

APPENDIX C.

LETTER FROM MR. MORRIS FOX, RETURNING TABLES, AS CHECKED.

Mr. MORRIS FOX to the CHAIRMAN, Public Accounts Committee.

Re *Midland Railway Company*.

SIR,—

Government Insurance Department, 28th August, 1893.

In accordance with instructions conveyed in a memorandum of the 26th instant, from the Clerk of the Public Accounts Committee, I have read letter No. 35 in paper D.—6, from the Under-Secretary of Public Works, and have also checked the Tables A to H in the *Midland Railway Company's* statement supplied to me and returned herewith.

Tables A, B, C, D, E, and F.—The accumulations given in the company's tables are practically correct, £27 being the largest error, which is of no importance considering the amounts involved and the purpose for which they are required. I append a statement showing the correct accumulations, and also, as likely to be of use, the proofs of their correctness as shown by the equality of the present values of the accumulations and the present values of the three instalments at the various rates of interest. I have pointed out in my statement that in each of the Tables A, B, C, D, E, and F the ten years will not expire until *eleven* years from the 31st December, 1893.

Tables G and H.—I also give accumulations and present values for Tables G and H. There were errors of £1,132 and £5,122 in these tables. There appears to me to be a radical error in the calculations in these two tables, which I have explained in a note in my tables.

The Calculations furnished by me and embodied in Letter No. 35 from the Under-Secretary of Public Works.—The present value at 4 per cent. of an annuity of £1 per half-year for twenty half-years, the first instalment payable at once, is £16·67846. The present value of a similar half-yearly annuity of £33,750 will therefore be £33,750 × 16·67846 (=£562,898).

| | |
|---|--------------|
| The present value, at 4 per cent. of £200,000 due in one year, is | ... £192,308 |
| " " £200,000 due in two years, is | ... 184,911 |
| " " £218,000 due in three years, is | ... 193,801 |

Total present value £571,020

This sum of £571,020, discounted at 4 per cent. for about three and half months, is also £562,898; and therefore the present value of the three land-grant instalments (due at the end of 1894, 1895, and 1896 respectively) will be equal to the present value of the twenty half-yearly annuities of £33,750 about the middle of next month, September, 1893, taking interest at 4 per cent.

I have been much pressed for time in supplying this information, but I shall be happy to remedy any deficiencies if you will kindly indicate in what direction you need further information.

I have, &c.,

The Chairman, Public Accounts Committee.

MORRIS FOX, Actuary.

TABLE A.

TABLE B.

£618,250, payable in three sums of £206,083, as stated, and accumulated for 10 years at

| 3 per cent. | | | 3½ per cent. | | |
|---|----|-----------|---|----|-----------|
| £806,911 | | | £842,944 | | |
| <i>Proof.</i> | | | <i>Proof.</i> | | |
| Present value of £206,083 due | .. | £ 206,083 | Present value of £206,083 due | .. | £ 206,083 |
| " £206,083 due in 1 year | .. | 200,081 | " £206,083 due in 1 year | .. | 199,114 |
| " £206,083 due in 2 years | .. | 194,254 | " £206,083 due in 2 years | .. | 192,381 |
| Total present value | .. | £600,418 | Total present value | .. | £597,578 |
| Present value of £806,911 due in 10 years | .. | £600,418 | Present value of £842,944 due in 10 years | .. | £597,578 |

TABLE C.

TABLE D.

£618,250+10 per cent. (=£680,075), payable in three sums of £226,692, as stated, and accumulated for 10 years at

| 3 per cent. | | | 3½ per cent. | | |
|---|----|-----------|---|----|-----------|
| £887,602. | | | £927,238. | | |
| <i>Proof.</i> | | | <i>Proof.</i> | | |
| Present value of £226,692 due | .. | £ 226,692 | Present value of £226,692 due | .. | £ 226,692 |
| " £226,692 due in 1 year | .. | 220,088 | " £226,692 due in 1 year | .. | 219,024 |
| " £226,692 due in 2 years | .. | 213,680 | " £226,692 due in 2 years | .. | 211,619 |
| Total present value | .. | £660,460 | Total present value | .. | £657,335 |
| Present value of £887,602 due in 10 years | .. | £660,460 | Present value of £927,238 due in 10 years | .. | £657,335 |