The Map-Makers of Lancashire

The impetus for accurate county surveys and the production of maps came in 1762 when the Royal Society of Arts advertised a premium of up to £100 for 'an accurate survey of any county upon the scale of one inch to one mile'. The honour and prize went to Benjamin Donn in 1765 for his 12 sheet map of Devon, surveyed between 1759 and 1765. The accuracy of these 18th century surveys varied considerably, but they were undoubtedly an improvement on earlier maps and usually claimed to be based on an actual trigonometrical survey of the county concerned. During the 18th century each county was a separate venture usually sponsored by local gentry who would take out subscriptions in advance to underwrite the project. By 1800 all English counties, except Cambridgeshire, had been surveyed at least once.

William Yates

From his early thirties in 1772 Yates combined surveying with this duties as a customs officer in Liverpool. In 1775 Yates and Chapman published a proposal in local newspapers for a mathematical survey of the county on a scale of 1 inch to 1 mile on which would be marked the hundred boundaries, market towns, villages, seats and parks of the nobility and gentry, all the main and cross roads, noted inns, farm houses, toll bars, milestones, landmarks and beacons, as well as every river and brook, and the track of all the canals completed or at present intended. He invited subscriptions of 1½ guineas and undertook to begin work when they had received 400 subscriptions. Work began but slackened due to war and the damage to the American trade out of Liverpool, resulting in many Lancashire family enterprises going bankrupt. In 1779 Yates' partner Chapman died and in 1786 Yates delivered his final drawings to Thomas Billinge, the engraver, of Liverpool. The finished map was released to subscribers in the following year. The Society of Arts endorsed the quality and accuracy of the map by awarding Yates the Society's gold medal as well as the promised £100 premium. These prizes were not given lightly to all comers. Out of the claims for awards between 1759 and 1809 only 13 county maps were successful. The Society insisted on accurate trigonometrical methods for the surveys and the maps were subjected to the scrutiny of experts before an award was made.

Yates' map is the first 'modern' map of Lancashire. Two characteristics distinguish it from all previous maps of the county - the accurate trigonometrical basis of the survey and Yates' recognition that industrial features were items worthy to be recorded on a map.

Church spires, windmills and prominent hills were used as siting points to construct a network of triangles upon which Yates eventually fashioned his map. He selected three principal stations for his triangulation, probably Billinge Beacon, Pendle Hill and Warton Crag. The remainder included other natural landmarks such as Rivington Pike and Coniston Old Man, prominent churches such as Preston, Leigh and Manchester, and windmills. Once they had constructed their skeletons of triangles, Yates and his assistants began to fill in the topographical details. From the trigonometrical stations they took bearings with theodolite or compass on prominent

features in the landscape. Wherever practicable, the three angles of each great triangle were observed to help eliminate error. Yates stated that 'latitude, longitude and meridian lines (were) accurately ascertained by astronomical observation', probably computed by taking altitudes of the sun with a quadrant or similar instrument. His observations clearly marked a step forward in the establishment of correct longitude.

The mapping of rivers, navigable waterways and roads, the county and hundred boundaries, was accomplished by a series of traverses. Linear distances along the roads were measured by the perambulator (a single wheel fitted with forks and a handle which, as it was wheeled along, automatically recorded the number of revolutions) and angles were determined either by the theodolite or the circumferentor (a common compass with open sights). Use may also have been made of a pedometer to count the surveyor's paces. Work was probably supplemented by sketches of special features and following contemporary practice, by making copies of existing maps and plans of towns, estates and inclosures.

Yates broke new ground by indicating the spread of each town, tracing the secondary roads, marking toll bars on the turnpikes and locks and bridges on the canals. As a final precaution he sent sections of the work to 'gentlemen in different parts of the county' to be checked for accuracy of local detail before he authorised the engraver to transfer his drawings to copper sheets for printing.

