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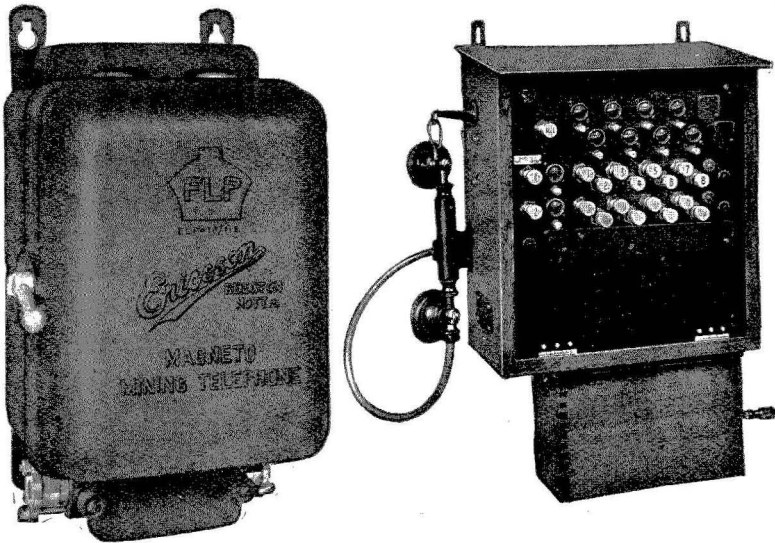
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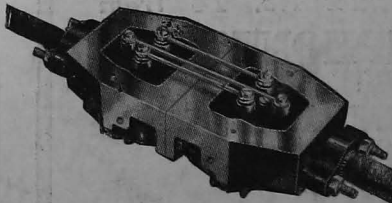
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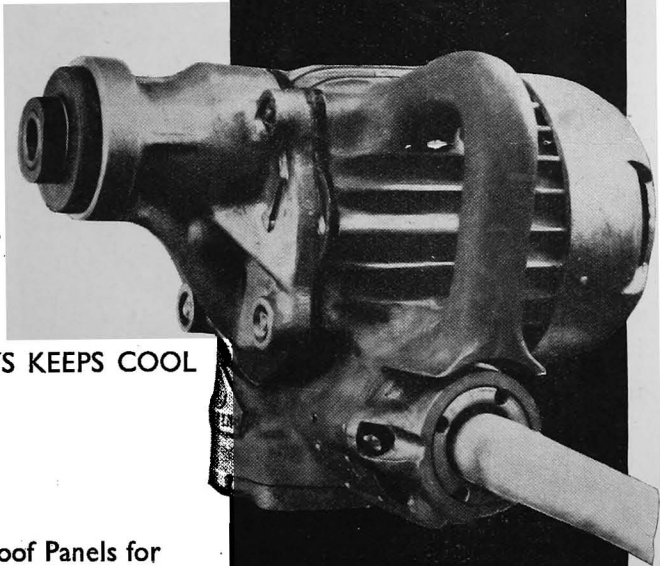
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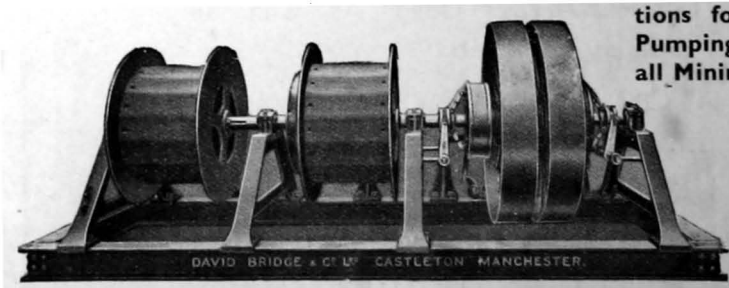
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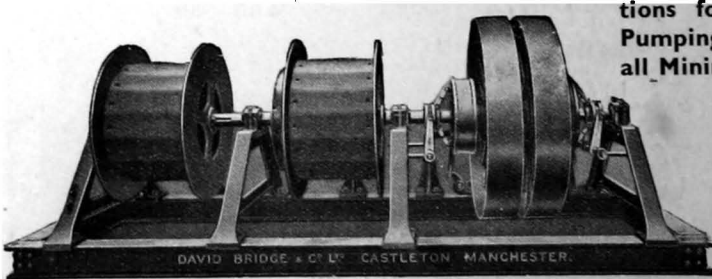
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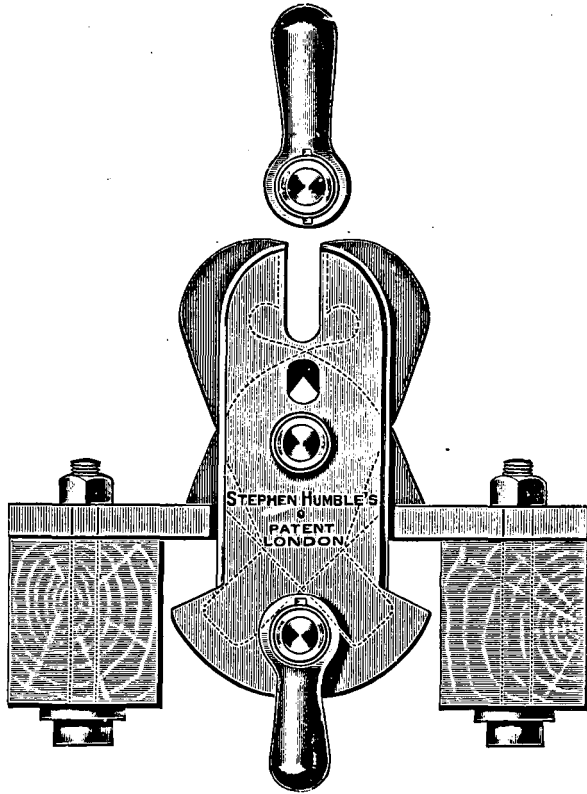
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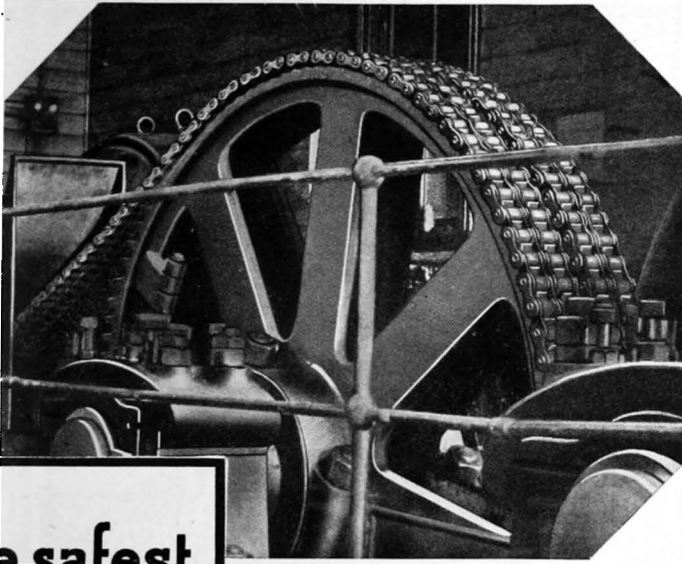
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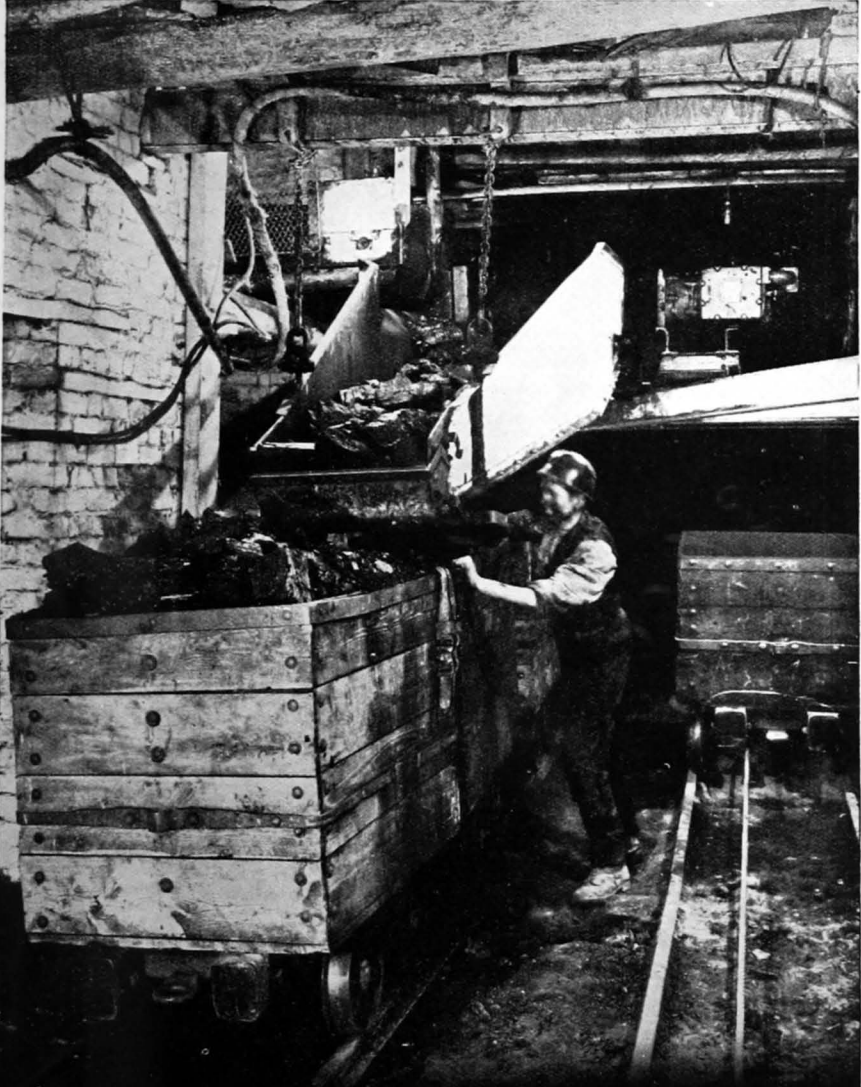


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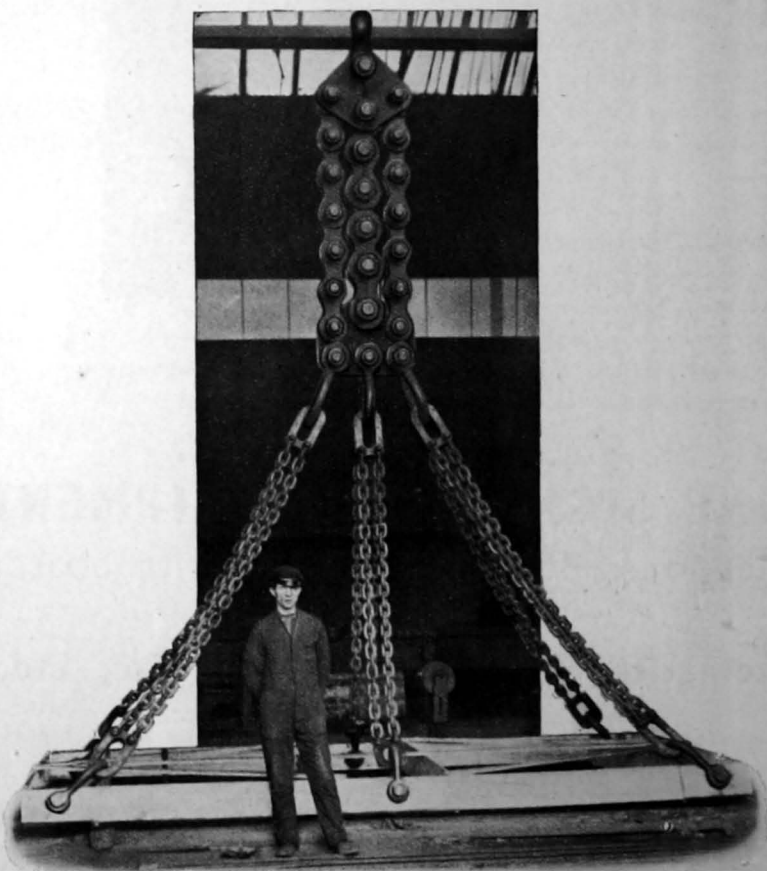
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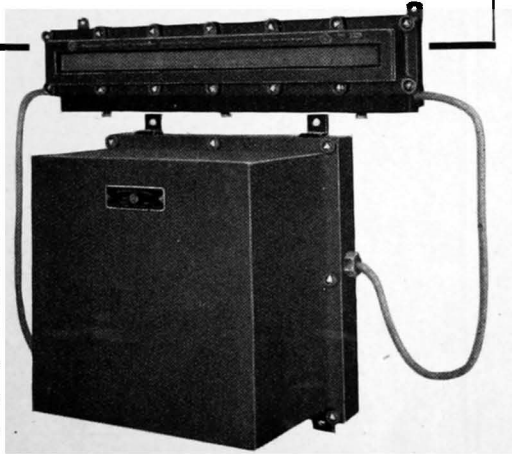


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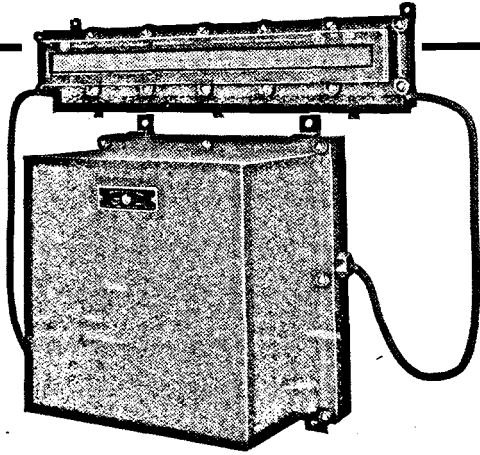
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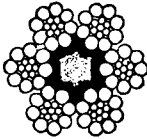
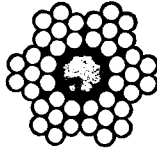
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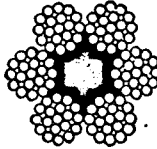
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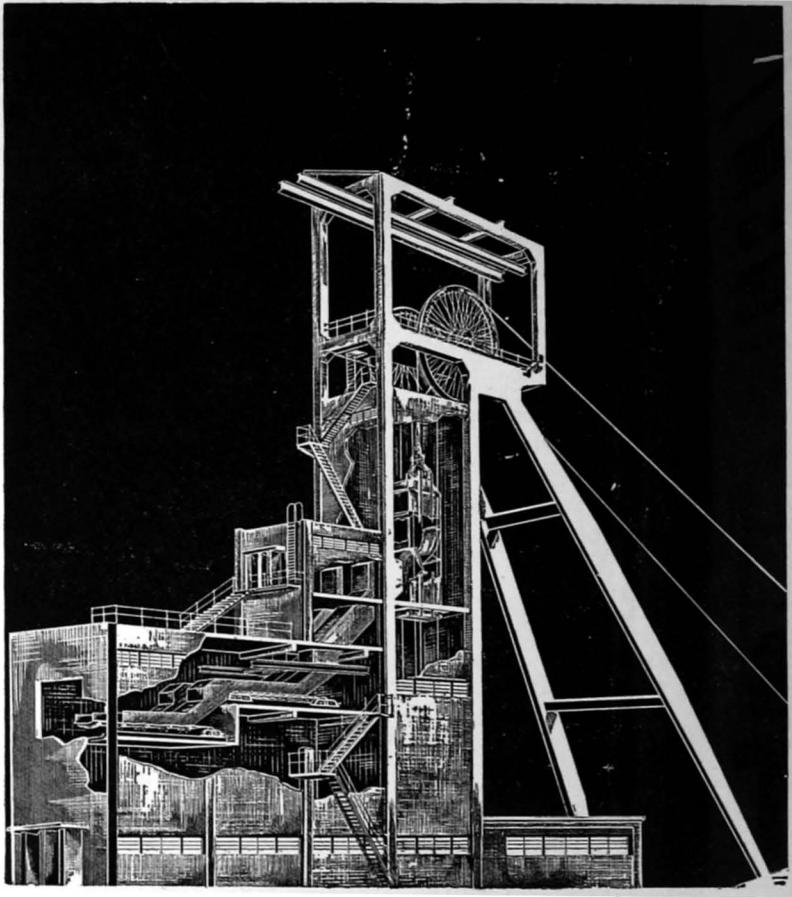
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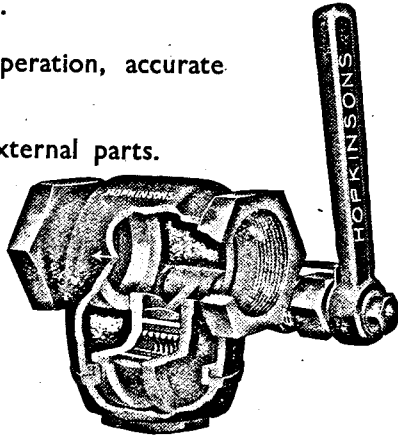
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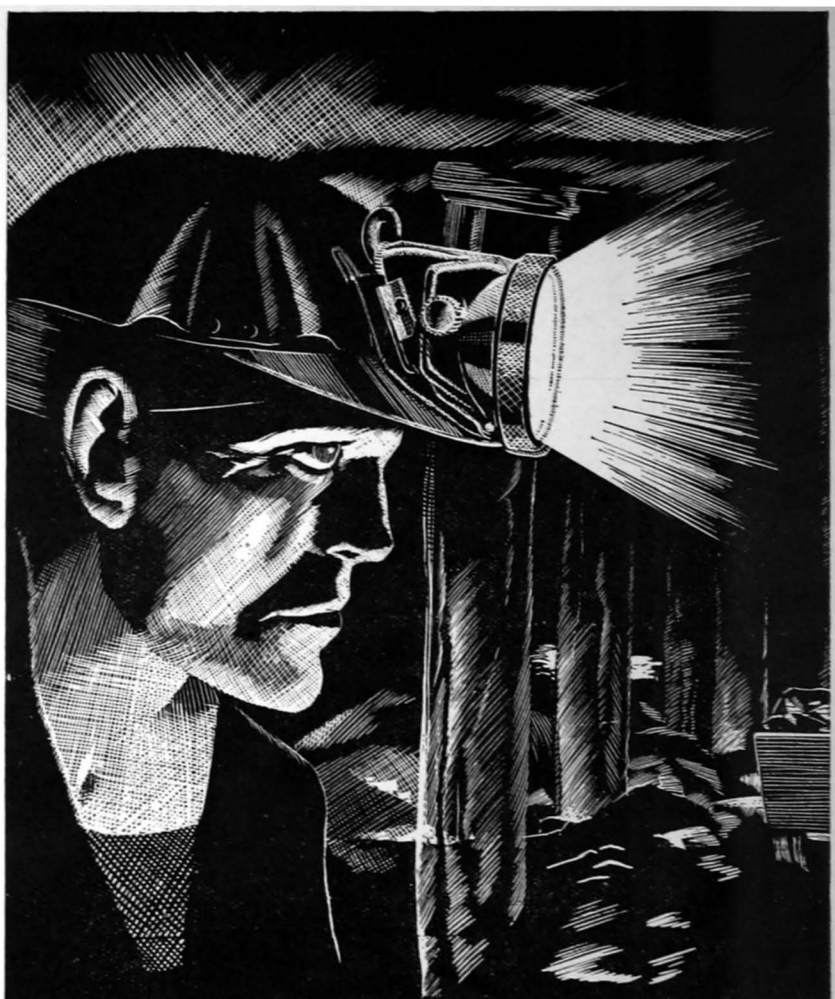


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SEVENTEENTH ANNUAL REPORT OF THE SECRETARY  
FOR MINES FOR THE YEAR ENDED 31st DECEMBER, 1937.

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PART I.

THE COAL MINING INDUSTRY IN 1937.

I. GENERAL REVIEW.

The end of the year saw the introduction of the Coal Bill, a comprehensive measure to provide for the unification of coal royalties under public ownership and control, for the furtherance of re-organisation in the coal-mining industry, and for the extension of that part of the 1930 Act from which authority for the coal marketing schemes is derived. The unification of coal royalties had been the declared policy of the Government since the General Election of 1935, and already before the introduction of the Bill a considerable amount of important ground had been covered in preparation. From an early stage negotiations had been in progress between the Government and a Committee representing a large majority of the owners of coal on the questions, first, how the amount of compensation to be paid in the event of the acquisition of the property should be arrived at, and secondly, what the amount should be. The result of those negotiations was reported to the House of Commons by the then Chancellor of the Exchequer, Mr. Chamberlain, on the 9th March, 1937. He reported that it had been found impossible to reach agreement on the amount of the compensation to be paid in the event of the statutory unification of royalties: he stated, however, that both parties were agreed that the proper basis of compensation would be the fixing of a global sum equivalent to the value of the whole property to be acquired, which would be divided proportionately among the various owners according to the relative values of their properties. He went on to announce that in those circumstances it had been agreed between His Majesty's Government and the Mineral Owners' Joint Committee that a Tribunal should be appointed to determine the value of the whole property concerned on the basis of a sale in the open market by a willing seller, and that both parties should be bound by the award in the sense that the owners on their side would accept it as the proper compensation if the Government proceeded with their proposals, and that the Government for their part, whilst they retained the right to abandon their proposals if the award were not acceptable to them, undertook that if they did not abandon them for that reason, they would not, without agreement with the owners, propose to Parliament any terms except those of the award.

The Tribunal consisted of Lord Justice Greene, Mr. Justice Clauson, and Lord Plender. On the 26th April the then Prime Minister informed the House of Commons that their award was to the effect that fifteen was the appropriate number of years' purchase to be applied to the figure which it had been agreed properly represented the average net annual income from royalties for the years 1928-34 inclusive, viz. £4,430,000; and that the compensation payable under the terms of the award would therefore be £66,450,000; he further announced that the Government had decided to accept the award and to introduce the necessary legislation as soon as possible. Subsequently, however, it became clear that the state of Parliamentary business would not permit the passage of a measure of such length and complexity during the Session then in progress, and on the 1st June announcements in that sense were made by Lord Halifax in the House of Lords and by the present Prime Minister in the House of Commons. They added, however, that an alternative form of procedure was possible which it was hoped would obviate any serious delay. They pointed out that the unification of coal royalties must inevitably involve a great deal of preliminary work, in particular the ascertainment of existing proprietary interests in coal and associated rights, and they stated that the Government had accordingly decided that this preliminary work should be proceeded with at once by means of a Bill to provide for the collection and registration of particulars concerning the units of separate ownership of coal and associated rights and of existing working leases.

The Coal (Registration of Ownership) Bill was accordingly introduced in the House of Lords on the 15th June and became law on the 30th July, 1937. The Act empowered the Board of Trade to register particulars of the existing ownership of the coal, the units in which it was owned, and the working rights and conditions attached to the property in each case. A provision was included to the effect that the costs reasonably incurred under the Act by owners of coal and other interested parties should be borne by the Board of Trade, provided that application for registration was made within six months from the date on which the Board of Trade's Rules of Procedure were published; this period could be extended by the Board of Trade if they were satisfied that good reason was shown.

Rules as to procedure with the scheduled prescribed forms were made by the Board of Trade on the 9th August, and a notice of such rules was published in the London and Edinburgh Gazettes on the 17th August, 1937. Up to the 16th October, 1937, only 41 applications for registration were received, but a considerable amount of work was done before that date in distributing forms and replying to numerous enquiries as to the method of application. After that time there was a steady flow of applications, and the number received up to the end of the year was 1,034.

The Coal Bill was introduced on the 10th November and received its Second Reading in the House of Commons on the 23rd November.\*

*World Coal Output.*—Bearing in mind the general increase in industrial activity and the increase of 22 million tons (18 per cent) in world coal exports (*see* page 7), it is surprising to find that the world coal output of approximately 1,280 million tons in 1937 was only about 5 per cent. greater than in the previous year. Nevertheless, the only higher figure on record is for the year 1929 when the output was about 2 per cent. greater.

Almost the whole of the increase took place in the European coalfields. In Germany (including the Saar) the output increased by 25½ million tons, in Great Britain by 12 million tons, in Poland by nearly 6 million tons and in Czechoslovakia by about 4½ million tons. Increases of nearly 1½ million tons and 1½ million tons were registered in the output of Belgium and the Netherlands respectively, while in France and the U.S.S.R. output declined by about 1 million tons each. The total output in the whole of Europe, exclusive of the U.S.S.R. and Spain, for which countries information is not available, increased by 51 million tons to 565 million tons.

In the U.S.A. in contrast to the year 1936, when the increase was greater than for any other individual country, the output in 1937 increased by only 1 million tons, to 442 million tons. The production in Japan for 1937 is not yet available, but it is clear from the statistics published for the period January–July that there was a considerable increase.

The following table shows the output during the last two years in the chief European and other important producing countries for which information is available :—

	<i>Output (Provisional).</i>		<i>Increase (+)</i>
	1936.	1937.	<i>or decrease (-).</i>
	Million	Statute Tons.	Per cent.
Great Britain . . . . .	228·45	240·41	+ 5·2
Germany (including Saar) ..	155·88	181·60	+16·5
U.S.S.R. (including lignite) ..	122·00	121·00	- 0·8
France .. .. .	44·51	43·62	- 2·0
Poland .. .. .	29·28	35·16	+20·1
Belgium .. .. .	27·43	29·21	+ 6·5
Netherlands .. .. .	12·60	14·10	+11·9
Czechoslovakia .. .. .	12·04	16·68	+38·5
U.S.A. . . . .	440·77	441·84	+ 0·2
Canada .. .. .	10·14	10·80	+ 6·5
Australia .. .. .	11·37	11·98	+ 5·4
British India .. .. .	21·40	22·21	+ 3·8
Union of South Africa ..	14·61	15·25	+ 4·4
Japan .. .. .	41·14	45·00 (esti- mated)	+ 9·4

So far as information is available, it is estimated that in 1929 stocks of coal and coke at European coal mines (excluding U.S.S.R.)

\* The Bill received the Royal Assent on 29th July, 1938.

amounted to nearly 10 million tons. At the end of 1931 they had increased to about 33 million tons but have since decreased to less than 12 million tons at the end of 1937 when they were about 20 per cent. less than at the end of the previous year.

*Coal Exports and Bunker Shipments from the Chief Exporting Countries.*—The international coal export trade improved considerably in 1937. As compared with the previous year, shipments of cargo and bunker coal increased by 22 million tons but were still 28 million tons or 16 per cent. less than in the peak year of 1929. Of this increase, the German share amounted to  $9\frac{1}{2}$  million tons; more than  $5\frac{1}{2}$  million tons were obtained by Great Britain and  $2\frac{2}{5}$  million tons by Poland. A striking increase was shown in the export trade of Czechoslovakia from less than  $1\frac{1}{2}$  million tons in 1936 to  $2\frac{1}{2}$  million tons in 1937. Holland increased its exports by about  $\frac{2}{3}$  million tons, the U.S.A. by  $2\frac{2}{3}$  million tons, and China and Manchukuo together by about  $\frac{1}{2}$  million tons.

Shipments from India increased by nearly  $\frac{4}{5}$  million tons, but it should be borne in mind that as from 1st April, 1937, the figures include trade with Burma (formerly classed as coastwise), and they are not therefore comparable with those for earlier years. After making allowance for this fact, however, shipments increased by about  $\frac{2}{5}$  million tons.

Of the remaining exporting countries, Belgium showed a decrease of  $\frac{2}{5}$  million tons, the U.S.S.R. of  $\frac{1}{2}$  million tons, South Africa of about  $\frac{1}{3}$  million tons and French Indo-China of about  $\frac{1}{5}$  million tons. From those countries for which information is readily available, the aggregate shipments amounted to more than 142 million tons.

Cargo and bunker coal shipments from the chief exporting countries during 1936 and 1937 were as follows:—

	<i>Exports (Cargo and Bunker Shipments).</i>	
	1936.	1937.
	Million Tons.	
Great Britain .. .. .	46.5	52.0
Germany .. .. .	28.2	38.0
France .. .. .	0.9	0.7
Belgium and Luxemburg .. .. .	4.7	4.2
Poland .. .. .	8.2	10.8
Netherlands .. .. .	3.5	4.2
Czechoslovakia .. .. .	1.3	2.2
U.S.S.R. .. .. .	1.8	1.3
India .. .. .	0.7	1.5*
Union of South Africa .. .. .	2.3	1.9
U.S.A. .. .. .	12.5	15.1
Japan .. .. .	3.1	3.0
China .. .. .	1.3	1.8
Manchukuo .. .. .	3.7	3.8
French Indo-China .. .. .	1.7	1.5

\* Including exports to Burma as from 1st April, 1937.

Total cargo and bunker coal shipments from these countries in 1929 and from 1933 to 1937 amounted to :—

Year.				Total Exports.* Million tons.
1929	..	..	..	170
1933	..	..	..	115
1934	..	..	..	122
1935	..	..	..	123
1936	..	..	..	120
1937	..	..	..	142

*Germany.*—Total German coal exports (including small quantities of bunkers supplied to foreign vessels) increased steadily from 22½ million tons in 1933 (after making the necessary adjustment for deliveries from the Saar) to 28½ million tons in 1936. In 1937 exports increased by 9½ million tons to 38 million tons or nearly 35 per cent. as compared with the previous year.

The expansion of German coal exports in 1937 was reflected in the figures of coal imports in all the principal importing countries of the world. Exports to France increased by more than 2 million tons, to Italy and Possessions by nearly 2 million tons, to Belgium and Luxemburg by 1½ million tons and to the Netherlands by almost ½ million tons. The aggregate exports to these countries accounted for more than two-thirds of the total German exports.

Exports to the Scandinavian and Baltic Sea markets increased by ½ million tons, to Southern Europe (excluding Italy) by more than 1 million tons, to countries in the Mediterranean Sea by nearly ¾ million tons and to North, Central and South America together by nearly ½ million tons.

The quantities exported to each group of markets during the years 1936 and 1937 are shown in the following table :—

	1936.	1937.	Increase.
	Million Tons.		Per cent.
Scandinavia and Baltic Sea .. ..	1·64	2·00	22·0
Central Europe .. ..	1·71	1·79	4·7
Southern Europe .. ..	6·81	9·95	46·1
Western Europe .. ..	15·79	20·75	31·4
British Mediterranean and North			
Africa .. ..	0·82	1·47	79·3
America .. ..	1·02	1·48	45·1

*Poland.*—Total Polish coal exports (including coal shipped as bunkers on foreign vessels) increased from 8½ million tons in 1936 to 10½ million tons in 1937 or an increase of 32 per cent.

Exports to Scandinavia and the Baltic Sea increased from 3½ million tons to 3¾ million tons, to Italy from less than 1 million tons

\* To make a true comparison of world coal exports adjustment should be made for the Saar. Deliveries from the Saar to France amounted to 4·9 million tons in 1929, 3·9 million tons in 1933, 4·2 million tons in 1934 and approximately 2 million tons in both 1935 and 1936. Saar deliveries to Germany were approximately 1 million tons in each of the years 1929, 1933 and 1934.

to  $1\frac{2}{3}$  million tons and to Western Europe from 2 million tons to  $2\frac{2}{3}$  million tons.

There was a remarkable increase in the quantity of coal shipped at Polish ports for use as bunkers on foreign ships, the figures increasing by  $\frac{1}{2}$  million tons to more than 1 million tons.

*British Coal Output.*—The progressive increase in output since the slump years of 1932 and 1933 was accelerated in 1937, when it amounted to  $240\frac{1}{2}$  million tons. The increase was 12 million tons over 1936 and  $33\frac{1}{3}$  million tons over 1933, but total production was  $3\frac{1}{2}$  million tons below that of 1930.

For the last few years production has been increasing despite a decrease in the volume of foreign shipments, but in 1937 it is satisfactory to be able to record an increase in output in practically all exporting districts as well as in those producing mainly for home consumption.

The output in the chief exporting districts in 1937 amounted to  $117\frac{3}{4}$  million tons as compared with  $111\frac{2}{3}$  million tons in 1936 and  $103\frac{2}{3}$  million tons in 1933; the figure for 1930 was  $125\frac{3}{4}$  million tons. The greatest recovery was in South Wales with an increase of nearly 4 million tons over 1936 and in Durham with an increase of nearly  $2\frac{1}{2}$  million tons; in both districts, however, output was well below the 1930 level.

In the remaining districts, which produce mainly for the home market, output has increased from  $103\frac{1}{2}$  million tons in 1933 to  $116\frac{3}{4}$  million tons in 1936 and  $122\frac{2}{3}$  million tons in 1937; moreover the 1937 figure was  $4\frac{1}{2}$  million tons greater than in 1930. As compared with 1936, practically the whole of the increase of 6 million tons was almost equally shared by Yorkshire and the district of Derby, Nottingham and Leicester.

*British Coal Exports.*—In 1937 there was a substantial increase in the total quantity of coal shipped abroad (including foreign bunkers and the coal equivalent of the coke and manufactured fuel exported). The figure had declined from 57 million tons in 1934 to  $55\frac{1}{2}$  million tons in 1935, with a further sharp fall to  $50\frac{1}{2}$  million tons in 1936; in 1937 it rose to  $56\frac{1}{2}$  million tons, an increase of 12 per cent.

There has been a continuous decline in foreign bunker shipments for many years and the quantity in 1937 was only  $11\frac{3}{4}$  million tons as compared with 12 million tons in 1936. The coal equivalent of coke and manufactured fuel exported increased by  $\frac{1}{2}$  million tons to a total of  $4\frac{1}{2}$  million tons.

Exports of coal (cargo shipments) increased from  $34\frac{1}{2}$  million tons in 1936 to  $40\frac{1}{2}$  million tons in 1937, the highest figure since 1931. The recovery of the Italian trade, following on the conclusion on 6th November, 1936, of the Anglo-Italian Commercial and Payments Agreements,\* accounted for nearly 37 per cent. of the increase over 1936. Shipments to Italy in 1937 amounted to  $2\frac{1}{2}$  million tons as

\* Cmd. 5345 and 5346.

compared with only 60,000 tons in 1936, while in the early months of 1938 there was a further substantial improvement in this trade. Coal cargo shipments to Spain in 1937 were still affected by the Civil War and showed little movement from the 1936 level. Shipments to Belgium and France in 1937 rose by over 2 million tons. Coal cargo exports to Germany in 1937 were higher than in 1936 by nearly a quarter of a million tons, the trade continuing to benefit substantially from the provision of the Exchange of Notes of April, 1933.

The increase in exports generally in 1937 as compared with 1936 was almost entirely due to the improvement in the quantity shipped as cargo to European and Mediterranean countries. This increase, amounting to  $5\frac{1}{2}$  million tons, reflected the general industrial recovery which took place in Europe during the year, and was accompanied by a general slackening of import restrictions in Western Europe. To other destinations there was a small net increase in spite of a decline in exports to North and Central America, of which Canada accounted for  $\frac{1}{2}$  million tons.

In 1936, 33·9 per cent. of all coal exported was sized coal. In 1937 this proportion had fallen to 30·3 per cent. owing to the increased proportion of anthracite and steam smalls and unscreened coal exported.

The Bristol Channel Ports accounted for  $3\frac{1}{2}$  million tons of the total increase in foreign shipments, the Humber Ports for  $1\frac{1}{2}$  million tons and the North East Coast Ports for 1 million tons. The volume of shipments from the Scottish and the North West Coast Ports was materially the same as in the previous year.

The following table shows the British proportion of the world coal production and exports :—

*Estimated World and Great Britain coal production and exports (including bunkers)*

Year.	World Production (Coal and Lignite).*	G.B. Production (Coal).	G.B. Percentage of World Production.		G.B. Percentage of World Exports.	
			World coal exports. †	G.B. coal exports.	World Exports.	World Exports.
	Million Tons.	Million Tons.	%	Million Tons.	Million Tons.	%
1913	1,237	287	23·2	171	94	55·0
1924	1,222	267	21·8	150	79	52·7
1929	1,375	258	18·8	170	77	45·3
1933	1,036	207	20·0	115	53	46·1
1934	1,126	221	19·6	122	53	43·4
1935	1,155	222	19·2	123	51	41·5
1936	1,263	228	18·1	120	46	38·6
1937	1,333	240	18·0	142	52	36·6

\* Lignite in terms of coal—9 tons of lignite taken as equal to 2 tons of coal.

† See footnote † page 7.



World production in 1937 increased by 70 million tons as compared with 1936, and was 96 million tons more than in 1913. Production in Great Britain in 1937 showed an increase of 12 million tons over 1936 but was 47 million tons less than in 1913.

World coal exports increased by 18 per cent. in 1937 as compared with 1936. Although British exports increased by about 6 million tons during the same period, the Great Britain share of the world coal export trade showed a decrease of 2 per cent.

*Trade Agreements.*—The coal-cattle arrangement with Eire, which first commenced to operate in 1935, and which led to the recovery by the United Kingdom of practically the whole of the Free State market for coal, was again renewed in 1937. Exports of United Kingdom coal to Eire in 1937 amounted to 2,577,707 tons as compared with 2,459,158 tons in 1936 and 1,039,983 tons in 1934 (the year before the arrangement came into force).

In April, 1938, a Trade Agreement\* was concluded between the United Kingdom and Eire Governments and the coal-cattle arrangement ceased to operate. Under the Trade Agreement the Government of Eire, with a view to securing the position as existing in 1937, of United Kingdom coal, coke and manufactured fuel in the Eire market, undertook to abolish the then existing coal import licensing system and to impose a duty of not less than 3s. per ton on coal, coke and manufactured fuel of other than United Kingdom origin, that of U.K. origin being admitted free of duty.

Reference has already been made to the improvement in trade with Italy under the Commercial and Clearing Agreements of November, 1936. By the end of 1937 the bulk of the arrears of commercial debts to be liquidated under the Clearing Agreement had been paid off, and Amending Agreements† were negotiated and concluded on 18th March, 1938. The principal point of interest to the coal trade is the provision under the revised clearing procedure of a separate sub-account from which payment is made for coal exported to Italy, this sub-account being credited with 46 per cent. of the sterling proceeds of Italian exports to the U.K. It is hoped that this will permit of a considerable increase of coal exports to Italy during this year.

The Agreements with Denmark, Norway, Sweden, Finland, Iceland, Latvia, Lithuania, Estonia, Argentine, Uruguay and Germany continued in operation throughout the year. Shipments of United Kingdom coal to these countries amounted in 1937 to 16,158,935 tons, or 40·0 per cent. of total exports as compared with 14,529,053 tons and 42·1 per cent. respectively in 1936.

*International Agreements—Regulation of the Export Market.*—There was some indication during the year that the problem of international regulation of the coal export market was receiving more serious consideration than for some time past. In this connection it is satisfactory to record that negotiations for the revision

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\* Cmd. 5728.

† Cmd. 5694 and 5695.

of the confidential agreement of 1934 between the United Kingdom and Polish Coal Industries were carried through to a successful conclusion, the new Agreement which was reached in December, 1937, incorporating such modification of the original instrument as were judged necessary by the signatories in order to bring it into line with changed conditions in the European coal export market.

During the year, an International Convention was entered into between the majority of coke producers in Germany, Great Britain, Holland, Belgium and Poland. This Convention, which covers gas coke as well as metallurgical coke, provides for the sharing of the export coke markets between the signatories to the Convention according to certain agreed percentages. Minimum prices for export coke are also fixed from time to time.

*Coal used at Home for Industrial, Transport, Domestic and all other purposes.*—The quantity of coal available for consumption for all purposes in Great Britain amounted to 181½ million tons which was nearly 6 million tons more than during the previous year and 8½ million tons more than in 1929. The figure had declined steadily from 173½ million tons in 1929 to 148½ million tons in 1933. Since then the recovery has been rapid and continuous.

The steady increase during recent years in the quantity of coal consumed at gas and electricity undertakings is particularly striking. The combined figure for 1933 was 26½ million tons; by 1937 it had risen to 33 million tons, an increase of 6 million tons of which electricity undertakings accounted for 4 million tons. The progressive recovery since 1932 in the iron and steel trades was maintained in 1937, the consumption of coal having increased by 2½ million tons or over 10 per cent. as compared with 1936.

*Coastwise Coal Shipments.*—Cargo shipments in 1937 amounted to 24·2 million tons as compared with 23·7 million tons in 1936 and 22·0 million tons in 1935. The improvement was most marked in shipments from Bristol Channel ports, but as compared with 1936 all groups of ports except the east coast of Scotland recorded increases. There was an increase of ½ million tons in the quantity delivered to Thames Ports which accounted for 65 per cent. of total shipments; the figure for 1937 was 15½ million tons as compared with 11½ million tons in 1931.

There has been little change in the amount of coal shipped as bunkers.

*Railway Rates.*—The standard charges for the conveyance of coal, coke and patent fuel were reviewed by the Railway Rates Tribunal who decided that an increase of 5 per cent. should operate from the 1st October, 1937. The method of its application was an increase of 1*d.* on existing charges of 10*d.* and not exceeding 2*s.* 5*d.*; of 2*d.* on charges over 2*s.* 5*d.* and not exceeding 4*s.* 1*d.*; of 3*d.* on charges over 4*s.* 1*d.* and not exceeding 5*s.* 10*d.*; and thereafter an increase of 1*d.* for each additional 1*s.* 8*d.* in the existing chargeable rate. Charges of less than 10*d.* per ton were not increased.

*Railway Freight Rebate Scheme.*—On the 1st January, 1937, the Railway Freight Rebates (Amended) Scheme came into operation under the provisions of the Railway Freight Rebates Act, 1936. The Act discontinued from that date the rebate on coal, coke and patent fuel delivered to iron and steel works, and the Scheme fixed the rebate on coal, coke and patent fuel for export (including coal shipped as foreign bunkers or for the use of fishing vessels) at  $1\frac{1}{2}d.$  per ton and 20 per cent. of the remainder of the carriage charges. The rebate operative during the preceding year had been  $1\frac{1}{2}d.$  per ton and  $27\frac{1}{2}$  per cent. of the remainder of the carriage charges.

*Coal Prices. (a) At Mine.*—The average net selling value at the mine of all saleable coal raised, including mine consumption and miners' coal, was 15s.  $2\frac{1}{4}d.$  per ton as compared with 14s.  $0\frac{1}{4}d.$  per ton in 1936, and was higher than in any of the past ten years. The majority of the more important coal producing districts showed increases of 1s. per ton or more. For Scotland the increase was as much as 1s.  $9\frac{1}{2}d.$  per ton, but for Lancashire and Cheshire it was  $10d.$  per ton and for North Derbyshire only  $7\frac{3}{4}d.$

The trend of British coal prices at the mine is compared below with the trend of values in the chief coal-producing countries for which information is available :—

	1930.	1933.	1934.	1935.	1936.
Great Britain.. .. .	100	95·7	94·7	95·7	103·1
Germany (excluding Saar) ..	100	71·2	69·9	69·6	70·5
France .. .. .	100	72·5	70·1	69·1	75·2
Belgium .. .. .	100	61·8	55·2	61·6	68·9
U.S.A.					
Anthracite .. .. .	100	81·7	83·7	78·9	80·8
Bituminous .. .. .	100	78·2	102·7	103·7	103·7
India .. .. .	100	79·4	73·4	72·8	71·0
Japan .. .. .	100	97·7	111·2	116·3	130·1
Czechoslovakia .. .. .	100	89·9	85·2	83·1	83·8
Union of South Africa ..	100	94·9	90·2	90·9	92·6

These results are calculated from values in terms of national currencies and, although the values given by the various countries are not always arrived at in the same manner, the figures shown above may be said to afford a fairly reasonable comparison of the trend of mine prices in the individual countries.

The slight improvement shown in 1935 was more pronounced in 1936. For the first time since 1929 the value per ton of German coal showed an increase over that for the preceding year and the average price at the mine of French and Belgian coal increased by 9 per cent. and 10 per cent. respectively. The prices in these countries, however, varied between 25 and 31 per cent. below those of 1930. On the other hand, the British price increased by nearly 8 per cent.

In 1937 the average price of coal at the mine in Great Britain increased further by  $8\frac{1}{2}$  per cent. as compared with the price in 1936, and was nearly 12 per cent. higher than in 1930. Particulars for other countries are not yet available in respect of the year 1937.

(b) *Export Coal Values.*—The following table shows the movement of British coal export prices since 1930 :—

Year.	Coal (including Anthracite.)	Anthracite.	SER
	s. d.	s. d.	
1930	16 8	26 7	
1933	16 1	28 10	
1934	16 1	28 3	
1935	16 4	28 7	
1936	17 0	29 0	
1937	18 8	25 6	

The average declared value per ton f.o.b. of all British coal exported, which had declined from 16s. 8d. in 1930 to 16s. 1d. in 1933 and 1934, improved slightly in 1935, while there was a marked increase to 17s. in 1936. The upward tendency was accentuated by the change in market conditions in 1937, when the figure reached 18s. 8d. per ton. For bituminous coal alone, which accounted for about 90 per cent. of the total exported, the average price rose from 15s.  $8\frac{1}{2}$ d. per ton in 1936 to 17s.  $11\frac{1}{2}$ d. per ton in 1937, an increase of 2s. 3d. per ton; on the other hand the average price of anthracite fell by 3s. 6d. per ton. Averages are, however, liable to be deceptive and the figures require analysis.

