THE ORIGIN OF THE MIDLAND DISTANCE DIAGRAMS

An item in the Roy Burrows Collection purports to be the first distance-book of the Midland Railway. A study of the make-up and content of the volume suggests that the claim may well be valid, not in the sense that there had been no earlier collection of distances, but rather that this was most probably the first official record to be kept up in Engineer's office at Derby as a listing of the company's lines, modified and added to as changes took place.

In *The Railway Clearing House in the British Economy 1842–1922*, Philip Bagwell writes (page 51): "At one of the earliest meetings of the goods managers of the railways in the Clearing House the Boards of Directors of the companies were asked to authorise Morison *[Kenneth Morison — the secretary]* 'to get a full and perfect list of tables *[of distances]* printed from the official sources'." This was in October 1847. Four years later the secretary was again asked to get tables prepared and printed. "The replies of the companies to Morison's circular requesting information make interesting reading. The return of the Lancashire and Yorkshire Railway, presented in manuscript, contained many crossings out in red ink. An even grubbier document was submitted by the Norfolk Railway. The Newcastle and Carlisle Railway quoted odd distances in decimal points of a mile; the other companies referred to miles, chains and links. From such a hotch potch there emerged in September 1853 the first *Clearing House Book of Distance Tables*, an invaluable work of reference of two hundred pages." There is a copy of this book in the Public Record Office (PRO RAIL 1089/2) which is heavily annotated and even has tables added to it. Amongst the annotations there are some basic junction diagrams drawn in by hand, and some printed maps have been stuck in.

The earliest Midland working timetables give distances to the nearest quarter of a mile only, so the "miles-and-chains" information was clearly not prepared for that use. Whether the origins of the Burrows Collection book lie in the need for information for the Clearing House or in the need of the Midland's own engineering staff to have an accurate record of the railway we shall probably never know — though the number of references to information passed to the Clearing House in the annotations in the book are of interest and maybe of significance — but the inclusion of diagrams with distances noted on them does seem to ante-date any Clearing House productions. It is clear that the book in question is of great significance and worth close examination.

DESCRIPTION OF THE DISTANCE-BOOK

This is a foolscap volume with black leather boards. The binding was presumably all leather originally, but at some stage there has been a major repair, in the course of which the spine has been re-made in black bookbinder's cloth (with the inner hinges in white bookbinder's cloth). On the front cover the title is centred, vertically and horizontally, and is printed in upper-case gold letters 8 mm in height.

MIDLAND RAILWAY.

—

DISTANCES AND DIAGRAMS.

On the left-hand side at the bottom, printed in upper-case gold letters 5 mm in height, is:

ENGINEER'S OFFICE,
DERBY.

The end-papers are marbled, the colouring being predominantly lighter and darker greens with straight lines running diagonally from bottom-left low to top-right high, with the patterning in maroon and a dark fawn. These marbled end-papers are broken by the later white-cloth hinge belonging to the later rebinding. Indeed, from the way in which the pattern appears on the two facing sheets, both back and front, these marbled papers appear to belong to the rebinding rather than to the origins of the book.

A sheet (i.e. four pages) of unlined off-white paper follows, forming in effect a second set of end-papers. Its "back" face is pasted to the marbled end-paper on one side and to the first page of the index-pages on the other. The watermark is "WJ & C^{o}" in a slanting hand in a wavy-bordered box. There appears to be no date. On the third of the four pages of this sheet is a centred title, in slanted upper- and lower-case handwriting. Four pairs of pencil-lines have been drawn to locate the writing, marking out the tops and bottoms of the bodies of the lower-case letters. The fourth of these pairs of lines is unused.

The First Distance Book

of the

Midland Railway Coy.

