

RIVER OUSE
(YORKS.)
CATCHMENT BOARD,

REPORT

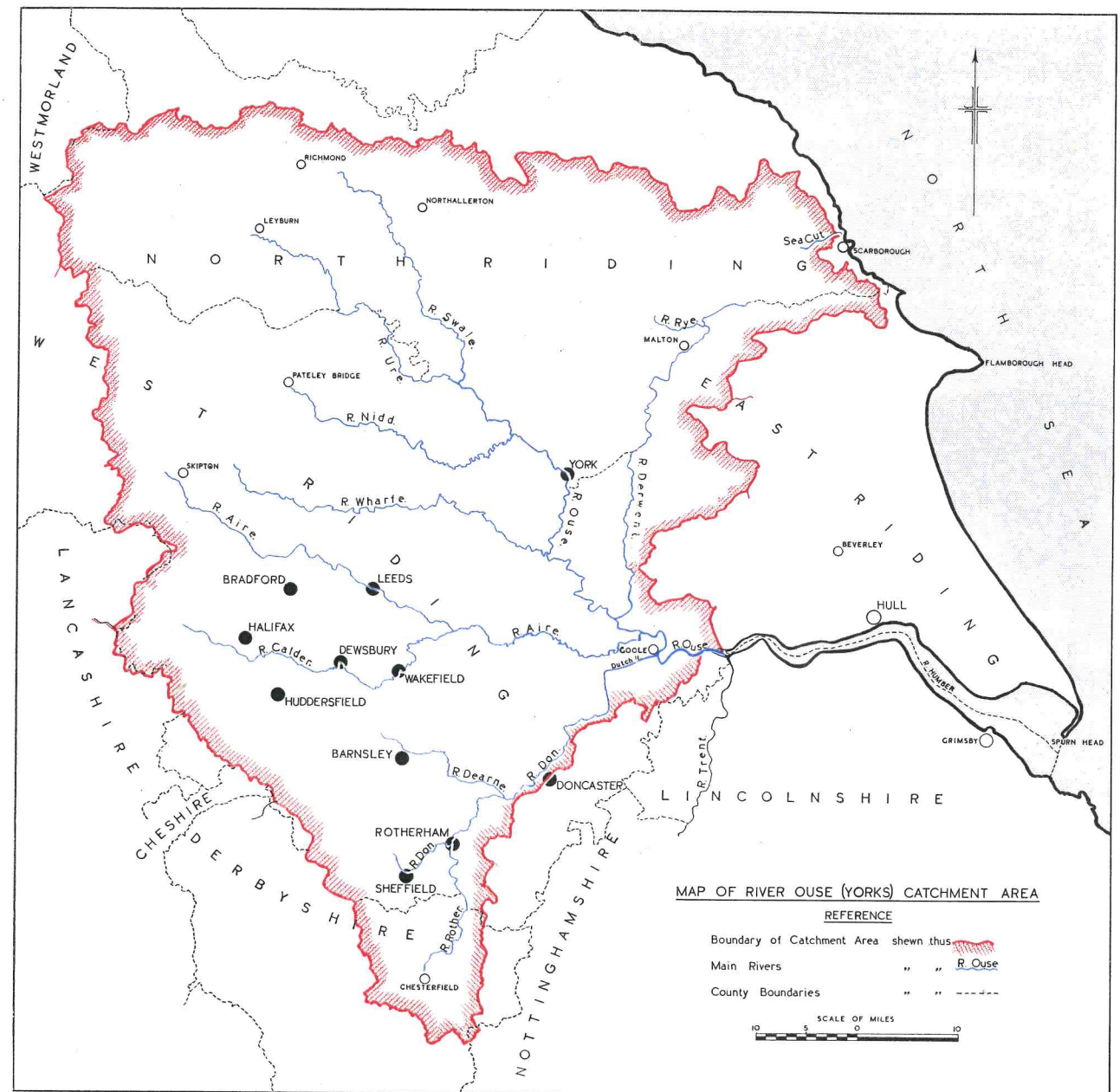
for the year ended
31st October, 1937.

1937

Central Bank Chambers,
Infirmary Street,
Leeds, 1.

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ANNUAL REPORT

For the Year ended November, 1937.

Section I.—ADMINISTRATION.

The period of three years for which the present Board was constituted expired on the 1st November, 1937, and with this, the sixth Annual Report, the whole of their activities of general interest will have been reviewed.

CONSTITUTION OF THE BOARD.

The only change in the constitution of the Catchment Board during the year has been the appointment by the County Council of the West Riding of Yorkshire of Captain E. A. Rimes and County Councillor M. Whittock to complete their quota of members in place of County Alderman W. Dean and R. E. Cock, Esq. who had ceased to be members of the Board.

OFFICES.

Considerable progress has been made in the provision of the Board's new offices now in course of erection on an island site having frontages to St. Paul's Street and Park Square, Leeds.

The acquisition of the site has been approved by the Ministry of Agriculture and Fisheries, and the plans of the building have also been approved by the Leeds City Council, and the Catchment Board's application for development of the site under the Town and Country Planning (General Interim Development) Order, 1933, has been granted.

The Building Committee discussed with the Architect his proposals for the construction of the proposed building and it has been decided that it shall be constructed in Georgian style with the type of brick known as the "Ibstock Brick" with Portland stone dressing and grey granite plinths. Air conditioning is to be provided in the main rooms and provision will also be made for a Hydraulic Laboratory and Projector Screen. The building will also be provided with automatic lifts.

Tenders have been accepted as follows :-

<u>Nature of work.</u>	<u>Name of Contractor.</u>
Steel constructional work.	Messrs. Leonard Cooper Ltd., Leeds.
Reinforced concrete work.	Messrs. S. MacFarlane Ltd., Leeds.
Excavation work.	Messrs. M. Harrison & Co., Ltd., Leeds.

A reproduction of a perspective drawing of the building when completed which has been prepared by the Architect appears on page 5 of this report.

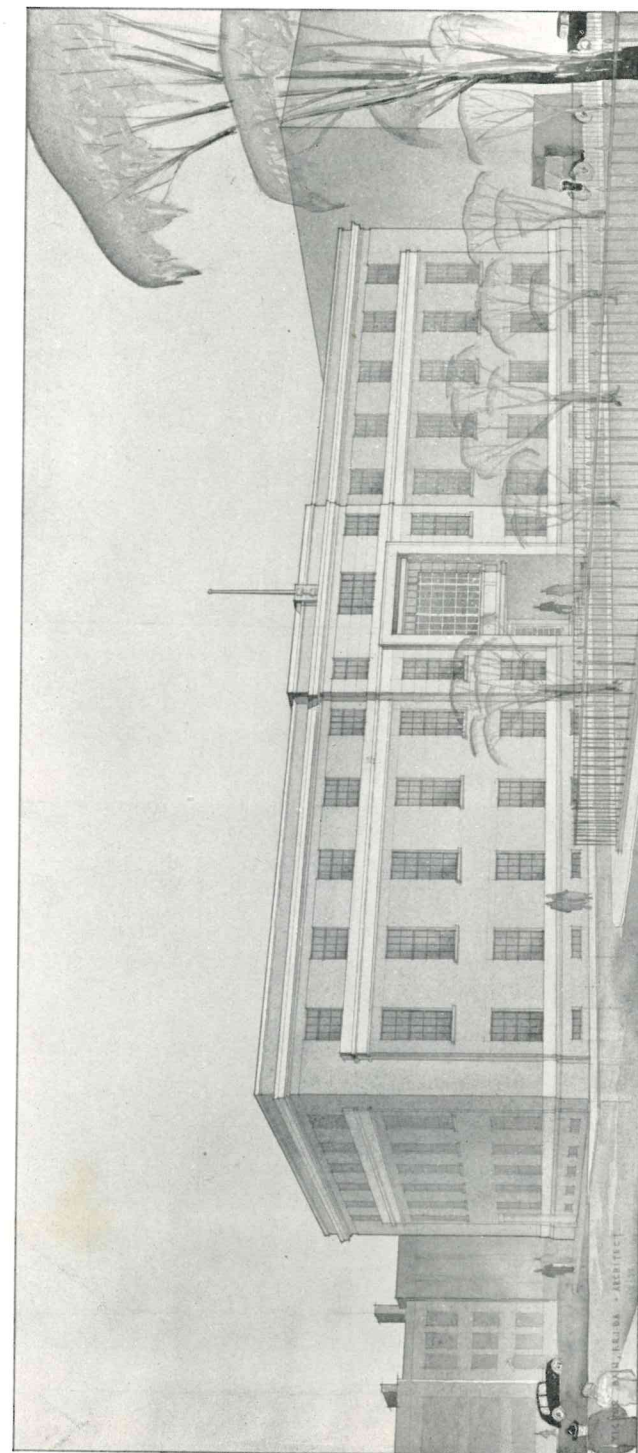
Considerable progress has been made in the execution of the reinforced concrete and excavation work under the direct supervision of Victor Bain, Esq., F.R.I.B.A. the Board's Architect.

Unfortunately however owing to the difficulty in obtaining steel the contractors for the steel constructional work have been seriously held up, but it is hoped they will shortly be in a position to complete their contract.

CATCHMENT BOARDS' ASSOCIATION.

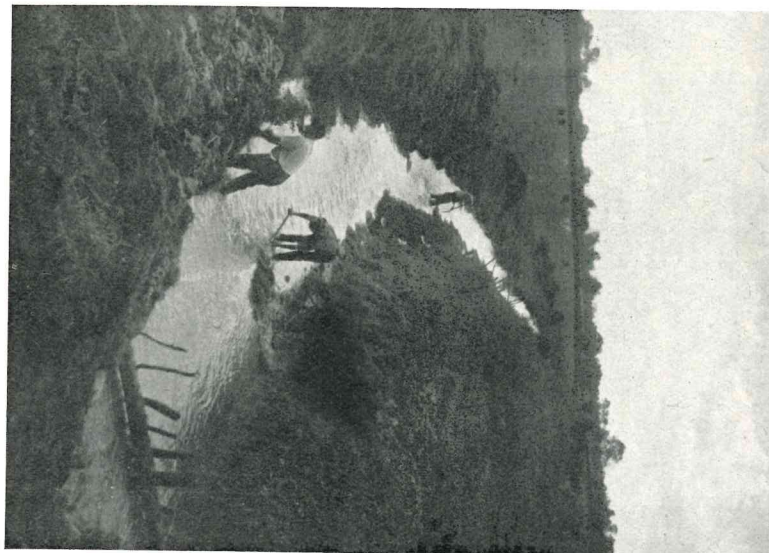
The Board continue to take an active interest in the Catchment Boards' Association which is proving increasingly useful in the interest of its members which now comprise 38 Boards.

The Board's representatives on the Association are the Chairman and Vice-Chairman of the Board and the Chairman of the Finance Committee.

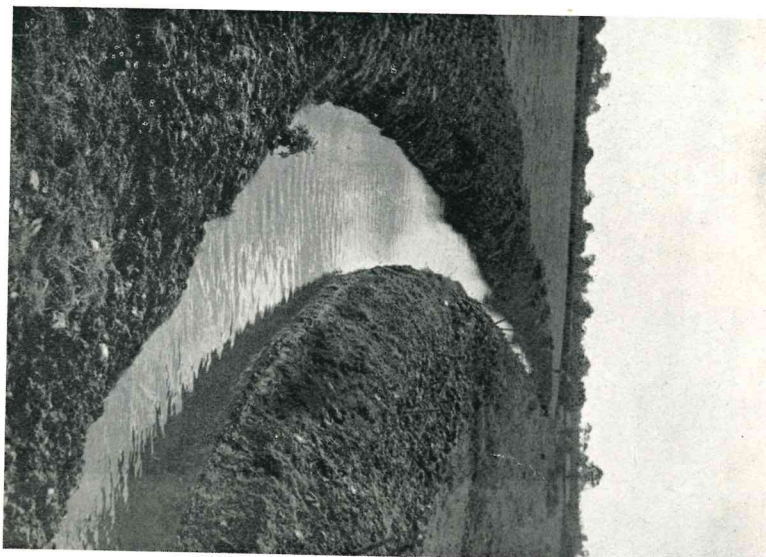


Proposed New Offices.
Elevation to Park Square.

Bedale Internal Drainage District.
Snape Main Cut before regrading.



Bedale Internal Drainage District.
Snape Main Cut after regrading.



The Annual Meeting of the Association was held in May when a cordial welcome was extended to the Minister of Agriculture and Fisheries, (The Rt. Hon. W. S. Morrison, M.C., K.C., M.P.) who delivered an instructive address in which he explained the principles upon which the provisions of Section 55 of the Land Drainage Act relating to Government Grants towards expenses incurred by Catchment Boards in improvement of existing works or construction of new works were administered by his Department.

In reference to amending legislation the President stated that it was generally agreed that the Land Drainage Act of 1930 was capable of improvement in the light of experience and he suggested that the Association might usefully give their attention to consolidating their proposals for an Amending Bill.

Col. A. P. Heneage, D.S.O., D.L., M.P., was re-appointed as President of the Association.

Several matters of interest to Catchment Boards have been dealt with during the year, amongst which the following may be mentioned:-

(a) Trunk Roads Bill.

Under the above Bill in future the Ministry of Transport will be the highway authority in respect of trunk roads.

Under Section 64 of the Land Drainage Act, 1930, it is not lawful for any person except by way of replacement or reconstruction of an existing bridge to construct a bridge over the main river of a Catchment Area without the consent (not to be unreasonably withheld) of the Catchment Board and unless the bridge is constructed in accordance with plans and sections approved by the Board.

When the Bill was going through Parliament the President of the Association requested the Minister to give an assurance that the above provision would be observed by him in dealing with any bridges over main rivers. In the course of his reply the Minister stated. "With regard to Catchment Boards, I will say that I would not construct a bridge over a main river of the catchment area without consulting the Catchment Board concerned and in default of agreement with them I would not proceed further without consulting with the Minister of Agriculture."

(b) Central Advisory Water Committee.

The Association have been invited to appoint two members with a knowledge of water problems from the point of view of land drainage, to serve on the Committee.

(c) Future development of Catchment Boards.

A Sub-Committee has been appointed (on which the Catchment Board are represented) to bring forward recommendations to the Association with regard to the future development of Catchment Boards. This Committee have also had referred to them the question of considering recommendations to be made to the Minister for amendments in any Bill to be brought forward for the amendment of the Land Drainage Act, 1930.

(d) Rivers Pollution.

A Committee has been appointed (upon which the Board are represented) for the purpose of examining the present position in regard to rivers pollution with power to negotiate and report to the Executive Council thereon.

(e) Private Bill Legislation.

Following upon representation made to the Private Bill Office by the Association, the following new Standing Orders have been approved by the House of Commons with regard to Private Bill Legislation :-

Delivery of copies of Bills to Catchment Boards.

In the case of a Bill which proposes to authorise any persons to impound or abstract water, or to discharge water into any watercourse, within the catchment area of any Catchment Board, or to construct works over, or under, or affecting any such watercourse or the banks thereof, a printed copy of the Bill shall on or before the fourth day of December, be delivered at or sent by registered post to the office of the Board.

Locus standi of drainage authorities.

Where any drainage authority within the meaning of the Land Drainage Act, 1930, petitions against a Bill alleging that the area or district of the authority will be injuriously affected by the provisions of the Bill authorising the abstraction or impounding of water, or the discharge of water into watercourses, within that area or district, it shall be competent to the Referees on Private Bills, if they think fit, to admit the Petitioners to be heard against the Bill or any part thereof.

(f) Public Health Act, 1936.

This Act received the Royal Assent on the 31st July, 1936, and came into operation on 1st October, 1937.

A Memorandum setting out the Catchment Boards' views was submitted to the Joint Select Committee, to which the Bill for the Act was referred, and the Chairman of the Executive Council of the Association appeared before the Committee in support. As a result, amendments in favour of drainage authorities were obtained and special saving provisions for their protection were inserted.

PARLIAMENTARY BILLS, SESSION 1936-37.

HUDDERSFIELD CORPORATION BILL.

Among the private Bills deposited in the Private Bill Office of the House of Commons for the Session 1936-37 was the Huddersfield Corporation Bill. The Bill was promoted by the Corporation to provide for, among other things, a transfer to themselves of three reservoirs, namely, the Bilberry Reservoir, the Holme Styes Reservoir and the Boshaw Whams Reservoir, from certain Commissioners in whom they were vested.

On acquiring these reservoirs the Corporation proposed to transfer the Holme Styes Reservoir to the Holmfirth Urban District Council and provision was made in the Bill for the winding up and dissolution of the Commissioners.

The Bill then went on to enumerate the works the Corporation might make and maintain, the following of which were of interest to the Catchment Board :-

Work No. 1. The Digley Reservoir in the Urban Districts of Holme and Holmfirth to be formed by means of an embankment across the Digley Brook.

Work No. 6. An aqueduct consisting of a line or lines of pipes to be situate in the Urban Districts of Holme and Holmfirth.

Work No. 8. An aqueduct in the Districts of Holmfirth and Honley and in the Borough.

Work No. 9. The Newsome Service Reservoir to be situate in the Borough.

Work No. 10. An Aqueduct consisting of a line or lines of pipes in the borough.

Provision was made in the Bill for the embankment of the Bilberry Reservoir to be maintained until the completion of the Digley Reservoir and for the flow of water from that reservoir to be continued in accordance with such reasonable directions in writing as might be received from the Millowners' Committee to be appointed annually.

Power was proposed to be taken by the Corporation to appropriate the waters of the Digley Brook and of all streams flowing into that Brook and of such other springs streams and waters as it might be possible to intercept by means of the Digley Reservoir and any subsidiary works in connection therewith.

It was also proposed in the Bill that after the completion and first filling of the Digley Reservoir the Corporation should cause to be discharged therefrom into the Digley Brook a quantity of water per day of 24 hours equivalent to one-third hundred and sixty fifth part of one third of the annual available rainfall on the drainage area of Digley Reservoir, for which purpose the drainage area of the Digley Reservoir should be deemed to be the natural drainage area above the embankment of the reservoir excluding those parts of that drainage area which constituted the drainage area of the waterworks of the Holmfirth Council and of the Harthill Springs and Round Hill Flat. The Bill also proposed that a suitable gauge should be erected by the Corporation in the Digley Brook 200 yards from the foot of the new embankment of the Digley Reservoir with an automatic recorder for the purpose of ascertaining and recording the quantity of water discharged from the reservoir or flowing down the brook, the records obtained by means of the gauge to be open at all reasonable times to the inspection of all persons interested in the flow of the Digley Brook.

As from the date of the transfer of the Holme Styes Reservoir by the Corporation to the Holmfirth Council the Bill proposed that the latter should maintain the existing embankment of such reservoir and until they commenced to take, use and divert the waters impounded by means of such reservoir, should permit water to flow therefrom in accordance with Millowners' directions, but not exceeding a quantity of 138,000 gallons in any one day. Further, from the date of such transfer it was proposed to authorise the Holmfirth Council to take, collect, use and appropriate the waters of the River Ribble and of all streams that flow into that river and all such other springs, streams and waters as it might be possible to intercept by means of the reservoir and any subsidiary works.

As from the date upon which the Holmfirth Council should commence to take and appropriate the waters impounded by the Holme Styes Reservoir, they were to be required during every day of 24 hours, to discharge into the River Ribble from the reservoir not less than 138,000 gallons of water in a continuous flow and make similar provision with regard to gauging as the Corporation were to provide in respect of the Digley Reservoir.

The provisions in the Bill which particularly affected the Catchment Board's interest were those relating to compensation water as above set out, and it was with some apprehension that they noted that power was sought by the Bill by agreement with the Millowners' Committee for the Corporation and/or the Holmfirth Council to vary the days and hours during which compensation water was to be discharged from either of the Digley or Holme Styes Reservoir into the Digley Brook and River Ribble respectively.

Representatives of the Board were deputed to meet representatives of the Corporation to discuss with them the proposals contained in the Bill affecting the Catchment Board's interests.

A meeting accordingly took place, when a most friendly discussion ensued, as the result of which clauses regarded as satisfactory to protect the Catchment Board's interests were agreed to by the Corporation and have been duly inserted in the Act.

With regard to the compensation water provisions, the proposals in the Bill have been revised so as to include more or less continuous flow of such water; and to avoid any question of doubt it is provided in the Act that the gauge and recorder and the records thereof shall be at all reasonable times open or available for inspection and examination by the Catchment Board.

LONDON, MIDLAND & SCOTTISH RAILWAY BILL.

Another Bill calling for close examination by the Catchment Board was that promoted by the London Midland and Scottish Railway Company.

By this Bill the Company sought power (among other things) to acquire lands at Woodhouse Mill in the Parish of Beighton in the Rural District of Chesterfield, lying between the River Rother, the Beighton Mill Tail Goit and the Sheffield-Worksop Railway, and in connection therewith to divert the Mill Tail Goit between points respectively 620 yards and 1380 yards measured downstream along the Goit from the Railway Bridge over it.

The Beighton Mill Tail Goit and the River Rother at the point in question are both marked as main river on the map of the Catchment Area.

By Clause 11 of the Bill the Company also sought power to divert a footpath at Woodhouse Mill which at the present time crosses the Beighton Mill Tail Goit in four places.

The matter was taken up with the Company, and a meeting with their representatives and the Derbyshire County Surveyor was held on the site, when the Company's Engineer explained that they had had great difficulty in obtaining suitable sites for the extension of their sidings in the neighbourhood.

With regard to the proposed diversion of the Mill Goit, the representatives of the Railway Company explained that their proposed repetition of the bends in the Goit was to meet the wishes of the owner of Woodhouse Mill, who contended that by lengthening the course of the Goit its storage capacity would be increased.

Ultimately, after further negotiations the Company agreed to be responsible for the maintenance of the diverted portion of the Goit for a period of three years from completion of the work, and that any such diversion should be carried out to the reasonable satisfaction of the Catchment Board. The Company have also agreed to construct the river face of the tipped-up embankment in such a manner as to prevent loose material therefrom being deposited in the channel of the river.

DONCASTER AREA DRAINAGE ACT, 1933—Section 1.

(a) Hatfield Chase Corporation.

By Section 1 of the Doncaster Area Drainage Act, 1933, Drainage District were made main river of the Catchment the River Don and Dutch River so far as within the Doncaster Area.

By the same section it is provided that if any of such channels or the banks thereof were vested in the Doncaster District Drainage Board they should by virtue of the Act vest in the Catchment Board.

It was also provided that, inter alia, any property held by any drainage board in respect to drainage in connection with such channels should vest in the Catchment Board. One of such drainage authorities was the Hatfield Chase Corporation and agreement has now been reached with them as to the various properties passing to the Catchment Board under the Act as follows :-

Channels or banks. (Section 1 (2).)

Right bank and flood embankment and right half of channel from Old Goole Bridge to west end of Timber Pond.

Right bank and flood embankment and channel from Timber Pond to downstream side of Dutch River Bridge.

Right bank and flood embankment and channel from upstream side of Dutch River Bridge to New Bridge.

Left bank of Dutch River from Timber Pond to New Bridge, including portions of flood embankment in the neighbourhood of Rawcliffe Bridge.

Right bank of River Don from New Bridge to Durham's Warping Drain.

Barrier bank carrying the New Bridge—Thorne County Road from New Bridge to Thorne, through Thorne and thence westwards (as the Ashfield Bank) as far as Dunston Hill Bridge.

Fishlake and Sykehouse barrier bank from a point 40 chains southwest of Topham, through Topham, thence eastwards to the River Don and southwards to a point opposite Hangman's Hill, Thorne, and thence south-westerly to River Don opposite Fishlake Church, continuing again from the west side of Fishlake southwards to Woodhouse Green, thence north-westerly to West End.

Properties. (Section 1 (3).)

Plot of land containing 95 square yards near Old Goole Bridge.

Wharf 300 yards above Old Goole Bridge leased to the Goole Marshland and Howdenshire Pure Tillage and Cattle Food Company.

Plot of land on the north bank of the Dutch River and lying to the west of Rawcliffe Bridge containing 2.71 acres or thereabouts and formerly let to R. Marshall.

Barmer Bank

Two plots of land on the north bank of the Dutch River lying to the east of Rawcliffe Bridge formerly let to R. Marshall and containing together 2.62 acres or thereabouts.

Plot of land at Rawcliffe Bridge containing 3.46 acres or thereabouts formerly let to Holland.

The freehold reversion in the bank and foreshore of the Dutch River leased to the Goole Shipbuilding and Repair Company by lease dated 31st December, 1908 for ninety-nine years from 1st January, 1909.

The freehold reversion in the bank and foreshore of the Dutch River leased to Messrs. Peter Spence & Sons, Limited, by lease dated 30th March, 1912, for a term of 99 years from 1st January, 1912.

The bank and foreshore of the Dutch River let to John Henry Stones at a rental of £5 per annum payable half-yearly on 2nd February and 2nd August in each year.

(b) Dun Drainage Commissioners.

Similar questions have arisen with regard to the Dun Drainage Commissioners who until the passing of the Act had carried out considerable work in connection with the river.

After lengthy negotiations with the Commissioners as to which works should be regarded as main river works and which should not be so regarded, it was agreed as follows :-

Works to be regarded as incidental to the main river :-

- (a) The banks adjoining Crimpsall Ings and Marsh Gate coloured brown on the plan sealed by the Minister.
- (b) The old course of the River Don, the New Cut and Cheswold River, coloured blue on the said plan between points marked "A" and "B."
- (c) Crimpsall Sluices marked C.1 and C.2 on the said plan.
- (d) Bentley Barrier Bank coloured green on the said plan.
- (e) The floodways under the Great North Road and the Selby Road at the points marked D.1 to D.4 on the said plan.

Works to be regarded as **not** incidental to the main river.

- (a) The existing and new culverts and sluices in the said Bentley Barrier Bank.
- (b) The watercourse known as Swaithe Dyke where it passes through the arches marked B.1 and B.2.
- (c) Thirty-one sluices marked on the said plan.

The arrangement come to between the two parties has been ratified by the Ministry.

SCALBY SEA CUT.

The Scalby Sea Cut from Weir Head to Scalby Mills having been marked by the Minister of Agriculture and Fisheries as part of the main river system of the Catchment Area, it has been necessary to prepare a Scheme under Section 4 (1) (a) of the Land Drainage Act, 1930 for the transfer to the Catchment Board of all such rights, powers, duties, obligations and liabilities over or in connection with it as theretofore were vested in or to be discharged by any drainage authority, and of any property held in connection therewith.

The only drainage authority concerned was the Muston and Yedingham Drainage Board and the necessary Scheme has been prepared and approved by the Minister.

By the Scheme the following properties have been transferred to the Catchment Board :-

- (i) Piece or parcel of land containing 2 roods and 14 perches situate at Scalby in the North Riding of the County of York comprised in an Indenture of Conveyance dated the sixth day of April One thousand eight hundred and two and made between Elizabeth Sedman of the one part and the Drainage Directors of the other part.
- (ii) Piece or parcel of land containing 2 acres 33 perches and houses and other buildings thereon situate in Scalby aforesaid near the Upper Mill and called Short Butts comprised in an Indenture of Conveyance dated the tenth day of November One thousand eight hundred and three and made between William Johnson and Mary Johnson his wife of the one part and the Drainage Directors of the other part.
- (iii) The freehold reversion in the Mill and premises at Scalby aforesaid comprised in an Indenture of Lease dated the twenty fourth day of August One thousand nine hundred and twenty two and made between the Drainage Directors of the one part and Israel Gilbertson Flinton of the other part and now held for a term of 2,000 years from the twenty seventh day of June One thousand nine hundred and twenty two at a rental of £5 15s. 0d. per annum and a peppercorn.
- (iv) The freehold reversion in one acre of land comprised in a Lease under date Twenty sixth day of April One thousand nine hundred and twenty eight and made between the Drainage Directors of the one part and the Revd. Walter Edward Stewart (now deceased) of the other part for a term of 14 years from the sixth day of April One thousand nine hundred and twenty eight at a rental of £3 per annum.

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(v) The following bridges over the Sea Cut Main River :—

- (1) Mowthorpe Bridge.
- (2) Scalby Bridge.
- (3) Whitby Road Bridge.

(vi) The several lands and Buildings thereon adjacent to the channel of the Sea Cut Main River shown in pink colour on the Ordnance Sheets Yorks. North Riding Numbers LXXVII 8, 10, 11, 12, 14 and 15 (1938 Edition) respectively and signed by "W. P. Holgreaves" and deposited at the Offices of the Board.

(vii) Any other properties held by the Drainage Directors over or in connection with the Sea Cut Main River and not specifically referred to in this Order.

AWARDS.

Brayton Award (Selby) Drain.

As was mentioned in the last Annual Report a certain length of this drain is dealt with in the Brayton Award, but difficulties have arisen in ascertaining upon whom a notice to maintain it should be served.

The Catchment Board promoted a Scheme for the revocation of the drainage provisions of the Award so that the operation of the Land Drainage Act, 1930, in regard to the drain might be facilitated.

Proposals have now been made for the inclusion within the Selby Dam Drainage District of the area through which the Union Lane Drain flows and under these circumstances the Board have decided to defer the Scheme in order that the matter may be dealt with by the Internal Board when their area has been extended.

Section II.

INTERNAL DRAINAGE BOARDS & DISTRICTS.

FORMATION AND SUPERVISION.

General.

Under the Land Drainage Act of 1930, the main river system of each Catchment Area in England and Wales was placed in the hands of a Catchment Board who were given powers to maintain and improve it, and in the case of this Catchment Area much valuable and costly work has been, is being and will be carried out to render these watercourses capable of efficiently evacuating surplus water from the land into the sea.

Parliament however, realised that such work would to a great extent prove useless unless equally efficient evacuation of water from low lying lands into the main rivers was ensured.

Under Section 4 of the Act therefore, Catchment Boards are placed under an obligation to bring all areas as will derive benefit or avoid danger as a result of drainage operations, under the jurisdiction of Internal Drainage Boards.

On the constitution of the Catchment Board in 1931, there were in existence within the Catchment Area, 29 Internal Drainage Boards covering an area of 161,144 acres. Since that date the Board have pursued a steady policy of either constituting new Boards or extending the districts of existing Boards with the result that there are now within their area 54 Boards whose districts cover a total area of 357,817 acres.

In slightly over six years therefore 25 new Boards have been constituted and 196,673 additional acres of land have been brought within Internal Drainage Districts.

Before considering the effect of the formation of these Boards on the internal drainage of the lowland portion of the Catchment Area it may be well to recapitulate the arguments in favour of drainage works being carried out by properly constituted Boards rather than by individual riparian owners or occupiers.

Before the breaking up of large estates the owners, generally speaking, looked after their own drainage systems most efficiently, and employed a staff of skilled drainers for this purpose who were kept more or less constantly at work.

When such estates were broken up and farms sold, the new owners in many cases had not the means to carry on drainage works in an efficient or regular manner. The cleansing of their drains if carried out at all, became the job of a labourer, often unskilled, when he was not otherwise engaged. Others failed to realise the folly of attempting to grow crops on waterlogged land, and others again lost heart through finding that the effect of cleansing their own drainage system was nullified by the neglect of their neighbours.

Frequently also the clearing of a drain by a riparian owner or occupier greatly benefited a neighbour whose lands were situated at some little distance from the watercourse in question but the latter was under no legal liability to contribute towards the cost of the work.

County Councils had the power to serve notices on persons having control of watercourses to cleanse them, but the machinery for enforcing compliance with such notices was so cumbrous and slow, that the results in many cases were not satisfactory.

The position in areas brought under Internal Drainage Boards is very different. An efficient Board adopts certain arterial watercourses within its district as main drains and these are regularly cleansed by a staff of drainers under skilled supervision. The main drains are so distributed over the whole district that each ratepayer is as far as practicable assured of an efficient discharge from his field drainage system and the cost of this work is borne equally by the District as a whole. The Board is also empowered to carry out works of improvement, the cost of which is far beyond the financial resources of individual landowners and is now also in a position to apply for a Government Grant amounting to one third of the cost of the works in ordinary cases and half the cost for special works.

Such a Board is comprised generally of the most able owners or occupiers of lands in the District, which ensures that with their extensive knowledge of the area, the ratepayers' money will be expended to the best advantage and that whilst extravagant schemes will not be embarked upon, the arterial drainage system will at all costs be efficiently maintained to the benefit of all.

As a result of the formation of new districts, it is found that in many cases drains are now being regularly cleansed which have not received attention within the memory of man.

Owing to long neglect the cost of dealing with such watercourses is obviously heavy and for financial reasons therefore, several years must elapse before such Boards can overtake arrears.

In all cases, however, where a Board has been set up, improvements in the drainage system have resulted and below are given a few examples of new works or improvement schemes carried out by Internal Drainage Boards within the Catchment Area.

It should of course be understood that Drainage Boards carry out works of maintenance as a matter of routine on the main drains in their districts and that the following list only indicates a few works of improvement which certain Drainage Boards have carried out in addition.

Bedale Drainage Board.

This Board has carried out a scheme of improvement on the Snape Main Cut involving the deepening and regrading of this drain. This involved the removal of large quantities of very hard gravel from the bed of the drain, and it is satisfactory to note an improvement in the drainage system of the land served by this watercourse is already obvious. The photographs on page 6 illustrate this work.

Black Drain Drainage Board.

The Black Drain which is the largest arterial drain in this district has been deepened and regraded to enable water to gravitate freely to the pump situated at the outlet of the drain into the Dutch River.

The work was carried out by a dragline excavator, and has effected a marked improvement in the drainage of the district.

Dearne & Dove Drainage Board.

This Board which has only been recently set up found all its main drains in a most unsatisfactory condition.

During the year under review a main drain known as the Ings Dyke was widened and deepened by a dragline excavator hired from the Catchment Board. This work is not yet complete and is continuing.

River Foss Drainage Board.

After considerable delay and difficulty the Board succeeded in setting up the River Foss Internal Drainage Board through whose area flows the River Foss for a distance of sixteen miles.

For many years there has been considerable agitation for improvement works to be carried out on the River Foss, a tributary of the River Ouse.

Considerable flooding has occurred every year but until the Catchment Board set up the River Foss Internal Drainage Board all efforts to secure the putting in hand of a satisfactory scheme had not met with success.

The Board are glad to be able to report that the newly created Authority have energetically commenced their duties and already carried out drainage works on the River Foss and other main drains in the District, and have adopted an improvement scheme estimated to cost £6,000.

Knottingley to Hensall Drainage Board.

This Board has constructed a new clough at the outlet of the Marsh Drain into the River Aire at Eggborough. This drain is the largest in the district and serves a considerable area of agricultural land.

Muston & Yedingham Drainage Board.

This Board is one of the oldest in the area, having been in operation for about a century.

During the year under review a scheme of improvement has been carried out on the River Hertford, which has been deepened and regraded by a dragline excavator hired from the Catchment Board.

Selby Dam Drainage Board.

This Board which is also one of the older drainage authorities in the Catchment Area has carried out a scheme of improvement on the Selby Dam Drain involving the deepening and regrading of the watercourse for a length of about 5½ miles, the work being carried out by a dragline excavator hired from the Catchment Board.



**Snaith Internal Drainage District.
Widening Main Drain.**



**Snaith Internal Drainage District.
Widening Main Drain.**



River Don.
Typical slip in bank near Wormley Hill.



Dutch River.
Shoal caused by slip in bank near Goole Railway Bridge.

Snaith Drainage Board.

The whole of the water from this district drains into the River Aire and is evacuated mainly by an electrically operated pump. To increase the efficiency of the pump the Board have recently completed a widening scheme on the main drain, this work being executed by a dragline excavator hired from the Catchment Board. The photographs on page 21 illustrate this work.

The foregoing representative cases illustrate the valuable work which can be carried out by properly constituted drainage authorities provided they elect to exercise energetically and intelligently the very considerable powers given to them under the provisions of the Land Drainage Act of 1930.

By the united and co-ordinated efforts of the Catchment Board and the Internal Boards it is to be hoped that in the course of a few years every acre of suitable land within the Catchment Area will be well drained and rendered capable of producing its appropriate crop.