The map cannot be accepted at face value as an unambiguous record of Lancashire topography. Statements in the 1775 prospectus and in the Explanation engraved on the map, coupled with what is known about Yates career and the techniques of map production assist in deciding which aspects of the map are most reliable. More trust may be placed in those features, such as roads, that were the result of instrumental survey, than in other features, such as the edge of the moorland on which the survey is silent.

John Cary

John Cary was described as 'the most representative, able and prolific of English cartographers'. He was as busy a publisher as he was a cartographer and engraver, and until his death in 1835 published a constant flow of atlases, maps, road maps, canal plans, globes, itineraries and geological surveys, and set new high standards of engraving and map design. In 1787 he published a 'New and Correct English Atlas' containing 46 maps which was re-issued ten times until 1831.

John Cary's Map of Lancashire in 1789 is a close copy of Yates' map, and his information on roads may be viewed with above-average confidence. In 1794 the Postmaster General commissioned Cary to survey the main roads of Great Britain. This involved the mapping of 9000 miles of roadway and he was able to draw on work he had already done for his earlier county maps. His earliest map of Lancashire appeared in his 'New and Correct English Atlas' (1787) at the small scale of 1¾ inches to 10 miles. He paid particular attention to roads and canals and found room to

mark the milestones on the turnpikes. He enlarged this map to 1 inch to 4 miles for Richard Gough's 1789 edition of Camden's Britannia.

His finest map of the county 'A New Map of Lancashire' was published in 1806 at a scale of 2½ inches to 10 miles. On it he featured new canals, even one authorised by Parliament but never actually built.

Charles Smith

Smith was a London engraver and map seller. A New Map of the County Palatine of Lancashire appeared as a single sheet in 1801 and then between 1804 and 1846 in subsequent editions of his New English Atlas. Smith's and Cary's maps are very similar but one is not a copy of the other. There are significant differences in detail. Smith calculated longitude from the London meridian, Cary from Greenwich. But there is no doubt that Cary and Smith used common sources, especially Yates survey, and since both were aiming their publications at the same market - the increasing number of private and commercial travellers - its hardly surprising that they produced similar maps.

Christopher and John Greenwood

Christopher Greenwood (1786 - 1855) began in 1815 when he published proposals for a new map of Yorkshire which appeared in 1817. This map was successful enough for him to turn next to Lancashire in 1818, later progressing to the rest of England and Wales. He said that his firm was prepared to spent upwards of £100,000 to complete the work in 8 years.

He began with a new survey. He derived accurate figures for latitude and longitude from the Ordnance Survey's principal trigonometrical stations but he had to construct his own network of minor triangles within the official body's framework, probably using a theodolite. His surveyors filled in the topographical data within the completed triangulation, probably using a compass to fix bearings, but it is doubtful if they used a surveyor's chain to measure roads. However, it was often possible to check the results of surveys with estate maps, enclosure maps, turnpike and canal plans and with local information contained in the latest directories and gazetteers.

He used symbols to denote churches, rectangles to indicate buildings, trees to show woods and varieties of lettering and line thickness, and carefully delineated the course of rivers, canals and turnpikes and located mills, and showed the extent of mosses and heaths. One technical device which was not wholly successful was the hachuring to show hills and rising ground. As all his predecessors had done, Greenwood's map failed to show Lancashire's physical form satisfactorily.

He instructed his engraver to particularly attend to the embellishing in a neat and tasteful manner landed estates, which are meticulously displayed, but in remoter parts of the county his surveyors did not pay such attention to detail. He openly