The index is made up of a gathering of seven sheets (28 pages) with the "A" entries on the first left-hand page (the first right-hand page being the one glued to the outer side of the marbled end-papers sheet). Thirteen half-sheets cut to form a thumb-index follow, the first carrying AB. After a half-sheet cut in the same position as AB, come CD, EF, GH, IK, LM, NO, PQ, RS, TU, VW, and YZ. The paper used here is off-white, apparently not watermarked, and lined (the lines being drawn more prominently on one surface of the sheets than on the other.) The index is followed by 2 sheets (i.e. eight pages) of a heavier, good-quality laid paper, unlined, and off-white in colour. The left-hand sides of these two sheets are watermarked with a Britannia-figure in an oval topped by a crown, and the right-hand sides are watermarked with "Thomas Hutton / London, / 1867".

It is at this point that what appear to be the 82 pages of the original book commence. The paper is light blue, lined on both sides in a darker blue, of a heavier weight, and apparently not watermarked. It is difficult to be certain about the make-up of this section of the volume. The first two gatherings are of five sheets each (20 pages each), the third is of four (16 pages), but the fourth is problematical, in that 14 pages appear to precede the stitching but only 12 follow — the total being the correct figure of 82. The numbering is in the top right-hand corner of each right-hand page except for the first (i.e. page 1 would by "normal" counting be page 3).

Between pages 18 and 19 (i.e. after the page numbered 8 and its reverse and before the page numbered 9) a single half-sheet of narrow-ruled paper, of a much paler colour, has been inserted. Also numbered 9, it carries a diagram of the Burton Junctions. After page 24 (i.e. the page numbered 11 and its reverse) a complete half-sheet has been cut out (pages 25 and 26), to leave just a thin strip by the binding. The numbering, however, takes no account of this omission — 11 is duly followed by 12. The half-sheet for pages 73 and 74 (the right-hand page of which would have carried the number 35) has been cut out, leaving just a narrow strip by the binding, and to this a full sheet of the same narrow-ruled and paler paper that is used for Burton has been stuck and numbered as 34a and 35. Only the opened-out area of this sheet has been

used, and it carries a diagram of the Melbourne & Sawley Lines, the right-hand page bearing the number 35. The half-sheet for pages 81 and 82, which is the last half-sheet of this original section (following the half-sheet with number 38 on its right-hand page) has also been cut out, leaving once again just a narrow strip by the binding, and to this a half-sheet of a different type of narrow-ruled paper has been inserted, and numbered page 39, to carry a Cudworth & Barnsley diagram.

The remainder of the book is made up of six gatherings of the same Britannia/Thomas Hutton paper found before the original section just described. Then half-sheets numbered 40, 41, 42, and 43 have the Britannia marking, 44, 45, and 46 carry the 1867 date, and 47 is cut back to a strip. In the next gathering 48 and 49 are cut back, 50 is Britannia, 51, 52, 53, and 54 are cut back, and 55 is an 1867 sheet. The next follows with 56 as Britannia, 57 and 58 cut back, 59 as Britannia, and 60, an unnumbered sheet, 61, and 62 as 1867 sheets. Printed diagrams of various sizes and folded in various fashions have been pasted into the volume using the cut-back half-sheets as their mounting-points. The final gatherings are wholly unused. In these, half-sheets 63 to 66 are Britannia and 67 to 70 are 1867. Then 71 to 74 and 75 to 78 , and 79 to 82 and 83 to 85 follow the same pattern. The last (and unnumbered) 1867 sheet is pasted to the first marbled end-paper.

CONTENTS

The index is alphabetical. Most of this index was clearly written at one time, but it has been continued in other hands and in other inks so that it is complete for all the material finally contained in the volume. The latest line to open that is listed in the first hand seems to be the Chesterfield & Sheffield, which was opened in 1870.