GOVERNMENT GRANTS TO INTERNAL DRAINAGE BOARDS.

The most important event of the year so far as Internal Drainage Boards are concerned has been the announcement that Government Grants would be available for approved schemes of drainage improvement.

In the years immediately preceding the passing of the Land Drainage Act, 1930, Government funds were available for unemployment schemes and many Drainage Authorities availed themselves of the opportunity of securing assistance in carrying out drainage works by applying for and obtaining grants under such provision.

Since the passing of the Act however the Government has discontinued the policy of unemployment grants and as no provision was made in the Land Drainage Act, 1930 for grants to be obtained by any Drainage Authorities except Catchment Boards there has been no way in which Internal Drainage Boards could obtain Government assistance in carrying out drainage schemes.

The Board were therefore glad to be informed by the Ministry of Agriculture and Fisheries that they had had under consideration in connection with the general question of agricultural production and food supply various ways of increasing the productivity of the soil and that power was being sought in the Agriculture Bill then before Parliament to make grants to Drainage Authorities (other than Catchment Boards) including County Councils (except London) and County Borough Councils (with Agricultural Committees) to enable them to carry out schemes for the improvement of land in need of proper drainage.

Parliament having voted the necessary moneys it is now competent to the Authorities above referred to to submit Schemes to the Ministry for grant purposes.

On perusing a copy of the communications addressed to Internal Drainage Boards and County and County Borough Councils it was observed that assistance would be available on the following conditions:—

- (1) The rate of grant would be $33\frac{1}{3}\%$ of the final net cost of all such schemes as might be approved by the Ministry with an increase to 50% in cases where the installation of pumping plant or such constructional work as sluice gates or sea defence work (involving costly material) was necessary.
- (2) Work would be confined mainly to the winter months (15th October to 30th April) but such period might be extended in exceptional cases, where the scheme had been unavoidably delayed by bad weather etc.
- (3) Wages paid would be restricted to the local agricultural rate except in the case of schemes which were in the vicinity of big towns or industrial areas where higher rates were general. In such cases the rate of wage would be that commonly recognised in the district for the type of work involved.

In effect this means that financial assistance is obtainable for all schemes of improvement adopted by Internal Drainage Boards. Drainage schemes involving drain clearing and re-grading receive a grant of $33\frac{1}{3}\%$ and schemes involving constructional work such as new sluices, pumping stations, piling etc., receive a grant of 50%.

The Board have drawn the Ministry's attention to the fact that it will not be practicable to carry out certain schemes which are undoubtedly suitable for grant if the condition was adhered to that work should be confined mainly to the winter months and that work generally could be done more expeditiously and economically carried out if the schemes could proceed during the summer months. It has also been pointed out to them with regard to the suggested wages to be paid that Internal Drainage Boards in the Catchment Area generally speaking were paying a rate higher than the local agricultural months and that work generally could be done more expeditiously obtain satisfactory labour to carry out any approved scheme at the wages suggested by the Ministry.

The matter has been further taken up with the Ministry and it is felt that a reasonable interpretation will be given to the conditions.

Several Internal Drainage Boards within the Catchment Area have in hand the preparation of schemes which are being prepared in consultation with the Board.

The following schemes of drainage works to be undertaken by Internal Drainage Boards within the Catchment Area have received the Ministry's approval up to the 31st October :

Name of Drainage Board.	Description of Scheme	Estimated Cost .	Amount of Estimated Grant.
Wistow, Cawood & Selby Drainage Board.	Provision of Pipe drain.	£ s. d. 231 14 0	£ s. d. 77 4 8
Selby Dam Drainage Commissioners	Improvement of drains.	757 0 0	252 6 8
Black Drain Drainage Board.	Widening and deepening drains.	1489 0 0	744 10 0
Dearne & Dove Drainage Board.	Removal of bushes and regrading of drains.	340 0 0	113 6 8

CREATION OF NEW DISTRICTS.

Ainsty.

The Minister has now confirmed by Order the Scheme submitted to him by the Board for the constitution of a new district bounded on the east by the Marston Moor District, on the north by the River Nidd, and on the west the River Crimple Drainage District. It extends on the south to Wetherby Racecourse and near to the Village of Walton, and contains about 5,370 acres and is called the Ainsty Internal Drainage District.

The first meeting of the newly constituted Board was held on the 19th February, 1937, when County Alderman Colonel E. York was appointed Chairman of the Board and Sir Robert N. Kay (Solicitor of York) the Clerk.

The Board have energetically started their duties, and the valuation of their district is almost complete. They have already commenced drainage operations and employ a staff of drainers who have already cleansed part of the system of main drains.

Cliffe.

The Ministry have also issued an Order confirming the Catchment Board's Scheme for the constitution of a new district which is known as the Cliffe Internal Drainage District. The district covers 5,330 acres of land draining into the Rivers Ouse and Derwent situated to the south and east of the existing Ouse and Derwent Drainage District.

The first meeting of the newly constituted Board was held on the 1st March, 1937, when H. Simpson Esq., was appointed Chairman of the Board and Mr. S. Brabbs (of Selby) their Clerk.

The valuation of this district is being prepared by their Clerk, and is almost complete.

The Board have already commenced drainage operations, and contracts have been let for cleaning the main drains of the district.

Ouseburn.

The Minister has now issued an Order confirming the Catchment Board's Scheme for the constitution of a new district known as the Ouseburn Drainage District. The

district covers about 3,936 acres of lowlands draining into the River Ouse on the right bank and River Nidd on the left bank from Cuddy Shaw Landing on the Ouse to Pool Beck on the Nidd.

The Drainage Board held its first meeting on the 2nd July, 1937, when Arthur Cundall Esq. was appointed Chairman and Mr. J. F. Coatesworth (of York) has subsequently been appointed Clerk.

The valuation of this district is in course of preparation and the Board are making arrangements for drainage works to be commenced as soon as possible.

Watershed of the Swale.

Two further districts to be set up during the year have been the Upper and Lower Swale Internal Drainage Districts. Between them they embrace all the lowland areas draining into the River Swale as will derive benefit from, or avoid danger as a result of drainage operations.

The Upper Swale District comprises some 7,150 acres and contains a total length of 29 miles of main drains. It extends roughly from the railway embankment at Maunby to Catterick Bridge. This Board held its first meeting on the 27th September, 1937, when T. S. Chapman Esq. was appointed Chairman and Mr. W. T. Whitton (of Bedale) the Clerk.

The Lower Swale District extends from Swale Nab to the railway embankment at Maunby and covers about 8,450 acres with a total length of main drain of 26 miles. This Board also held its first meeting on the 27th September, 1937, when G. Revelly Esq. was appointed Chairman and at a later meeting Mr. I. Smith (of Thirsk) was appointed Clerk.

Both these Boards have energetically commenced their duties and are making arrangements for the valuation of their districts to be prepared. They have also arranged for all the main drains in their district to be inspected by members of the Board and are hoping to commence drainage operations in the near future.

West Derwent

Another district to be set up during the year has been the West Derwent Drainage District. This District contains 13,140 acres which drain into the River Derwent and is situated to the east of and adjoining the Ouse and Derwent Drainage District.

The first meeting of the new constituted Board was held on the 26th April, 1937, when W. Bramley Esq. was appointed Chairman, and Mr. S. Brabbs (of Selby) Clerk.

The valuation of this district is being prepared by their Clerk, and is almost complete.

The Board have already commenced drainage operations, and contracts have been let for cleaning the main drains of the district.

River Wiske.

At the extreme north end of the Catchment Area the River Wiske Internal Drainage District has been set up. Its main arterial drain is the River Wiske itself for a length of about 24 miles. In addition to this, the tributaries of this river may properly be regarded as main drains for a total length of about 54 miles. The area included in the district for rating purposes amounts to about 9,400 acres.

The new Board held its first meeting on the 17th February, 1937, when A. W. Watts Esq., was appointed Chairman and Mr. J. Hunt (Solicitor, Northallerton) Clerk.

This Board is to be congratulated on the work it has already carried out since its formation. The valuation is almost complete and the River Wiske has already been cleaned out for approximately half its length. The work is continuing and arrangements have been made for the full length of the River Wiske to receive attention.

EXTENSIONS OF EXISTING DISTRICTS.

Bishopsoil.

The Minister has now made an Order altering the boundaries of the Bishopsoil Drainage District by including therein :—

- (a) A strip of land situate between Portington and Hive, having an approximate area of 510 acres.

- (b) A piece of land at Balkholme, having an approximate area of 284 acres and draining into Near Drain.

- (c) A triangular area to the south-east of Near Drain between Trandylane Bridge and Shortbutts Bridge, covering 120 acres ;

thus increasing the present area of the District from about 6,172 acres to approximately 7,086 acres.

At the same time opportunity was taken in the Order to alter the provisions of the Bishopsoil Act under which the Board was originally formed so far as its provisions relating to the qualification and the election of new members was concerned.

The new Board now consists of fifteen members, each of whom must either be an owner or occupier of land situate in the drainage district.

The Order also provides in order that there may be no doubt about the matter that notwithstanding anything contained in the Bishopsoil Act or the Award made thereunder on the 25th day of January 1777 or anything contained in any other Act or Award made in pursuance of a local Act affecting any land in the Drainage District from and after the appointed day, the Drainage Board may from time to time at their own cost and expense cleanse, repair or otherwise maintain or improve any existing watercourse or drainage work in the Drainage District and do any other act or things reasonably necessary or required for the purpose of protecting from injury or benefiting or improving any land or hereditaments in the Drainage District.

Dun.

The question of extending the boundaries of the Dun Drainage District is one which has given the Commissioners and the Catchment Board matter for serious consideration for some time, and finally an area has been agreed upon which in the opinion of both bodies comes within the description of land described in Section 1 of the Land Drainage Act as proper to be brought within an internal drainage district, i.e. "such areas as will derive benefit or avoid danger as a result of drainage operations."

The proposed added areas consist mainly of strips of land situated along the south eastern and western boundaries of the district, and amount to 4,500 acres in all.

The Catchment Board have therefore placed on deposit a Scheme together with a Map showing the proposed added area.

At the same time opportunity was taken by the Scheme to reorganize the Drainage Board and bring its proceedings in line with the provisions of the Land Drainage Act, 1930.

Numerous objections have been received in respect of properties proposed to be brought within the district and in due course the Minister will give his decision thereon.

River Kyle.

A Scheme has been placed on deposit for the extension of the River Kyle Drainage District which at present comprises little over 2,000 acres adjacent to the River Kyle which discharges into the River Ouse above Newton-upon-Ouse.

The area proposed to be added to the District amounts to about 18,000 acres including certain lands within the parishes of Haxby, Skelton and Wigginton.

An objection was taken by the Flaxton Rural District Council to the inclusion of such lands, but the Catchment Board were of opinion that they had been rightly included and have so informed the Minister who has now placed on deposit his draft Order to confirm the Catchment Board's Scheme.

Norton (or Went)

A Scheme has been submitted to the Ministry for the extension of the Norton (or Went) Drainage District by adding thereto the remainder of the lowland area of the River Went which is a tributary of the River Don.

At the same time the opportunity has been taken of amending the provisions of the Went Act relating to the qualification of members of the existing Drainage Board and the election of new members so as to bring them in line with the procedure set up by the Land Drainage Act, 1930.

No opposition has been received to the Scheme and in due course it is expected that the Minister will make his final Order in the matter.

The Drainage Board of the enlarged district will consist of fifteen members and the enlarged area of the district will be 19,100 acres.

ELECTIONS.

The members of internal drainage boards formed under the Land Drainage Act, 1930, or to which the provisions of the Act have been applied, hold office for a period of three years, after which an election must be held.

The following internal boards were due to hold elections during the year under review :—

Bedale.	Marston Moor.
Black Drain	North Wharfe.
Cod Beck	River Foss.
Earby & Salterforth.	Rye.
East Derwent	South Wharfe.
Fishlake.	Sykehouse.

The electors at an election for members of an internal drainage board are the ratepayers, both owners and occupiers, in the drainage district, but no ratepayer is entitled to register his vote if any portion of a drainage rate in respect of which he is liable and which has been demanded remains unpaid for more than a month. It follows therefore that no newly created internal drainage board is in a position to hold an election until they have prepared a valuation of their district and carried out all other necessary work to be in a position to levy a rate and have indeed levied such a rate so there may be duly qualified electors to vote.

It is the custom of the Minister when making an Order constituting a new internal drainage board to provide that the first members thereof who take up office on the appointed day shall remain in office until the 1st day of November in the year following that in which the new board is first set up. It has been found in various cases that the newly created board has not been able to carry out all necessary work and levy a rate in time for the first election to be held. In these cases it has therefore been necessary to obtain an Order from the Ministry extending the period of office of the first members for an additional year.

This course has been taken in the case of the following boards and Orders have been duly made by the Ministry :—

East Derwent, and River Foss.

BYELAWS.

The Board have taken another opportunity of bringing to the notice of internal drainage boards generally the desirability of making Bye-laws to secure a more efficient working of the drainage system in their district, and have recommended them to give serious consideration to the question. It is believed that many of them are doing so, but during the year only the following two additional boards have reached the stage where draft Bye-laws have been placed on deposit :—

River Foss.
Acaster.

MISCELLANEOUS.

Black Drain Drainage District.

As has been pointed out in the previous Report the water from the main drain of the Black Drain Drainage District is evacuated into the Dutch River by means of a pump, and it would appear that the water from a small area in the neighbouring Thorntree Drainage District finds its way into the Black Drain and is thus dealt with at the expense of the Black Drain Drainage Board.

The Catchment Board therefore suggested to the two boards that the matter might be dealt with by means of an Agreement under Section 39 of the Land Drainage Act, 1930, whereby the Thorntree Board should agree to contribute towards the cost of works of drainage by the Black Drain Board in dealing with water from their area. The Thorntree Drainage Board however have suggested that the matter be allowed to stand in abeyance for the time being as they were desirous of seeing what the ultimate result of the improvements expected to be effected by the Catchment Board on the main river would be in the area.

Dearne & Dove Internal Drainage Board. Drainage Works.

An interesting illustration of the need for the closest co-operation between the Catchment Board and the various internal drainage boards within the Catchment Area has been afforded by the action taken by the Internal Board to supplement the main river works carried out by the Catchment Board in their area.

In order to effect improvements in the River Dearne and to mitigate and as far as possible prevent periodical flooding the Catchment Board have completely reconstructed the Knoll Beck Barrier Bank.

It was suggested to the Internal Board that they might usefully improve the Thurnscoe Carr and Ings Dyke and the Internal Board suggested that as the Catchment Board had suitable plant in the neighbourhood and the necessary skilled men they might undertake this work on behalf of the Drainage Board and debit them with the cost. The Catchment Board agreed that this would be the most effective and economical way of doing the necessary work and they have accordingly agreed to do so.

In addition to this work the Board are proposing to carry out further improvement works estimated to cost £340, and the Ministry of Agriculture and Fisheries have already sanctioned a grant of £113 6s. 8d. towards this work which will be carried out during the coming year.

Brompton Beck.

A communication has been received from the North Riding of Yorkshire Agricultural Committee stating that the Northallerton Rural District Council had requested that a deputation of members of the County Council should meet their representatives at Brompton with regard to the flooding which occurs periodically in the village.

The Catchment Board were requested to send representatives and as the Beck was a main drain of the newly created River Wiske Internal Drainage Board in whose area the village and the scene of the flooding were situated it was felt desirable that they should also be represented.

A meeting was accordingly held of all the interested parties, when after a long discussion it was felt that a survey of the Beck, including a measurement of the various bridges, sluices etc. might disclose the real cause of the flooding.

Subsequently a request was received from the Internal Board that such a survey might be made.

This has been done by the Board's Engineer, and particulars of the survey together with plans have been forwarded to the Agricultural Committee.

Pocklington Canal.

The Pocklington Canal which runs from Canal Head, one mile south of Pocklington to the River Derwent at East Cottingham belongs to the London & North Eastern Railway Company, and in response to their suggestion the matter has been discussed as to whether the canal which for the greater part of its length is within the Wilberfoss & Thornton Level Drainage District could usefully be taken over by the Catchment Board or the Internal Drainage Board.

The Engineer reported that it would not benefit the main river system of the Catchment Board if the canal were made main river, but the Wilberfoss & Thornton Level Drainage Board were invited to consider the matter to see whether it would be practicable to divert the Pocklington Beck into the canal at Canal Head and the Bielby Beck at Bielby with a view to making the canal a carrier of highland flood water thus relieving the lowland drainage system.

The matter was carefully considered by the Internal Drainage Board who in view of all the existing circumstances, including their present commitments, decided to take no action in the matter.

Hatfield Chase Corporation.

Black Drain Drainage District.

The Board have had under consideration the anomalous position in relation to two small portions of the rateable area of the Hatfield Chase Corporation drainage area being also within the Black Drain Drainage District resulting, inter alia, in such land being liable to be rated by two separate authorities.

In allowing the Corporation's appeal against the nominal sum precepted upon them by the Board in respect of these areas the Minister of Agriculture and Fisheries suggested for the consideration of the Catchment Board the question whether action might not be taken by means of a scheme under the Land Drainage Act, 1930 for the exclusion of such areas from the jurisdiction of the Hatfield Chase Corporation, and action is being taken accordingly.

River Swale.

Non main river section.

A communication was received from the North Riding of Yorkshire Agricultural Committee to the effect that the Cultivation and Land Drainage Sub-Committee had had under

consideration the damage done to land by the overflowing of the River Swale in its higher reaches. The River Swale is a main river only to Catterick Bridge and the portion of the river above referred to is much higher up, namely, in the Reeth district.

Enquiries were made as to whether steps could be taken to help farmers whose land was flooded in this area, and the Board went into the question as to whether it would be possible to include the area in an internal drainage district.

The Board therefore caused a survey of the river to be made between Catterick Bridge and Muker when the Engineer reported to them that in the length of approximately $3\frac{1}{2}$ miles from Catterick Bridge to Richmond the river had a rapid fall and that the land adjoining rose fairly sharply, and therefore if a drainage board were set up for this length very little land could be included.

From Richmond up to Reeth, a length of approximately 10 miles, the river runs through a valley the sides of which are very steep and the Board felt in this case also that the setting up of an internal drainage district in the valley was not practicable as very little land could be included. Between Reeth and Muker, a length of approximately 9 miles, though land immediately adjoining the river is fairly flat and in places is protected by a flood bank, the flood bank does not protect more than one field distant from the river as land further away than this rises rapidly and is not liable to flooding from the river.

The Board therefore decided that it was not practicable to deal with the problem raised by the North Riding Agricultural Committee by the formation of internal drainage districts, and they have been so informed.

Swang Drain.

Another interesting example of the good work which can be carried out when the Catchment Board and the internal boards work together is afforded by the case of the Swang Drain which is a main drain discharging into the Dutch River.

Complaints of flooding of certain lands in the district were investigated when it was found that an area which now drained into the Swang Drain had originally drained into an adjacent main drain known as the Dempster Main Drain which however was not of sufficient capacity to deal with all the water which was being discharged into it.

The matter was discussed jointly by the Catchment Board and the Dempster Internal Drainage Board, when it was agreed that if the Catchment Board reconstructed and enlarged Swang Clough the Internal Drainage Board would improve the drain so that full advantage of the enlargement of the clough might be obtained and the ground for complaints as to flooded land removed.

The Catchment Board have already commenced work on enlarging the clough, and when this is completed the Drainage Board will be in a position to commence the widening and improvement of the drains leading thereto.

River Went.

The River Went is a tributary of the River Don discharging on its west side a short distance above New Bridge, Thorne. It has a total catchment area of about 46,300 acres of which about 27,200 acres may be deemed to be highlands and 19,100 acres lowlands.

For a distance of $11\frac{1}{2}$ miles the river flows through the Norton (or Went) Drainage District and it falls upon the Internal Drainage Board to deal with the whole of the water from the catchment area of the river, although their present district over which they are empowered to levy rates is but 4,776 acres. As is described on page 30 of this Report a Scheme is in hand for the extension of the Internal District.

Works of improvement on the river being urgently needed the Board were glad to receive from the Went Drainage Commissioners a copy of a report submitted to them by their Engineer for the improvement of the river. The estimated cost of the scheme outlined in such report was shown as £30,000 exclusive of any land which might have to be purchased.

The Board have approved of the scheme in principle and have drawn the attention of the Internal Drainage Board to the effect of the proposals to extend the present district and also to the policy of the Government to provide grants for approved Schemes submitted by internal drainage boards.

West Haddlesey Internal Drainage Board.

Brotherton Ings.

A case of exceptional difficulty with which the Catchment Board have had to deal has been the problem presented by the area known as Brotherton Ings which is an area in

process of being subsided by colliery workings comprising about 140 acres in the Parish of Brotherton. That such an area could be improved by a drainage operation goes without saying, but only at a cost in excess of any benefit to be derived therefrom. It forms part of the West Haddlesey Internal Drainage District and is connected with the main area of that district by a drain of unknown depth and dimensions referred to in an old Award as the "subterraneous drain." The Internal Drainage Board are strongly of opinion that the area should be taken out of their district and several discussions with them have taken place in the matter.

Eventually a conference was called at which the Catchment Board, the Internal Drainage Board, the West Riding County Council and the Ministry of Agriculture and Fisheries were all represented.

The only way for the area to be removed from the Drainage District would be by an Order made by the Ministry of Agriculture and Fisheries to give effect to a scheme to be promoted by the Catchment Board with that object in view.

Many arguments were used both for and against such a proposal. In view of the fact however that if the area were taken out of the District the County Council would not be in a position to operate Section 35 of the Land Drainage Act in respect of the drains therein so far as their condition was due to subsidence, it was felt that the area should remain in the Drainage District, when the Internal Drainage Board in the event of any drainage works being carried out therein could preserve an equitable situation by making a differential rate in respect thereof.

RATING IN URBAN AREAS.

Included within the Dearne & Dove Internal Drainage District are portions of the Wombwell, Darton and Darfield Urban District Councils and also of the County Borough of Barnsley, which in the aggregate contain several hundred separate hereditaments, rated for land drainage purposes at one third of their annual value.

It will readily be seen therefore that the amount of labour and cost incurred if each of these individual properties were rated separately would be considerable.

The Internal Board therefore turned their attention to Section 25 of the Land Drainage Act, 1930, which provides that the rating authority of an urban district, some part of which is situate within a drainage district and the drainage board of that district might agree so long as the agreement is in force that no drainage rate made by the Drainage Board should be levied by them upon the occupiers of hereditaments within that part of the urban district, but that the rating authority should pay to the Drainage Board within two months after the making of any drainage rate, a sum equal to the aggregate of the amounts which the drainage board would have been entitled to demand and recover in respect of that rate from the occupiers of hereditaments within that part of the urban district. The Section goes on to say that any sum payable by an urban rating authority under this Section shall be paid by them out of the proceeds of an additional item of the general rate levied in that part of the urban district.

Action under this Sub-section did not commend itself either to the drainage board or the urban authorities involving as it did special rating by the latter.

An alternative method was therefore sought whereby the ratepayers in the urban portions of the drainage district would not be the recipients of a separately demanded drainage rate which could not be economically collected.

Section 32 of the Land Drainage Act gives power to local authorities to contribute to the expenses of drainage works and by Section 24 the drainage board may exempt for good and sufficient reason any part of their district from the payment of drainage rates.

Agreements have therefore been entered into between the Drainage Board and the various urban authorities whereby the urban authorities have agreed to contribute to the Drainage Board such amounts as the Drainage Board would have been entitled to demand and recover from the occupiers of hereditaments within that part of the district, and at the same time the Drainage Board has, with the approval of the Ministry, made Orders exempting such parts of their District from rating.

LOWLAND AREA.

The following schedules show the progress which has been made in bringing all lands within the Catchment Area, likely to benefit or avoid danger as a result of drainage operations, under the jurisdiction of internal drainage boards:-

INTERNAL DRAINAGE BOARDS IN EXISTENCE WHEN THE CATCHMENT BOARD WAS CONSTITUTED on the 13th May, 1931.

NAME OF BOARD.	Area of Acres. District	District Drains to	Observations
Acaster	3245	Ouse & Wharfe	Part of.
Adlingfleet and Whitgift	1469	Ouse	
Airedale	2905	Aire	
Airmyn	2310	Ouse and Dutch River	
Aldborough	1080	Ure	Ministry gave area as 5557.
Appleton Roebuck and Copmanthorpe	4711	Wharfe	
Bellasize	1153	Ouse	
Bishopsoil	3782	Ouse	
Cowick	2702	Don	Part of.
Dempster	2696	Ouse and Dutch River	
Dun	14500	Don	
Dunsforth	1165	Ure	
Goole Fields	2643	Ouse	(Amalgamated with Muston & Yedingham D.D. 9th Jan., 1933).
Greenoak	1383	Ouse	
Hatfield Chase Corporation	871	Dutch River	
Howden	3532	Ouse	
Hutton Buscel and West Ayton	1781	Derwent	21,200 acres rated in 1931.
Kyle River	2039	Ouse	
Lower Aire	18700	Ouse and Aire	
Muston and Yedingham	16413	Derwent	
Norton (or Went)	4776	Don	
Ouse and Derwent	30000	Ouse	
Reedness and Swinefleet	4877	Ouse	
River Crimble	1502	Nidd	
River Tutt	1559	Ure	
Selby Dam	14500	Ouse	
Snaith	950	Aire	
Wilberfoss and Thornton Level	8200	Derwent	
Wistow, Cawood and Selby	5700	Ouse	
Total of 29 Districts	161144		

NEW INTERNAL DRAINAGE BOARDS CONSTITUTED
between 31st October, 1936 and 31st October, 1937.

NAME OF BOARD.	Area Acres.	District Drains to
Ainsty	5370	Nidd
Cliffe	5330	Ouse & Derwent
Lower Swale	8450	Swale
Ouseburn	3936	Ouse and Nidd
River Wiske	9400	Swale
Upper Swale	7150	Swale
West Derwent	13140	Derwent
TOTAL	52776	

EXISTING INTERNAL DRAINAGE BOARDS WHOSE
BOUNDARIES HAVE BEEN EXTENDED
between 31st October, 1936 and 31st October, 1937.

NAME OF BOARD.	New Area Acres	District Drains to
Bishopsoil	7086	Ouse

EXISTING INTERNAL DRAINAGE DISTRICTS
SURVEYED WITH A VIEW TO ALTERATION OF
BOUNDARIES.

NAME OF BOARD.	Proposed to be added to exist- ing District. Added Acres.	District Drains to River
Dun	4500	Don
Greenoak	2208	Ouse
Howden	1902	Ouse
Kyle River	18050	Ouse
Selby Dam	2000	Ouse
Went	14324	Don
Wilberfoss and Thornton Level	20233	Derwent
Wistow, Cawood and Selby	300	Ouse
TOTAL	63517	

INTERNAL DRAINAGE BOARDS OPERATING
on 31st October, 1937.

NAME OF BOARD.	Area of District Acres.	District Drains to	Observations
Acaster	3245	Ouse & Wharfe	Part of
Adlingfleet and Whitgift	1469	Ouse	
Ainsty	5370	Nidd	
Airedale	2905	Aire	
Airmyn	2310	Ouse and Dutch River	
Aldborough	1080	Ure	
Appleton Roebuck and Copmanthorpe	4711	Wharfe	
Bedale	5363	Swale	
Bellasize	1153	Ouse	
Bishopsoil	7086	Ouse	
Black Drain	4223	Dutch River	
Cliffe	5330	Ouse & Derwent	
Cod Beck	4100	Swale	
Cowick	2702	Don	
Dearne & Dove	5300	Dearne	
Dempster	2696	Ouse and Dutch River	
Dun	14500	Don	
Dunsforth	1165	Ure	
Earby & Salterforth	574	Aire	
East Derwent	11500	Derwent	
Fishlake	3150	Don	
Goole Fields	2643	Ouse	
Gowdall	1664	Aire	
Greenoak	1383	Ouse	
Hatfield Chase Corporation	871	Dutch River	Part of
Howden	3532	Ouse	
Knottingley to Hensall	5806	Aire	
Kyle River	2039	Ouse	
Lower Aire	18700	Ouse and Aire	
Lower Swale	8450	Swale	
Marston Moor	11741	Ouse	
Muston and Yedingham	18194	Derwent	
North Wharfe	4377	Wharfe	
Norton (or Went)	4776	Dutch River	
Ouse & Derwent	31283	Ouse	
Ouseburn	3936	Ouse	
Rawcliffe	2700	Aire and Dutch River	
Reedness and Swinefleet	4877	Ouse	
River Crimple	1502	Nidd	
River Foss	20000	Ouse	
River Tutt	1559	Ure	
River Wiske	9400	Swale	
Rye	30470	Rye & Derwent	
Selby Dam	14500	Ouse	
Snaith	950	Aire	
South Wharfe	5473	Wharfe	
Sykehouse	2775	Don	
Thornton	12970	Derwent	
Thorn tree	1824	Dutch River	
Upper Swale	7150	Swale	
West Derwent	13140	Derwent	
West Haddlesey	5300	Aire	
Wilberfoss and Thornton Level	8200	Derwent	
Wistow, Cawood and Selby	5700	Ouse	
TOTAL	357,817		

IN RIVERS AND WORKS.

IN RIVER SYSTEM.

the Catchment Area as shewn on the
chment Area is as follows :-

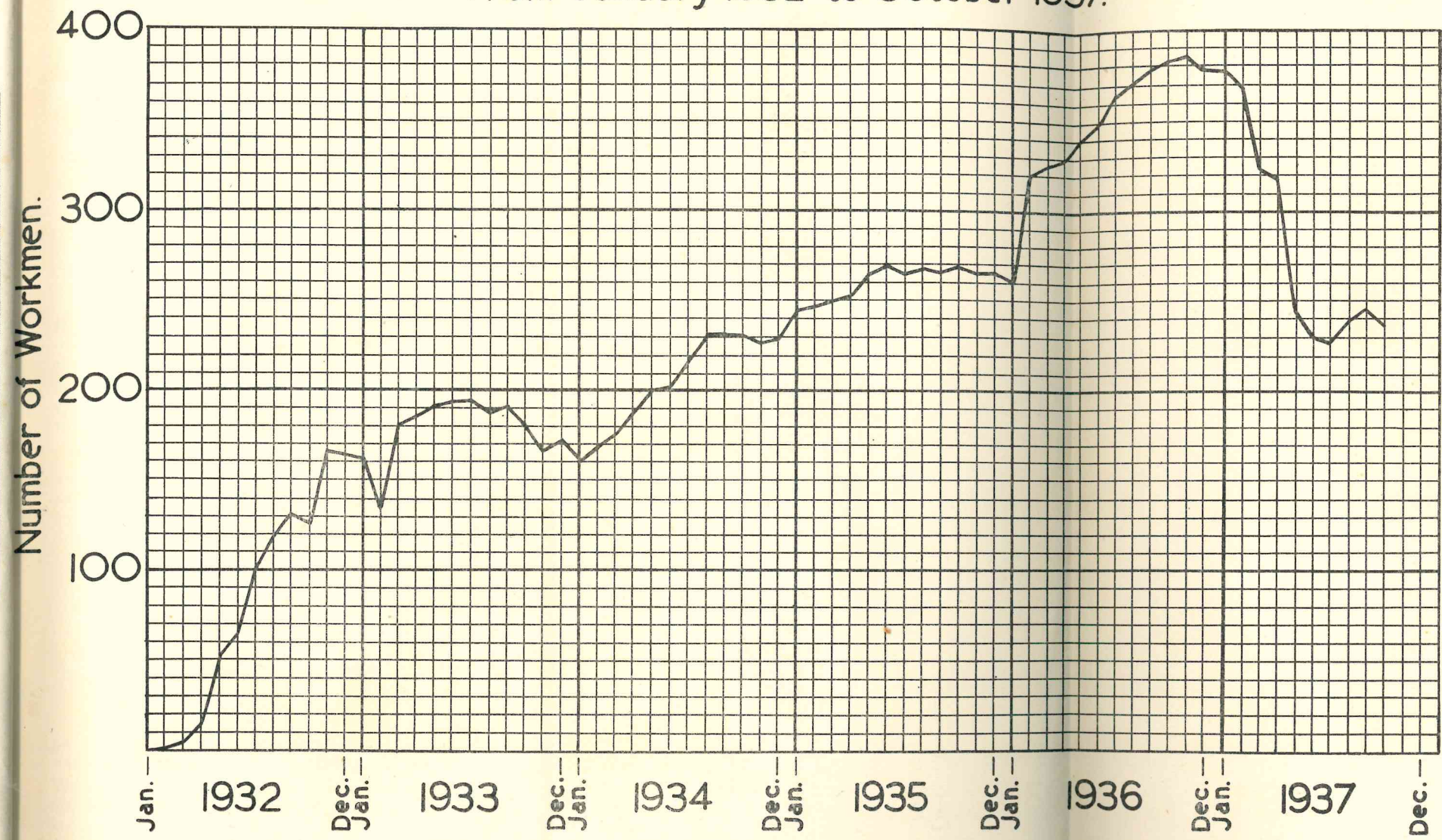
From	To confluence with	Length Miles	Water Shed Area Sq. Miles
am	Ouse	50½	757
te	Derwent	8	
seven	North Sea	5	12
ad	Ouse	40½	569
k Bridge	Swale	44	383
y	Ouse	43	254
Bridge	Ouse	48	408
Bridge	Ouse	77	506
den	Aire	47½	361
y Bridge	Ouse	45½	714
.....	Don	21½	
field	Don	23½	235
und Ure	Trent	56	
		510	4,199

KS — GENERAL.

urried out by the Board during the past
ler two main headings.

s and Improvement of existing Works.
Maintenance.

DIAGRAM SHOWING NUMBERS OF MEN EMPLOYED
From January 1932 to October 1937.



Sec

The "n
official

Ri
Derwent
Rye
Sea Cut
Swale
Ure
Nidd
Wharfe
Aire
Calder
Don and River
Dearne
Rother
Ouse

The
year ar

The progress made with all works during the year has been less than planned. This may be attributed mainly to two causes :-

(1) The spring months were abnormally wet which resulted in certain main rivers continuing in a state of flood or semi flood over long periods. The land remained waterlogged and soft for a considerable time which reduced materially the output of the excavating and transportation plant.

(2) Throughout the year, the cost of materials and plant rose steadily, and it may be said that due to this, and the increase in wages, the cost of carrying out works increased by about twenty five per cent in excess of the estimate prepared some years ago, when the fifteen year scheme of river improvement works was adopted by the Board. As the sum allocated for expenditure on works was not increased, the volume of work carried out has had to be proportionally reduced.

This reduction in the volume of work is illustrated in the fall in the number of men employed as shown on the graph opposite page 42.

Lengthy delays have also been experienced in the delivery of both plant and materials, and this has in many cases not only retarded the progress of works, but also added to their cost. It would appear however, that supplies of steel in particular, are now easier to obtain, and less difficulty may be experienced during the coming year in obtaining reasonably satisfactory deliveries.

There has been a keen demand for skilled labour throughout the year, and the services of capable men can only be retained by the payment of wages equal to those obtainable elsewhere, and in excess of those contemplated when the original estimates were prepared.

The more important works carried out during the year are described in some detail in the following pages.

NEW WORKS AND WORKS OF IMPROVEMENT.

(1) RIVER DON and DUTCH RIVER.

(a) General Scheme.

A scheme for the improvement of these rivers was prepared in 1933 but it was necessary to enter into negotiations with navigation and other authorities before the approval of the Board of Trade could be obtained. As these interests were often conflicting, negotiations were likely to be protracted.

Applications were therefore made to the Board of Trade for sanction to carry out the widening and improvement firstly of the Dutch River from Rawcliffe Bridge to New Bridge, and secondly, of the River Don from New Bridge to Jubilee Bridge. By this means it was possible to proceed with a certain portion of the scheme whilst negotiations were continuing.

Subject to certain conditions and matters of detail, the sanction of the Board of Trade to the scheme as a whole was finally received in April last.