As regards bituminous coal, there was an increase in the value of all classes; the increase for steam and gas coal, which together accounted for the greater part of the exports, was at the average level of 2s. 3d. per ton, and for household coal and "other sorts" of coal the increases were 1s. 3d. and 2s. 11d. per ton respectively.

The average drop of 3s. 6d. per ton for all anthracite exported is quite a different matter, as will be seen from the figures below :—

Kind of Anthracite.	1936		1937	
	Quantity Exported.	Average Value per Ton f.o.b.	Quantity Exported.	Average Value per Ton f.o.b.
	Tons.	s. d.	Tons.	s. d.
Small ..	497,000	8 2	1,093,000	10 1
Sized ..	2,056,000	32 0	1,997,000	31 3
Large ..	768,000	34 4	716,000	33 1
Total ..	3,321,900	29 0	3,806,000	25 6

The average value per ton f.o.b. of large anthracite exported fell by 1s. 3d. and sized by only 9d. while smalls actually increased by 1s. 11d. The apparent decline of 3s. 6d. per ton in the average value of all anthracite exported was largely due to the inclusion in 1937 of a much larger proportion of smalls at an average value per ton far below that of the whole group.

A comparison is shown below of the trend of British coal export prices and export values in certain countries abroad :—

	1930.	1933.	1934.	1935.	1936.	1937.
Great Britain..	100	96·5	96·5	98·0	102·0	112·0
Germany*	100	54·8	47·7	45·6	45·2	53·6
Poland ..	100	68·3	59·6	54·9	57·9	62·7
Netherlands ..	100	72·4	63·3	60·0	60·6	76·5
Belgium ..	100	76·7	69·9	77·7	82·3	97·1
U.S.A.						
Anthracite ..	100	91·0	88·9	85·3	85·4	80·5
Bituminous ..	100	84·9	99·8	97·1	97·4	99·8

\* Including coal exports from the Saar since 18th February, 1935.

Export prices as a whole made a distinct upward movement in 1937. The average price of both German and Belgian coal exports was about 18 per cent. greater than in 1936 while British coal export prices increased by only about 10 per cent. The greatest increase, however, took place in the average price of coal exported from the Netherlands where the price increased by more than 25 per cent. as compared with 1936 but was still about 24 per cent. less than the price in 1930.

German export prices, in terms of Reichsmarks, have fallen by more than 46 per cent. since 1930 and Polish prices, in terms of Zlotys, by over 37 per cent. while British prices have shown an increase of 12 per cent.

*Amalgamations.*—One scheme was referred to the Railway and Canal Commission and confirmed and seven further schemes completed during the year were certified under Section 13 (7) of the Coal Mines Act, 1930 without reference to the Court. Particulars of these schemes, and of fifteen amalgamations which were accomplished without recourse to the Coal Mines Reorganisation Commission or to the Board of Trade, are given in the Tenth Report by the Board of Trade under Section 12 of the Mining Industry Act, 1926, published in March, 1938 (Cmd. 5701). Since the passing of the Mining Industry Act, 1926, 79 schemes (reduced by subsequent amalgamations to 56) have been carried through, affecting pits or levels employing about 301,000 workers.

*Employment.*—There was a steady increase in employment at the mines throughout the year, the number of persons employed rising from 771,200 at the end of 1936 to 802,100 at the end of 1937, an increase of 30,900. The average number of persons employed during 1937 was 791,700 or about 24,600 more than in the previous year, but 139,600 less than in 1930. The number of manshifts worked per person employed was 270 or 8 more than in 1936.

The improvement in the regularity of work, which has been continuous over the past few years was maintained during 1937. The average number of days on which coal was wound at the pits was 266, or 13½ days more than in 1936, and 23 days more than in 1930.

Having regard to the number of persons employed and the number of days on which coal was wound, the total volume of employment in 1937 was nearly 9 per cent. greater than in 1936, but 7 per cent. less than in 1930.

*Use of Machinery Below-ground.*—Mechanical mining at coal mines in this country has developed rapidly during the last ten years, and particularly during the last half of the decade. Greater advance has been made during the period in the mechanical conveyance of coal than in the cutting of coal by machinery, but the former is a more recent development of mechanical mining and has, therefore, had the opportunity of making quicker progress.

The number of mechanical conveyors in use has increased from 2,856 in 1928 to 7,300 in 1937; the figure for 1936 was 6,727. There has been a great increase in the proportion of machines driven by electricity; 43 per cent. of the total number of machines were electrically driven in 1928 and 58 per cent. in 1937. The total quantity of coal conveyed in 1928 was 28 million tons, in 1936, 109 million tons and in 1937, 123 million tons; the proportion conveyed of the total saleable output rose from 12 per cent. in the former year to 51 per cent. in the latter; in 1936 the figure was 48 per cent.

The number of coal-cutting machines in use has increased since 1928 from 7,131 to 7,600 in 1936 and to 7,781 in 1937; here again electricity has supplanted compressed air, the proportion driven by electricity of the total number of machines in use having increased from 50 per cent. in 1928 to 64 per cent. in 1937. The quantity of coal cut by machinery in 1928 was 61 million tons or 26 per cent. of the total saleable output; the comparable figures for 1936 were 125½ million tons and 55 per cent. and they increased to 137 million tons and 57 per cent. in 1937.

The quantity of mineral dealt with per machine, both by mechanical conveyors and coal-cutting machines has been greatly increased, and as regards the latter, has been more than doubled. The quantity of coal conveyed per machine has risen from 9,800 tons in 1928 to 16,800 tons in 1937, and the quantity of coal cut per coal-cutting machine from 8,600 tons to 17,600 tons.

Table 44 of the Statistical Appendix gives details of the use of machinery below-ground for the individual coalfields.

The progressive increase in the use of pneumatic picks which has been shown over a number of years was continued in the year under review. The number in use for ripping and similar work has increased from 3,450 in 1936 to 3,824 in 1937, in which year it was nearly three times as many as in 1928, while picks used for coal-getting have increased from 6,464 in 1936 to 7,621 in 1937, or eight times as many as in 1928. Of the 7,621 pneumatic picks in use in 1937 for getting down coal 1,281 were used in conjunction with coal-cutting machines, an increase of 90 over the previous year. The quantity of coal dealt with by these picks has risen from little more

than one million tons in 1928 to  $11\frac{3}{4}$  million tons in 1936 and to  $13\frac{3}{4}$  million tons in 1937.

Pneumatic picks are most extensively used in the districts of Durham, Lancashire and Cheshire, Yorkshire and South Wales and Monmouthshire. These districts accounted for 90 per cent. of all the coal dealt with by this means and a similar percentage of the total number of picks in use for all purposes.

Steady progress has also been made in the use of drills for boring shot-holes, the number having increased from 5,504 in 1928 to 6,857 in 1935. As stated in my last report an attempt was made to collect this information on a different basis for the year 1936 which resulted, unfortunately, in some duplication of figures; particulars for that year were, therefore, not comparable with previous years. The form of return for the collection of these particulars was again revised for the year 1937, and the result, which is more satisfactory, shows that there were 7,747 drills used at mines during the year, an increase of 890 over 1935.

As previously mentioned, the expansion of mechanical conveying and loading below-ground at coal mines in the past few years has been rapid; this applies particularly to the tonnage dealt with by face and gate conveyors worked together. The total tonnage mechanically conveyed increased from 109 million tons in 1936 to 123 million tons in 1937, of which nearly 80 million tons were carried by face and gate conveyors as compared with 67 million tons in 1936; the figures for face conveyors only, being 43 million tons and 42 million tons respectively. It will be seen that there has been a decline in the proportion of coal dealt with by face conveyors only, from 38 per cent. in 1936 to 35 per cent. in 1937, while the output of coal dealt with by face and gate conveyors together has increased from 62 per cent. to 65 per cent. in 1937. The details for each year since 1930, the first year for which particulars were recorded in detail, are given in the following statement:—

Year.	By Face Conveyors.		By Face and Gate Conveyors.		Total Tonnage conveyed mechanically.	Pro-portion of Total Output.
	Direct into Tubs.	With Gate-end Loaders.	Direct into Tubs.	With Loaders.		
	1,000 Tons.					
1930	17,663	10,632	12,784	1,416	42,495	17
1931	17,527	11,351	16,966	1,464	47,308	22
1932	17,858	12,847	20,676	1,285	52,666	25
1933	19,383	15,010	26,140	1,623	62,156	30
1934	20,699	18,576	39,772	2,446	81,493	37
1935	20,666	20,710	52,462	1,773	95,611	43
1936	19,661	22,304	64,432	2,921	109,318	48
1937	19,946	23,157	77,019	2,693	122,815	51

## 2. FUEL TREATMENT AND UTILISATION.

*Committee on Oil from Coal.*—In view of the great public interest which has been manifested in recent years in the question of the home-production of oil from coal and other indigenous substances, particularly in relation to the problem of fuel supplies in time of war, the Government announced on 26th April, 1937, its decision to appoint a Sub-Committee of the Committee of Imperial Defence to examine the whole question. The Terms of Reference of the Sub-Committee were as follows:—

“ To consider and examine the various processes for the production of oil from coal and certain other materials indigenous to this country, and to report on their economic possibilities, and on the advantages to be obtained by way of security of oil supplies in emergency.”

and its constitution:—

Viscount Falmouth (Chairman).  
 Sir Amos L. Ayre, O.B.E.  
 Mr. Arthur E. Cutforth, C.B.E.  
 Professor A. C. G. Egerton, F.R.S.

The Committee completed its work before the end of the year, and its report, excluding confidential matter, was published on the 15th February, 1938, as Command Paper 5665. The following is a summary of the recommendations of the Committee as contained in the published report:—

### I. *Extension for further period of Guaranteed Preference.*

That the present guaranteed preference of 4*d.* per gallon on motor spirit should be raised to 8*d.* and to be operative for 12 years from 1938; the guarantee being extended to diesel oil for use in road vehicles, the benefit of the preference being available, as at present, equally to all processes.

Proposals were made by the Committee for effecting a decrease in the amount of the guaranteed preference in the event of an increase in the c.i.f. values of imported motor spirit or gas oil by more than a specified amount over the values in 1937 or if the home production exceeded a certain percentage of the total consumption of these products. Particulars of these proposals are given in paragraphs 272 and 275 of the Report.

### II. *Low Temperature Carbonisation.*

(1) That assistance to this industry should be limited to participation in the benefits to be derived from the guaranteed preference; the grant of direct financial assistance for the establishment of further plants cannot be justified.

(2) That the facilities provided by the Department of Scientific and Industrial Research for carrying out, free of charge, tests of low temperature carbonisation plants should be continued; and extended to cover all technical points.



### III. Synthetic Processes.

That it would be of considerable advantage if the establishment of a plant to work the Fischer process could be secured (by private enterprise); with the possibility of some Government financial assistance for carrying out approved items of research work.

### IV. Scottish Shale Oil Industry.

That the grant of the further guaranteed preference proposed would be of great assistance in encouraging the development of this industry.

### V. Research.

In the body of the Report there is a recommendation on the importance of continuing research on an adequate scale.

#### *Production of Oil Products from Coal and other Indigenous Materials.*

##### (1) Production of Light Oils.

The information collected under the provisions of the British Hydrocarbon Oils Production Act, 1934, in respect of the year 1937, shows that the total production of refined motor spirit from indigenous materials reached 100 million gallons for the first time. This is an increase of nearly 9 per cent. over the previous year and 85 per cent. over the 1934 figure. Other refined light oils were also produced comprising *inter alia* 90's benzole, 90's toluole, xylene, solvent and heavy naphtha, pure benzene, pure toluene and pure xylene. The total production of refined products was nearly 115 million gallons, compared with 105½ million gallons in 1936. The following table shows the sources of supply and the production in the years 1934 to 1937:—

	1934.	1935.	1936.	1937.
(i) Refined motor spirit* (including motor benzole)	Million Gallons.			
(a) From coal, coal tar and coal tar oils:				
High Temperature Carbonisation:				
At Coke Ovens .. .. .	24·4	26·2	30·1	34·5
At Gas Works .. .. .	7·4	8·6	10·0	10·0
Low Temperature Carbonisation .. .. .	0·5	0·7	0·8	1·0
Tar and Tar Oil Distilleries and Refineries .. .. .	7·4	9·7	11·1	11·8
Hydrogenation .. .. .	—	20·8	33·3	35·0
(b) From Shale .. .. .	14·3	10·2	6·7	7·7
Total refined motor spirit	54·0	76·2	92·0	100·0
(ii) Other refined light oils .. .. .	10·1	12·5	13·5	14·9

\* Practically the whole of the motor spirit shown as produced at coke ovens, gas works and tar and tar oil distilleries and refineries was motor benzole.

The output of refined motor spirit obtained from coke oven gas (and from tar where such was distilled at the coke ovens) increased in 1937 by 14·5 per cent., almost the same percentage increase as in the previous year. There was an increase of 1·9 million tons in the quantity of coal carbonised owing to the continued expansion of the iron and steel industries and this again largely accounted for the increased spirit production, as in the previous year. Almost all the gas made at coke ovens is scrubbed for crude spirit; on the basis of coal carbonised, those which extracted the benzole represented 97·9 per cent. of the total. The average yield of crude benzole thus obtained per ton of coal carbonised at those coke ovens where spirit was extracted was 3·00 gallons, compared with 3·01 gallons in 1936.

The output of refined motor spirit obtained at gas works (from the gas and from such tar as was distilled at the works) increased by only 0·7 per cent., compared with an increase of 15·3 per cent. in 1936 over 1935. Benzole extraction plants were installed at only a few additional gas works in 1937. On the basis of coal carbonised at gas works, those which took out the benzole from the gas represented 51·7 per cent. against 47·3 per cent. in 1936. The average yield of crude benzole thus obtained per ton of coal carbonised by those undertakings which extracted spirit decreased from 2·24 gallons in 1936 to 2·21 gallons in 1937.

The tar and tar oils treated at distilleries for the recovery of motor spirit, etc., are supplied from coke ovens and gas works. Many of these distilleries also refine the crude benzole obtained by gas stripping at coke ovens and gas works.

The output of petrol from the hydrogenation plant at Billingham increased from 33½ million gallons in 1936 to over 35 million gallons in 1937, the second complete calendar year of operation, while the output of motor spirit (including naphtha) by the Scottish shale oil industry increased by one million gallons.

## (2) Production of Heavy Oils.

The information supplied voluntarily by those who were required to furnish particulars of the production of light oils shows that in 1937, 114 million gallons of creosote and other heavy oil were produced in this country from coal tars obtained from the carbonisation of coal and from the distillation of shale. This figure compares with 100 million gallons in 1936, 93 million gallons in 1935, and 90 million gallons in 1934.

*Low Temperature Carbonisation.*—In 1937, 13 low temperature carbonisation plants were in operation on a commercial or semi-commercial scale, as compared with 15 in 1936. The difference is accounted for by the fact that of the four plants which carbonised mixtures of pulverised coal and tar or oil in 1936, one closed down towards the end of that year, while at another the process was modified to the treatment of tar only.

The following table shows the quantities of coal distilled at low temperature carbonisation plants and the yields of products obtained for the four years 1934-1937 :—

	Unit.	1934.	1935.	1936.	1937.
(i) Total Quantities.					
Coal distilled ..	Tons	284,242	327,112*	364,305*	480,827*
Products :					
Semi-coke ..	Tons	220,793	260,358	287,133	376,164
Tar .. ..	Gallons	4,693,832	5,298,404	6,339,786	8,064,725
Gas† .. ..	1,000cu.ft.	1,479,900	1,658,006	2,043,016	2,216,676
Crude Spirit from Gas ..	Gallons	767,438	878,079	1,095,799	1,359,430
(ii) Production per ton of throughput for processes which distilled coal only.					
Semi-coke ..	Cwts.	15.5	15.9	15.8	15.6
Tar .. ..	Gallons	16.5	16.2	16.9	17.1
Gas .. ..	Therms	33.3	32.3	31.2	28.6
Crude Spirit from gas†..	Gallons	2.89	2.93	2.94	3.07

\* In addition quantities of tar and oil were distilled at those plants where mixtures of coal and tar or oil were processed.

† The yield of gas varies widely according to the process and the kind of coal treated.

‡ Spirit is not "scrubbed" from the gas at all plants. These figures are related only to the plants where crude spirit was extracted from the gas produced.

In addition to the total quantity of 480,827 tons of coal carbonised in 1937, 26,574 tons of coal and 465 tons of purchased coke were used for purposes other than processing, e.g., power, steam-raising, etc. 9,867 tons of the solid fuel produced were also used at the works for these purposes.

The amount of coal carbonised shows an increase of 32 per cent. over the 1936 tonnage and of 135 per cent. over the quantity distilled in 1930. The quantity of semi-coke produced increased by 31 per cent. compared with 1936. The great bulk of the crude spirit produced is sold to refiners for the production of motor spirit.

*Hydrogenation.*—The plant of Imperial Chemical Industries, Limited, at Billingham, worked throughout the year. Operation is said to have been much steadier and mechanical difficulties encountered during the earlier years have been overcome. The percentage yield of petrol obtained per ton of coal treated was improved. Nevertheless the plant has not yet worked up to the capacity for which it was planned, viz. the production of 45 million gallons of petrol per annum from coal, creosote and low temperature tar,

for which it was reckoned a total of some 600,000 tons of coal would be required, including coal for processing and for the production of power and hydrogen. To some extent this has been due to the fact that certain modifications have been found necessary to obtain petrol of higher anti-knock ratings to enable it to conform with more stringent market specifications. According to the Report of the Falmouth Committee, the Company informed the Committee when it visited the plant that the conditions on the plant were quite satisfactory mechanically and promised a steady technical improvement. In regard to the possibilities of further development, the Company expressed the view that a further two years would be necessary before the Billingham plant could be said to have afforded the fullest experience and data with regard to the technical and economic possibilities of the process.

During the year over 35 million gallons of petrol, including some 2 million gallons of aviation spirit complying with the latest specification, were produced, compared with 33½ million gallons in 1936. The total quantity of coal consumed for all purposes was 440,000 tons, of which 110,000 were directly hydrogenated, as against 425,000 tons, including 100,000 tons directly hydrogenated, in 1936. In addition to coal, substantial quantities of creosote and low temperature tar oils were hydrogenated, as well as some high temperature tar, anthracene oil and neutral oil.

*Pulverised fuel for Industrial use.*—Consumers of pulverised fuel have again furnished information to the Department regarding the use of such fuel during the year. The following table shows consumption during 1929, when statistics were first made available, and for the past three years, distinguishing the principal purposes for which the fuel was used.

	1929.	1935.	1936.	1937.
	Tons.			
For Steam Raising :				
(a) By Collieries .. ..	229,304	572,971	589,184	634,738
(b) By Commercial Firms	525,843	669,056	745,497	816,315
(c) By Authorised Electrical Undertakers*	714,513	1,883,542	2,216,300	2,339,000†
For Heating Purposes :				
(a) In Metallurgical Furnaces, etc. .. ..	41,077	170,003	216,262	251,279
(b) In Cement and other Kilns .. ..	1,244,421	1,753,315	1,958,627	2,059,848
Total .. ..	2,755,158	5,048,887	5,725,870	6,101,180

\* The particulars for Local Authorities relate to the year ended 31st March of the year following that shown.

† Provisional figure.

In addition to the above, 1,200 tons of pulverised fuel were used for central heating compared with 200 tons in 1936.

It will be seen that further progress has been made in the use of this type of fuel for all the purposes indicated above. The consumption of pulverised fuel in 1937, at 6.1 million tons, represents an increase of more than 6 per cent. over 1936, and of 121 per cent. over 1929.

The number of undertakings, apart from the cement industry, which furnished particulars in respect of the year 1929, and of the last three years, was as follows:—

	1929.	1935.	1936.	1937.
For Steam Raising :				
Colliery Companies .. ..	17	27	26	27
Other Commercial Firms ..	22	33	37	37
Authorised Electrical Undertakers	18	22	21	22
For Heating Purposes :				
Metallurgical Firms .. ..	17	93	108	130
<b>Total .. .. .</b>	<b>74</b>	<b>175</b>	<b>192</b>	<b>216</b>

The metallurgical industry consumed 16 per cent. more pulverised fuel in 1937 than in 1936, and over six times as much as in 1929. The continued growth in its use by the metal trades for heating or reheating billets, etc., smelting and melting, annealing and copper refining, is noteworthy.

#### Type and Size of Boiler.

The following table shows the quantities of pulverised fuel used for steam raising, according to the type and size of boiler:—

Type and Size of Boiler.	Quantity of Coal consumed in 1937.				Total Quantity of Coal consumed in 1936.
	At Collieries.	At Commercial Establishments.	At Authorised Electricity Undertakings.	Total 1937.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Lancashire .. ..	122,174	23,147	—	145,321	139,298
Scotch Marine .. ..	—	4,961	—	4,961	6,720
Water Tube :					
Up to 15,000 lbs./hr.	3,418	46,274	—	49,692	33,256
15,001–30,000 ..	190,374	70,871	9,228	270,473	249,586
30,001–50,000 ..	318,772	61,542	12,535	392,849	380,472
50,001–75,000 ..	—	15,660	144,835	160,495	152,676
Over 75,000 ..	—	593,860	2,172,402	2,766,262	2,588,973
<b>Total Water-Tube Boilers .. ..</b>	<b>512,564</b>	<b>788,207</b>	<b>2,339,000</b>	<b>3,639,771</b>	<b>3,404,963</b>
<b>Total of all Boilers :</b>					
1937 .. ..	634,738	816,315	2,339,000	3,790,053	—
1936 .. ..	589,184	745,497	2,216,300	—	3,550,981

The above figures show that 96 per cent. of the total amount of pulverised fuel used for steam raising was burned under water-tube boilers, and 73 per cent. under such boilers of over 75,000 lbs. per hour capacity.

Three central pulverising plants, which have been set up in the last few years, distribute pulverised fuel to small consumers either by road or rail tank wagons, as in the case of oil fuel, or in waterproof paper sacks. About 4,700 tons were so supplied in 1937 as against about 1,500 tons in 1936.

It is interesting to note that pulverised fuel has gained a footing, albeit a small one as yet, in the field of central heating. In this field there appears to be scope for the use of a home-produced commodity in a form which enables it to be consumed in an equipment somewhat similar to that used for burning oil fuel, and with much the same ease of control. The advantages afforded by the distribution facilities referred to above have been partly responsible for encouraging this development.

After consultation with Associations representing makers and users of plants the Home Office have published recommendations for precautions to be taken in respect of the operation of plants of the storage or central pulverising type, and of unit plants of pulverising capacity greater than thirty hundredweights per hour per unit.

*Use of Surplus Coke Oven Gas.*—Details of the production and disposal of gas at coke ovens in this country during 1937 are given in Table 33 of Appendix A. The total quantity produced was 234,304 million cubic feet, as compared with 214,033 million cubic feet in 1936. The bulk of this was used by the coke ovens and associated undertakings. The quantity sold to gas undertakings in 1927 was in the neighbourhood of 5,000 million cubic feet, which increased to 24,531 million in 1936 and to 27,486 million cubic feet in 1937. The balance not accounted for in 1937 amounted to a little over 5 per cent.

The Sheffield Gas Company was again the foremost purchaser of coke oven gas, and the 8,361 million cubic feet purchased in 1936 increased to 10,058 million cubic feet in 1937, nearly 37 per cent. of the total coke oven gas purchased by gas undertakings.

The South Yorkshire Gas Grid, owned and operated by the Sheffield Gas Company, has continued to expand and some eight miles of grid main have been laid during the year, linking up three more coking plants and making a total of 36 miles of coke oven gas mains laid under the Grid Scheme since 1931.

Meetings were held between representatives of Glasgow Corporation Gas Department and of various coke oven firms in the neighbourhood with regard to the purchase of coke oven gas by the former, but it is understood that no definite agreement has yet been reached.

*Use of Compressed Gas for Motor Transport.*—In 1937 there were 19 goods vehicles and one hackney vehicle registered as being propelled, wholly or partly, by coal gas, as compared with 13 goods vehicles and one hackney vehicle in the previous year.

*Mechanical Coal Cleaning.*—Steady progress continued to be made in the preparation of coal for the market by means of mechanical cleaning processes. The quantity of cleaned saleable coal produced at cleaning plants in Great Britain in 1937 was 105½ million tons or 43·8 per cent. of the total saleable output. This was nearly 6½ million tons above the total in the previous year, but since saleable output was higher in 1937, the percentage of the total output cleaned was only slightly in excess of the 1936 figure.

With the exception of Northumberland and several of the smaller districts, the remaining districts all show increases in the tonnage of coal treated by cleaning plants. Increases worthy of particular mention are 1½ million tons in Durham, 1½ million tons in South Yorkshire and 1½ million tons in South Wales.

In Table 8 of Appendix A, which gives full particulars for each district of the quantities of saleable coal mechanically cleaned, sand flotation plants, which were formerly included in the figures for washeries, are now classified under an amended heading as flotation plants.

This adjustment mainly accounts for the decline in the number of washeries and the increase in the number of flotation plants in operation between 1936 and 1937. Taking the three types of cleaning plant together there is little change in the total number in 1937 as compared with the previous year.

Washing is still the principal method of treatment; 87,094,697 tons, or 82·8 per cent. of the coal mechanically cleaned were dealt with at washeries in 1937, as compared with 16,094,971 tons, or 15·3 per cent., at dry cleaning plants.

### 3. PART I OF THE COAL MINES ACT, 1930.

#### (1) General.

A detailed review of the operation of the schemes in force under Part I of the Coal Mines Act, 1930, since the December quarter, 1936, has already been published.\* That review dealt in particular with the relations of consumers to the schemes and the effect of the operation of the schemes on coal prices. It is proposed, therefore, to limit this Report to a very brief reference to the more important matters arising in connexion with the operation of the schemes.

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\* Report by the Board of Trade under Section 7 of the Act, on the Working of Schemes under Part I of the Act, since the December quarter, 1936. (Cmd. 5773.)

Section 1 (1) of the Coal Mines Act, 1932, provided that Part I of the 1930 Act should continue in force until 31st December, 1937, and no longer unless Parliament otherwise determined. When the Schemes for organized selling were under discussion it was understood both by the coalowners and the mineworkers that in due course the Government would introduce legislation to extend the life of the schemes for a further period. One of the conditions laid down by the Government with which the schemes must comply was indeed that they should have a measure of permanency. Provision was therefore made in the Coal Bill, 1937, that Part I of the 1930 Act should continue in force until 31st December, 1942. As it was not possible for the Bill to become law before the end of the year a hiatus in the life of Part I of the 1930 Act was avoided by extending its period of operation until 31st August, 1938, under the provisions of the Expiring Laws Continuance Act, 1937.

The Committees of Investigation constitute the statutory protection to consumers against unfair or inequitable treatment under the Selling Schemes, but during the year dissatisfaction was expressed by consumers in regard to the procedure and effectiveness of the Committees. After consultation with national organisations representing consumers of coal and those engaged in the coal industry a number of proposals in regard to Committees of Investigation were included in the Bill. In summary the principal changes which the Bill proposes in this regard are :—

- (a) that the Chairmen of the Committees should be members of the legal profession (this gives statutory effect to what has been the practice since August, 1936);
- (b) that reserve chairmen and members of the Committees of Investigation and of the proposed Central Appeal Tribunal should be appointed in order to avoid delays in arranging meetings;
- (c) that the present arbitration procedure under Section 5 (8) of the 1930 Act should be deleted and that the decision of a Committee of Investigation with respect to the operation of a scheme should be final, subject to a right of appeal;
- (d) that an independent Central Appeal Tribunal should be set up to which any person aggrieved by the decision of a Committee of Investigation might appeal within fourteen days of the date on which the decision was given. The Central Appeal Tribunal will act as an arbitrator and its award will therefore be final and binding;
- (e) that Section 8 of the 1930 Act should be amended so as to enable Committees of Investigation and the proposed Central Appeal Tribunal to pass on to complainants evidence submitted by Executive Boards so long as there is no disclosure of information relating to any particular business or undertaking;



- (f) that the Committees of Investigation and the Central Appeal Tribunal should take evidence in public, unless they have any special reason to decide otherwise and that their decisions upon every complaint should be delivered in public.

These proposals did not fully satisfy the criticisms of the Selling Schemes by organised consumers, and the Central Council of Colliery Owners thereupon gave assurances to the Government with regard to such matters as choice of supply, the reference of prices actually quoted to the Committees of Investigation, and the reservation of coal pending the hearing of complaints. These assurances have been published as a White Paper (Cmd. 5693). Subsequently the District Executive Boards agreed to submit amendments of their schemes to cover the principal assurances.

#### (2) Amendment of Schemes.

(a) The early part of 1937 was marked by a rapid increase in demand for coal which temporarily outran supply. Many districts urged that while trade shares, which were designed to prevent evasions of the controlled selling schemes, were not restricting production to any extent, there was likely to be a tendency on the part of owners, already working to capacity, not to make full supplies available through fear of exceeding their trade shares and of having to pay contributions to other owners within a district who for some exceptional reason were not supplying their proportionate share of the increased trade. With firm market conditions and prices rising there was little or no incentive to evade the provisions of the schemes, and it was therefore agreed to approve amendments to provide for the suspension of the operation of the trade share provisions in respect of the six months ending 30th September. Amendments were submitted by all the districts concerned, except Kent and Bristol, and were approved accordingly.

By the end of September conditions of trade were unchanged, and further amendments of the schemes for the same districts were approved extending the period of suspension until 31st March, 1938. In the case of the Midland (Amalgamated) District the trade share provisions operate on an annual basis and their operation was accordingly suspended for the period from 1st August, 1936, to 30th April, 1937.

(b) *Durham, Shropshire and North Staffordshire.*—In order to encourage development amendments providing for greater elasticity in the basic tonnage provisions of the scheme for each of these districts were approved during the first six months of the year. In addition, in the Shropshire Scheme, amendments were approved to cover certain matters of administration and to facilitate the operation of the trade share provisions of the Scheme; and during the year various other amendments were made in the North Staffordshire

Scheme to substitute a sliding scale of compensation and contribution payments for the previous flat rate of 5s. per ton and to make minor alterations which experience of the working of the scheme had shown to be necessary. Two of the latter amendments required a District Order under Section 3 (4) of the Coal Mines Act, 1930.

(c) *Warwickshire*.—An amendment to the scheme in regard to the constitution and method of electing the Executive Board for the district was approved on the 13th May, 1937.

(d) *Lancashire and Cheshire*.—On the 25th May, 1937, an amendment to the scheme was approved to provide for the inauguration of a Staff Pension Fund. A further amendment was approved on the 25th November, 1937, to define the term "commercial description" in connection with the purchase of coal by the Executive Board from owners.

### (3) Operation of the Selling Schemes.

During the year considerable progress was made in extending and consolidating the selling organisations throughout the country. Negotiations proceeded in a number of districts with representatives of the distributors' organisations. Inter-district co-ordination of prices of railborne coal sold on the inland market was continued and extended by means of discussions between groups of districts with markets in common. For all the principal classes of coal, including export coal, substantially higher prices were secured, but during the greater part of the year these were due more to pressure of demand than to the exercise of control under the schemes.

### (4) Regulation of Output and Supply.

*General*.—Throughout the year quantitative regulation was virtually inoperative. During the March and December quarters the initial allocations made by the Central Council were based generally on performance in the corresponding period of the previous year, but in the June and September quarters the initial supply allocations were fixed at various amounts in excess of the previous year's performance. In all four quarters a considerable tonnage of increased allocations was readily granted by the Central Council. No appeals to arbitration against the Council's determinations were made during the year.

Statistics of the total of allocations for the year and the performance of the districts are given on page 28. Detailed particulars by quarters are given in Table 10 of Appendix A.

*Output*.—The total output allocations made by the Central Council during the year amounted to 256 million tons. Total output during the year, as returned by the District Executive Boards to the Central Council, amounted to 247·1 million tons, falling short of the sum of allocations by 3·5 per cent.

*Statement Showing Total Allocations made by the Central Council and Output and Disposals of the Various Districts during the Year 1937.*

District.	Output.			Export Supply.*			Inland Supply.†		
	Total Allocation.	Output as returned by the Executive Boards to Central Council.	Percentage by which output fell short of allocation.	Total Allocation.	Disposals as returned by the Executive Boards to Central Council.	Percentage by which Export Disposals fell short of allocation.	Total Allocation.	Disposals as returned by the Executive Boards to Central Council.	Percentage by which Inland Disposals fell short of allocation.
	<i>Tons.</i>	<i>Tons.</i>	<i>%</i>	<i>Tons.</i>	<i>Tons.</i>	<i>%</i>	<i>Tons.</i>	<i>Tons.</i>	<i>%</i>
Northumberland ..	16,092,485	15,310,996	- 4·86	5,141,143	4,453,983	-13·37	9,743,775	9,066,049	- 6·96
Durham .. ..	36,159,819	35,477,771	- 1·89	11,144,428	10,374,069	- 6·91	22,014,130	21,342,528	- 3·05
Cumberland .. ..	1,663,900	1,598,839	- 3·91	10,702	6,202	-42·05	1,333,379	1,239,583	- 7·03
Lancashire and Cheshire	15,732,748	15,137,297	- 3·78	331,144	299,634	- 9·52	13,955,802	13,458,377	- 3·56
Midland Amalgamated	81,687,830	79,568,464	- 2·61	8,875,847	8,212,504	- 7·47	66,840,598	65,452,391	- 2·08
Shropshire .. ..	690,725	632,476	- 8·43	—	—	—	644,216	592,034	- 8·10
North Staffordshire ..	7,773,373	7,420,738	- 4·54	90,270	60,095	-33·43	6,796,874	6,478,245	- 4·69
South Staffordshire and Worcestershire ..	1,517,577	1,372,412	- 9·57	—	—	—	1,351,394	1,250,136	- 7·49
Cannock Chase .. ..	5,513,857	5,136,816	- 6·84	450	441	- 2·00	5,104,897	4,835,206	- 5·28
Warwickshire .. ..	5,917,568	5,629,356	- 4·87	31	31	—	5,587,809	5,278,667	- 5·53
Forest of Dean .. ..	1,477,164	1,402,410	- 5·06	46,198	36,591	-20·80	1,363,411	1,287,359	- 5·58
Bristol .. ..	87,088	74,501	-14·45	—	—	—	76,067	60,279	-20·76
Somerset .. ..	800,417	764,843	- 4·44	2,000	—	-100·00	728,666	700,567	- 3·86
Kent .. ..	2,309,241	2,119,975	- 8·20	46,436	22,643	-51·24	1,900,383	1,767,426	- 7·00
North Wales .. ..	3,067,947	2,890,692	- 5·78	137,602	94,991	-30·97	2,553,179	2,419,174	- 5·25
South Wales and Monmouthshire ..	41,222,191	40,235,058	- 2·39	19,843,753	19,186,250	- 3·31	16,880,772	16,371,017	- 3·02
Scotland .. ..	34,345,753	32,330,811	- 5·87	8,162,737	6,630,888	-18·77	24,349,642	23,244,761	- 4·54
<b>GREAT BRITAIN ..</b>	<b>256,069,683</b>	<b>247,103,455</b>	<b>- 3·50</b>	<b>53,832,741</b>	<b>49,378,322</b>	<b>- 8·27</b>	<b>181,224,994</b>	<b>174,843,799</b>	<b>- 3·52</b>

\* "Export Supply" means loading at the customary shipping places of the District as cargo into ships for conveyance therein to destinations outside the United Kingdom, Eire, the Isle of Man and the Channel Islands, or as fuel for use on ships proceeding to such destinations, or as fuel for use on fishing vessels or supply to works situated at ports to be used for the preparation of patent fuel for export.

† "Inland Supply" means supply otherwise than as Export Supply, including supply to other parts of an undertaking of which the coal mine forms part, but excluding supply for use in working the coal mines and supply free or at reduced rates for the use of persons who are or have been employed in or about the mine and the dependents of persons who have been so employed.

NOTE.—For detailed quarterly particulars see Table 10 of Appendix A.

Supplementary output allocations during the year amounted to 10 million tons, which exceeded the amount granted in any previous year since regulation of output has been in force.

*Inland Supply.*—The total inland supply allocations during the year amounted to 181·2 million tons. Inland disposals totalled 174·8 million tons, falling short of the sum of allocations by 3·52 per cent. Inland disposals for the year exceeded inland disposals for 1936 by 6·8 million tons or 4 per cent.

Increased inland supply allocations during the year amounted to about 9½ million tons, of which more than half was granted during the June quarter alone to meet abnormal demands for the inland market.

*Export Supply.*—The export supply allocations during the year amounted to 53·8 million tons. Export disposals totalled 49·4 million tons, 8·27 per cent. less than the sum of allocations but 5½ million tons in excess of export disposals in the year 1936. Except for the March quarter, the initial export supply allocations allowed generally for a wider margin of improvement over performance in the corresponding periods of the previous year than the initial output and inland supply allocations. Even so, additional export supply allocations were granted during the year to the extent of 3½ million tons.

#### (5) Committees of Investigation.

During 1937, 46 complaints were lodged with the following District Committees :

Midland (Amalgamated)	..	..	..	18
Lancashire and Cheshire	..	..	..	7
Northumberland	..	..	..	5
Scotland	..	..	..	5
South Wales	..	..	..	3
Warwickshire	..	..	..	3
Durham ..	..	..	..	2
North Wales	..	..	..	1
Forest of Dean ..	..	..	..	1
North Staffordshire	..	..	..	1

Of these 26 had been withdrawn by the end of the year, and five of the nine cases outstanding at the end of 1936 were withdrawn in the early part of 1937. Altogether during 1937 the Committees completed the investigation of 13 complaints, making recommendations in the following three cases :

The Clyde Valley Electrical Power Co. and the British Trawlers' Federation, Ltd., lodged complaints with the Scottish and Northumberland Committees respectively regarding increases in the price of coal. In the former case the Committee of Investigation decided against the complaint and in the latter made a recommendation to the effect that while the increase in price was unobjectionable, it had perhaps been imposed too suddenly. In both cases, however, the Committees added that they had been impressed

with the position that in cases such as these, where the price about which complaint had been made was embodied in a contract already entered into, the Scheme authorities had no power to implement recommendations by Committees of Investigation that such prices should be varied. They stated that they could conceive circumstances in which it would be impossible for a complaint to be lodged with them and investigated during the period between the receipt of the tender and the date from which the contract must be effective. Accordingly the Committees reported to the Board of Trade that the Schemes in question should be amended in such a manner as to ensure that the protection which the Committees of Investigation were intended to afford to complainants in respect of any recommendation which the Committees might make with regard to prices, would be a reality. The action taken under Section 5 (6) of the 1930 Act by the Board of Trade (which falls partly outside the period covered by this Report) is described in the Report on the Working of Schemes (Cmd. 5,773).

The third case in which a Committee made recommendations concerned the complaint with the Midland (Amalgamated) District Committee by Woolcombers, Ltd., in respect of the delivered price of coal. During the course of the investigation the complainants represented that they had no complaint against the pithead price but asked that they should be given facilities for making contracts direct with the Selling Agents appointed under the Scheme. The Committee recommended that such facilities should be granted and that the scheme authorities should exercise their permissive power under the terms of the Midland (Amalgamated) Scheme to prepare and bring into force a Register of Distributors. Both these recommendations were adopted by the Executive Board for the district.

The remaining 11 complaints were either being investigated or awaiting investigation at the end of the year.

In addition to the above, one complaint was lodged in January, 1937, with the National Committee of Investigation by Low Temperature Carbonisation Limited and the Low Temperature Carbonisation Association in regard to a direction by the Central Council of Colliery Owners to the District Executive Boards that contracts for inland supply should not at that date be entered into beyond 31st March, 1938. The National Committee received an explanation from the Central Council that the Council had power to grant exemptions from the direction in particular cases if it appeared desirable to do so, and that if and when a specific application was made to a Scheme authority for a permit to supply coal under a long term contract and the matter was brought before the Council with the necessary particulars of the proposed contract, the Council were bound to consider whether they would grant exemption from the direction.

The explanation was brought to the notice of the complainants who were satisfied that it indicated that the Central Council no longer regarded the direction as so rigid that no exceptions to its terms could be made, and in consequence they withdrew their complaint.

## 4. LEGISLATION.

The Coal Mines (Employment of Boys) Act, 1937, received the Royal Assent on 20th July. The effect of the Act is to prohibit the employment of boys under 16 years of age on the night shift underground in coal mines. Provision is made for allowing the prohibited period of seven hours to begin at any time between 10 p.m. and 11 p.m., in order to meet the varying hours of the night shift at different mines and in different districts.

The Coal (Registration of Ownership) Act, 1937, received the Royal Assent on 30th July, 1937. An account of the circumstances under which this measure was introduced, together with a description of its main provisions, is to be found in the first Section of this Report.

## 5. WAGES AND PROFITS.

During the year 1937 proceeds, wages and credit balances increased in all Districts (or groups of Districts). A number of new wages agreements were made giving more favourable terms to the workpeople. Some of these agreements gave increased basis wages, others raised the minimum percentage on basis rates, while other agreements provided for the increase of both.

A table showing financial details for each District (or groups of Districts) will be found on page 33, and further relevant tables are given on pages 151 to 165.

Cash earnings per manshift worked (excluding the value of allowances in kind) for the country as a whole were 10s. 8d. as compared with 10s. 0½d. in 1936 and 9s. 3¼d. in 1935. All Districts (or groups of Districts) showed increases over 1936, varying from 3½d. in Lancashire, Cheshire and North Staffordshire to 1s. 3¾d. in North Derbyshire and Nottinghamshire.

In terms of annual cash earnings per wage-earner, this, with an improvement in the regularity of employment, resulted in an increase for the country as a whole of £13: the figure rising from £131 in 1936 to £144 in 1937. The largest increase was in North Derbyshire and Nottinghamshire where, owing to the increased inland demand, cash earnings rose by about £29. In South Wales and Monmouthshire, where there was a considerable increase in exports, cash earnings rose by nearly £17. The annual cash earnings varied from £124 18s. in Durham and £125 11s. in Northumberland to £158 13s. in North Derbyshire and Nottinghamshire. These differences, however, are partly offset by the value of allowances in kind which amounted to £15 11s. in Durham and £14 9s. in Northumberland, as against £3 17s. in North Derbyshire and Nottinghamshire. In Scotland and Lancashire, Cheshire and North Staffordshire, the value of allowances in kind is negligible.

There was a slight decrease in the average output of saleable coal per manshift worked which was 23½ cwts. as compared with 23½ cwts. in 1936: the figure was, however, the same as in 1935.

There was a considerable increase in the regularity of work, the average number of manshifts worked per wage-earner being 270

as against 262 in 1936 and 256 in 1935. The improvement was particularly marked in North Derbyshire and Nottinghamshire where 21 more shifts were worked and in South Wales and Monmouthshire where there was an increase of 15 shifts.

Gross proceeds (which include the proceeds of miners' coal) were 15s. 11½*d.* per ton of coal disposable commercially as compared with 14s. 8½*d.* in 1936 and 13s. 6½*d.* in 1935. All Districts (or groups of Districts) showed substantial increases which ranged from 9½*d.* in North Derbyshire and Nottinghamshire to 1s. 11½*d.* in Scotland.

Costs other than wages over the country as a whole amounted to 4s. 10½*d.* as against 4s. 7*d.* in 1936 and 4s. 6*d.* in 1935. The increase since 1936 was accounted for by a rise in the cost of stores and timber. Costs other than wages varied considerably in the different districts and ranged from 3s. 11½*d.* in North Derbyshire and Nottinghamshire to 5s. 11*d.* in South Wales and Monmouthshire.

The net result of the year's working showed an increased credit balance of 3½*d.*: the figure for 1937 was 1s. 2½*d.* as against 11½*d.* in 1936 and 6½*d.* in 1935. All Districts (or groups of Districts) showed credit balances which ranged from 5*d.* in South Wales and Monmouthshire to 2s. 1½*d.* in South Derbyshire, etc. With the exception of North Derbyshire and Nottinghamshire and Cumberland, etc., where the balances were ½*d.* and 1½*d.* less respectively than in 1936, improvement was recorded in all Districts. The increases varied from 6½*d.* in Northumberland to 2½*d.* in the South Derby group.

Wages Agreements covering the main classes of workers were made during the year in Durham, Yorkshire, and South Wales and Monmouthshire by which both basis wages and the minimum percentage to be paid above basis rates were increased. In Northumberland and North Derbyshire higher basis rates were fixed, while in the Forest of Dean the minimum percentage was twice raised during 1937. In Scotland and Cumberland higher minima became operative at the beginning of the year.

Percentages above the minimum were paid throughout the year in Lancashire and Cheshire, Nottinghamshire, Leicestershire, Warwickshire and Somersetshire (Radstock). In the following Districts payment above the minimum was made during part of the year:—Scotland, Northumberland, Yorkshire, North Derbyshire, South Derbyshire, North Staffordshire, Cannock Chase and Somersetshire (Newbury).

The flat rate advances which were granted at the beginning of 1936 were continued largely on the same basis throughout 1937: details will be found in Table 19 on pages 151 to 153.