The blue-paper "core" section follows. On the left-hand page of each double-opening is a distance-table for one of the lines of the Midland Railway, with the list of locations appearing in the centre of the page (colour-coded by the use of black ink for stations and blue ink for junctions and other locations) with the distance from the starting-point (or starting-points) set out in miles and chains on the left-hand side and the reverse distances set out on the right-hand side, both in columns ruled in red ink (with double red lines on either side of the locations column for the first three lists). The facing right-hand page is used for simple diagrams of complex locations, with distances between points being shewn. Thus the first double-opening is used for the North Branch (i.e. the North Midland line from Derby to Leeds), the table being on the left-hand side and diagrams of Derby and other locations on the right-hand side. The right-hand-only numbering starting in the first double-page spread seems to imply that the table-and-diagram layout was intended from the start.

It is not possible to say when this distance book was compiled, but the evidence points towards the last years of the 1850s. A number of 1856 features are in their proper places (Toton Sidings, opened in May 1856; Derby Nottingham Road, the Ripley Branch, and the Dursley Branch, all opened in September 1856; and Attenborough Gate, opened in December 1856). And the Leicester & Hitchin line, opened in April 1857, appears in its proper place in the sequence and is properly "colour-coded". However, the Leicester & Burton table includes the station-name Braunstone. This is struck out, and the name Kirby Muxloe is written above. Braunstone station was closed and Kirby Muxloe opened on 1 July 1859. Chaddesden Siding is shewn as an addition. Now land was bought for this in 1856, so it seems reasonable to assume that the siding was brought into use not more than one or two years later. And Mount Sorrel Junction, which was brought into use in 1861, is also shewn as an addition.

The Nottingham to Trent Junction table has a date of 1858 written at its head, in what appears to be a contemporary (but different) hand. This table is in its correct place, on opening 7, but it is cancelled and a replacement is provided to shew the changes at Trent brought into use in 1862. Beneath it someone has added, in a fancy later hand: "Note. For this table shewing the

alterations in curves at Trent see page 18." The diagram opposite is of the original layout of the Trent curves, and above this has been added: "see page 18. for alterations of curves Dec 1861" in what appears to be a contemporary hand. Below the Nottingham–Trent table is what appears to be the first additional table in the book — that for the Clay Cross Extension, dated November 1861. This does not seem to be in the same hand as the Nottingham–Trent table. Although not marked as cancelled — unlike Nottingham–Trent — this table is in fact replaced by a full new Erewash Valley table reflecting the post-1862 position. This first one rather interestingly includes mileages from Rugby as well as the standard up and down mileages.

The last entry of the original material seems to be the Matlock Branch on opening 18. Beneath this is a double red line across both pages. Then, on the same page, we find the replacement for the Nottingham–Trent table. It is headed "Nottingham to Trent Junction / with new Station & Curves opened 1862" on the left-hand side and "New Junction at Trent. – Opened 1862" on the right-hand side. On the next "sheet" — opening 19 — is a new "Erewash Valley / with connecting line to Clay Cross." table, which is the replacement for the Clay Cross Extension table. Then comes the Ashchurch & Evesham Branch, opened in June 1864. Other lines follow, apparently entered up as they were opened. The earliest dated or datable alterations and additions to the text thus appear to refer to 1861, 1862, and 1864. It seems that the date of original compilation can be put with some confidence in the period mid-1857 to end-1861.