As however, the scheme as finally approved, differed considerably from that originally proposed, a more detailed description will be given.

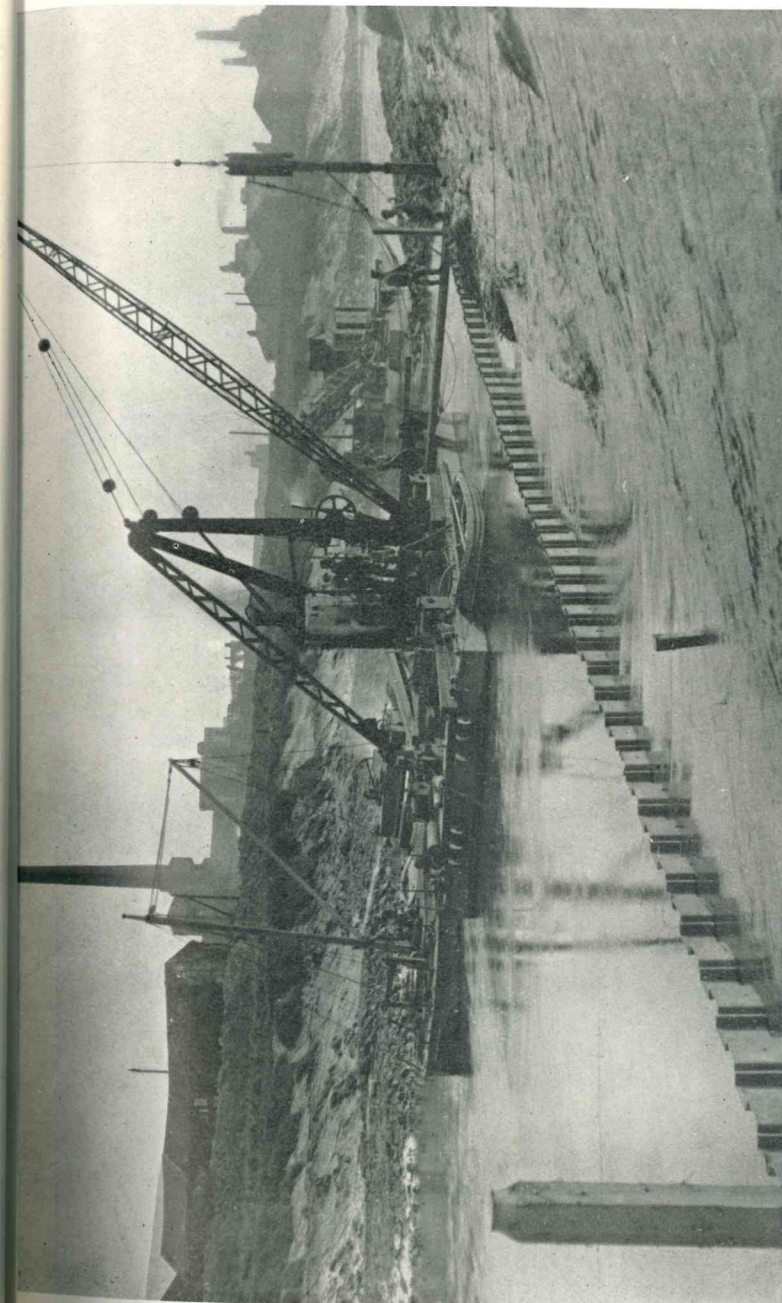
From Doncaster to the Aqueduct at Kirk Bramwith, the improvement in the discharge capacity is being obtained by widening and deepening the existing channel where practicable, together with the easing of bends and the removal of obstructions, the cutting of main river diversions at Waite House, Barnby Dun and Wilsick House and a very considerable raising of the river flood embankments throughout the length.

Between Kirk Bramwith and Jubilee Bridge, Thorne, there are further river diversions at Stainforth, Fishlake and Waterside but whilst small cradge banks are retained alongside the river, the main flood banks will be set back several hundred feet from the main channel thereby forming a berm or winter channel for floods.

From Thorne to Goole the embankments are again adjacent to the river and the improvement is being effected mainly by widening and embanking.

Collateral works include the construction of retaining walls, the diversion of roads, the construction of new road bridges and the raising and reconstruction of existing road and railway bridges.

One of the difficulties encountered in maintaining the efficiency of the tidal length of the River Don, is the continual slipping of the river banks. This is mainly due to the nature of the strata forming the bed and banks. Whilst the material varies somewhat, in general the bed consists up to a level below low water, of clay impervious to water, whilst above this level is found a pervious stratum consisting mainly of sand and warp. This results in the following cycle of events :—



Dutch River.
Plant engaged on pile driving.



Dutch River.
Typical length of Steel Sheet Piling.



Dutch River.
Tie-rods anchoring Steel Sheet Piling.

The high tide saturates the pervious material forming the banks and water percolates downwards as the water level drops. The layer above the clay is therefore kept saturated and is forced outwards by pressure from above. This undermines the bank and causes settlement which is evidenced by longitudinal cracks near the top of the bank. These cracks are filled with water next tide and the whole cycle is repeated. A typical slip thus caused is shown in the top photograph on page 22 whilst the resulting condition of the lower length of the Dutch River is shown in the lower photograph on the same page.

Whilst such slips are continually occurring throughout the tidal length, they are particularly serious when they cause undermining of the river flood embankment. A series of such slips occurred in the right bank of the Dutch River above Goole Tillage Works. The embankment in this case protects an extensive area of low lying land and a breach would have serious consequences. Temporary repairs were carried out regularly every spring tide, but subsidence continued and necessitated permanent works being undertaken to stabilize this length of bank.

Alternative schemes for this work were considered, namely, the deposit of stone at the toe of the bank and steel sheet piling.

That the former method has not been a success in the past on this length is evident by the numerous stone heaps now found in the centre of the channel, some of which can be seen in the last mentioned photograph. Whilst it is probable that the dredging of a key trench well down into the clay bed at the foot of the bank prior to the deposit of stone, might have been effective, it was considered that steel sheet piling would prove a more certain method in this case.

As the piles were to be driven at the toe of the bank, the work had to be carried out from floating craft. For this purpose a Butters two ton steam derrick crane with a forty five feet jib was mounted on the Board's floating pontoon. This crane can be seen in operation in the photograph on page 45, and illustrates the procedure in carrying out this work which is as follows :—

The Grab Dredger (in the background) removes the stone and other slipped material from the foot of the bank. Temporary timber piles are then driven at fifteen feet centres and timber guide walings attached thereto. The steel piles are then lifted into position by the crane until a complete panel is ready for driving. A hammer supported from the crane and supplied with steam from the crane boiler, carries out the driving, the work being commenced at the end of each panel and proceeding towards the centre.

The temporary piles are then withdrawn and used for the next panel. The piles are anchored back by means of tie rods to concrete blocks placed well behind the flood embankment. Whilst this anchoring back adds very materially to the strengthening of the work, it is not practicable to excavate the flood embankment to the necessary depth and for this purpose a patent thrust borer is used. A pit is excavated at the anchorage end in which the thrust borer is placed and accurately sighted on to the piling. Special steel rods are then forced by hydraulic pressure underneath the embankment until the piling is reached, when the tie bars are attached and drawn back to the anchorages consisting either of steel piles or vertical reinforced concrete slabs.

This method has effected a very considerable saving in cost. A completed length of piling is shown on photographs on page 46.

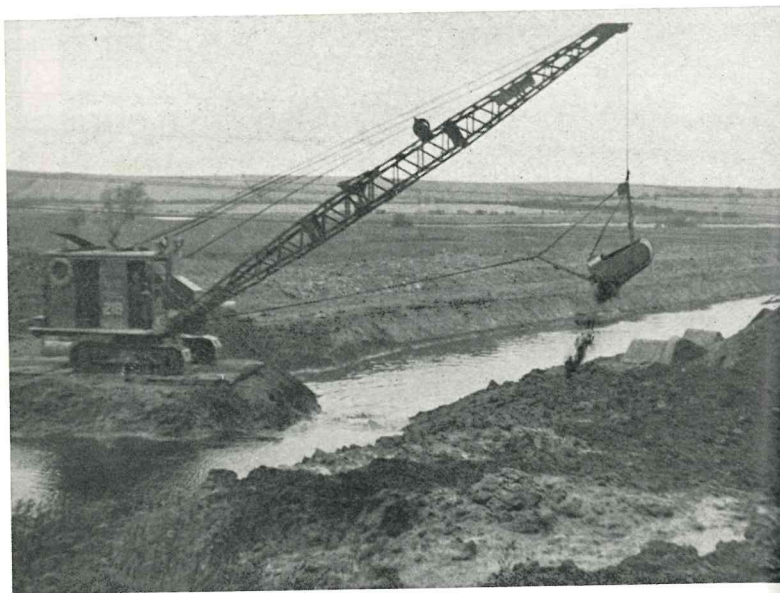
(b) Diversion at Waterside.

A second important work which was started this year is the diversion of the River Don at Thorne Waterside. Immediately above Sour Lane Drain it is proposed to divert the river for a length of 3,600 feet, and the cutting of this diversion was commenced in May 1937. The excavation of the material was carried out by two of the Board's largest draglines working one on either side of the new channel, which was kept dry to facilitate the work by means of a pump situated at the downstream end. The commencement of the excavation is illustrated in the photograph on page 49 which shows in the foreground Chambers Mill, a portion of which has been rented for the Board's workshop.

Whilst no difficulties were anticipated in the excavation, the method of transporting the material to the site of the new flood embankments required careful consideration. The first method contemplated was by light railway track and tip wagons loaded direct from the excavators. This has



River Don.
Commencement of diversion of Waterside, Thorne. (Line of diversion shown by dotted line).
By courtesy of Priestman Bros., Ltd., Hull.



**River Dearne.
Bolton Ings diversion. Removal of upstream dam.**



**River Dearne.
Bolton Ings diversion completed.**

several disadvantages. In wet weather the track sinks on the soft deposited material and needs constant attention. As the excavation face is moving forward parallel to the depositing face the track has constantly to be shifted if a long circuitous route is to be avoided.

The clearing of the wagons, particularly with material of a sticky or clayey nature, involves a considerable amount of labour. The result of these and other disadvantages is that the cost tends to be somewhat high. A slightly cheaper method would be to rehandle the material three or four times by means of the dragline excavators. In view of the fact, however, that some 2,000,000 cubic yards of material will have to be excavated and transported in the Don Scheme alone, it was considered that the employment of special plant was justified.

A wheeled scraper of the carry-all type was therefore purchased and hauled behind the Board's existing tractor. This arrangement demonstrated that the tractor unit was somewhat underpowered, but nevertheless showed that the cost of excavating, transporting and consolidating by means of this plant could be reduced to about one fifth of the normal method by tip wagons. It was considered therefore, that the employment of this type of plant was justified.

Where possible, the procedure in making the diversion is therefore, firstly to clear the site of hedges, trees etc., and then strip the turf from the base of the new embankments. Both these operations are carried out by tractor and angledozer. The wheeled scraper next excavates a portion of the material from the new cut and transports it to form the new flood embankment where it spreads it in a thin layer. Repeated journeys over the deposited material result in efficient consolidation. The remainder of the material is then removed by dragline excavators and placed on the banks to be transported at a later date.

About half the length of the diversion has now been cut, involving the excavation of 100,000 tons of material.

(c) Excavation and Embankment.

As previously mentioned, sanction for work between Jubilee Bridge and Rawcliffe Bridge was obtained prior to the approval of the scheme as a whole, and by November 1936, 418,000 tons of material had been removed from the River Don and Dutch River.

The whole of this material is required for the formation of high flood embankments, but owing to the semi-liquid state of the material when excavated it has to be left to dry out. After sufficient time has elapsed an excavator is travelled along the top of the spoil bank and forms the sides, the surplus material being loaded into tip wagons and hauled away by diesel locomotives to form adjacent lengths of embankment. The left bank has now been completed from Rawcliffe Bridge to Went Sluice, whilst the right bank has been completed for a length of about one mile. Above the Warring Drain Sluice the whole of the material is being rehandled to form the new embankment alongside the New Bridge-Thorne Road. Meanwhile, the excavation of the channel has been completed on the left bank as far as Jubilee Bridge and on the right bank to Hadds Lane.

(2) RIVER DEARNE.

The major work carried out on this section consists of a diversion of the main river at Bolton Ings. As mentioned in the previous Annual Report serious flooding had occurred in the past at Wath-upon-Dearne due to the overtopping and breaching of the Knoll Bank. The Knoll Bank was reconstructed last year but was still liable to be overtopped in a very high flood. Whilst the flooding from such a cause would not be as serious as that caused by the breaching of this bank it would nevertheless cause considerable inconvenience. It was desirable, therefore that some improvement of the main channel be carried out immediately.

The river previously followed a circuitous course between the Hull & Barnsley and the London Midland & Scottish Railways and it was proposed in the major scheme for the improvement of the Dearne to cut a new channel for the River Dearne between these two bridges. Any expenditure therefore on the old course of the river would not form part of this scheme, and moreover, would not be eligible for grant. It was considered therefore desirable that this diversion should be constructed at the present time.

In order that this scheme should have the maximum effect, and to prevent scour caused by the lowering of the water level downstream it was decided to lower the bed underneath the Five Arches Bridge of the London Midland and Scottish Railway and to construct a reinforced concrete cill thereto.

The cutting of the new diversion was commenced on the 3rd February and was carried out by No. 5 Dragline Excavator. The material was excavated in the dry, dams being left at each end and the spoil being deposited on the banks to be rehandled at a later stage. By June the excavation of the channel was completed apart from removing the dams, and the dragline commenced to level off the excavated spoil. Meanwhile, in order to effect a better fall a diversion of the Ings Dyke was carried out and a sluice constructed in the banks of the new cut. This work, in conjunction with works of the Dearne & Dove Drainage Board, has already effected a considerable improvement in the drainage of the adjacent low lying lands.

The cutting of this diversion has involved the excavation of 28,700 cubic yards of material. See photographs on page 50.

After the removal of the dams at each end, the old course was sealed up and the lowering of the river bed underneath the Five Arches Bridge commenced. As this work had to be carried out by hand it was first necessary to dam off the centre arch and divert the river through the side arch. Bagged clay dams were formed above and below the bridge and the bed excavated. A reinforced concrete cill was then constructed at the low level in order to prevent undermining of the bridge. The result of these works has been to lower the normal water level at the outlet of the Knoll Beck 2 feet 6 inches.

(3) RIVER ROTHER.

The improvement works carried out on this river consisted of the removal of trees and other bad obstructions from the channel of the river. Two small gangs were employed for a period of about six months and the worst of the obstructions between the River Don and the New Whittington have been removed.

(4) RIVER DERWENT.

(a) Improvement of channel.

The improvement of the channel of the River Derwent has now been completed over a length of nine and one quarter miles from the confluence with the River Ouse at Barmby-on-the-Marsh. A length of one and three quarter miles from South Duffield Clough to near the Thorganby parish boundary has been completed during the year, whilst widening has been completed on the left bank only for a further half mile.

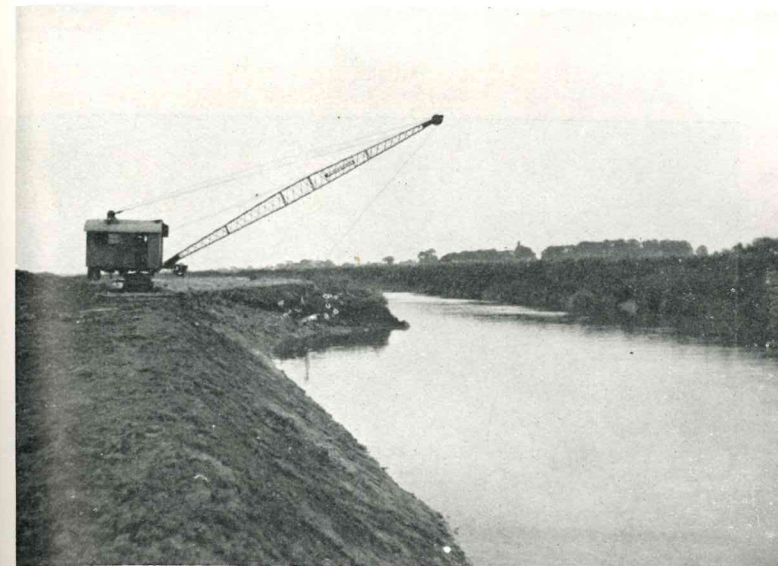
The length of river dealt with was the narrowest on the tidal reaches or for many miles upstream and the volume of excavation required was considerable. In one reach the original width was as little as thirty five feet at high water level compared with eighty five feet at the same level and ninety five feet at foreshore level in the widened river. At the point now reached the river requires comparatively little widening whilst a short distance further upstream the channel is already wider than the standard width and no widening will be required on a length of several miles. This unusual feature of the river becoming wider as one proceeds upstream is probably due to the rapid deposit of warp by the tides in the lower length.

The widening of this narrow section of the river, whilst entailing considerable excavation, is expected to produce a proportionately great benefit in the relief of flooding. In fact, during the autumn it has been found that the level of the river upstream has been lower than was previously to be expected even under such exceptionally dry conditions and it is anticipated that the effect on the reduction of the duration of future floods will be marked.

The work of widening and deepening has been carried out by means of No. 3 and No. 8 Excavators operating from the right and left banks respectively. Both machines have been working throughout the year except for a period in January, February and March when work was first hampered and finally stopped by persistent floods. At one time in March the machines were accessible only by boat, the nearest dry land being nearly half a mile away. Since the floods subsided, however, the dry summer and autumn have enabled rapid and continuous progress to be made. The photographs on page 55 show the work of widening the channel in progress, and the same length of channel after widening.

(b) Floodbanks.

In addition to increasing the discharging capacity of the channel, a considerable amount of work has been done in the improvement of the flood banks. At Barmby-on-the-Marsh the left flood bank behind the village was in a bad state and high tides had overflowed causing flooding in gardens and buildings. This bank was raised and strengthened for a length of 1,000 yards with material brought to the site in tip wagons hauled by diesel locomotive from the spoil heap deposited during the widening of the river further downstream. Unfortunately, this work was barely completed when the

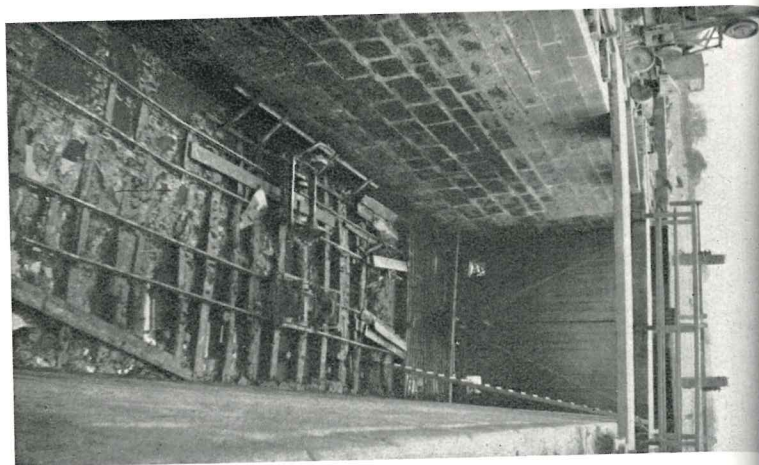


**River Derwent.
No. 3 Excavator widening above Bubwith.**



**River Derwent.
After widening above Bubwith.**

Elvington Lock. River Derwent.
Old timber floor partially removed.



Elvington Lock. River Derwent.
After construction of concrete floor.



foreshores and banks on this section of the river began to crack and settle in many places, owing to the scouring action of the continual floods. Owing to the exceptionally wet season the discharge of "fresh" water was so great that except when the highest tides occurred, the current was never reversed so as to carry any warp into the river. The effect was clearly seen when the floods subsided, leaving the river bed denuded of several feet of warp, with old roots and stumps exposed above beds of clay. When the support of the warp was withdrawn the sides of the channel in many places commenced to slip and parts of the newly constructed bank, together with the foreshore in front of it subsided by as much as four feet, bringing it again below the maximum high tide level. The bank has now been restored to a safe height with material obtained from the foreshores, but further slipping would be likely to occur if there should be any long continued flooding before the new bank has become stabilised.

Another length of five hundred yards of the flood bank on the opposite side of the river was also raised and strengthened but here, fortunately, although parts of the foreshore subsided, the new bank was not affected.

An entirely new bank was constructed at South Duffield Ings. There was previously an area of about ninety acres unprotected by banks and liable to floods which penetrated for a distance of one and a half miles up the Scarcemoor Dike. A bank had already been formed across part of the area by material excavated in widening the river and after consultation with West Derwent Internal Drainage Board it was decided to construct the remaining 240 yards of flood bank and erect cloughs at the outlets of the Scarcemoor Dike and two small drains. The bank has been completed. The material was part of that deposited on land owned by the Board during the construction of the South Duffield diversion and was loaded into tip wagons by No. 2 Excavator. It is proposed to construct the cloughs early next year.

The remainder of the material from the diversion was spread and levelled by No. 2 Excavator and has subsequently been cultivated and sown with grass. The material deposited on the other side of the river was also excavated by the same machine and transported to the old channel, where a short length was filled up and a roadway giving access to the island cut off by the diversion was constructed. The warping up of the old channel is proceeding rapidly and the level of it is now only a few feet below that of the adjoining land. The old channel cut off by the Bubwith diversion is also warping up rapidly and has now filled up with warp to the low water level.

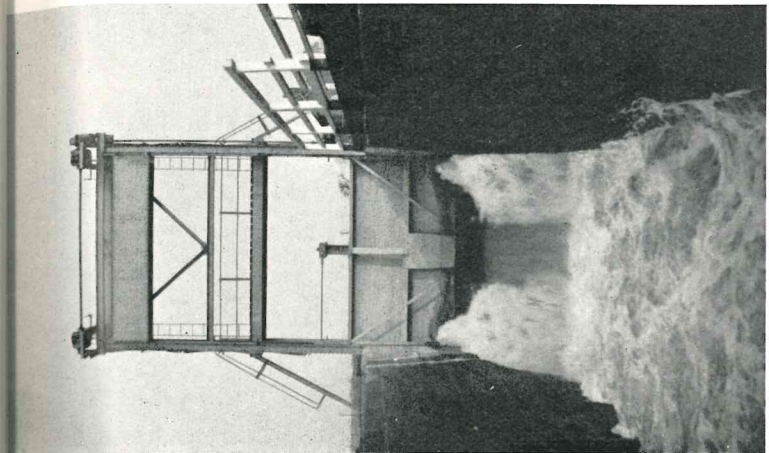
Bank works were also carried out at Gunby where the material excavated during widening the river was spread and levelled by No. 2 Excavator, fitted with a scraper plate. The material was then sown with grass seed and has produced a very satisfactory turf.

The left flood bank above Bubwith Bridge was found during the winter floods to be in a bad state. The bank was very steep on the river side and liable to slips, whilst many leaks were observed when the bank was under pressure. The top of the bank has now been moved back by grading back the front slope and building up the back with material obtained in widening the river further upstream. The back of the new bank was pitched with stone from the old bank to protect it from erosion by waves caused by the wind blowing across the flooded Ings.

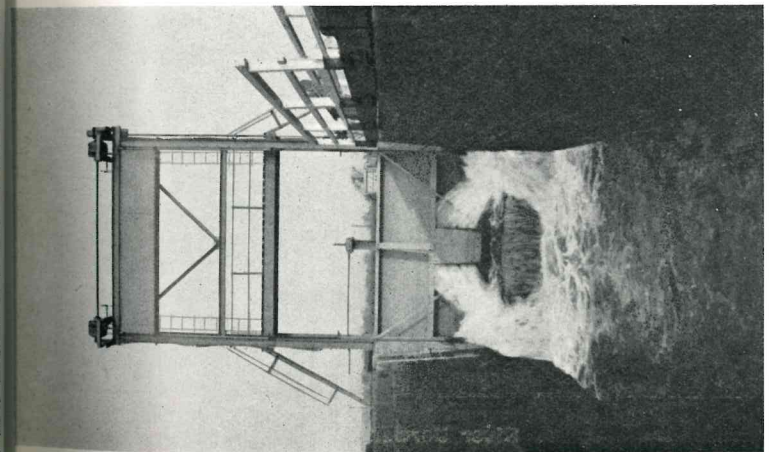
(c) Elvington Sluices.

Work has been in progress during the greater part of the year at Elvington where float operated sluices are being installed to replace the stone weir. Before the weir could be removed it was necessary to divert the river through the lock, where a vertically lifting steel sluice has been installed in place of the old timber doors. This sluice makes it possible to use the lock cut as an additional waterway for the discharge of flood waters. The erection of the lock sluice was completed on the 25th November, 1936, but before it could be brought into use it was necessary to carry out extensive repairs to the walls and floor of the lock. For this purpose a dam of steel sheet piling was constructed at the lower end of the lock which was then pumped dry. The old timber floor, which was scoured nearly through, was removed and a floor of reinforced concrete was constructed to withstand the scour of the water which would pass through the new sluice. The construction

of the floor was in progress when the sluice was completed but further work on it was interrupted by floods which overtopped the dam and flooded the lock. Beginning in January, there was a period of over three months when the river level was never less than seven feet above normal and work on the lock floor was impossible. Eventually however, it was possible to pump out the lock pit where it was found that eighteen inches of mud had been deposited by the floods. This was removed and the floor was completed. A concrete sill faced with oak was constructed for the lower gates. At the lower end of the lock slots were constructed for the rapid erection of a temporary dam when required and these were found useful during the final stages of the work on the floor. Iron ladders were also provided and a sump in the floor for use in pumping out the lock. See photographs on page 56.



River Derwent.
Elvington Lock Sluice. Side sluices open.



River Derwent.
Elvington Lock Sluice. Centre sluice open.



**River Derwent.
Elvington Weir before removal of crest.**



**River Derwent.
Elvington Weir after removal of crest.**

The lock is now usable for navigation. The downstream doors were tarred and are now in good order. The lock can be filled through culverts in the side walls controlled by new penstocks of modern design or by a small sluice in the centre of the upper gate. The latter method is shown in the photograph on page 59 whilst the lower photograph shows the use of the sluice for the discharge of water through the lock.

The lock cut which contained an average of six feet of silt, was dredged and the lock was opened to navigation for a short period in June. It was then closed to allow the diversion of the river through it during the construction of the weir sluices.

It had been hoped to commence the demolition of the weir much earlier but the delays in completion of the locks due to floods made it impossible. However, the construction of a dam across the river above the weir was completed at the beginning of August and the removal of the weir was commenced. A photograph of the weir when dry is shown on page 60.

The weir was found to consist of a substantial vertical wall which had subsequently been supported by a long front slope of rubble pitched with close jointed stones eighteen inches deep. To reach the foundation level of the new sluices it was necessary to remove an average depth of five feet of masonry and also a large quantity of loose stone and mud from above the weir. The masonry was broken up by pneumatic drills and by blasting and together with the other material was loaded into tip wagons by No. 2 Excavator and removed. The stone will be used as required for pitching the river banks on the tidal reaches. On reaching the foundation level it was found that the remaining stone contained cavities and passages through which water had been flowing and these were stopped with concrete. A line of steel sheet piling was driven at the upper and lower edges of the new floor and the latter was made sufficiently high to prevent work on the floor being interrupted by high tides or minor floods. The photograph on page 60 shows the site of the new sluices after the demolition of the weir. Retaining walls of steel sheet piling having a total length of 240 feet have been constructed above and below the site of the new sluice to prevent any scour of the banks. It is hoped that the river will remain low long enough to enable the construction of the new structure to be largely completed before any serious floods occur.

(5) RIVER OUSE.

Good progress has been made during the past year on the scheme of improvement of this river. The works comprise the reconstruction of existing flood banks, the construction of new flood banks at some distance from the channel and the stabilizing of the natural banks of the channel.

The object of these works is to increase the discharging capacity of the river in time of flood and to ensure that the flood or barrier banks will neither be overtopped nor breached under such conditions.

The principal works carried out are situated on the right bank at Ravendell Cawood, and on the left bank between Wharfe's Mouth and Stillingfleet Road, Cawood Bridge to Kelfield, Kelfield Brick Yard to Riccall Landing and at Long Ruddings, Riccall.

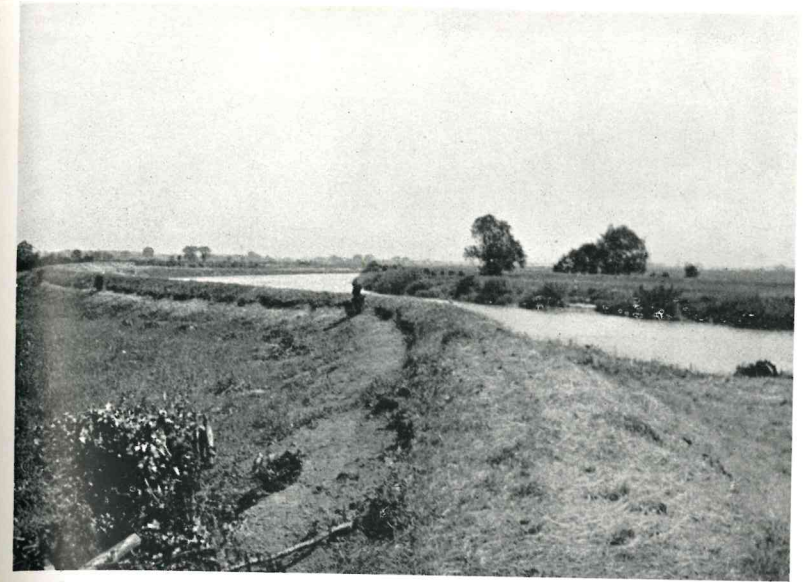
In the majority of cases suitable material for the formation or reconstruction of flood banks is obtained from the foreshore or from closely adjacent spoil pits. The soil is excavated by mechanical means and loaded into trains of tip wagons drawn by diesel locomotives.

Prior to the formation of a new bank, the site is stripped of turf and a core trench excavated to ensure that a satisfactory key is provided into the virgin ground, and that no tile drains are left running transversely under the bank.

Similarly in the reconstruction of an existing bank a core trench is excavated to disclose the presence of vermin holes. These are dug out, after which the core trench is filled with selected material, and the widening and raising of the bank is proceeded with by tipping the new soil in thin layers, which are thoroughly consolidated by power rammers.

At the appropriate season of the year grass seed is sown and mown periodically to ensure a sound growth of turf.

Where necessary the toe and face of the natural bank of the channel has been protected against erosion by the deposit of stone or by layers of faggots laid as fascine work to encourage the collection of warp. In the course of the year over 4,400 tons of stone, and 30,000 faggots have been used on such works, much of which has been transported in the Board's craft.



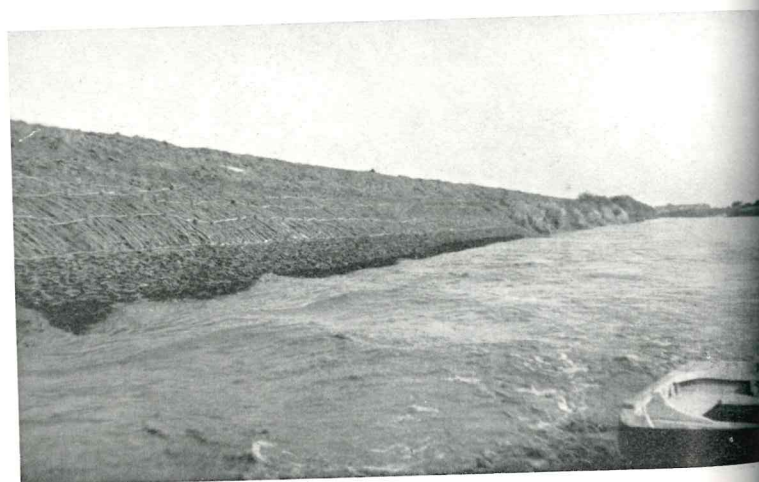
River Ouse.
Ravendell bank before reconstruction.



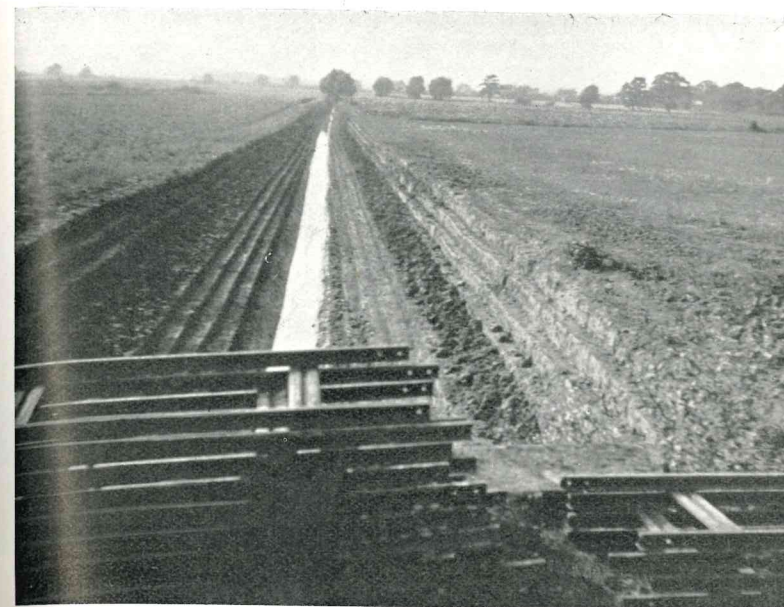
River Ouse.
Ravendell bank after reconstruction.



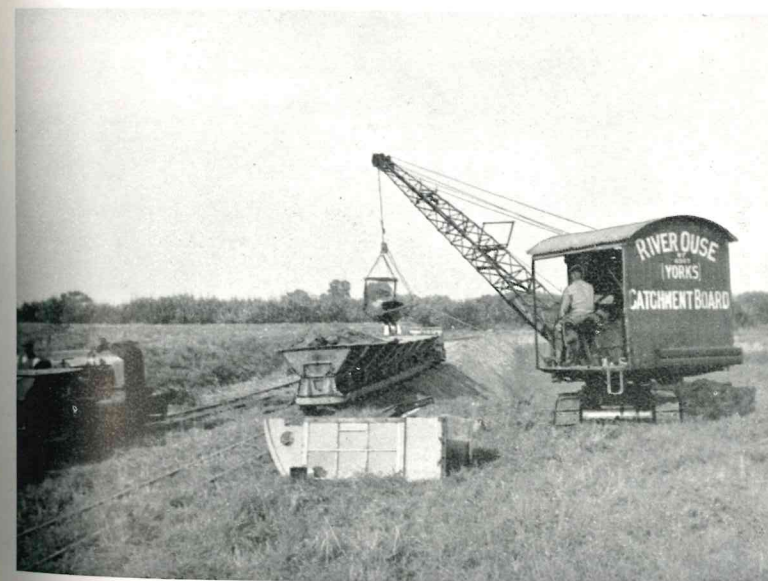
River Ouse.
Wheel Hall bank. Depositing stone at toe.



River Ouse.
Cleek Hall, Cliffe. Fascine work.



River Ouse.
Summercroft Drain, which provided spoil for bank reconstruction.



River Ouse.
Loading spoil for bank reconstruction, from Summercroft Drain.



River Ouse.
Summercroft bank before reconstruction.



River Ouse.
Summercroft bank after reconstruction.

In the case of the new bank under construction at Riccall, the Board acquired a strip of land about 300 feet in width parallel to the river as it was most desirable in this instance that a new barrier bank should be constructed some distance inland in order that a winter or flood channel of adequate capacity should be formed. The stripping of the turf on the site of the new bank was carried out by the Board's bulldozing plant, which again demonstrated the all round utility of this machine. The material forming the bank is being excavated from adjacent foreshores and spoil pits, but it is contemplated that when a sufficient length of new bank has been completed and properly consolidated and grassed over, it will be isolated by short cross banks, rendering it possible to utilise the material in the existing bank in front for the formation of another section of new bank. The length of this bank completed by the 31st October, 1937, was 733 yards or nearly half a mile.