During 1937 negotiations were begun in nearly all Districts on the question of holidays with pay for the main classes of workers in coal mines and by the end of the year Agreements had been signed in North Derbyshire and Cannock Chase. In addition there are a number of agreements in operation giving holidays with pay to officials (*e.g.*, deputies, shotfirers, etc.).

*Average Proceeds, Earnings and Profit in the Coal Mining Industry during 1937.*

District.	Per ton disposable commercially.					Percentage of Wages Costs to Net Proceeds.	Per Manshift Worked.		Per Person employed per Annum.		
	Gross Proceeds.	Costs other than Wages.	Net Proceeds.	Wages Costs.	Profit.		Output of Saleable Coal.	Average Cash Earnings (all classes of Workpeople).*	Average Number of Manshifts worked.	Average Cash Earnings.	Average Value of Allowances in Kind.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>		<i>%</i>	<i>cwts.</i>	<i>s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>
Scotland .. ..	15 9½	4 7	11 2½	9 4½	1 9½	83·8	23·96	10 4	306	158 0 7	0 11 5
Northumberland ..	14 3½	5 1½	9 2	8 1½	1 0½	88·4	23·28	8 11½	280	125 11 3	14 9 1
Durham .. ..	14 6	5 1½	9 4½	8 10½	0 6½	94·4	21·75	9 1	275	124 18 0	15 11 1
South Wales and Monmouthshire†	17 1½	5 11	11 2½	10 9½	0 5	96·3	20·59	10 4½	275	142 15 3	3 1 7
Yorkshire .. ..	15 5½	4 4½	11 0½	9 8½	1 4	87·9	26·34	11 10½	252	149 16 11	3 18 5
North Derbyshire & Nottinghamshire	15 3	3 11½	11 3½	9 4½	1 11	83·0	29·06	12 8½	249	158 12 8	3 16 8
South Derbyshire, Leicestershire, Cannock Chase & Warwickshire ..	17 1½	4 6½	12 7	10 5½	2 1½	83·1	23·66	11 5½	255	145 15 10	4 17 0
Lancashire, Cheshire and North Staffordshire ..	18 3½	5 7½	12 8½	11 3	1 5½	88·5	20·77	10 8	268	143 1 3	0 7 11
Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent .. ..	17 2	5 4½	11 9½	11 2½	0 7	95·1	19·41	9 11½	285	142 5 4	3 5 9
Average for all Districts	15 11½	4 10½	11 0½	9 9½	1 2½	88·9	23·35	10 8	270	144 3 3	5 6 10
Average for all Districts (1936)	14 8½	4 7	10 1½	9 2	0 11½	90·5	23·64	10 0½	262	131 4 1	5 1 4

\* Table 22 of Appendix A shows the average value of allowances in kind which is excluded above.

† The particulars for this district relate to the year February, 1937, to January, 1938 (inclusive).

NOTE.—Costs other than wages relate only to expenditure incurred on revenue account. The profit shown above, therefore, does not take account of such capital expenditure as loan interest and amortisation charges. For further particulars see Table 24 of Appendix A.



## 6. THE MINERS' WELFARE FUND.

This Fund was set up by the Mining Industry Act of 1920 to be applied to " purposes connected with the social well-being, recreation and conditions of living of workers in or about coal mines, and with mining education and research." The Fund is administered by the Miners' Welfare Committee appointed by the Secretary for Mines, and a full account of it is published separately in the Committee's Annual Report for 1937.\*

There was one change in the membership of the Committee in 1937, Mr. F. Llewellyn Jacob having succeeded the late Mr. H. F. Smithson, who had replaced Mr. Walter Hargreaves as one of the representatives of the Mining Association of Great Britain earlier in the year.

TABLE A.

Receipts.		Appropriations.		
		To Districts Fund.	To General Fund.	To Baths Fund.
£		£	£	£
475,127	<i>In 1937</i> Output Levy— (a) Appropriated under the Act of 1934 .. .. . £186,196	20,000 (for research)	166,196	—
	(b) Divided between the Districts and General Funds .. £288,931	57,786 (one fifth)	—	231,145 (four-fifths)
180,000	Royalties Levy .. .. .	—	180,000	—
70,305	Interest, etc. on Investments	12,124	28,804	29,377
725,432	Total .. .. .	89,910	375,000	260,522
100%	Total per cent. .. .. .	12·4%	51·7%	35·9%
	<i>From 1921 to 1937</i>			
13,153,486	Output Levy .. .. .	2,097,451†	1,142,554†	9,913,481
2,094,000	Royalties Levy .. .. .	—	2,094,000	—
1,454,288	Interest, etc., on Investments	180,931*	827,668*	445,689*
16,701,774	Total .. .. .	2,278,382	4,064,222	10,359,170
100%	.. per cent. .. .. .	13·6%	24·4 %	62%

\* Excludes or includes £507,743 derived from investments of Districts Fund and General Fund balances and transferred to the Baths Fund during the years 1927 to 1933.

† Includes or excludes £460,920 transferred from the General Fund to the Baths Fund during the years 1927 to 1933.

\* Miners' Welfare Fund. Sixteenth Annual Report, 1937. H.M. Stationery Office, Price 1s. 6d. net.

The receipts of the Fund, which by the end of 1937 had amounted to £16,701,774, are derived from two sources, an output levy at the rate of  $\frac{1}{2}d.$  a ton of coal produced and a royalties levy of 1s. in the £ on mining royalties, together with interest on investments representing balances of the Fund awaiting disbursement and profits on investments realised.

Table A shows the receipts from each source in 1937 and for the whole period from 1921 to 1937, and the amounts appropriated therefrom to the three separate accounts into which the Fund is divided, the Baths Fund, the Districts Fund and the General Fund. In 1937 the total receipts, at £725,432, were £3,793 less than in 1936, a rise of £11,777 in the yield from the output levy having been offset by falls of £4,000 in the yield from the royalties levy and £11,570 in the yield from investments.

In Table B the position at the end of 1937 as regards the allocation and disbursement of the Fund is shown.

The grants allocated during the year amounted to £963,383 and were £237,951 in excess of the receipts, £725,432 for the year. At the end of the year there was only the sum of £178,241 awaiting allocation.

TABLE B.

	Grants Allocated.	Grants Paid.
Total at 31st December, 1936 .. ..	£ 15,560,150	£ 14,190,606
During 1937 (net amount) .. ..	963,383	931,798
Total at 31st December, 1937 .. ..	16,523,533	15,122,404
Excess of receipts over payments .. ..	—	1,579,370
Ditto allocations .. ..	178,241	—
Total Receipts .. ..	16,701,774	16,701,774

*The Baths Fund.*—Under the Mining Industry (Welfare Fund) Act, 1934, the Baths Fund is credited each year with the whole of the receipts from the royalties levy and such sum from the receipts of the output levy as will, with the receipts from interest, etc., on investments, bring the revenue of this Fund for the year up to £375,000. The total receipts of the Baths Fund since its institution, when the royalties levy was imposed by the Mining Industry Act, 1926, had at the 31st December, 1937, amounted to £4,064,222, the whole of which sum, and an additional sum of £341,533 from future receipts, had been allocated to defray the cost of pithead baths built or to be built by the Miners' Welfare Committee through their architectural staff.

The following table shows the position at the end of 1937 as regards the allocation and disbursement of the Baths Fund.

Baths Fund.	Grants Allocated.	Grants Paid.
Total at 31st December, 1936 .. ..	£ 3,776,310	£ 2,989,317
During 1937 (net amount) .. ..	629,445	511,382
Total at 31st December, 1937 .. ..	4,405,755	3,500,699
Excess of receipts over payments .. ..	—	563,523
Excess of allocations over receipts .. ..	341,533	—
Receipts .. .. ..	4,064,222	4,064,222

During 1937 contracts were placed for building baths to the value of £657,690. At the end of the year building, or preparations for building, were in progress for 152 new baths installations accommodating nearly 170,000 men and women at a cost of £2,500,000. Of this number, 70 installations were actually under construction, costing £1,267,000 and providing accommodation for 90,500 men and women. Preparations were in hand for 82 installations, valued at £1,300,000 and designed for 78,500 men and women, with a view to starting construction in 1938 or as soon as the financial position of the Baths Fund permits.

The installations completed or actually in course of construction during 1937 numbered 53 compared with 31 in 1936 and 19 in 1935. This expansion in the rate of building was made possible by the Miners' Welfare Committee's decision in 1936, as reported last year, to make allocations to the value of about £250,000 more than the statutory £375,000, in each of the two years 1937 and 1938. When a contract is placed, it is at once covered in full by an allocation, but payment is not completed until later, by which time the Fund has been credited with additional levy receipts. To a limited extent therefore allocations are made in excess of the sum standing to the credit of the Baths Fund.

Present financial resources will not suffice for the continuance of this accelerated rate of building for more than about two years, but the Committee estimated that if allocations were continued at the rate of £625,000 a year for eight years, all the industry's requirements for baths would probably be met by the end of that period, except for small collieries, those with very short lives and those where baths are not wanted or cannot be built owing to technical difficulties. In these circumstances the Secretary for Mines intimated early in March 1937, that he was satisfied that the accelerated programme was in every way desirable and that he had come to the conclusion that he was justified in authorising the Committee to base their programme of work on the assumption that they would

have £625,000 a year at their disposal up to and including the year 1944. With this assurance the Committee had, before the end of 1937, already commenced preparations for a 1939 programme at the same building rate.

The number of baths opened or under construction at the end of 1937 was 299, giving accommodation for 380,619 men and 798 women. The Miners' Welfare Committee are responsible for 278 of them, while 12 had been built by local committees mainly out of grants from the Districts Fund and 9 had been built by colliery companies at their own cost. Of the 278, 70 were under construction and 208 had been completed, 24 of them having been opened during 1937. The sum allocated from the Baths Fund in 1937 was £629,445, the remaining £28,245 of the year's contracts having been provided out of the Districts Fund at the request of certain District Committees who desired further to expedite the work in their Districts.

The average cost of all the baths completed or put out to tender up to the end of 1937 was £12 4s. per person accommodated, an increase of 7s. per person on the average up to the end of 1936. This increase was mainly due to a considerable increase in building costs during the year, the installations tendered for in 1937 alone showing an average cost of £14 15s. per person as against a cost of £12 16s. in the previous year. The rise in building costs, which in the latter half of 1937 amounted to about 25 per cent. over 1934, was mainly due to the greater demand for special labour and the higher prices of building materials, but there was also a smaller proportion of large installations in 1937 which are relatively less costly.

The average number of users of all the baths which are in operation was 92 per cent. of the workmen employed, and the workmen's weekly subscription towards the upkeep costs was 6d. or less at 86 per cent. of the installations.

First-aid rooms for the treatment of minor injuries have always been included in the baths built by the Miners' Welfare Committee.

Since the Act of 1934 canteens have also been provided when required out of the Baths Fund at new installations. Up to the end of 1937 allocations had been made for 79. In addition, canteens had been or were being provided out of the Districts Fund at 83 older installations. The baths schemes which included canteens therefore numbered 162 altogether, an increase of 33 on 1936.

Further facilities provided in some installations, though not at the cost of the Baths Fund, include cycle stores and boot repair shops.

When building baths, it has been possible sometimes to suggest improvements in the arrangement or appearance of the colliery surface works and premises, and colliery companies have often been willing to accept the suggestions even at some considerable expense to themselves.

*Districts Fund.*—The receipts of the Districts Fund in 1937 amounted to £260,522, *i.e.*, 35·9 per cent. of the total receipts of the Welfare Fund. This sum was as usual divided amongst the 25 Coalfield Districts, each District being credited with receipts from the output levy in proportion to the sums contributed in the District, and with receipts from interest, etc., on investments in proportion to the District's balance for the time being.

The total receipts of the Districts Fund from its institution in 1921 to the end of 1937 amounted to £10,359,170, of which all but £405,524 had been allocated for specific purposes.

The amount and chief purposes of the grants are as follows :—

Districts Fund.	1937.	1921 to 1937.
Grants allocated :—	£	£
For Recreation .. .. .	139,127	5,437,952
Health .. .. .	62,511	3,470,069
Pithead Baths .. .. .	28,245	500,273
Other Pit Welfare .. .. .	28,827	176,049
Education .. .. .	6,718	132,679
Miscellaneous .. .. .	10,534	85,948
Administration Expenses .. .. .	11,488	150,676
	287,450	
Less Reductions of earlier grants .. .. .	6,072	
Net total allocated .. .. .	281,378	9,953,646
Balance available for allocation .. .. .	—	405,524
Receipts .. .. .	260,522	10,359,170
Grants paid .. .. .	351,603	9,676,214
Excess of receipts over payments .. .. .	—	682,956

Of the £139,127 devoted to recreational purposes in 1937, £75,720 was for sports grounds, parks and children's playgrounds, £55,963 for workmen's institutes and halls for dances and indoor amusements, £6,386 for boys' clubs and camps, and £1,009 for swimming pools.

An important step was taken by Parliament in 1937, when the Physical Training and Recreation Act was passed, making further arrangements for promoting the physical fitness of the nation and empowering the Board of Education and the Secretary of State for Scotland to make grants from the Exchequer, upon the recommendation of the National Fitness Councils, towards the capital cost of providing facilities for physical training and recreation, including outdoor games, athletics, camping and swimming, and community centres and clubs with provision for physical exercise and active indoor games like badminton, deck tennis or netball. The new Act also increased the powers of local government authorities to provide or assist the provision and maintenance of these facilities.

Without relieving the Welfare Fund of its obligations it is possible that, when its resources are inadequate, financial assistance may be obtainable from the National Fitness Councils, and steps have been taken to ensure the necessary co-ordination.

This is readily secured through the District Organisers, who have now been appointed by the Miners' Welfare Committee for 15 of the 25 coalfield districts, and have proved their value in a variety of matters, particularly in furthering the successful maintenance of welfare schemes.

Provision for the welfare of the youth of the coal industry has recently been the subject of special consideration by the Miners' Welfare Committee, with a view to helping District Committees desirous of promoting or assisting the organisation of boys' clubs and camps.

The grants under the heading of health purposes included £30,000 for further endowment of the Durham miners' convalescent home, £13,316 for additions and alterations to this and other convalescent homes and for augmenting convalescent treatment funds, £10,484 for hospitals, £1,535 for ambulance services, £4,947 for providing miners and their dependents with special medical treatment and surgical appliances and £2,229 for nursing services.

Grants for pithead baths amounting altogether to £28,245 were made in Lancashire, South Staffordshire, North Staffordshire and Kent where the District Committees desired to supplement their proportions of the Baths Fund so as to get their collieries equipped earlier. The grants for other pit welfare purposes were mainly for canteens (£10,273) and cycle stores (£15,160).

Of the sum of £6,718 devoted to education in 1937, £5,089\* was for scholarships and grants to students. Non-vocational lectures accounted for £1,145 and grants were also made for safety instruction and for equipment for mining instruction.

The sum of £10,534 shown under the heading "Miscellaneous" included £9,750 for aged miners' homes in Northumberland.

The administration expenses of the District Miners' Welfare Committees required £11,488.

*General Fund.*—The receipts of the General Fund in 1937 amounted to £89,910, comprising £77,786 from the output levy and £12,124 from interest, etc., on investments.

The new grants allocated in 1937 amounted to £66,607, but after allowing for reductions of earlier grants, chiefly that for equipping the Mining Department of the Manchester College of Technology, the net amount allocated was £52,559.

The new grants included a further £42,795\* for researches under the Safety in Mines Research Board into problems affecting the safety and health of mine-workers, £20,505 for the Miners' Welfare

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\* These sums are, of course, over and above the permanent income derived from the trust funds for Scholarships and for Research respectively.

Committee's expenses of administration and their architectural and general building expenses, £1,937 for buildings and equipment for mining schools and £1,030 for non-vocational lectures.

The financial position of the General Fund at the end of 1937 may be summarised as follows :—

General Fund.	1937.	1921 to 1937.
	£	£
Grants allocated :—		
For Education .. .. .	2,992	1,033,143
„ Research .. .. .	42,795	979,801
„ Other Pit Welfare .. .. .	315	2,203
„ Recreation .. .. .	—	150
„ Administration & Building Expenses	20,505	148,835
	66,607	
Less Reductions of earlier grants ..	14,048	
Net total allocated .. .. .	52,559	2,164,132
Balance available for allocation .. ..	—	114,250
Receipts .. .. .	89,910	2,278,382
Grants paid .. .. .	68,814	1,945,491
Excess of receipts over payments .. ..	21,096	332,891

#### MINERS' WELFARE NATIONAL SCHOLARSHIP AND STUDENTS' EXHIBITIONS SCHEMES.

A full report of these Schemes in 1937 has been published as part of the Annual Report on the Miners' Welfare Fund (*see Note \* page 34.*)

The income from the Scholarship Scheme Endowment Fund in 1937, as in 1936, amounted to about £8,000, of which approximately 92 per cent. was disbursed in scholarships. Of the 398 applicants, 19 per cent. were mine-workers and 81 per cent. children of mine-workers. Thirteen scholarships were awarded, seven to mine-workers and six to children of mine-workers. At the end of 1937, 45 scholarships were being maintained.

The total number of scholarships awarded during the eleven years in which the scheme has been in operation is 152, of which 69 were for mine-workers and 83 for children of mine-workers.

The Students' Exhibitions Scheme was established in 1936 by means of an endowment of £25,000 from the Miners' Welfare Fund (General Fund), the income (about £880 per annum) to be applied in providing exhibitions for meritorious candidates who did not secure Miners' Welfare Scholarships. The use of income from this trust is not limited to university degree courses. Ten exhibitions were awarded in 1937, of which one was for a mine-worker and nine for children of mine-workers.

## PART II.

## OTHER MINING AND QUARRYING INDUSTRIES IN 1937.\*

This part of the Report deals with over 30 different minerals and the production over a number of years of nearly all will be found in Table 5 on pages 128 and 129. The following table gives certain particulars classified into groups :—

Group.	Total Net Selling Value of Output.	Percentage of Total Value.	Approximate Number of Persons Employed.
1. Iron Ore and Ironstone ..	£ 3,584,000	14	9,700
2. Non-Ferrous ores .. ..	1,042,000	4	3,900
3. Minerals (other than metal- liferous ores) used mainly in iron and steel-making and other smelting processes ..	1,952,000	8	9,500
4. Minerals used mainly for china, pottery and glass manufac- ture .. ..	1,347,000	5	4,800
5. Minerals used mainly for build- ing, road-making, lime, cement, concrete, etc. ..	15,554,000	60	68,000
6. Other minerals .. ..	2,426,000	9	7,400

This section of the Industry, on the whole, continues to increase in importance. The output in 1937 amounted to about 116 million tons with a total net selling value at the mine, quarry or other working of nearly £26 million : employment being found for some 103,000 persons.

In 1936 comparable figures were 106 million tons, £23 million and 99,000 persons respectively : increases of nine per cent. in output, 12 per cent. in value and four per cent. in the number of persons employed.

Since 1929, the output per person employed has increased considerably. In that year output was 77 million tons while the number of persons employed was nearly 113,000; the average number of days worked per wage-earner per year being estimated at 265. Comparing these figures with those for 1937 when the average number of working days per wage-earner was estimated to be 280, it will be seen that an increase in individual output per man-day worked of about 55 per cent. has been achieved. There has been no substantial change in the hours of labour of these workers between the two periods. This increased individual output is due mainly to the more extensive use of machinery and explosives.

\* Except for metalliferous minerals and a few others of special importance this survey does not cover the produce of quarries which are 20 feet or less in depth. The chief products of such quarries are clay, gravel and sand. Nor are sand and gravel raised from river beds and foreshores included. The output of mineral from these sources is fairly substantial.



The improvement since 1929 of 39 million tons in the output of mineral is chiefly accounted for by increases in the output of Gravel and Sand (14½ million tons), Clay, Shale, etc. (12 million tons), Limestone (4 million tons) and Chalk (3½ million tons).

#### GROUP 1.—IRON ORE AND IRONSTONE.

The total output of iron ore and ironstone used for iron-making in 1937 reached a total of 14,215,000 tons. This was the highest figure since the War and was 1,514,000 tons more than in 1936, an increase of 12 per cent.

The total value at the mines, quarries and other workings producing iron ore or ironstone was £3,584,000 as compared with £2,838,000 in 1936, an increase of £746,000 (26 per cent.). The average net selling value in 1937 was 5s. 1d. per ton, an increase of 7d. over the value of 4s. 6d. per ton in 1936.

Employment has been steadily increasing during the past three years and in 1937 reached 9,700, over 800 more than in 1936 and 1,700 more than in the previous year. It is, in fact, the highest figure since 1930, when the number of persons employed was 11,400. Since 1936, regularity of work has increased by about 2½ per cent.

The bulk of this country's production of ironstone (91 per cent. in 1937) is of *Jurassic* origin, the output of which was 12,919,000 tons (with an average metal content of 28 per cent.); an increase over the output of 11,417,000 tons in 1936 of 13 per cent. Average values in 1936 and 1937 were 3s. 5d. and 3s. 9d. respectively. This group is subdivided into four classes and the following table shows the output and value of each class. Class (b) is obtained from mines while the remaining classes are mainly the output of quarries.

Class.	Output.		Average Net Selling Value per Ton.	
	Raised in 1937. Tons.	Percentage increase over 1936. %	In 1937. s. d.	Increase over 1936. d.
(a) Lower Lias; North Lincolnshire (Frodingham)	3,045,000	3	2 8	2
(b) Middle Lias; Cleveland (North Yorkshire) ..	2,037,000	10	7 2	9
(c) Middle Lias; South Lincolnshire, Leicestershire, Northamptonshire and Oxfordshire .. ..	2,001,000	19	2 5	—
(d) Inferior Oölite (including some Cretaceous); South Lincolnshire, Northamptonshire and Rutlandshire .. ..	5,836,000	18	3 5	4

There was a small decrease in the production of *hematite* iron ore obtained from mines on the North West Coast, which declined from 880,000 tons in 1936 to 857,000 tons in 1937. This ore, which has a high metal content (52 per cent.) is particularly suitable for making high grade steel and it is valued at a much higher figure than the iron ore or ironstone produced in other districts. In 1937 the average value was 19s. 4d. per ton, an increase of 5s. 0d. over the corresponding figure in 1936.

A survey of abandoned iron ore mines in West Cumberland was started in April under the auspices of the Cumberland Development Council, which was formed at the instigation of the District Commissioner: at the end of the year it had not been completed.

In 1937 iron ore imported and retained amounted to 7,039,000 tons; purple ore, of which 300,000 tons were available from the treatment of 399,000 tons of imported cupreous iron pyrites, also yields pig iron. These amounts, together with home produced iron ore and ironstone, after allowing for a small quantity exported, give a total of 21,550,000 tons available for home consumption; this is equivalent to about eight million tons of metal, about one million tons more than in 1936.

At the end of 1937, there were 200 pig iron furnaces in existence as compared with 245 at the end of 1936, but the average number in blast during the year increased from nearly 111 in 1936 to 124½ in 1937.

In June, 1936, the Import Duties Advisory Committee were asked by the Board of Trade to enquire into the position of the iron and steel industry and to suggest lines for its future development, having due regard to the national interest. Their Report\* was issued early in July, 1937, and its chief recommendation was that schemes of development or curtailment suggested by the industry themselves should be submitted to an independent body who would consider them from the point of view of the general public interest; it was also suggested that a central advisory body, consisting of both sides of the industry with representatives of the Ministry of Labour to secure a more detailed census of labour available in the industry and to co-ordinate the activities of the recruiting agencies, might be advantageous.

The production of pig iron and ferro alloys was 8,493,000 tons, 772,000 tons more than in the previous year and 458,000 tons greater than in 1920, hitherto the best post-war year. In spite of this increase there was a shortage of iron ore, scrap and coke (materials used in the production of pig iron) in the early part of the year and the duty of 33½ per cent. on pig iron was therefore removed† at the beginning of March.

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\* Cmd. 5507.

† Import Duties (Exemptions) (No. 4) Order, 1937. S.R. & O. 1937 (No. 133).

The production of steel ingots and castings in 1937 was 12,984,000 tons, the highest figure ever reached, as against 11,785,000 tons in the previous year and was 32 per cent. higher than the output of 9,859,000 tons in 1935.

In November, 1937, the industry decided to stabilise the steel prices then ruling until the end of 1938. The price level of iron and steel products in 1937, according to the Board of Trade Index, showed a substantial increase over 1936; the figures being 129.6 and 106.6 respectively (1930=100).

#### GROUP 2.—NON-FERROUS ORES.

*Tin.*—The output of dressed tin ore (black tin) in 1937, was 3,367 tons, a decline of 191 tons from the output of 3,558 tons in 1936. The average percentage of metal in the mineral was 59 per cent. as in the previous year.

The chief sources of supply were Geevor, South Crofty, and East Pool and Agar mines and Gwythian Sands working, situated in Cornwall, from which county practically all the output of tin ore in this country is obtained. These four undertakings together produced 73 per cent. of the total output.

There were 14 mines producing or developing in 1937; of this number two were opened during the year. One of these, Royal Polberro Consuls mine had been disused for a number of years and a considerable amount of preliminary work will have to be done before production can be started. Excellent progress had been made by September 1937. The existence of very large ore reserves has been proved in the Mount Wellington mine and their exploitation may become practicable.

Nearly all the tin produced in Great Britain was from imported ores and concentrates, the retained amount of which in 1937 was 50,800 tons as compared with 51,900 tons in 1936. The chief sources of supply were Bolivia, Nigeria and Chile. The estimated metal content of this ore varied from 60 to 75 per cent. and amounted to some 33,000 tons in each year. The metal obtained from ores produced in Great Britain was about 2,000 tons in 1937 and 2,100 tons in 1936. Of the total metal production, about 18,000 tons in both years were exported (including soft solder and tin blocks, ingots, bars and slabs), leaving a balance in each year of some 17,000 tons. To arrive at a figure of home consumption there must be added the imported and retained tin manufactures which in 1937 amounted to 8,400 tons and in 1936 to 5,300 tons. These imports were obtained chiefly from the Netherlands and British Malaya in 1937 and from the latter in 1936. The apparent home consumption figures were approximately 26,000 tons in 1937 and 22,000 tons in 1936.

The number of persons employed during the year averaged 1,769 against 1,730 in 1936. These figures include persons engaged in the recovery of arsenic and in development work.

The average cash price per ton of Standard Tin, compiled from figures supplied by the courtesy of the London Metal Exchange, was £242 in 1937, an increase of more than £37 over the average price of £205 in 1936.

During the first three months of 1937 there was a rapid rise, the peak figure of £303 (closing price) being reached on 26th March. From then, however, the price fell until the lowest closing price level in 1937 of £181 15s. 0d. was reached on 31st December.

At the beginning of the year the third Agreement under the International Tin Control Scheme came into operation. This Agreement, which lasts for five years, limits the production of those countries under the scheme (who together produce between 80 and 90 per cent. of the world's supplies) to a percentage, or quota, of a standard tonnage which was agreed by the signatory countries. The Quota is fixed each quarter by a Committee appointed for the purpose. During 1937, owing to the possible shortages of tin anticipated owing to re-armament schemes in various countries, the Quota was fixed at 100 per cent. for the first quarter and raised to 110 per cent. in respect of the second period, at which figure it remained throughout the year.

World production of tin in 1937 was estimated at over 208,000 tons, which compares with about 180,000 tons in 1936, an increase of 15 per cent. It is the highest figure for a number of years and more than double the production in 1932 or 1933. Apparent world consumption rose from about 160,000 tons in 1936 to nearly 200,000 tons in 1937.

*Lead and Zinc.*—In 1934, the output of dressed lead ore reached a peak figure of 68,100 tons, since then it has declined rapidly to 39,100 tons in 1936 and 33,400 tons (average metal content 79 per cent.) in 1937. During the same period, however, the output of dressed zinc ore, which is mined with lead, rose from just under 1,000 tons to 7,900 tons in 1936, and 13,100 tons in 1937 (with an average of 58 per cent. metal), which was the highest output since 1914. During 1936 and 1937 a further 8,500 tons was obtained which is subject to further treatment before sale; particulars have not been included in the relevant tables.

The chief sources of supply of both lead ore and zinc ore are Mill Close mine (Derbyshire) and Halkyn mine (Flintshire). These two mines between them provided 86 per cent. of the former and 98 per cent. of the latter in 1937.

At the Halkyn mine, Flintshire, driving in the deep gravity tunnel was advanced a further 526 feet during the first three months of 1937, making the total length of the sea-level tunnel from Bagillt about 8·4 miles. A new lode was cut and brought into production later in the year.

Lead ore and concentrates exported in 1937 were 13,700 tons and in 1936, 26,100 tons; this amounted to 41 per cent. and 67 per cent., respectively, of home production. The export of zinc ore

and concentrates in 1937, was 23,000 tons as compared with 10,000 tons in 1936, while imports (retained) in 1937, amounted to 150,100 tons and in 1936, to 129,400 tons.

The average number of persons employed at lead and zinc mines, which includes those engaged in development work, was 1,915 in 1937, a rise of 352 over the average numbers employed in 1936; but work was less regular in 1937 than in the previous year, the average number of man-days worked per wage-earner being about six per cent. less.

The prices of Soft (Foreign) Lead and Spelter (or Zinc) as quoted on the London Metal Exchange followed a similar course to those of Standard Tin. The average price of the former during 1937 was £23 with high and low levels (closing prices) of £36 on 12th March and £15 10s. on 26th November and 31st December, while comparable figures for the latter were £22, £34 11s. 3d. on 12th March and £14 15s. 0d. on 31st December. In 1936 the average prices of Soft (Foreign) Lead and Spelter were £17 12s. 0d. and £14 18s. 5d., respectively.

**GROUP 3.—MINERALS (OTHER THAN METALLIFEROUS ORES) USED MAINLY IN IRON AND STEEL-MAKING AND OTHER SMELTING PROCESSES.**

The increased demand for metals during 1937, in some measure due to the Government's re-armament programme, is reflected in the Board of Trade Index of Industrial production which, in the iron and steel trades, increased by 11 per cent., and in the non-ferrous metal trades by 15 per cent. A similar increase took place in the output of minerals covered by this Group which in 1937 was 7,905,000 tons valued at £1,952,000 as compared with 7,059,000 tons and £1,703,000 in 1936, increases of 12 and 15 per cent., respectively.

The following table shows details for each mineral :—

<i>Mineral.</i>	<i>Output.</i>		<i>Average Net Selling Value per Ton.</i>	
	<i>Raised in 1937.</i>	<i>Percentage increase as compared with 1936.</i>	<i>In 1937.</i>	<i>Increase as compared with 1936.</i>
	<i>Tons.</i>	<i>%</i>	<i>s. d.</i>	<i>d.</i>
Fireclay .. .. .	2,739,000	9	6 10	2
Dolomite used as a refractory material .. ..	676,000	10	3 3	—
Silica Stone, Silica Sand and Ganister .. ..	715,000	12	7 4	—
Limestone and Dolomite for use as a fluxing agent	2,868,000	17	3 3	3
Moulding and Pig-bed Sand	865,000	8	3 5	1
Fluorspar .. .. .	42,000	28	16 5	11

Employment was provided for 9,500 workers, an increase of 800 (nine per cent.) over the figure for 1936. There was an increase of about one per cent. in the regularity of work during 1937 over the previous year.

Exports of fireclay during 1937 rose to 35,180 tons as compared with 16,536 tons in 1936, while the quantity of fluorspar exported amounted to 4,478 tons against 2,736 tons in 1936.

#### GROUP 4.—MINERALS USED MAINLY IN CHINA, POTTERY AND GLASS MANUFACTURE.

The output of the minerals in this Group aggregated 1,369,000 tons valued at £1,347,000 against 1,267,000 tons with a selling value of £1,230,000 in 1936: representing an increase of eight per cent. in output and nine per cent. in value.

The output of China Clay accounts for about 60 per cent. of that of the Group and increased by 11 per cent. over the output in 1936, while its value was 3d. per ton more.

The following table shows the changes in output and value for each mineral:—

<i>Mineral.</i>	<i>Output.</i>		<i>Average Net Selling Value per Ton.</i>		
	<i>Raised in 1937.</i>	<i>Percentage change as compared with 1936.</i>	<i>In 1937.</i>		<i>Change as compared with 1936.</i>
			<i>Tons.</i>	<i>%</i>	
China Stone .. .. .	60,700	— 9	28 2	+1 4	
Potters' Clay (including Ball Clay) .. .. .	225,200	+ 5	18 1	— 0 2	
Sand for use in Glass-making .. .. .	131,700	+ 2	4 0	—	
Chert for use in China and Pottery Trades ..	4,800	+ 7	67 11	— 4 4	
China Clay .. .. .	830,900	+11	23 9	+0 3	
Limestone for use in Glass-making .. .. .	115,700	+ 8	5 2	— 0 1	

The average number of persons employed rose from 4,400 in 1936 to 4,800 in 1937; there was practically no change in the number of days worked per wage-earner during the year.

Reference was made in last year's Report to one large undertaking in the China Clay industry, which produces about two-thirds of the China Clay and one-half of the China Stone produced in the country. The completion of the company's central electricity plant towards the end of the year had made possible further electrification and re-organisation of their works in the Mid-Cornwall area.

A considerable proportion of the minerals dealt with in this group were exported. In 1937 exports of china clay amounted to 534,600 tons, nearly two-thirds of the output, as compared with 449,400 tons in 1936, an increase of 19 per cent. Exports of ball clay accounted for 77,100 tons against 57,500 tons in 1936, an increase of 34 per cent., while those of felspar (including china stone) increased from 8,900 tons in 1936 to 9,100 tons in 1937. Imports (retained) of the last, however, were 24,600 tons in 1937 and 27,100 tons in 1936.

**GROUP 5.—MINERALS USED MAINLY FOR BUILDING, ROAD-MAKING, LIME, CEMENT, CONCRETE, ETC.**

The minerals covered by this Group represent about three-fourths of the output and three-fifths of the value of all minerals dealt with in this part of the Report.

In 1937, production amounted to 86,013,000 tons, while in 1936, 78,998,000 tons were obtained, an increase of nine per cent. A similar increase was recorded in the value, which in 1937 totalled £15,554,000 compared with £14,258,000 in 1936.

The value of these minerals does not fluctuate greatly from year to year and apart from slate, the value of which rose from £5 16s. 8d. per ton in 1936 to £6 9s. 2d. in 1937 (partly accounted for by a decrease in the quantity of cheap slate used for building, etc.), there was little change.

The uses to which the minerals in this Group are put fall roughly under three headings: (a) building, (b) road-making, (c) lime, concrete and plaster manufacture. It is impossible to make a precise apportionment, but so far as information is available the following are the figures:—

	<i>Quantity.</i>			<i>Net Selling Values.</i>		
	1937. <i>Tons.</i>	1936. <i>Tons.</i>	<i>Percentage increase. %</i>	1937. <i>£</i>	1936. <i>£</i>	<i>Percentage increase. %</i>
(a)	42,123,000	39,059,000	8	6,878,000	6,420,000	7
(b)	23,815,000	22,450,000	6	6,052,000	5,591,000	8
(c)	20,075,000	17,489,000	15	2,624,000	2,247,000	17

The average number of persons employed in 1937 was 68,000, about two-thirds of the number producing minerals other than coal. Compared with 1936, when the number was 66,800, there was an increase of two per cent. The number of man-days worked per wage-earner increased slightly.

In spite of the increase in production of the minerals in this Group, imports (retained) were still substantial. Details of the quantities and values are given in Table 39 on page 180.

**GROUP 6.—OTHER MINERALS.**

The value of the minerals comprising this Group was £2,426,000 in 1937 as against £2,168,000 in 1936, an increase of 12 per cent.

Separate particulars of the output and value of the minerals covered will be found in Table 1 (g) on pages 120 and 121, while special references to the Scottish Shale Oil Industry are made on pages 18, 19 and 108.

The number of persons employed increased by five per cent., rising from 7,100 in 1936 to 7,400 in 1937.

*Salt.*—The output of salt and salt brine in 1937 was 3,071,000 tons as compared with 2,818,000 in 1936, an increase of nine per cent. Comparable figures of value were £1,253,000 and £1,113,000, an increase of 13 per cent. Of the total output in 1937, 70 per cent. was salt contained in brine used for purposes other than salt making.

The chief centre of production is Cheshire, which in 1937 produced about 83 per cent. of the total of salt or salt brine.

The following table shows the changes in output and value since 1936:—

	<i>Output.</i>		<i>Average Net Selling Value per Ton.</i>			
	<i>Obtained in 1937.</i>	<i>Percentage change as compared with 1936.</i>	<i>In 1937.</i>		<i>Change as compared with 1936.</i>	
			<i>Tons.</i>	<i>%</i>	<i>s.</i>	<i>d.</i>
Rock Salt mined ..	18,000	+ 6	27	1	+1	3
Salt evaporated from Brine						
(a) Vacuum .. ..	340,000	+ 5	25	10	+2	5
(b) Other .. ..	553,000	— 3	25	3	+3	0
Salt content of Brine pumped to alkali works	2,160,000	+13	0	10	—	

Exports of salt were 270,700 tons in 1937, valued at £725,600 f.o.b. as compared with 280,000 tons (£724,000) in 1936.

*Barytes and Witherite.*—There was little change in the total output and value of these minerals which amounted in 1937 to 73,300 tons and £137,300.

Further details are given in the following table:—

	<i>Output.</i>		<i>Average Net Selling Value per Ton.</i>			
	<i>Raised in 1937.</i>	<i>Percentage change as compared with 1936.</i>	<i>In 1937.</i>		<i>Change as compared with 1936.</i>	
			<i>Tons.</i>	<i>%</i>	<i>s.</i>	<i>d.</i>
Barytes and Witherite—						
Not Ground .. ..	48,800	+ 6	28	9	+1	6
Ground, Bleached ..	5,400	— 5	80	8	+5	1
Ground, Unbleached ..	19,100	—10	47	5	+1	4



In 1937 *barytes* was obtained principally from the counties of Ayr and Bute (22,000 tons), Devon (21,000 tons) and Salop (12,000 tons); the remainder being got from Derbyshire, Montgomeryshire, Durham, Westmorland and Yorkshire.

There were only three mines producing *witherite*, Settlingstones in Northumberland, the Morrison pit of South Moor Mine and the Busty pit of Holmside Mine.

Exports of *barytes* had increased from 1,561 tons in 1933, to 4,161 tons in 1936, but in 1937 they declined to 1,765 tons. Production in Great Britain is, however, insufficient to supply home requirements which have increased since 1931, so that in 1937 54,149 tons were imported and retained as against 31,041 tons in 1931, and 52,806 tons in 1936.

## PART III.

## PROCEEDINGS UNDER PART I OF THE MINES (WORKING FACILITIES AND SUPPORT) ACTS, 1923, 1925 AND 1934, AND PART II OF THE MINING INDUSTRY ACT, 1926.

The number of applications referred during the year to the Railway and Canal Commission was five. One of these was heard and determined, one was withdrawn and in the remaining three cases pleadings were not completed at the end of the year. Of four applications which had been referred to the Commission in 1936, but not completed during that year, two were decided, one withdrawn, and in one case the Court decided that they had no jurisdiction.

*Proceedings in England and Wales.*

(i) The Firbeck Main Collieries, Limited, applied for the right to work 76 acres of land for coal, and for ancillary rights, at Carlton in Lindrick, Nottinghamshire. This was a numerosity case, i.e. private arrangement was impracticable as the number of persons involved was too great. No objections were lodged and the application was granted.

(ii) The Bolsover Colliery Company, Limited, obtained the right to work coal in about 200 small parcels of land in the Robin Hood District of Nottinghamshire and Derbyshire. The land in question aggregated about 1,500 acres and many of the parcels were already in lease to the applicants or terms had been agreed. Other parcels were in numerous ownership, or the owners could not be traced, and in many cases the land was former copyhold, where the lord of the manor owned the minerals and could not work them without the consent of the copyholder.

Objections were lodged by local authorities and surface owners, who asked for protection not only for existing buildings and crops, but for buildings to be erected on the surface.

The Commission granted the rights applied for, subject to payment of compensation for any damage caused by subsidence to existing buildings and crops, and to buildings to be erected in future, and that repairs should be done within six months of the cessation of subsidence. Royalties, where payable, were assessed by the Court, and liberty was given to apply for a reduction in their amount, in the event of compensation becoming too onerous.

(iii) An application was made by Messrs. T. Ryan Somerville & Co., Ltd., for the right to occupy a strip of ground for the construction of a road, and to connect it with a public highway, in order to facilitate the development of their limestone and by-product workings at Hindlow Quarry, Derbyshire. A preliminary point was raised as to the liability of the County Council for the upkeep of the highway in question. The Court decided that they had no jurisdiction

on this point and therefore adjourned the case with liberty to apply.

(iv) An application by the Barrow Haematite Steel Company, Limited, for the right to search for and work iron ore deposits at Cleator Moor, Cumberland, and for the right to let down the surface, was withdrawn by agreement.

*Proceedings in Scotland.*

(v) A case of importance, involving a question of conflicting national interests, was heard in Edinburgh. An application was made by Messrs. Archibald Russell, Limited, for the right to develop a new coalfield in the area between Thornliebank and Barrhead, near Glasgow, covering an area of 1,800 acres and estimated to contain coal worth over £7,000,000. The applicants claimed that the coal should be worked, not only because it was a national asset, but also because it was essential in the interests of the various industries in the West of Scotland to replace the rapidly diminishing coal reserves in Lanarkshire. The case was strenuously opposed by Messrs. Nether Pollok, Ltd., to whom the greater part of the lands in question belonged, and by the Corporation of Glasgow who contended that the national interest required that the area should be reserved for housing development, and that if the application were granted an extensive housing scheme would be sterilised.

The Commission, after an adjournment to allow further borings to be made, heard evidence and held that the applicants had failed to satisfy them that the refusal of Messrs. Nether Pollok, Ltd., to grant the right was unreasonable at the time when it was made in 1935. They accordingly dismissed the application for want of jurisdiction.

An appeal was made to the Second Division of the Court of Session and was successful, the case being remitted back to the Commission to consider the question of reasonableness in the light of all the facts as disclosed at the hearing, and in the light of the views they had formed as between the conflicting national interests.\*

(vi) An application by the Lothian Coal Company for the grant of an ancillary right to acquire additional ground for the purpose of extending the railways and sidings at one of their collieries was settled by consent of the Court.

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\* This application has since been granted as the result of a further hearing.

PART IV.  
HEALTH AND SAFETY.

This part of the Report deals chiefly with matters of general administration and the work of the Official Testing Stations. Health and Safety subjects in their detailed technical and statistical aspects are covered by the Annual Report of H.M. Chief Inspector of Mines, which immediately follows this part of this Report, and by the Annual Reports (all published separately) of H.M. Divisional Inspectors of Mines, of the Safety in Mines Research Board and the Health Advisory Committee, and of H.M. Electrical Inspector.

1. ROYAL COMMISSION ON SAFETY IN COAL MINES.

The Royal Commission on Safety in Coal Mines continued its public sittings for the taking of evidence until 27th April, by which date it had sat for that purpose on 52 days in all and had taken evidence from 12 representative bodies of persons in the coal mining industry, and from the Mines Department, the Mines Inspectorate, and the Safety in Mines Research Board. Since that date there have been numerous meetings in private to consider the evidence and formulate conclusions, a task on which the Commission was still engaged at the close of the year.

2. LEGISLATION.

*Quarries and Metalliferous Mines—Effect of the Factories Act, 1937.*

As indicated in last year's Report, quarries and the pitbanks of metalliferous mines have hitherto been partly governed by the Factory Acts, but with the passage into law of the Factories Act, 1937, the following important legal changes concerning the regulation of quarries and metalliferous mines will take effect as from the 1st July, 1938 :—

(1) Quarries of 20 feet deep or less will be brought under the general quarry law which previously applied only to deeper quarries, and for the first time the law empowers and directs the making of General Regulations applying to all quarries irrespective of depth or size.

(2) "Factory" law will no longer apply to the quarrying operations, or to the pitbanks of metalliferous mines in respect of any process ancillary to the getting, dressing or preparation for sale of the minerals, but the Factories Act will, like the previous Factory Acts, apply to manufacturing processes carried on in premises in or adjacent to and belonging to the quarry or metalliferous mine, and any such manufacturing processes will continue to be subject to inspection under the Factories Act. In this connexion, however, the Act (Section 158 (4)) gives statutory authority for the continuance, and if necessary the extension, of existing administrative

arrangements between the Mines Department and the Home Office whereby in order to prevent dual inspection of quarries and the pitbanks of metalliferous mines so far as possible, the Inspectors of Mines and Quarries, in some circumstances, act on behalf of the Home Office Inspectors of Factories and *vice versa*.

(3) Certain provisions of the Coal Mines Acts, regulating the employment of women and young persons, will in future apply to quarries and above ground at metalliferous mines in place of the provisions of the Factory Acts.

In these circumstances, draft General Regulations for Quarries have been framed with the following main objects:—

(a) To provide simple general rules for the safe working of small quarries where it is not considered necessary to apply the more elaborate requirements of the Special Rules which are already established at the larger quarries, and will continue in force there.