acknowledged that he gave preferential treatment to the interests of the landed gentry because he was seeking their support and patronage but it was probably the need to keep to a pre-announced public publication date that was the major cause of incompleteness in the Fylde, Furness and areas of south Lancashire away from the main roads and towns. His time-schedule for both individual maps and the series as a whole was too exacting to ensure complete satisfaction. Little fault however can be found with his major roads - the turnpikes show the position of the toll-gates and arabic figures indicate the number of miles between neighbouring towns. He clearly showed the canal and navigation system, which by 1818 was well-nigh complete. His attempt to plot the numerous industrial sites was however over-ambitious. The task was more formidable than the one Yates had faced a couple of generations earlier for the industrial pattern had grown increasingly complex. The task of surveying England and Wales in 52 maps was immense and especially in industrial counties, extensive revision would soon be required if the maps were to remain useful. To stave off bankruptcy Greenwood planned to publish smaller versions of his maps in atlas form and in instalments. A Map of the County Palatine of Lancashire 'corrected to the present period' appeared in the second part of the atlas of England and Wales published in 1830 and in an attempt to keep up-to-date anticipated the opening of the Liverpool and Manchester railway by some 7 months.

By the time the last part of the atlas was published in 1834 Greenwood and Company were in financial difficulties. They offered for sale the plates of the 1" maps and the London publisher G F Cruchley in 1835 published the Lancashire plate under his own name.

James Pigot

In 1828 J Pigot and Company published a British Atlas containing 41 maps of the counties of England, each tastefully hand-coloured in the traditional manner. All the maps in this series were engraved on steel, and was one of the last maps to display decorative features. It was reprinted in 1829.

The map provides information on roads, rail-roads, rivers and canals. Reference to 'rail-roads' on early issues of the maps does not relate to railways, but rather to private tracks constructed by colliery and similar undertakings on which horse-drawn trucks were employed. Railways started to appear on issues from 1838 onwards. Seven further issues of the Atlas between 1831 and 1844, and in 1846 its publication was taken over by Isaac Slater with a subsequent change of imprint. All the maps in this series were engraved on steel, one of the last to display decorative features. The supporting text provides details on the history of the county, information on soil, climate, produce and manufacture, rivers, canals, population and a distance table.

George Hennet and Henry Teesdale

In May 1830 Henry Teesdale of London published George Hennet's Map of the County Palatine of Lancaster surveyed in 1828 - 1829 at a scale of 7½ inches to 10 miles, including the same landscape features as Greenwood's map did. The engraver, James Bingley, produced a modern looking map, the features of which stand out clearly. Perhaps it is a sign that times and attitudes were changing that the map does not carry the customary dedication to the county gentry even though it displays the county seats and parks as prominently as ever. Hennet's finer hachuring was no more successful than Greenwood's in portraying Lancashire's hills and mountains but his mapping of the county's communications network was the clearest and most helpful that had yet been achieved. He took care to up-date his canals and railways, and anticipated the final construction of some planned. In rapidly-changing times well-informed anticipation was justifiable enough, but historians have to take special care when using 'anticipatory' maps as historical documents. His survey of industrial sites seems to have been a little more methodical than Greenwood's. Nevertheless, he experienced similar difficulties in plotting such sites on the map, making no serious attempt to plot in some areas than Greenwood had done.

Southport and Blackpool were shown as developing seaside resorts but the map was too early to record any of the changes which were to transform Barrow into an industrial town or the development of the village of Poulton into the resort of Morecambe.

Edward Baines

Commercial directories, local histories, topographical books and practical guides for the traveller were starting to appear (including such information as suitable accommodation for travellers), and these volumes also included small maps. Sometimes they were for the whole county such as Edward Baines' 'History, Directory and Gazetteer of the County of Lancaster' of 1824-5, containing a map of the county at a scale of 1 inch to 4 miles by T Wilson.

T L Murray

In 1830 Murray published a map of Lancashire, described as 'Drawn under the superintendence of T L Murray'.

John and Charles Walker

The Walker brothers were publishers as well as prolific engravers. They produced their British Atlas in 1837 with reissues appearing almost annually until 1852. There were a further 5 editions between 1852 and the final one in 1879.

J Archer

In 1858 J Archer issued a reprint of his 1843 map of the county, with the railways revised. It was both drawn and engraved by Archer.