A similar length of barrier bank was completed this year on the right bank of the river near Wistow Clough. An area of two and a quarter acres of land was acquired as a spoil pit on the west side of Wistow Clough, and a bank about one eighth of a mile in length was constructed thus removing the imminent risk of a breach at this point.

In the Lower Aire District, the barrier bank from Summercroft Farm to Long Drax is in course of reconstruction, the necessary material in this case being obtained free of charge from the riparian owner. The reconstructed bank will have a uniform crest width of about six feet, and its completion will ensure the safety of a large area of lowlying land to the south which for some years has been exposed to risk of floods through breaches in this bank. Photographs on pages 63 to 66 illustrate the works on this section of the River Ouse.

(6) RIVER AIRE.

Reconstruction of banks by the method detailed in the case of the Ouse has been carried out between Airmyn Butts and Airmyn and at Newland from Jefferson's Clough to Eskamhorn. Some 2,260 tons of stone were used in protecting the toe of the bank against erosion—much of which was transported in the Board's craft.

WORKS OF MAINTENANCE.

GENERAL.

RIVER DERWENT—Derwent Mouth to Yedingham.

Owing to the improvement works carried out and in progress little maintenance work has been necessary in the tidal reaches of the river. The flood banks were strengthened and repaired on both sides of the river in the parishes of East and West Cottingham and small repairs were carried out at other points.

Numerous obstructions, consisting mainly of overhanging and sunken trees, were removed from the river between Sutton and Kirkham, whilst bank repairs were carried out at Schoolhouse Mill, Malton and Scampston, where breaches in the flood banks occurred. The weed growing in the river between Yedingham and Rye Mouth was twice cut during the season.

SEA CUT.

Works of maintenance have been continued by a gang of three men during the year, which include the removal of gravel beds and the weeding of the Sea Cut Channel, the clearing of brushwood and the plashing of fences on the north and south banks between the Weir Head and Whitby Road Bridge.

An old stone culvert, which conveyed the water from the North Back Drain under the bed of the Sea Cut Channel, was seriously damaged during the floods of 1935/36. This necessitated part of it being re-laid with 114 feet of 18in. steel tubes, the maximum depth of the cutting being 15 feet.

Two sections of the south bank east of the culvert have been raised for a total distance of 300 yards, where the Cut overflowed during abnormal floods.

Two slips, each approximately 100 yards in length, have required attention. The first of these occurred on the south bank east of the Railway Viaduct at Scalby and the second on the north bank east of Scalby High Mill. At both points the banks rise steeply and erosion was taking place. In each case brushwood was felled and formed into a mattress of fascines. These were loaded with stone and sunk into deep water as a protection to the foot of the slope.

Although no abnormal floods have occurred, the following are the most outstanding during the past year :—

<u>Flood level.</u>	<u>Date.</u>
8 feet 9 in.	January 18th & 19th.
9 feet 3 in.	January 31st.
7 feet 9 in.	March 14th.
7 feet 9 in.	March 17th.
8 feet 0 in.	May 12th.
7 feet 8 in.	May 21st.
9 feet 0 in.	November 19th.

Several floods of a minor nature were also recorded. A constant watch was kept and no damage occurred.

During September the subsidiary drains discharging into the Sea Cut were cleansed and scoured. The west end of the North Back Drain was sunk for a distance of 14 chains and a further 15 chains of this dyke was brushed where the sides had become undermined.

RIVER RYE—Rye Mouth to Habton.

Bank repairs have been carried out at Howe Bridge and other points on this river and the weeds growing on the sides of the channel have been cut and burned.

RIVER NIDD—Nidd Mouth to Knaresborough.

For most of the year the usual clearing works on this length have been held in abeyance. The length from which major obstructions have been removed from the channel, namely between Nun Monkton and Ribston, extends over a distance of eighteen miles.

RIVER DON—Doncaster to Goole.

A small gang consisting of a foreman and five men has been employed throughout the year on general maintenance of the banks between Doncaster and Goole. Weeds have been cut, slips repaired and embankments strengthened where required, but no extensive works have been carried out.

Heavy rainfall early in March caused overflowing of the river embankment between Bramwith and Waite House. The embankments were therefore patrolled day and night and the maintenance gang strengthened temporarily for this purpose. These measures were sufficient to prevent any breaching of the embankments, and although some flooding occurred, the water dropped rapidly after the 19th March and the flooding was of short duration. Photographs appear on page 71.

RIVER WHARFE.

Clearing works have been considerably curtailed during the year, and only short lengths above Flint Mill and at Castley have been attended to. Repairs to the flood embankments were carried out at Acaster, Nun Appleton and Ryther Ings.

A groyne 30 yards in length was constructed for the purposes of checking erosion on the left bank at the ford at Castley Lane about a quarter of a mile above the Wharfedale viaduct. The groyne was constructed of concrete in bags encased in steel crates. The aggregate was obtained from a shoal in the river on the opposite bank.

To check erosion on the left bank at Hawkesworth Island opposite the third green of the Ilkley Golf Club, the protective works carried out by the Club in the past were in September completed by the driving of a row of No. 1 Larssen steel sheet piling well into the river bed. The space behind the piling was filled in with gravel and finally turfed over. The cost of this work was shared between the Catchment Board and the Ilkley Golf Club.

Gauge boards have been erected at the following places :- Tadcaster Mill, Thorp Arch Weir, Wetherby Weir, Linton Bridge, Harewood Bridge, Harewood Weir, Castley, Pool Bridge, Otley Bridge, Denton Bridge, Iron (Ilkley) Bridge, Bolton Bridge.

RIVER OUSE.

(a) Wharfe's Mouth to Kirby Hall.

Work on this length has been considerably curtailed during the past year owing to lack of funds.

Until April 1937 the average number of men employed was fourteen, whilst for the remainder of the year only four have been employed.

Repairs have been carried out on the right bank at Naburn, Acaster Selby, Nun Monkton, and on the left bank at Moreby and Beningbrough.

Only the banks which most urgently needed mowing were dealt with during the year owing to the lack of funds.

One gang was employed for a considerable period in felling timber and brushwood in Mafeking Wood, Nun Monkton, whilst another was similarly employed in woods at Dunsforth and Great Ouseburn. This material was formed into kids for use on tidal fascine protection works. Twelve cargoes of kids weighing 110 tons were transported by the Board's floating craft from this source.

Gauge boards were erected at Stillingfleet Landing, Killingbeck Bridge, and Linton Lock (2).

(b) Derwent Mouth to Blacktoft.

The usual maintenance works on this section were carried out during the year. Fascine work was constructed at several points where the banks needed support and 2,208 tons of stone were used in pitching the bank between Boothferry Bridge and Derwent Mouth. Weak banks were strengthened and repaired, particularly at Howdendyke where a length of three quarters of a mile was raised and strengthened. Repairs were also carried out to the timbering supporting the sides of the creek at Bishopsoil Farr Drain Outfall.

(c) Wharfe's Mouth to Aire's Mouth.

Of the 38 miles of bank on this length it was found that prior to the advent of the Catchment Board only some ten miles of bank had received any regular attention in the nature of maintenance works. It was realised therefore that it would take a considerable time before they could be strengthened sufficiently to withstand a serious flood, particularly as vermin holes were numerous. The regular employment of vermin killers has effected a material improvement in this respect.

On an average about fifteen men have been employed in three gangs during the year on maintenance work, these being engaged principally in patching up the weakest portions of the bank.

The most extensive repairs were carried out on the left side below Selby, at Cherry Orchard and Turnham Hall, where about 440 yards of weak bank was protected by the construction of a fascine work toe. The brushwood and timber utilised in making the kids were obtained from several sources near the River Ouse at Monkton, Ouseburn and Drax, and transported to the site by barge. Similar fascine works were also carried out at Wistow, Barlby, White House and Cliffe.

d during the year occurred on 1936, when a level of 20 feet tum (Liverpool) on the gauge. The following are the parcels recorded during the year

Height 20 ft. 0 in. O.D.
Height 20 ft. 4 in. O.D.

Height 7 ft. 9 in. O.D.
Height 17 ft. 0 in. O.D.

, with 10 feet of fresh running Ure and Swale, the following

Height 12 ft. 0 in. O.D.
Height 17 ft 1 in. O.D.

highest tide of the year as

Height 13 ft. 0 in. O.D.
Height 19 ft. 2 in. O.D.

n the lengths within the Lower ing six months of the year he 192 moles, whilst another em- s killed 434 rabbits, 4,631 rats

s.

men have been employed on the summer all banks were weak portions of bank at Der- ilpin, Hook and Whitgift were

Whitgift has received partic- n tide, as subsidence continues.

The Aire and Calder Navigation have deposited 120 tons of stone at this point in an endeavour to check further sinkage.

The length of bank between the Catchment Board's boundary at Calf's Head and Trent Falls was mown, and the low places made up where necessary.

By arrangement with the West Riding County Council, a 4 inch tile drain was laid below the landward toe of the bank near Whitgift Church to drain the bank through which water percolated at times of high tide. The face of this bank was further protected by the placing of flag stones on the slope immediately adjacent to the new footpath.

At several portions of bank where pitching stone had been displaced, the necessary repair work was carried out.

RIVER URE.

(a) Kirby Hall to Ripon.

During the first half of the year a small gang of six men were employed in felling timber and making kids in woods at Great Ouseburn and Dunsforth, and some 10,000 kids and 1,500 stakes were prepared and transported in the Board's craft for use in the tidal River Ouse.

The banks were mown where required and several small repairs carried out. In April the channel was sounded from a point near Bridge Hewick to Ousegill Beck, and showed a slight decrease in depth since the previous survey in September.

Subsequent to the floods in December, breaches which occurred on the left side between Swale Nab and Ellenthorpe Hall were repaired by the owners at their own expense, and several smaller breaches on the opposite bank were similarly dealt with.

Gauge boards were erected at the following points :-

Dunsforth
Milby Lock (2)
Westwick Lock (2)
Oxclose Lock
Bridge Hewick
North Bridge, Ripon (2)

(b) Ripon to Wensley.

A heavy snowfall occurred in Wensleydale and particularly in the Hawes district, during the second week of December 1936. This was followed by a rapid thaw about the 13th December. By the 14th December a record flood had passed down the dale, with consequent damage to banks at different points on this length and resulting in the flooding of large areas, both arable and pasture. Thirty-three such breaches were reported and inspected, and whilst many of them have been repaired by the owners themselves, and several of the larger ones by the Catchment Board, many are still open.

The heights of this flood as recorded at the places named are as follows :-

Ripon	74.2 ft. O.D.
Tanfield	150.6 ft. "
Masham.	249.0 ft. "
Danby Low Mill.	323.5 ft. "
Cover Bridge (R. Cover).	339.5 ft. "
Middleham Bridge.	340.5 ft. "
Wensley Bridge.	355.1 ft. "

Owing to the breaches in the banks, flooding took place in the vicinity of the confluence of the River Cover and the River Ure below Cover Bridge, and large areas of land in the Parishes of East Witton, Danby, Thornton Steward and Jervaulx were inundated. Within two days the Catchment Board had taken steps to repair the worst of these breaches, and this work was continued until September when breaches had been repaired at the following points :-

Cover Bridge.
Kilgram Bridge.
Thornton Steward—3 breaches.
Danby—2 breaches.

At Cover Bridge, the breach was rather unusual, as over a distance of 60 yards the foundation upon which a new bank had to be built was composed of loose gravel.

The importance of providing a sound toe was obvious, and this was attained by the construction of a double line of steel wire crates filled with concrete in bags on the river side of the reconstructed bank. The soil forming the bank was thoroughly consolidated during construction by power ramming the layers, and the large crater caused by the scour during the flood, was filled in with spoil which was also rammed.

In this work 12 men were employed, 36 crates of steel wire mesh, 33 tons of cement and 2,500 bags were used, and much vermin was destroyed.

Photographs illustrating the works on this length are shown on page 72.

Gauge boards were erected at the following points :-

Tanfield Bridge.
Masham Bridge.
Kilgram Bridge.
Ulshaw Bridge.

RIVER SWALE.

(a) Swale Nab to Skipton-on-Swale.

A serious subsidence which had occurred in the left bank at Myton Hall was dealt with by the deposit of stone at the toe on the concave bend. This stone, amounting to 760 tons, was obtained from the demolition of York Prison, loaded into the Board's barges and transported to the site by tug.

This river is particularly liable to sudden and high floods and owing to special circumstances, much damage is caused by them.

The banks are in most cases formed of light and friable material which is liable to rapid erosion, and those at many bends are dangerously undermined and eroded. In addition rabbits and other vermin are particularly numerous on the banks and adjacent land, probably due to the ease with which burrows may be formed in the light sandy soil.

A sudden flood caused by the melting of snow and the rainfall on the higher ground, caused extensive damage to the banks on this length on the 14th December, 1936. The banks were breached in about ten places and overtopped on several different lengths. The following flood levels were recorded :-

Myton-on-Swale Bridge.	45.7 feet O.D.
Helperby.	49.8 " "
Eldmere (Chapel Garth).	58.3 " "
Topcliffe Weir (downstream side)	64.5 " "
Topcliffe Weir (upstream side).	65.5 " "
Catton.	69.1 " "
Skipton-on-Swale Bridge.	71.8 " "

On the right side breaches were repaired at Wath Pasture, Treblesyke, Burton Pastures and The Holmes, and on the left bank at Helperby, The Carrs and Myton-on-Swale.

An acute bend and projecting spur opposite Myton Hall, tended to deflect the current to the left bank. This was eased by the removal of the material on the foreshore for a width of six yards. The material was loaded into tip wagons by hand, and conveyed by light railway track on to the bank between Myton Pasture Plantation and Myton Bridge. This length of bank, which had been badly overtopped and broken, was thus made secure over a distance of a quarter of a mile.

Breaches on the left bank below the landing place at Myton-on-Swale were also repaired by the same gang and equipment.

A considerable number of obstructions have been removed from the channel between Myton and Swale Nab, and several cargoes of stone were placed at the toe of eroded banks on the right side above Myton Hall.

A vermin killer employed on the banks on this length has reported that during the year he has destroyed 3,609 rabbits, 300 rats, 129 moles and 10 stoats.

(b) Skipton-on-Swale to Catterick Bridge.

The flood of December 14th, 1936, did serious damage to the banks on this length of the Swale.

The number of breaches was approximately thirty-six, and of these, the six men employed by the Board during the year have repaired fourteen, whilst landowners have carried out repairs to about a dozen more.

In the case of two large breaches, 40 and 200 yards in length, which occurred on the left bank at Bramper Farm, Thrintoft, the Fife Settled Estates Co., Ltd., owners of the land, consulted the Catchment Board on the carrying out of repairs.

The Catchment Board prepared plans and specifications of the necessary work, and a contract was entered into by the Company with a firm of contractors who specialise in excavation and bank formation. They employed scraper plant which excavated and transported material from a hillside about 300 yards distant and deposited it in even layers on the site of the new banks.

This work was carried out expeditiously and economically during the summer months, and demonstrated that the similar plant acquired by the Board can be profitably utilised on such works.

The gang of men employed by the Board have been wholly occupied in repairs to breaches at Holme Moors, Swale House, Scruton, Thackwray House, Gatenby and at the confluence of Bedale Beck and the River Swale.

The following are the levels of this exceptional (but not record) flood recorded on the 14th December, 1936 :-

Holme-on-Swale.	75	feet O.D.
Maunby Ferry.	81.9	" "
Gatenby.	88.7	" "
Morton Bridge	93.0	" "
Bramper Farm, Thrintoft.	99.7	" "
Langton Bridge.	115.1	" "
Kiplin.	123.7	" "
Catterick Bridge.	198.4	" "

The repair carried out at Newton Picot on the right bank was completed by the laying of thorns and placing of concrete in bags in alternate layers over a distance of two chains. Repairs were also carried out on groynes constructed in previous years at Killerby, Kiplin and Scruton. In this work ten crates 60 tons of cement and 8,000 bags have been used.

The vermin killer employed in this area during the year reports the destruction of 6,552 rabbits, 110 rats, 2 moles and 19 stoats. This undoubtedly constitutes a record for a vermin killer in the employment of the Catchment Board.

RIVER AIRE.

(a) Lower Aire District.

A small gang of men have been continuously employed throughout the year repairing and strengthening these banks. In certain places the banks have been kidded, whilst in others where slipping has occurred, stone has been used. The banks were mown during the summer.

Fortunately no floods of any magnitude were experienced on this length.

Works have been carried out at the following points :-

Old Ferry, Rawcliffe, opposite Rawcliffe village, at Carlton, Templehirst and Hall Ings, Chapel Haddlesey and at Sugar Hill, Newland. Several cargoes of stone were also delivered to the above points.

Gauge boards were erected at Mill Lane Clough, Newland, Jefferson's Clough, Carlton Old Bridge, and Temple Clough, Templehirst.

(b) Airmyn District.

Four men have been continuously employed on this length and attention has been given to the weak places in the bank near Airmyn.

The banks reconstructed under the improvement scheme have been patrolled regularly, and the vermin found burrowing have been exterminated.

A tide gauge board was erected at Airmyn, and the usual channels surveys were carried out.

(c) Rawcliffe Bridge to Knottingley.

Temporary repairs have been carried out on the banks on this length in many places and more permanent works at Bell Lane, Rawcliffe, and to the banks upstream from that village.

583 tons of stone were used in protecting the toe of certain lengths of bank against erosion.

(d) Airedale District.

Five men were employed during the first part of the year on repairs to both banks of the river between the London, Midland & Scottish Railway Bridge and Carlton Bridge near Skipton.

Projections and shoals were removed and the banks trimmed.

Owing to lack of funds, work in this district was suspended in December.

Flood conditions have been reported only once during the year, when the following levels were recorded :-

Kildwick Bridge.	295.3 feet O.D.
Carleton-Skipton.	310.2 " "

At the latter point a new gauge board was erected.

BRIDGES OVER MAIN RIVER.

Section 64 of the Land Drainage Act, 1930, provides that it shall not be lawful for any person except by way of replacement or reconstruction of an existing bridge to construct a bridge over the main river of a catchment area without the consent (not to be unreasonably withheld) of the Catchment Board and in accordance with plans and sections approved by the Catchment Board.

The following cases have been dealt with during the period under review :-

RIVER AIRE.

Railway Bridge, Snaygill.

Plans were submitted by the London, Midland and Scottish Railway Company in connection with the reconstruction of the bridge carrying the railway across the River Ouse near Skipton Sewage Farm situated within the Airedale Drainage District.

In consultation with the Drainage Commissioners it was decided that objection should be taken to any part of the flood arch on the south or right bank of the river being filled up; that in the event of the Railway Company constructing a concrete pipe 2ft. 3in. in diameter under the flood arch on the left or north bank of the river, they should continue this pipe so that it would discharge directly into the river below the bridge and be fitted with a flap to prevent the ingress of river water in time of flood.

As an alternative to the construction of this pipe through the embankment, the Company were informed that the Drainage Commissioners would prefer the existing drain called the "Railway Drain" above the bridge to be increased in dimensions to an extent equal to the area of a 2 ft. 3 in. diameter pipe, this enlarged outlet to be also provided with a tidal flap to prevent the ingress of flood water from the river, and that in the event of the Railway Company agreeing to certain conditions the Commissioners would offer no objection to the left or north flood arch being filled in as shown on their plan. It would, however, be made clear in any Agreement that the works referred to would be maintained and kept clear at all times by the Railway Company to the satisfaction of the Commissioners.

BEIGHTON MILL GOIT.

Railway Viaduct.

Notification was received from the London and North Eastern Railway Company to the effect that they proposed in the near future to fix timber centres in the arch of the Company's viaduct crossing the Beighton Mill Goit (a main river of the Catchment Area).

It appears that the structure was cracking through colliery subsidence and that the proposal was to support the central arch over the Goit by timber centering carried on upright timbers on the sides of the piers, supported on sole timbers which in turn would be supported on sections of railway metal inserted in the piers.

The proposal was examined and there appeared to be no risk of the discharge of the Goit being obstructed by the proposed works.

The Company were duly informed that the Board approved of their proposals.

RIVERS DERWENT & RYE.

(a) Hull Corporation Water Scheme.

A communication has been received from the Corporation of Hull stating that whilst no active commencement was contemplated on the Farndale Water Scheme at the present time they had now reached the stage at which it was necessary to consider the crossing by an aqueduct of the Rivers Derwent and Rye and that before the preliminary designs were prepared and the necessary calculations made, the views of the Catchment Board were desired as to whether a span of 65 ft. for the River Derwent and 55 ft. for the River Rye with a width of between 15 and 16 ft. in both cases would be acceptable.
Galley 21.

The Corporation have been informed that the suggested dimensions of the aqueduct crossing the River Rye are satisfactory but in the case of the crossing of the River Derwent a clear span of 100 ft. is desirable.

In due course in accordance with the protective clause obtained by the Catchment Board in the Corporation's Act, plans and sections of any proposed works will be submitted to them.

(b) Kexby Bridge.

The East Riding County Council have had under consideration the question of an improvement of the transport facilities at Kexby either by widening the existing bridge which is scheduled as an ancient monument or by the provision of a new bridge.

From land drainage point of view the Catchment Board were of opinion that as it would not be possible to demolish the existing bridge if a new bridge were erected; the widening of the existing bridge was preferable, and detailed plans have now been received from the East Riding County Council showing their proposals to widen the existing bridge.

The Board have informed the County Council that they would offer no objection to the proposals subject to the submission of plans of any temporary scaffolding and/or dams to be constructed during the progress of the works for the approval of the Board.

(c) Malton By-pass Road.

In connection with their proposal to construct a road to by-pass Malton, the North Riding County Council conferred with the Catchment Board with regard to the bridge to be built to carry the road over the River Derwent.

The Engineer reported that the proposed road would cross the valley of the River Derwent about half a mile upstream from Old Malton, and after leaving the Malton to Pickering turnpike would traverse a washland known as Abbey Ings; thence across the River Derwent by a bridge near Millers Turn and finally over Settrington Ings towards the Malton and Scarborough Railway.

It was suggested to the County Council that the proposed bridge should have a clear span of not less than 100 ft. and a soffit level of not less than 65 ft. O.D. i.e. 2 ft. above the maximum flood level in the river.

A Public Local Inquiry was held in the matter by an Inspector of the Ministry of Transport, when the County Surveyor agreed to the above suggestions.

An undertaking was also given on behalf of the North and East Riding County Councils that any necessary provision in the way of flood arches in the proposed embankments where the proposed by-pass would cross the low lying areas

in the Rye and Thornton Internal Drainage Districts should be provided, and that failing agreement on this point the matter should be referred for decision to the Minister of Transport and the Minister of Agriculture and Fisheries.

RIVER DON.

(a) Jubilee Bridge.

In connection with the improvement of the River Don, the Board were advised that provision would have to be made at an estimated cost of £1,500 to protect the foundations of Jubilee Bridge at Thorne. It appears however, that the West Riding County Council were proposing to construct a new bridge in place of the Jubilee Bridge and they have been informed that subject to the approval of the Ministry of Agriculture and Fisheries, the Catchment Board were prepared to contribute the sum of £1,500 towards the cost of the new Jubilee Bridge in lieu of expending such sum on protective works required to the old bridge on the understanding that the new bridge in so far as its span and headroom were concerned would be designed to conform with the dimensions of the improved channel of the river and particulars of the minimum dimensions of the span and headroom for the new bridge which the Board considered should be provided have been supplied to the County Council.

(b) Stocksbridge.

Plans have been submitted by Messrs. Samuel Fox & Co. Ltd., of Stocksbridge Works, near Sheffield, showing the position in which they desire to construct a road bridge over the River Don or Porter River, of two spans each of about 30 ft. The plans were approved, subject to a condition that during the construction of the bridge, no obstruction was caused to the free flow of the watercourse.

(c) Vickers Works.

The English Steel Corporation submitted plans of a proposal involving the erection of a girder bridge across the River Don at Vickers Works, Sheffield, and a length of concrete sheet piling to protect and raise the river banks.

The Engineer reported that the proposed bridge would have a clear span over the river, the level of the underside of the girders varying from 1 ft. to 1 ft 1 in. above the maximum recorded flood level of September 1931.

It was decided to raise no objection to the proposed works, subject to compliance with certain conditions.

RIVER OUSE.

Selby By-Pass.

A letter was received from the Ministry of Transport (Roads Department) enclosing for the information of the Catchment Board a copy of a draft Order (and Map) which the Minister proposed to make under Section 1 (3) of the Trunk Roads Act, 1936, in respect of the Selby By-Pass Scheme.

The Minister stated that the bridge over the River Ouse was proposed to be of the double opening bascule type with a clear span of 120 ft. and providing headroom adjacent to either abutment not less than 20 ft. and at mid span a foot greater clearance than the adjacent railway bridge.

It may here be mentioned that two years ago the views of the Catchment Board were invited as to the site of the proposed bridge, when they informed the authorities that in their opinion, having regard to the interests of land drainage, the existing bridge should be removed and a new bridge constructed on the site of the existing bridge with a central span of not less than 120 ft. but that in the event of such a course not being followed and another site being selected, the Catchment Board intimated that the new bridge wherever it was constructed should have a clear central span of at least 120 ft.

The site selected by the Minister was situated about 300 yards east of the London & North Eastern Railway Bridge at Selby.

So far as the by-pass road was concerned it was found that it traversed lands within the following internal drainage districts, namely, Ouse & Derwent and Cliffe, and lands proposed to be included in the Selby Dam Drainage District, and would cross several watercourses.

The Minister caused a Public Local Inquiry to be held into the matter, when, on behalf of the Catchment Board it was represented that they desired to raise no objection to the new bridge as proposed by the Minister, namely, with a central opening span of 120 ft. It was pointed out however, that flood arches might also be necessary, and a request was tabled that in accordance with the Minister of Transport's statement in the House, plans would be submitted to the Catchment Board in due course.

A protective clause for drainage interests generally in respect of any work carried out in the Ministry's proposals was handed in.

RIVER WHARFE.

Otley Bridge.

From time to time considerable flooding has been experienced at Otley due to the overflowing of the banks of the River Wharfe, and the matter has been one which has caused the local council much anxious consideration and has also greatly concerned the West Riding County Council owing to the dislocation of traffic caused thereby.

Various proposals have been made from time to time for dealing with the problem of the bridge which is a masonry structure of seven arched spans carried on six piers of some considerable dimensions.

The Engineer of the Catchment Board reported that there could be no question that the removal of this bridge and the substitution therefor of a single or two span structure, would materially lower the level of the river when in flood for some distance upstream.

They therefore welcomed a communication from the Otley Urban District Council stating that the Council had come to the conclusion that it was impossible to prevent the damage caused by flooding at Otley Bridge except by the removal of the existing bridge and the substitution of a bridge such as had been indicated by the Engineer of the Catchment Board.

It appeared however, that a scheme for the reconstruction of the existing bridge had already been approved by the Ministry of Transport involving a widening thereof by lengthening the existing arches.

A difficulty however presented itself in the fact that the bridge is scheduled as an ancient monument and could not be removed without the consent of the Ancient Monuments Board.

The West Riding County Council were approached in the matter, when it was learned that representatives of the County and Urban District Councils proposed to seek an interview with the Ancient Monuments Board in the matter and that representatives of the Catchment Board would be welcomed at such deputation.

A conference was duly held on the site when representatives of the following bodies were present :-

H.M. Office of Works (Ancient Monuments Board
Ministry of Transport. Section).
West Riding County Council.
Otley Urban District Council.
River Ouse (Yorks.) Catchment Board.

After inspecting the bridge the views of the several parties were expressed and it was urged in view of the inadequacy of the bridge for present transport traffic purposes, and frequent dislocation of traffic caused through flooding, of which the piers of the bridge were a considerable factor, that instead of the proposal to widen the bridge the necessary permission should be granted to remove it and substitute therefor a bridge with one or two spans.

The representatives of the Ancient Monuments Board promised that all that had been said would be carefully considered and submitted to the Chief Commissioner of Works, and the Ministry of Transport representative requested that information as to levels of the adjacent weir and other parts of the river should be obtained, when the matter would receive full consideration by his Department.

The necessary information as to levels has accordingly been furnished by the Board's Engineer.

CROSSINGS OF MAIN RIVERS.

Applications have been granted for the carrying of cables or overhead wires across main rivers as follows :-

CABLES.

Name of River.	Situation.	Company.
Derwent	Elvington	Central Electricity Board.
Derwent	North Duffield	North Lincs. & Howden-shire Electricity Co. Ltd.
Derwent	Stamford	York Corporation.
Derwent	Bridge	North Lincs. & Howden-shire Electricity Co. Ltd.
Derwent	Wressle	Yorkshire Electric Power Company.
Don	Stainforth	Post Office Telephone Department.
Ouse	Boothferry	Electrical Distribution of Yorkshire Limited.
Wharfe	Nesfield	

In every case the work has been carried out to the satisfaction of the Board.

RIVER CALDER.

(a) Dewsbury Corporation; Diversion of Sewer.

In carrying out certain proposals in connection with their sewerage undertaking the Dewsbury Corporation found it necessary to lay a syphon under the River Calder at Mill Street East for the diversion of a sewer. A plan of the proposal was submitted showing the carrying out of the construction of the syphon within three coffer dams in the channel of the river.

Subject to certain conditions, to which the Corporation have agreed, the proposals has been approved.

(b) Greetland: Halifax Corporation Sewage Works.

A proposal has been considered from the Corporation of Halifax to instal a Porteous Process Plant for the treatment of secondary sludge at Greetland and in connection therewith to construct a bridge over the River Calder to carry the necessary pipe lines.

Subject to the observance of the usual conditions, the consent of the Catchment Board to the construction of the proposed bridge has been given.

(c) Mytholmroyd: Hebden Royd Urban District Council. Sewage Disposal Works.

The Hebden Royd Urban District Council have drawn the Board's attention to certain difficulties which had arisen in connection with the outlet pipe from their Sewage Disposal Works, which delivered into the River Calder at a point opposite the Burnley Road Council School, Mytholmroyd, and which owing to the accumulation of silt etc., during the past few years was now practically covered and at times the outlet choked. The blocking of this outlet had resulted last winter in the sewage works being flooded for several days and the Council were desirous of remedying the present unsatisfactory position and requested the Catchment Board's observations on the matter.

The Board have pointed out to the Council that at present the outlet of the sewer pipe extended in the centre of the river and was subject to obstruction by a shoal of gravel which had collected there, and on the advice of their Engineer, have recommended the Council that a new outlet for the sewer pipe should be constructed so as to discharge into a pool at a concave bend in the river lower downstream.

The attention of the West Riding Rivers Board has also been drawn to the Council's letter.

(d) Weir at Luddendenfoot.

Application has been received on behalf of Messrs. J. W. Whitworth Ltd., of Huddersfield to build a new concrete weir across the river at their woollen mills, Luddenfoot to replace a dry stone weir which was destroyed during the floods last winter.

The Board have caused the proposal to be investigated with the result that it has been found that the only effects of raising the weir to its former level would be to render two small fields rather more liable to flooding and possibly to raise the water level at the tail race of the Cooper House Mill, in the same ownership, about 350 yards upstream. It was found that land drainage interests would not be adversely affected by the proposal and on an undertaking being given that a permanent employee would be instructed to open the sluices and drop the top boards whenever the depth of water flowing over the weir reached 2 feet, the Board have approved of the proposals.

RIVER OUSE, NAVIGATION.

The growing use of the River Ouse for navigation purposes at Selby has provided the Board with a matter for considerable thought. While they welcome all signs of increasing prosperity of traders using the river, they felt it was necessary that they should consider how best the river could be used for navigation purposes doing as little injury as possible to land drainage interests.

They therefore invited the principal traders and owners of jetties and wharves at Selby to meet them when a most friendly and helpful discussion ensued.

On behalf of the Catchment Board it was pointed out that they were primarily a drainage authority whose chief duty must be to facilitate the safe evacuation of surplus water from the land and to prevent the overflowing of the river or the breaching of the banks, and that the use of the river for the purposes of navigation might have a detrimental effect on drainage interests from two points of view, namely, erosion of the banks and the obstruction of the river by the mooring of vessels in the channel during periods of flood.

On behalf of the users of the river it was pointed out that the river was tidal and this to a great extent regulated the speed of the boats. They were invited by the Board to co-operate with them in every possible way to avoid undue obstruction of the channel of the river or injury to the banks by navigation and assurances were given by all present that they would be prepared to do so.

INSPECTIONS.

In order that an opportunity might be afforded to members of the Board to obtain first hand evidence of the works being carried out by the Board and the problems with which they are faced, it has been usual to arrange for an inspection of certain main rivers and works annually.

This year the Board conducted a two days inspection when many members were able to avail themselves of the opportunity thus given.

On the first day the Rivers Swale and Ure were inspected, this being the first inspection undertaken by the Board of these rivers. Both rivers are subject to sudden and high floods and their banks are generally constructed of light, sandy material in which the presence of vermin adds to the difficulty of efficient maintenance. The channel of the Swale in particular is very unstable and changes its course with great frequency with resultant undermining and damage to the flood banks.

Works carried out by the Board in closing breaches and the protection of banks against erosion by concrete and thorn fascine work and the construction of groynes were inspected.

The groynes in question are of a light and inexpensive design constructed of steel mesh crates filled with concrete in bags.

It was found that in certain cases such structures had induced such large accretions of shingle in their vicinity that the river channel had been effectually diverted from the bank which was being attacked and that there was no necessity to stabilise the temporary groyne until the river showed signs of returning to its former course.

The members present inspected in particular a breach in the river banks recently repaired at Cover Bridge on the River Ure.

On the second day the members proceeded to inspect the lock gate and sluices being installed by the Board at Elvington on the River Derwent. They then inspected the locks and weir at Naburn on the River Ouse and proceeded via Stillingfleet and Kelfield to Bubwith Bridge inspecting the flood banks of the River Ouse en route.

At Bubwith Bridge the river diversion and widening was inspected and also the diversion at Patent Hook.

In the afternoon the River Don and bank works at New Bridge were inspected at Thorne where the members saw the Board's workshop and also the new diversion of the river at Waterside.

In this way a good insight was afforded of the varied activities of the Board.

FISHERY INTERESTS.

It is provided in the Land Drainage Act that in carrying out any work thereunder regard shall be had to fishery interests, and in connection with the works of improvement being carried out on the River Derwent at Elvington where automatic sluices were being constructed in the weir, the opportunity has been taken of constructing a fish-pass adjacent thereto. The plans of the fish-pass have met with the unqualified approval of the Yorkshire Fishery Board who have expressed appreciation with regard to the excellent design. The fish-pass will be constructed as soon as the work on the weir has been completed.

ACQUISITION OF LAND.

Section 45 of the Land Drainage Act provides that a drainage board may with the approval of the Minister acquire by agreement land for any purpose connected with the drainage of land, or purchase by agreement any water mill, dam, weir or other work or any easement which interferes with the proper drainage of their district.

In connection with the Main River Improvement Scheme it has been necessary to acquire several properties and a list of such properties together with the particular purpose for which they were required is set out in the Appendix to this Report.

THE WORKSHOP AND YARD.

As stated in last year's Annual Report, a portion of the buildings of Chamber's Mill, near Thorne, was leased for the purpose of constructing a Maintenance Workshop and Repair Yard for the Board's Plant.

This workshop has just been completed and comprises the following buildings :-

Existing main building in two floors with a combined floor area of 5,800 square feet.

New steel and corrugated iron saw shed on ground floor.

New conveniences (brick).

Existing brick building utilised as central heating boiler house and coke store.

Existing blacksmith's shop.

Yard with an area of 1,150 square yards, bounded by brick wall.