(b) To regulate the working of quarries in all the necessary general matters (hitherto, but no longer to be, regulated by the Factory Acts) which are not peculiar to quarries but have the same or a similar application in other industries—such matters, for example, as the fencing of machinery, the use of steam boilers and cranes, the use of electricity—and also matters of health, sanitation and welfare. In these connexions, the corresponding requirements of the Factories Act have been taken into consideration in framing the draft Regulations.

As regards metalliferous mines, it was necessary to frame draft General Regulations to deal at least with the position indicated in (2) and (3) above, but in doing so it was found that there would unavoidably be a good deal of overlapping and confusion between such Regulations on the one hand, and the existing codes of General and Special Rules on the other. For this reason, and also because many of the present requirements in Special and General Rules have remained unaltered for a great many years and require amendment in the light of modern practice, it has been considered desirable and in the interests of the metalliferous mining industry itself, to take this opportunity to make a comprehensive new code of General Regulations for metalliferous mines. It is intended that this code, in addition to dealing with the matters mentioned in (2) and (3) above, shall be in substitution for all the general rules in Section 23 of the Metalliferous Mines Regulations Act, 1872 and for as many of the special rules already in operation as seem suitable for General Regulations.

Three sets of draft Regulations—two for quarries (one general and one for electricity) and one for metalliferous mines—have been discussed informally with representative bodies connected with the industries and they were formally published in draft in May, 1938.\*

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\* The Quarries General Regulations were made on 29th June, 1938 (Statutory Rules and Orders, 1938, No. 632) and the Metalliferous Mines Regulations on 30th June, 1938 (Statutory Rules and Orders, 1938, No. 630).

## 3. INQUIRIES.

*(a) Inquiries into Mining Accidents.*

(i) *Wharncliffe Woodmoor Nos. 1, 2 & 3 Colliery*.—A reference was made in last year's Report to the publication in July, 1937, of the Report on the explosion at this colliery by H.M. Chief Inspector of Mines,\* which occurred on 6th August, 1936, and resulted in the loss of 58 lives. Sir Henry Walker had no doubt that the explosion was initiated by electric sparking either at the commutator or at the starting-switch of a loader-motor which was being overhauled: the commutator cover had been removed for that purpose and the switch-cover was found to be loose. The accumulation of the firedamp ignited he attributed to a short-circuit of the ventilation caused by two doors between an intake and a return airway having been spragged open by men engaged in moving rubbish.

Prior to the publication of the Report, but arising out of his investigation of the explosion, a circular (M.D. Circular No. 92), signed by Sir Henry Walker, was sent to colliery owners, managers and electricians, drawing special attention to the danger of an electrician opening the enclosing case of a motor or switch for the purpose of examination or adjustment while the apparatus is "live"; and pointing out that the practice is expressly forbidden by General Regulation 132 (iii).

(ii) *Holditch (Brymbo) Colliery*.—Mr. F. H. Wynne, H.M. Deputy Chief (now Chief) Inspector of Mines, was appointed to hold a Formal Investigation into the fire and subsequent explosions which occurred on 2nd July, 1937, at the Holditch (Brymbo) Colliery, North Staffordshire, whereby 30 persons lost their lives. The Report was published in April, 1938.†

(iii) *Markham Colliery*.—Mr. J. R. Felton, H.M. Divisional (now Deputy Chief) Inspector of Mines, was directed to make a Special Report on the explosion which occurred at this colliery on 21st January, 1937, and resulted in the loss of nine lives. The Report was published in May, 1937.‡

It was found that the explosion was initiated by electric sparking in the switch-compartment of a coal-cutter, the cover-plate of which had not been properly closed after an examination of the switch by an electrician. The failure properly to close the cover-plate was due to the fact that some coal and dirt lying on the floor were inadvertently scraped up and trapped between the plate and the surface of the flange to which it was bolted. The presence of an explosive mixture of firedamp was attributed to an abnormal emission of gas, to dilute which the air current was insufficient.

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\* Cmd. 5503, 1937. H.M. Stationery Office. Price 2s. net.

† Cmd. 5720, 1938. H.M. Stationery Office. Price 1s. net.

‡ Cmd. 5456, 1937. H.M. Stationery Office. Price 9d. net.

Following upon the publication of the Report, a memorandum by H.M. Electrical Inspector of Mines (M.D. Circular No. 100) was circulated to owners, managers and electricians, with directions as to methods of ensuring that the cover-plate is everywhere held close against its seating and describing several devices which would facilitate this.

Arrangements were also made with manufacturers of coal-cutters for modifications of the designs of such machinery so as to enable the closeness of the fitting of the cover-plate to be directly observed without the insertion of a feeler gauge.

(b) *Other Inquiries.*

(i) *Explosions in Coal Mines.*—A detailed examination of the French accident statistics, following a question in the House of Commons, indicated that the French record in regard to explosions was proportionately so much better than that of this country that the French Government were asked to give facilities for an investigation into any differences in conditions or practice in the coal mines of France which might account for the lower accident rate from this cause. Every facility was given by the French Authorities and Major H. M. Hudspeth, at that time Deputy Chief Inspector of Mines, and another officer of the Department visited France for the purpose of the investigation in May, 1937.

The report on their investigation entitled "Explosions in Coal Mines. A Comparison between Great Britain and France"\* revealed important differences in legislation and practice between the two countries, and the general conclusion reached was that:—

"there is in France a broad general relation of cause and effect between a high statutory standard of ventilation and a low accident rate from explosions."

The Report was sent to the Royal Commission for consideration of this, and other questions of principle, in framing their recommendations and in the meantime certain matters of detail are being dealt with by the General Regulations mentioned on page 57.

(ii) *Firedamp Detector Regulations.*—The Departmental Committee which was appointed in December, 1936, to inquire into the working of the Firedamp Detector Regulations, 1935, and to make recommendations, continued its work throughout 1937. The Committee found itself unable to complete its Report by the date on which the existing Regulations were due to expire, namely, 30th September, 1937: they accordingly recommended to the Secretary for Mines that the Regulations should be continued in force for a further period and this was done. The Report was ultimately published in March, 1938.†

\* Cmd. 5566, 1937. H.M. Stationery Office. Price 6d. net.

† Report of the Committee on the Firedamp Detector Regulations. H.M. Stationery Office. Price 1s. net.

(iii) *Pulmonary Diseases*.—The Department is co-operating with the Industrial Pulmonary Diseases Committee of the Medical Research Council in a systematic investigation of the pulmonary diseases which occur among various types of workers in coal mines. A preliminary survey of a number of selected mines in the anthracite area of South Wales, where the incidence of silicosis is highest, was first made by the Inspectors of Mines; and, towards the end of the year, the investigation was started at a mine with a high incidence of certified cases of silicosis. Grants towards the cost of the investigation have been made from the Miners' Welfare Fund on the recommendation of the Safety in Mines Research Board.

The investigation includes a clinical, radiological and occupational study of every worker employed underground and on the surface, and a study of the environmental conditions at the mine which may be possible causative factors, such as dust, fumes, ventilation, temperatures and humidities.

The fullest co-operation is being given by the owners and by the workers' organisation and by the men themselves. Arrangements have been made to ensure the secrecy of the results of individual examinations.

Every effort is being made to complete the investigation as quickly as possible, but the magnitude of the task precludes the possibility of reaching early conclusions.

#### 4. REGULATIONS AND ORDERS.

##### (a) *Of General Application.*

(i) *Explosives in Coal Mines*.—Difficulty having been experienced at certain mines in getting done the necessary ripping of main roads because the shots essential for the purpose might only be fired when the number of workmen in the seam was small enough to comply with Clause 7 (c) of the Explosives in Coal Mines Order 1934, an exhaustive investigation was made to find means of overcoming the difficulty. It was found, however, that in a few isolated cases, despite every effort, the strict enforcement of the provision regarding removal of workmen had led to a deterioration of the roads that was likely to affect the safety of the mine. An amending Order was therefore made on 18th November, 1937, conferring on the Chief Inspector of Mines power to authorise, by certificate in writing, for such period as he thinks fit, the relaxation of Clause 7 (c) as regards removal of workmen in exceptional cases where he is satisfied that shot-firing is necessary in order to carry out work required for the safety of the mine, and that compliance with this provision would prevent the carrying out of the work or would delay it unduly.

It is intended that this power shall only be used on proof of need to deal individually with certain exceptional cases where it is impracticable to comply fully with paragraph (c) of Clause 7 without detriment to safety in other important respects, and in each case



the Chief Inspector's certificate will prescribe such other precautions as he considers desirable to ensure the safety of the persons employed.

(ii) *Firedamp Detectors*.—On the recommendation of the Committee appointed to inquire into the General Regulations (Firedamp Detectors), 1935, these Regulations were prolonged for a period of four months from 30th September, 1937, when they were due to expire, in order to give time for the completion of the Committee's report, and for the establishment of new Regulations. A further prolongation of the Regulations for six months was recommended by the Committee and made by the Secretary for Mines in January, 1938.

(iii) *First-Aid*.—General Regulations were made on 14th June, 1937, to amend the requirements of the First Aid Regulations, 1930, as to the identifying mark on first-aid rooms and on first-aid and other boxes at mines under the Coal Mines Act, 1911. The marking required by the Regulations of 1930 was a white cross on a red ground, but in view of the Geneva Convention Act, 1937, which precluded the continued use of that mark, it was decided to require instead the words "First-Aid" as the identifying mark.

A like Order was made on 14th June, 1937, under Section 29 of the Workmen's Compensation Act, 1923, amending the Order of 1st March, 1924, which applies to quarries and the pit banks of metalliferous mines.

(b) *Applicable to Individual Mines and Quarries.*

The following Special Regulations and Special Rules were established during the year :—

(i) *Mines under the Coal Mines Act, 1911.*

<i>Airways</i> .—Prescribing minimum distances between main airways and the distances from one another of the connexions between main airways (Section 42 (5)) .. .. .	4
<i>Lighting</i> *.—Supplementing No. 11 of the Coal Mines General Regulations (Lighting), 1934, so as to permit the use of fixed electric lights in certain places not covered by paragraphs (a), (b) and (c) of the Regulation .. .. .	1
<i>Safety Lamps</i> .—Regulations for the use of safety lamps in naked light mines .. .. .	6
<i>Winding and Haulage</i> .—Modifying No. 10 of the Coal Mines General Regulations (Winding and Haulage), 1937, to permit the cutting off, when re-capping, of a length of rope less than that prescribed .. .. .	1

\* No. 78 of the General Regulations of 10th July, 1913, was revoked by the Coal Mines General Regulations (Lighting) 1934, but the Special Regulations made thereunder remain in force until revoked individually. Only one such Special Regulation now remains in force.

(ii) *Mines under the Metalliferous Mines Regulation Act, 1872.*

## Special Rules (Section 24).

The dust prevention rules of the Haematite Iron Ore Mines Code have been revised and established at all the haematite iron ore mines.

Haematite Iron Ore Mines Code	..	..	..	..	8
Haematite Iron Ore Mines Code (Revised dust prevention rules only)	..	..	..	..	9
Surface Lines and Sidings Code	..	..	..	..	7
Ganister and Chert Mines Code	..	..	..	..	4
Slate Mines (Exempted) Code	..	..	..	..	1
Electricity Code	..	..	..	..	1
Lead Mines Code (Additional explosives rules)	..	..	..	..	1

(iii) *Quarries.*

## Special Rules.

General Code	..	..	..	..	..	141
Silica Quarries Code	..	..	..	..	..	3
Slate Quarries Code	..	..	..	..	..	2
Ironstone Quarries (Northants. and Lincs.) Code	..	..	..	..	..	1

Exemptions and consents were granted or renewed during the year—subject in the majority of cases to special conditions for ensuring safety—under powers conferred by the Statutes and Regulations as follows:—

(i) *Mines under the Coal Mines Act, 1911.*

<i>Electricity.</i> —Exempted flexible cables supplying portable drills or lighting equipment from certain requirements in respect of earthing conductors (Regulations 125 (b) and 137 (a))	..	..	..	..	..	19
Permitting the use of unarmoured cables and the earthing of a point other than the mid-voltage point (Regulations 129 (e) (iv) and 137 (a))	..	..	..	..	..	4

*Rescue: General Regulations of 10th December, 1928:*

Exempting from certain requirements	..	..	..	..	..	1
<i>Diesel engine</i> —Consent to introduce and use underground (Section 58)	..	..	..	..	..	1
<i>Safety Lamps.</i> —Exempting from the use of safety lamps after an explosion of inflammable gas causing personal injury (Section 32 (1) (b))	..	..	..	..	..	2
<i>Shot-firing from power mains.</i> —Permitting the firing of shots from lighting circuit during shaft sinking (General Regulation 133 (a))	..	..	..	..	..	1
<i>Simultaneous Shot-firing.</i> —Consenting to experimental simultaneous shot-firing trials with Cardox and Hydrox cartridges	..	..	..	..	..	4

<i>Winding apparatus.</i> —Exempting from the provision of a detaching hook (Section 40 (2)) .. .. .	2
Exempting from the provision of an automatic contrivance to prevent overwinding (Section 40 (2)).. .. .	9
Extending the life of winding ropes (No. 6 (a) of General Regulations (Winding and Haulage) 1937) .. .. .	6
<i>Working under Moss, etc.</i> —Consenting to coal being worked under moss, etc. (General Regulation 29 of 1920) .. .. .	2
<i>Lighting.</i> —Permitting continuation in use of safety lamps not formally approved under Lighting Schedule (No. 1 of Lighting Regulations, 1934) .. .. .	2
(ii) <i>Metalliferous Mines.</i>	
<i>Gunpowder.</i> —Slate Mines (Gunpowder) Act, 1882 :—	
Exempting from certain provisions of the Metalliferous Mines Regulation Act, 1872, relating to the use of explosives	1

#### 5. PROSECUTIONS.

It is felt that a useful purpose would be served by including in this Report brief accounts of a few of the more important cases of legal proceedings instituted during the year under the Coal Mines Act, 1911, which may have the effect of drawing the particular attention of colliery managements to certain requirements of the Act, and of clarifying the Law.

(i) *Fencing of machinery.*—Following on a fatal accident at Deep Navigation Colliery, South Wales, in which a fitter was killed through being caught between the rollers of a conveyor belt, proceedings were taken against the Owners, Agent and Manager of the Colliery for failure to keep the return end of the conveyor securely fenced as required by Section 55 of the Coal Mines Act, 1911. This Section reads “Every fly-wheel and all exposed and dangerous parts of the machinery used in or about the mine shall be kept securely fenced.” The case was dismissed by the Merthyr Tydfil Magistrates but on appeal the case was remitted to them, and the defendants were convicted.

At the appeal proceedings in the Divisional Court, the Lord Chief Justice stated in his Judgment that the Magistrates, although they considered the machinery dangerous, dismissed the case for two reasons; firstly because the victim of the accident acted in a wrong and extraordinary manner, since he could, and should, have gained access to the rollers through the relatively small apertures (2 ft. 7 in. deep and from 12 in. to 4 in. wide) provided; and secondly because the machinery, though dangerous, was not exposed within the meaning of the Act.

Lord Hewart said, in regard to the first finding :

“Workmen very often have to be protected against themselves, not, that is to say, against the results of their own

deliberate mischief, but against the consequences of doing what they have to do in a way which either hurry or laziness or some other consideration may present to their minds as being at the moment the most convenient way of doing it."

In regard to the second finding he said that the amplification of this argument was that "exposed" meant "exposed to persons in general," and in commenting upon this he said :—

"I cannot conceive anything more sublimely futile than statutory provision for the protection of the life and limb of workmen which should except from and entirely leave out of its protecting provisions the particular class of workmen most likely to come, and to come most frequently, near to or in contact with the machinery referred to."

He found it a little difficult to understand how a part of the machinery could be dangerous but not exposed: "exposed" means "at all exposed."

Mr. Justice du Parcq, in agreeing with the Judgment of the Lord Chief Justice, referred to the case of *Wing v. Soar*,\* which he said should be of great assistance to Justices and to those who have to advise the owners of mines on these matters.

(ii) *Ventilation*.—A series of inspections at Mitchell Main Colliery, Yorkshire, revealed the existence of an alarming state of affairs in regard to the ventilation arrangements at this colliery in consequence mainly of the small size of certain airways, the rapid advance of the face, and the excessive leakage of the air available. As a result, 2½ per cent. and upwards of inflammable gas was found in the general body of the air in certain places, and accumulations of an explosive mixture were also discovered.

Proceedings were accordingly instituted under Section 29 (1) of the Coal Mines Act, 1911, in respect of seven different portions of road or face, on five different dates against the Owners, Agent and Manager of the mine. Altogether forty-two charges were laid under Section 29 (1), and in addition, the Agent and Manager were summoned for breach of Section 101 (4) under which a sentence of imprisonment may be imposed. The defendants were convicted on all counts with total fines of £405 and in the case of the Manager a sentence of one month's hard labour under Section 101 (4).

The defendants appealed to Quarter Sessions and the appeals under Section 101 (4) were allowed but without costs; the fines against the manager for his offences under Section 29 (1) were reduced, but none of the appeals under this section were allowed.

(iii) *Means of egress*.

(a) An inspection at Joy Pit, Northumberland, showed that more than ten men were employed in the Low Main Seam from which there was only one means of egress to the surface.

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\**Law Times Reports*, 27th November, 1937.

Legal proceedings were instituted against the Owners, Agent, and Manager of the pit.

It was contended for the defence that the Low Main Seam area was a very disturbed one, still in process of development in order to prove the continuity of the coal, and that the workings in it were, under Section 36 (5) (i) (b), workings "for the purpose of searching for or proving minerals" in "a new mine or seam being opened," in which 20 persons might legally be employed. In fact, however, the seam had already been worked at no great distance away and 300 tons of coal were being drawn daily.

All the defendants were convicted.

(b) An inspection of the airways at Nelson Colliery, Northumberland, showed that contrary to Section 36 (3) of the Act more than nine persons were at work in a district the return airway from which was blocked by a fall. Inspections at a later date showed that the main return airway, contrary to Section 42 (2) of the Act, did not afford a ready means of ingress to and egress from the workings, and another instance of contravention of Section 36 (3) was then discovered.

Legal proceedings were accordingly instituted against the Owners, Agent, Manager and a former Manager, and charges were laid under both Sections of the Act.

It was contended, for the defence, as regards Section 36 (3), that the fall would have been cleared within a few hours, and that it was, therefore, unnecessary to withdraw the men, and as regards Section 42 (2) that there had been at all times, except when the fall occurred, two ready means of egress.

These contentions were not accepted by the Magistrates and the defendants were convicted on all charges.

(iv) *Support of Roof*.—Proceedings were instituted against the Manager and Under-manager of Thrislington Colliery, Durham, following an accident whereby a man was killed by a fall of roof while engaged in making up sets of tubs on a main haulage landing. The defendants were charged and convicted for failure to see that the roof of the landing, where tubs were coupled and uncoupled, was systematically and adequately supported as required by Section 50 (3) of the Coal Mines Act, 1911. Support had been provided, prior to the fall, by four sets of baulks, but these had been discharged ten days before the accident by some derailed tubs, and had not been replaced.

## 6. WINDING AND HAULAGE REGULATIONS.

Reference was made in last year's Report to the General Regulations which were made on 2nd March, 1937, to strengthen the statutory requirements as to measures to prevent overwinding,

and as to the care and treatment of winding and haulage ropes, and of detaching gear.

Nos. 1—4 of these Regulations deal with the prevention of overwinding, and were due to come into operation on 1st January, 1938. The remaining Regulations came into operation on 1st April, 1937.

Representations were made by the National Association of Colliery Managers, and by the Mining Association that the operation of the Regulations relating to the prevention of overwinding should be postponed, on the grounds that serious difficulties were being encountered in obtaining the necessary slow-banking apparatus; that it was impossible to secure delivery by the appointed day; and that in any case it was very doubtful whether the apparatus obtainable would in all cases enable compliance to be effected with the requirement in No. 1 of the Regulations that the landing speed of the cage should not exceed 5 feet per second.

Later inquiries revealed that, generally speaking, the manufacturers of slow-banking apparatus were not then experiencing any considerable difficulty in supplying apparatus to give the performance required, but the statements that it was impossible for them to give delivery by the appointed day were found to be justified.

It was felt, however, that since the Overwind Prevention Committee's Report (containing the recommendation as to performance implemented by No. 1 of the Regulations) had been published as long ago as the spring of 1935, and since the formal publication of the Regulations was made only after prolonged discussions with the industry, the delay in complying with the regulations by the appointed date must in large measure be ascribed to delay on the part of colliery companies in investigating the apparatus available and placing their orders, with the result that the manufacturers had received a rush of orders at the last minute, which could only be met with promises of delivery running well into the future.

Accordingly when it became clear early in 1938 that this was the position it was decided to meet it, not by a general postponement of the operation of the Regulations, which might have resulted in further procrastination at some collieries, but by granting temporary exemption in particular cases on the production of evidence from the manufacturers as to the date of order of the apparatus and the probable date of its delivery, accompanied by an undertaking from the mine owner promptly to afford all the necessary facilities for installation.

A difficulty of a minor character arose in connexion with electric winders, and an investigation was made in consultation with colliery engineers and the manufacturers, into the question of the brake test which should be applied for the purposes of No. 3 (a) of the Regulations. It was agreed that the term "maximum torque" in Regulation No. 3 (a) as applied to electric winders was to be interpreted as "the maximum torque actually developed during a normal winding cycle." It was also agreed that it would be

desirable, for purposes of the actual tests of the brakes, to provide a margin of say 10 per cent. over and above the peak current reached during the normal wind, and the Secretary for Mines recommends that this should be done.

A number of applications for the extension of the life of winding ropes beyond the normal statutory period of 3½ years have been received under No. 6 of the Regulations, and in a few of these cases where satisfactory evidence has been produced that the use of the rope could be continued without danger, a limited extension of life has been granted, subject, in some cases, to additional conditions connected with such matters as the lubrication of the rope.

These extensions can only be granted in exceptional cases and in respect of ropes which have not been and are not to be ordinarily used for the winding of persons or mineral.

#### 7. DRAFT GENERAL REGULATIONS.

In answer to a question in the House of Commons on 8th June, 1937, as to what further steps it was proposed to take in pursuance of the recommendations of the reports of the Court of Inquiry into the explosion at Gresford Colliery, which had been published early in 1937, the Secretary for Mines announced that he intended (among other things) to propose General Regulations to deal with certain matters, *ad interim*, without prejudging the recommendations of the Royal Commission on Safety.

The matters which had been raised in these reports, and which it was felt could be dealt with in this way were (1) Precautions against coal dust, (2) Fire-fighting, (3) Inspections of Firemen, Examiners and Deputies, and (4) Telephones and Signalling Apparatus. The desirability of dealing with these questions without waiting for the publication of the findings of the Royal Commission, was emphasized by certain other considerations.

The question of precautions against explosions of coal dust had, for instance, been engaging the attention of the Safety in Mines Research Board ever since its inception, and the experimental work of the Board had by this time reached a stage at which it appeared practicable, as well as necessary from the point of view of safety, to translate its findings into revised regulations. There had been a serious coal dust explosion, in 1936, at Wharnccliffe Woodmoor Nos. 1, 2 and 3, Colliery, which had brought into prominence the need for more ample stonedusting than the present regulations require where coals of high volatile matter content are worked, and the importance of using incombustible dusts which will preserve their dispersibility when the conditions are humid.

The need for providing equipment and organization for fighting fires underground was becoming generally recognized, and valuable pioneer work had been done by many progressive mine owners and managers. A general study of the subject had been made and an Interim Report published by the Institution of Mining Engineers in

collaboration with the Mining Association and the National Association of Colliery Managers, and the time was ripe, and the information and experience available, for drawing up a provisional code of fire-fighting regulations.

Finally, the advantage of the use by deputies for gas testing of flame safety lamps which can be adjusted to admit air at the top of the lamp only was commented upon in Sir Henry Walker's Report\* in 1936, on the explosion at North Gawber Colliery, and as soon as a convenient opportunity presented itself, it was clearly desirable to require such lamps to be provided for the use of deputies.

Draft regulations were accordingly prepared and were, in the first instance, circulated informally to the representative bodies of the industry and to the Press, on 3rd July, 1937, in order to give a fuller opportunity for the study and discussion of the difficult issues which they raised than could have been afforded had the draft been formally published with a time limit for the lodging of formal objections.

Lengthy discussions took place with the Mining Association and the National Association of Colliery Managers in November, 1937, and in the early months of 1938; and towards the end of March, 1938, a revised draft of the regulations was circulated to the representative bodies of the industry. This draft was again discussed with the two Associations referred to, in April, 1938, but it was not possible to secure full agreement, and in the circumstances it was decided that formal publication should no longer be deferred and the draft was accordingly published in May.

Apart from matters of detail in regard to which a number of adjustments were agreed upon, the discussions had turned largely upon the requirements of Part I of the regulations which dealt with precautions against coal dust, and greatly strengthened the existing requirements governing the treatment of the roads with incombustible dust. It was clear that the attainment of the much higher standard proposed in regard to the incombustible matter content of the road dust, especially where coal of a high volatile matter content was being worked, would be a matter of difficulty in some cases; and, as a result of the discussions, alterations were made in the draft which were designed so far as practicable to lessen this difficulty, notably by the introduction of provisions permitting some reduction in the incombustible matter content where stone dusts of special efficacy were used for treating the roads.

The regulations as finally published, may, in their general effect, be summarized as follows :—

Part I, dealing with precautions against coal dust, requires a reduction in the permissible combustible content of the road dust below the present figure of 50 per cent. on a sliding scale, according as the volatile matter of the coal worked increases above 20 per cent. In the case of coals having a volatile matter content of over 30 per

\* Cmd: 5214



cent, the permissible combustible content of the road dust would be 25 per cent. New or amended requirements are also introduced governing the fineness and dispersibility of the incombustible dust used, the methods of sampling and analysing dust, the number of samples to be taken and the recording of the results of the analyses of these samples on a scale plan of the workings to be kept specially for this purpose.

Part II of the regulations, which deals with the subject of fire-fighting, is a provisional code of regulations, laying down, on broad lines, basic requirements of general application in regard to the provision of materials and equipment for fighting fires underground, and to the organization of fire-fighting work.

Part III is concerned with inspections by firemen, examiners and deputies, and in its main provisions requires that *all* findings of gas and other dangers shall be reported in the statutory report book and not only those found in the course of statutory inspections. The deputies shall be provided for the purpose of their statutory inspections with both a flame and an electric lamp each of types approved for that purpose, or with a combined flame and electric lamp.

Part IV of the draft introduces new requirements in respect of the compulsory use of approved telephone and signalling apparatus in safety lamp areas, and gives the Board of Trade power to prescribe such conditions of manufacture, installation and use as may be necessary to ensure safety. It is intended that only apparatus of intrinsically safe types shall be approved under the regulations, and safeguards are prescribed to guard against unsafe connexions of this apparatus with unapproved apparatus.

#### 8. CIRCULAR LETTERS.

The following gives a brief review of the Mines Department Circulars issued to the coal industry during the year, 1937. Copies of these circulars, and of others issued in earlier years, may be obtained free of charge from the Department.

*No. 90* gave formal notice of the intention to establish the Coal Mines General Regulations (Winding and Haulage), 1937, and included a memorandum explaining the provisions of the proposed Regulations.

*No. 91* announced the establishment of the Winding and Haulage Regulations, 1937, and notified owners and managers of the dates on which the various parts of the Regulations would come into force.

*No. 92*, issued by the Chief Inspector, dealt with the examination, or adjustment, of electrical apparatus below-ground: such apparatus must not be opened up for that purpose while it is "live," with consequent risk of open sparking.

*Nos. 93 and 94* were concerned with the issue of a poster appealing for co-operation in the prevention of accidents to boys.

*Nos. 95 and 97* established General Regulations, issued in consequence of the Geneva Convention Act, 1937, amending the

requirements as to the marking of first-aid rooms, and first-aid boxes.

*No. 96* announced the publication of the Eighth Supplement to the Catalogue of Plans of Abandoned Mines.

*No. 98* directed the attention of owners and managers to the requirements of the Coal Mines (Employment of Boys) Act, 1937.

*No. 99* was concerned with the prolongation of the Firedamp Detectors Regulations, 1935.

*No. 100* gave directions in regard to the maintenance of electrically-driven coal-cutters in a flameproof condition.

*No. 101* notified owners and managers that an amended form of return (M.D. Ret. 39) would be used during 1938 for all non-fatal 3-day accidents, and furnished a memorandum explaining the reasons for the amendment and giving directions for completing the Return.

#### 9. SAFETY IN MINES RESEARCH BOARD.

Under the scheme by which members of the Board retire in rotation, Major D. H. Currey Briggs and Mr. Thomas Cape, M.P., retired from the Board on 31st December, 1937, after a period of service in each case of nearly nine years. The Secretary for Mines has conveyed to them and desires now to express publicly his warm appreciation of the valuable services they have rendered during their long service with the Board.

Mr. George Hall, M.P. and Mr. T. E. B. Young were appointed to membership of the Board as from 1st January, 1938, in succession to the members mentioned above and Dr. C. G. Douglas was appointed at the same time in place of the late Dr. J. S. Haldane. In order to avoid too great a change in the personnel of the Board, the appointments of Mr. R. W. Glass and Mr. Frank Lee, which were due to expire at the end of 1937, have been further extended to the end of 1938.

At the Buxton Research Station a new laboratory, mainly for explosives researches, was completed during the year. The provision of increased accommodation in the new building enabled the existing general laboratory to be converted into a lecture room for the use of the increasingly large parties of visitors to the Research Station.

Co-operation has been maintained with the chief mining research organisations abroad. In September, representatives of the Board attended an International Conference of the Directors of the Research Station held at Brussels.

The development and use of protective equipment continue to make satisfactory progress. In order to ensure the suitability of "hard hats" steps are being taken to register a Certification Mark in the name of the Secretary for Mines under the Trade Marks Acts, 1905 to 1919, the Mark consisting of the outline of a crown with the

letters MD therein. The Mark is intended to provide purchasers with an assurance of quality and suitability, for manufacturers will only be entitled to use it under licence granted by the Secretary for Mines, subject to appropriate conditions and after their product has been thoroughly tested.

Full particulars of the progress of the Board's work during the year are published separately in their Sixteenth Annual Report.\*

#### 10. TESTING WORK.

The work at the Department's Sheffield and Buxton Testing Stations has continued at increasing volume during the year, and an addition to the Sheffield staff has been made on account of the increased call for analytical services for the Mines Inspectorate.

The general testing, as has been explained more fully in previous Reports, covers safety lamps and other lighting equipment, explosives and shotfiring appliances and all forms of electrical apparatus, chiefly for use in the mining industry, but also to some extent for use in other industries in which inflammable atmospheres are liable to be encountered.

Close co-operation is maintained with work on the same subjects by the Safety in Mines Research Board through the Director of Research Stations, Professor R. V. Wheeler.

The more important items are dealt with separately in the following pages.

##### *(a) The Testing Station, Sheffield.*

The work of this station was continued during the year under the Superintending Testing Officer, Captain C. B. Platt.

(i) *Safety Lamps*.—Complete type tests were carried out of three flame and six electric lamps for approval under the Lighting Regulations, and of a number of other flame and electric lamps designed mainly for use by officials. Examination has also been made of a large number of minor improvements for incorporation in existing types of lamps.

The chief development with respect to flame safety lamps has been in the progress of the investigation into means of cooling the lamps. It has been found that by improved ventilation combined with suitable general design the temperature rise during use can be reduced to about 50° F. at the oil vessel and 60–65° at the bonnet, and that the reduction in temperature rise is accompanied in most cases by an appreciable increase in lighting power. Manufacturers

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\* Sixteenth Annual Report of the Safety in Mines Research Board. H.M. Stationery Office. Price 2s. net.

have already availed themselves of this development and several lamps embodying the improvements have now received statutory approval.

Exhaustive laboratory tests have been carried out of toughened flame lamp glasses of the " Armourplate " type, and in view of their satisfactory performance, particularly as regards resistance to impact and shock, arrangements are now being made for practical trials at collieries with a view to types of toughened glasses being approved for general use.

There has been no special development during the year in the design of electric safety lamps. Although increases in lighting efficiency have been made, they have been due less to improvements in lamp construction than to the use of higher efficiency bulbs.

(ii) *Firedamp Detectors*.—The Ringrose Type CH<sub>4</sub> combined safety lamp and automatic firedamp detector (which gives warning of the presence of firedamp by a pronounced dimming of the working light) passed its official tests and was given statutory approval by the Firedamp Detectors (No. 4) Order of 7th September, 1937.

Three other types of electric automatic detector were put forward for test during the year, all of them being submitted as entries for the £500 prize offered by the Mining Association, but the tests are not completed. The Naylor " Spiralarm " referred to in last year's report is still the subject of experiment and the official test is suspended for the time being.

During December, 1937, the Superintending Testing Officer visited the Montluçon Testing Station of the Comité Central des Houillères de France and was given every facility and help to study the manufacture and testing of the Leon Montluçon firedamp detector which is used in France to a considerable extent. Arrangements are now being made for detectors of this type—some of British and some of French manufacture—to be tried out " side-by-side " at collieries in this country. This detector is not automatic and is not intended for use by workmen. It is a scientific instrument for measuring percentages of firedamp in the air.

(iii) *Lamp Bulbs*.—The testing of lamp bulbs has proceeded on normal lines, and the approved list now comprises over 110 types covering the 19 ratings now in use.

An extensive series of colliery trials, carried out in collaboration with the British Standards Institution and the Electrical Lamp Manufacturers' Association, showed that a test-life for hand lamp bulbs of 600 hours (which had been fixed originally at this figure on the assumption that the test-life and pit-life would be approximately the same) gave, in fact, a considerably longer pit-life. In the new British Standards specification\* just issued, it has accordingly been

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\* B.S.S. 535-1938.

decided to reduce the test-life to 500 hours (which has been proved more than sufficient to provide for an actual pit-life of 600 hours) and thereby to enable a higher lighting efficiency to be specified. The British Standards Institution has been asked to arrange for another review of the specification in 12 months' time in the light of the further tests now in progress, with a view to the possible specification of a still shorter test-life in order to obtain the advantages of a still higher standard of lighting efficiency.

An important development during the year has been the manufacture of lamp bulbs containing a gas filling of krypton instead of argon, which has enabled the lighting efficiency of the bulbs to be increased by about 20 per cent. without involving any reduction in the length of life. Krypton-filled bulbs were, in the first instance, subjected to pit trials and, these being satisfactory, were given provisional approval. Owing, however, to the high cost of the krypton filling, the manufacturers desired to reduce substantially the size of the glass envelopes and official tests were carried out which confirmed that the filament-life would not be prejudiced. The provisional approval was afterwards extended to cover small diameter bulbs in four of the hand lamp ratings. The use of krypton has not yet been applied to cap lamp bulbs, but it is hoped that this will follow in the near future.

The informal Consultative Committee, representative of the Mines Department and of electric bulb and lamp manufacturers, has continued to assist the Department on questions relating to lamp bulbs and the Secretary for Mines desires again to thank the members for their services.

The check-testing of lamp bulbs taken from collieries, to prove compliance with the approved specifications, and the inter-check on special batches of bulbs undertaken for calibration purposes in conjunction with the National Physical Laboratory and manufacturers, have been continued with satisfactory results.

The investigation at collieries to determine what are the limits of reasonable deterioration of the lighting efficiency of safety lamps in service has been completed, and some portable photometers have been constructed at the Testing Station for the use of Inspectors of Mines in checking the observance of the Lighting Regulations.

(iv) *Lighting other than by Safety Lamps.*—An interesting item in connection with the use of air-turbo lighting units has been the successful trial at a colliery of a low-voltage mercury-vapour lamp, giving a substantial increase in lighting power as compared with ordinary lamps of a similar rating, and official approval has now been given to a lamp fitted with this type of bulb.

(v) *Electrical Shotfiring Apparatus.*—The testing of exploders during the year has consisted mainly of the check-test of a percentage of each manufacturer's output, and the individual test of a number

of experimental multi-shot exploders for simultaneous shotfiring trials at collieries with Cardox and Hydrox shells. No new type of exploder has received official approval. Some research has been carried out with the object of evolving a simple routine test of the efficiency of multi-shot exploders, but so far no satisfactory alternative to the actual use of fuse-heads has been found.

(vi) *Mining Bells, Relays, Telephones, etc.*—The development of the safe system of bare wire signalling with alternating current apparatus, mentioned in last year's report, resulted in the submission of a number of units for official test and certification. All these units proved satisfactory, subject to modifications in some instances, and a useful range of certified alternating current apparatus is now available.

(vii) *Test and Examination of Impounded Apparatus.*—A considerable amount of work was carried out on the testing and examination of lamps and other apparatus impounded by H.M. Inspectors of Mines following mining accidents. The results of any tests which proved to be significant are given elsewhere in the Reports of H.M. Divisional Inspectors of Mines, or in special reports on particular accidents.

(viii) *Miscellaneous Tests.*—The miscellaneous testing carried out during the year, chiefly on behalf of the Home Office, was concerned mainly with control gear for printing machinery, recording instruments for petroleum installations and lighting apparatus for use in industrial premises where inflammable gases or vapours are liable to be encountered.

(ix) *Analysis of Mine Air and Mine Dust Samples.*—The numbers of mine air and mine dust samples examined during the year were 6,056 and 9,307 respectively as compared with 3,106 and 5,677 respectively in 1936. The increase was due, in part, to special investigations made by H.M. Inspectors of Mines to obtain information required by the Royal Commission on Safety in Mines.

#### (b) *The Testing Station, Buxton.*

(i) *Flameproof Electrical Apparatus.*—Testing of the flameproof enclosure of all types of electrical apparatus was continued throughout 1937 by the Testing Officer, Mr. H. Rainford, under the general supervision and direction of H.M. Electrical Inspector of Mines.

The design of all apparatus, as shown on detailed drawings, is first examined as to its compliance with the general constructional requirements laid down and with the special requirements for the various groups of inflammable gases or vapours: (Group I—Firedamp; Group II—Petroleum and Acetone vapours; Group III—Town's gas and Coke Oven gas). When a design is accepted, after

modification if necessary, a specimen of the apparatus is required to be submitted to test and if the results are satisfactory the design is duly certified. The Group III test is still provisional only, pending the acquisition of further data, and all apparatus in that group is temporarily covered by test reports without certificates.

The volume of testing has continued at the high level reached during the previous year and, as would be anticipated now that about 1,100 types of apparatus have been certified, there has been much examination of drawings relating to small variations, most of which have been accepted without test. During the year, 237 certificates and 36 Group III Reports were issued in addition to 41 duplicate certificates (to manufacturers desiring to market apparatus submitted by other firms) and 346 supplementary certificates covering variations to apparatus previously certified. The corresponding figures for 1936 were 271 certificates, 1 Group III Report, 40 duplicate certificates and 298 supplementary certificates. The number of firms licensed to use the registered flameproof mark of the Secretary for Mines, the letters "FLP" within a crown, is now 72.

It is a condition of the grant of flameproof certificates that all apparatus marketed as being of certified type shall bear suitable identification marks, including the number of the "FLP" certificate, and shall conform strictly to the design shown on the signed drawings. It is important that the identification plates should be maintained intact and that no modification to the apparatus (which would invalidate the certification) should be made at a colliery. If for any purpose modification is considered essential, it should be arranged through the manufacturer who can apply for a supplementary certificate to cover the variation.

The lists of flameproof apparatus are now too voluminous for annual publication, but quarterly lists are supplied to the technical mining and electrical journals.

Several instances have been found during the year of apparatus not conforming strictly to the accepted designs being marked as certified by the Department. Such irregularities are liable to involve revocation of the manufacturers' flameproof certificates although such action has not been considered necessary in the cases hitherto brought to notice.

A feature of the flameproof testing has been the increased size and weight of the units submitted for test. In some instances special arrangements were necessary to handle the heavier apparatus and to accommodate it in the testing chamber but, pending further evidence of a substantial demand for test of large and heavy apparatus, the expenditure which would be entailed in making permanent provision for such work has not been considered to be justified.

Some testing of an experimental nature, *e.g.* on "breathing" devices for motors, has been carried out to assist manufacturers in

the design of flameproof apparatus, and a routine test with inflammable gas under initial pressure as an alternative to hydraulic test for proving the margin of strength has been applied in certain cases.

(ii) *The Testing of Permitted Explosives*.—Eight new compositions were submitted for test, of which seven passed and one failed. In addition, two existing Permitted Explosives were retested because of slight modifications in their composition, and two new compositions intended for the Canadian market were tested, making 12 tests in all.

Two of the new explosives were not made commercially available, but six new names were added to the Permitted List during the year, and the number of explosives available in sheathed form increased by nine. Excluding explosives not manufactured in Great Britain or manufactured for export only, the List on 31st December gave a choice of 55 explosives permitted for general use (including 33 available sheathed) and 10 low density explosives (1 sheathed).

For this testing work, as well as for advice on the subject of mining and quarrying explosives in general, the Department is much indebted to the staff of the Explosives Department, Home Office.

Two new types of Carbox Carbon Dioxide Cartridge were tested and added to Part 3 of the Permitted List, viz., Types L.P./2 (2 in. diameter) and L.P./C. 74 (2½ in. diameter). Both of these are designed to work at a lower pressure than the types previously approved.

(c) *Test of Rescue Apparatus (Doncaster)*.

The testing of rescue apparatus continues to be carried out at Doncaster Rescue Station by the Testing Officer, Mr. W. F. Richardson, one of H.M. Inspectors of Mines, who, in addition, inspects Rescue Stations throughout the country and advises upon reports received concerning accidents and other mishaps arising out of the use of rescue apparatus.

A modified form of "Proto" Mark II breathing apparatus was tested and passed during the year. As compared with the original "Proto" Mark II apparatus the most important improvements are a breathing bag of larger capacity with an inward curve or "waist" to keep the carbon dioxide absorbent "Protosorb" in position, a new by-pass valve designed at Doncaster Rescue Station, and a new type of pressure gauge more accurate and more easily read. The apparatus as modified is designated "Proto" Mark IV.

Two new types of breathing apparatus—"Vitox" Mark I and Mark II—were also tested and were officially approved on 27th July, 1938. This apparatus is carried wholly on the wearer's back and the two types are almost identical in design and principle, the only difference being that Mark II is fitted with a "cooler" and one of the two absorbent canisters is larger than the



other, while Mark I has no cooler and the absorbent canisters are of the same size.

In connection with the test of the "Vitox" apparatus, the manufacturers submitted light-weight oxygen cylinders made of "Vibrac" steel (nickel-chrome-molybdenum). The cylinder was of 11 cubic feet capacity when charged to a working pressure of 150 atmospheres. These figures being in excess of the "safe limits" which had been laid down in November, 1933, viz., 10·5 cubic feet capacity at a working pressure of 120 atmospheres, those limits were re-examined and after expert advice had been taken it was decided to approve the use of the "Vibrac" cylinder with both "Vitox" and "Proto" Rescue Apparatus on condition that the cylinder shall have minimum dimensions of 4·2 inches external diameter and 0·10 inch wall thickness, respectively, and shall otherwise be constructed in accordance with the recommendations in the Third Report of the Gas Cylinders Research Committee.\*

Further experimental tests of gas masks and canisters, designed by the Safety in Mines Research Board, were made and practical trials underground are now to be carried out.

Two Mine Rescue Memoranda were issued to Rescue Station Authorities during the year. No. 12 reminded the authorities that carbon steel cylinders should be tested hydraulically by some competent firm at least once in every five years and it emphasised that annealing of carbon steel cylinders is undesirable; No. 13 specified the alterations that should be made in "Proto" Mark II apparatus, consequent upon approval of "Proto" Mark IV apparatus, and the manner in which they should be effected.

The second Conference of Rescue Station Superintendents was held at Lichfield and was attended by Superintendents and Instructors from nearly all the Rescue Stations in the country. The members of the Conference visited Ashby, Wilnecote and Hednesford Rescue Stations. Another Conference is to be held during 1938.

Tests of face masks for use with "Proto" and "Salvus" breathing apparatus were carried out on behalf of the Home Office for the purposes of the Chemical Regulations, 1922, made under the Factory and Workshop Act, 1901. The masks passed the tests and were recommended for approval for use with the "Proto" and "Salvus" apparatus for one hour and half an hour, respectively.

## 11. TRAINING OF BOYS.

The safety classes for boys continued satisfactorily in nearly all the coal mining areas of the country.

The following table sets out the number of centres at which safety classes were held during the Session 1937-38; the number of boys who were enrolled; and the number who were awarded safety badges or certificates.

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\* Published by H.M. Stationery Office in 1929, price 2s. 6d. net.

*Safety Classes for Colliery Boys.*

Session 1937-38.