Existing tables were amended to take account of the addition of stations, sidings, junctions, changes of name, and so on, and many of the alterations and additions cite an authority for the information being added. It seems evident that this volume was the working volume of record in the Engineer's Office throughout the 1860s and for the first part of the 1870s. One unfortunate casualty of its day-to-day use was that the original colour-coding of locations was not kept up — indeed, it is not used for the Matlock Branch, and it does not appear again (even though red ink does make an appearance in the diagrams on the right-hand pages). There is abundant evidence in the original sections for amendments dated in the latter half of 1873 (right up to its end, as indicated by a note "wrote Allport Dec^{r} 31/73" on the right-hand page of opening 6, and also several full diagrams were pasted in with dates in 1873. On opening 56 is an ink-drawn diagram of the Leicester area with a date of 10 February 1874. This is followed by a Tamworth Curve diagram dated July 1873 and circulated on 7 July 1873, and then by two 1874 diagrams: the Clifton Extension, with a printed date of 27 May and a note shewing that it was circulated on 28 May, and the Duffield & Selston line, with a printed date of 12 October and dated notes shewing that it was circulated immediately after that. The final entry is a heading for the Settle & Carlisle line on the right-hand page of opening 59 (the stub of the left-hand page having been used for the Duffield & Selston line diagram). This reads "Settle to Carlisle – Schedule of Stations with Mileage of Same (See M^{r} Underwoods letter of 10th Sep: 1875," followed by a double underlining and a blank page. This seems to indicate when the volume went out of regular use. It will be recalled that the first edition sheets of the Distance Diagrams bear a date of July 1873.

As noted, the diagram-sketches at first shew just the more complex areas. The first to shew the *whole* of a line is that for the Kettering Thrapstone & Huntingdon, which appears on the right-hand page of double-page opening number 23. This is marked: "These distances & sketch were taken from M^{r} Bruce's letter to M^{r} Allport of 2nd March/66". The all-line diagrams in the blue-paper section of the volume are:

23	Kettering Thrapstone & Huntingdon	1866
24	Peterborough Sutton & Wisbech	May 1866
25	Tewkesbury & Malvern	1864
26	Rowsley & Buxton Extension	1866
27	Stonehouse & Nailsworth	1866

28	Sutton Bridge & Lynn	1866
29	Cheshire Midland Railway	1867
30	Furness & Midland Joint	1867
31	Duffield & Wirksworth	1867
32	London & Bedford	1867
33	London & Bedford — the London area	1867
34	Cromford Canal	1868
34a	BLANK	
35	Melbourne & Sawley (replacement sheet)	1868
36	Midland & South Western Junction	1868
37	Yate & Thornbury	1868
38	Keighley & Worth Valley	1868
39	Cudworth & Barnsley (replacement sheet)	1869

The Cudworth & Barnsley sheet is marked as being to a scale of 1" to 1 mile and is the first sheet to be so marked. Only two others of the hand-sketched sheets are similarly marked for scale, that for the Chesterfield & Sheffield line and that for the Mangotsfield & Bath line.

The first diagram to appear on the later, white, paper added after the "core" book and with the Britannia water-mark is that for the Chesterfield & Sheffield line, with the *recto* carrying the number 40. The hand-sketched diagrams in this section are:

40	Chesterfield & Sheffield	1870
41	Mangotsfield & Bath	1869
42	Manchester Branch	1870
43	Mansfield & Southwell	1870
44	Tottenham & Hampstead	1870
45	Coton Park Branch	1872
46	Bedford & Northampton	February 1873

From this point on the diagrams are printed sheets rather than sketches (with the exception of the), and these are tipped into the book. They are:

47	Stenson & Weston	October 1872
48	Yate & Thornbury	
49	Northampton Junction	
50	Horninglow Branch	
51	Cheshire Lines	
52	Ashby & Nuneaton Joint	24 April 1873
53	MISSING	
54	Ashby & Breedon	7 July 1873
55	MISSING	
56	Leicester drawing	February 1874
	Tamworth Curve	July 1873

57	Clifton Joint Line to White Ladies Road	1874
58	Duffield & Selston 1874	1874

All these diagrams save two (the very large Cheshire Lines one — 51, and Leicester — 56) have a circulation-list on the back. So, for example, the Stenson & Weston diagram is numbered as copy number 50 and the list on the back of it shews that a total of 41 copies were circulated. The Horninglow Branch diagram (50) is drawn rather than printed, but duly has its circulation-list, and the Leicester diagram (56) is also drawn. The Ashby & Nuneaton sheet was distributed from the Midland's Engineer's Office on 24 April 1873 not merely to Midland staff but also to officers of the London & North Western Railway. With the sheet numbered 57, dealing with the first section of the Clifton Joint Line, a new practice is introduced under which the signature of the person collecting the copy or copies is required against each entry in the distribution-list — this signature apparently being in most cases that of a clerk from the office of the recipient. The last entry in the volume is, as has already been remarked, no more than a heading, for the double-page numbered 59. This reads: "Settle to Carlisle — Schedule of Stations with mileage of same (See Mr Underwood's letter of 10th Sep: 1875," [NB: no closing brackets!].