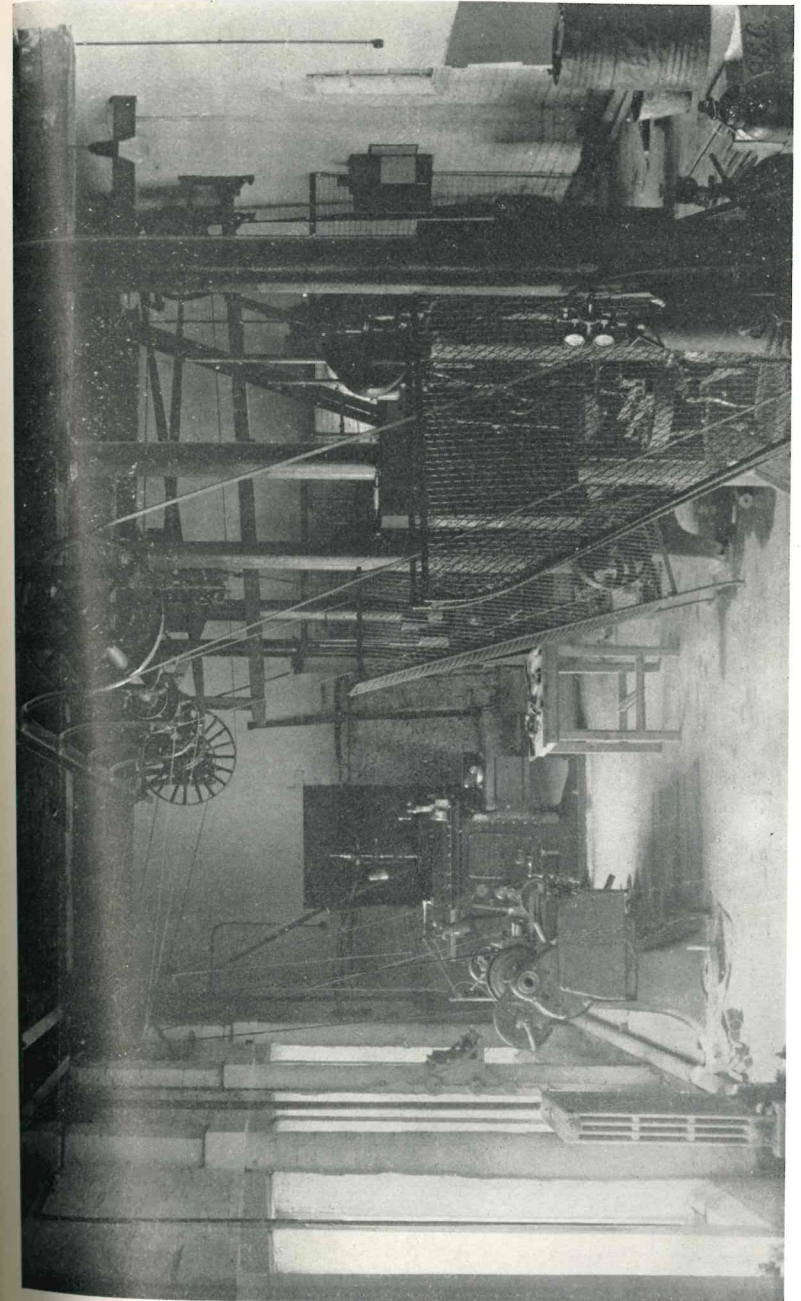
Dealing with the main building first, the larger part of the ground floor is used as a Machine and Fitting Shop, and to give sufficient light for the proper working of machine tools, new large steel framed windows were fitted. Also as the subsoil is rather poor, substantial engine and machine beds were laid together with a new concrete floor.

All the main line and counter shafting is mounted on ball bearings, and to keep maintenance of this item to a minimum every effort was made to arrange the belting as simply as possible. In the Machine Shop and Saw Shed there is a total length of belting of 400 feet.

The equipment in this shop consists of :-

One 10½ in. Screwcutting Lathe, one 18 in. Shaper, one Screwing Machine (maximum capacity 2 in. Whitworth threads), one Power Hacksaw, two Drilling Machines, the smaller with a drilling range of one sixteenth to ½ in. and the larger from ½ in. to 2 in. one Double Wheel Tool Grinder with twist drill grinding attachment.

Power is supplied by a 27 B.H.P. Diesel Engine which also drives the Circular Saw described below.



Thorne Workshop.
Part of the interior of the machine shop.



River Calder.
Flooding on Burnley Road, Mytholmroyd, December, 1936.
 By courtesy of the Yorkshire Post.



River Ure.
Near Wensley. Damage by flooding. December 1936.
 By courtesy of the Yorkshire Post.

One end of this shop is fitted with benches, cupboards etc., and also hand tools for fitting work and the equipment includes an oxy-acetylene welding and cutting outfit. Part of the interior of the machine shop is shown in the photograph on page 93.

Adjoining the above is the Saw Shed equipped with a 36 in. Drag Saw Bench complete with rails and bogies for sawing heavy timber. In addition to ordinary duties, this outfit is being used for the sawing up of trees which have been cut down on land acquired on the river banks, and much valuable hardwood is being put into stock for future use.

The smaller part of the ground floor of the main building, and divided from the Machine Shop by a brick wall, is used as a Store and is fitted with a Storekeeper's Office, and the usual racks and shelves for spare tools and materials.

Adjoining the side of the store is an existing brick building divided into two parts. The first portion houses the central heating boiler, and the second is used as a coke store. These two places have been fitted with steel doors as a precaution in case of fire.

The first floor of the main building is divided into two parts. The major portion is the Joiner's Shop, the largest shop in the premises. This shop was also fitted with new windows and generally reconditioned.

The smaller portion of this floor has been divided by a timber partition wall for use as Offices, and is arranged as follows :-

The main portion is fitted up as a Drawing Office and the remainder is further divided into a smaller office, and a photographic darkroom.

Included in the lease of the premises was the exclusive use of the Blacksmith's Shop, and this brick building required very little alteration to render it fit for use.

Near the above shop is the Yard, used for storing all timber, steel and large plant which can be stored outside. It has two entrance gates giving access to road and river respectively, and the surface is colliery ashes with broken brick as ballast. After the ballast was laid, the ashes were rolled in to form one level surface. A small garage has been built near one set of entrance gates, to house the light van. A large electric floodlight has been erected in order that materials may be got from the yard during emergency periods in hours of darkness.

A light railway track capable of carrying a maximum load of three tons, connects all the shops and store with the yard so that heavy equipment and materials can be transported quickly, to and from the various parts of the premises.

The shops are lighted by electricity, and warmed by central heating, and each machine tool is fitted with its own electric light for the dual purpose of giving a brilliant light on the job in the machine, and to keep the lighting costs as low as possible.

The entire structural alterations, new buildings, layout and setting of the engine and machine tools were carried out by direct labour and have taken about twelve months to complete. The normal staff numbers ten men.

At present the various shops are turning out spare parts for the overhaul of plant in use on the river improvement schemes, in addition to the construction of timber huts, new barrows etc., and also the fabrication of all steelwork required for the Goole sheet piling scheme, and the new Canal Overflow and Ice Disposal Sluice at New Bridge.

It is proposed in the future to bring excavators into the yard to carry out complete overhauls. In this way any large plant brought in for overhaul would be dismantled under cover and the units requiring repair would be taken by means of the yard railway into the appropriate shop, where repairs would be effected.

In this way, all waiting for the delivery of spare parts would be obviated and special improvements such as oversize bushes, building up worn castings by welding, etc., could be carried out under direct supervision.

RAINFALL AND RIVER FLOW 1937.

The figures quoted are for the "River Year 1937" i.e. from October 1st, 1936, to September 30th, 1937. This procedure is the same as was adopted last year. The reason for this period being chosen is that over a series of years it has been found that in this country the level of the water table in the ground is at its lowest about the end of September.

The general rainfall for the year over the Catchment Area was 5% above the average.

The maximum excess was 20% at Dale Dyke Reservoir in the Don watershed and the greatest deficiency 10% at Winterburn Reservoir in the Aire watershed.

The autumn months of 1936 show a rainfall somewhat above the average. The stations in the north western part of the Catchment Area have noticeably high totals for December, mainly due to a phenomenal precipitation on the 13th and 14th, 3.75 inches in one day being recorded in Upper Wharfedale.

The winter months—January, February and March 1937, also showed totals considerably above the average, February being notably high; for some stations during this month the rainfall was over 200% of the average.

The spring—April, May and June was on the whole dry, the rainfall varying from about average in April to 65% of the average in June.

The summer months showed falls well below the normal precipitation, August being only about 40% of the average and September 70%.

FLOODING.

The most serious flooding during the year took place on the 14th and 15th December, 1936. This was worst in the Rivers Swale, Ure and Wharfe. The Derwent, Nidd and Upper Aire were also affected but not so seriously.

The flooding was caused by an exceptionally high rainfall in the highlands in the north western part of the Catchment Area. Melting snow also contributed to the flood.

In the Ure Valley flooding occurred the whole way from Hawes to Boroughbridge, many roads in the dale were flooded including the Great North Road at Boroughbridge, and many low lying farms and villages were surrounded by water. The river burst its banks in many places, breaches occurring throughout the whole length of the river. The three most serious of these were at Kilgram, Jervaulx and Cover Bridge. These have since been repaired by the Board.

In Swaledale a similar state of affairs prevailed, many breaches being made in the vermin infested banks, and the water spreading throughout the whole of the low lying parts of the valley.

The effect of this highland water showed itself in the River Ouse, when flood conditions prevailed for practically the whole length of the river above Selby from the 15th to the 18th of December. The recorder at Naburn Weir showed nearly 9 feet of fresh water passing over the crest.

Wharfedale experienced the most serious flooding on record. The flood level at 5 p.m. on December 14th at Ilkley Old Bridge was 2 inches higher than the previous record of 1866. Most roads were flooded the whole way down the valley as far as Tadcaster. The flooding was at its worst above Pool-in-Wharfedale and decreased in severity lower downstream, the reason for this being that the rainfall was most severe at the upper end of the watershed and diminished lower down. At Otley it was estimated that the maximum discharge of the river reached 20,000 cubic feet per second.

Flooding also occurred in Upper Airedale, the main road being flooded at Stocksbridge, Keighley. A minor flood was also experienced in the Derwent valley.

A feature of all this flooding was the great rapidity with which the water rose, the rainfall causing it being of quite abnormal intensity for the winter season.

Fortunately, the flood in the River Wharfe at its mouth near Cawood, had subsided to a considerable extent before the flood coming down the Ouse from the Swale and Ure had reached its peak. The difference in time of the two peaks was about 30 hours. If this had not been the case it would probably have meant very serious flooding in the low lying districts adjacent to the River Ouse, in the upper portion of the tidal reach. Photographs on page 94 and on pages 99 and 100 show flooding in the several localities.

On March 17th a minor flood occurred in the Don valley, the flow at Sprotborough Weir being 5,800 cubic feet per second. The water overflowed the spill weir in the river bank near Waite House and passed into Thorpe Marsh. A serious flood was also experienced in the Derwent valley, large areas of ing's land and several roads being flooded. The high level of the river also seriously delayed the Board's work of reconstructing the sluice and lock at Elvington.

This flooding was caused by a moderately high rainfall on the 16th and 17th when the ground was in a saturated condition following a wet period.



River Ure.
Flooding on the Great North Road, Boroughbridge. December 1936.
By courtesy of the Yorkshire Post.



River Ure.
Flooding of Boroughbridge. December 1936.
By courtesy of the Yorkshire Post.



River Ouse.
Flooding near York Waterworks. December 1936.
 By courtesy of the Yorkshire Post.



River Aire.
Flooding at Cononley. December 1936.
 By courtesy of the Yorkshire Post.

Later in the year some very dry weather was experienced, a partial drought being recorded at many stations in the Catchment Area, notably in the Don valley. A partial drought is defined as a period of at least 29 consecutive days, the mean daily rainfall of which does not exceed .01 inch. These conditions existed from about the 25th July to the 10th September.

During this period the flow of the rivers was of course very low, the average flow of the River Don being only 204 cubic feet per second from the 19th August to the 15th September, a very low figure over a long period.

This dry period and low river flow are clearly illustrated on the accompanying charts showing the rainfall and run off. The run off is given as the average rate of flow over Sprotborough Weir, and the rainfall as the average of that recorded at a number of stations evenly distributed over the watershed.

Corresponding charts are also shown for the River Nidd, the flow being measured at Hunsingore Weir.

Neither of these rivers experienced a serious flood although a minor flood occurred in each. The charts also show the low and steady flow throughout the summer months.

ACCRETION OF WARP IN TIDAL LENGTHS OF RIVER.

As was to be expected the effect of this rather abnormal distribution of rainfall and consequently large seasonal variations in the river flow, showed itself in the results of the main river survey which is taken each spring and autumn.

A longitudinal section of the River Ouse is taken from Naburn Lock to Goole. The object of this survey, is to ascertain the amount of warp which has been deposited or removed from the channel in the preceding six months. In a normal year, the level of the river bed is noticeably higher in autumn, after the dry weather, than in spring, when the winter floods have served to scour out the warp.

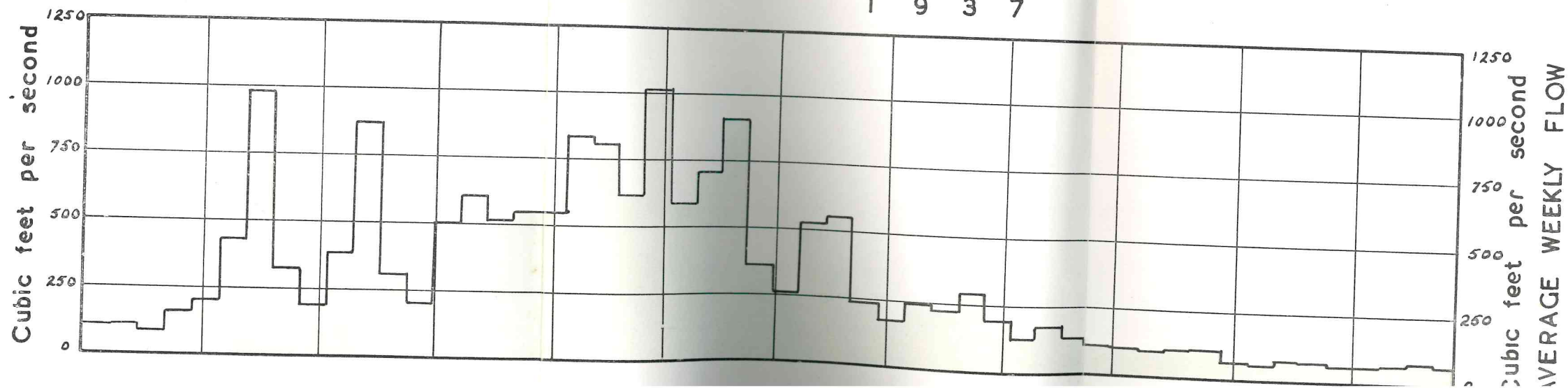
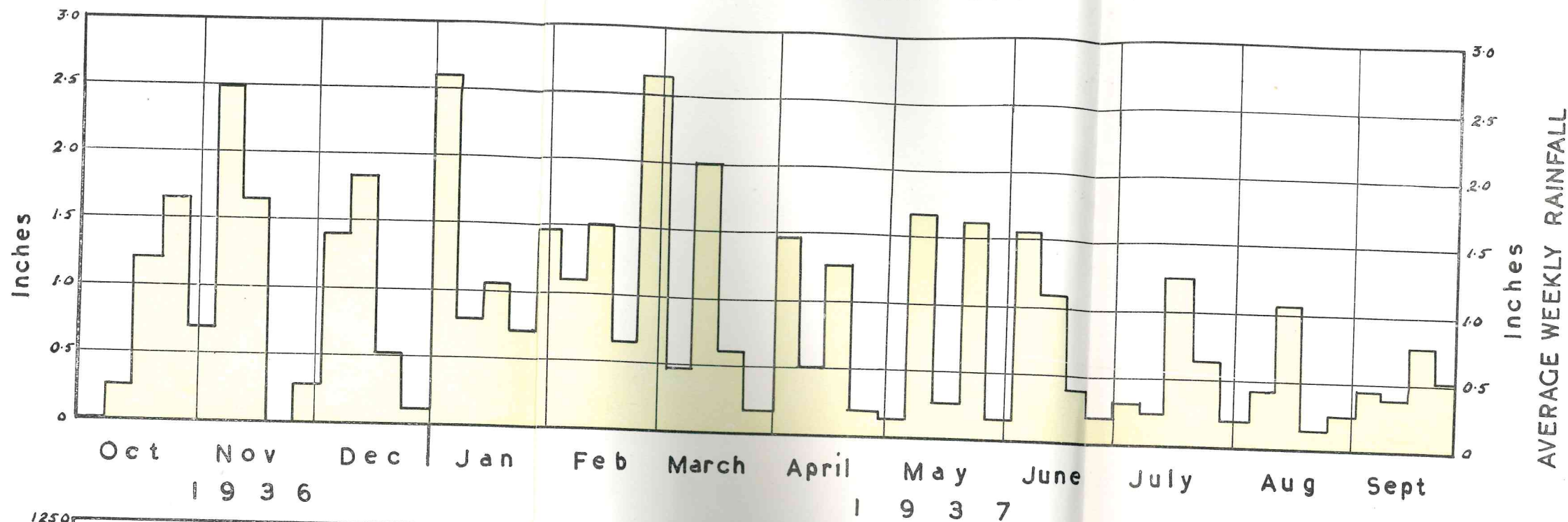
In the spring of 1937, after a winter of heavy rainfall and high river flow, it was found that the average bed level of the River Ouse was lower than it had ever been since the taking of these surveys was commenced by the Board. The average level of the bed between Naburn and Goole on April 1st, 1937, was 8.60 feet below O.D.

RIVER DON CATCHMENT AREA ABOVE SOUTHBOROUGH WEIR

RAINFALL & RUN-OFF



RIVER NIDD CATCHMENT AREA ABOVE HUNSINGORE WEIR RAINFALL & RUN-OFF



32. As regards surface water a considerable number of local authorities and water companies measure the water from their gathering grounds but they usually do so at the outflows of their storage works and accurate records of run-off for the gathering grounds are rarely available.

The measurement of the discharges of the principal rivers of the basin is at present undertaken by the West Riding of Yorkshire Rivers Board, who are concerned with the prevention of river pollution, and the River Ouse (Yorks.) Catchment Board. As a beginning these bodies have used as measuring instruments existing weirs at Hunsingore on the Nidd, Flint Mill on the Wharfe, Stamford Bridge on the Derwent, Kirkthorpe on the Calder, Beal on the Aire and Sprotborough on the Don.

The Rivers Board are concerned with all these weirs except that at Stamford Bridge, which is in the East Riding. They installed their first two recording instruments on the Calder and Aire in 1927 and 1929 respectively. Since 1934 the Rivers Board and the Catchment Board have shared both the cost of installing recording instruments at the other places mentioned above and the information obtained.

33. These weirs are convenient and inexpensive to use for measuring purposes, but they have drawbacks. At times of high discharge the weir crest may become drowned (e.g. at Stamford Bridge). In other cases sluices adjoining the weir have to be operated in a way which hampers accurate measurements of discharge; this happened at Beal weir during at least four months in each of the two water years 1934-5 and 1935-6. On rare occasions, too, the river may outflank the weir at very high levels, and thus partly escapes measurement. The weir is usually long as well as broad-crested and, being all at one level, may not be very suitable for measuring the smallest discharges.

It will accordingly be seen that, valuable as is the information now collected, it is very desirable that arrangements should be devised for overcoming any deficiencies of existing stations and that there should be more measuring stations established on the rivers of the basin, especially on the Swale and the Ure with their high rainfall.

RIVER OUSE.

(NABURN LOCK TO GOOLE).

Comparison of Surveys of River Bed, 21st September, 1936,
and 1st April, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	Sept. 1936.	April 1937.	+ Feet.	- Feet
Naburn to 1 mile	29.21	28.76		.45
1 mile to 2 miles	29.30	28.83		.47
2 miles to 3 miles	28.97	28.01		.96
3 " 4 "	28.44	28.11		.33
4 " 5 "	26.51	26.94	.43	
5 " 6 "	26.67	25.45		1.22
6 " 7 "	25.37	24.56		.81
7 " 8 "	23.72	23.31		.41
8 " 9 "	22.11	22.34	.23	
9 " 10 "	21.77	21.53		.24
10 " 11 "	21.10	21.51	.41	
11 " 12 "	21.37	20.63		.74
12 " 13 "	21.69	20.34		1.35
13 " 14 "	17.69	18.07	.38	
14 " 15 "	19.56	17.46		2.10
15 " 16 "	18.40	15.85		2.55
16 " 17 "	19.56	16.64		2.92
17 " 18 "	21.47	18.71		2.76
18 " 19 "	18.25	18.91	.66	
19 " 20 "	19.62	17.59		2.03
20 " 21 "	18.94	18.04		.90
21 " 22 "	20.62	18.09		2.53
22 " 23 "	23.25	20.41		2.84
23 " 24 "	22.22	19.28		2.94
24 " 25 "	21.09	17.02		4.07
25 " 26 "	20.94	21.57	.63	
26 " 27 "	17.47	15.02		2.45
27 " 28 "	20.06	19.07		.99
28 " 29 "	13.61	14.82	1.21	
29 " 29 1/2 "	15.50	13.75		1.75

Average level of bed of channel :-
 21st September, 1936 — 22.56 ft. above Datum.
 or 7.44 ft. below O.D.
 1st April, 1937 — 21.40 ft. above Datum.
 or 8.60 ft. below O. D.
 Average decrease in level 1.16 ft.

RIVER OUSE.

(NABURN LOCK TO GOOLE).

Comparison of Surveys of River Bed 1st April, 1937
and 11th October, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	April 1937.	October 1937.	+ Feet.	- Feet
Naburn to 1 mile.	28.76	29.59	.83	
1 mile to 2 miles	28.83	32.29	3.46	
2 miles to 3 miles	28.01	30.94	2.93	
3 " 4 "	28.11	30.39	2.28	
4 " 5 "	26.94	29.76	2.82	
5 " 6 "	25.45	29.79	3.74	
6 " 7 "	24.56	28.70	4.14	
7 " 8 "	23.31	26.67	3.36	
8 " 9 "	22.34	26.32	3.98	
9 " 10 "	21.53	25.77	4.24	
10 " 11 "	21.51	24.59	3.08	
11 " 12 "	20.63	24.46	3.83	
12 " 13 "	20.34	22.50	2.16	
13 " 14 "	18.07	18.42	.35	
14 " 15 "	17.46	21.14	3.68	
15 " 16 "	15.85	17.79	1.94	
16 " 17 "	16.64	19.06	2.42	
17 " 18 "	18.71	20.01	1.30	
18 " 19 "	18.91	17.50		1.41
19 " 20 "	17.59	18.94	1.35	
20 " 21 "	18.04	18.42	.38	
21 " 22 "	18.09	20.67	2.58	
22 " 23 "	20.41	23.81	1.35	
23 " 24 "	19.28	22.25	2.97	
24 " 25 "	17.02	20.59	3.57	
25 " 26 "	21.57	20.00		1.57
26 " 27 "	15.02	15.44	.42	
27 " 28 "	19.07	17.92		1.15
28 " 29 "	14.82	13.12		1.70
29 " 29 1/2 "	13.75	15.88	2.13	

Average level of Bed of Channel :-
 1st April, 1937 — 21.40 ft. above Datum.
 or 8.60 ft. below O.D.
 11th October, 1937 — 23.52 ft. above Datum.
 or 6.48 ft. below O.D.
 Average increase in level 2.12 ft

RIVER WHARFE.

(TADCASTER WEIR TO WHARFE MOUTH).

Comparison of Surveys of River Bed, 16th November, 1936
and 12th April, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	Nov. 1936.	April 1937.	+ Feet.	- Feet
Tadcaster Weir to 1 mile	37.15	34.08		3.07
1 mile to 2 miles	34.06	33.06		1.00
2 miles to 3 miles	34.74	34.30		.44
3 " 4 "	33.61	34.45	.84	
4 " 5 "	31.77	31.89	.12	
5 " 6 "	31.55	31.14		.41
6 " 7 "	30.94	31.17	.23	
7 " 8 "	29.91	30.25	.34	
8 " 9 1/4 "	27.28	29.04	1.76	

Average level of Bed of Channel :—

16th November, 1936 — 32.33 ft. above Datum.
or 2.33 ft. above O.D.

12th April, 1937 — 32.15 ft. above Datum.
or 2.15 ft above O.D.

Average decrease in level 0.18 ft.

RIVER WHARFE.

(TADCASTER WEIR TO WHARFE MOUTH).

Comparison of Survey of River Bed 12th April, 1937
and 22nd September, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	April 1937.	Sept. 1937.	+ Feet.	- Feet
Tadcaster Weir to 1 mile	34.08	35.00	.92	
1 mile to 2 miles	33.06	34.37	1.31	
2 miles to 3 miles	34.30	34.37	.07	
3 " 4 "	34.45	34.99	.54	
4 " 5 "	31.89	31.69		.20
5 " 6 "	31.14	32.04	.90	
6 " 7 "	31.17	31.45	.28	
7 " 8 "	30.25	29.84		.41
8 " 9 1/4 "	29.04	27.95		1.09

Average level of Bed of Channel :—

12th April, 1937 — 32.15 ft. above Datum.
or 2.15 ft above O.D.

22nd September, 1937 — 32.41 ft. above Datum.
or 2.41 ft. above O.D.

Average increase in level 0.26 ft.

RIVER DERWENT.

(ELVINGTON LOCK TO DERWENT MOUTH).

Comparison of Surveys of River Bed, 19th October, 1936
and 14th April, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	October 1936.	April 1937.	+ Feet.	- Feet
Elvington Lock to 1 mile	30.19	31.44	1.25	
1 mile to 2 miles	29.54	30.19	.65	
2 miles to 3 miles	31.07	30.96		.11
3 " 4 "	30.35	31.00	.65	
4 " 5 "	30.19	30.91	.72	
5 " 6 "	29.27	30.15	.88	
6 " 7 "	28.91	29.19	.28	
7 " 8 "	29.55	28.68		.87
8 " 9 "	28.44	28.11		.33
9 " 10 "	28.07	27.49		.58
10 " 11 "	29.96	28.92		1.04
11 " 12 "	29.65	27.82		1.83
12 " 13 "	27.94	27.45		.49
13 " 14 "	27.21	26.37		.84
14 " 15 "	27.92	27.36		.56
15 " 15½ "	26.75	23.75		3.00

Average level of Bed of Channel :—

19th October, 1937 — 29.06 ft. above Datum.
or .78 ft. below O.D.

14th April, 1937 — 28.74 ft. above Datum.
or 1.26 ft. below O.D.

Average decrease in level 0.32 ft.

RIVER DERWENT.

(ELVINGTON LOCK TO DERWENT MOUTH).

Comparison of Surveys of River Bed 14th April, 1937
and 10th September, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	April 1937.	Sept. 1937.	+ Feet.	- Feet
Elvington Lock to 1 mile	31.44	30.86		.58
1 mile to 2 miles	30.19	30.17		.02
2 miles to 3 miles	30.96	31.12	.16	
3 " 4 "	31.00	30.75		.25
4 " 5 "	30.91	30.84		.07
5 " 6 "	30.15	30.26	.11	
6 " 7 "	29.19	28.24		.95
7 " 8 "	28.68	28.04		.64
8 " 9 "	28.11	27.61		.50
9 " 10 "	27.49	27.66	.17	
10 " 11 "	28.92	28.95	.03	
11 " 12 "	27.82	28.41	.59	
12 " 13 "	27.45	27.27		.18
13 " 14 "	26.37	27.44	1.07	
14 " 15 "	27.36	29.77	2.41	
15 " 15½ "	23.75	25.38	1.63	

Average level of Bed of Channel :—

14th April, 1937 — 28.74 ft. above Datum.
or 1.26 ft. below O.D.

10th September, 1937 — 28.92 ft. above Datum.
or 1.08 ft. below O.D.

Average increase in level 0.18 ft.

RIVER AIRE.

(HADDLESEY OLD LOCK TO AIRE'S MOUTH).

Comparison of Surveys of River Bed, 22nd September, 1936
and 2nd April, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	Sept. 1936.	April 1937.	+ Feet.	- Feet
Haddlesey Old Lock to 1 mile	26.50	26.62	.12	
1 mile to 2 miles	25.04	25.12	.08	
2 miles to 3 miles	25.19	25.82	.63	
3 " 4 "	25.76	25.75		.01
4 " 5 "	27.06	28.06	1.00	
5 " 6 "	23.44	25.00	1.56	
6 " 7 "	24.24	24.11		.13
7 " 8 "	23.42	23.06		.36
8 " 9 "	21.94	20.29		1.65
9 " 10 "	20.96	19.66		1.30
10 " 11 "	23.32	22.35		.97
11 " 12 "	23.11	22.47		.64
12 " 13 "	19.97	20.17	.20	
13 " 14 "	21.02	20.27		.75
14 " 15 "	24.01	22.05		1.96
15 " 16 "	24.42	22.12		2.30

Average level of Bed of Channel :—

22nd September, 1936 — 23.71 ft. above Datum.
or 6.29 ft. below O.D.

2nd April, 1937 — 23.30 ft. above Datum.
or 6.7 ft. below O.D.

Average decrease in level 0.41 ft.

RIVER AIRE.

(HADDLESEY OLD LOCK TO AIRE'S MOUTH).

Comparison of Surveys of River Bed, 2nd April, 1937
7th September, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	April 1937.	Sept. 1937.	+ Feet.	- Feet
Haddlesey Old Lock to 1 mile	26.62	24.62		2.00
1 mile to 2 miles	25.12	25.75	.63	
2 miles to 3 miles	25.82	26.11	.29	
3 " 4 "	25.75	27.10	1.35	
4 " 5 "	28.06	26.99		1.07
5 " 6 "	25.00	24.26		.74
6 " 7 "	24.11	24.64	.53	
7 " 8 "	23.06	24.41	1.35	
8 " 9 "	20.29	23.01	2.72	
9 " 10 "	19.66	23.65	3.99	
10 " 11 "	22.35	24.10	1.75	
11 " 12 "	22.47	24.70	2.23	
12 " 13 "	20.17	22.25	2.08	
13 " 14 "	20.27	23.84	3.57	
14 " 15 "	22.05	24.86	2.81	
	22.12	24.47	2.35	

Average level of Bed of Channel :—

2nd April, 1937 — 23.30 ft. above Datum.
or 6.7 ft. below O.D.

7th September, 1937 — 24.67 ft. above Datum.
or 5.33 ft. below O.D.

Average increase in level 1.37 ft.

RIVER DON

(AQUEDUCT TO GOOLE).

Comparison of Surveys of River Bed, 2nd October, 1936
and September, 1937.

Datum 30 ft. 0 in. below O.D.

Mile Section.	Average height in feet above Datum.		Increase or Decrease.	
	October 1936.	Sept. 1937.	+ Feet.	- Feet.
Aqueduct to 1 mile.	12.40	11.69		.71
1 mile to 2 miles	11.22	10.60		.62
2 miles to 3 miles	9.63	9.97	.34	
3 " 4 "	9.18	9.11		.07
4 " 5 "	8.01	7.10	1.23	.91
5 " 6 "	6.52	7.75	2.98	
6 " 7 "	5.62	8.60		1.14
7 " 8 "	7.84	6.70		2.85
8 " 9 "	8.46	5.61		2.29
9 " 10 "	7.82	5.53		2.34
10 " 11 "	3.96	1.62		1.60
11 " 12 "	4.07	2.47		1.99
12 " 13 "	4.26	2.27		1.06
13 " 14 "	0.25	0.81		2.02
14 " Dutch River	3.10	1.08		

Average level of Bed of Channel :—

October, 1936 — 6.82 ft. above Datum.
or -3.18 ft. below O.D.

September, 1937 — 5.95 ft. above Datum.
or -4.05 ft. below O.D.

Average decrease in level 0.87 ft.

PLANT.

The Board has consistently followed the practice of carrying out all their works by direct labour.

This has necessitated the acquisition of a large quantity of plant. Details of additional items delivered during the year are given below.

Plant.	H.P.	Supplied by	Cost	Date of Delivery	Where operated
No. 12 Excavator	36	Ransomes and Rapier, Ltd.	1582 0 0	Nov. 1936.	R. Don.
Petrol Pump		Geo. Pike Ltd.	58 0 0	" "	" "
Barges Nos. 3 & 4		J. S. Watson Ltd.	1186 10 0	Dec. "	All rivers
Power Rammer		C. H. Johnson & Son.	87 15 0	" "	R. Ure.
" "		" "	87 15 0	" "	" "
Motor Boat		Staniland & Co.	232 10 0	" "	R. Don.
Diesel Engine (Stationary)		J. & H. McLaren Ltd.	240 0 0	" "	Workshop
Concrete Mixer		Winget Ltd.	39 0 0	" "	R. Don.
No. 13 Excavator	35	Ruston-Bucyrus Ltd.	1126 2 6	Jan. 1937	Internal Drainage Boards.
Locomotive No. 12	20/28	Motor Rail Ltd.	345 0 0	" "	R. Ure.
Petrol Pump		Gwynnes Pumps Ltd.	60 4 0	" "	" "
Tractor No. 2	45	H. Leverton & Co.	1431 10 0	Feb. "	R. "Don."
1-Ton Mobile Crane		R. H. Neal & Co.	285 0 0	" "	R. Derwent.
Circular Saw Bench		J. Pickles & Son.	123 3 0	" "	Workshop
Thrust Borer Magnall Type G.4.		Hydraulic Engineering Co.	284 5 0	" "	R. Don.
Screwing Machine		Joshua Heap and Co., Ltd.	188 12 6	Mar. "	Workshop
18 in. Shaping Machine		Butler Machine Tool Co., Ltd.	176 15 0	April "	"
28 in. Drilling Machine		Jones & Shipman Ltd.	140 0 0	" "	"
Piling Plant Winch with Engine for ditto		British Steel Piling Co., Ltd.	355 2 6	" "	R. Don.
			137 0 0	July "	"

Plant.	H.P.	Supplied by	Cost	Date of Delivery	Where operated
5-cwt. Fordson Van	5	E. & G. Charlesworth.	105 5 0	May 1937.	R. Don.
Lathe		Buck & Hickman Ltd.	222 14 10	" "	Workshop
Digma Scraper		H. Leverton & Co.	833 0 0	" "	R. Don.
Grinding Machine		Voucher Ltd.	39 0 7	June "	Workshop
5 in. Pump and Engine		Blackstone & Co., Ltd.	135 12 0	" "	R. Don.
2-Ton Steam Derrick Crane Boiler for do		Butters Bros.	540 0 0	" "	" "
Motor Scythe		Spencer Hopwood Ltd.	152 4 0	" "	" "
Sawing Machine		Thos. Green & Son	50 0 0	" "	R. Ouse.
Half cu. yard Trencher Equipment		Assoc. British Machine Tool Makers.	33 10 1	July "	Workshop
15 cwt. Fordson Van		Priestman Bros. Ltd.	173 0 0	" "	R. Don.
Bench Drilling Machine		Tate of Leeds.	230 0 0	Aug. "	All rivers
Concrete Mixer		Voucher Ltd.	17 4 11	Sept. "	Workshop
Concrete Mixer		J. Fowler & Co., Ltd.	49 0 0	Oct. "	R. Don.
		J. Fowler & Co., Ltd.	183 0 0	" "	R. Derwent

Section IV—DONCASTER DRAINAGE DISTRICT.

ADMINISTRATION OF THE DONCASTER AREA DRAINAGE ACT OF 1929.

Under the above Act, it is provided that mineowners working or proposing to work minerals under any lands situated within the Doncaster district, or so near thereto that the surface of any lands in the said district will or may be affected by the working of the minerals, shall be under a duty to construct and maintain in proper condition such works and do such things as may, by reason of any subsidence which results or may result from the working of the minerals, be requisite, in order to obviate or remedy, so far as having regard to all the circumstances of the case is reasonably necessary, any loss of efficiency which has arisen or may arise in the drainage system and drainage works of the Doncaster district.