Inspection Division.	No. of Centres.	No. of Boys Enrolled.	No. of Badges or Certificates Awarded.
Scotland .. .. .	56	2,329	1,747
Northern .. .. .	86	3,373	2,181
Yorkshire .. .. .	47	1,989	853
North Midland .. .. .	54	2,030	1,062
North Western .. .. .	13	1,136	520
Cardiff and Forest of Dean .. .. .	50	1,667	712
Swansea .. .. .	24	516	230
Midland and Southern .. .. .	24	824	124

The total numbers show little change as compared with the previous Session. In South Wales, the efforts of the South Wales and Monmouthshire Safety in Mines Research Committee, in co-operation with bodies representative of the Industry and the Education Authorities, have led to some improvement, more especially in the eastern half of the coalfield. The best progress was in Monmouthshire.

Classes were started for the first time in Shropshire under the aegis of the Shropshire Education Committee.

The Board of Education have published in the form of an Education Pamphlet\* the report of their Inspectors on instruction in safety principles in junior courses in the West Riding of Yorkshire. This report contains valuable information which should be studied by all who are concerned with the management and teaching of such classes.

In their Sixth Report† the Management Committee of the Yorkshire Mines Safety Badge have suggested the formation of a "League of Safety" at each colliery at which 50 or more safety badge winners are employed. Safety badge winners only would be eligible for admission, and full membership would be restricted to those who hold both a safety badge and a first-aid certificate. It would be one of the chief objects of the League to encourage boys to continue their interest in safety principles by obtaining recognised qualifications in mining subjects and in ambulance and first-aid. The Miners' Welfare Committee have made a grant to initiate the Scheme.

\* "Safety Principles for Boys Employed in Coal Mining." (Board of Education—Educational Pamphlet No. 108.) Published by H.M. Stationery Office, 1937, Price 6d. net.

† For Session 1936-37. Issued by the Yorkshire Council for Further Education, September, 1937.

During the year the Secretary for Mines distributed safety badges to colliery boys from classes arranged by the Kent Education Committee and the Wigan and District Mining and Technical College. In Kent, the boys from one colliery were also presented with protective equipment provided by the colliery management and the local branch of the District Mineworkers' Association. This practical method of rewarding badge-winning boys helps to stimulate a "safety" atmosphere and is an encouragement to all young workers in coal mines to use protective equipment; and the facts have been communicated to those concerned with the organization of safety classes for boys in other areas, in the hope that it will be found possible to make similar arrangements elsewhere.

It cannot be too often or too strongly emphasised that while preparatory instruction at safety classes is an important factor in minimising accidents, by instilling into boys a sense of the dangers that may befall them in their working life and in teaching practical measures which should be taken for their protection, these classes should not in any way be regarded as a substitute for the systematic practical training and careful supervision which are vitally necessary for the boys at the mine itself.

*Safety Classes for Adults.*—Since the formation of organized safety classes for adult miners at a Yorkshire colliery in 1936, this movement has extended to collieries in several other districts. In the North Midland Division there are now ten centres at which mining education for adult workmen is given, five of which were started under the direction of the Nottinghamshire Education Committee in co-operation with the colliery managements concerned. Some 600 men have attended these classes.

## 12. SAFETY FIRST.

In further development of their work, the National Safety First Association has arranged to introduce, in 1938, a separate class of membership for mines and a mining service of posters and safety bulletins specially suitable for mine officials and Mine Safety Committees. The Chief Inspector is a member of the Mining Advisory Panel for this work which has been set up by the Association.

## 13. STATUTORY EXAMINATIONS FOR COLLIERY OFFICIALS.

### (a) *Board for Mining Examinations.*

Two members of the Board—Mr. J. G. Hancock and Mr. Jesse Wallwork—resigned during the year. Mr. Hancock was one of the original members of the Board and Mr. Wallwork was appointed a year later, in 1913. Both gentlemen had given very many years of valuable and ungrudging service, and have taken with them in

their retirement the sincere good wishes of the Secretary for Mines and the Board.

The vacancies have been filled by the appointment of Major James Gardiner and Mr. G. H. Jones.

The decline in the number of candidates for Certificates of Competency, to which reference has been made in previous reports, appears to have been arrested, and in 1937 there were 560 entrants compared with 493 in 1936. Candidates for First Class Certificates numbered 239 and for Second Class Certificates 321, compared with 243 and 250 respectively in 1936. It is gratifying to record an increase in the number of candidates qualifying at the examinations—28·9 per cent. in the First Class and 35·8 per cent. in the Second Class being successful. These figures are much better than those of the previous year, 21·8 per cent. and 27·2 per cent. respectively.

During the year 18 unsuccessful candidates obtained a sufficient number of marks to entitle them to be re-examined in one or two weak subjects or in the oral test without taking the whole of the examination again. In May, 8 candidates qualified for re-examination in November (7 being successful), and 10 candidates became eligible for re-examination in May, 1938.

Statistics showing the attendances and the results of the two examinations in 1937 are given in Table 62 and the results of previous examinations in Table 63 of Appendix A.

The decline in the number of candidates for Surveyors continues, the number having fallen from 151 (in 1936) to 130. On the other hand the percentage of candidates who passed (26·2 per cent.) is better than for many years past. Statistical analyses of the results are given in Table 62 and Table 63 of Appendix A.

Copies of the questions set at the written examinations are on sale and are obtainable through the usual channels. Copies of the Central Examiners' Reports and of the Annual Report of the Board to the Secretary for Mines were issued to the technical press and to teaching institutions throughout the country.

Further copies of pamphlets explaining the requirements of the Mining Examinations (Certificates of Competency) Rules, 1935, have been distributed to institutions in the coalfields. Under these Rules, students who were below the age of 17 on the 21st June, 1935, and who intend in the future to take either a Manager's or Under-Manager's Certificate will be required to produce evidence showing that they have passed examinations of an approved standard in English, Mathematics, Science and Drawing, or to produce evidence of superior qualifications. Copies of the pamphlet may be obtained gratis on application to the Secretary to the Board.

*(b) Examination for Firemen's and Shotfirers' Certificates.*

These examinations are conducted in mining districts by Local Education Authorities and Mining Institutions approved by the Secretary for Mines under the provisions of Section 15 of the Coal

Mines Act, 1911. The examinations are visited from time to time by the Inspectors of Mines in order to ensure that reasonable uniformity of administration is maintained. An analysis of the results of the examinations held in 1937 will be found in Table 61 of Appendix A.

#### 14. PLANS OF ABANDONED MINES.

The Department has prepared and is extending annually a comprehensive catalogue of plans of abandoned mines, the primary purpose of which is to assist those immediately responsible for dealing with safety problems arising from the proximity of old workings to present-day workings. The location and extent of abandoned workings are indicated by correlation to the maps of the Ordnance Survey, and frequent inspections of plans are made by interested parties.

During the year approximately 100 plans were presented to the Department. In this connexion the Secretary for Mines desires to place on record his thanks to the Earl of Dudley and the Dolcoath Mines, Limited, as well as to others whose gifts have enhanced the value of the catalogue and the supplements thereto. The Department is always glad to record particulars of plans which are held in private ownership and urgently requests owners whose collections have already been catalogued to notify any change in their address or of any transfer of plans to other ownership. It is only by such co-operation that the catalogue can be kept up-to-date.

Deposited plans which are open to inspection can be seen at the Mines Department between 10·30 and 12·30 and between 2·30 and 4·30 (Saturdays excepted) or, by special arrangement, at the offices of the Divisional Inspectors of Mines. No charge is made for inspection and copies, if required, can be prepared under the supervision of a qualified Mine Surveyor at a reasonable cost.

**THIRTIETH ANNUAL REPORT OF H.M. CHIEF  
INSPECTOR OF MINES.**

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## TABLE OF INSPECTION DIVISIONS

### Corrected to August, 1938.

H.M. Chief Inspector of Mines .. .. .	F. H. WYNNE, C.B.E., B.Sc.
H.M. Deputy Chief Inspector of Mines .. .. .	J. R. FELTON, O.B.E.
Senior Inspector .. .. .	*W. F. RICHARDSON.
H.M. Electrical Inspector of Mines .. .. .	J. A. B. HORSLEY, O.B.E.
H.M. Deputy Electrical Inspector of Mines .. .. .	G. M. HARVEY, M.Sc., B.Eng.
Electrical Inspector for Special Duties .. .. .	R. CRAWFORD.
H.M. Medical Inspector of Mines .. .. .	*S. W. FISHER, M.D., B.Ch.
Inspector for Special Duties .. .. .	P. S. HAY, O.B.E.

Mines Department, Dean Stanley Street,  
Millbank, London, S.W.1.

No. of Division. (1)	Names and Areas of Divisions. (2)	Inspectors in Charge, Telegraphic Address and Telephone Number. (3)	Senior Inspectors. (4)	Junior Inspectors. (5)	Sub-Inspectors of Mines. (6)	Sub-Inspectors of Quarries. (7)	Inspectors of Horses in Mines. (8)
1	<p><b>Scotland Division, comprising the whole of Scotland.</b></p> <p>T. Ashley, 51, Melville Street, Edinburgh, 3.</p> <p>(Mines Inspector, Edinburgh.)</p> <p>(Edinburgh 27358.)</p> <p><i>Private address:</i> 29, Braid Farm Road, Edinburgh, 10.</p> <p>(Edinburgh 53008.)</p>	<p>A. Stoker, 136, Brownside Road, Cambuslang, nr. Glasgow.</p> <p>*R. J. Edwards, 13, Hill View Road, Corstorphine, Edinburgh, 12</p>	<p>*P. G. Dornay, M.C., B.Sc., Transylaw, Dunfermline.</p> <p>J. A. Grove, 32, Forrester Road, Corstorphine, Edinburgh, 12.</p> <p>*G. Hoyle, B.A., 21, Netherview Road, Netherlee, Glasgow, S.4.</p> <p>N. Naismith, 59, St. Ronan's Drive, Burnside, Rutherglen, Glasgow.</p> <p>H. Hyde, B.Sc., Ph.D., 14, Milton Road, West, Edinburgh.</p> <p><i>Electrical:</i> (1 vacancy)</p>	<p>A. McCall, 60, Sydney Terrace, Craigen-tinny, Edinburgh, 7.</p> <p>*T. H. Hamilton, 34, Prestwick Road, Ayr.</p> <p>*W. Dunbar, Holmlea, Coatbridge Road, Bargeddie, Lanarkshire.</p> <p>W. G. Irwin, 47, Woodside Avenue, Rosyth, Dunfermline.</p>	<p>N. Gillies, 37, Milton Road West, Duddingston, Portobello, Midlothian.</p>	<p>A. McArthur, 8, Handland Avenue, Glasgow, W. (see also Division 2).</p>	
2	<p><b>Northern Division, comprising Northumberland, Durham, Cumberland, Westmorland, the North Riding of Yorkshire, the detached part of Lancashire north of Morecambe Bay and the Isle of Man.</b></p> <p>W. J. Charlton, O.B.E., Crown Buildings, 63, Westgate Road, Newcastle-on-Tyne, 1.</p> <p>(Mines Inspector, Newcastle-on-Tyne.)</p> <p>(Newcastle 28664.)</p> <p><i>Private address:</i> "Craiglands," Strathmore Road, Rowlands Gill, Co. Durham.</p> <p>(Rowlands Gill 94.)</p>	<p>T. L. McBride, B.Sc., Benton Cottage, Longbenton, Newcastle-on-Tyne.</p> <p>*W. B. Brown, Millbank, Western Hill, Durham.</p>	<p>*W. Wainwright, Hillside, North End, Durham.</p> <p>*T. A. Rogers, "Sunnyside House," 56, High St., Gosforth, Newcastle-on-Tyne, 3</p> <p>T. A. Jones, 37, Hawthorn Road, Gosforth, Newcastle-on-Tyne, 3.</p> <p>H. S. Stephenson, 7, Lonsdale Terrace, St. Bees, Cumberland.</p> <p>*F. S. Pollard, 14, Roker Park Road, Sunderland.</p> <p><i>Electrical:</i> (1 vacancy) (see also Division 1).</p>	<p>W. Brown, M.B.E., 225, Osborne Road, West Jesmond, Newcastle-on-Tyne, 2.</p> <p>W. Goodin, Penrith House, Cockton Hill Road, Bishop Auckland.</p> <p>J. S. Jobling, 2, Wood View, Shincliffe, Durham.</p> <p>*W. Cummings, 19, Beatty Avenue, Jesmond, Newcastle-on-Tyne, 2.</p> <p>R. N. Forster, 31, Purley Gardens, Kenton Lane, Gosforth, Newcastle-on-Tyne, 3. (1 vacancy.)</p>	<p>R. W. Ball, 28, Honister Avenue, High West Jesmond, Newcastle-on-Tyne, 2.</p>	<p>R. L. Layfield, M.B.E., Laburnum Cottage, Gilesgate Moor, Durham.</p> <p>E. A. Stubley, 5, Chelsea Grove, Newcastle-on-Tyne, 4.</p> <p>A. McArthur (see also Division 1).</p>	

3	<p>Yorkshire Division, comprising East and West Ridings of Yorkshire, (except that portion of the West Riding which was transferred for administrative purposes from Lancashire by the Local Government Act, 1888).</p>	<p>H. J. Humphrys, D.S.O., M.C., Lancaster House, West Laitha Gate, Doncaster. (Mines Inspector, Doncaster.) (Doncaster 2684.) <i>Private address:</i> 119, Thorne Road, Doncaster. (Doncaster 3768.)</p>	<p>H. L. V. Evans, 1, Auckland Road, Doncaster. *T. B. Bassett (acting), 13, Lidgett Park Road, Roundhay, Leeds, 8.</p>	<p>*T. Green, 18, Oxford Rd., Wakefield. *C. W. Scott, B.Sc., "Charnwood," 83, Fossdale Road, Sheffield, 7. *J. E. Henshaw, B.Sc., 10, Ayresome Avenue, Roundhay, Leeds, 8. *T. Gawthrope, 174, Hunter House Road, Sheffield, 11. *Wm. Brown, B.Sc., 20, Axholme Road, Doncaster. J. Hawley, 17, Windsor Road, Doncaster. <i>Electrical:</i> J. Cowan, 30, Abbeydale Park Rise, Totley Rise, Sheffield (see also Divisions 4 &amp; 5).</p>	<p>J. T. Shaw, "Arosfa," Bar Crescent, Doncaster Road, Wakefield. *F. E. Stone, May Villa, 4, Gold Street, Barnsley. *A. Clarke, 83, Hawkswood Crescent, Kriestall, Leeds. T. H. Stanton, M.C., 211, Dodworth Road, Barnsley.  (1 vacancy).</p>	<p>G. Holden, Bleakholt, Wood Lane, Malin Bridge, Sheffield. (see also Division 4).</p>	<p>G. H. Mould, "Farlands," Bar Crescent, Doncaster Road, Wakefield. R. Baxter (see also Division 4).</p>
4	<p>North Midland Division, comprising the Counties of Derby, Leicester, Lincoln, Nottingham, Huntingdon, Northampton, Rutland and Oxford.</p>	<p>G. Cook, Albion Chambers, King Street, Nottingham. (Mines Inspector, Nottingham.) (Nottingham 43918.) <i>Private address:</i> "Kenilworth," Dove-dale Road, Edwalton Hill, West Bridgford, Nottingham. (Nottingham 8068.)</p>	<p>A. H. Steele, 119, Melton Road, West Bridgford, Nottingham. *J. Hall, 866, Whitlow-dale Road, Sheffield, 11.</p>	<p>A. L. Flint, 26, Tennyson Avenue, Chesterfield. *T. E. Pickering, Langley, Garth Road, Mansfield. *W. Gray, B.Sc., 66, Bridgford Road, West Bridgford, Nottingham. W. Widdas, B.Sc., Selwyn House, Stenson Road, Normanton, Derby. I. G. E. Leek, B.Sc. (Min.), 15, Dunstan Cres., Sparken Hill, Worksop. <i>Electrical:</i> J. Cowan. (See also Div. 3).</p>	<p>F. Shooter, 132, Ashby Road, Burton-on-Trent. R. A. Ridsdale, 343, Valley Road, Sherwood, Nottingham. W. Whitehouse, "Acuba," Little-moor, Newbold, Chesterfield.</p>	<p>E. Laundon, "Charnwood," Leicester Road, Groby, Leicester. G. Holden (see also Division 3).</p>	<p>R. Baxter, 54, Wilson Road, Sheffield, 11 (see also Division 3).</p>
5	<p>North Western Division, comprising part of Lancashire (namely, so much of the County as is not included in No. 2 Division) Cheshire, that part of the County of Stafford lying to the North of the Road from Uttoxeter through Bramshall Field and Milwich to Stone and thence through Norton Bridge, Eccleshall, Croxton, Hookgate and Almington to Market Drayton, Anglesey, Caernarvon, Denbigh, Flint, Merioneth, and Montgomery.</p>	<p>E. H. Frazer, O.B.E., M.Sc., Prudential Assurance Buildings, 78, King Street, Manchester, 2. (Mines Inspector, Manchester.) (Blackfriars 2669.) <i>Private address:</i> 2, Raynham Avenue, Didsbury, Manchester, 20. (Didsbury 2911.)</p>	<p>*H. S. S. Scott, Stavros, Southlands Ave., Newcastle-under-Lyme, N. Staffordshire. *D. Coatesworth, "Sumerfield," 386, Walkden Road, Worsley, Manchester.</p>	<p>*H. R. Houston, "The Bungalow," Hall Lane, Marylebone, Wigan. *L. C. A. Benson, 2, Cliveden Rd, Hough Green, Chester. G. Jenkins, "Hillcrest," 29, Lancaster Road, Newcastle, Staffs. H. F. Wilson, B.Sc. (Min.), "The Gables," 8, Enfield Road, Mon-ton, Eccles, Manchester. J. A. Peasegood, "Redroofs," Keele, Stoke-on-Trent. (continued in Col. 8)</p>	<p>J. Duncan, 5, Eaton Bank, Accrington. *W. Roberts, 37, Birley Street, Newton-le-Willows. J. W. Wilton, "Oakdene," 86, Downall Green Road, Bryn, Wigan.  (1 vacancy.)</p>	<p>Rhys Williams, M.B.E., 30, Friars Avenue, Bangor. O. Jones, 91, Ashworth St., Rochdale.</p>	<p>J. Evans (see also Division 8).  Junior Inspectors (continued) <i>Met. Mines and Quarries:</i> W. M. Thomas, Wensall, Bettws-y-Coed, N. Wales. <i>Electrical:</i> J. Cowan (see also Division 3).</p>

\* Trained in the use of Rescue apparatus.



TABLE OF INSPECTION DIVISIONS Corrected to August, 1938—continued.

No. of Division. (1)	Names and Areas of Divisions. (2)	Inspectors in charge, Telegraphic Address and Telephone Number. (3)	Senior Inspectors. (4)	Junior Inspectors. (5)	Sub-Inspectors of Mines. (6)	Sub-Inspectors of Quarries. (7)	Inspectors of Horses in Mines. (8)
6	<p><b>Cardiff and Forest of Dean Division</b>, comprising the County of Monmouth, part of the Counties of Glamorgan and Brecon, the Counties of Radnor, Cardigan and Gloucester (West of the River Severn).</p>	<p>J. M. Carey, O.B.E., 2, Museum Place, Cardiff.  (Mines Inspector, Cardiff.)  (Cardiff 5995.)  <i>Private address:</i> No. 8, Warwick House, Castle Court, Car- diff (Cardiff 2730).</p>	<p>E. S. Rees, The White House, The Green, Llandaff, Cardiff. P. T. Jenkins, "Bryn- coed," Woodville Road, Newport, Mon.</p>	<p>*G. N. Scott, M. Sc. 2, Cyn Coed Avenue, Cardiff. D. Douglas, B.Sc. (Min.), Lulworth, Beatty Ave., Roath Park, Cardiff. G. D. Nussey, B.Sc. (Min.), Grey Tree, Caerul Cres., New- port, Mon. (1 vacancy). <i>Electrical:</i> R. Robinson, 44, The Parade, Barry, Glam. (see also Divisions 7 &amp; 8).</p>	<p>*J. R. Jenkins, "Nyth- fa," Pye Corner, near Newport, Mon. R. J. Bennett, Arosfa, Keswick Avenue, Roath Park, Cardiff. W. E. Thomas, 24, Kenilworth Road, Newport, Mon. E. A. Owen, 20, Can- ada Road, Cardiff.</p>		<p>T. L. Evans, 1, Kelvin Road, Cardiff. D. R. Thomas (see also Division 7).</p>
7	<p><b>Swansea Division</b>, compris- ing the Counties of Car- marthen, Pembroke and part of the Counties of Glamorgan and Brecon (namely, so much of these Counties as is not included in No. 6 Division).</p>	<p>*P. S. Lea, Dryslwyn House, De la Beche Street, Swansea.  (Mines Inspector, Swansea.)  (Swansea 2367.)  <i>Private address:</i> Thirlwall, Eden Av., Swansea. (Swansea 4208).</p>	<p>*R. Yates, D.S.O., M.C. 45, Queen's Road, Sketty, Swansea.</p>	<p>W. J. Owen, "Ochil- tree," Cowbridge Road, Bridgend. *T. Waldin, "Trew- ennol," Cmla Road, Neath. A. Taylor, M.Sc., "Brooklyn,"Glanmor Park Road, Sketty, Swansea. C. Leigh, 23, Sketty Av., Sketty, Swan- sea. <i>Electrical:</i> R. Robinson (see also Division 6).</p>	<p>*J. Hughes, 6, Grange Street, Port Talbot. *J. R. Bowen, Dulais, Heolgam, Bridgend, Glam. T. J. Evans, Bryn-yr- awl, Coppa Road, Pontardulais.</p>		<p>D. R. Thomas, 24, Dunraven Road, Sketty, Swansea. (see also Division 6).</p>
8	<p><b>Midland and Southern Divi- sion</b>, comprising so much of the County of Staff- ord as is not included in the North Western Division, Bedford, Berks, Buckingham, Cambridge, Cornwall, Devon, Dorset, Essex, Gloucester, except that part West of the River Severn, Hants, Hereford, Hertford, Kent, London, Middlesex, Nor- folk, Salop, Somerset, Suffolk, Surrey, Sussex, Warwick, Wilts and Worcester.</p>	<p>*E. Rowley, Empire House, Great Charles Street, Birmingham, 3.  (Mines Inspector, Birmingham.)  (Central 6016.)  <i>Private address:</i> 14, Duchess Road, Edgbaston, Bir- mingham, 16. (Edgbaston 0553.)</p>	<p>*H. C. W. Roberts, M.C., B.Sc., High Croft, Old Chester Road, Castle Bromwich, Birmingham.</p>	<p>*T. D. Davies, 639, Walsall Road, Great Barr, Birmingham. F. N. Siddall, 82, New- bridge Hill, Bath. H. H. Wilson, 38, Gower Road, Quin- ton, Birmingham. <i>Met. Mines and Quarries:</i> R. Butler, 1, Carns- merry Crescent, St. Austell, Cornwall. <i>Electrical:</i> R. Robinson (see also Division 6).</p>	<p>*W. Price, 26, Sir John's Road, Selly Park, Birmingham. G. H. Sutton, 178, Higham Lane, Nun- eaton. R. H. Clough, "Brance- peth," Linton Road, Penn, Wolverhampton.</p>	<p>W. Morrow, "Afton," 126, Cambridge Road, North Harrow, Middlesex. M. A. Cheshire, 132, Cartland Road, Stirchley, Birming- ham.</p>	<p>J. Evans, 467, Bel- chers Lane, Little Bromwich, Bir- mingham, 9. (see also Division 5).</p>

\* Trained in the use of Rescue apparatus.

† Including the Parishes of Aberdare, Rhondda, Llantrisant, Coychurch Higher, Pencoed, Coychurch Lower, Llan-Gan, Colwinston, Llandow, St. Donats, Llyswen, Llandefalle, Llanflio, Llan-y-wern, Llanhamlach, Llanfrynach, Cantref, Penderyn and all Parishes to the East thereof.

THIRTIETH ANNUAL REPORT OF H.M. CHIEF  
INSPECTOR OF MINES.

MINES DEPARTMENT,  
DEAN STANLEY STREET,  
MILLBANK, LONDON, S.W.1.

9th June, 1938.

Captain Harry Crookshank, M.P.,  
Secretary for Mines.

Sir,

In accordance with the requirements of Section 100 of the Coal Mines Act, 1911, I have the honour to submit the following Report for the year 1937 in regard to mines under that Act. My Report under the Metalliferous Mines Regulation Acts and the Quarries Act will be submitted and published separately.

In the ordinary course, Sir Henry Walker would have written this report but, as foreshadowed in the last paragraph of his report for 1936, the material for its compilation was not available at the time he relinquished his duties and the responsibility has fallen upon his successor.

Sir Henry Walker, C.B.E., LL.D., had held the post of H.M. Chief Inspector of Mines since 1924, and, having reached the age limit, retired from the Service on 17th March, 1938.

He was appointed to the Inspectorate in 1902, as Inspector assisting the late Mr. J. S. Martin, the Inspector in charge of the Southern District. At various times he was stationed in the West of England, Durham, Yorkshire and Scotland, where he was appointed Divisional Inspector in 1915. He was appointed Deputy Chief Inspector of Mines in 1921, when the late Sir Thomas Mottram became Chief Inspector of Mines.

Sir Henry takes with him into his retirement the affection and good wishes of all his former colleagues.

INSPECTION DIVISIONS AND INSPECTORATE.

There has been no alteration in the Inspection Divisions, of which a complete list is given on pages 80 to 82, together with the names and addresses of the Inspectors appointed to each Division.

I deeply regret to record the deaths during the year of Mr. H. J. Finney, Senior Inspector, and Mr. J. A. Bloor, Sub-Inspector, who met their deaths when engaged on official duties in Holditch Colliery, North Staffordshire, as a result of an explosion of firedamp following an outbreak of fire in the workings of the Four Feet Seam in the early hours of 2nd July. As the causes and circumstances of this

calamitous accident have been the subject of a Special Inquiry and Report,\* it is not necessary to make further reference to them here.

Mr. Finney had been promoted to be a Senior Inspector little more than three months before he was killed, after having served as a Junior Inspector for 13 years. Mr. Bloor had served as a Sub-Inspector for 15 years. I take this opportunity of paying tribute to the valuable work each had done in his respective sphere and to express my sorrow at their untimely end.

Mr. H. M. Hudspeth, D.S.O., M.C., M.Sc., Deputy Chief Inspector of Mines, resigned from the Inspectorate in order to take up the appointment of General Manager of The Airedale Collieries Limited. Mr. Hudspeth's valuable services as Chief Mining Engineer to the Safety in Mines Research Board and previously as an Inspector of Mines are well known, and the good wishes of his former colleagues go with him in his new post.

Mr. H. T. Foster, Senior Inspector in the Scotland Division, was seconded from the Inspectorate on appointment as Chief Mining Engineer to the Safety in Mines Research Board.

Following are the other changes in the staff during the year :—

*Retirements.*

Mr. T. Greenland Davies, Divisional Inspector in Northern Division.

Mr. T. Boydell, M.B.E., Senior Inspector in North Western Division.

Mr. R. King, Junior Inspector of Metalliferous Mines and Quarries in Midland and Southern Division.

*Promotions.*

Mr. J. R. Felton, O.B.E., Divisional Inspector in North Midland Division, to Deputy Chief-Inspector of Mines.

Mr. P. S. Lea, Senior Inspector in North Western Division, to Divisional Inspector in Swansea Division.

Mr. G. Cook, Senior Inspector in Yorkshire Division, to Divisional Inspector in North Midland Division.

Mr. R. J. Edwards, Junior Inspector in Cardiff and Forest of Dean Division, to Senior Inspector in Scotland Division.

Mr. W. B. Brown, Junior Inspector in North Western Division, to Senior Inspector in Northern Division.

Mr. H. L. V. Evans, Junior Inspector in North Midland Division, to Senior Inspector in Yorkshire Division.

Mr. T. B. Bassett, Junior Inspector in Cardiff and Forest of Dean Division, to Senior Inspector in Yorkshire Division.

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\* Report on the Causes and Circumstances attending the explosion at Holditch Colliery, North Staffordshire, on 2nd July 1937. Cmd. 5720. Price 1s. 0d. net.

Mr. H. J. Finney, B.Sc. (since deceased), Junior Inspector in Swansea Division, to Senior Inspector in North Western Division.

Mr. D. Coatesworth, Junior Inspector in North Western Division, to Senior Inspector in North Western Division.

Mr. R. Butler, Sub-Inspector of Metalliferous Mines and Quarries in Northern Division, to Junior Inspector of Metalliferous Mines and Quarries in Midland and Southern Division.

*Transfers.*

Mr. W. J. Charlton, O.B.E., Divisional Inspector, from North Western Division to Northern Division.

Mr. E. H. Frazer, O.B.E., Divisional Inspector, from Scotland Division to North Western Division.

Mr. T. Ashley, Divisional Inspector, from Swansea Division to Scotland Division.

Mr. H. S. S. Scott, Senior Inspector, from Northern Division to North Western Division.

Mr. H. R. Houston, B.Sc., Junior Inspector, from Scotland Division to North Western Division.

Mr. G. N. Scott, M.Sc., Senior Inspector in Yorkshire Division, to Junior Inspector in Cardiff and Forest of Dean Division.

*Appointments.*

Mr. Wm. Brown, B.Sc., Junior Inspector in Yorkshire Division.

Mr. W. Widdas, B.Sc., Junior Inspector in North Midland Division.

Mr. H. F. Wilson, B.Sc.(Min.), Junior Inspector in North Western Division.

Mr. A. Taylor, M.Sc., Junior Inspector in Swansea Division.

Mr. T. J. Evans, Sub-Inspector in Swansea Division.

During the year there were in Great Britain 2,120 mines working under the Coal Mines Act. The total number of inspections made at these mines, inclusive of inspections made by the Inspectors of Horses, was 23,357. Of these inspections 18,228 were made underground, 2,899 being made on afternoon and night shifts.

In addition, there were 55 underground inspections made at mines in the Swansea Division by one Senior and one Junior Inspector engaged on special duties in connexion with an investigation into pulmonary diseases among coal miners, initiated by the Medical Research Council with the co-operation of the Mines Department.

Inspectors of Horses made 2,498 inspections during the year, the number of separate examinations of horses being 60,134.

Since the total number of horses employed is little more than 30,000 it follows that, on the average, practically every one was examined twice.

One thousand, three hundred and thirty-six mines were inspected throughout, that is, in every part.

As in former years, several of the Inspectors read papers or gave lectures in addition to carrying out their work of inspection. A list of the papers read and of the lectures given will be found in Appendix I.

### PERSONS EMPLOYED AND ACCIDENTS.

At mines under the Coal Mines Act, 1911 (mines of coal stratified ironstone, shale and fireclay) 177,479 persons were, on the average, employed at the surface, and 625,880 persons underground. The number of persons killed by accidents at these mines in 1937 was 859 and 3,363 were seriously injured. The number of persons who were injured and disabled for more than three days was 140,645.

The following table shows the number of persons killed and injured by serious accidents per 100,000 manshifts worked *underground* at mines under the Coal Mines Act, from various causes in each of the Mines Inspection Divisions during 1937:—

Division.	Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Underground Haulage.	Miscellaneous Underground.	Total Underground.		
						1937	1936	1935
1. Scotland ..	0.10	1.04	0.02	0.56	0.67	2.39	2.43	2.86
2. Northern ..	0.05	0.95	0.06	0.60	0.47	2.13	2.14	2.52
3. Yorkshire ..	—	1.08	0.08	0.64	0.22	2.02	2.19	2.36
4. NorthMidland	0.13	1.68	0.04	0.55	0.50	2.90	2.87	2.63
5. NorthWestern	0.23	0.97	0.02	0.60	0.49	2.31	2.12	2.20
6. Cardiff and Forest of Dean ..	0.05	1.65	0.01	0.46	0.36	2.53	2.14	2.21
7. Swansea ..	0.07	1.26	—	0.86	0.36	2.55	2.75	2.81
8. Midland and Southern ..	—	1.29	0.06	0.80	0.48	2.63	2.17	2.53
All Divisions ..	0.08	1.20	0.05	0.60	0.44	2.37	2.31	2.49

By serious accidents is meant those which, because of their nature, are required to be reported to H.M. Divisional Inspectors of Mines at the time of their occurrence. They include (a) accidents causing fracture of the head or limbs, or dislocation of limbs or any other serious personal injury and (b) accidents caused by explosion of gas or dust, or by any explosive, or by electricity or by overwinding and causing any personal injury whatever.

In addition to these immediately reportable accidents, a Return for each mine of all accidents which prevent a workman from following his employment for more than three days, is required to be forwarded to H.M. Divisional Inspectors of Mines on or before

21st January each year, and the statistics of these accidents are shown in Appendix II.

The accident rates per thousand persons employed *above* and *below* ground at mines under the Coal Mines Act for the whole country in 1935, 1936 and 1937 were :—

	1937.	1936.	1935.
Killed .. .. .	1·07	1·02	1·10
Killed and seriously injured ..	5·26	5·02	5·28

The accident rates per 100,000 man-shifts worked *above* and *below* ground at mines under the Coal Mines Act for the whole country were :—

	1937.	1936.	1935.
Killed .. .. .	0·40	0·39	0·43
Killed and seriously injured ..	1·96	1·92	2·06

#### ACCIDENTS.

Of the 3,838 persons killed and seriously injured underground during the year, 1,952, or 51 per cent., were killed or seriously injured by falls of ground; 982, or 26 per cent., by haulage accidents; 122, or 3 per cent., by explosions; 71, or 2 per cent., by shaft accidents; and 711, or 18 per cent., by various miscellaneous causes.

#### FALLS OF GROUND.

Four hundred and thirty-six persons were killed by falls of ground and 1,516 seriously injured from the same cause during the year. Compared with the year 1936, there were increases of 56 in the number killed and 167 in the number seriously injured. The total number of persons disabled for more than three days, including those reported to the Divisional Inspectors as having been seriously injured, was 48,269, an increase of 734 compared with the corresponding figure for 1936.

The table below shows the number of persons killed and seriously injured per 100,000 man-shifts worked underground from falls occurring respectively at the face and on roads in the several Inspection Divisions, also the total rate from this cause for Great Britain in 1935, 1936 and 1937.

Accidents from falls of ground accounted for 51 per cent. of all the serious accidents occurring underground during the year, and the problem of preventing them is still, as it so long has been, the most important and pressing one which confronts all connected with the practical side of the industry.

Many of the accidents are avoidable by ordinary caution, being due to lack of care and foresight. The research that is now being carried on in all the coalfields on the general problems of roof control

should result in time in fewer falls, and as a corollary, fewer accidents therefrom, but it is not likely to affect the proportion of accidents which are avoidable by ordinary caution. These can only be reduced by intensive and persistent propaganda, coupled with closer supervision and strict discipline in order to see that what should be obviously necessary precautions are not neglected.

Division.	At the face.		On Roads.				Total: Persons killed and seriously injured.			
	No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below-ground.	Whilst repairing or enlarging.		Whilst otherwise working or passing.		No. in 1937.	Rate per 100,000 man-shifts worked below-ground		
			No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below-ground.	No. of Persons killed and seriously injured.	Rate per 100,000 man-shifts worked below-ground.		1937.	1936.	1935
1. Scotland ..	192	0.90	13	0.06	17	0.08	222	1.04	0.94	1.27
2. Northern ..	260	0.72	39	0.11	44	0.12	343	0.95	0.88	1.17
3. Yorkshire ..	223	0.83	40	0.15	28	0.10	291	1.08	1.05	1.17
4. N. Midland	257	1.41	32	0.18	17	0.09	306	1.63	1.63	1.61
5. N. Western	151	0.83	16	0.09	9	0.05	176	0.97	1.07	1.13
6. Cardiff and Forest of Dean ..	265	1.26	47	0.22	35	0.17	347	1.65	1.15	1.23
7. Swansea ..	99	0.99	15	0.15	12	0.12	126	1.26	1.27	1.55
8. Midland and Southern	120	1.10	12	0.11	9	0.08	141	1.29	1.19	1.25
Total in 1937	1,567	0.96	214	0.13	171	0.11	1,952	1.20	—	—
Total in 1936	1,379	0.90	199	0.13	151	0.10	1,729	—	1.13	—
Total in 1935	1,536	1.02	202	0.14	162	0.11	1,900	—	—	1.27

A large number of the accidents falling to be included in the category of "avoidable" are those caused by falls of side at the face, especially where the coal is worked by machinery. Nearly all the Divisional Inspectors lay stress on this feature, as the following extracts from their reports indicate.

Mr. Ashley states in respect of Scotland — "The large number of accidents from this cause (i.e. falls of side) demands the close attention of managers and officials regarding the direction of face advance and the method of spragging the coal and the support of the side generally. Most of the accidents were caused by falls of coal, and to a lesser extent by falls of 'falling' bands of blaes or stone overlying the coal, there being 3 fatal and 53 serious accidents from these causes or 63 per cent. of all the accidents from falls of side: 68 per cent. of these occurred on conveyor faces." Mr. Ashley proceeds to give instances of accidents that might have been avoided.

Mr. Humphrys, reporting on the Yorkshire Division, emphasises the fact that all of 16 fatalities from falls of side occurred in the thicker seams, i.e. seams over 4 feet in thickness, and suggests that the need for spragging the face of thick seams, even when no holing is done, is indicated.

Mr. Cook, writing about the mines of Derbyshire, Nottinghamshire and Leicestershire, says :—

“The large number of accidents due to falls of coal is very disturbing. Many of these accidents could have been avoided by reasonable care. In far too many cases men were killed or injured by not observing the simple precaution of standing clear of coal they were attempting to bring down. . . . Another prevalent cause was that men did not see that they had a clear line of retreat whilst they were performing such work. . . . Spragging does not receive the attention it should; . . . the method, or perhaps a better expression would be the want of method, of withdrawing them (i.e. sprags) left much to be desired. Sometimes too many were withdrawn at one time and sometimes the person withdrawing them took up a position in front of the coal about to be got down. Proper means of withdrawing sprags should be provided and used; . . . A further bad practice is to use improvised timbers, such as prop ends, for sprags and nogs.”

Mr. Frazer (North Western Division) puts the matter very succinctly, thus :—

“Many of the falls of coal occurred because thick seams of coal were not efficiently spragged. Others happened because men stood in front of coal to pull it down instead of working from the rise side with a pinch bar.

“These accidents were so common and the remedies are so obvious that it is unnecessary to relate a specific case.”

Mr. Rowley (Midland and Southern Division) in a detailed analysis of the incidence of accidents from falls of side, states, *inter alia*, that :—

“This classification shows that 52 per cent. of these 69 accidents were avoidable by the exercise of ordinary care under the existing conditions.” He then proceeds to give brief particulars of several accidents which go to prove his case, and concludes with the following useful suggestions, the adoption of which he strongly advocates :—

(1) The systematic support of the face itself (in addition to cutter chocks where such chocks are used) in seams of upwards of four feet in thickness, or where the coal is worked to the rise at more than 1 in 12.

(2) The reduction of the maximum interval between holing sprags to five feet.

(3) The limitation of the face to such length that, allowing for reasonable stoppages, the work can be completed without undue hurry or risk.

(4) Efficient supervision.

(5) Strict discipline.

In regard to these recommendations he further says that if they were generally adopted, the number of accidents from falls of side would without doubt be reduced, an opinion at which few can cavil.



### UNDERGROUND HAULAGE ACCIDENTS.

The following table shows the accidents due to haulage operations underground during the year :—

	Fatal and Non-fatal Accidents reported to Inspectors.						All Non-fatal Accidents disabling for more than 3 days in 1937.* No. of Persons Injured.
	No. of Separate Accidents.			No. of Persons Killed and Seriously Injured.			
	1937.	1936.	1935.	1937.	1936.	1935.	
While engaged in haulage operations ..	751	685	705	752	689	707	} 33,668
While walking inbye or outbye to or from their work .. .. .	100	70	77	105	75	79	
Miscellaneous .. ..	123	142	157	125	143	163	
<b>Total .. ..</b>	<b>974</b>	<b>897</b>	<b>939</b>	<b>982</b>	<b>907</b>	<b>949</b>	<b>33,668</b>

\*The corresponding figures for 1936 were 33,649 persons injured and for 1935, 34,352 persons injured.

The number of separate accidents reported to the Inspectors is 27 per cent. of all the reportable accidents which occurred underground during the year.

The following table gives the respective numbers of killed and seriously injured and the rate per 100,000 man-shifts in each of the Divisions.

Division.	Number of Persons killed and seriously injured.			Rate per 100,000 man-shifts worked Below ground.		
	1937.	1936.	1935.	1937.	1936.	1935.
1	120	105	121	0.56	0.51	0.61
2	215	194	213	0.60	0.57	0.66
3	171	147	164	0.64	0.58	0.63
4	99	91	98	0.55	0.53	0.61
5	107	101	96	0.60	0.57	0.56
6	97	103	99	0.46	0.57	0.51
7	86	96	82	0.86	0.99	0.82
8	87	70	76	0.80	0.62	0.70
Great Britain	982	907	949	0.60	0.59	0.63

It will be noted that the rates for the respective Divisions vary widely from the average (0.60) for the whole country, the highest rate (0.86) being for the Swansea Division and the lowest (0.46)

for the Cardiff and Forest of Dean Division. Roughly, as the table shows, these variations remain more or less constant from year to year, which would appear to indicate that the incidence of accidents from this cause (haulage) is dependent upon several constant factors, e.g. the physical conditions underground, haulage practice, and, possibly also to some extent, local customs. For these reasons comparison of the rates as between district and district is somewhat invidious, since it is impossible accurately to assess the value of each of the factors mentioned above. For instance, the Swansea Division has the unenviable distinction of the highest rate from year to year over a considerable period, but in extenuation of this it must be remembered that the physical conditions there are unfavourable—inclinations are often high, the measures are much disturbed resulting in difficulty in keeping roadways straight and also in maintaining in first class order such roadways as there are.

In spite, however, of these variations, there are great possibilities for a general reduction of accidents from this cause for, in whichever district they occur, a large majority of them might be prevented by the following precautions :—

- (a) greater care and caution on the part of those engaged in the haulage operations ;
- (b) making the conditions in the roadways more favourable by affording plenty of room and by better lighting
- (c) the provision of more and better safety devices, and seeing that they are properly maintained and always used, and
- (d) keeping persons not engaged in the actual haulage operations away from the roadways while the haulage is in motion.

#### MISCELLANEOUS UNDERGROUND ACCIDENTS.

Eighty-two persons were killed and 629 reported to the Divisional Inspectors as having been injured from various miscellaneous causes during the year. These causes were :—

(a) *Explosives*.—Thirteen persons were killed and 213 injured by accidents connected with the use of explosives, as shown in the Table below.

From this table it will be seen that upwards of 75 per cent. of both the fatal and non-fatal accidents caused by explosives were due to blows from stone or coal projected by shots when the persons killed or injured had not taken proper shelter.

Whilst the number of deaths and persons injured from this cause are not great they are by no means negligible, especially since, almost without exception, the accidents causing the death or injury should not have occurred.

Character or Cause.	No. of Fatal Accidents.	No. of Persons Killed.	Non-fatal Accidents.	
			No. of Separate Accidents.	No. of Persons Injured.
While conveying explosives .. ..	—	—	—	—
While handling explosives .. ..	2	2	15	19
While charging or stemming—				
From sparks of match, lamp, or candle .. ..	—	—	2	2
When using wooden, brass or copper tools .. ..	—	—	1	1
In other ways .. ..	—	—	—	—
Premature explosions—				
With squibs or straws .. ..	—	—	1	1
With safety fuse .. ..	—	—	—	—
With electric fuse .. ..	—	—	2	2
Delayed explosions .. ..	—	—	—	—
Unramming shots which had missed fire .. ..	—	—	6	8
While boring or working near unexploded remnants left by incomplete detonation of the charge .. ..	—	—	3	7
Blows from stone or coal projected by shots when persons had not taken sufficient shelter .. ..	10	10	145	151
Sundries and unknown .. ..	1	1	18	22
<b>Total in 1937 .. ..</b>	<b>13</b>	<b>13</b>	<b>193</b>	<b>213</b>
<b>Total in 1936 .. ..</b>	<b>11</b>	<b>11</b>	<b>180</b>	<b>199</b>

(b) *Suffocation by Natural Gases.*—In eight accidents due to suffocation by natural gases, 13 persons were killed during the year, two in the Scotland, three in the Cardiff and Forest of Dean, two in the Swansea, and six in the Midland and Southern Divisions respectively.

In five of the eight accidents, eight persons lost their lives because for various reasons—generally to get a tool or material, but sometimes unaccountably—they went through fences into abandoned workings where either firedamp or blackdamp had accumulated. Short of putting in stoppings at the entrances to all abandoned districts or roadways, it is difficult to suggest a remedy for these occurrences, for in some of these cases a fence could not have been passed inadvertently, access beyond being impossible without the deliberate removal of part of the fence.

In one of the other accidents, a fireman engaged in clearing firedamp in a rising face, went too far beyond the end of the bratticing. In another, a youth of 17, sent to fetch a sprag from the next stall, which, however, was 40 yards behind, was suffocated in climbing over a fall in the ribside waste. A fence in the waste had been obliterated by the fall.