G W Bacon

In 1890 Bacon's 'Commercial and Library Map of Lancashire from the Ordnance Surveys' was published. It was a very fine map, derived from the Ordnance Surveys but also showing a remarkable similarity to the Greenwood map of 1818.

Ordnance Survey

The Ordnance survey was established in 1791 having its origins in both military and civilian mapping. The survey of Scotland by William Roy after the 1745 rebellion inspired General Roy and the Board of Ordnance with the idea of undertaking a trigonometrical survey of England. In the civilian initiatives Charles Lennox, third Duke of Richmond, played a major role. As a Sussex landowner, he was employing civilian surveyors and when he was appointed Major General of the Board of Ordnance in 1782 he brought to his survey Thomas Yeakell as a chief draftsman.

The survey work of the Ordnance engineers was undertaken at first at scales of 2 inches, 3 inches and 6 inches to the mile and over the years from 1791 to around 1840 covered the south part of England and Wales as far north as a line through Hull and Preston. These form the basis of the printed 1 inch to the mile Ordnance Survey maps.

Between 1825 and 1842 the Ordnance Survey mapped Ireland at 6 inches to the mile and between 1841 and 1855 they also mapped Lancashire, Yorkshire and seven Scottish counties at this scale. The 6 inch map has remained the largest scale of survey and published for moorland districts (in practice much of Scotland and some upland parts of England and Wales). In 1854 it was replaced as the standard scale of survey of rural areas by 1:2500, which was completed for Great Britain in 1896. Urban areas were also mapped at the 25 inch scale. From this 25 inch survey, maps at 6 inch and at 1 inch to the mile were published.

Between 1844 and 1890 about a half of England was revised at 1:10560 and in 1891 a general revision of 1:10560 and 1:2500 survey of Great Britain was begun and completed in 1914. The 1 inch mapping of both Britain and Ireland was revised independently in the 1890s. With certain exceptions such as London, urban mapping at 1:1056 (5 feet: 1 mile), 1:528 and 1:500 was not revised after 1895 so that most towns have only one set of maps at a scale of larger than 25 inches.

The One Inch Series
Some details of the Lancashire sheets were out-of-date as soon as they appeared. Every few years the OS published revised sheets which were in fact new impressions taken from the amended original copper plates. Unfortunately the engraver never

altered the date on the plate so that each revised sheet bears a date earlier than the true date of publication.

The Six Inch Series
The six inch series reveals the whole of Lancashire in unprecedented detail, preserving evidence of long-vanished industrial sites. The engraver was now able to name streets, mills and factories as well as public and industrial buildings of many kinds.

Sources

'Looking at Old Maps' by John Booth 1979 Cambridge House Books

'Royal Historical Society Guides and Handbooks No.18 Historians' Guide to Early British Maps' Edited by Helen Wallis 1994 Royal Historical Society, London

'Lancashire - A History of the County Palatine in Early Maps' by J J Bagley and A G Hodgkiss 1985 Neil Richardson, Manchester
(J J Bagley was a member of staff of Liverpool University for many years. He has been closely concerned with the development of Local History Studies in Lancashire and Cheshire and has held offices, including that of President, for the Historic Society of Lancashire and Cheshire. He is also a council member of the Record Society of Lancashire and Cheshire and the author of a number of books on the two counties.
A G Hodgkiss was a member of staff at Liverpool University for 37 years and was in charge of the cartographic unit of the Department of Geography. He is the author of several books dealing with maps and mapmaking. He was a consultant author to the Open University during the preparation of the Fundamentals of Human Geography course, was editor for 9 years of the Bulletin of the Society of University Cartographers and consulting editor to the Canadian journal Cartographia)

'A Descriptive List of the Printed Maps of Lancashire 1577 - 1900' by Harold Whitaker 1938 The Chetham Society

'William Yates A Map of the County of Lancashire 1786' by J B Harley 1968 Historic Society of Lancashire and Cheshire

'Maps and Plans for the Local Historian and Collector' by David Smith 1988 B T Batsford Ltd