It is further provided that it is the duty of every mineowner to comply with such reasonable directions as may from time to time be given to him by the Catchment Board with respect to the construction or maintenance of any drainage works which he is required under this part of the Act to construct or maintain.

The portion of the Doncaster District under the jurisdiction of the Board is that lying to the north-east of Doncaster and is triangular in shape, bounded on the north by the Rivers Aire and Ouse, on the West by a line running from a point near the south-west outskirts of Doncaster through Brodsworth, Bullcroft and Askern Collieries to Knottingley, and on the south-east by a line running through Doncaster, Stainforth and Thorne, and joining the River Ouse near Ousefleet. The whole area comprises about 94,000 acres, of which 7,200 acres have so far been affected and lowered by colliery workings.

Remedial drainage work upon the area subsided or affected in any way by mine workings is proceeding as an integral part of the routine of the several collieries concerned.

There are at present seven Colliery Companies operating within that portion of the Doncaster District which is within the Ouse Catchment Area. These are Askern, Bentley, Bullcroft Main, Brodsworth, Hatfield Main, Markham Main and Thorne Collieries.

Prior to subsidence of the surface due to the working of coal, the drainage of a large portion of the Doncaster District presented many difficult problems owing to the low level of

the land relative to the level of the River Don and the small fall obtainable in the drainage channels.

The subsidence of the surface over or adjacent to areas from under which coal has been extracted, has in many cases rendered gravity drainage impossible, and recourse has had to be had to pumping to lift the water into unsubsidied drains. Where a carrier drain traverses a subsided area its banks have to be raised at least to the extent of the subsidence. This has been done in the case of the high level drain known as the Old Ea Beck or Smallholme and Tilts Drain, which in addition to conveying a large volume of foreign water also receives the drainage from a subsided basin. Pumping plants are installed at two points along its course for this purpose, these being known as the Duck Holt and Tilts Pumping Stations. These stations comprise electrically operated automatic centrifugal pumps housed in brick buildings with concrete sump wells. At present they are of sufficient capacity to deal with the drainage of 3,000 acres of the subsided basin. As this basin increases in area these pumps may be replaced by units of greater capacity. Duck Holt Pumping Station is illustrated on page 117.

At certain sites temporary pumping plants have been installed. These units are used for pumping the water from a subsided, into an unsubsidied length of drain. The temporary pumping station at Great Common Drain is illustrated on page 117.

Plans showing the extent of present and prospective workings are forwarded periodically to the Catchment Board by the mineowners. From an examination of these plans information as to where subsidence and consequent loss of efficiency in the drainage system will occur is obtained.

As subsidence is continuing from day to day over a considerable but scattered area, and goes on for several years after the coal has been worked out, constant levelling is necessary to record changes in surface levels. Approximately 2,000 acres have so far been levelled, and bench marks have been established throughout this area whereby the amount and rate of subsidence is recorded.

Throughout the year, the drainage of areas subsided by colliery workings has been kept under observation, and the attention of the Colliery Companies concerned has been drawn to cases where a loss of efficiency has been observed.

At present there are fourteen remedial drainage pumps in operation within the District, and many miles of drains have been regraded or embanked to counteract the effects of subsidence.



Colliery Remedial Drainage Works.
Duckholt Pumping Station on Smallholme and Tilts Drain.



Colliery Remedial Drainage Works.
Temporary pumping station, Great Common Drain, Askern.

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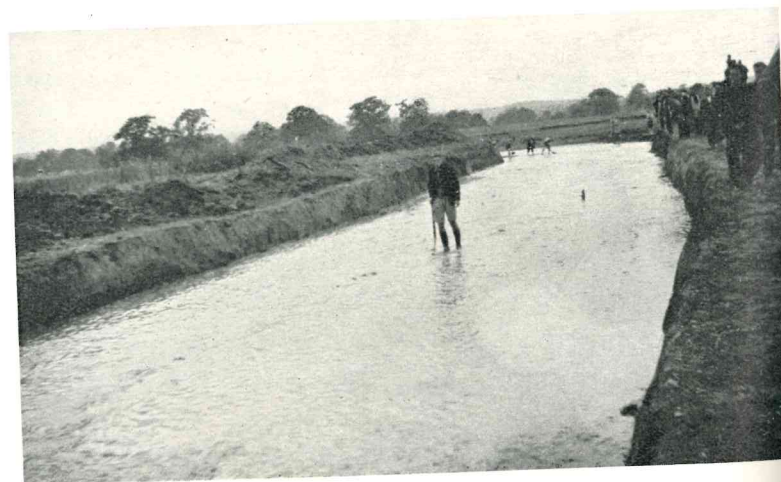
Colliery Remedial Drainage Works.
Duckholt Pumping Station on Smallholme and Tilts Drain.



Colliery Remedial Drainage Works.
Temporary pumping station, Great Common Drain, Askern.



River Rye.
Cambridge unemployed camp. Diversion before opening.



River Rye.
Cambridge unemployed camp. Diversion after opening.

Section V—FINANCE.

ACCOUNTS.

By virtue of the Catchment Boards (Financial Statement and Audit of Accounts) Order, 1931 the financial year of the Catchment Board extends from the 1st April until the succeeding 31st March. The Accounts of the Catchment Board and their officers are subject to audit by the District Auditor who has completed his audit of the Accounts for the year ended 31st March 1937.

An abstract of the Accounts as audited appears in the Appendix to this Report.

FINANCIAL YEAR BEGINNING 1st APRIL, 1937,

The following particulars with regard to the financial year beginning 1st April, 1937 may be of interest :—

Expenditure of Catchment Board.

The following estimate of expenditure was adopted by the Board :—

1. Under the Land Drainage Act, 1930 :

	£	s.	d.
(a) Administration	22,977	0	0
(b) Works of Maintenance	11,696	4	1
(c) Improvement of existing works	51,724	0	0
(d) Execution of new works	12,812	0	0
(e) Contributions to Internal Drainage Boards	1,700	0	0

2. Meeting expenditure or charges incurred before the passing of the Land Drainage Act, 1930.

NIL.

£100,909 4 1

To meet this expenditure the Catchment Board had the following resources of revenue to fall back upon (apart from sundry small receipts) :—

- (a) Government Grant.
- (b) Precepts on Internal Drainage Boards.
- (c) Precepts on County and County Borough Councils.

(a) Government Grants.

As has previously been reported the Ministry of Agriculture and Fisheries in approving the Main River Improvement Scheme of the Catchment Board to be carried out at an estimated cost of £1,190,000 had agreed to contribute by way of grant 33½% of the cost thereof. Instalments of Grant are paid on request in respect of expenditure on the Scheme and to the 19th day of November, 1937, instalments of Grant amounting to £64,600 have actually been received.

(b) Contributions by Internal Drainage Boards.

It is laid down in the Land Drainage Act, 1930, that a Catchment Board shall by resolution require each internal drainage board to make towards the expenses of the Catchment Board such contributions as the Catchment Board may consider to be fair.

It is clear that no hard and fast rules can be laid down as to what the various contribution shall be in as much as the circumstances in each case vary so greatly.

The Board have now to deal with 54 internal drainage boards and a special Sub-Committee has devoted a considerable amount of time to considering each case separately on its merits. For the financial year beginning 1st April, 1937, contributions in all amounting to £3,202 have been required to be paid by the internal drainage boards.

Particulars of the several amounts will be found in the Appendix to this Report.

Appeals.

It is provided by Section 21 (5) of the Land Drainage Act, 1930, that if any Internal Drainage Board is aggrieved by a resolution of the Catchment Board with respect to the precept levied upon them they may appeal to the Minister in the matter, and in respect of the precepts levied for the half year ending 31st March, 1937, appeals were lodged by two internal drainage boards namely, the Hatfield Chase Corporation and the Ouse & Derwent Drainage Commissioners.

The case of the Hatfield Chase Corporation is peculiar inasmuch as the lands under their jurisdiction within the Catchment Area were only slight in extent and moreover were also part of the Black Drain Drainage District. In view however of the language of Section 21 (1) of the Land Drainage Act to the effect that the Catchment Board "shall require" an internal board to contribute to their expenses the Catchment Board decided to precept them with the nominal sum of £4.

The Ministry however took the view that this was placing a double burden on the area in view of the precept on the Black Drain Internal Drainage District, and therefore allowed the appeal and suggested for the consideration of the Catchment Board whether steps might not be taken by means of a Scheme under Section 4 (1) (b) of the Act to exclude from the jurisdiction of the Hatfield Chase Corporation the areas in question.

In the case of the Ouse & Derwent Drainage Commissioners the Minister reported that he had come to the conclusion that the appeal must be dismissed and the contribution confirmed.

(c) Contributions by County and County Borough Councils.

Section 20 of the Land Drainage Act provides that the expenses under the Act of a Catchment Board in so far as they are not met otherwise shall be paid to the Board by the Councils of Counties and County Boroughs which are situate within or extend into the Catchment Area in proportion to the rateable values of the hereditaments in such areas within the Catchment Area.

In the Appendix to this Report appears a Statement of the totals of the rateable values at 1st April, 1937 of all such hereditaments in the respective areas of those Councils as are situate within the Catchment Area, together with the amounts payable in respect of Precepts for the financial year beginning on that date.

The aforesaid estimated expenditure of £100,909 4s. 1d. was raised as follows :-

	£	s.	d.
Government Grant	20,833	6	8
Precepts on Internal Drainage Boards.	3,202	0	0
Precepts on County and County Boroughs Councils	76,873	17	5
	£100,909	4	1

CONTRIBUTIONS TO INTERNAL DRAINAGE BOARDS.

Section 21 (3) of the Land Drainage Act, 1930, provides that where it appears to an internal drainage board that by reason of the quantity of water which their district receives from lands at a higher level or by reason of the time which will elapse before their district obtains any relief from the operations of the Catchment Board on the main channel of the river, it is fair that a contribution towards their expenses

should be made by the Catchment Board they may make an application to the Catchment Board and that Board may resolve to make to the internal drainage board such contribution, if any, as may be specified in the resolution.

During the year applications from 23 internal drainage boards have been received for contributions and to enable the Board to deal with them a great deal of information has had to be considered and checked. As in the case of precepts on internal drainage boards individual consideration has been given to each case which has been decided and a total sum of £1,844 10s. 0d. has been paid to the various boards. Particulars of these payments will be found in the Appendix to this Report.

ACCOUNTS OF INTERNAL DRAINAGE BOARDS.

The Catchment Board's Association have given consideration to the question of the form of internal drainage boards' accounts, and have issued a specimen set of accounts for adoption by all internal boards with a view to securing uniformity.

A set of forms has accordingly been circulated to all the internal drainage boards within the Catchment Area and has been generally adopted by them.

Reports by and Accounts of Internal Drainage Boards have been received from the following Internal Boards :—

Acaster	Hatfield Chase.
Adlingfleet & Whitgift.	Howden.
Ainsty.	Knottingley to Hensall.
Airedale.	Lower Aire.
Airmyn.	Muston & Yedingham.
Aldborough.	Rawcliffe.
Bedale.	Reedness & Swinefleet.
Bellasize.	River Crimpe.
Bishopsoil.	River Foss.
Black Drain.	River Kyle.
Cliffe.	River Tutt.
Cod Beck.	Rye.
Cowick.	Selby Dam.
Dearne & Dove.	Snaith.
Dempster.	Sykehouse.
Dun.	Thornton.
Dunsforth.	Thorntree.
Earby & Salterforth.	Went.
Fishlake.	West Haddlesey.
Goole Fields.	Wilberfoss & Thornton
Gowdall.	Level.
Greenoak.	Wistow, Cawood & Selby.

BORROWING BY INTERNAL DRAINAGE BOARDS.

During the year several new internal drainage boards have been set up and have held their first meetings.

One of the first questions facing every new board is as to whether or not they will commence drainage operations immediately or wait until they have levied and collected their first rate. Should the latter policy be adopted it would mean that for a year at least after they were first set up they would be able to do no work and would doubtless have unusual difficulty in collecting the first rate.

The Board are glad to be able to report therefore that in the case of every new internal board set up by them it has been decided by each such board, with the sanction of the Minister of Agriculture and Fisheries, to incur an overdraft at the Bank by way of loan to enable them to function, pending the receipt and collection of the first rate.

The following table shows the action taken by the several new boards set up during the year :—

Name of Board.	Amount sanctioned by Ministry of Agriculture & Fisheries to be borrowed.
	£
Ainsty.	700.
Cliffe.	1000.
Earby & Salterforth.	150.
Lower Swale	2000.
Ouseburn.	500.
River Wiske.	1200.
Rye.	5000.
Upper Swale.	1000.
West Derwent.	1000.

In addition to the above, the Minister has sanctioned the raising of a loan of £2000 by the Muston and Yedingham Drainage Board.

SUPERANNUATION.

The Superannuation Act, 1937, has received the Royal Assent and will come into operation on the 1st April, 1939, as from which date the existing Local Government and Other Officers' Superannuation Act, 1922 will be repealed.

As the Board have adopted the 1922 Act, the provisions of the 1937 Act will apply to them and their Officers.

STAFF IN ENGINEER'S DEPARTMENT.

With the ever increasing volume of work being carried out by the Catchment Board the original staff of the Board which was necessarily of a skeleton nature, has had from time to time to be increased and an interesting departure so far as the Engineer's Department is concerned has been the appointment of two Trainee Assistants.

Consultations have taken place with the northern Universities who were informed that the Catchment Board were prepared to entertain the appointment of students who had completed their course at the University and obtained a good degree. After consideration of the replies received the Catchment Board adopted the following recommendations:—

- (a) That from time to time as the services of a junior engineering assistant can be usefully and economically employed and the exigencies of the Board will permit, an approved Graduate in Engineering of a recognised University be employed in the Engineer's Department by the Board for a defined period as a "Civil Engineering Trainee Assistant under agreement to the Chief Engineer of the Board."
- (b) That the said agreement be substantially in the form approved, and in itself subject to further conditions laid down by the Board.
- (c) That such further conditions include the following:—
 - (i) That the period of training shall be for three years except in special cases where the period may be reduced to two years.
 - (ii) That subject to satisfactory service and to the exigencies of the Board permitting, the employment by the Board of such trainees be continued (subject to the approval of the Finance Committee) for a further period not exceeding three years as Trainee Assistants;
 - (iii) That on the expiry of such last mentioned period the employment of such trainees by the Department shall cease unless a vacancy exists therein for a fully qualified Engineering Assistant and the Trainee Assistant is specially qualified to fill such vacancy.
 - (iv) That the annual salary of Civil Engineering Trainee Assistants be as follows:—

1st year of service as Trainee Assistant	£150 per annum.
2nd year of service as Trainee Assistant	£175 per annum.
3rd year of service as Trainee Assistant	£200 per annum.
For the maximum period of three years of a Trainee Assistant's continued satisfactory service beyond the specific period of training, and the position held not being otherwise designated	£225. per annum.
- (d) That the salary scale attached to designated posts be so graded as to ensure that no Associate Member of the Institution of Civil Engineers having had eight years' practical experience subsequent to taking his degree or the completion of his pupilage, and whose work has been satisfactorily reported upon, shall receive less than £350 per annum.

Under the above arrangements, after interviewing selected candidates the Catchment Board have appointed Mr. N. Pring, B. Sc., and Mr. R. Neaverson, B.Sc.

Mr. Neaverson has been allocated to the Northern District of the Catchment Area and works from York as a centre while Mr. Pring has been detailed for duty in the Southern District with headquarters at Doncaster.

HOSPITAL CONTRIBUTIONS.

Under the voluntary system suggested by the Board's workmen whereby a sum of one penny in the pound per week is deducted from their wages the sum of £111 1s. 4d. has been so deducted during the year ending 31st March, 1937 and distributed among hospitals suggested by the men.

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Section VI.—MISCELLANEOUS.

TOWN & COUNTRY PLANNING.

As indicated in last year's Report the Catchment Board have established communication with the various Regional Town Planning Committees operating in the Catchment Area under the Town and Country Planning Act, with a view to keeping the closest watch upon the proposed development of lands in the Catchment Area liable to flooding as obviously they felt it was undesirable that any building should take place on such land. They are glad to be able to report that in every case friendly relationships have been established and any suggestions made by the Catchment Board have been sympathetically received.

The good work that has resulted from this co-operation can be seen from the following examples:—

(a) Bentley-with-Arksey Urban District Council.

A communication has been received from the Clerk of the Bentley-with-Arksey Urban District Council stating that plans had recently been submitted for the erection of four houses and sheds on land which the Council considered was not fit for the erection of domestic dwellings having regard to the levels. They had therefore rejected the plans and requested the support of the Catchment Board in their opposition to such proposal.

The Board's Engineer reported to them that he had inspected the site and in his opinion it was an unsuitable site for building. The Board therefore decided to support the Urban District in their objection to the land being used for building.

(b) Rothwell, Methley & Hunslet Joint Town Planning Committee.

A communication was received from the Town Planning Consultants in this case that a Planning Scheme was being prepared for the Rothwell and Methley Urban Districts and Rothwell Rural District.

The area was inspected and surveyed on behalf of the Catchment Board, and areas which on local enquiries had been found to have been flooded in the past were indicated on six 6 in. Ordnance Sheets and forwarded to the Consultants as indicating localities where flooding was to be expected and also drawing their attention to the possibility of other areas being rendered unsuitable for building owing to subsidence due to mining operations. The Engineer of the Catchment Board has been invited to attend the meetings of the Joint Committee when these matters are discussed.

(c) Wakefield and District Joint Town Planning Committee.

The Catchment Board have been invited to appoint a representative on this Committee, and have accordingly requested that representation to the Board be given through their Engineer on the Technical Advisory Sub-Committee of the Town Planning Committee. This suggestion has been adopted.

(d) North Riding County Council.

The proposals of the North Riding County Council for the following areas have been considered :—

- (i) Scalby Urban District Council.
Scarborough Rural District Council.
- (ii) Aysgarth Rural District Council.
Bedale Rural District Council.
Masham Rural District Council.

On investigation it was found that certain lands scheduled as building lands were liable to flooding. Representation was accordingly made with reference to the two Schemes objecting to building on such areas and conferences have taken place between the Engineer of the Board and the Planning Officer accordingly and all necessary information supplied.

(e) Chesterfield Regional Town Planning Committee.

Representation has been granted to the Board on the Chesterfield Regional Town Planning Committee who have instructed their Engineer to represent them thereon.

(f) Keighley and District Joint Town Planning Committee.

Particulars of lands liable to be flooded have been supplied to this Committee for their consideration with a view to their being zoned as unsuitable for building purposes.

(g) Pudsey Town Council.

The Board were duly informed by the Pudsey Town Council that they had adopted a resolution to town plan the remaining portion of the Calverley district of the Borough not so planned at present.

The area was accordingly inspected and it was found that there was a small area of land near the River Aire unsuitable for building upon. The attention of the Town Council was therefore called to this fact with a request that they would make provision in any Town Planning Scheme that such area should remain unbuilt upon.

(h) City of York (Acomb) Planning Scheme.

On examination of the draft of the City of York (Acomb) Planning Scheme it was found that there was an area liable to flooding covering about 20 acres included in the Scheme.

Particulars of this land have been forwarded to the Corporation with a representation that in the opinion of the Catchment Board no building should be permitted to be erected on lands liable to be flooded but that such lands should be reserved as open spaces.

MINISTRY OF HEALTH INQUIRIES.

Experience having shown that it might in many cases serve the interests of land drainage if the Catchment Board could be informed of any applications submitted to the Ministry of Health for sanction to borrow money for works of sewerage, water supply etc. so that they might have an opportunity of conferring with the local authority concerned, it is the practice of the Ministry to notify Catchment Boards of any Public Local Inquiry they propose to hold in the Catchment Area.

Inquiries have been held in the following cases :-

Name of Authority.	Purpose of Inquiry.
Conisborough Urban District Council.	Works of sewage disposal.
Derwent Rural District Council	Works of water supply.
Gt. Ouseburn Rural District Council.	Works of sewerage and sewage disposal.
Hebden Royd Urban District Council.	Works of water supply.
Hemsworth Rural District Council.	Works of water supply.
Howden Rural District Council	Works of water supply.
Ilkley Urban District Council	Works of sewerage.
Keighley Corporation.	Works of water supply.
Kirbymoorside Rural District Council.	Works of water supply.
Knarborough Rural District Council.	Works of sewerage.
Norton Rural District Council	Works of water supply.
Pontefract Corporation.	Works of sewerage and sewage disposal.
Queensbury & Shelf Urban District Council.	Works of sewerage and sewage disposal.
Ripon Rural District Council.	Works of water supply.
Sheffield Corporation	Works of sewerage disposal.
Shipley Urban District Council	Works of sewerage disposal.
Skipton Rural District Council	Works of water supply.
Tadcaster Rural District Council.	Works of water supply.
Thirsk Rural District Council	Works of water supply.
Wetherby Rural District Council.	Works of water supply.

In every case the proposals have been examined and where the interests of land drainage might be injuriously affected representatives of the local authority have been seen and in every case where suggestions have been made to them they have been adopted.

PUBLIC HEALTH ACT, 1936.

The above Act came into force on the 1st October, 1937 and affords an important example of the attention that is now being paid by Parliament to land drainage interests.

Hitherto local sanitary authorities have been able to carry out their duties practically without reference to drainage authorities although in many cases it would have been useful to secure a measure of co-operation with them. This is now secured in the Public Health Act, 1936 by requiring the sanitary authority to notify the drainage authority of all cases where they propose to construct a sewer which will cross or interfere with any watercourse or works vested in or under the control of a land drainage authority and give them notice of their proposals.

They are under similar obligations in regard to the laying of water mains.

Considerable powers are given to local authorities under Part XI of the Act which provides however that such powers shall not be exercised with respect to any stream, watercourse, ditch or culvert within the jurisdiction of a land drainage authority, except after consultation with that authority.

A section has also been included for the protection of works of land drainage authorities.

A copy of the provisions of the Act affecting land drainage interests has been furnished to all the Internal Drainage Boards in the Catchment Area with a recommendation that they should acquaint all local authorities of that part of the drainage district which is within the local authorities' districts so that they may be in a better position to comply with the Act.

IN THE COURT OF THE RAILWAY & CANAL COMMISSION.

(a) Bolsover Colliery Co., Ltd.

It is now the practice of the Court of the Railway & Canal Commission to direct that Notices of any Application to work coal shall be served upon the Catchment Board of the area in which the coal is situate and a Notice of Application of the Bolsover Colliery Company for the right to search for and work coal in certain parishes, two of which were within the Catchment Area has been received and investigated with the result that it was found that the Catchment Board's interests would not be injuriously affected.

No action was therefore taken in regard to the application.

(b) South Kirkby, Featherstone & Hemsworth Collieries Ltd.

An application to the Commission by the South Kirkby Featherstone & Hemsworth Collieries Ltd., for a grant to work coal under two plots of land at Moorthorpe in the Parish of South Kirkby has also been investigated.

As it was found that land drainage interests would not be adversely affected it was not necessary to take any action in the matter.

INLAND WATER SURVEY.

A circular letter has been addressed by the Ministry of Agriculture and Fisheries to all Catchment Boards requesting them to give careful consideration to the question of putting in hand (if they had not already done so) a systematic survey of the water resources in their Catchment Area by standard methods of river gauging as soon as possible.

In the First Annual Report of the Inland Water Survey Committee it is stated that "There has been a growing demand in recent years for more reliable information regarding the water resources of the country. Such information is of course of importance to a variety of interests — agriculture, land drainage, fisheries, industry, navigation, sewage disposal, and water supplies."

In the Report of the Joint Committee on Water Resources and Supplies it was recommended that Catchment Boards should be given the duty of undertaking the work

of gauging the rivers not only in their lower reaches but also in their tributaries and upper reaches, and that if such a recommendation were to be carried out the Ministry of Health should contribute the whole cost thereof.

It was clear to the Board that it was very desirable that they should be fully aware of the whole of the water resources in their area if they were to exercise intelligently even a supervisory control over them. It was equally clear that such information would be valuable in several other directions.

In view of the fact however that such information was of vital interest to so many other authorities as above mentioned the Board decided to inform the Ministries of Health and Agriculture that they were prepared to undertake the work of a systematic survey of the water resources of the Catchment Area, but were of opinion that the cost thereof should be borne by the Ministries in such proportions as might be agreed upon.

So far the Board have, in some cases in conjunction with the West Riding of Yorkshire Rivers Board, installed recorders in the following points of the main river system :-

River Ouse	at Naburn Lock.
" Derwent	" Stamford Bridge.
" Nidd	" Hunsingore Weir.
" Wharfe	" Flint Mill.
" Don	" Sprotborough.
" Aire	" Beal.
" Calder	" Kirkthorpe.

AIR RAID PRECAUTIONS.

The Board have had under consideration a draft Memorandum which had been prepared by the Home Office on the subject of Air Raid Precautions for canals, navigable rivers, land drainage channels and tidal embankments. They felt however a matter of such widespread interest could not be dealt with by any Catchment Board individually. They therefore recommended the Catchment Boards' Association to co-operate with the Association of Municipal Corporations and the County Councils' Association who were also dealing with the question of Air Raid Precautions generally rather than deal with it separately.

NUTRIA OR COYPU RAT.

The attention of the Catchment Board has been drawn by the Ministry of Agriculture and Fisheries to the Nutria, a large South American aquatic rodent mammal which is known in its native land as Coypu, a name originally meaning otter, evidence having reached them which went to suggest that these rats may be responsible for more serious damage to watercourses than had previously been thought.

The Ministry requested particulars of any evidence of damage by Nutria to river banks with which the Catchment Board could furnish them. So far however no evidence has been brought to their notice.

The attention of all Internal Drainage Boards has been drawn to the matter and their co-operation invited.

ACCIDENTS.

On the whole, considering the occasionally hazardous nature of their work, the workmen of the Catchment Board have been comparatively free from serious accidents.

During the past year however it is with great regret that it has to be recorded that two of the Board's employees lost their lives whilst in the execution of their duty, when Foreman T. Douthwaite and F. Sadler met their deaths by drowning in the River Ure. Verdicts of "Death by misadventure" were returned by the Coroner and the sympathy of the Board and its officers was duly conveyed to the relatives of the two men.

LITTLE OUSEBURN, OUSEGILL BECK.

A problem of unusual difficulty confronted the Board with regard to the Ousegill Beck from the overflowing of which an area of agricultural land was flooded.

A meeting of the interested parties, i.e. the Catchment Board, the Great Ouseburn Rural District Council, the Great Ouseburn Parish Council, the West Riding County Council and the owner of the Kirby Hall Estate met on the site and discussed the matter in all its bearings.

It appears that the Ousegill Beck on one part of its length had a great many years ago been dammed up to form a lake which was now used to supply water to Kirby Hall Estate.

It was agreed that to effect a cure the mere cleansing of the present Ousegill Beck would not meet the case. What would have to be done would be to lower the level of the water in the lake which would entail the lowering of the dam and the regrading of the bottom of the lake. If this were done however it would result in the deprivation of the water supply which the Kirby Hall Estate now enjoys from that source. Furthermore the regrading of the dyke above the dam might affect the stability of a road bridge between Little Ouseburn and Aldwark.

The final conclusions of the conference were as follows:-

1. The first matter to be settled was the provision of an alternative water supply for the Kirby Hall Estate if the lake were drained.
2. The second matter to be dealt with was to go into the question of the bridge and see whether it would be injuriously affected as it might prove a costly matter to attend to and some arrangement would have to be come to between the owners of the bridge and the highway authority.

It was decided that if the above two matters could be satisfactorily settled the West Riding County Council would then be in a position to submit a Scheme to the Ministry for grant for the improvement of the drainage of the district if they thought fit. Should such a Scheme be carried out it would then be more practicable for the Catchment Board to extend the present Ouseburn Drainage District in order that the improved Ousegill Beck could be properly maintained in the future.

SINNINGTON BY-PASS ROAD.

The Board have examined plans submitted by the North Riding County Council of the Sinnington by-pass road across the River Rye.

On examination of the plans and inspection of the site, certain matters were pointed out to the County Council who were invited to revise their proposals and this has been done.

ABSTRACTION OF WATER FROM MAIN RIVER.

An application has been considered from Messrs. John Rostron & Sons Ltd. who had constructed a jetty in the River Ouse at Selby for permission to take approximately half a million gallons of water per week from the river.

After consultation with the Ouse Navigation Committee in the matter it was decided to raise no objection in principle to the proposal, subject to any pump or installation for giving effect thereto being erected to the satisfaction of the Engineer.

CROSSINGS OVER WATERCOURSES NOT MAIN RIVER.

RIVER AIRE.

(a) Gargrave.

Proposals submitted by the Skipton Rural District Council for the laying of a 4 in. pipe in the River Aire at Gargrave below the level of the present bed of the river and concreted over have been examined and approved, subject to the Council accepting liability for any damage which might be caused by erosion of the banks of the river or alteration of the bed.

(b) Eastburn Bridge.

Proposals of the West Riding County Council for the construction of a new bridge over the Eastburn Beck (a tributary of the River Aire), the filling up of derelict flood arches through the eastern approach to the bridge and the substitution of concrete tubes for the flood arches under the western approach to the bridge have been examined in conjunction with the Airedale Drainage Commissioners in whose district the work was proposed to be carried out.

As land drainage interests would not be injuriously affected no objection has been taken to the proposals.

BRADLEY BECK.

Proposals have been received from the Skipton Rural District Council for the crossing of Bradley Beck by a line of sewer in connection with their works of sewerage and sewage disposal. On examination it was found that the proposed crossings were satisfactory and the Rural District Council were so informed.

RIVER COLNE.

(a) Longroyd Bridge.

The proposals of the Huddersfield Corporation for the erection of a trolley vehicle depot at Longroyd in connection with which it was proposed to build an administration and canteen block spanning the River Colne have been investigated and approved, and the Corporation were so informed.

(b) New Bridge.

Proposals have also been received from the Corporation of Huddersfield with respect to the widening and reconstruction of Firth Street, Colne Road and St. Thomas's Road involving the construction of a new bridge over the River Colne close to its confluence with the River Holme at a point 120 yards downstream of Engine Bridge.

These proposals also were satisfactory and duly approved.

(c) Somerset Bridge.

The Board have had before them a communication from the Huddersfield Corporation with respect to the proposed laying of a 9 in. water main across the River Colne at Somerset Bridge.

After consultation with the Board the Corporation agreed to lay the pipe at least 2 feet below the existing bed level and to restore the channel to its former condition after the work had been carried out. The Corporation also proposed to construct a stop valve at each side of the river in order that in the event of a burst occurring the pipe could be isolated.

The Engineer reported to the Board that the river at the point in question was wide and had a good fall and that the laying of the pipe would not adversely affect land drainage interests.

The proposals were therefore approved.

RIVER DEARNE—Clayton West.

An application has been dealt with from Messrs. R. Beanland & Co. Ltd., Clayton West, near Huddersfield, to erect a cycle shed which would project over the River Dearne.

At the point where the shed was proposed to be constructed the river runs through a steep channel with vertical retaining walls at each side, and in as much as it was proposed to construct the building in such a way as to allow an adequate waterway so that land drainage interests would not be affected, no objection was raised to the proposal.

RIVER WHARFE—Kettlewell.

In connection with the Coronation celebrations the Board were informed by the Skipton Rural District Council that at Kettlewell it was proposed to erect a footbridge over the River Wharfe just above the old ford at Kettlewell.

The plans of the proposal were examined and it was pointed out to the Rural Council that in a high flood floating tree trunks etc. might strike the central cast iron column or the main girders of the bridge with disastrous results, and they were advised that it would be wise to give a greater clearance between the bed of the river and the underside of the bridge.

Ultimately the authorities agreed to raise the level of the bridge 2 feet as suggested, and the proposal was approved.

FISHING.

Sea Cut.

By the River Ouse (Yorks.) Catchment Area (Scalby Sea Cut) Order 1936 the Sea Cut became a main river of the Catchment Area and by virtue of the operation of the Land Drainage Act, 1930 the Catchment Board became owners of, *inter alia*, the bed and banks thereof and have let the fishing rights in respect of the length between Scalby Bridge and Newby Bridge on satisfactory terms.

Wath-upon-Dearne.

In connection with the construction of the Knoll Bank as part of the Board's scheme for relieving flooding in this area, the Catchment Board purchased two fields in order to obtain spoil for the construction of the bank.

The necessary spoil has been excavated with the result that a considerable cavity has been produced in the land which is now filled with water and the Board were interested to receive a letter from the Manager of the Wath Main Colliery stating that he had received a request from workmen engaged at the pit that they should be allowed to fish in the pond after he had stocked it with fish.

This unlooked for outcome of the Board's activities was duly appreciated and the necessary permission was given.

RIVER BAIN—Lake Semerwater.

The River Bain is an important upland tributary of the River Ure, and flows into and out of Lake Semerwater. The material brought down by the stream had, over many years, formed a shoal at the outlet to the Lake and thus caused a rise in the water level, with the result that the land on the

shores of the Lake was becoming waterlogged. The owners of the land were anxious to get the outlet to the lake and the River Bain cleared of obstructions, and they therefore approached the North Riding of Yorkshire County Council who in turn consulted the Catchment Board.

A small dragline excavator was made use of by the County Council to carry out this work. The channel of the River Bain was deepened and widened, and a way was cut through the shoal at the outlet of the lake into deep water. This work, in conjunction with the lowering of the cill of Countersett Bridge which was carried out by the County Council, resulted in the lowering of the water level in the lake by slightly over two feet, with consequent benefit to the adjacent land. This work is illustrated in photographs on pages 137 and 138 which show the River Bain upstream and downstream from Countersett Bridge.

UNIVERSITIES COUNCIL FOR UNEMPLOYED CAMPS.

The Universities Council for Unemployed Camps which has for its object the promotion of useful schemes of work for the unemployed, approached the Catchment Board with reference to proposals for further works on the River Rye to those which were carried out under their auspices last year, and requested the co-operation of the Catchment Board in the matter. This co-operation was gladly given and two camps were held during July and August the first being organised by the University of Oxford and lasted for a period of three weeks when about fifty unemployed men, together with a staff of undergraduates, were in camp at Duncombe Park, Helmsley. The work carried out was the construction of a diversion near Rye House below Helmsley. With the labour available it was only found possible to complete half the width of the proposed channel. The 15 foot channel made however was correctly graded and will carry a considerable volume of water during floods thereby relieving the rapid erosion which was previously taking place on the outside of the bend cut off by the new channel.

The second Camp which was run by the Cambridge University lasted for four weeks. Seventy-five unemployed men from the Tees-side district together with a staff of eighteen were in camp. The chief work carried out was the construction of a diversion across an acute bend in the river where serious erosion was taking place during floods.

Approximately 80 men worked daily for a little over three hours. The diversion made was approximately 400 feet long by 30 feet wide with an average depth of about 5 feet and involved the removal of approximately 3,000 tons of earth and gravel.

The work was carried out remarkably well, the bottom being left level and evenly graded. A dam was left at the upstream end until the completion of the work and when this was finally cut the new channel immediately began to take a large proportion of the river flow. It is expected that in floods most of the river water will pass through the new channel.

In addition to this work some improvements were carried out on the diversions made in the previous two years. A gravel shoal which had formed at the junction of the new and old channels was excavated and the gravel deposited to raise the bank across the top of the old channel. This work was also well carried out.

Owing to the excellent weather during the progress of the camps all the men appeared to benefit greatly in health by the exercise and work in the open air and sunshine.

All the tools lent by the Board have been returned in good condition.

Photographs of the completed diversion appear on page 118.

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APPENDIX.

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MEMBERS OF THE BOARD, 1936-37.

County Alderman R. L. Walker (**Chairman**),
Boothferry House, Airmyn, Goole.

Alderman C. W. Beardsley,
96, Bents Road, Bents Green, Sheffield.

Robert Clive, Esq.,
(Box No. 77), Royal Victoria Hotel, Sheffield, 1.