The eighth accident resulted in four deaths at Littleton Colliery, Staffordshire, and is described at length by Mr. Rowley in his Report. Briefly, three surface workmen were sent to dismantle a conveyor in an abandoned gateway going to the rise. Whilst they were at work, there was a rapid and unusual emission of blackdamp

and firedamp, the source of which was not elucidated, and they were suffocated by it. In a valiant attempt at rescue the under-manager, an elderly man, was also overcome.

(c) *Underground Fires*.—During the year five lives were lost and 15 persons were injured in three accidents as a result of suffocation by fumes from underground fires. In addition to these, two lives were lost purely as a result of the fire which preceded the explosion at Holditch Colliery. These two deaths have been included for convenience in the total of lives lost in the explosion, further reference to which is made on pages 55 and 95 of this Report.

Of the three fatal accidents, one which caused two deaths, occurred at Deaf Hill Colliery, Durham. It was due to a fire caused by heating at the return wheel of an endless rope installation, the timber wheel frame being ignited probably by burning grease and coal dust. Details of this occurrence are given by Mr. Charlton in his Report for the Northern Division.

The two fires causing the other three deaths were due (1) to the bursting of an electric cable (from which two persons lost their lives), particulars of which are given by Mr. Ashley in his Report for the Scotland Division, and (2) to friction between the drum and belt of a conveyer when the belt became jammed. The victim, in the latter, was sent inadvertently, with another man, into a return airway by which fumes from the fire were passing to the upcast shaft. This unfortunate occurrence is described by Mr. Humphrys in his Report for the Yorkshire Division.

Although no injury was caused by them, it is appropriate to mention here that there were 62 other fires underground during the year, 29 of which were due to spontaneous combustion. In addition 23 cases of "heating" were reported.

(d) *Electricity*.—Two persons were killed in two separate accidents due to electric shock. These and the 44 non-fatal cases which occurred during the year are dealt with in detail and remedies suggested by Mr. Horsley in his Annual Report.

(e) *Machinery*.—Twenty-three persons were killed and 106 seriously injured by accidents in connexion with the use of machinery during the year. These figures show a slight improvement on the previous year, when they were respectively 28 and 111.

Of the 23 deaths, 12 resulted from accidents in connexion with the working of coal-cutting machines. Perusal of the details of these accidents confirms the statement made in last year's report, that most of them would not have occurred if the persons involved had been more alive to danger.

For example, in respect of five accidents (two of which were fatal), in Scotland, Mr. Ashley states, "none of them would have occurred if the stay props, or stells, had been fixed properly, instead of being held by the machinemen from a position where they were in imminent danger."

Again, Mr. Charlton referring to accidents in the Northern Division, calls attention to two fatalities which occurred when

fitting coal-cutting machines, the victims being crushed against a prop in each case.

Mr. Cook, reporting on accidents in connexion with coal-cutting machines in the North Midland Division, observes that two were due to poor practice in turning the machines, and two others to machine attendants not observing their positions in regard to the haulage ropes and so getting caught by them.

Five fatal accidents occurred in connexion with conveyors, which is a considerable improvement on the previous year, when there were 12. Practically half of the serious accidents were also due to conveyors, and it is a fairly general observation by the Inspectors that the inherent danger of the rollers at the tension ends of belt conveyors is not fully appreciated. To prevent intentional or accidental contact with the rollers complete boxing-in is essential, and cleaning of the belts, other than automatic mechanical cleaning, should be done only when the belt is at rest. With the belt in motion any manual cleaning is bound, sooner or later, to result in accident.

(f) *Other Accidents.*—Accidents of a miscellaneous character are included under this heading. Twenty-six persons lost their lives and 249 were seriously injured, compared with 36 and 247 respectively in the previous year. Of the fatalities eight were due to blood poisoning following such slight injuries that the persons concerned did not think First Aid treatment necessary, or, in several cases, even report the injury; at least four would most probably have been prevented if hard hats, and two if gloves, had been worn.

#### EXPLOSIONS.

Thirty-five accidents by explosions of firedamp occurred during the year. In 13 of them 63 persons were killed and 21 injured; in the remaining 22 cases, 38 persons were injured, some slightly and some seriously.

The causes of these explosions and the results are shown in the following Table:—

Cause.	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons Injured.*
Naked Lights .. ..	2	2	14	18
Safety Lamps .. ..	2	5	—	10
Shotfiring .. ..	—	—	1	1
Electricity .. ..	2	11	2	8
Matches or Smoking .. ..	5	12	3	8
Underground Fires.. ..	2	33	—	11
Miscellaneous or Unknown	—	—	2	3
<b>Total in 1937 ..</b>	<b>13</b>	<b>63</b>	<b>22</b>	<b>59</b>
<b>Total in 1936 ..</b>	<b>9</b>	<b>71</b>	<b>31</b>	<b>63</b>

\* Including persons injured by explosions which proved fatal to others.

The most serious accident during the year occurred at Holditch Colliery, North Staffordshire, on 2nd July, causing the loss of 30 lives, including the Agent, who was also the Managing Director of the Colliery Company, several underground officials and two of H.M. Inspectors of Mines.

The explosion was caused by a fire in a long wall face when preparations were being made to erect stoppings to isolate the fire.

A Report\* on this explosion has been published and in it will be found details and plans.

Two explosions were caused by open sparking at electrical apparatus.

One of them occurred at Markham Colliery, Derbyshire, on January 21st and resulted in the deaths of nine persons and injury to five others.

Firedamp was ignited by arcing inside an electrically driven coal-cutting machine, apparently at the switch, when the current was switched off. Flame was transmitted to the outside atmosphere through a gap between the door or cover plate and the flanged face of the controller box or compartment. In replacing the cover plate after it had been removed to carry out minor repairs, a quantity of small coal and dirt had been trapped between the cover plate and the flanged face at the bottom right hand corner.

Owing partly to the design of the machine and partly to the restricted space in the coal face, this part of the machine was awkward to examine and the gap had escaped detection.

Since the occurrence, this matter has been taken up with the manufacturers of coal cutting machines and various expedients have been adopted to prevent such defects in future.

This explosion was the subject of a Special Report† by the Divisional Inspector, Mr. J. R. Felton, O.B.E., and in it will be found full details of the occurrence and plans.

The other occurred at Skellyton Colliery, Lanarkshire, on 22nd October, 1937, where the manager and a fireman were killed when firedamp was ignited by open sparking at an electrically driven auxiliary fan.

The roadway in which the fan and switchgear were installed was ventilated by intake air, and apparently for this reason flameproof apparatus was not installed, but firedamp which had accumulated at the working face at the inbye end of the roadway seems to have been driven outbye when the fan was set to force air through a range of air pipes between the fan and the fringe of the accumulated gas.

Compared with the previous year there is a gratifying reduction in the number of deaths and persons injured in explosions due to

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\* Report on the Causes and Circumstances of the Explosion at Holditch Colliery, North Staffordshire, on 2nd July, 1937. Cmd. 5720. Price 1s. 0d. net.

† Report on the Causes and Circumstances attending the Explosion at Markham Colliery, Derbyshire, on 21st January, 1937. Cmd. 5456. Price 9d. net.

naked lights. In 1936 three accidents caused three deaths and in 25 accidents 41 persons were injured; whereas, in 1937 the corresponding figures were two and two and 14 and 18 respectively. Both the deaths occurred in Scotland, the district usually so productive of accidents due to naked lights, but only 10 persons in that division were injured compared with 33 in 1936.

Only one explosion, in which one person was injured, was caused by shotfiring, which goes to confirm the fact so significantly illustrated by the table on page 91 of the report for last year, that although both the quantity of explosive used and the number of shots fired are increasing, the attendant danger is not increasing. On the contrary, if figures mean anything at all, the danger is diminishing.

#### COAL DUST.

During the year 9,059 samples of the dust on the underground roadways were taken by the Inspectors in the several Divisions. Five and a half per cent. of these samples were found on analysis to contain less than 50 per cent. of incombustible matter. The highest percentage of samples not in compliance with the General Regulations was in the Scotland Division, namely 8; and the lowest, namely 4, in the North Midland Division.

#### SHAFT ACCIDENTS.

Thirty persons were killed in the same number of accidents and 41 reportably injured in 14 accidents in connexion with the working of shafts during the year.

Reference to the comprehensive Table (No. 47) of Accidents on page 189 of the Statistical Appendix to this Report will show that accidents under the Heading "Shaft Accidents" are divided into no less than eight categories, the last of which is a miscellaneous collection entitled "Other Shaft Accidents." This last category includes 13 deaths, which is considerably more than the deaths in any one of the other seven categories, and these deaths were caused for the most part by accidents which occurred in connexion with the movement of cages and the loading or unloading thereof either at the surface or at the shaft bottom.

Of the other categories the first three may be roughly grouped together as covering the actual operations of lowering and raising the general body of underground workmen to and from their work. When account is taken of the fact that of the total of, in round figures, 600,000 persons employed below ground upwards of 500,000 were wound in shafts on an average 500 times during the year, it is perhaps not unreasonable to suggest that the record of no more than three lives lost in the process and no more than 29 injured, is one in which pride may be taken. It does at least speak well for the quality and maintenance of the winding gear and the efficiency of, and the care exercised by, those entrusted with its manipulation.

Nevertheless, much is being done to ensure that this satisfactory record shall as far as possible be maintained, if not actually improved, as witness the Coal Mines General Regulations (Winding and Haulage) 1937. The Parts of these Regulations which came into force in March are directed mainly towards bringing into line with the best present-day practice the methods of capping and re-capping winding ropes and of periodical inspection during use.

#### SURFACE ACCIDENTS.

Seventy persons were killed and 314 seriously injured by accidents at the surface of mines during the year. The number killed is twelve more than in 1936; the largest increase, from 8 to 20, occurred in the number of deaths due to unclassified causes.

Fifteen persons were killed in connexion with machinery; 30 on railways, sidings or tramways; 2 by electric shock; 20 by miscellaneous causes and 3 by a boiler explosion.

Machinery and moving railway trucks or pit trams account, it will be seen, for 45 out of the total of 70 deaths.

The risk of accident in both these cases is not inherently a mining risk; the same risk is common to all the heavy industries in particular and, to some extent, to all other industries.

In the case of accidents with machinery, much in the way of prevention can be done by efficient fencing, but this will not prevent all of them, for every year there occur quite an appreciable number of accidents, both fatal and otherwise, which it is almost impossible satisfactorily to explain or excuse.

For instance, Mr. Ashley gives an account of an accident in Scotland which caused the death of a picking table chageman, who, for some reason unknown, whilst the machinery was standing, opened a gate and climbed on to some shafting without warning the person in control of the machinery, or, alternatively, without tying back the lever of the fast-and-loose pulley which controlled the movement of the shafting in question. When the machinery was restarted he was caught by it.

With slight variations of the details the description of this occurrence could be used for many others that have occurred from time to time. The only remedy would appear to be persistent propaganda to promote a safety mentality, which, put shortly, merely means persuade workpeople to exercise common sense and forethought.

#### GENERAL.

##### *Inspections on behalf of Workmen.*

During the year 4,686 inspections were made at 495 mines by persons appointed by the workmen employed in those mines, in exercise of their powers under Section 16 of the Coal Mines Act, 1911. Fifty-three per cent. of these inspections were made in the Northern



Division and 20 per cent. in the Cardiff and Forest of Dean Division. I regret that more use is not made of this section of the Act in the other Divisions.

*Protective Equipment.*

Satisfactory progress has again been made in both the development and use of protective equipment; its value in the prevention of injuries is becoming more fully appreciated and in consequence the initial prejudice against its use is being steadily overcome. Even now, however, there is some apathy and even opposition to be surmounted, for in spite of the proved efficacy of the equipment there are people who are apparently distrustful of any attack on the accident problem which deviates from the elimination of the actual source of the accidents.

During the year 147,000 hard hats made in this country were supplied to British Collieries, making a total of approximately 435,000 in the last three years. Since, however, many of these were replacements of worn or damaged hats, and there are upwards of 600,000 persons employed underground in coal mines, it is evident that there is still ample room for further expansion in the use of hard hats.

The following Table shows, for the last five years, the number of man-shifts worked underground per head injury :—

Year.	Man-shifts worked per head injury.
1933 .. .. .	17,036
1934 .. .. .	16,825
1935 .. .. .	17,035
1936 .. .. .	17,991
1937 .. .. .	18,614

The middle year (1935) of the period covered by the Table marks the beginning of the popularisation of the use of protective equipment generally and protective headgear in particular. That there has been a reduction in head injuries since that time is evident from the figures, but it is strange that the reduction is not more pronounced, especially in the light of the encouraging reports from individual mines or groups of mines that many fewer head injuries have occurred since protective hats were introduced.

Safety boots are now worn extensively, and the prevention of many serious foot injuries can be attributed to them. Their cost is comparable with that of a good ordinary boot and there appears to be no cogent reason why the wearing of protective boots by all colliery workmen should not become universal.

The number of gloves in use has rapidly increased. For certain operations the wearing of gloves is undoubtedly beneficial and has resulted in a reduction of hand injuries. In consequence many

classes of workmen are now appreciative of the protection afforded by them.

Considerable improvement has been effected in the design of goggles for protection of the eye against both flying fragments and dust. Such goggles fitted with safety glass are light, comfortable to wear, inexpensive and give adequate protection against both risks whilst, if required, the lens can be ground to suit defective vision. In spite of the improvements, however, there is still a good deal of opposition to their use, a somewhat surprising fact in view of the numbers of eye injuries that each year continue to occur, and the fact that by the use of suitable goggles they could almost be eliminated.

The introduction of other equipment particularly knee pads and shin guards, has made good progress.

#### *Roof Supports on Roadways and at the Working Face.*

The Table on page 100 gives the result of the first attempt to collect accurate particulars of the length of underground roadways in use, and the materials and method used for supporting the roof of the roadways in all mines under the Coal Mines Act, 1911. Particulars are also given of the numbers of steel props and bars used for supporting the roof in the working faces. The Table shows the position in respect of each Division as at 30th June, 1937.

#### *Explosives.*

During the year 29,755,538 pounds of explosives were used in 63,039,518 shots; of this weight 22,471,266 pounds were Permitted Explosives.

There was further expansion in the use of "sheathed" explosives during the year. More than one half of the Permitted Explosives used in the Yorkshire, North Midland, North Western, and Cardiff and Forest of Dean Divisions were sheathed, and over the whole country the proportion was about one third. Whilst it is perhaps too early yet to assert that the use of sheathed explosives eliminates the risk of the ignition of firedamp in all circumstances, there can be no doubt that the sheathing does considerably minimise the risk of ignition.

#### *The Edward Medal.*

His Majesty the King was graciously pleased to award the Edward Medal to John Edward Samuels, in recognition of his gallantry in connection with the Gresford Colliery Explosion on the 22nd September, 1934.

The sole survivors of those working underground were six men, of whom Samuels, a coal-cutting machineman, was one. They had been working at the time in what was known as No. 29's District. The effect of the explosion was to close the normal means of access to this section of the mine and thereby to cut off those working there,

SUPPORTS ON ROADWAYS AND AT THE WORKING FACE (AT 30TH JUNE 1937).

*Mines under the Coal Mines Act, 1911.*

	Division.																Great Britain.	
	Scotland.		Northern.		Yorkshire.		North Midland.		North Western.		Cardiff and Forest of Dean.		Swansea.		Midland and Southern.			
	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.	Miles.	Per cent. of Total.		
<i>Length of Roadways below ground in use:</i>																		
<i>Supported—</i>																		
By Steel Arches .. ..	553	33·5	351	10·4	386	21·1	291	23·8	306	26·0	567	44·3	256	38·9	198	24·2	2,908	24·2
„ Cambered Girders ..	22	1·3	6	0·2	55	3·0	42	3·5	67	5·7	1	0·1	—	—	6	0·7	199	1·7
„ Straight Girders, Bars, etc. .. ..	265	16·0	779	23·0	621	34·0	346	28·3	216	18·3	23	1·8	8	1·2	244	29·9	2,502	20·8
„ Timber and other means	814	49·2	2,249	66·4	765	41·9	543	44·4	588	50·0	689	53·8	394	59·9	369	45·2	6,411	53·3
	1,654	100·0	3,385	100·0	1,827	100·0	1,222	100·0	1,177	100·0	1,280	100·0	658	100·0	817	100·0	12,020	100·0
<i>Unsupported .. ..</i>	225	—	316	—	690	—	495	—	129	—	248	—	218	—	84	—	2,405	—
<b>Total .. ..</b>	<b>1,879</b>	<b>—</b>	<b>3,701</b>	<b>—</b>	<b>2,517</b>	<b>—</b>	<b>1,717</b>	<b>—</b>	<b>1,306</b>	<b>—</b>	<b>1,528</b>	<b>—</b>	<b>876</b>	<b>—</b>	<b>901</b>	<b>—</b>	<b>14,425</b>	<b>—</b>
<i>No. of Steel Props etc. in use at the Working Face.</i>																		
Steel Props .. ..	85,867	28,982		111,288		147,026		24,688		67,965		10,201		22,197		498,214		
Steel Bars or Straps ..	41,470	103,188		55,223		110,827		23,273		18,026		2,021		12,392		866,420		

but it seemed to a group of men who had got together that a way out might be found along a little used road which served as a return airway. This hope proved in the end to be justified but the survivors had to fight their way for nearly half a mile through an atmosphere so laden with gas that at an early stage some of the party turned back to seek some other way out, only to meet their deaths. The worst place proved to be at a point where the road crossed a fault and it was necessary for a ladder to be climbed in order to reach the upper level. At various points, members of the party fell behind and the temptation to leave them to their fate must have been very strong.

Throughout Samuels took a leading part in encouraging members of the party, in advising as to what should be done or attempted, and in giving other help, staying behind to render assistance at a time when any delay in escaping was fraught with grave danger. Samuels summed up the position and displayed qualities of leadership in a most terrifying situation, and there seems to be no doubt that some at least of the party owe their lives to his coolness and courage.

I have the honour to be,

Sir,

Your obedient Servant,

F. H. WYNNE.

## APPENDIX I.

## PAPERS READ OR LECTURES GIVEN BY H.M. INSPECTORS, 1937.

"The Evolution of Mining Legislation," by E. H. Frazer, O.B.E., M.Sc., Divisional Inspector, before managers, miners, officials and general public at (a) Preston Lodge Mining School, Prestonpans, (b) Valleyfield Miners' Institute, Culross.

"Mine Ventilation," by H. T. Foster, B.Eng., Senior Inspector, before students at Preston Lodge School.

"Accidents in Mines and their Prevention," by J. A. Grove, Junior Inspector, before officials, workmen and students at (a) Lindsey High School, (b) Lochgelly Institute, (c) Preston Lodge School.

\* "The Objects of Earthing," by R. Crawford, Junior Electrical Inspector, before mining students at the Royal Technical College, Glasgow.

"The Colliery Deputy and his Duties," by W. B. Brown, Senior Inspector, before the Durham Colliery Deputies' Association.

† "Accidents from Falls of Ground in the Northern Mines Inspection Division," by T. A. Rogers, Junior Inspector, before the North of England Branch of the National Association of Colliery Managers.

"The Care, Working and Treatment of Horses," by G. H. Mould, Horse Inspector, before the Yorkshire Branch of the National Association of Colliery Undermanagers.

‡ "The Improper Use of Mining Explosives," by F. E. Stone, Sub-Inspector, before officials and men of (a) Stringers' Employees' Society, (b) Yorkshire Branch of the National Association of Colliery Undermanagers.

§ "Presidential Address," by F. E. Stone, before the North-West Branch of the Association of Mining Electrical Engineers.

"Shot-firing," by William Gray, Junior Inspector, before mine officials at the County Technical College, Worksop.

|| "Safer Mining," by R. A. Ridsdale, Sub-Inspector, before the Nottingham Mining Students' Association.

"Haulage Accidents—some suggestions on how to prevent them," by D. Coatesworth, Senior Inspector, before students at Ashton-under-Lyme Technical College.

¶ "Presidential Address," by E. Rowley, Divisional Inspector, before the South Staffordshire Institute of Mining Engineers.

"The Safe Use of Coal-face Electrical Plant," by J. A. B. Horsley, O.B.E., Electrical Inspector, before the Lancashire and Cheshire Colliery Deputies and Shot-firers' Association.

\* Colliery Guardian.

Annual proceedings of the West of Scotland Mining Students Association.

† "Iron and Coal Trades Review" issues of 22nd and 29th January, and 16th July, 1937.

‡ Local Press.

§ Mining Electrical Engineer, issue of October, 1937.

|| Transactions of the Nottingham Mining Student's Association.

¶ "Colliery Guardian."

\*\*\* "Accidents associated with the use of electricity in the Coal Mines of Great Britain," by J. A. B. Horsley, O.B.E., before the Association of Mining Electrical Engineers.

†† "Some Medical Aspects of a Miner's Life," by S. W. Fisher, M.D. B.Ch., Medical Inspector, before the (a) Midland Counties Institution of Engineers and to (b) students and colliery firemen at St. Helens Mining School.

"The Treatment of Persons Injured by a Colliery Explosion," discussion at Buxton Research Station opened by S. W. Fisher, M.D., B.Ch.

‡‡ "Electric Shock and its effects upon the Human Body," by S. W. Fisher, M.D., B.Ch., and G. M. Harvey, M.Sc., B.Eng., Deputy Electrical Inspector, before the London Branch of the Association of Mining Electrical Engineers.

"Prevention of Silicosis" by P. S. Hay, O.B.E., before the County of Durham Mining Society.

\*\* "Colliery Guardian", August 13th, 1937.

†† Transactions of the Institution of Mining Engineers.

‡‡ The Mining Electrical Engineer, issue of May, 1937.

## APPENDIX II.

*Divisional Summary of Non-Fatal Accidents disabling the Person injured for more than 3 days occurring at Mines under the Coal Mines Act during the Year 1937.*

Place or Cause of Accident.	Inspection Division.							Total.	
	Scot-land.	Nor-thern.	York-shire.	North Mid-land.	North Wes-tern.	Cardiff and Forest of Dean.	Swan-sea.		Midland and South-ern.
Number of Persons injured who were disabled for more than 3 days.									
<i>Underground:</i>									
Explosions of Firedamp or Coal Dust .. .. .	17	12	—	8	7	6	5	—	55
Falls of ground .. .. .	4,154	8,909	8,678	6,595	4,738	8,639	3,570	2,986	48,269
Shaft Accidents .. .. .	107	78	39	29	35	21	7	21	337
Underground Haulage Accidents .. .. .	3,041	10,379	7,003	3,445	3,041	2,811	1,856	2,092	33,668
Miscellaneous .. .. .	5,271	8,057	7,925	7,242	5,589	6,212	2,820	3,477	46,593
Accidents .. .. .	5,271	8,057	7,925	7,242	5,589	6,212	2,820	3,477	46,593
Total Underground .. .. .	12,590	27,435	23,645	17,319	13,410	17,689	8,258	8,576	128,922
<i>On Surface:</i>									
On railways, sidings or tramways .. .. .	467	891	680	403	383	352	247	194	3,617
Elsewhere .. .. .	955	1,740	1,332	1,033	986	943	478	639	8,106
Total on Surface .. .. .	1,422	2,631	2,012	1,436	1,369	1,295	725	833	11,723
Grand Total { 1937 .. .. .	14,012	30,066	25,657	18,755	14,779	18,984	8,983	9,409	140,645
1936 .. .. .	14,574	28,766	23,314	18,065	15,411	16,018	9,392	9,308	135,968
1935 .. .. .	14,674	27,479	22,742	17,877	15,092	17,305	9,310	9,377	133,756
Rate per 100,000 man-shifts worked.*									
<i>Underground:</i>									
Explosions of Firedamp or Coal Dust .. .. .	0.08	0.03	—	0.05	0.04	0.03	0.05	—	0.03
Falls of ground .. .. .	19.47	24.70	32.33	36.30	26.30	40.91	35.62	27.26	29.70
Shaft accidents .. .. .	0.50	0.22	0.14	0.16	0.19	0.10	0.07	0.19	0.21
Underground Haulage Accidents .. .. .	14.26	28.77	26.09	18.96	16.88	13.31	18.52	19.10	20.71
Miscellaneous .. .. .	24.71	22.33	29.52	39.86	31.02	29.41	28.14	31.74	28.67
Accidents .. .. .	24.71	22.33	29.52	39.86	31.02	29.41	28.14	31.74	28.67
Total Underground .. .. .	59.02	76.05	88.08	95.33	74.43	83.76	82.40	78.29	79.32
<i>On Surface:</i>									
On railways, sidings or tramways .. .. .	6.46	7.93	7.48	5.88	5.27	7.72	9.11	4.75	6.82
Elsewhere .. .. .	13.20	15.49	14.64	15.09	13.57	20.68	17.63	15.64	15.29
Total on Surface .. .. .	19.66	23.42	22.12	20.97	18.84	28.40	26.74	20.39	22.11
Grand Total { 1937 .. .. .	49.05	63.55	71.39	74.98	58.45	73.93	70.55	62.56	65.24
1936 .. .. .	63.13	64.43	71.21	77.78	61.72	71.38	75.33	64.30	66.64
1935 .. .. .	55.57	63.68	70.69	80.21	62.61	72.63	73.07	62.68	67.03
Estimated Number of man-shifts actually worked in 1936. (Thousands)									
At the Coal Face .. .. .	12,181	16,284	12,924	9,429	8,855	11,124	5,315	5,285	81,397
Elsewhere Below Ground .. .. .	9,151	19,793	13,921	8,738	9,163	9,994	4,707	5,669	81,137
Total Below Ground .. .. .	21,332	36,077	26,845	18,168	18,018	21,118	10,022	10,954	162,534
Above Ground .. .. .	7,233	11,233	9,096	6,847	7,268	4,560	2,711	4,085	53,033

\* The rates for underground accidents are based upon the number of shifts so worked, and those for surface accidents upon the number of shifts worked above ground.

Note.—The particulars of accidents above are complementary to those shown in Table 5 of the Reports of H.M. Inspectors of Mines under the Coal Mines Act, 1911, for the year 1937, which are published separately for each Division. Certain classes of non-fatal accidents are reported at the time of their occurrence to H.M. Inspectors of Mines, most of which involve disablement for more than 3 days and are included above.

## REPORT OF THE PETROLEUM DEPARTMENT.

*The Petroleum (Production) Act, 1934.*

During the course of 1937, 36 Prospecting Licences were granted under the Petroleum (Production) Act, 1934, in respect of areas amounting in the aggregate to 5,659 square miles. Applications for the extension of two licensed areas, amounting to 103 square miles, were also granted. Of these Licences, thirteen were granted to the D'Arcy Exploration Company, Limited, twelve to the Anglo-American Oil Company, Limited, nine to the Gulf Exploration Company (Great Britain), Limited and two to Messrs. Steel Brothers and Company, Limited. By the end of 1937, there were in all 81 Licences in force under the Petroleum (Production) Act, 1934, covering a total area of 13,198 square miles. A number of other applications for Prospecting Licences were under consideration in the Petroleum Department, while notification had been given by the D'Arcy Exploration Company to terminate two of their Licences covering areas in the South of England. The latter, under one of which the deep test borehole at Portsdown was drilled, were terminated in January, 1938. The situation of all the areas licensed up to the end of 1937 is shown on the map facing page 106.

## SUMMARY OF WORK CARRIED OUT BY LICENSEES.

A considerable amount of work was carried out during 1937 over widely separated areas. A total depth of 19,588 feet was drilled in ten test boreholes and 1,720 feet in six shallow exploratory information boreholes. Geological surveys were carried out over areas aggregating 1,940 square miles and geophysical surveys over areas aggregating 1,751 square miles.

*South of England.*

*Test boreholes.*—Five test boreholes were completed during the year and one was still in course of drilling at the end of the year. Particulars of the completed boreholes are given below:—

Designation of borehole.	Situation.	Drilled by	Drilling		Depth reached (feet).	Geological formation reached at time of abandonment.
			Com-menced.	Ceased.		
Portsdown No. 1.	Near Portsmouth, Hampshire.	D'Arcy Exploration Co., Ltd.	30th March, 1936.	15th Feb., 1937.	6,556	Trias.
Henfield No. 1.	Near Steyning, Sussex.	D'Arcy Exploration Co., Ltd.	25th June, 1936.	15th March, 1937.	5,105	Upper Carboniferous rocks.
Broad Bench No. 1.	Kimmeridge Bay, Dorset.	D'Arcy Exploration Co., Ltd.	3rd Dec., 1936.	24th Aug., 1937.	943	*Osmington Oolite series (Corallian).
Grove Hill No. 1.	Hellingly, Sussex	Anglo-American Oil Co., Ltd.	18th May, 1937.	17th Sept., 1937.	3,506	Upper Carboniferous.
Poxwell No. 1	Near Weymouth, Dorset.	D'Arcy Exploration Co., Ltd.	24th May, 1937.	29th July, 1937.	1,666	Fuller's Earth (Great Oolite Series).

\* This was a geological exploratory boring the final objective of which was not reached. A broken drill-pipe became wedged in the hole and the borehole was abandoned.



The abandonment of all these boreholes was carried out in accordance with the provisions of the Petroleum (Production) Regulations, 1935, so as to isolate any water-bearing formations and prevent any possibility of damage to water supplies.

Only slight traces of oil and gas were encountered in the boreholes at Portsdown, Henfield and Grove Hill and in general the strata tested in these boreholes, which it was hoped would prove suitable for the concentration of petroleum if such had been formed in this region, proved to be too impervious to act as reservoir rocks. At Poxwell, the "Bencliff Grit" in the Corallian was found to be reasonably porous and permeable, but contained salt water.

Drilling at the D'Arcy Exploration Company's Kingsclere No. 1 borehole, Sydmonton, Hampshire, was still proceeding at the end of the year, when a depth of 4,949 feet in the Lower Lias had been reached.\* Only faint traces of oil were found at rare intervals.

*Shallow information exploratory boreholes.*—Four boreholes for geological information were drilled by the D'Arcy Exploration Company in Dorset (three at Poxwell and one at Ringstead Bay) and two by the Gulf Exploration Company (Great Britain) near Rainham in Kent.

*Geological and Geophysical Surveys.*—Geological mapping, supplemented by pitting and hand-augering, was carried out by the D'Arcy Exploration Company, mainly in Sussex and Dorset. Geological work was also carried out in Kent and Sussex by the Gulf Exploration Company (Great Britain).

Geophysical work on an extensive scale was carried out by the Gulf Exploration Company (Great Britain), in Kent and Sussex, preparatory to the selection of a site for test drilling. By the end of the year the work was well advanced, but further geophysical data were still required before a final decision could be reached as to the most suitable site for drilling.

#### *Midlands.*

*Test boreholes.*—Drilling with cable tools at Messrs. Steel Brothers' Edale borehole (Derbyshire) commenced on the 27th September, 1937, and had reached a depth of 417 feet at the end of the year.

This boring is being made to test the Carboniferous (Mountain) Limestone which is here overlain by shales in the Edale Anticline. At 417 feet the boring had penetrated the first important limestone band in the shales, finding it full of water, but had not yet reached the main mass of limestone to be tested.

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\* This borehole was subsequently abandoned in February, 1938, at 5,125 ft., having reached the Trias.



• *Geological Surveys.*—The D'Arcy Exploration Company undertook a considerable amount of geological investigation in Shropshire, Staffordshire, Cheshire and Derbyshire. This work was directed mainly (a) to the study of the problem of the well-known occurrences of small quantities of petroleum in the Coalport–Coalbrookdale region, and (b) to an examination of the geological structures in the Carboniferous Rocks of a broad region between Leek and Stalybridge. As a result of (b) in conjunction with other investigations, arrangements were put in hand at the end of the year for the drilling of a deep test well on the Gun Hill Anticline north of Leek.\*

The Anglo-American Oil Company, whose Licences in the North Midlands were issued on 28th October, 1937, had by the end of the year commenced the geological examination of four licensed areas. Much assistance in the delineation of geological structure was obtained from the study of colliery maps and records made available to the Company by the courtesy of various Colliery Companies.

Further geological investigations on the Edale structure were carried out by Messrs. Steel Brothers.

#### *East and North East of England.*

*Test boreholes.*—For the purpose of testing the Permian Magnesian Limestone expected at a depth of about 4,000 feet, the D'Arcy Exploration Company commenced drilling at Aislaby in Eskdale on the 17th July, 1937, and had drilled to a depth of 2,486 feet in the Trias by the 25th November, when a series of accidents beginning with the breakage of a hard steel bit at the bottom of the hole prevented further progress. At the end of the year "fishing" operations for the recovery of drill pipe were still in progress.

*Geological and Geophysical Surveys.*—Geological work in this region was carried out by the D'Arcy Exploration Company and the Gulf Exploration Company (Great Britain).

Reference was made in the previous report to the programme of geophysical work which was being carried out by the D'Arcy Exploration Company with a view to locating structures in the hidden Carboniferous Limestone favourable for test drilling. As a result of much careful work the initial programme was completed in June, 1937, but the results obtained were somewhat inconclusive and the Company decided to carry out further geophysical work with a view to obtaining more precise information regarding the nature of the concealed geological structures. Work on the new programme commenced in September, 1937, and was still in progress at the end of the year. An additional geophysical party was allocated to this work in December.

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\* Drilling commenced on the 19th April, 1938.

*Scotland (Lothians).*

*Test boreholes.*—Drilling commenced at the D'Arcy Exploration Company's borehole at Cousland, near Dalkeith, on the 5th September, 1937, and a depth of 1,303 feet in the Oil Shale Group had been reached at the end of the year. The slow progress was due in part to the fact that continuous coring was carried out, and partly to delays caused by thorough testing operations.

The Anglo-American Oil Company selected a site for a test boring (known as Midlothian No. 1) at D'Arcy, close to the site of the well which was drilled by Messrs. S. Pearson & Son in 1921/22, on behalf of H.M. Government. Drilling commenced on the 30th October, 1937, and reached a depth of 1,962 feet in the Oil Shale Group by the 31st December, 1937. Coring operations were intermittent down to 1,750 feet, below which continuous cores were taken. In both the Cousland and Midlothian wells sandstones impregnated with viscous petroleum were encountered, and several shows of natural gas were observed, the greatest volume coming from sand at about 2,000 feet in the Midlothian well. Drill stem tests were made at intervals in both wells.

Drilling at both sites was still proceeding at the end of the year.

*Licences in force under the Petroleum (Production) Act, 1918.*

No drilling was carried out during 1937 by licensees under the 1918 Act.

On the 30th December, 1937, with the consent of the Secretary for Mines, the Chatsworth Estates Company assigned to the D'Arcy Exploration Company the licence granted by the Board of Trade to the late Duke of Devonshire in 1923 and subsequently assigned to the Chatsworth Estates Company. Under the licence, the D'Arcy Company propose to carry out some tests on the Hardstoft oil well and to deepen it further with a view to testing a greater thickness of the Carboniferous Limestone.

Pumping operations at the Hardstoft well were suspended during the last quarter of the year. Mainly on this account production during 1937 was somewhat lower than in the previous year.

## THE SCOTTISH SHALE OIL INDUSTRY.

The output of oil shale in 1937 was 1,461,000 tons valued at £478,000 as compared with 1,409,000 tons valued at £433,000 in 1936.

During the year one shale mine (Newliston No. 29), which had been exhausted, was abandoned. The progress with the new mines at Roman Camp mentioned in the last report was very much retarded by heavy flows of water, and sinking had not been completed by the end of the year. The sinking of another pair of mines to a different seam a little further to the south at Roman Camp was begun towards the end of the year.

The production of crude oil and crude naphtha amounted to approximately 31½ million gallons, an increase of rather more than 1 million gallons as compared with the previous year. In addition considerable quantities of unfinished oils from refinery process stocks were worked up, resulting in an increase of about 3½ million gallons in the output of refined products as compared with the previous year. The production of diesel oil increased by rather more than 3 million gallons, and that of motor spirit by about 1 million gallons, accompanied by a reduction in the output of the other refined products. The new refining plant at Pumpherstons was completed by the end of the year.

It is estimated that the production of sulphate of ammonia was again about 25,000 tons.

The extensions to the plant for the manufacture of bricks from spent shale were approaching completion at the end of the year. These extensions increased the capacity of the plant to 3½ times that of the original unit laid down about four years ago.

The number of persons employed in the industry at the end of the year was 4,400 as compared with 4,290 and 4,260 respectively at the close of the two preceding years.

#### IMPORTS, CONSUMPTION AND PRICES.

*Taxation of Imported Petroleum Products.*—There was no change in the rates of taxation of petroleum products during the year 1937, all imported motor spirit and heavy oil used for road transport being taxed at the uniform rate of 8*d.* per gallon. On heavy oil used for other purposes the tax was 1*d.* per gallon.

*Imports of Petroleum.*—The imports of crude petroleum and refined products in 1937, distinguishing the countries from which the imports were consigned, are shown in Table 66 of Appendix A. The greater proportion of the refined products are imported ready for use, but substantial quantities of crude petroleum are imported for refining, while some of the partly refined products are subjected to further treatment in this country.

The following table, compiled from returns supplied by the principal oil refining companies, shows the quantities of oils treated and the products obtained :—

<i>Refining Operations in Great Britain.</i>				
		1937.	1936.	1935.
<i>Oils treated.</i>		1,000 Gallons.		
Imported crude Petroleum	..	523,625	486,713	473,193
Imported partly refined Oils	..	63,572	89,921	70,684
Scottish Shale Oil	..	33,920	30,359	29,582
Total .. .. .	..	621,117	606,993	573,459

<i>Products obtained.</i>	1937.	1936.	1935.
	1,000 Gallons.		
Motor Spirit .. .. .	118,226	125,249	133,774
Other Spirit .. .. .	22,678	17,935	20,058
Kerosene .. .. .	39,203	37,164	33,544
Gas Oil .. .. .	47,880	63,228	51,270
Fuel and Diesel Oil .. .. .	197,721	170,826	161,078
Lubricating Oil .. .. .	33,098*	26,637*	25,726*
Other Oils† .. .. .	289	61	—
<b>Total Liquid Products .. .. .</b>	<b>459,095</b>	<b>441,100</b>	<b>425,450</b>
		Tons	
<b>Total Solid Products (Asphalt and pitch, wax, and petroleum coke)</b>	<b>567,882</b>	<b>552,038</b>	<b>491,041</b>

*Petroleum Products available for Consumption.*—An approximation of the quantities of petroleum products available for consumption is obtained by adding to the imports the production in this country of refined products from imported crude and semi-refined oils, and making allowances for the export and re-export of refined products. The figures in the following table have been calculated in this way but no adjustments have been made for changes in stocks held at the beginning and end of the year.

*Approximate quantity of the principal Petroleum Products (including Oils from Scottish Shale) available for Consumption in Great Britain and Northern Ireland.*

<i>Description.</i>	1937.	1936.	1935.
	(Revised)		
	Million Gallons.		
Motor Spirit .. .. .	1,364·0	1,293·0	1,239·7
Other Spirit .. .. .	27·8	27·1	23·3
Kerosene .. .. .	222·6	216·5	204·1
Gas Oil .. .. .	151·0	144·7	131·9
Fuel and Diesel Oil .. .. .	870·2‡	771·0‡	757·8‡
Lubricating Oil .. .. .	132·6	126·4	110·1
<b>Total .. .. .</b>	<b>2,768·2</b>	<b>2,578·7</b>	<b>2,466·9</b>

\* These figures represent the production of lubricating oils by refiners of imported crude and other heavy petroleum oils and do not include the manufacture of lubricating oils by merely blending or chemically treating imported lubricants.

† Mainly liquid bitumen.

‡ Including fuel oil shipped for the use of steamers, etc. engaged in the foreign trade (including fishing vessels) which amounted to 344 million gallons in 1937, 302 million gallons in 1936, and 311 million gallons in 1935.

Further details are given in Table 67 of Appendix A.

The above table includes the quantities of refined products obtained by the treatment of shale, but does not include oil produced from coal or coal products. Particulars of the production of light hydrocarbon oils from indigenous materials are given on page 18, from which it will be seen that the quantity of spirit so produced in 1937, excluding that from shale, was 92·3 million gallons. In 1936 and 1935 the quantities were 85·3 and 66 million gallons respectively. Including these home-produced oils the total quantity of motor spirit estimated to be available for consumption in each of the past three years was 1,456·3 million gallons in 1937, 1,378·3 million gallons in 1936 and 1,305·7 million gallons in 1935. Although no official information is available of the quantity of the heavy oils produced from coal which was used as a fuel in 1937, it is known that the quantity was comparatively small.

*Prices of Petroleum Products.*—The average declared value, c.i.f., of petroleum and petroleum products imported during the last three years is shown below.

<i>Description.</i>	<i>Average Declared c.i.f. Value</i>		
	1937.	1936. (Revised)	1935.
	<i>Pence per gallon.</i>		
Crude Oil .. .. .	2·3	2·0	2·0
Kerosene .. .. .	3·7	2·8	2·9
Motor Spirit .. .. .	4·5	3·8	3·5
Lubricating Oil .. .. .	9·1	8·2	7·7
Gas Oil .. .. .	3·1	2·3	2·3
Fuel and Diesel Oil .. .. .	2·5	1·8	1·7

It will be seen that the declared values showed substantial increases in all cases as compared with the preceding year.

The prices of petroleum products sold for inland consumption also rose during the year, the situation being characterised by a number of adjustments of smaller amounts than has hitherto been the case.

*Wholesale and Retail Prices of Kerosene.*—Wholesale prices in England and Wales quoted by the large oil companies, for deliveries of 20 gallons and over, were raised by  $\frac{1}{2}d.$  per gallon on the 5th January. The price of "Standard White," in which most business is transacted, thus became  $6\frac{1}{2}d.$  per gallon for delivery ex tank wagon in the Southern and Eastern Counties Zone, and  $6\frac{3}{4}d.$  per gallon in the rest of England and Wales. Prices were again raised on 2nd April by  $\frac{1}{2}d.$  per gallon in the Southern and Eastern Counties Zone, and  $\frac{1}{4}d.$  per gallon for the rest of England and Wales. On 27th April there was a further advance of  $\frac{1}{4}d.$  per gallon in all areas. An Eastern Counties Inner Zone (comprising parts of the counties of Norfolk and Suffolk) was created within the existing Southern and Eastern Counties Zone on 1st May, when prices in the new zone were reduced by  $\frac{1}{4}d.$  per gallon below the prices ruling in the Southern and

Eastern Counties Zone. Prices at the end of the year for "Standard White" were as follows: Southern and Eastern Counties Zone,  $7\frac{1}{4}d.$ , Eastern Counties Inner Zone,  $6\frac{1}{2}d.$ , and for the rest of England and Wales,  $7\frac{1}{2}d.$  per gallon respectively. The price of "Water White," a superior grade, was higher by  $1d.$  per gallon. Concessions of  $\frac{1}{2}d.$  per gallon on the schedule prices are obtainable on purchases in bulk of 200 gallons and upwards.

The prices quoted by independent suppliers ex ocean installation ranged from  $3\frac{3}{8}d.$  at the beginning of the year to  $5\frac{1}{8}d.$  per gallon at the end of April. This price was maintained to the end of the year. The average for the whole year was  $4\frac{3}{32}d.$  per gallon. The duty of  $1d.$  per gallon is included in all the above prices.

*Wholesale and Retail Prices of Motor Spirit.—England, Wales and South Scotland Zone\**

Date of Change.	No. 1 Grade used by ordinary motorist.		No. 3 or Commercial Grade.		Amount of Duty.				
	Including Duty.		Including Duty.						
	Wholesale.	Retail.	Wholesale.	Retail.					
	<i>Ex-pump per Gallon.</i>				Per Gallon.				
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>d.</i>
1931.									
3rd March .. .. .	1	1 $\frac{1}{2}$	1	2 $\frac{1}{2}$	0	11 $\frac{1}{2}$	1	0 $\frac{1}{2}$	4
28th April .. .. .	1	3 $\frac{1}{2}$	1	4 $\frac{1}{2}$	1	1 $\frac{1}{2}$	1	2 $\frac{1}{2}$	6
22nd May .. .. .	1	2 $\frac{1}{2}$	1	3 $\frac{1}{2}$	1	0 $\frac{1}{2}$	1	1 $\frac{1}{2}$	6
18th July .. .. .	1	1 $\frac{1}{2}$	1	2 $\frac{1}{2}$	0	11 $\frac{1}{2}$	1	0 $\frac{1}{2}$	6
11th September .. ..	1	3 $\frac{1}{2}$	1	4 $\frac{1}{2}$	1	1 $\frac{1}{2}$	1	2 $\frac{1}{2}$	8
1932.									
14th September .. ..	1	6 $\frac{1}{2}$	1	7 $\frac{1}{2}$	1	4 $\frac{1}{2}$	1	5 $\frac{1}{2}$	8
1933.									
17th May .. .. .	1	4	1	5	1	2	1	3	8
3rd November .. .. .	1	5	1	6	1	3	1	4	8
1934.									
22nd March .. .. .	1	4	1	5	1	2	1	3	8
1935.									
1st May .. .. .	1	5	1	6	1	3	1	4	8
1936.									
	(No change)								
1937.									
14th January .. .. .	1	5 $\frac{1}{2}$	1	6 $\frac{1}{2}$	1	3 $\frac{1}{2}$	1	4 $\frac{1}{2}$	8
12th February .. .. .	1	6	1	7	1	4	1	5	8
27th April .. .. .	1	6 $\frac{1}{2}$	1	7 $\frac{1}{2}$	1	4 $\frac{1}{2}$	1	5 $\frac{1}{2}$	8
29th July .. .. .	1	6	1	7	1	4	1	5	8

\* For the rest of Scotland generally, apart from the more remote districts and for the Islands, the prices were  $1d.$  a gallon higher than those given in the above table.



