, Valluing & numbering 300 Oake Trees in Flaikbrigg after[wards] sold to George Gosling & John Robinson" and then by "Wm. Nicholson [n. 5] & others viewing & valluing 100 Oakes in Whinfell afterwards sold to John Airey & partners". Both events cost 7s. 6d. expenses.

<sup>19</sup> On 5 April 1697, Philip Lancaster of Barton married Dorothy Hall of Brougham Castle where William Hall was "Housekeeper" at £5 a year and probably a relative of the Keeper of Whinfell (n. 5).

<sup>20</sup> Probably of Temple Sowerby (n. 9), where the Fawells were also tanners.

<sup>21</sup> C.R.O., Carlisle, D/Lons/L, box "Manor of Yanwath & Eamont Bridge".

<sup>22</sup> Robert Carleton's will was proved at Carlisle. He was buried at St Andrew's, Penrith on 9 September 1703. His property was heavily mortgaged but he left his wife the 400 acre sugar plantation at Christchurch, Barbados (including 412 negroes) which she had brought him at marriage. This plantation therefore passed to her next husband, Robert Lowther (1681-1745) of Maulds Meaburn, and she died in 1722. This helped Lowther become Governor of Barbados in 1711. Later he married Katherine Pennington and their second son, James Lowther (1736-1802), inherited the Lowther estates in 1751 and became 1st Earl of Lonsdale in 1784. C. R. Hudleston and R. S. Boumphrey, *Cumberland Families & Heraldry*, (1978), 52 and 212; J. V. Beckett, *Landownership in Cumbria 1680-1750*, Lancaster University, PhD. thesis, (1975), chap. "Lowther of Maulds Meaburn".

<sup>23</sup> As the navy preferred winter-felled trees £9 9s. has been allowed for the bark of 54 trees at 3s. 6d. and, for slabs and tops,  $54 \div 79 \times £54 = £36$  18s. to make £368 income.

<sup>24</sup> B. Tyson, "The Troutbeck Park Slate Quarries . . . 1753-1760", CW2, lxxxiv, 167-90 demonstrates the economies of water transport with regard to slate. Timber for Sockbridge barn was carried and towed by boat along Ullswater from Hartsop in 1699. CW2, lxxxiii, 113.

<sup>25</sup> Brushwood for making dead hedges. CW2, lxxxiii, 113 and 123.

<sup>26</sup> CW2, lxi, 218-221.