Councillor R. Colver,
Anworth, 239, Graham Road, Sheffield.

County Councillor A. Corfield,
182, Castleford Road, Normanton.

Alderman E. Cruikshanks, (**Vice-Chairman**),
Conway, Old Wortley Road, Rotherham.

Capt. P. R. Davies-Cooke,
Skellow Hall, Doncaster.

Lieut. Col. the Rt. Hon. The Viscount Downe,
Wykeham, Yorks.

L. J. Edwards, Esq.,
St. John's Terrace, Leeds, 3.

County Councillor W. T. Everatt,
Faircote, Parker Lane, Mirfield.

C. W. H. Glossop, Esq.,
Bramwith Hall, Doncaster.

County Councillor A. E. Hall,
The Limes, Eckington, via Sheffield.

Councillor J. Hargrave,
23, Howe Hill Road, York.

W. Hinchcliff, Esq.,
Belvedere, Thorne Road, Doncaster.

Councillor F. Austin Leach,
36, Reservoir Road, Halifax.

Councillor J. Lennon,
Belle Vue Cottage, Thackley, Bradford.

Councillor G. Muff, M.P.,
508, Halifax Road, Buttershaw, Bradford.

MEMBERS OF THE BOARD, 1936-37—Cont.

A. Penty, Esq.,
The Gables, Burneston, Bedale, Yorks.

County Alderman J. H. Preston,
Flasby Hall, Gargrave, Skipton, Yorks.

Captain E. A. Raimes,
Acaster Manor, York.

County Councillor Lieut. Col. H. Rhodes,
Oaklands, Whixley, York.

Colonel P. Saltmarshe,
Saltmarshe, Howden, E. Yorks.

County Alderman G. Schofield,
Harrington Villa, 51, Park Road, Mexborough,
Rotherham.

Alderman A. E. Sellers,
The Homestead, Newsome Road South,
Huddersfield.

Councillor Henry Shaw,
Trento, Birkdale Road, Dewsbury.

Alderman G. Smith,
Redholm, Thorne Road, Doncaster.

Councillor H. Spencer,
Hollywell Lane, Armley, Leeds, 12.

A. R. Thomlinson, Esq.,
Hall Cross Chambers, Doncaster.

C. W. G. H. Thompson, Esq.,
The Red House, Escrick, York.

County Alderman W. H. Turner,
Fairhaven, Wood Lane, Rothwell Haigh,
nr. Leeds.

County Councillor M. Whittock,
46, Front Street, Glasshoughton, Castleford.

W. Wood, Esq.,
Flaxton, York.

County Alderman Colonel E. York,
Hutton Hall, Long Marston, York.

STAFF OF THE CATCHMENT BOARD.

CLERK'S DEPARTMENT:—

Clerk and Solicitor	....	....	F. M. FARMER, M.B.E., LL.B.
Chief Clerk (Legal)	....	....	A. W. WOOD, (Solicitor).
Finance Clerk	....	....	G. HILL, A.L.A.A.
Senior Clerk	....	....	B. J. WALPOLE.
Conveyancing and General Clerk	....	....	F. S. WARD.
Clerk (Accounts Dept.)	....	....	A. WALKER.
Clerk	....	....	J. R. L. REYNER.
Clerk (Accounts Dept.) (Temp.)	....	....	W. E. WILKINSON.
Junior Clerk (Accounts)	....	....	H. BAXTER.
Shorthand Typist	....	....	Miss A. A. ROSE.
Junior Clerk	....	....	M. TAYLOR.

ENGINEER'S DEPARTMENT:—

Chief Engineer	....	....	H. J. PAUL, M.Inst.C.E., M.Inst.W.E.
District Engineer	....	....	A. H. MITCHELL. E. W. WELLS, B.Sc., Assoc.M.Inst.C.E.
District Engineer	....	....	D. GARDEN.
Resident Engineer	....	....	G. McLEOD, B.Sc., Assoc.M.Inst.C.E.
Resident Engineer	....	....	P. U. PROUDFOOT, B.Sc., Assoc.M.Inst.C.E.
Senior Engineering Assistant	....	....	J. G. CAMPBELL, P.A.S.I., (Chartered Surveyor).
Engineer in charge of work in connection with the Doncaster Area Drainage Acts.	....	....	P. LEACH, Assoc.M.Inst.C.E.
Engineer in charge of supervision of work of Internal Drainage Boards.	....	....	J. B. WISE, Assoc.M.Inst.C.E. (Ireland).
Chief Assistant to ditto.	....	....	L. GRAY.
Junior Engineering Assistant (Temp.)	....	....	C. B. HARRISON, Stud.Inst.C.E.
Junior Engineering Assistant (Temp.)	....	....	F. G. B. CLAYTON, B.Sc.
Junior Engineering Assistant	....	....	D. A. CUTTS.
Chief Draughtsman	....	....	V. K. MARCH.
Junior Draughtsman	....	....	B. M. BRIDGES, Stud.Inst.C.E.
Trainee Assistant	....	....	R. NEAVERSON, B.Eng.
Trainee Assistant	....	....	H. N. PRING, B.Sc.
General Foreman and Clerk of Works.	....	....	C. BRYCE.
Costing Clerk	....	....	M. TURNER.
Costing Clerk (Doncaster)	....	....	H. BISHOP.
Junior Clerk (Doncaster)	....	....	L. BLACKSHAW.
Shorthand Typist	....	....	Miss B. M. STEELE.
Shorthand Typist (Temp.)	....	....	Miss A. BANNISTER.

SCHEDULE OF PROPERTIES

as at 31st October, 1937, belonging to the Catchment Board.

Part I.

Properties vested in the Board by virtue of the Land Drainage Act, 1930, or Orders made thereunder, in addition to those referred to on pages 13, 14 and 15 of this Report).

Situation.	Area			How acquired.
	A.	R.	P.	
RIVER AIRE.				
Cononley	0.	1.	11.	Pursuant to Order under Sec. 4 (1) (a) Land Drainage Act 1930.
Steeton-with-Eastburn	2.	0.	16½	do.
Morton			37½	do.
Cononley	1.	0.	28.	do.
Steeton-with-Eastburn	2.	3.	32.	do.
Glusburn	0.	1.	39.	do.
Cononley	0.	2.	6.	do.
RIVER DERWENT.				
Kirkham Lock, Weir and Island	1.	1.	16.	Under the River Derwent Navigation Extinguishment Order 1935.
Howsham Lock, Cut and Weir	0.	2.	22.	do.
Stamford Bridge Cut, Weir and House on Island, Swing Bridge, Store Buildings and land.	1.	2.	32.	do.
Elvington Cut, Weir and Island.	1.	1.	20.	do.
Ings Drawbridge and approaches.	0.	0.	8.	do.
North Hills Drawbridge and approaches.	0.	0.	8.	do.
Buttercrambe Weir, Lock and Cut.	0.	1.	10.	do.
Barmby Chain Jetty and Foreshore.	0.	1.	0.	do.

SCHEDULE OF PROPERTIES—(continued).

Part II.

Properties acquired under Section 45 of the Land Drainage Act, 1930.

Situation.	Area			Purpose for which acquired.
	A.	R.	P.	
RIVER DEARNE.				
Bolton-on-Dearne	7.	3.	2.	Making New Cut.
Wath-on-Dearne	6.	1.	35.	Obtaining spoil for New Embankment.
Bolton-on-Dearne	2.	0.	24.	Making New Cut.
RIVER DERWENT.				
Hemingbrough.	1.	3.	32.	Straightening river channel
Hemingbrough.	1.	3.	27.	do.
South Duffield.	13.	0.	35.	Making New Cut.
Bubwith.	7.	2.	24.	do.
Bubwith.	0.	0.	7.	do.
Bubwith.	2.	0.	30.	do.
North Duffield.	0.	2.	6.	Widening existing channel and improving existing embankment.
Bubwith.	1.	3.	2.	do.
Bubwith.	1.	2.	2.	do.
Ellerton.	2.	0.	14.	do.
Aughton.	0.	1.	11.	do.
Ellerton.	11.	2.	18.	do.
Ellerton.	1.	0.	10.	do.
North Duffield.	2.	2.	32.	do.
Ellerton.	0.	3.	29.	do.
Ellerton.	0.	3.	11.	do.
Ellerton.	1.	0.	0.	do.
Ellerton.	0.	2.	32.	do.
RIVER DON.				
Thorne.	9.	2.	8.	Widening existing channel and improving embankment.
Bankside, Thorne.	0.	1.	6.	do.
Thorne.	11.	2.	35.	do.
Snaith.	0.	3.	1.	do.
Sykehouse.	7.	0.	23.	do.
Thorne.	2.	3.	30.	do.
Sykehouse.	0.	0.	34.	do.
Thorne.	0.	2.	33.	do.
Sykehouse.	0.	1.	5.	do.
East Cowick.	0.	2.	19.	Cutting of new outfall in bank.
Thorne.	5.	1.	33.	Widening existing channel and improving embankment.
Snaith & Cowick.	0.	1.	7.	Improving embankments.
Thorne.	6.	2.	18.	Widening existing channel and improving embankment.
Fishlake.	3.	0.	14.	do.
Fishlake.	0.	2.	5.	do.
Fishlake.	0.	2.	5.	Improving embankment.

SCHEDULE OF PROPERTIES—(continued).

Situation.	Area			Purpose for which acquired.
	A.	R.	P.	
Fishlake.	1.	0.	27.	Widening existing channel and improving embankment.
Thorne.	3.	3.	16.	do.
Thorne.	3.	3.	19.	do.
Thorne.	3.	0.	1.	do.
Fishlake.	6.	0.	36.	do.
Thorne.	0.	3.	10.	do.
Fishlake.	26.	3.	35.	do.
Thorne.	1.	2.	8.	Making new cut and forming new embankment.
Fishlake.	0.	0.	37.	Widening existing channel and improving embankment.
Fishlake.	1.	3.	28.	Improving existing embankment.
Thorne.	0.	0.	26.	do.
RIVER OUSE.				
Wistow.	2.	1.	0.	Widening existing channel and improving embankment.
Barlby.	3.	1.	17.	Constructing new embankment.
Wistow.	4.	2.	33.	do.
Riccall.	27.	1.	4.	do.
Riccall.	2.	3.	3.	do.
Riccall.	3.	1.	2.	do.
Riccall.	3.	0.	5.	do.
Riccall.	3.	3.	26.	do.
Wistow.	6.	0.	0.	do.
Riccall.	3.	1.	5.	do.
Barlby.	0.	1.	34.	do.
LEEDS.				
Park Square.	1,396 sq. yds.			New office premises.

INTERNAL DRAINAGE DISTRICTS

wholly or partly within the Catchment Area.

Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area.	Annual Value.		
		Acres.	Agri-cultural Land. £	Other hereditaments (rated at one-third Annual Value). £	Total Annual Value for rating purposes. £
Acaster	Under West Riding of Yorks. County Council (Drainage Act) 1923.	3245	3613	2130	4323
Adlingfleet and Whifflet	Under Act of Parliament dated 1767.	1469	2804	342	2918
Ainsty	Under Land Drainage Act 1930.	5370	5490	792	5754
Airedale	Under Act of Parliament dated 1861.	2905	6007	15316	11112
Airmyn	Under West Riding of Yorks. County Council (Drainage Act) 1923.	2310	4427	1835	5038
Aldborough	Under West Riding of Yorks. County Council (Drainage Act) 1923.	1080	1482	206	1550
Appleton Roebuck and Copmanthorpe	Under Land Drainage Provisional Confirmation (No. 1) Act, 1922.	4711	4985	6050	7002
Bedale	Under Land Drainage Act, 1930.	5363	4510	603	4711
Bellazee	Under Land Drainage Acts, 1861 and 1918.	1153	1219	756	1471

Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area.	Annual Value.		
		Acres.	Agri-cultural Land. £	Other hereditaments (rated at one-third Annual Value). £	Total Annual Value for rating purposes. £
Bishopsoil	Under Act of Parliament dated 1767 and under Land Drainage Act, 1930.	7086	Valuation of extended District not completed		
Black Drain	Under Doncaster Drainage Act, 1929.	4223	3775	11986	7771
Cliffe	Under Land Drainage Act, 1930.	5330	Valuation not completed		
Cod Beck	Under Land Drainage Act, 1930.	4100	4730	1860	5340
Cowick	Under West Riding of Yorks. County Council (Drainage Act) 1923.	2702	2382	2368	3338
Dearne & Dove	Under Land Drainage Act, 1930.	5300	2521	21269	9610
Dempster.	Under West Riding of Yorks. County Council (Drainage Act) 1923.	2696	3796	2764	4717
Dun	Under Act of Parliament dated 1873.	14500	12572	83381	40366
Dunsforth	Under West Riding of Yorks. County Council (Drainage Act) 1923.	1165	1512	333	1623

Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area.		Annual Value.	
		Acres.	Agri-cultural Land. £	Other hereditaments (rated at one-third Annual Value). £	Total Annual Value for rating purposes. £
Earby & Salterforth	Under Land Drainage Act, 1930.	574	835	279	928
East Derwent	Under Land Drainage Act, 1930.	11500	Valuation	not completed	
Fishlake	Under West Riding of Yorks. County Council (Drainage) Act, 1923.	3150	2274	2292	3038
Goole Fields	Under Act of Parliament dated 1889.	2643	3987	607	4189
Gowdall	Under West Riding of Yorks. County Council (Drainage) Act, 1923.	1664	1346	1798	1945
Greenoak	Under Land Drainage Acts, 1861 and 1918.	1383	1334	130	1377
Hatfield Chase Corporation	Under Act of Parliament dated 1862.	871	741	395	873
Howden	Under Land Drainage Acts 1861 and 1918.	3532	3132	1638	3678
Knottingley to Hensall	Under Doncaster Drainage Act, 1929.	5506	5556	33990	16886

Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area.		Annual Value.	
		Acres.	Agri-cultural Land. £	Other hereditaments (rated at one-third Annual Value). £	Total Annual Value for rating purposes. £
Lower Aire	Under Land Drainage Act, 1918.	18700	18336	17647	24219
Lower Swale	Under Land Drainage Act, 1930.	8450	Valuation	not completed	
Marston Moor	Under Land Drainage Act, 1930.	11741	15413	19640	21960
Muston and Yedingham	Under Act of Parliament dated 1800.	18194	14407	2915	15378
North Wharfe	Under Land Drainage Act, 1930.	4377	4320	342	4434
Norton (or Went)	Under Act of Parliament dated 1831.	4776	3473	13157	7859
Ouse and Derwent	Under Act of Parliament dated 1854.	31283	29073	65432	50884
Ouseburn	Under Land Drainage Act, 1930.	3936	Valuation	not completed	
Rawcliffe	Under West Riding of Yorks. County Council (Drainage) Act, 1923.	2700	3545	11286	7307

Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area	Annual Value.		Total Annual Value for rating purposes. £
			Agri-cultural Land.	Other hereditaments (rated at one-third Annual Value). £	
Reedness and Swinefleet	Under Act of Parliament dated 1884.	4877	10226	2331	11003
River Crimple	Under West Riding of Yorks. County Council (Drainage) Act, 1923.	1502	1562	129	1605
River Foss	Under Land Drainage Act, 1930.	20000	20588	27796	29854
River Kyle	Under Land Drainage Acts, 1861 and 1918.	2039	2106	Nil	2106
River Tutt	Under West Riding of Yorks. County Council (Drainage) Act, 1923.	1559	1717	225	1793
River Wiske	Under Land Drainage Act, 1930.	9400	Valuation	not completed	
Rye	Under Land Drainage Act, 1930.	30470	28646	9693	31877
Selby Dam	Under Act of Parliament dated 1885.	14500	13640	15387	18836
Snaith	Under Doncaster Area Drainage Act, 1929.	950	963	5060	2650

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Name of District.	Act under which constituted.	As at 1st April, 1937.			
		Area	Annual Value.		Total Annual Value for rating purposes. £
			Agri-cultural Land.	Other hereditaments (rated at one-third Annual Value). £	
South Wharfe	Under Land Drainage Act, 1930.	5473	6274	6336	8386
Sykehouse	Under Land Drainage Act, 1930.	2775	1642	1824	2250
Thornton	Under Land Drainage Act, 1930.	12970	1426	2567	15117
Thornitree	Under Doncaster Drainage Act, 1929.	1824	2807	822	3081
Upper Swale	Under Land Drainage Act, 1930.	7150	Valuation	not completed	
West Derwent	Under Land Drainage Act, 1930.	13140	Valuation	not completed	
West Haddlesey	Under Land Drainage Act, 1930.	5300	6625	1926	7267
Wilberfoss and Thornton Level	Under Land Drainage Act, 1861.	8200	6791	3484	7952
Wistow, Cawood and Selby	Under Land Drainage Act, 1918.	5700	8450	6864	10738

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CONFERENCE OF REPRESENTATIVES OF
INTERNAL DRAINAGE BOARDS
and
MEMBERS OF THE CATCHMENT BOARD,
held at York

30th September, 1937.

REPORT OF PROCEEDINGS.

PRESENT :

Representing the Catchment Board :—

County Alderman R. L. Walker, Chairman of the Board and Chairman Main Rivers and Works Committee.
W. Hinchcliff, Esq., Chairman Internal Districts Committee.
County Alderman Col. E. York, Vice-Chairman Internal Districts Committee.
A. Penty, Esq., Chairman General Purposes Committee.
C. W. H. Glossop, Esq.
Capt. P. R. Davies-Cooke.
Councillor F. Austin Leach.
Capt. E. A. Raimes.
County Councillor Lt. Col. H. Rhodes.
County Alderman J. H. Preston.
W. Wood, Esq.
County Councillor M. Whittock.

The following Internal Drainage Boards were also represented :—

Acaster
Adlingfleet & Whitgift.
Ainsty.
Airmyn.
Airedale.
Appleton Roebuck
& Copmanthorpe.
Bedale.
Bellasize.
Bishopsoil.
Black Drain.
Cliffe.
Cod Beck.
Cowick.
Dearne & Dove.
Dempster.
East Derwent.
Gowdall.
Greenoak.
Hatfield Chase Corporation.
Howden.
Knottingley to Hensall.

Kyle River.
Lower Aire.
Marston Moor.
Muston & Yedingham.
Norton (or Went).
Ouseburn.
Ouse & Derwent.
Rawcliffe.
River Foss.
River Tutt.
Rye.
River Wiske.
Selby Dam.
Snaith.
South Wharfe.
Sykehouse.
Thorntree.
Upper Swale.
West Derwent.
West Haddlesey.
Wistow, Cawood & Selby.

S. Dougill, Esq., (North Riding County Land Agent) was also present.

APOLOGIES FOR ABSENCE.

The following apologies for absence were submitted :—

Members of the Catchment Board.

Alderman C. W. Beardsley.
R. Clive, Esq.,
County Alderman G. Schofield.
Alderman G. Smith.
A. R. Thomlinson, Esq.,
W. L. Killingbeck, Esq., Chairman Knottingley to Hensall Drainage Board.
E. Wood, Esq., Clerk Airedale Drainage Commissioners.
I. Smith, Esq., Clerk of the Cod Beck Internal Drainage Board.
R. Smith, Esq., Clerk of the Wilberfoss and Thornton, etc. Drainage Board.
Will Bentley, Esq., Clerk of the River Went Drainage Board.
H. T. Tate, Esq., East Riding County Land Agent.

The Chairman of the Catchment Board in welcoming the delegates expressed his pleasure at meeting them in order to discuss the many difficulties in land drainage. With regard to land drainage he was fully convinced that the people of this country were getting "drainage minded." In the early stages of their work not a great interest was taken in the land. Now that the rivers were getting cleansed people were realising the possibilities of their land being made of greater use.

One point he wanted to mention particularly was the question of grants under the new Agriculture Act for work done by internal boards. As they knew, it would be possible to get 50% for new sluices or pumping plant, and 33% for improvement in drains. There was a good deal of grumbling that the Ministry had thought fit to make it a condition that the work should proceed only in the winter months. He explained how this had come about and expressed the opinion that if the weather was really bad and schemes had been started it would be possible for the Minister to take that into account. He advised them to get something going as soon as possible and felt sure the Minister would give a reasonable interpretation of the conditions.

He called upon Mr. Hinchcliff, the Chairman of the Internal Districts Committee, to preside at the meeting.

Mr. W. Hinchcliff also welcomed the delegates and called on the Engineer of the Catchment Board to read a report he had prepared on Internal Drainage in the Catchment Area.

The Engineer of the Catchment Board read a report on the activities of the Internal Drainage Boards in the Catchment Area.

Mr. Hinchcliff then remarked that never had there been a report presented in York before or in any part of the country in the living memory of man. It showed things in one way were progressing, how they used to be and how they were at present and how the Engineer hoped they would be, and he expressed the hope that when they had got the land ready for produce producers would be given a fair price for what was grown on it.

He referred to the contents of the report which showed that many Boards were functioning properly and expressed the hope that other Boards would, having heard the report, think about it and put their house in order.

The various items on the Agenda were then considered.

Constitution of Internal Drainage Districts.

Captain H. T. Fawcett (Cod Beck Internal Drainage Board) opened a discussion on the question of what lands should be included in an internal drainage district and stated that they had a tremendous number of watercourses and subsidiary drains which, as the Engineer of the Catchment Board had pointed out, had in the past been largely operated by land-owners. They would like the whole of the watershed area to be included in the drainage district. It was an injustice that those in the lowlands should have to pay when most of the water passing through the district came from the land behind.

From the Cod Beck point of view they were a small area and had a very small income. They had their own internal expences and their income did not allow them to carry out the improvements they would like to do.

Mr. G. A. Penrose (River Whiske Internal Drainage Board) supported the Cod Beck representative. He said they had a long straggling area of 30 miles from the source of the river to the mouth along a narrow valley. He thought the lowlands were penalised and that the lowland farmer should have some recompense.

The Chairman pointed out that at the present time the Catchment Board were making grants on account of foreign water, when a delegate interposed with the remark "We think it should be a national charge."

Sir R. Newbald Kay (Marston Moor and River Foss Drainage Boards) also supported the suggestion.

He pointed out that there was discontent and dispute in fixing the contour line in the case of villages near to the city and gave illustrations of properties which were partly out and partly included.

Mr. J. Leach (West Haddlesey Drainage Board) remarked that the difficulty as a rule was that most of the land was at the higher level and that the lower land was having to contribute an exorbitant rate. It had been said that the Catchment Board made a contribution and what they wanted to know was where the contribution came from. He thought it might be used to relieve the Internal Drainage Board and

have a rate on the higher land as well. The Clerk of the Catchment Board explained how originally the only land rated was that which was deemed to have actually benefited, i.e. been relieved of floods and how gradually the area of benefit was extended to 5 feet above the flood level and then to 8 feet and suggested that the best way of attempting to bring about the object desired would be to get the 8 feet level still further extended.

DRAINAGE RATES.

(a) Basis of assessment.

Mr. J. H. Glover (of Messrs. Newman & Bond, Clerks to the Hatfield Chase Corporation) suggested that the basis of assessment for drainage rates should be the net annual value and not the gross annual value as determined for the purposes of Schedule A.

He stated there were certain difficulties which had not been appreciated by the Minister when the Act was made. These were twofold. First, the difficulty of making an accurate assessment and secondly, the unsatisfactory nature of assessments when received.

The trouble was that the Income Tax Authorities did not always know what land a man owned and had no connection with the District Valuer who often had this information. He pointed out that sometimes an owner was rated for an area in excess of what he actually possessed and indicated anomalies and inconsistencies which arose under the present system.

Mr. W. Dawson (Hatfield Chase Corporation) supported this view and said the present basis was distinctly wrong.

Mr. G F. A. Newey (Clerk of the Rye Drainage Board) suggested that some power should be obtained to check Schedule A assessments.

(b) Alteration of assessments.

Mr. J. W. Heddon (the Clerk of the Bedale Drainage Board) enquired what was the practice as to the alteration of assessments in other districts. He stated that works carried out by his Board had resulted in great improvement in the waterlogged condition of the land. Land which was originally valued at 5s. an acre was now admittedly worth 30s. but still stood at 5s. per acre for drainage rate purposes. Schedule A.

values were revised every five years. Would it be possible and legal to alter any assessment? The rent had not altered and the Schedule A value remained the same.

The Clerk of the Catchment Board pointed out that the drainage rate must always be levied on the Schedule A value existing at the date the rate was made.

(c) Rating of lands raised by tipping.

Mr. C. E. Farran (Engineer of the Dun Drainage Commissioners) raised the question whether lands which had been raised by tipping above the original low level to a higher level which water could not reach should continue to be rated as if they were still at the low level or could they be exempted altogether by a Differential Rating Order.

After a long and interesting discussion it appeared to be the view of the Conference that while the land was in the drainage district it should continue to be rated.

(d) Waste Lands.

Mr. C. E. Farran also raised the question of the value to be placed on a vacant site which was not assessed to Schedule A and which for the time being was used as a car park on market days.

In the course of the discussion it was suggested that in fixing a Schedule A value the Drainage Board should endeavour to follow on the lines adopted by the Assessor of Taxes and assess the land on the basis of the rent which a hypothetical tenant would give for it.

(e) Collection of Owner's Rate.

Mr. Henry Bentley (the Clerk to the Knottingley to Hensall Drainage Board) suggested that power should be obtained for internal drainage boards to recover the owner's portion of a drainage rate direct from the owner.

This suggestion found general favour as also did a suggestion of the Dun Drainage Commissioners supported by the Muston and Yedingham Drainage Directors that power should be obtained whereby the owner might be made responsible for paying drainage rates on small property, the rateable value of which was £13 or under.

(f) Catchment Board's Precept.

Mr. C. E. Farran (Dun Drainage Commissioners) drew attention to the fact that the Catchment Board's Precept was

an owner's charge and expressed the opinion that the portion of it relating to administration and maintenance works should be paid by the occupier, and after discussion, by a show of hands, the Conference declared itself in favour of such a suggestion.

(g) Exemption Orders.

Mr. A. W. Taylor (the Clerk of the Dun Drainage Commissioners) referred to the ground of exemption for rating of an area cited in Section 24 (7) of the Land Drainage Act, 1930. i.e. "height above sea level or for any other reason." He stated that in the ordinary acceptance of the phrase the *ejusdem generis* rule would appear to apply and that any other reason should be a reason similar to the nature to height above sea level. He had, however, received an official letter from the Ministry of Agriculture and Fisheries in which it was stated that in their opinion the *ejusdem generis* rule did not apply.

Mr. K. M. Walker (the Clerk of the Dearne and Dove Internal Drainage Board) referred to agreements which had been entered into by his Board with various urban district councils in their area under which, in the event of the Drainage Board making Orders exempting the portion of the urban district within the drainage district from rating, the councils had agreed to contribute each year a sum not less than a sum which would have been due to the Drainage Board had rates been levied in such areas. He stated that the Ministry had issued Orders confirming the arrangement and that the Exemption Orders made by his Board were not made by reason of the height of lands above sea level.

ELECTION OF INTERNAL DRAINAGE BOARDS.

The Cod Beck Internal Drainage Board drew attention to the disqualification of an owner nominated for election owing to the rates of his land not having been paid by the occupier.

It was agreed that this was a point to which the Ministry's attention should be called.

DEFAULT UNDER BYELAWS.

Mr. A. W. Taylor (the Clerk of the Dun Drainage Commissioners) drew attention to the unsatisfactory position of the Internal Drainage Board in that the only method of securing compliance with a Byelaw was to take legal proceedings for penalties. He suggested that it would be far better if where there was default under the Byelaws the Drainage

Board could step in and do the work and recover the cost summarily from the person in default.

This suggestion found favour with the Conference.

CONVEYANCE OF MATERIALS OVER LAND.

Mr. Henry Bentley (the Clerk of the Knottingley to Hensall Drainage Board) suggested that authority should be granted to Drainage Boards or persons authorised by them to enter on any land for the purpose of conveying materials in connection with land drainage works and instanced a case where an owner-occupier of land adjoining the site where work was to be carried out had refused to allow the Board's contractor to go over the land.

In as much as the works in question were works of improvement or new works, as the law stands at present, it would seem that the Drainage Board's only remedy was to buy such land, which was in most cases impracticable. The Conference felt therefore that the Drainage Board should have the necessary powers to go on such land for all necessary purposes, subject to doing as little damage as possible thereon and making good such damage.

TREES BLOWN DOWN.

The Appleton Roebuck and Copmanthorpe Drainage Board raised a question as to when trees were blown down over a stream under the care of a drainage board and the owner failed to remove them so that the work of clearance had to be done by the Boards' workmen whether the Board could dispose of the timber by using it for piling or for sale. An answer in the negative was given to this question.

EVACUATION OF SEWAGE OR SEWAGE EFFLUENT INTO WATERCOURSES UNDER THE CONTROL OF AN INTERNAL DRAINAGE BOARD.

Sir R. N. Kay (the Clerk to the Marston Moor Internal Drainage Board) raised this question and stated that there were many cases within drainage districts where sewage either in crude form or after treatment was evacuated into open dykes, and that the Marston Moor Internal Drainage Board were faced with the question of drains which were agricultural drains primarily and made for the purpose of taking water from the land. The question was did they become under the control of a Public Authority so that such Authority could pass what they call treated effluent thereto? They as Internal Drainage Boards had to get the water from the land. Were they to allow these watercourses to receive

sewage effluent? They were of opinion that these watercourses were provided for agricultural purposes only. They had had cases in their own area where the dykes had been blocked up and it had been impossible for men to work in them.

The representative of the West Derwent Internal Drainage Board pointed out that his Board had had a similar experience and had come to an arrangement with the Rural District Council whereby the drainage board accepted this sewage and the Rural District Council contributed to the drainage board £3 and the drainage board cleansed the drain three times a year.

County Alderman Colonel E. York pointed out that in some cases drains had been opened up which in his memory had never functioned as drains, and said that he could remember a hedge there, but a ditch there never was; a new passage had been cut through land which had not had drainage hitherto.

The Chairman of the Catchment Board stated that there were a good many cases in the country districts. He felt it would be wrong to make these people construct sewage schemes when the sewage is doing no harm at all. They have an arrangement with a Rural District Council that if the sewage became a nuisance it would be for the Sanitary Authority to intervene.

Mr. C. E. Farran instanced a case at Peterborough a good many years ago where strong opposition was raised by the drainage board into whose drains the effluent was to pass. An Order was made providing safeguards for the drainage authorities. The local authorities were only allowed to put their sewage in in time of flood.

RUBBISH THROWN BY HOUSEHOLDERS INTO DRAINS ADJOINING THEIR GARDENS.

Mr. A. W. Taylor (Clerk to the Dun Drainage Commissioners) explained that part of their district which had been agricultural had now become urban where the gardens to new houses which had been built ran down to a drain, and that all sorts of things got into these drains. The drainage board had no power under the Act. They said it was for the local authority to deal with and that the local authority had powers to abate nuisances. The public authority should be able to deal with it in this instance, but first of all it was necessary to catch an offender.

It was pointed out that Byelaws might assist the Drainage Board in the matter.

CULVERTS UNDER SECONDARY ROADS.

Mr. W. Thompson (the Chairman of the Selby Dam Drainage Board) raised the question as to who was responsible for the upkeep of the culverts under the secondary roads. He stated that these culverts had been maintained for a good many years by the road authority, and it would be a big expense for the drainage board to maintain these culverts. He thought this was a matter for the Catchment Board or for the Catchment Board's Association, to take up.

WATERCOURSES RUNNING ALONGSIDE HIGHWAYS.

Sir R. N. Kay (the Clerk to the River Foss Drainage Board) raised the question as to who was liable for cleansing watercourses running alongside highways, and stated that in the area of the River Foss Internal Drainage District they were faced with a difficulty which they felt ought to be on somebody else's shoulders. There was a large open stream which could scarcely be termed a farmers' dyke between the hedges which they had claimed should be vested in the owners of the highway. He understood the secondary roads had now been taken over by the County Councils. This dyke being part of the highway and adjoining the highway the drainage board had no power to enclose it. He stated that he would be glad of any help from other Internal Boards if they knew of any other cases.

The Clerk of the Catchment Board stated that a ditch on a roadway side was not necessarily part of the highway. The duty of cleansing such a ditch at common law was the owner of the land adjoining. Section 67 of the Highways Act, 1835 empowered the Surveyor of Highways to make, cleanse and keep open all ditches etc. deemed necessary in and through any land adjoining or lying near to any highway. The effect of the Section according to the opinion of Law Officers of the Crown was "to empower but not compel."

Section 32 of the Land Drainage Act empowered a Local Authority to contribute to the expense of a Drainage Board in the maintenance of drainage works for (inter alia) the better enjoyment of the highway.

RATING—SCHOOLS.

The Clerk to the River Foss Internal Drainage Board suggested that as schools were exempt from poor rates they should be exempt from drainage rates.

CLEANSING OF DRAIN.

Mr. J. Leach (West Haddlesey Drainage Board) said that his board might have to serve notices upon occupiers of land to cleanse their drains and said he would like to know how much the occupiers were compelled to do and upon default by them and the drainage board having to do the work would they be able to recover the cost?

It was suggested that such work could be done as was necessary to restore the proper flow of the drain.

On the motion of Miss Morris (River Tutt Internal Drainage Board) a hearty vote of thanks was accorded to Mr. Hinchcliff the Chairman of the Internal Districts Committee for his services in the chair.

This concluded the business of the Conference when the Chairman stated that the various points raised had been noted and would be considered by the Catchment Board in due course for any necessary action to be taken.

COUNTIES and COUNTY BOROUGHs within the CATCHMENT AREA.

Statement of Rateable Values at 1st April, 1937 and amounts payable in respect of Precepts for the financial year beginning on that date.

County or County Borough.	Total rateable value at 1st April, 1937, of hereditaments within the Catchment Area.	Adjusted Precepts.					
		Half year beginning 1st April, 1937.		Half year beginning 1st October, 1937.		Total for year beginning 1st April, 1937.	
	£	£	s. d.	£	s. d.	£	s. d.
Counties :—							
Chester	Nil.	1,565	11 1	1,175	5 2	2,740	16 3
Derby	752,166	13	17 6	11	18 4	27	15 10
Lancaster	7,627	—	—	—	—	—	—
Lincoln (Parts of Lindsey)	Nil.	—	—	—	—	—	—
Nottingham	1,044	2	3 6	1	12 7	3	16 1
Westmorland	Nil.	—	—	—	—	—	—
York, East Riding	132,133	275	0 5	206	9 2	481	9 7
York, North Riding	521,907	1,086	5 11	815	9 7	1,901	15 6
York, West Riding	6,819,287	14,193	12 5	10,655	2 9	24,848	15 2
County Boroughs :—							
Bradford	2,187,026	4,552	1 3	3,417	4 7	7,969	5 10
Huddersfield	909,444	1,892	18 2	1,421	0 2	3,313	18 4
Leeds	3,597,891	7,488	12 6	5,621	14 1	13,110	6 7
Sheffield	3,187,787	6,635	0 9	4,980	18 4	11,615	19 1
York	642,362	1,337	0 2	1,003	13 10	2,340	14 0
Halifax	596,078	1,240	13 6	931	7 5	2,172	0 11
Wakefield	370,464	771	1 7	578	17 0	1,349	18 7
Dewsbury	314,518	654	12 8	491	8 8	1,146	1 4
Doncaster	301,377	627	5 8	470	18 0	1,098	3 8
Barnsley	348,815	726	0 5	545	0 6	1,271	0 11
Rotherham	406,705	846	10 3	635	9 6	1,481	19 9
	£21,096,631	£43,910	7 9	£32,963	9 8	£76,873	17 5

L DRAINAGE BOARDS.

AMOUNTS precepted in the financial year ending 31st March, 1937.