The retail prices of kerosene vary considerably according to district, and there is no official information available which would enable representative figures to be given.

*Wholesale Prices of Fuel Oil, Diesel Oil and Gas Oil.*—The schedule price of diesel fuel oil for road vehicles was advanced on 24th March and 27th April by  $\frac{1}{2}d.$  per gallon and  $\frac{3}{4}d.$  per gallon respectively. The price on the latter date, including the duty of 8d. per gallon, for minimum deliveries of 500 gallons ex road tank wagon, thus became 1s.  $1\frac{1}{2}d.$  per gallon in the following areas: within a 15 mile radius of Charing Cross, and a 15 mile radius of Thames Haven (north of Thames only); within a 20 mile radius of Manchester and Liverpool, and within a 25 mile radius of Preston. For all other areas in Great Britain, the prices were rather higher up to a maximum of 1s.  $2\frac{1}{2}d.$  per gallon. Deliveries down to a minimum of 250 gallons were  $\frac{1}{2}d.$  per gallon more in all areas.

The schedule prices of fuel, diesel and gas oils used for other than road transport purposes were also increased during the year. Light and heavy fuel oils, and diesel oil were advanced by  $\frac{1}{4}d.$  per gallon in January and March, and gas oil by  $\frac{1}{4}d.$  per gallon in January (twice), by  $\frac{1}{2}d.$  in April and again by  $\frac{1}{4}d.$  in October. At the end of the year the prices for contracts of over 100 tons to 399 tons ex ocean installation were as follows: Diesel oil  $5\frac{3}{4}d.$  per gallon; light fuel oil 5d. per gallon; gas oil  $5\frac{1}{2}d.$  per gallon; and heavy fuel oil  $4\frac{3}{4}d.$  per gallon. These prices include the duty of 1d. per gallon.

*Retail Prices of Fuel Oil, Diesel Oil and Gas Oil.*—There is no retail market for these oils, and purchases are usually made by contract.

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Kind of Mineral.	Quantity of Mineral raised or quarried in			Total Net Selling Value of Mineral at Mine or Quarry in			Average Net Selling Value per ton of Mineral at Mine or Quarry in		
	1937.	1936.	1935.	1937.	1936.	1935.	1937.	1936.	1935.
(a) Coal .. .. .	Tons. 240,408,438	Tons. 228,448,356	Tons. 222,248,822	£ 182,674,113	£ 160,119,088	£ 144,538,949	£ s. d. 0 15 2	£ s. d. 0 14 0	£ s. d. 0 13 0
(b) Iron Ore and Ironstone—									
West Coast Hematite (Non-phosphoric) ..	856,905	879,907	839,915	829,378	630,795	564,010	0 19 4	0 14 4	0 13 5
Jurassic:									
Cleveland .. .. .	2,036,671	1,848,490	1,640,093	731,404	595,111	481,973	0 7 2	0 6 5	0 5 11
Other Sorts .. .. .	10,882,227	9,568,886	8,102,195	1,665,759	1,344,112	1,113,441	0 3 1	0 2 10	0 2 9
Coal Measures .. .. .	178,645	174,165	167,072	357,502	267,998	191,099	—	—	—
Other Occurrences ..	260,547	229,938	146,110						
<b>Total : Iron Ore and Ironstone ..</b>	<b>14,214,995</b>	<b>12,701,386</b>	<b>10,895,385</b>	<b>3,584,043</b>	<b>2,838,016</b>	<b>2,350,523</b>	<b>0 5 1</b>	<b>0 4 6</b>	<b>0 4 4</b>
(c) Non-ferrous Ores :									
Tin Ore, dressed (Black Tin) .. .. .	3,367	3,558	3,535	434,611	382,312	395,715	129 1 7	107 9 1	111 19 0
Lead Ore, dressed ..	33,411	39,093	52,859	495,947	423,464	451,056	14 16 11	10 16 8	8 10 8
Zinc Ore, dressed ..	*13,083	*7,869	2,116	*84,353	*22,868	6,628	*6 8 11	*2 18 1	3 2 8
Copper Precipitate ..	79	138	77	1,445	1,809	1,347	18 5 7	13 3 10	17 9 10
Chromite .. .. .	300	—	—	300	—	—	1 0 0	—	—
Other Non-ferrous Ores†	—	—	—	25,222	19,662	25,601	—	—	—
<b>Total Value : Non-ferrous Ores..</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1,041,878</b>	<b>850,115</b>	<b>880,347</b>	<b>—</b>	<b>—</b>	<b>—</b>

(d) Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes:									
Fluorspar .. .. .	42,160	32,962	31,146	34,533	25,493	25,117	0 16 5	0 15 6	0 16 2
Silica Stone (including Gansister and Silica Sand) used as Refractory Material ..	714,872	637,456	576,365	262,445	232,665	213,049	0 7 4	0 7 4	0 7 5
Limestone and Dolomite for use as a fluxing agent ..	2,868,573	2,446,683	2,170,576	462,583	368,214	340,501	0 3 3	0 3 0	0 3 2
Dolomite for use as a Refractory Material .. .. .	675,523	615,519	545,930	110,759	100,423	89,382	0 3 3	0 3 3	0 3 3
Moulding and Pig-bed Sand	864,973	802,140	695,291	147,451	133,753	118,617	0 3 5	0 3 4	0 3 5
Fireclay .. .. .	2,738,793	2,524,153	2,283,894	934,046	842,140	724,777	0 6 10	0 6 8	0 6 4
<b>Total Value : Minerals (other than Metalliferous Ores) used mainly in Iron and Steel Making and other Smelting Processes</b>	—	—	—	<b>1,951,817</b>	<b>1,702,688</b>	<b>1,511,443</b>	—	—	—
(e) Minerals used mainly in China, Pottery and Glass Manufacture :									
China Clay .. .. .	830,946	746,922	707,572	985,692	876,558	811,112	1 3 9	1 3 6	1 2 11
Potters' Clay (including Ball Clay) .. .. .	225,165	213,432	175,847	203,212	194,445	150,704	0 18 1	0 18 3	0 17 2
China Stone .. .. .	60,715	66,509	57,160	85,608	89,118	76,664	1 8 2	1 6 10	1 6 10
Limestone for use in glass-making .. .. .	115,699	107,029	77,113	29,938	28,215	20,065	0 5 2	0 5 3	0 5 2
Sand for use in glassmaking	131,732	128,847	134,490	26,336	26,023	25,768	0 4 0	0 4 0	0 3 10
Chert for use in the china and pottery trades .. .. .	4,770	4,469	4,433	16,202	16,153	15,749	3 7 11	3 12 3	3 11 1
<b>Total Value : Minerals used mainly in China, Pottery and Glass Manufacture</b>	—	—	—	<b>1,346,988</b>	<b>1,230,512</b>	<b>1,100,062</b>	—	—	—

PRODUCTION.

\* In addition, 8,475 tons of partially dressed zinc ore were obtained during the years 1936 and 1937. The value of this ore, which is to be subjected to further treatment before sale, is not yet known, but the relevant figures will be included in future reports.

† Under this heading are comprised the following dressed ores the production of which is shown in Table 5:—Tungsten Ore and Gold Ore.

TABLE 1—continued.

Kind of Mineral.	Quantity of Mineral raised or quarried in			Total Net Selling Value of Mineral at Mine or Quarry in			Average Net Selling Value per ton of Mineral at Mine or Quarry in		
	1937.	1936.	1935.	1937.	1936.	1935.	1937.	1936.	1935.
(f) Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc. :	Tons.	Tons.	Tons.	£	£	£	£ s. d.	£ s. d.	£ s. d.
Clay, Shale, etc. . . . .	25,667,686	24,537,641	23,251,904	2,152,263	2,055,449	1,961,830	0 1 8	0 1 8	0 1 8
Gravel and Sand* . . . . .	20,229,027	17,795,623	14,679,037	2,898,814	2,399,943	1,999,080	0 2 8	0 2 8	0 2 9
Igneous Rocks* . . . . .	10,433,763	9,896,954	9,162,839	3,259,172	3,016,679	2,759,735	0 6 3	0 6 1	0 6 0
Sandstone* . . . . .	4,087,057	3,541,641	3,288,177	1,596,827	1,390,958	1,285,230	0 7 10	0 7 10	0 7 10
Slate† . . . . .	285,451	297,098	302,906	1,842,971	1,733,024	1,737,467	6 9 2	5 16 8	5 14 9
Chalk . . . . .	10,218,049	9,091,358	8,254,730	674,292	598,746	563,961	0 1 4	0 1 4	0 1 4
Chert and Flint . . . . .	167,104	184,362	159,817	34,005	35,566	30,846	0 4 1	0 3 10	0 3 10
Limestone* . . . . .	13,830,321	12,650,962	11,545,718	2,786,070	2,560,402	2,329,406	0 4 0	0 4 1	0 4 0
Gypsum (including Anhydrite)									
Raw Stone . . . . .	484,845	455,567	427,010	208,791	194,161	183,710	0 8 7	0 8 6	0 8 7
Dressed, roughly ground or broken stone . . . . .	609,264	546,905	554,903	301,057	272,817	272,810	0 9 11	0 10 0	0 9 10
<b>Total Value : Minerals used mainly for Building and Roadmaking, Lime, Cement, Concrete, etc. . . . .</b>	—	—	—	<b>15,554,262</b>	<b>14,257,745</b>	<b>13,124,075</b>	—	—	—
(g) Other Minerals :									
Arsenic (White) and Arsenic Soot . . . . .	95	153	172	1,023	2,081	2,458	10 15 4	13 12 0	14 5 10
Iron Pyrites . . . . .	4,627	4,623	4,194	814	801	504	0 3 6	0 3 6	0 2 5



Barytes and Witherite—												
Not Ground§ .. ..	48,757	46,001	51,290	70,079	62,681	69,226	1 8 9	1 7 3	1 7 0			
Ground—												
Bleached .. ..	5,427	5,731	6,288	21,888	21,669	22,794	4 0 8	3 15 7	3 12 6			
Unbleached .. ..	19,124	21,338	20,554	45,348	49,135	46,468	2 7 5	2 6 1	2 5 3			
Calc spar .. ..	28,664	27,681	26,156	25,891	25,556	23,382	0 18 1	0 18 6	0 17 11			
Gravel and Sand .. ..	81,282	64,419	43,566	15,138	15,069	9,769	0 3 9	0 4 8	0 4 6			
Igneous Rocks .. ..	35,999	34,000	35,197	7,993	6,723	6,863	0 4 5	0 3 11	0 3 11			
Limestone for:												
Chemical purposes .. ..	1,186,387	1,013,529	1,020,453	236,111	204,261	205,352	0 4 0	0 4 0	0 4 0			
Other purposes .. ..	258,753	201,748	174,228	95,531	67,328	54,071	0 7 5	0 6 8	0 6 2			
Mica Clay .. ..	3,223	3,494	4,622	2,169	2,300	2,974	0 13 6	0 13 2	0 12 10			
Oil Shale .. ..	1,460,729	1,409,415	1,408,371	477,843	433,173	418,112	0 6 7	0 6 2	0 5 11			
Salt, Brine—												
Salt obtained from Brine—												
(a) Vacuum .. ..	340,147	324,435	831,800	439,339	379,587	962,555	1 5 10	1 3 5	1 3 2			
(b) Other .. ..	552,811	567,063								697,761	631,202	1 5 3
Salt contained in Brine used for purposes other than Salt making .. ..	2,159,580	1,908,799	1,838,715	90,703	79,721	70,786	0 0 10	0 0 10	0 0 9			
Salt, Rock¶ .. ..	18,371	17,291	16,309	24,842	22,334	21,338	1 7 1	1 5 10	1 6 2			
Sandstone .. ..	99,957	103,580	111,523	80,972	79,898	84,213	0 16 2	0 15 5	0 15 1			
Other minerals   .. ..	—	—	—	92,190	84,611	76,317	—	—	—			
<b>Total Value: Other Minerals ..</b>	—	—	—	<b>2,425,635</b>	<b>2,168,130</b>	<b>2,077,182</b>	—	—	—			
<b>Grand Total (Value) .. ..</b>	—	—	—	<b>208,578,736</b>	<b>183,166,294</b>	<b>165,582,581</b>	—	—	—			

PRODUCTION.

\* For further particulars see Table 28.

† Including in 1937, 17,220 tons of crude or roughly dressed slate, valued at £3,531, used chiefly for building, metalling roads, hedging, etc. It was obtained, for the most part, from quarries in the Isle of Man. Dressed slate for building and monumental purposes is also included, but the quantity and value of such slate cannot be stated.

‡ Including 11,882 tons of Witherite in 1937, 8,751 tons in 1936 and 9,409 tons in 1935.

¶ The output of "Scotch Salt" in 1937 amounted to 1,945 tons, the value of which at Works was £12,105. This was made from rock salt purchased from England, Ireland or elsewhere and dissolved in sea water. About 97 per cent. of the final product was obtained from the rock salt.

|| In order to avoid the possible disclosure of information relating to individual firms the value of the following minerals has been aggregated above, viz.,

Mineral.	Quantity Produced.			Mineral.	Quantity Produced.		
	1937.	1936.	1935.		1937.	1936.	1935.
Alum Clay and Shale .. ..	Tons. 2,080	Tons. 2,397	Tons. 1,656	Diatomite .. ..	Tons. 1,141	Tons. 1,086	Tons. —
Bog Ore, Iron Ore and Ironstone used otherwise than for iron-making .. ..	8,248	7,224	7,986	Fuller's Earth .. ..	Particulars are not available for publication.		
Celestine (Sulphate of Strontium) .. ..	7,597	5,771	4,510	Ochre, Umber, etc. .. ..	8,087	7,298	8,315
				Petroleum .. ..	29	42	51

In addition small quantities of Natural Gas were obtained in each year.

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TABLE 2.—Quantity and Net Selling Value of Minerals raised and Number Workings in each County of

NOTE.—For particulars of the uses to which certain

COUNTY.	QUANTITY OF MINERALS											
	Coal.	Principal Metalliferous Ores.				OTHER						
		Iron Ore and Ironstone.	Lead Ore, dressed.	Tin Ore, dressed (Black Tin).	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Gravel and Sand.		Gypsum (including Anhydrite).
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
ENGLAND:												
Bedford..	—	—	—	—	—	940,202	—	3,652,619	—	21,065	394,104	—
Berks ..	—	—	—	—	—	8,713	50	249,020	—	—	241,032	—
Buckingham ..	—	—	—	—	—	11,540	—	1,336,311	—	—	489,468	—
Cambridge ..	—	—	—	—	—	393,080	2,905	1,076,306	—	—	35,320	—
Chester..	14,778	—	—	—	—	—	—	664,945	13,678	18,142	188,357	—
Cornwall ..	—	—	3,367	—	—	—	1,015	26,893	1,529	464	—	—
Cumberland ..	1,343,093	736,669	1,879	—	—	—	—	85,004	16,569	53	32,030	67,027
Derby ..	14,649,697	900	14,101	—	3,372	—	6,415	659,949	131,309	11,131	315,284	2,593
Devon ..	—	—	—	—	21,298	—	976	57,880	1,249	20	163,342	—
Dorset ..	—	—	—	—	—	1,538	—	189,979	—	—	291,748	—
Durham ..	33,465,652	—	576	—	6,804	—	—	781,347	236,162	5,171	820,700	393,251
Essex ..	—	—	—	—	—	2,358,919	9,184	513,802	—	24,076	1,618,173	—
Gloucester ..	1,468,104	863	—	—	—	—	—	274,178	13,081	—	26,063	—
Hants ..	—	—	—	—	—	84,238	2,092	202,512	—	—	92,963	—
Hereford ..	—	—	—	—	—	—	—	19,239	—	—	34,584	—
Hertford ..	—	—	—	—	—	28,402	9	40,582	—	84	1,455,951	—
Huntingdon ..	—	—	—	—	—	—	—	1,831,769	—	—	46,697	—
Kent ..	1,955,056	—	—	—	—	4,651,444	53,374	1,028,059	—	97,740	1,768,418	—
Lancaster ..	15,065,917	120,236	—	—	—	—	—	2,444,680	140,786	62,181	778,913	—
Leicester ..	2,865,878	1,069,138	—	—	—	—	—	755,351	43,412	—	99,917	—
Lincoln ..	—	4,385,770	—	—	—	165,983	145	115,904	25,521	4,722	63,231	—
Middlesex ..	—	—	—	—	—	22,037	190	146,940	—	—	2,987,966	—
Monmouth ..	11,045,207	958	—	—	—	—	—	120,704	50,159	—	—	—
Norfolk ..	—	—	—	—	—	18,487	64,819	15,984	—	36,435	392,002	—
Northampton ..	—	3,843,705	—	—	—	—	—	317,625	—	—	164,762	—
Northumberland ..	14,248,120	—	1,458	—	6,003	—	—	164,188	122,558	600	79,616	—
Nottingham ..	16,400,410	—	—	—	—	—	—	424,799	—	218,029	334,218	305,694
Oxford ..	—	850,987	—	—	—	134,820	—	114,720	—	—	3,556	—
Rutland ..	—	732,627	—	—	—	—	—	54,551	—	—	—	—
Salop ..	663,929	178	—	—	12,298	—	—	134,660	58,017	9,601	48,051	—
Somerset ..	764,794	—	—	—	—	—	5,524	180,012	—	—	474	—
Stafford ..	13,571,148	149,895	—	—	—	—	—	1,675,373	353,570	139,108	1,449,163	*236,688
Suffolk ..	—	—	—	—	—	117,086	13,964	73,125	—	6,533	228,118	—
Surrey ..	—	—	—	—	—	122,092	939	250,116	458	2,742	1,580,526	—
Sussex ..	—	—	—	—	—	486,135	2,480	281,042	—	1,950	506,351	*
Warwick ..	5,699,251	901	—	—	—	—	—	1,041,370	87,921	—	851,242	—
Westmorland ..	—	—	27	—	470	—	—	—	—	—	1,104	88,856
Wilts ..	—	—	—	—	—	10,022	80	31,157	—	—	19,068	—
Worcester ..	311,344	91	—	—	—	—	—	355,650	86,465	87,692	155,713	—
York ..	45,115,121	2,040,194	—	—	214	660,639	2,221	2,352,719	361,782	27,436	1,290,370	—
Total ..	178,667,499	13,932,852	18,041	3,367	50,459	10,215,377	166,382	24,201,064	1,744,226	774,975	19,049,285	1,094,109

\* Gypsum produced in Sussex is included with Staffordshire.

*of Persons Employed at all Mines and Quarries and certain other Mineral Great Britain during the Year 1937.*

of the Minerals are put see Tables 1 and 38.

MINERALS.										TOTAL NET SELLING VALUE OF ALL MINERALS RAISED.	PERSONS EMPLOYED.			COUNTY.
Igneous Rocks.	Limestone (including Calcepar).	Ochre, Umber, &c.	Potter's Clay (including Ball Clay).	Salt.		Sandstone.			Tons.		£	Below Ground at Mines (and inside at Quarries).	Above Ground at Mines (and Outside at Quarries).	
				Brine.	Rock.	Silica Stone (including Gneiss and Silica Sand) used as Refractory Material.	Other Sorts.	Slate.						
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£				ENGLAND :
4,240	21,846					133,396	421			817,667	560	288	848	Bedford.
	20,003									68,207	268	66	334	Berks.
								1,900	96	134,939	272	201	473	Buckingham.
	566									69,402	179	58	237	Cambridge.
				2,515,489	18,371	19,894	235,827			1,082,030	659	2,170	2,829	Chester.
1,016,958		100						18,214	17,154	1,892,060	4,291	3,176	7,467	Cornwall.
124,520	474,625							2,989	5,327	2,127,553	6,389	2,230	8,619	Cumberland.
279,934	4,519,157	120	400					53,819	184,125	12,188,262	38,067	13,092	51,159	Derby.
812,915	682,565	893	128,055						173,585	589,615	1,522	1,071	2,993	Devon.
	99,838		91,424							312,023	960	339	1,299	Dorset.
150,409	1,401,541			159,673		82,050	50,222			24,718,161	94,552	25,115	119,667	Durham.
										396,036	601	345	946	Essex.
	870,720	1,390						94,759		1,492,531	5,520	1,380	6,900	Gloucester.
	8,550							578		43,946	210	69	279	Hants.
34,792	20,367									20,970	108	21	129	Hereford.
	16,817									195,412	488	178	666	Hertford.
	282,563									68,003	159	39	198	Huntingdon.
	646,324		150	731,848		36,769	783,509	338		2,411,225	7,677	1,699	9,376	Kent.
44,338	227,382		1,381							14,128,086	47,370	17,346	64,716	Lancaster.
1,196,090	218,549									2,823,944	8,649	3,479	12,128	Leicester.
	202,682									766,484	1,310	272	1,582	Lincoln.
	203,271					169	58,805			387,198	277	367	644	Middlesex.
	58,931					6,220	587			3,351,204	32,328	5,917	38,245	Monmouth.
	289,919					3,899	6,438			78,578	396	133	529	Norfolk.
	272,034					118	36,991			722,460	1,315	554	1,869	Northampton.
	218,093					7,057	5,605			10,274,323	35,761	11,506	47,267	Northumberd.
	284,231	5,194	936							12,283,787	36,028	11,083	47,111	Nottingham.
	218,093							478	6	123,229	204	131	335	Oxford.
410,388	124									137,104	252	49	301	Rutland.
32,335	1,628,503	5,194	936							841,743	2,775	1,116	3,891	Salop.
249,588	226,813		2,889			24,058	18,462			1,091,775	4,027	1,311	5,338	Somerset.
						740				12,071,502	38,039	13,831	51,870	Stafford.
										58,996	298	55	353	Suffolk.
										287,868	584	269	853	Surrey.
	124					13,649				13,933	597	111	708	Sussex.
163,112	361,034							401,955		5,302,456	13,527	5,237	18,764	Warwick.
133,929	245,871							16,669	3,689	163,425	621	255	876	Westmorland.
	23,831							376		37,486	181	114	295	Wilts.
187,693	32,980			65,498		2,008	8,945			425,913	1,138	611	1,749	Worcester.
119,657	1,958,409					96,942	1,066,471			85,495,317	119,083	35,079	154,112	York.
4,941,920	15,316,139	7,697	225,165	3,052,518	18,371	472,206	3,389,905	37,934		154,153,499	507,592	160,383	667,955	.. Total.

† Brine Salt produced in Yorkshire is included with Durham, and that produced in Staffordshire and in the Isle of Man is included with Lancashire.

APPENDIX A.—STATISTICAL TABLES.

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TABLE 2

COUNTY.	QUANTITY OF MINERALS												
	Coal.	Principal Metalliferous Ores.							Other				
		Iron Ore and Ironstone.	Lead Ore, dressed.	Tin Ore, dressed (Black Tin).	Barytes and Witherite.	Chalk.	Chert and Flint.	Clay, Shale, &c.	Fireclay.	Gravel and Sand.		Gypsum (including Anhydrite).	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
<b>WALES :</b>													
Anglesey .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Brecon .. .. .	516,624	—	—	—	—	—	—	5,365	—	—	—	—	
Caernarvon .. ..	—	—	450	—	—	—	—	56,705	—	—	—	12,226	
Cardigan .. .. .	—	—	—	—	—	—	—	—	—	—	—	17	
Carmarthen .. ..	1,841,511	—	—	—	—	—	—	41,973	13,798	—	—	30	
Denbigh .. .. .	2,542,191	186	—	—	—	—	—	168,312	27,382	—	—	162,059	
Flint .. .. .	229,731	—	14,900	—	—	2,672	5,492	193,501	50,634	—	—	220,247	
Glamorgan .. .. .	24,326,224	259,684	—	—	—	—	—	284,131	64,331	—	—	543,951	
Merioneth .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Montgomery .. ..	—	—	—	—	1,069	—	—	14,000	—	—	—	—	
Pembroke .. .. .	43,447	—	—	—	—	—	—	23,773	—	—	—	—	
Radnor .. .. .	—	—	—	—	—	—	—	304	—	—	—	—	
<i>Total</i> .. .. .	29,499,728	259,870	15,350	—	1,069	2,672	5,492	788,084	156,145	—	—	438,530	
<b>SCOTLAND :</b>													
Aberdeen .. .. .	—	—	—	—	—	—	—	19,900	—	145	—	97,051	
Angus (Forfar) ..	—	—	—	—	—	—	—	18,170	—	—	—	7,195	
Argyll .. .. .	—	—	—	—	—	—	—	—	—	—	—	950	
Ayr .. .. .	*4,605,014	90	—	—	†21,780	—	—	10,258	125,444	12,551	—	55,423	
Banff .. .. .	—	—	—	—	—	—	—	—	—	—	—	140	
Berwick .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Bute .. .. .	—	—	—	—	†	—	—	—	—	—	—	—	
Calthness .. .. .	—	—	—	—	—	—	—	—	—	—	—	1,575	
Clackmannan .. ..	540,110	—	—	—	—	—	—	—	—	—	57	8,747	
Dumbarton .. .. .	582,255	—	—	—	—	—	—	—	‡65,299	8,267	—	6,974	
Dumfries .. .. .	—	—	—	—	—	—	—	8,961	—	—	—	4,403	
East Lothian .. ..	1,113,537	—	—	—	—	—	—	27,031	5,122	—	—	1,015	
(Haddington) .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Fife .. .. .	*8,234,345	3,078	—	—	—	—	—	166,445	76,750	76	—	76,739	
Inverness .. .. .	—	—	—	—	—	—	—	—	—	—	—	9,544	
Kincardine .. .. .	—	—	—	—	—	—	—	—	—	—	—	1,922	
Kinross .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Kirkcudbright .. .	—	—	—	—	—	—	—	—	—	—	—	5,196	
Lanark .. .. .	9,303,549	5,577	20	—	—	—	—	153,568	193,178	63,276	—	346,024	
Midlothian .. .. .	3,679,517	3,480	—	—	—	—	—	112,745	6,915	—	—	156,091	
(Edinburgh) .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Moray .. .. .	—	—	—	—	—	—	—	8,000	—	—	—	549	
Nairn .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Orkney .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Peebles .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Perth .. .. .	—	—	—	—	—	—	—	—	—	—	—	32,438	
Perth .. .. .	—	—	—	—	—	—	—	—	—	—	—	2,220	
Perth .. .. .	—	—	—	—	—	—	—	7,200	‡	180	—	6,727	
Ross & Cromarty ..	—	—	—	—	—	—	—	—	—	—	—	—	
Roxburgh .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Selkirk .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Shetland .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Stirling .. .. .	1,603,662	2,795	—	—	—	—	—	8,250	328,716	5,249	—	90,572	
Sutherland .. .. .	—	—	—	—	—	—	—	6,004	—	—	—	1,471	
West Lothian .. ..	2,580,220	7,273	—	—	—	—	—	113,495	36,998	—	—	14,658	
(Linlithgow) .. .	—	—	—	—	—	—	—	—	—	—	—	—	
Wigtown .. .. .	—	—	—	—	—	—	—	—	—	197	—	30	
<i>Total</i> .. .. .	32,242,209	22,273	20	—	21,780	—	—	660,077	838,422	89,998	—	927,654	
<b>ISLE OF MAN</b>													
.. .. .	—	—	—	—	—	—	—	18,481	—	—	—	26,562	
<b>Grand Total</b>	<b>240,409,436</b>	<b>14,214,995</b>	<b>33,411</b>	<b>3,367</b>	<b>73,308</b>	<b>10,218,049</b>	<b>171,874</b>	<b>25,667,686</b>	<b>2,733,793</b>	<b>864,973</b>	<b>30,442,041</b>	<b>1,094,1</b>	

\* Coal produced in Dumfries is included with Ayr, and that produced in Sutherland with Fife.

† Barytes and Igneous Rocks produced in Bute are included with Ayr.

PRODUCTION.

continued.

CARD (see also page 126).										TOTAL NET SELLING VALUE OF ALL MINERALS RAISED.	PERSONS EMPLOYED.			COUNTY.
acres.											Below Ground at Mines (and Inside at Quarries).	Above Ground at Mines (and Outside at Quarries).	Total Number.	
Igneous Rocks.	Limestones (including Calcepar).	Ochre, Umber, &c.	Pottery Clay (including Ball Clay).	Salt.		Sandstone.		Slate.	Tons.					
				Brine.	Rock.	Siliceous Stone (including Ganister and Siliceous Sand) used as Refractory Material.	Other Sorts.			£	Tons.	Tons.		
12,659	308,141	370	—	—	—	18,604	18,218	—	67,689	183	102	285	WALES:	
79,319	168,066	—	—	—	—	9,566	41,254	—	574,289	1,948	543	2,491	Anglesey.	
8,365	868,976	—	—	—	—	—	—	165,779	1,591,578	3,351	4,148	7,499	Brecon.	
18,241	—	—	—	—	—	—	—	—	10,544	70	9	79	Caernarvon.	
91,755	213,042	—	—	—	—	30,235	—	—	2,114,796	7,837	2,303	10,190	Cardigan.	
—	313,211	—	—	—	—	76,731	18,092	846	2,165,082	7,948	2,524	10,472	Carmarthen.	
—	249,995	—	—	—	—	4,332	24,436	—	546,837	1,141	656	1,797	Denbigh.	
—	1,285,208	—	—	—	—	23,490	181,339	—	20,288,910	72,992	14,904	87,896	Flint.	
05,793	500	—	—	—	—	—	74,713	55,932	536,620	1,259	1,533	2,792	Glamorgan.	
82,253	—	—	—	—	—	—	14,460	799	39,208	103	60	163	Merioneth.	
83,070	55,204	—	—	—	—	—	—	439	81,201	351	186	537	Montgomery.	
39,205	28,991	—	—	—	—	—	816	—	48,950	124	71	195	Pembroke.	
—	—	—	—	—	—	—	—	—	—	—	—	—	Radnor.	
60,660	3,209,334	370	—	—	—	180,900	507,135	226,770	28,067,704	97,357	27,039	124,396	Total.	
18,177	5,732	—	—	—	—	—	3,767	1,763	158,024	737	364	1,101	SCOTLAND:	
46,532	—	—	—	—	—	—	13,823	—	66,114	230	84	314	Aberdeen.	
08,135	2,298	—	—	—	—	—	—	8,328	78,887	330	264	594	Angus (Forfar).	
24,042	63,981	—	—	—	—	—	11,935	—	19,311,788	8,741	2,908	11,649	Argyll.	
36,283	58,243	—	—	—	—	—	15,108	500	24,177	182	19	201	Ayr.	
99,879	—	—	—	—	—	—	1,455	—	27,327	97	27	124	Banff.	
10,802	—	—	—	—	—	—	—	—	4	28	30	58	Berwick.	
32,060	—	—	—	—	—	—	18,025	—	11,761	67	20	87	Bute.	
02,350	—	—	—	—	—	—	—	—	405,919	861	234	1,095	Caitness.	
47,084	6,439	—	—	—	—	—	—	612	573,403	1,701	617	2,318	Clackmannan.	
46,341	24,750	—	—	—	—	—	—	—	456,295	1,097	410	1,507	Dumbarton.	
119,687	91,289	—	—	—	—	—	—	—	760,783	2,388	720	3,108	Dumfries.	
26,592	1,757	—	—	—	—	—	—	—	6,048,181	17,583	5,655	23,238	East Lothian (Haddington).	
80,091	5,207	—	—	—	—	—	—	—	8,811	69	24	93	Fife.	
27,439	—	—	—	—	—	—	—	—	19,196	138	14	152	Inverness.	
43,116	—	—	—	—	—	—	—	—	9,917	14	40	54	Kincardine.	
89,994	—	—	—	—	—	—	—	—	57,596	170	138	308	Kinross.	
43,915	153,492	—	—	—	—	16,538	28,216	—	7,579,623	23,128	6,614	29,742	Kirkcudbright.	
11,847	—	—	—	—	—	12	16,188	—	2,808,684	8,308	2,935	11,243	Lanark.	
4,263	—	—	—	—	—	—	675	—	9,875	54	9	63	Midlothian (Edinburgh).	
34,566	—	—	—	—	—	—	52,049	—	1,482	11	2	13	Moray.	
60,366	—	—	—	—	—	—	—	—	8,811	69	24	93	Nairn.	
35,834	15,317	—	—	—	—	—	—	—	10,492	61	—	61	Orkney.	
2,908	—	—	—	—	—	—	—	—	11,047	31	46	77	Peebles.	
72,780	1,666	—	—	—	—	—	—	—	50,233	158	58	216	Perth.	
3,917	100	—	—	—	—	—	—	—	47,011	127	66	193	Renfrew.	
5,850	—	—	—	—	—	—	—	—	7,160	38	14	52	Ross & Cromarty.	
90,127	1,941	—	—	—	—	—	—	—	17,404	114	11	125	Roxburgh.	
2,477	—	—	—	—	—	—	—	—	1,449	9	11	20	Selkirk.	
71,493	—	—	—	—	—	—	—	—	2,045	7	4	11	Sutherland.	
98,278	—	—	—	—	—	—	—	—	1,487,593	4,573	1,587	6,160	Stirling.	
—	—	—	—	—	—	—	—	—	9,137	56	26	82	Sutherland.	
—	—	—	—	—	—	—	—	—	2,233,734	6,203	1,985	8,188	West Lothian (Linlithgow).	
—	—	—	—	—	—	—	—	—	—	—	—	—	Wigtown.	
82,025	432,212	—	—	—	—	61,766	289,974	12,695	26,314,713	77,404	24,966	102,370	Total.	
75,157	6,235	—	—	—	—	—	—	8,052	42,820	185	133	318	ISLE OF MAN	
69,782	18,963,920	8,067	225,165	3,052,518	18,371	714,872	4,187,014	285,451	208,578,736	682,538	212,501	895,039	Grand Total.	

† Fireclay produced in Renfrew is included with Dumbarton.  
 ‡ Gravel and Sand produced in Montgomery is included with Glamorgan.  
 § Included with Lancashire.

NOTE TO TABLE 2

Note.—The following Minerals were also produced at Mines, Quarries, &c., in Great Britain in addition to those detailed in the preceding Table.

County.	Mineral.	Quantity raised in 1937.	County.	Mineral.	Quantity raised in 1937.
ENGLAND:			ENGLAND—cont.		
Bedford ..	Bog Ore .. ..	Tons. 851	Somerset ..	Fuller's Earth ..	Tons. •
Cornwall ..	Arsenic (White) and Arsenic Soot .. ..	95	Surrey .. ..	Fuller's Earth ..	•
	China Clay .. ..	759,704	Sussex .. ..	Natural Gas .. ..	•
	China Stone .. ..	60,715	Warwick ..	Iron Pyrites .. ..	4,512
	Copper Precipitate ..	84	Westmorland ..	Diatomite .. ..	1,141
	Mica Clay .. ..	2,457	Wilts .. ..	Iron Ore† .. ..	1,782
Cumberland ..	Tungsten Ore, dressed	123	York .. ..	Alum Shale .. ..	1,351
	Zinc Ore, Dressed ..	204	Fluorspar .. ..	Fluorspar .. ..	4,399
Derby .. ..	Fluorspar .. ..	25,414	WALES:		
	Iron Pyrites .. ..	115	Anglesey ..	Copper Precipitate ..	40
	Petroleum .. ..	29	Flint .. ..	Zinc Ore, dressed ..	1,982
	Zinc Ore, dressed. ..	110,897	Glamorgan ..	Natural Gas .. ..	•
Devon .. ..	China Clay .. ..	71,242	Merioneth ..	Gold Ore, dressed ..	787
	Copper Precipitate ..	5	SCOTLAND:		
	Mica Clay .. ..	766	Midlothian (Edinburgh) ..	Oil Shale .. ..	233,268
	Tungsten Ore, dressed	4	Shetland ..	Chromite .. ..	300
Durham ..	Alum Clay .. ..	709	West Lothian (Linlithgow) ..	Oil Shale .. ..	1,227,461
	Fluorspar .. ..	12,347			
Gloucester ..	Celestine (Sulphate of Strontium) .. ..	7,597			
Kent .. ..	Ironstone† .. ..	39			
Northampton	Bog Ore .. ..	5,571			

\* This information is not available for publication. † Used otherwise than for iron-making.  
 ‡ See \* note to Table 1 on page 119.

TABLE 3.—Approximate Quantity of Metal obtainable by Smelting Ores raised in Great Britain during the Years 1937, 1936 and 1935.

NOTE.—In calculating the approximate quantity of metal obtainable the following allowances have been made for losses in smelting: Lead, 5 per cent.; Zinc, 22 per cent. Silver in ore containing less than 3 ozs. of that metal per ton of dressed mineral is ignored, and  $\frac{1}{4}$  oz. of silver is assumed to remain in each ton of desilverized pig lead.

Description of Metal.	1937.		1936.		1935.	
	Quantity.	Value at the Average Market Price.	Quantity.	Value at the Average Market Price.	Quantity.	Value at the Average Market Price.
Copper .. ..	Tons. 36	£ 2,166	Tons. 62	£ 2,631	Tons. 50	£ 1,755
Gold (fine) .. ..	(ozs.) 60	423	(ozs.) 0.7	5	(ozs.) 148	1,052
Iron .. ..	4,264,499	24,173,049*	3,810,416	14,546,771*	3,268,616	11,092,487*
Lead .. ..	25,075	584,874	28,968	509,837	39,169	557,669
Silver .. ..	(ozs.) 71,448	5,973	(ozs.) 76,885	6,427	(ozs.) 92,348	11,219
Tin .. ..	1,987	481,508	2,099	429,525	2,050	462,723
Zinc .. ..	6,225†	138,558†	3,314†	49,448†	908	12,783
<b>Total Value ..</b>		<b>25,386,551</b>		<b>15,544,644</b>		<b>12,182,698</b>

\* This is calculated on the average declared value of the pig-iron exported.  
 † See \* note to Table 1 on page 119.

TABLE 4.—*Tonnage of the Principal Minerals raised at Mines under the Coal Mines Act, and the Total Tonnage of Minerals raised at such Mines and at Mines under the Metalliferous Mines Regulation Acts, in Great Britain\* from 1873.*

*Note.*—For the number and cause of fatal accidents at mines from which this mineral was raised see Table 48. Comparative particulars of the number of persons employed are shown in Table 13.

Decennial Period or Year.	Total Quantity of Mineral raised from Mines under the—						Metal- liferous Mines Acts.†	
	Coal Mines Act.							
	Coal.	Fireclay.	Ironstone.†	Oil Shale.	Other Minerals.	Total.		
Annual Average.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
	1873-1882 ..	138,086,800	1,875,287	11,514,447	712,928	40,209‡	152,221,629	4,278,577
	1883-1892 ..	169,921,705	2,079,818	8,634,571	1,835,174	175,239	182,646,507	4,110,068
	1893-1902 ..	203,314,691	2,628,168	7,366,505	2,192,597	288,874	215,790,835	3,637,745
	1903-1912 ..	253,967,596	2,758,318	7,787,910	2,735,153	481,157	267,730,134	3,275,844
	1913-1922 ..	241,081,755	1,910,359	5,201,170	2,875,769	385,593	251,454,646	2,391,993
	1923-1932 ..	233,096,907	1,773,744	2,584,846	2,133,745	432,227	240,021,469	2,365,022
	1913 .. ..	287,411,869	2,585,763	7,709,624	3,280,143	623,954	301,611,353	3,236,490
	1919 .. ..	229,743,128	1,849,690	4,949,944	2,759,165	299,012	239,000,939	2,104,252
	1920 .. ..	229,503,435	1,966,040	4,985,410	2,829,515	352,279	239,636,679	2,394,398
1921   .. ..	163,216,505	1,352,244	1,340,275	1,850,649	282,876	168,042,549	1,085,994	
1922 .. ..	249,584,085	1,643,777	1,854,782	2,586,656	302,366	255,971,696	1,735,291	
1923 .. ..	275,965,702	1,904,207	2,867,144	2,844,816	376,378	283,958,247	2,272,498	
1924 .. ..	267,061,027	1,959,118	2,991,149	2,843,945	446,620	275,301,859	2,260,651	
1925 .. ..	243,146,880	1,966,992	2,899,134	2,458,052	436,268	250,907,326	2,151,492	
1926   .. ..	126,230,165	1,253,842	1,212,927	1,959,795	347,456	131,004,185	1,616,634	
1927 .. ..	251,197,384	2,147,072	3,115,120	2,047,263	489,444	258,996,233	2,532,300	
1928 .. ..	237,450,878	1,998,520	3,013,602	2,038,114	442,931	244,944,045	2,599,158	
1929 .. ..	257,887,551	1,915,878	3,552,477	2,023,609	425,409	265,804,924	2,232,393	
1930 .. ..	243,862,100	1,789,088	2,866,601	2,020,510	435,340	250,973,639	2,797,354	
1931 .. ..	219,439,620	1,483,532	1,820,369	1,732,746	435,693	224,911,960	2,046,177	
1932 .. ..	208,727,764	1,319,188	1,509,939	1,368,596	486,738	213,412,225	2,139,563	
1933 .. ..	207,105,847	1,421,339	1,424,864	1,396,988	496,664	211,835,702	2,332,057	
1934 .. ..	220,721,028	1,697,202	2,151,532	1,400,775	551,496	226,522,033	2,627,824	
1935 .. ..	222,236,855	1,951,221	2,313,579	1,408,371	574,122	228,484,148	2,704,457	
1936 .. ..	228,434,148	2,148,911	2,605,572	1,409,415	610,632	235,208,678	2,856,135	
1937 .. ..	240,392,659	2,373,966	2,862,442	1,460,729	680,842	247,770,638	3,016,896	

\* Including particulars for Ireland up to the year 1921.  
 † For the total quantity of ironstone and iron ore raised see Tables 5 and 37.  
 ‡ The tonnage under the Metalliferous Mines Acts relates in some cases (e.g., tin ore, slate, &c.) to dressed mineral and not the total quantity of rock mined.  
 § Average for 8 years only, and so far as particulars were furnished.  
 || The majority of the coal mines were idle during a considerable period of the years 1921 and 1926 owing to protracted disputes. In consequence, employment at iron mines and at certain other mines was reduced.

TABLE 5.—Tonnage of the Principal Minerals obtained from all Mines,

Note.—Complete returns from all quarries more than 20 feet deep are only available from the year 1895, when the Reports of the Secretary for Mines and for the period up to 1913 in the General Report on Mines and Quarries for 1913 Tables 1 and 38 also give some details of the principal uses to which a number of the more widely distributed minerals

Decennial Period or Year.	Coal.	Metalliferous Ores.							
		Iron Ore and Ironstone.	Tin Ore, dressed (Black Tin).	Lead Ore, dressed.	Zinc Ore, dressed.	Tungsten Ore, dressed.	Uranium Ore.	Copper Ore, dressed.	Copper Precipitate.
1873-1882	138,086,800	16,338,805	14,114	73,357	25,519	30	—	64,733	408
1883-1892	169,921,705	14,315,492	14,432	49,651	24,628	117	—	20,267	342
1893-1902	203,322,846	13,204,252	8,741	34,480	22,182	65	35	7,305	267
1903-1912	253,983,464	14,768,388	7,534	28,076	19,108	254	45	5,023	233
1913-1922	241,109,385	12,317,805	5,716	16,539	8,419	191	111	855	191
1923-1932	233,125,846	9,842,821	3,511	21,942	1,603	39	‡	45	129
1926 .. ..	126,278,521	4,094,386	3,878	19,076	1,944	19	—	155	128
1927 .. ..	251,232,336	11,206,601	4,321	20,428	2,911	12	—	270	206
1928 .. ..	237,471,931	11,262,323	4,844	18,771	1,553	96	‡	—	104
1929 .. ..	257,906,802	13,214,943	5,640	23,260	1,811	27	‡	13	104
1930 .. ..	243,881,824	11,627,233	4,146	25,380	1,348	128	—	—	75
1931 .. ..	219,458,951	7,625,860	920	29,502	409	100	—	—	109
1932 .. ..	208,733,140	7,328,190	2,025	40,633	8	2	—	12	90
1933 .. ..	207,112,243	7,461,720	2,337	49,056	9	11	—	—	64
1934 .. ..	220,726,298	10,586,846	3,224	68,122	988	190	—	—	23
1935 .. ..	222,248,822	10,895,385	3,535	52,859	2,116	219	—	—	77
1936 .. ..	228,448,356	12,701,386	3,558	39,093	7,869†	189	—	—	138
1937 .. ..	240,409,436	14,214,995	3,367	33,411	13,083††	127	—	—	79

Decennial Period or Year.	Other Minerals—								
	Oil Shale.	Salt.	Slate.	Chalk.	Chert and Flint.	Clay, Shale, etc.			
						Alum Clay and Shale.	China Clay, China Stone, and Potters' Clay (including Ball Clay).	Fireclay.	Mica Clay.
1873-1882	712,928	2,373,648	‡	‡	‡	6,726			
1883-1892	1,835,174	2,160,129	457,107	‡	‡	3,914			
1893-1902	2,192,597	1,959,089	557,925	4,051,926**	94,370**	3,912			
1903-1912	2,736,700	1,957,897	458,691	4,547,235	66,720	7,925			
1913-1922	2,883,257	1,916,090	217,238	3,257,349	65,738	5,549	809,794	ud: with "Other Sorts."	
1923-1932	2,137,320	1,954,164	281,279	5,525,593	139,930	10,670	992,819	2,016,726	26,369
1926 .. ..	1,959,795	1,716,467	300,124	4,315,376	119,162	8,260	1,058,249	1,491,648	25,363
1927 .. ..	2,047,263	1,976,339	296,271	5,765,189	109,697	9,166	1,123,736	2,411,525	31,389
1928 .. ..	2,038,114	1,931,823	300,251	5,996,041	154,559	8,964	1,037,788	2,261,470	28,393
1929 .. ..	2,023,609	1,959,362	300,829	6,529,348	138,551	9,344	1,096,790	2,207,651	35,124
1930 .. ..	2,020,510	2,054,783	260,522	6,712,101	159,836	8,997	981,212	2,028,661	35,537
1931 .. ..	1,732,746	1,885,252	242,807	6,870,177	174,764	9,797	762,976	1,705,746	23,586
1932 .. ..	1,368,596	2,204,908	252,854	6,036,431	172,639	12,116	683,682	1,543,360	21,057
1933 .. ..	1,396,988	2,352,838	272,518	6,483,534	175,643	4,476	776,621	1,683,945	8,150
1934 .. ..	1,400,775	2,506,062	290,455	7,681,693	161,578	2,274	890,680	2,015,592	8,070
1935 .. ..	1,403,371	2,636,824	302,906	8,254,730	164,250	1,656	940,579	2,283,894	4,622
1936 .. ..	1,409,415	2,817,588	297,098	9,091,358	188,831	2,397	1,026,863	2,524,153	3,494
1937 .. ..	1,460,729	3,070,889	285,451	10,218,049	171,874	2,060	1,116,826	2,738,793	3,221

\* Including particulars for Ireland up to 1921. † Prior to 1928 the figures are incomplete. ‡ Ganister is included through sand used as Refractory Material is also included. The latter was previously included with "Gravel and Sand." § Cannot



*Quarries, and certain other Mineral Workings in Great Britain\* from 1873:*

Quarries Act, 1894, first became operative. Particulars of certain minerals not included below will be found in previous Parts I and III.  
e.g., limestone, igneous rocks, sandstone, gravel and sand, are put.