SIGNIFICANCE OF THE DIAGRAMS

If the diagrams of complex areas do indeed date from the latter years of the 1850s, then it is possible that this Midland way of doing things is earlier than the similar practice found in the Railway Clearing House Junction diagrams. In "John Airey: An Unnoticed 150th Anniversary?" in *Railway Maps and the Railway Clearing House — The David Garnett Collection in Brunel University Library*, David Thomas writes: "John Airey published the first edition of *"Railway Junction Diagrams"* in January 1867. Two earlier books of diagrams have survived in the Railway Clearing House archives at the Public Record Office. The earliest was drawn by E F White. It is believed to have been compiled by 1859 (the paper is water-marked J WHATMAN 1856) and contains 11 pages of diagrams including a map of London railways which show the ownership of the lines but not the distances which became a feature of John Airey's publication. The second book at the PRO contains 72 diagrams in roughly alphabetical order. They are drawn on paper water-marked J WHATMAN 1860 and are not uniform in style. The diagrams at higher numbers in the book look similar in style to the ones Airey was to publish except they too do not show the distances." [NB: These two books are PRO RAIL 1082/2 and PRO RAIL 1082/1 respectively.]

David Garnett wrote, in an article entitled "The Railway Maps of Zachary Macaulay, John Airey and the Railway Clearing House" [re-]printed in the same publication: "Before mentioning works with which I know that Airey was concerned a moment must be devoted to two pieces of equipment made in the Distances Section to help in the work thereof. I think Airey must have used these and been impressed by them but I have no justification for thinking that he was concerned with the making of them. In the British Rail archives art Kew is a book entitled RAILWAY JUNCTIONS. It measures about 17½" by 11½" and contains 72 hand drawn and coloured diagrams of railway junctions, together with a two-page analysis of the Companies meeting at each junction. The book is undated. However, there is another book of diagrams, hand drawn by W F White, which carries a manuscript date '21/9/59'. One diagram is actually dated '1859' and there is a manuscript index for the eleven sheets of which four cover specific areas and the others some 28 individual junctions or smaller areas. This book measures about 11¾" by 8¾". Further study is needed to decide whether the book first mentioned is earlier or later. My impression is that the undated one is fractionally later but that they are very nearly contemporary, perhaps for simultaneous use by two different people. The undated one is more elaborate and mentions the West Midland Railway whereas the dated book mentions the Oxford, Worcester and Wolverhampton Railway."

There is, of course, no way of telling whether the idea of representing layouts and distances on a map-type diagram was borrowed from another source now lost to us, was developed by

people in the Clearing House and people in the Midland Railway's offices independently, or shews some form of mutual influence.

As for the Distance Tables, I have not myself seen the earliest information for the Midland company in the Clearing House records (the earliest book I have consulted being one for 1867). However, there is another item in the Roy Burrows Collection which is of great interest in this context. This is a volume entitled:

Midland Railway

Distance Tables

March, 1860

Printed for the Company

By McCorquodale & Co., London.— Works, Newton.

The distance tables in this volume are printed in the standard Clearing House format as we know it from later years and on up to Grouping, and the volume is printed on the same blue paper as that used by the RCH for its distance-tables publications. Thus it seems that whilst the Midland was developing one practice for its own internal purposes, it was passing information to the Clearing House for publication in the standard form developed by that institution.