.....	£
.....	34
Gift	26
.....	—
.....	200
.....	40
.....	13
and Copmanthorpe	40
.....	27
.....	11
.....	27
.....	65
.....	—
.....	17
.....	34
.....	40
.....	32
.....	368
h	10
.....	—
.....	30
.....	29
.....	14
.....	9
ration	—
.....	31
all	109
.....	226
.....	—
.....	123
am	135
.....	24
.....	86
.....	—
.....	450
.....	59
et	79
.....	12
.....	—
.....	14
.....	10
.....	—
.....	274
.....	119
.....	18
.....	—
.....	20
.....	120
.....	24
.....	—
.....	—
.....	43
iton Level	60
Selby	100
.....	£3,202

LAND DRAINAGE ACT, 1930.

River Ouse (Yorks.) Catchment Board.

COPY

of the Accounts of the Receipts and Expenditure of the Catchment Board and its Officers for the year ending 31st March, 1937.

Central Bank Chambers,
Infirmity Street, Leeds, 1.

F. M. FARMER,
Clerk of the Board.

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO ADMINISTRATION ACCOUNT.						
Salaries and National Insurance (proportion)	4,877	13	6			
Superannuation	515	5	4			
Compensation for loss of Office				5,392	18	10
Travelling Expenses (proportion)				191	13	4
Inspection Expenses				1,046	6	0
Offices : Leeds—				123	11	0
Rent and Rates	416	7	7			
Heating, Lighting and Cleaning	148	8	1			
Offices : Doncaster—						
Rent and Rates (proportion)	66	8	9			
Heating, Lighting and Cleaning	53	16	10			
Setting up and Supervising Internal Drainage Boards				685	1	3
Drawing Office—Maps, Stationery, &c.				1,087	10	6
Printing, Stationery and Advertising				244	2	9
Fidelity Bonds and Sundry Insurances				1,181	3	11
Workmen's Compensation				35	15	10
Legal Charges, Cheques, Stamp Duties, &c.				72	4	10
Catchment Boards Association				551	3	3
Income Tax, &c.				84	0	0
River Derwent Navigation—				77	12	5
Revocation Order—						
Property Repairs	27	19	7			
Income Tax, Tithe, &c.	5	13	10			
Postages, Telephone and Sundries				93	13	5
Office Premises—Park Square, Leeds—				464	18	2
Land Purchase, Costs, &c.						
				11,259	3	10
Total to Summary Account	£	22,530	19	4		

for the Year ending 31st March, 1937.

INCOME.		£	s.	d.
BY ADMINISTRATION ACCOUNT.				
Workmen's Compensation Refunded	....	72	4	10
Interest on Loans to Internal Drainage Boards	....	55	0	0
Bank Interest	....	219	3	2
River Derwent Navigation—Revocation Order—				
Rent of Properties	....	34	6	6
Income Tax deducted from Interest on Land				
Purchase Monies	....	12	0	10
Sundries	....	7	8	5
Total to Summary Account		£	400	3
				9

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT.						
River Ouse—Ousefleet to Goole—Banks.						
Wages and National Insurance, &c.	466	19	1			
Haulage	17	12	6			
Sundry Materials	0	4	5			
Tools and Equipment	20	17	2			
Drain at Whitgift	124	6	10			
				630	0	0
River Ouse—Airmyn District—Banks.						
Wages and National Insurance, &c.	38	9	9			
Tools and Equipment	0	18	9			
				39	8	6
River Aire—Airmyn District—Banks.						
Wages and National Insurance, &c.	79	7	1			
Sundry Materials	5	0	8			
Tools and Equipment	9	19	4			
				94	7	1
River Aire—Rawcliffe to Hensall—Banks.						
Wages and National Insurance, &c.	513	17	0			
Haulage	30	15	5			
Stone	218	12	6			
Sundry Materials	7	14	5			
Tools and Equipment	15	19	10			
				786	19	2
River Ouse—Lower Aire District—Banks.						
Wages and National Insurance, &c.	631	2	11			
Haulage	0	18	9			
Sundry Materials	12	6	1			
Tools and Equipment	11	12	3			
				656	0	0
River Aire—Lower Aire District—Banks.						
Wages and National Insurance, &c.	933	15	11			
Haulage	8	17	4			
Sundry Materials	19	4	3			
Tools and Equipment	21	12	0			
				983	9	6
River Aire—Hensall to Knottingley—Banks.						
Wages and National Insurance, &c.	469	19	11			
Haulage	0	8	3			
Sundry Materials	5	8	6			
Tools and Equipment	15	12	2			
				491	8	10
River Ouse—Blacktoft to Derwent Mouth—Banks.						
Wages and National Insurance, &c.	600	10	4			
Haulage	2	1	6			
Sundry Materials	0	10	0			
Tools and Equipment	23	19	4			
				627	1	2
River Derwent—Derwent Mouth to Bubwith—Banks.						
Wages and National Insurance, &c.	92	16	3			
Sundry Materials	0	7	0			
Tools and Equipment	1	9	9			
				94	13	0
Carried forward	1.403	7	3			

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY WORKS OF MAINTENANCE ACCOUNT.			
River Ouse—Lower Aire District—Banks.			
Wages Recharged	0	7	7
River Aire—Lower Aire District—Banks.			
Wages Recharged	0	5	8
River Ouse—Blacktoft to Derwent Mouth—Banks.			
Wages Recharged	1	4	5
Carried forward	1	17	8

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT—cont.						
Brought forward	4,403	7	3			
River Derwent—Derwent Mouth to Bubwith.						
Wages and National Insurance, &c.—	140	11	11			
Banks	1	0	10			
Channel	6	1	11			
Sundry Materials	11	6	4	159	1	0
Tools and Equipment						
River Derwent—Bubwith to Sutton.						
Wages and National Insurance, &c.—	584	5	2			
Banks	11	2	9			
Channel	7	7	6	602	15	5
Tools and Equipment						
River Derwent—Sutton to Stamford Bridge.						
Wages and National Insurance, &c.—	63	7	8			
Banks	115	13	0			
Channel	0	2	9			
Sundry Materials	6	12	3	185	15	8
Tools and Equipment						
River Derwent—Stamford Bridge to Howsham.						
Wages and National Insurance, &c.—	75	10	6			
Banks	147	10	4			
Channel	6	4	6	229	5	4
Tools and Equipment						
River Derwent—Howsham to Malton.						
Wages and National Insurance, &c.—	72	0	8			
Banks	44	18	9			
Channel	0	11	9			
Sundry Materials	0	8	3	117	19	5
Tools and Equipment						
River Derwent—Malton to Yedingham Bridge.						
Wages and National Insurance, &c.—	19	12	11			
Banks	129	13	3			
Channel	6	0	0			
Sundry Materials	0	5	10	155	12	0
Tools and Equipment						
River Ouse—Selby to Cawood—Banks.						
Wages and National Insurance, &c.—	1,423	15	10			
Haulage	38	8	9			
Sundry Materials	11	12	2	1,604	15	4
Tools and Equipment	130	18	7			
River Aire—Keighley to Calverley—Survey.						
Wages and National Insurance, &c.—				0	16	9
Carried forward	7,459	8	2			

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	1	17	8
River Ouse—Selby to Cawood—Banks.			
Wages &c. Recharged	6	15	0
Carried forward	8	12	8

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT—cont.						
Brought forward	7.459	8	2			
River Aire—Airedale District—Channel.						
Wages and National Insurance, &c.	171	16	4			
Sundry Materials	2	0	8			
Tools and Equipment	0	14	7	174	11	7
River Ouse—Wharfe Mouth to York.						
Wages and National Insurance, &c.—						
Banks	152	0	0			
Channel	9	13	6			
Sundry Materials	1	6	4			
Tools and Equipment	0	4	7	163	4	5
River Wharfe—Wharfe Mouth to Ulleskelf Ferry.						
Wages and National Insurance, &c.—						
Banks	226	10	1			
Channel	20	11	7			
Haulage	1	0	3			
Tools and Equipment	6	5	2	254	7	1
River Wharfe—Ulleskelf Ferry to Thorp Arch						
Wages and National Insurance, &c.—						
Wages and National Insurance, &c.	167	18	11			
Haulage	0	15	9			
Tools and Equipment	0	12	10	169	7	6
River Wharfe—Thorp Arch to Pool Mill.						
Wages and National Insurance, &c.—						
Banks	41	10	1			
Channel	14	5	9			
Haulage	0	5	0			
Sundry Materials	2	5	3			
Tools and Equipment	5	7	7	63	13	8
River Ouse—York to Kirby Hall—Banks.						
Wages and National Insurance, &c.—						
Wages and National Insurance, &c.	96	10	6			
Sundry Materials	4	8	0			
Tools and Equipment	4	19	6	105	18	0
River Ure—Kirby Hall to Boroughbridge—Banks.						
Wages and National Insurance, &c.	16	18	8			
Sundry Materials	7	2	0	24	0	8
River Ure—Masham to Wensley—Banks.						
Wages and National Insurance, &c.	426	16	3			
Haulage	30	18	0			
Plant	729	3	6			
Fuel, &c.	4	14	6			
Sundry Materials	31	4	11			
Plant Repairs	1	6	11			
Tools and Equipment	3	18	10	1,228	2	11
Carried forward	9,642	14	0			

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	8	12	8
River Ure—Kirby Hall to Boroughbridge—Banks.			
Materials Recharged	6	10	0
Carried forward	15	2	8

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	9.642	14	0
River Nidd—Nidd Mouth to Knaresborough.			
—Banks.			
Wages and National Insurance, &c.	3	7	1
Sundry Materials	1	6	4
Tools and Equipment	1	9	7
Recorder House	0	10	0
	6	13	0
River Swale—Swale Nab to Skipton-on-Swale			
—Banks.			
Wages and National Insurance, &c.	325	6	2
Haulage	5	8	9
Tools and Equipment	10	0	10
	340	15	9
River Swale—Skipton-on-Swale to Morton Bridge			
Wages and National Insurance, &c.—			
Banks	488	5	4
Channel	2	4	9
Haulage	0	8	0
Tools and Equipment	0	12	10
	491	10	11
River Swale—Morton Bridge to Catterick Bridge			
—Banks.			
Wages and National Insurance, &c.	7	1	0
Tools and Equipment	10	9	6
	17	10	6
Cub Excavators.			
Wages and National Insurance, &c.	9	18	9
Haulage	7	13	9
Excavator No 10—Purchase Price	929	0	0
Fuel, &c.	22	13	11
Excavator Spares and Repairs	5	12	5
Insurance, &c.	5	15	11
Sundry Materials	1	16	9
Mats, Tools and Equipment	58	4	7
	1.040	16	1
River Rye—Rye Mouth to Little Habton.			
Wages and National Insurance, &c.—			
Banks	363	16	3
Channel	35	6	4
Haulage	5	15	0
Sundry Materials	0	4	5
Tools and Equipment	4	4	8
	409	6	8
Sea Cut—Weir Head to Scalby.			
Wages and National Insurance, &c.	195	7	9
Haulage	2	15	6
Sundry Materials	90	11	0
Income Tax	8	8	9
	297	3	0
Carried forward	12.246	9	11

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	15	2	8
Cub Excavators.			
Accident Claim—Expenses Recouped	133	11	3
	29	3	6
	162	14	9
River Rye—Rye Mouth to Little Habton—Banks.			
Wages &c. Recharged	8	1	11
Carried forward	185	19	4

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.
TO WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	12,246	9	11
River Don—Doncaster to Thorne—Banks.			
Wages and National Insurance, &c.	828	17	1
Haulage	13	8	4
Motor Mower	48	15	10
Fuel, &c.	2	4	5
Sundry Materials	0	15	6
Tools and Equipment	11	19	11
	906	1	1
River Don—Thorne to Goole.			
Wages and National Insurance, &c.—			
Banks	509	16	2
Channel	24	16	7
Sundry Materials	4	17	8
Tools and Equipment	4	19	4
Maintenance of Bridges	20	0	0
Balance of contribution towards cost of alterations at Wormley Hill Lane	154	16	10
	719	6	7
River Dearne—Dearne Mouth to Darton—Banks.			
Wages and National Insurance, &c.—	5	14	8
River Rother—Rotherham to Beighton—Channel.			
Wages and National Insurance, &c.—	8	5	1
River Rother—Beighton to Chesterfield—Channel			
Wages and National Insurance, &c.	8	7	5
Haulage	0	12	0
	8	19	5
General Expenses.			
Salaries and Travelling Expenses (proportion)	665	0	9
Clerk of Works and Motor Van (proportion)	132	2	7
	797	3	4
Total to Summary Account	£ 14,692	0	1

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY WORKS OF MAINTENANCE ACCOUNT—cont.			
Brought forward	185	19	4
River Don—Thorne to Goole—Banks.			
Wages Recharged	16	3	7
General Expenses.			
Motor Van—Licence Refunded	7	10	0
Total to Summary Account	£ 209	12	11

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT.						
River Ouse—Ousefleet to Goole—Banks.						
Wages and National Insurance, &c. 196	5	7				
Haulage	12	0	6			
Tools and Equipment	0	12	0	208	18	1
River Aire—Airmyn District—Banks.						
Wages and National Insurance, &c. 64	0	3				
Tools and Equipment	0	8	9	64	9	0
River Aire—Rawcliffe to Hensall—Banks.						
Wages and National Insurance, &c. 52	10	0				
Sundry Materials	0	13	6	53	8	6
River Aire—Lower Aire District—Banks.						
Wages and National Insurance, &c. 47	18	6				
Stone	149	12	6	197	11	0
River Ouse—Blacktoft to Derwent Mouth—Banks.						
Wages and National Insurance, &c. 2,087	2	4				
Haulage	8	4	6			
Stone	2,528	14	9			
Sundry Materials	15	3	4			
Tools and Equipment	46	3	10	4,685	8	9
River Aire—Airedale District.						
Wages and National Insurance, &c.—						
Banks	231	16	11			
Channel	37	17	7			
Tools and Equipment	1	6	0	271	0	6
River Ouse—Wharfe Mouth to York—Banks.						
Wages and National Insurance, &c.—				92	13	0
River Wharfe—Illeskelf Ferry to Thorp Arch—Banks						
Wages and National Insurance, &c. 35	13	11				
Tools and Equipment	0	5	9	35	19	8
Carried forward				5,609	3	6

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT.			
River Ouse—Blacktoft to Derwent Mouth—Banks.			
Wages Recharged	5	2	1
Carried forward	5	2	1

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT.—continued.						
Brought forward	....	....		5,609	3	6
River Wharfe—Thorp Arch to Pool Mill.						
Wages and National Insurance, &c.—						
Banks	....	....	196 12 0			
Channel	....	....	223 11 0			
Haulage	....	....	39 16 0			
Sundry Materials	....	....	169 18 8			
Tools and Equipment	....	....	7 19 1	687	16	9
River Ouse—York to Kirby Hall—Banks.						
Wages and National Insurance, &c.—				5	6	6
River Nidd—Nidd Mouth to Knaresborough						
Wages and National Insurance, &c.						
Banks	....	....	1 1 11			
Channel	....	....	10 13 3	11	15	2
River Swale—Swale Nab to Skipton-on-Swale						
—Banks.						
Wages and National Insurance, &c.	723	8	5			
Haulage	....	....	11 2 3			
Stone	....	....	48 10 6			
Fuel, &c.	....	....	1 4 0			
Sundry Materials	....	....	14 13 3			
Tools and Equipment	....	....	23 19 0	822	17	5
River Swale—Skipton-on-Swale to Morton Bridge.						
—Banks.						
Wages and National Insurance, &c.	273	9	10			
Haulage	....	....	1 4 0			
Tools and Equipment	....	....	3 19 0	278	12	10
River Swale—Morton Bridge to Catterick Bridge....						
General—						
Wages and National Insurance, &c.						
Banks	....	....	51 1 7			
Channel	....	....	91 2 7			
Rent of Storeshed	....	....	1 0 5			
Sundry Materials	....	....	464 6 9			
Tools and Equipment	....	....	1 16 5			
Wheat Hill Groynes—						
Wages and National Insurance, &c.	216	2	1			
Sundry Materials	....	....	251 9 0	1 076	18	10
Carried forward	....	....		8,442	11	0

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT.—continued.			
Brought forward	....	....
	5	2	1
Carried forward	....	....
	5	2	1

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT. —continued.			
Brought forward	8,442	11	0
River Rye—Rye Mouth to Little Habton.			
—Banks.			
Wages and National Insurance, &c.	123	3	10
River Don—Doncaster to Thorne—Banks.			
Wages and National Insurance, &c.	66	12	5
Haulage	2	6	0
Tools and Equipment	0	17	6
	69	15	11
River Dearne—Dearne Mouth to Darton—Banks.			
Wages and National Insurance, &c.	1	17	3
Tug and Barges.			
Wages and National Insurance, &c.—			
River Ouse	4	19	4
River Swale	40	2	8
Survey	9	13	11
Tolls	20	0	0
Fuel	7	17	8
	82	13	7
Thorne Workshop and Store.			
Rent (proportion)	3	11	4
General Expenses.			
Salaries and Travelling Expenses (proportion)	1,927	11	2
Clerk of Works and Motor Van (proportion)	396	7	9
Sundries	27	4	2
	2,351	3	1
Total to Summary Account £	11,074	16	0

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT. —continued.			
Brought forward	5	2	1
Total to Summary Account £	5	2	1

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT. (GRANT EARNING).						
River Aire—Airmyn District—Banks.						
Wages and National Insurance, &c. 2,793	7	1				
Haulage	5	2	9			
Stone	670	9	6			
Fuel, &c.	22	6	6			
Sundry Materials	69	6	9			
Plant	655	17	10			
Tools and Equipment	25	9	3	4,241	19	8
River Ouse—Lower Aire District—Banks.						
Wages and National Insurance, &c. 271	5	11				
Stone	1,219	8	9			
Sundry Materials	0	16	2			
Tools and Equipment	2	1	7	1,493	12	5
River Aire—Lower Aire District—Banks.						
Wages and National Insurance, &c. 1,686	3	2				
Haulage	15	12	0			
Stone	1,223	17	3			
Fuel, &c.	17	3	3			
Sundry Materials	28	0	1			
Tools and Equipment	19	18	3			
Plant Repairs	13	18	2	3,004	12	2
River Derwent—Derwent Mouth to Bubwith—Banks.						
Wages and National Insurance, &c. 1,155	9	6				
Haulage	2	17	0			
Stone	43	15	0			
Fuel, &c.	5	4	11			
Sundry Materials	11	9	5			
Plant, Tools and Equipment	93	18	3	1,312	14	1
River Derwent—Derwent Mouth to Bubwith—Banks						
Wages and National Insurance, &c.						
Banks	974	11	2			
Channel	714	6	6			
Haulage	7	8	0			
Stone	359	13	0			
Excavator Spares and Repairs	87	7	6			
Fuel, &c.	133	1	7			
Insurance, &c.	20	1	6			
Compensation	48	15	0			
Sundry Materials	150	16	5			
Plant	1,191	13	6			
Tools and Equipment	32	10	9			
Plant Repairs	7	12	9	3,727	17	8
Carried forward				13,780	16	0

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT. (GRANT EARNING).			
River Derwent—Derwent Mouth to Bubwith—Banks			
Contribution towards cost of Brighton Bank	500	0	0
Carried forward	500	0	0

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	....	....	....	13,780	16	0
River Derwent—Bubwith to Sutton.						
Wages and National Insurance, &c.—						
Banks	....	....	....	56	9	0
Channel	....	....	....	847	6	7
Excavator Spares and Repairs	....	....	....	96	11	9
Fuel, &c.	....	....	....	92	4	11
Insurances	....	....	....	3	6	6
Land Purchase	....	....	....	66	19	1
Sundry Materials	....	....	....	12	11	5
Tools and Equipment	....	....	....	37	13	7
				1,213	2	10
River Derwent—Elvington Sluice.						
Wages and National Insurance, &c.	1,636	0	10			
Haulage	....	....	....	14	0	2
Fuel, &c.	....	....	....	39	11	7
Insurances	....	....	....	12	12	7
Piling, Materials, &c.	....	....	....	2,469	12	0
Plant	....	....	....	1,267	12	1
Tools and Equipment	....	....	....	236	14	11
				5,676	4	2
River Derwent—Sutton to Stamford Bridge.						
Wages and National Insurance, &c.	....	....	....	5	1	8
Sundry Materials	....	....	....	0	13	6
				5	15	2
River Ouse—Selby to Cawood—Banks.						
General—						
Wages and National Insurance, &c.	1,207	0	11			
Haulage	....	....	....	115	17	6
Stone	....	....	....	38	1	3
Excavator No. 9—Purchase Price	833	0	0			
Other Plant	....	....	....	1,061	1	0
Excavator Spares and Repairs	....	....	....	8	7	5
Rent of Storeshed	....	....	....	18	0	0
Fuel, &c.	....	....	....	2	7	5
Insurances, &c.	....	....	....	19	17	0
Plant Repairs	....	....	....	0	10	2
Sundry Materials	....	....	....	91	4	4
Tools and Equipment	....	....	....	38	12	0
				3,433	19	0
Cleek Hall Bank—						
Wages and National Insurance, &c.	1,578	2	10			
Haulage	....	....	....	114	15	10
Sundry Materials	....	....	....	59	3	5
Tools and Equipment	....	....	....	11	10	11
				1,763	13	0
Carried forward	....	....	....	25,873	10	2

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.			
Brought forward	....	....	....
	500	0	0
River Derwent—Elvington Sluice.			
Wages, &c., Recharged	....	....	....
	16	17	4
Carried forward	....	....	....
	516	17	4

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	.....	.....	.....	25,873	10	2
River Ouse—Selby to Cawood—Banks—continued.						
Kelfield Bank—						
Wages and National Insurance, &c.	1,324	16	7			
Haulage	.....	52	17	0		
Land Purchase	.....	54	2	4		
Plant	.....	222	12	4		
Fuel, &c.	.....	40	6	1		
Insurances, &c.	.....	5	19	0		
Sundry Materials	.....	113	7	1		
Plant Repairs	.....	28	18	0		
Tools and Equipment	.....	37	19	3		
				1,880	17	8
Kelfield Hall Garth Bank—						
Wages and National Insurance, &c.	379	15	5			
Haulage	.....	31	16	6		
Stone	.....	71	17	0		
Sundry Materials	.....	41	6	11		
Tools and Equipment	.....	7	2	3		
				531	18	1
Ravendells Bank—						
Wages and National Insurance, &c.	155	18	11			
Haulage	.....	13	8	3		
Land Purchase	.....	109	10	0		
Sundry Materials	.....	0	2	8		
				278	19	10
Riccall Ings Bank—						
Wages and National Insurance, &c.	499	3	8			
Haulage	.....	11	11	0		
Fuel, &c.	.....	12	5	4		
Sundry Materials	.....	4	3	5		
Tools and Equipment	.....	6	12	11		
				533	16	4
Wheel Hall Bank—						
Wages and National Insurance, &c.	1,436	17	1			
Haulage	.....	31	8	0		
Excavator Spares and Repairs	.....	149	11	9		
Fuel, &c.	.....	120	16	10		
Plant	.....	74	3	6		
Stone	.....	309	12	9		
Sundry Materials	.....	41	5	9		
Plant Repairs	.....	16	19	11		
Tools and Equipment	.....	25	9	8		
				2,206	5	3
Wistow Bank—						
Wages and National Insurance, &c.	1,161	13	0			
Haulage	.....	51	3	3		
Land Purchase	.....	373	19	3		
Sundry Materials	.....	64	19	11		
Tools and Equipment	.....	8	16	1		
				1,660	11	6
Carried forward	.....	.....	.....	32,965	18	10

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.			
Brought forward	.....	.....	.....
	516	17	4
Carried forward	.....	.....	.....
	516	17	4

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	2.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	....	....	....	32,965	18	10
River Don—Doncaster to Thorne—Banks.						
Wages and National Insurance, &c.	774	17	2			
Haulage	....	32	12			
Excavator Spares and Repairs	....	3	15			
Fuel, &c.	....	16	11			
Sundry Materials	....	39	9			
Plant	....	221	5			
Tools and Equipment	....	20	4			
				1,108	16	7
River Dearne—Dearne Mouth to Darton—Banks.						
Wages and National Insurance, &c.	2,020	6	10			
Haulage	....	38	11			
Excavator Spares and Repairs	....	62	15			
Fuel, &c.	....	118	2			
Insurances, &c.	....	25	9			
Sundry Materials	....	31	0			
Plant	....	440	11			
Plant Repairs	....	8	10			
Tools and Equipment	....	15	6			
				2,760	13	2
River Don Survey—						
Wages and National Insurance, &c.	235	15	1			
Haulage	....	5	2			
Rent of Store	....	6	10			
Maps, &c.	....	93	6			
Equipment and Sundry Materials....	....	55	9			
				396	4	0
River Don—Dearne Mouth to Rotherham—Channel.						
Wages and National Insurance, &c.	150	18	10			
Haulage	....	1	4			
Sundry Materials	....	0	2			
Tools and Equipment	....	6	0			
				158	5	7
River Rother—Rotherham to Beighton—Channel....						
Wages and National Insurance, &c.	276	15	11			
Tractor Hire, &c.	....	21	0			
Sundry Materials	....	3	9			
Tools and Equipment	....	7	19			
				309	4	8
River Rother—Beighton to Chesterfield—Channel.						
Wages and National Insurance, &c.	569	11	4			
Tractor Hire, &c.	....	55	7			
Sundry Materials	....	0	3			
Tools and Equipment	....	10	5			
				635	7	6
Carried forward	....			38,334	10	4

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.			
Brought forward	....	....	....
	516	17	4
Carried forward	....	
	516	17	4

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	....	....	....	38,384	10	4
Dutch River—Mouth to Railway Bridge—Banks.						
Wages and National Insurance, &c.	34	10	8			
Plant	284	5	0			
Sundry Materials	6	7	0			
Tools and Equipment	11	2	6			
				336	5	2
Dutch River—Rawcliffe Bridge to New Bridge— Excavators—						
Wages and National Insurance, &c.	268	5	10			
Haulage	7	19	6			
Excavator Spares and Repairs	4	3	9			
Sundry Materials	0	2	0			
Plant	80	0	0			
Compensation for Deposit of Spoil	28	15	0			
				389	6	1
River Don—New Bridge to Jubilee Bridge— Excavators—						
General—						
Wages and National Insurance, &c.	5,445	19	10			
Haulage	84	8	1			
Stone	2,443	13	9			
Excavator Spares and Repairs	363	0	9			
Fuel, &c.	469	14	10			
Sundry Materials	499	9	1			
Rent of Storeshed	9	1	8			
Tools and Equipment	167	14	5			
Excavator No. 12—Purchase Price	1,582	0	0			
Ferry Pontoon—Part Purchase						
Price	1,926	10	0			
Other Plant	1,173	15	0			
Insurances, &c.	152	6	10			
Professional Charges	689	2	0			
Land Purchase	1,566	14	4			
Compensation	34	5	0			
Income Tax	5	3	4			
Rates	1	2	10			
Tithe Redemption Annuity	0	2	4			
Blackshaw Clough—						
Wages and National Insurance, &c.	231	4	0			
Haulage	1	5	0			
Sundry Materials	109	18	0			
Tools and Equipment	27	5	7			
				16,983	16	8
River Don—Jubilee Bridge to Aqueduct.						
Sundry Materials	....	....	....	9	13	6
Carried forward	....	....	....	56,053	11	9

for the Year ending 31st March, 1937.

INCOME	£	s.	d.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	516	17	4
River Don—New Bridge to Jubilee Bridge— Excavators—						
Rent of Cottage	6	5	9
Use of Land	13	5	0
Sundries	7	5	0
				26	15	9
Carried forward	543	13	1

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	....	....	56,053	11	9	
River Don—Aqueduct to Doncaster—Channel.						
Wages and National Insurance, &c.	35	12	5			
Haulage	3	7	0			
Sundry Materials	30	19	4			
Tools and Equipment	0	7	9			
			70	6	6	
Tug "Aid" and Barges.						
Tug—Balance of Purchase Price	116	0	0			
Barges Nos. 1 & 2—Balance of Purchase Price	100	0	0			
Barges Nos. 3 & 4—Part Purchase Price	1,031	17	0			
Wages and National Insurance, &c.						
River Ouse	214	15	6			
" Aire	14	9	3			
" Derwent	5	0	10			
" Don	8	2	3			
Repairs	33	7	5			
Fuel	67	16	10			
Calibration	11	10	11			
Repairs, Sundry Materials, &c	46	13	11			
Insurance—Tug	40	19	10			
" —Barges	62	10	8			
Tools and Equipment	38	2	1			
			1,791	6	6	
Dredger No. 1—River Don.						
Balance of Purchase Price	599	0	0			
Wages and National Insurance, &c.	489	19	10			
Haulage	0	10	6			
Insurance	148	3	1			
Fuel	43	4	9			
Repairs, Sundry Materials, etc.	103	11	1			
Tools and Equipment	21	7	4			
			1,405	16	7	
Thorne Workshop and Store.						
Rent, Rates, &c., (proportion)	32	1	10			
Reconstruction—						
Wages and National Insurance, &c.	560	9	7			
Haulage	14	9	0			
Equipment and Sundry Materials	457	12	9			
Stock and Sundry Expenses	17	17	9			
			1,082	10	11	
Offices.						
Rent, Rates, &c., (proportion)			124	17	9	
Carried forward	....	....	60,528	10	0	

for the Year ending 31st March, 1937.

INCOME	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.			
Brought forward	543	13	1
Tug "Aid" and Barges.			
Expenses recharged	0	15	0
Carried forward	544	8	1

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE	£	s.	d.	£	s.	d.
TO IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	60,528	10	0			
Special Staff.						
Wages and National Insurance, &c.	1,110	2	1			
Travelling Expenses	183	9	3			
	1,293	11	4			
	61,822	1	4			
Income Tax.						
Deductions from Interest on Land Purchase monies—						
River Derwent	0	1	9			
„ Ouse	0	15	4			
„ Don	9	11	9			
	10	8	10			
Total to Summary Account	£ 61,832	10	2			

for the Year ending 31st March, 1937.

INCOME	£	s.	d.	£	s.	d.
BY IMPROVEMENT OF EXISTING WORKS ACCOUNT (GRANT EARNING).—Cont.						
Brought forward	544	8	1			
Ministry of Agriculture and Fisheries.						
Net Expenditure Recharged	61,277	13	3			
Grant- $\frac{1}{3}$ rd thereof	20,425	17	9			
Total to Summary Account	£ 20,970	5	10			

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE.	£	s.	d.	£	s.	d.
TO EXECUTION OF NEW WORKS ACCOUNT (GRANT EARNING).						
River Derwent—Bubwith Cut.						
Land Purchase	20	10	9			
Wages and National Insurance, &c. 1,594	0	9				
Haulage	37	0	9			
Excavator Spares and Repairs	239	10	11			
Fuel, &c.	109	0	10			
Insurances	37	1	7			
Plant	285	14	0			
Sundry Materials	82	4	4			
Plant Repairs	13	19	8			
Tools and Equipment	56	12	6			
				2,475	16	1
River Dearne—Bolton Ings Cut.						
Wages and National Insurance, &c. 265	4	5				
Haulage	7	10	0			
Excavator Spares and Repairs	3	0	0			
Fuel, &c.	17	6	8			
Sundry Materials	4	5	8			
Tools and Equipment	1	1	9			
				298	8	6
Thorpe Marsh Barrier Bank.						
Compensation for Loss of Land				15	0	0
				2,789	4	7
Income Tax.						
Deductions from Interest on Land Purchase monies—						
River Derwent				1	12	0
Total to Summary Account	£			2,790	16	7
TO CONTRIBUTIONS TO INTERNAL DRAINAGE BOARDS ACCOUNT.						
Contributions				1,884	10	0
Total to Summary Account	£			1,884	10	0

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.	£	s.	d.
BY EXECUTION OF NEW WORKS ACCOUNT (GRANT EARNING).						
Ministry of Agriculture and Fisheries.						
Net Expenditure Recharged	2,789	4	7			
Grant-3rd thereof				929	14	10
Total to Summary Account	£			929	14	10

PRECEPT INCOME ACCOUNT

	Half-Year to 30th September, 1936.			Half-Year to 31st March, 1937.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
To Income and Expenditure Account.									
Allocation of Precepts—									
Administration Account	21,170	12	2	12,005	15	10	33,176	8	0
Works of Maintenance Account	9,998	0	0	951	0	0	10,949	0	0
Improvement of Existing Works Account	—	—	—	19,533	6	8	19,533	6	8
Execution of New Works Account	900	0	0	1,333	6	8	2,233	6	8
Contributions to Internal Drainage Boards Account	1,500	0	0	—	—	—	1,500	0	0
	33,568	12	2	33,823	9	2	67,392	1	4
							£ 67,392	1	4

for the Year ending 31st March, 1937.

	Half Year to 30th September, 1936.			Half-Year to 31st March, 1937.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
By Precepts—									
Internal Drainage Boards	1,351	0	0	1,352	0	0	2,703	0	0
Less Amounts allowed on Appeal	2	0	0	2	0	0	4	0	0
County Council of—	1,349	0	0	1,350	0	0	2,699	0	0
Chester	—	—	—	—	—	—	—	—	—
Derby	1,126	19	0	1,135	16	7	2,262	15	7
Lancaster	11	11	10	11	13	8	23	5	6
Lincoln—Parts of Lindsey	—	—	—	—	—	—	—	—	—
Nottingham	1	9	8	1	9	11	2	19	7
Westmorland	—	—	—	—	—	—	—	—	—
York, East Riding	212	4	8	213	18	2	426	2	10
York, North Riding	831	15	5	838	6	6	1,670	1	11
York, West Riding	10,556	19	8	10,640	3	3	21,197	2	11
County Borough of—									
Bradford	3,361	7	5	3,387	17	1	6,749	4	6
Huddersfield	1,311	15	3	1,322	1	11	2,633	17	2
Leeds	5,486	13	8	5,529	18	2	11,016	11	10
Sheffield	4,858	7	7	4,896	13	1	9,755	0	8
York	897	7	0	904	8	4	1,801	15	4
Halifax	912	14	11	919	18	10	1,832	13	9
Wakefield	566	11	9	571	1	0	1,137	12	9
Dewsbury	478	14	9	482	10	3	961	5	0
Doncaster	460	13	4	464	5	11	924	19	3
Barnsley	533	13	8	537	17	8	1,071	11	4
Rotherham	610	12	7	615	8	10	1,226	1	5
	33,568	12	2	33,823	9	2	67,392	1	4
							£ 67,392	1	4

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE	£	s.	d.
To Expenditure in Year.			
Administration	22,530	19	4
Works of Maintenance	14,692	0	1
Improvement of Existing Works—			
General	11,074	16	0
Grant Earning	61,832	10	2
Execution of New Works—			
Grant Earning	2,790	16	7
Contributions to Internal Drainage			
Boards.	1,884	10	0
	114,805	12	2
Balances in hand carried forward.			
Administration	11,641	14	2
Execution of New Works	2,295	18	8
Contributions to Internal Drainage			
Boards	514	17	5
	14,452	10	3
	£ 129,258	2	5

for the Year ending 31st March, 1937.

INCOME.	£	s.	d.
By Balances in Hand brought forward.			
Administration	596	1	9
Works of Maintenance	2,596	3	8
Improvement of Existing Works	29,674	2	11
Execution of New Works	1,923	13	9
Contributions to Internal Drainage			
Boards	899	7	5
	35,689	9	6
Income in Year—			
Government Grants and Miscellaneous—			
Administration	400	3	9
Works of Maintenance	209	12	11
Improvement of Existing Works—			
General	5	2	1
Grant Earning	20,970	5	10
Execution of New Works—			
Grant Earning	929	14	10
	22,514	19	5
Precepts—			
Administration	33,176	8	0
Works of Maintenance	10,949	0	0
Improvement of Existing Works	19,533	6	8
Execution of New Works	2,233	6	8
Contributions to Internal Drainage			
Boards	1,500	0	0
	67,392	1	4
Balances overspent carried forward—			
Works of Maintenance	937	3	6
Improvement of Existing Works	2,724	8	8
	3,661	12	2
	£ 129,258	2	5

BALANCE SHEET at

£	73,920	6	7
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31st MARCH, 1937.

£	73,920	6	2
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