Gold Ore (Auriferous Quartz).	Manganese Ore.	Other Minerals.							Decennial Period or Year.
		Arsenic (White) and Arsenic Soot.	Barytes and Witherite.	Celestine (Sulphate of Strontium). †	Fluorspar.	Gypsum (including Anhydrite).	Iron Pyrites.	Ochre, Umber, etc.	
\$	3,362	5,566	19,303	\$	445	72,218	40,680	5,904	1873-1882
3,570	7,162	6,112	24,408	9,604‡	267	126,316	22,322	12,324	1883-1892
10,252	1,103	4,093	23,819	14,156	1,386	189,159	11,703	13,383	1893-1902
11,988	8,661	1,781	37,225	14,067	40,211	245,480	10,134	15,209	1903-1912
648	7,172	2,023	55,926	5,571	44,173	239,825	9,841	11,148	1913-1922
23	718	1,361	50,449	4,128	36,697	626,365	4,669	9,624	1923-1932
—	128	1,666	42,775	820	35,883	465,102	4,239	10,203	.. .. 1926
—	1,509	1,337	46,853	3,090	39,724	506,239	4,890	10,464	.. .. 1927
180	235	1,289	49,901	7,126	46,862	634,645	4,370	10,504	.. .. 1928
70	—	953	57,095	5,329	41,762	966,061	4,371	9,343	.. .. 1929
—	—	579	58,705	5,141	29,788	838,018	5,497	8,623	.. .. 1930
—	—	177	45,580	4,052	19,922	754,895	4,571	7,364	.. .. 1931
††	—	247	56,639	6,852	15,427	995,422	992	7,748	.. .. 1932
135	—	121	66,820	3,862	26,058	985,055	1,132	8,707	.. .. 1933
501	—	185	73,994	9,440	34,216	961,581	2,145	7,393	.. .. 1934
791	—	172	78,132	4,510	31,146	931,913	4,194	8,315	.. .. 1935
6	—	153	73,070	5,771	32,962	1,002,472	4,623	7,298	.. .. 1936
787	—	95	73,308	7,597	42,160	1,094,109	4,627	8,067	.. .. 1937

continued.

Other Sorts.	Gravel and Sand.		Igneous Rocks.	Limestone.		Sandstone.		Decennial Period or Year.
	Moulding and Pig-bed Sand.	Other Sorts.		Calcspar.	Other Sorts.	Silica Stone (including Ganister and Silica Sand) used as Refractory Material. ‡	Other Sorts.	
\$	In-	\$	\$	In-	\$	In-	\$	1873-1882
13,395,263**	cluded	1,612,552**	4,497,702**	cluded	11,385,286**	cluded	4,971,975**	1883-1892
14,661,052	in next	2,252,378	6,138,013	in next	12,164,414	column.	4,852,542	1893-1902
8,415,198	column.	2,277,305	5,509,523	column.	10,469,476	320,633	2,020,897	1913-1922
13,335,258	600,368	5,613,731	8,593,814	14,394	13,263,048	489,181	2,948,790	1923-1932
12,918,792	521,031	4,484,251	8,245,729	14,806	11,018,779	337,815	2,984,184	.. .. 1926
14,609,514	695,216	4,992,714	8,467,806	17,516	14,411,483	568,824	3,131,406	.. .. 1927
13,278,243	666,224	5,303,973	8,479,996	16,303	14,108,471	510,901	3,158,879	.. .. 1928
14,271,198	681,810	6,262,248	8,744,388	15,187	14,974,000	549,140	3,051,727	.. .. 1929
15,356,383	651,694	7,900,151	9,639,803	15,975	14,812,120	444,316	3,240,402	.. .. 1930
15,623,902	537,638	9,159,467	10,670,929	17,411	13,699,127	387,938	3,321,018	.. .. 1931
14,876,463	491,065	8,852,709	9,213,697	15,546	12,300,727	372,803	2,896,764	.. .. 1932
18,385,520	571,975	11,049,927	8,795,233	18,472	13,063,332	447,264	2,949,960	.. .. 1933
21,920,280	713,659	13,341,564	8,869,472	22,280	14,671,529	532,437	3,266,175	.. .. 1934
23,251,904	695,291	14,857,093	9,198,036	26,156	15,534,018	576,365	3,399,700	.. .. 1935
24,537,641	802,140	17,988,889	9,930,954	27,681	17,035,470	637,456	3,645,221	.. .. 1936
25,667,686	864,973	20,442,041	10,469,762	28,664	18,935,256	714,872	4,187,014	.. .. 1937

ut. Complete information with respect to other kinds of Silica Stone is available from 1922 only, from which year Silica is dated. † From 1878. ‡ From 1884. \*\* From 1895. †† Less than ‡ ton. ††† See \* note to Table I on page 119.

TABLE 6.—Output of Saleable Coal in the Principal Districts of Great Britain\* from 1873.

Note.—Important disputes affecting the production of coal occurred in the following years and districts, viz.: 1873 and 1875, South Wales; 1879, Durham; 1880, Lancashire; 1892, Durham; 1893, Federated Districts; 1894, Scotland; 1898, South Wales; and in 1914 and 1919, Yorkshire. In 1912, 1920, 1921 and 1925, there were national disputes lasting approximately 6 weeks, 2 to 3 weeks, 3 months and 7 months, respectively.

Year.	Northumberland.	Durham.	Yorkshire.	Lancashire, Cheshire and North Wales.	Derbyshire, Nottinghamshire and Leicestershire.	Staffordshire, Shropshire, Worcestershire and Warwickshire.	South Wales and Monmouthshire.	Other English Districts.†	Scotland.	Ireland.	Total Output of Coal.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1873 .. ..	6,464,061	23,278,556	15,311,778	19,227,051	10,701,020	17,315,242	16,180,728	3,208,192	16,857,772	135,731	128,680,131
1874 .. ..	6,464,944	24,102,300	14,827,313	18,554,692	11,379,522	15,027,747	16,490,832	2,814,884	16,788,661	139,213	126,590,108
1875 .. ..	6,755,796	25,568,349	15,860,008	20,968,034	11,626,749	16,531,180	14,173,143	3,097,518	18,597,507	128,201	133,306,485
1876 .. ..	6,566,911	25,685,183	15,137,373	20,467,818	11,435,300	15,861,052	16,972,284	3,206,438	18,665,612	125,195	134,125,166
1877 .. ..	5,485,573	25,929,652	15,813,310	20,797,132	11,981,007	15,535,899	16,911,214	3,265,926	18,320,074	140,181	134,179,668
1878 .. ..	5,254,927	24,877,656	15,589,119	20,902,636	12,417,269	14,966,315	17,417,118	3,227,690	17,837,282	122,051	132,612,063
1879 .. ..	5,537,071	23,251,903	16,248,156	21,500,621	12,981,483	15,223,401	17,819,043	3,559,785	17,469,927	129,003	133,720,398
1880 .. ..	6,850,162	28,063,346	17,473,806	22,230,609	13,399,609	15,741,186	21,165,580	3,636,523	18,274,866	133,702	146,969,408
1881 .. ..	7,074,577	28,517,843	18,294,177	21,952,407	14,412,248	16,883,989	22,234,176	3,864,243	20,823,055	127,585	154,184,300
1882 .. ..	7,060,783	29,238,814	19,530,331	22,956,776	14,499,583	16,973,241	22,817,378	3,780,160	20,515,134	127,777	156,499,977
1883 .. ..	7,527,065	29,878,435	19,567,670	23,946,292	15,429,234	17,259,974	24,975,433	3,801,317	21,225,797	126,114	163,737,327
1884 .. ..	7,516,005	28,552,303	19,224,354	23,394,470	14,825,534	16,468,895	25,552,168	3,914,933	21,186,688	122,431	160,757,779
1885 .. ..	7,354,776	27,737,324	18,501,684	23,587,218	15,681,960	16,797,221	24,342,856	3,950,758	21,288,586	109,035	159,351,418
1886 .. ..	7,305,182	27,481,005	19,392,975	23,825,699	15,450,035	15,389,090	24,204,370	3,997,085	20,373,478	105,583	157,518,482
1887 .. ..	6,658,940	28,858,121	20,108,903	24,213,648	15,758,767	15,925,046	26,046,374	3,958,333	21,484,976	106,704	162,119,812
1888 .. ..	8,001,828	29,664,892	20,579,980	24,554,526	16,536,209	16,843,976	27,355,250	3,987,570	22,319,104	91,904	169,936,219
1889 .. ..	8,794,005	30,307,177	21,976,027	25,223,467	18,012,378	17,242,266	28,064,235	3,976,805	23,217,163	103,201	176,816,724
1890 .. ..	9,446,035	30,265,241	22,338,886	25,776,824	18,773,860	17,134,480	29,415,025	4,083,081	24,278,589	102,267	181,614,288
1891 .. ..	9,330,859	29,807,523	22,794,057	26,550,803	19,789,172	17,737,619	29,992,810	3,946,438	25,424,168	105,681	185,479,168
1892 .. ..	9,528,834	29,834,027	23,189,915	25,983,105	19,801,137	17,429,953	31,207,360	3,509,736	27,191,923	111,881	181,786,871
1893 .. ..	9,112,788	30,819,070	15,955,817	16,682,552	14,415,578	16,105,631	30,154,799	3,491,024	25,482,918	105,678	184,322,595
1894 .. ..	9,541,199	32,556,924	23,446,184	27,058,385	19,794,139	16,752,428	33,418,344	4,115,764	21,481,554	112,604	188,277,582
1895 .. ..	8,694,651	31,193,253	22,811,038	25,612,243	19,329,651	16,132,957	33,040,114	3,989,178	28,792,693	125,886	189,961,325
1896 .. ..	9,027,752	32,762,539	23,943,488	26,279,459	19,915,703	17,069,778	33,867,921	4,038,335	28,326,700	129,585	195,361,260
1897 .. ..	9,768,459	33,819,068	24,055,380	26,476,028	21,245,398	17,572,099	35,806,390	4,169,088	29,082,996	135,025	202,129,931
1898 .. ..	10,570,713	34,737,347	25,639,021	28,230,587	23,081,794	18,062,391	26,723,618	4,641,464	30,237,616	129,965	202,054,516
1899 .. ..	11,184,072	34,870,675	26,907,132	28,303,690	24,708,292	18,369,475	39,870,097	4,613,215	31,142,713	125,420	220,064,781
1900 .. ..	11,514,521	34,800,719	28,250,679	28,651,932	25,977,987	18,771,905	39,328,209	4,648,445	33,112,204	124,699	225,181,300

1901	..	..	11,272,005	33,954,438	26,975,460	27,337,333	25,118,006	17,717,838	39,209,260	4,562,773	32,796,800	103,029	819,046,945
1902	..	..	11,619,072	34,808,460	27,956,148	28,053,551	26,252,448	18,194,315	41,905,583	4,670,969	34,115,759	108,737	227,095,042
1903	..	..	12,021,340	35,873,268	28,532,362	28,138,447	25,927,483	18,014,583	42,154,191	4,577,193	34,992,790	102,812	230,334,460
1904	..	..	12,258,509	36,154,273	28,840,506	27,444,437	26,178,319	17,742,900	43,730,415	4,519,887	35,453,363	105,637	232,428,272
1905	..	..	12,693,885	37,397,176	29,930,184	27,150,778	27,287,622	18,038,664	43,203,071	4,497,924	35,639,297	90,335	236,128,936
1906	..	..	13,283,408	38,813,969	32,556,102	28,986,795	29,303,937	18,824,028	47,056,365	4,757,593	37,992,369	93,662	251,067,628
1907	..	..	13,722,262	40,264,871	35,181,229	30,035,357	32,633,791	20,726,441	49,978,211	5,096,548	40,082,548	99,704	262,930,982
1908	..	..	13,797,990	40,137,585	34,936,302	27,879,809	30,687,591	19,808,000	50,227,113	4,793,022	39,158,225	103,158	261,528,795
1909	..	..	14,019,341	41,240,852	35,900,046	27,297,553	30,644,154	19,518,855	50,363,937	4,937,817	39,768,365	89,392	264,774,319
1910	..	..	13,121,929	39,431,598	38,304,088	27,178,124	31,257,256	20,164,046	48,699,992	4,861,071	41,335,132	79,802	264,433,023
1911	..	..	14,682,717	41,718,916	39,137,115	27,424,075	31,655,198	20,375,612	50,200,727	4,894,812	41,718,163	84,564	271,601,999
1912	..	..	13,381,787	37,890,404	38,298,080	26,315,682	30,461,492	19,567,627	50,116,264	4,778,066	39,518,629	90,307	260,418,338
1913	..	..	14,819,328	41,532,890	43,680,016	28,134,364	33,702,521	20,845,761	56,830,317	5,346,239	42,456,516	82,521	287,430,473
1914	..	..	12,472,103	37,549,204	39,556,450	26,206,134	31,414,317	20,282,681	53,879,752	5,363,990	38,847,362	92,400	265,864,393
1915	..	..	11,040,563	33,737,985	40,357,917	24,927,009	31,783,562	19,784,873	50,452,600	5,440,159	35,596,856	84,557	253,206,081
1916	..	..	11,244,955	33,742,979	40,222,255	24,912,623	32,591,866	19,884,115	52,080,765	5,511,844	36,094,631	89,833	256,375,366
1917	..	..	10,221,491	30,842,539	40,889,903	25,210,173	33,169,624	19,899,931	48,507,965	5,416,124	34,245,744	95,649	248,499,240
1918	..	..	9,883,139	28,404,190	35,666,514	22,879,997	30,006,156	17,653,592	46,716,552	4,756,295	31,890,218	89,001	227,748,654
1919	..	..	10,989,990	31,008,711	32,854,307	22,652,523	29,411,588	18,024,935	47,522,306	4,764,879	32,457,864	92,414	229,779,517
1920	..	..	11,185,958	30,818,241	36,182,855	21,691,351	29,422,539	17,411,318	46,246,967	4,938,950	31,523,941	107,961	229,538,031
1921	..	..	8,025,104	21,768,459	28,482,202	14,915,323	20,929,900	12,723,394	30,572,003	3,201,735	22,545,122	86,537	168,251,181
1922	..	..	13,204,921	34,862,878	42,119,188	20,541,375	30,772,057	17,517,504	50,325,094	4,816,475	35,447,424	102,812	249,606,964
1923	..	..	14,293,756	38,217,862	46,466,855	23,534,764	34,916,672	20,334,149	54,251,587	5,490,512	38,494,403	103,158	276,000,560
1924	..	..	13,660,448	36,689,491	46,568,688	23,235,751	34,189,686	20,255,280	51,085,135	5,243,407	36,190,281	102,812	267,118,167
1925	..	..	11,955,368	31,493,011	45,273,999	20,521,439	32,755,690	18,700,342	44,629,522	4,818,932	33,028,528	90,335	243,176,231
1926	..	..	6,151,696	14,136,418	21,603,465	10,930,507	20,845,470	12,992,255	20,272,572	2,592,383	16,753,755	84,564	196,978,521
1927	..	..	13,503,813	34,603,196	45,938,719	20,551,646	31,471,640	18,968,411	46,256,363	5,338,854	34,597,694	99,704	251,238,338
1928	..	..	12,967,982	34,708,793	43,967,966	18,398,457	30,087,529	17,088,299	43,311,966	5,181,983	32,358,946	93,662	257,471,931
1929	..	..	14,547,425	39,000,694	46,406,074	19,115,155	32,736,789	18,184,439	48,149,613	5,590,749	34,175,864	103,158	257,906,802
1930	..	..	13,137,901	35,862,756	44,560,741	18,298,368	31,990,742	17,649,404	45,107,912	5,615,300	31,658,700	90,335	243,981,824
1931	..	..	12,495,865	30,248,866	40,589,644	17,231,743	30,557,990	16,980,570	37,084,852	5,197,080	29,072,361	84,564	219,458,951
1932	..	..	12,165,732	27,802,275	38,075,279	16,148,992	28,586,122	17,030,505	34,874,302	5,275,534	28,804,389	90,335	208,738,140
1933	..	..	12,473,749	27,606,127	37,252,125	16,056,036	27,808,247	17,016,354	34,854,984	5,299,380	29,243,341	90,335	207,112,248
1934	..	..	13,831,073	30,590,076	39,852,601	16,544,049	29,165,790	18,566,655	35,178,317	5,669,695	31,332,647	90,335	230,728,268
1935	..	..	14,027,148	30,272,958	40,657,048	16,633,026	29,237,901	19,233,117	35,025,110	5,815,562	31,846,952	90,335	222,248,622
1936	..	..	14,427,260	31,372,566	42,476,133	17,496,409	31,028,963	20,275,215	33,886,179	5,496,455	31,987,177	90,335	228,448,356
1937	..	..	14,242,120	33,485,652	45,115,121	17,852,617	33,915,985	20,245,672	37,773,013	5,531,047	32,242,209	90,335	240,409,436

\* Including particulars for Ireland up to the year 1921.

† Including Cumberland and Westmorland, Gloucestershire and Somersetshire in each year, Dorsetshire in 1879, Devonshire in 1881 and 1893, and Kent in 1907 and subsequent years.

‡ The output of coal at mines in Eire, so far as information is available, was as follows—

		Tons.		Tons.			
1926	..	..	78,456	1934	..	..	111,074
1929	..	..	85,187	1935	..	..	112,723
1931	..	..	91,730	1936	..	..	124,723
1932	..	..	81,180	1937	..	..	125,924
1933	..	..	105,287				

In Northern Ireland small quantities of coal were raised in 1922, 1924, 1925 and 1926, but the quantities produced cannot be stated. In 1935, 1936 and 1937, 3,630 tons, 5,256 tons, and 1,203 tons of coal were raised, respectively.

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TABLE 7.—Tonnage and Net Selling Value of Saleable Coal Raised in each Colliery District of Great Britain during the Year 1937.

District.	Total Quantity of Saleable Coal Raised.	Total Net Selling Value at Mines and Quarries.	Average Net Selling Value per ton.	Total Quantity of Saleable Coal Raised in 1936.	Average Net Selling Value per ton in 1936.
<b>ENGLAND &amp; WALES.</b>					
	Tons.	£	s. d.	Tons.	s. d.
1. Northumberland .. ..	14,248,120	9,988,839	14 0-26	14,427,260	12 6-86
2. Durham .. ..	33,485,652	23,795,031	14 2-54	31,372,566	12 11-52
3. Cumberland and Westmorland .. ..	1,343,093	1,182,169	17 7-24	1,189,948	14 11-80
4. Lancashire and Cheshire .. ..	15,080,695	13,179,373	17 5-74	14,659,807	16 7-89
5. Yorkshire, South .. ..	32,406,498	23,300,147	14 4-56	30,694,734	13 3-69
6. Yorkshire, West .. ..	12,708,623	9,809,988	15 5-26	11,781,399	14 3-37
7. Nottinghamshire .. ..	16,400,410	11,959,238	14 7-01	15,059,284	13 6-00
8. Derbyshire, North .. ..	13,807,931	10,117,209	14 7-85	12,471,150	14 0-10
9. Derbyshire, South .. ..	841,766	631,305	14 11-99	806,406	14 0-22
10. Staffordshire, North .. ..	7,214,502	5,754,821	15 11-44	7,056,616	14 11-67
11. Cannock Chase .. ..	5,254,997	4,408,109	16 9-32	5,401,893	15 8-71
12. South Staffs. and Worcester .. ..	1,412,993	1,037,629	14 8-24	1,476,715	14 0-67
13. Leicestershire .. ..	2,865,878	2,080,825	14 6-26	2,692,122	13 10-19
14. Warwickshire .. ..	5,699,251	4,844,470	17 0-00	5,634,019	15 11-60
15. Shropshire .. ..	663,929	546,435	16 5-53	705,972	15 9-91
16. Forest of Dean .. ..	1,400,894	1,092,677	15 7-20	1,439,036	13 10-98
17. Somersetshire .. ..	764,794	692,561	18 1-33	747,023	17 5-68
18. Bristol .. ..	67,210	60,444	17 11-84	94,844	18 0-64
19. Kent .. ..	1,955,056	1,656,139	16 11-31	2,025,604	15 11-63
20. South Wales & Monmouth :—					
Anthracite .. ..	5,435,670	5,645,164	20 9-25	5,581,442	20 9-77
Other .. ..	32,337,343	24,870,594	15 4-58	28,304,737	13 11-82
21. North Wales .. ..	2,771,922	2,162,934	15 7-27	2,838,602	14 6-86
<b>Total .. ..</b>	<b>208,167,227</b>	<b>158,816,101</b>	<b>15 3-10</b>	<b>196,461,179</b>	<b>14 2-19</b>
<b>SCOTLAND.</b>					
22. Fife, Clackmannan, Kinross and Sutherland* .. ..	8,774,455	6,307,177	14 4-51	8,742,445	12 7-39
23. Lothians (Mid and East) and Peebles .. ..	4,793,054	3,313,420	13 9-91	4,843,562	11 11-06
24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dumbarton :—					
Anthracite .. ..	811,104	806,127	19 10-53	857,627	17 5-74
Other .. ..	13,258,582	9,953,267	15 0-17	13,115,940	13 2-73
25. Ayrshire, Dumfries and Argyll* .. ..	4,605,014	3,478,021	15 1-26	4,427,603	13 5-43
<b>Total .. ..</b>	<b>32,242,209</b>	<b>23,858,012</b>	<b>14 9-59</b>	<b>31,987,177</b>	<b>13 0-09</b>
<b>Great Britain .. ..</b>	<b>240,409,436</b>	<b>182,674,113</b>	<b>15 2-36</b>	—	—
<i>Corresponding figures for 1936 ..</i>	<i>228,448,356</i>	<i>160,119,088</i>	<i>14 0-22</i>	<i>228,448,356</i>	<i>14 0-22</i>

\* A small quantity of Anthracite was got in this District.  
*Note.*—The total quantity of Anthracite raised in Great Britain in 1937 was 6,335,776 tons valued at £6,544,093, as compared with 6,523,225 tons valued at £6,640,477 in 1936.

TABLE 8.—Number of Wet and Dry Cleaning Plants in use and the Quantity of Cleaned Saleable Coal produced in each Colliery District of Great Britain during the Year 1937.

(a) Classification according to Colliery District.

District.	Number of Cleaning Plants in use.*			Quantity of Cleaned Saleable Coal produced.				
	Wash-eries.	Dry Clean-ing.	Froth and other flota-tion Plants	At Washeries.	By Dry Cleaning Plants.	By Froth and other flota-tion Plants.	Total.	Per-centage Total Output.†
				Tons.	Tons.	Tons.	Tons.	%
<b>England and Wales.</b>								
1. Northumberland .. ..	28	14	1	3,894,002	1,534,722	9,150	5,437,874	38.2
2. Durham .. ..	34	32	—	7,256,917	8,568,338	—	15,825,255	47.3
3. Cumberland and Westmorland .. ..	9	—	—	887,358	—	—	887,358	66.1
4. Lancashire and Cheshire .. ..	39	8	3	5,813,667	350,996	915,477	6,480,140	43.0
5. Yorkshire, South .. ..	67	18	2	17,523,790	1,717,844	132,341	19,373,975	59.8
6. Yorkshire, West .. ..	31	10	1	5,285,267	732,098	239,863	6,257,228	49.2
7. Nottinghamshire .. ..	48	11	1	6,697,534	392,290	9,935	7,099,759	43.3
8. Derbyshire, North .. ..	37	13	—	4,374,393	399,410	—	4,773,803	34.6
9. Derbyshire, South .. ..	1	—	—	6,739	—	—	6,739	0.8
10. Staffordshire, North .. ..	16	4	1	2,909,597	146,000	177,477	3,233,074	44.8
11. Cannock Chase .. ..	15	5	—	1,128,912	66,825	—	1,195,737	22.8
12. South Staffs. and Worcester.. ..	4	—	—	615,004	—	—	615,004	43.6
13. Leicestershire .. ..	4	13	1	—	447,518	105,081	552,599	19.3
14. Warwickshire .. ..	6	9	—	618,277	556,602	—	1,174,879	20.6
15. Shropshire .. ..	1	—	—	7,796	—	—	7,796	1.2
16. Forest of Dean .. ..	—	1	—	—	131,499	—	131,499	9.4
17. Somersetshire .. ..	2	2	—	9,520	49,328	—	58,846	7.7
18. Bristol .. ..	1	—	—	31,869	—	—	31,869	47.4
19. Kent .. ..	1	2	—	477,118	227,974	—	705,092	36.1
20. South Wales and Monmouth.. ..	103	10	6	12,108,168	747,080	977,906	13,833,154	36.6
21. North Wales .. ..	7	—	—	1,022,654	—	—	1,022,654	36.9
<b>Total .. ..</b>	<b>450</b>	<b>152</b>	<b>16</b>	<b>70,668,582</b>	<b>16,068,522</b>	<b>1,967,230</b>	<b>88,704,334</b>	<b>42.6</b>
<b>Scotland.</b>								
22. Fife, Clackmannan, Kinross and Sutherland .. ..	28	—	—	4,849,186	—	—	4,849,186	55.3
23. Lothians (Mid and East) and Peebles .. ..	19	—	—	2,472,924	—	—	2,472,924	51.6
24. Lanarkshire, West Lothian (Lindlithgow) .. ..	90	—	2	7,129,842	—	56,655	7,186,497	51.1
25. Ayrshire, Dumfries and Argyll .. ..	19	1	—	1,974,163	26,449	—	2,000,612	43.4
<b>Total .. ..</b>	<b>158</b>	<b>1</b>	<b>2</b>	<b>16,426,115</b>	<b>26,449</b>	<b>56,655</b>	<b>16,509,219</b>	<b>51.2</b>
<b>Great Britain .. ..</b>	<b>606</b>	<b>153</b>	<b>18‡</b>	<b>87,094,697</b>	<b>16,094,971</b>	<b>2,023,885‡</b>	<b>105,213,553‡</b>	<b>43.8</b>
<i>Corresponding figures for 1936</i>	<i>617</i>	<i>154</i>	<i>9</i>	<i>83,289,140</i>	<i>15,016,972</i>	<i>231,697</i>	<i>98,537,109</i>	<i>43.1</i>

(b) Classification according to Situation of Plant.

1. Plants at Mines treating coal from:—								
(a) Own Mines .. ..	590	151	18	83,741,987	15,782,344	2,023,885	101,548,216	—
(b) Other Owners' Mines .. ..				516,419	17,339	—	533,758	—
<b>Total .. ..</b>	<b>590</b>	<b>151</b>	<b>18</b>	<b>84,258,406</b>	<b>15,799,683</b>	<b>2,023,885</b>	<b>102,081,974</b>	<b>—</b>
2. Plants at Coke, &c., Works not situated at Mines .. ..	16	2	—	2,836,291	295,288	—	3,131,579	—
<b>Grand Total .. ..</b>	<b>606</b>	<b>153</b>	<b>18‡</b>	<b>87,094,697</b>	<b>16,094,971</b>	<b>2,023,885‡</b>	<b>105,213,553‡</b>	<b>—</b>

\* In addition, there were 28 washeries, and 9 dry cleaning plants which were idle during the year. Altogether cleaning plants were installed at 589 mines and at 17 works not situated at mines.

† In relation to the output of coal which is generally suitable for cleaning, i.e., fine or small coal, the proportion actually so treated is in general considerably higher than is indicated above by the percentage of the total output of coal.

‡ Including 9 plants (1,813,962 tons cleaned) of a type previously included under Washeries.

§ Including 3,293,348 tons of cleaned anthracite of which 2,621,279 tons were produced at plants in South Wales and 672,069 tons at plants in Scotland.

TABLE 9.—Weekly Tonnage of Coal Raised and Weighed at Pits in the Principal Colliery Districts of Great Britain during the Year 1937\* and the Number of Wage-earners on Colliery Books.

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Week ended.	Northumberland. (Tons).	Durham. (Tons).	Yorkshire. (Tons).	Lancashire, Cheshire and North Wales. (Tons).	Derbyshire, Nottingham- shire and Leicestershire. (Tons).	Staffordshire, Shropshire, Worcester- shire and Warwickshire. (Tons).	South Wales and Mon- mouthshire. (Tons).	Other English Districts. † (Tons).	Scotland. (Tons).	Great Britain. (Tons).	Number of Wage- earners on Colliery Books.‡
<b>FIRST QUARTER (13 WEEKS ENDED 3rd APRIL)</b>											
Jan. 9 .. ..	299,400	684,000	882,900	377,500	727,000	432,500	757,000	115,900	538,800	4,815,000	760,672
16 .. ..	304,700	701,900	871,400	371,200	717,400	417,600	757,800	116,400	629,100	4,887,500	760,560
23 .. ..	308,700	696,000	849,200	359,500	705,600	407,000	755,600	111,600	638,200	4,831,400	760,494
30 .. ..	274,800	649,700	860,500	360,000	708,900	405,800	759,000	111,800	632,600	4,763,100	761,306
Feb. 6 .. ..	298,100	662,900	967,800	367,900	725,100	410,800	779,100	112,100	650,800	4,874,400	762,690
13 .. ..	301,400	682,600	994,900	374,000	744,600	420,300	781,800	114,700	666,700	5,061,000	764,831
20 .. ..	306,100	691,000	999,300	376,600	742,300	427,700	782,500	114,700	668,500	5,117,700	765,723
27 .. ..	306,400	684,700	997,000	382,700	745,700	431,000	779,600	114,100	657,300	5,098,500	768,688
Mar. 6 .. ..	306,700	693,600	993,000	374,200	723,800	424,500	764,500	114,400	644,500	5,039,200	769,127
13 .. ..	300,100	680,300	1,018,500	386,900	738,100	423,500	783,300	116,900	642,800	5,091,400	770,246
20 .. ..	311,700	708,000	1,033,700	387,500	761,700	450,300	800,200	118,100	664,100	5,235,300	771,812
27 (a) .. ..	242,000	547,800	789,000	283,300	586,300	403,300	788,900	89,200	685,800	4,415,600	772,242
April 3 (a) .. ..	251,000	580,100	651,500	300,200	545,900	271,000	480,300	88,400	678,000	3,826,400	773,288
Total Output and Average Number of Wage-earners on Colliery Books	3,811,100	8,642,600	11,909,700	4,701,500	9,172,400	5,325,100	9,779,600	1,437,300	8,397,200	63,176,500	766,283
<b>SECOND QUARTER (13 WEEKS ENDED 3rd JULY)</b>											
April 10 .. ..	311,600	712,300	1,018,500	384,700	761,800	433,800	821,400	118,700	671,200	5,234,000	774,965
17 .. ..	317,600	716,800	1,017,400	379,600	738,600	445,400	817,600	121,300	666,400	5,220,700	776,368
24 .. ..	307,700	708,800	986,300	386,000	686,300	438,000	813,000	120,200	668,100	5,114,400	777,295
May 1 (b) .. ..	288,500	662,300	971,300	384,800	689,500	423,700	817,500	113,900	659,700	4,871,200	778,080
8 (b) .. ..	303,100	703,100	1,003,700	375,300	691,300	423,800	675,900	120,400	654,000	4,949,700	778,204
15 (c) .. ..	247,400	592,100	758,200	305,500	546,200	334,000	794,500	99,400	557,500	4,234,800	777,509
22 (c) .. ..	245,800	562,500	624,000	277,400	478,600	275,000	369,300	81,300	665,100	3,379,000	777,407
29 .. ..	316,800	710,900	1,004,100	371,300	716,400	424,000	813,700	119,500	661,800	5,138,300	777,833
June 5 .. ..	305,500	697,500	961,800	360,800	642,900	402,300	820,600	118,000	650,300	4,959,700	778,275
12 .. ..	308,600	700,900	918,000	359,500	603,700	385,300	815,200	117,400	598,200	4,806,500	778,530
19 .. ..	294,700	673,300	926,100	347,000	591,700	373,600	815,900	117,900	651,500	4,791,700	778,183
26 .. ..	272,300	683,200	729,500	341,500	538,300	375,000	826,600	118,600	654,700	4,539,700	778,452
July 3 .. ..	290,500	692,600	876,700	327,600	523,500	372,700	827,000	115,500	655,800	4,661,900	779,131
Total Output and Average Number of Wage-earners on Colliery Books	3,810,100	8,813,400	11,797,600	4,581,000	8,088,800	5,106,600	10,028,200	1,482,100	8,414,100	62,121,900	777,710

APPENDIX A.—STATISTICAL TABLES.

		THIRD QUARTER (13 WEEKS ENDED 2nd OCTOBER)										
July	10 .. ..	307,500	700,600	872,100	254,500	529,500	371,800	816,600	116,000	653,000	4,621,600	779,587
	17 (d) ..	277,500	699,900	797,000	332,200	509,800	360,700	827,400	114,300	499,100	4,417,300	779,151
	24 (d) ..	299,900	653,900	560,300	348,100	506,600	378,600	847,800	117,200	130,400	3,840,200	779,457
	31 .. ..	299,700	686,800	694,500	336,600	544,000	385,900	812,500	118,200	585,400	4,443,600	779,310
Aug.	7 (e) ..	241,100	541,900	559,400	220,300	340,200	31,800	304,900	66,100	608,800	2,972,500	778,909
	14 .. ..	295,500	693,400	791,500	391,100	608,600	393,800	790,600	115,700	627,100	4,807,300	779,849
	21 .. ..	307,400	703,400	828,200	338,000	623,500	370,100	825,200	120,200	636,900	4,752,900	778,856
	28 .. ..	283,900	691,100	781,500	337,600	612,100	392,000	824,900	118,200	623,800	4,697,100	780,014
Sept.	4 .. ..	305,000	699,000	902,300	340,000	614,500	385,200	810,400	115,200	632,000	4,903,600	780,283
	11 .. ..	295,600	703,100	650,900	333,700	626,900	374,500	814,100	118,200	633,100	4,550,100	780,998
	18 .. ..	302,500	711,900	923,800	334,600	647,200	393,200	815,200	117,600	614,400	4,860,400	781,720
	25 .. ..	291,700	702,300	933,700	352,100	683,200	389,000	808,700	119,000	621,800	4,881,500	782,430
Oct.	2 .. ..	304,000	700,000	854,400	347,900	620,700	378,800	795,700	119,000	638,700	4,869,200	782,650
Total Output and Average Number of Wage-earners on Colliery Books		3,811,300	8,886,100	10,249,600	4,204,700	7,446,800	4,615,400	10,084,000	1,474,900	7,504,500	58,277,300	780,253
		FOURTH QUARTER (13 WEEKS ENDED 1st JANUARY, 1938)										
Oct.	9 .. ..	299,900	705,300	943,200	338,700	655,200	376,400	813,500	120,200	654,500	4,907,900	783,056
	16 .. ..	309,500	667,300	944,300	343,500	634,000	387,600	811,700	122,100	646,400	4,866,400	784,019
	23 .. ..	298,000	718,000	921,500	351,100	653,300	375,700	805,100	123,900	637,100	4,863,700	784,908
	30 .. ..	306,200	716,100	940,800	355,500	665,000	388,000	819,900	121,800	619,900	4,893,200	785,455
Nov.	6 .. ..	307,000	707,400	943,300	359,600	631,400	395,000	814,500	121,400	622,100	4,901,700	786,373
	13 .. ..	292,500	716,700	943,700	360,400	655,000	401,300	824,700	122,500	635,400	4,952,200	787,024
	20 .. ..	300,200	685,500	945,800	363,700	684,700	405,400	828,600	123,300	637,400	4,974,600	787,532
	27 .. ..	316,900	730,900	949,300	370,100	705,600	415,400	828,600	127,900	655,600	5,100,800	787,653
Dec.	4 .. ..	298,600	713,400	974,400	374,600	714,800	426,600	827,600	129,200	631,400	5,090,700	788,124
	11 .. ..	302,100	717,300	977,400	374,600	714,800	426,600	827,600	129,200	631,400	5,090,700	788,124
	18 .. ..	304,100	716,900	1,023,300	385,400	725,200	417,500	830,900	128,600	660,700	5,134,300	789,115
	25 (f) ..	280,800	650,200	856,400	336,800	646,500	383,000	808,700	105,300	675,600	4,829,300	790,642
Jan.	1 (g) (1938)	261,200	598,100	502,600	248,000	467,000	243,000	471,300	75,300	564,200	3,430,700	789,843
Total Output and Average Number of Wage-earners on Colliery Books		3,877,000	9,043,100	11,866,000	4,562,100	8,609,400	5,067,000	10,236,000	1,552,000	8,273,300	63,085,900	787,229
<b>GRAND TOTAL</b>		<b>15,309,500</b>	<b>35,385,200</b>	<b>45,822,900</b>	<b>18,049,300</b>	<b>33,917,400</b>	<b>20,114,100</b>	<b>40,127,800</b>	<b>5,946,800</b>	<b>32,589,100</b>	<b>246,661,600</b>	<b>777,869</b>
Corresponding figures for 1936 ..		15,279,700	32,833,800	42,789,400	17,718,800	30,460,900	20,154,400	35,409,300	5,854,700	32,143,300	232,699,300	756,012

PRODUCTION.

\* The period covered does not coincide with the calendar year since it excludes 1st and 2nd January, 1937 (i.e., Friday and Saturday), and includes 1st January, 1938 (i.e., Saturday). During the week ended 2nd January, 1937, the total tonnage of coal raised was 3,808,700 tons and the number of wage-earners employed 760,963.  
† Including Cumberland, Gloucestershire, Somersetshire and Kent.  
‡ Including a small number of wage-earners employed at coal mines in raising or handling minerals other than coal.  
(a) Easter Holidays. (b) May-Day Holidays. (c) Whitsun Holidays. (d) Scottish Annual Holidays. (e) August Bank Holiday. (f) Christmas Holidays. (g) New Year Holidays.

TABLE 10.—*Coal Mines Act, 1930: Allocations made by the Central Year*

(NOTE.—See also

District.	March Quarter.		June Quarter.	
	Output Allocation.*	Output.†	Output Allocation.*	Output.†
(a) Output Allocation				
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Northumberland .. .. .	3,869,799	3,672,183	3,962,292	3,819,260
Durham .. .. .	8,558,806	8,348,388	8,974,447	8,840,069
Cumberland .. .. .	960,051	320,220	378,823	373,831
Lancashire and Cheshire .. .. .	4,092,884	3,826,308	3,999,357	3,875,695
Midland Amalgamated‡	20,834,172	20,577,572	20,204,841	20,143,890
Shropshire .. .. .	175,642	160,115	171,172	162,447
North Staffordshire .. .. .	1,936,194	1,868,193	1,997,428	1,941,250
South Staffordshire and Worcestershire	377,796	350,958	362,387	343,828
Cannock Chase .. .. .	1,565,694	1,403,579	1,386,432	1,278,758
Warwickshire .. .. .	1,504,337	1,444,653	1,450,284	1,419,420
Forest of Dean .. .. .	379,805	348,265	360,954	352,210
Bristol .. .. .	22,000	18,365	19,800	18,667
Somerset .. .. .	212,098	195,072	204,672	195,552
Kent .. .. .	592,576	521,877	557,041	543,085
North Wales .. .. .	743,755	709,421	738,971	735,835
South Wales and Monmouthshire .. .. .	9,886,990	9,663,509	10,185,041	9,947,769
Scotland .. .. .	8,157,333	7,986,087	9,064,749	8,367,760
<b>GREAT BRITAIN .. .. .</b>	<b>63,269,932</b>	<b>61,408,765</b>	<b>64,018,691</b>	<b>62,358,826</b>
(b) Export Supply Allocations				
	Export Supply Allocation.*	Export Disposals.†	Export Supply Allocation.*	Export Disposals.†
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Northumberland .. .. .	1,021,745	901,225	1,462,398	1,160,863
Durham .. .. .	2,345,312	2,262,500	2,719,116	2,536,963
Cumberland .. .. .	1,179	610	2,248	1,081
Lancashire and Cheshire .. .. .	76,597	73,579	86,325	73,786
Midland Amalgamated‡	1,869,728	1,770,927	2,256,119	2,234,670
Shropshire .. .. .	—	—	—	—
North Staffordshire .. .. .	22,300	14,997	33,230	13,465
South Staffordshire and Worcestershire	—	—	—	—
Cannock Chase .. .. .	250	250	—	—
Warwickshire .. .. .	—	—	11,549	7,167
Forest of Dean .. .. .	8,034	5,926	—	—
Bristol .. .. .	—	—	250	—
Somerset .. .. .	1,250	5,597	20,436	6,432
Kent .. .. .	6,000	31,518	39,435	18,287
North Wales .. .. .	34,487	—	—	—
South Wales and Monmouthshire .. .. .	4,427,625	4,248,031	4,966,128	4,819,305
Scotland .. .. .	1,496,491	1,388,379	2,466,246	1,782,808
<b>GREAT BRITAIN .. .. .</b>	<b>11,310,998</b>	<b>10,703,539</b>	<b>14,063,480</b>	<b>12,654,827</b>
(c) Inland Supply Allocations				
	Inland Supply Allocation.*	Inland Disposals.†	Inland Supply Allocation.*	Inland Disposals.†
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Northumberland .. .. .	2,476,307	2,443,365	2,489,686	2,243,391
Durham .. .. .	5,286,699	5,216,583	5,517,199	5,317,643
Cumberland .. .. .	288,009	250,921	315,864	279,383
Lancashire and Cheshire .. .. .	3,684,768	3,634,451	3,489,454	3,276,271
Midland Amalgamated‡	17,464,570	17,425,986	15,955,100	15,902,403
Shropshire .. .. .	165,184	151,333	155,611	147,127
North Staffordshire .. .. .	1,699,984	1,708,593	1,718,523	1,638,600
South Staffordshire and Worcestershire	335,243	335,115	335,170	306,046
Cannock Chase .. .. .	1,427,658	1,342,716	1,259,484	1,185,664
Warwickshire .. .. .	1,460,448	1,433,482	1,320,713	1,255,445
Forest of Dean .. .. .	343,099	326,454	330,591	318,970
Bristol .. .. .	21,000	16,079	19,000	14,493
Somerset .. .. .	190,262	194,139	131,520	173,084
Kent .. .. .	469,077	439,828	458,692	445,535
North Wales .. .. .	613,309	595,511	630,993	613,119
South Wales and Monmouthshire .. .. .	4,224,183	4,193,090	4,361,182	4,035,501
Scotland .. .. .	5,998,406	5,983,807	6,251,708	5,859,445
<b>GREAT BRITAIN .. .. .</b>	<b>46,148,206</b>	<b>45,675,458</b>	<b>44,789,490</b>	<b>42,982,120</b>

\* Including supplementary allocations granted during the quarter.

† "Export Supply" means loading at the customary shipping places of the District as cargo into ships for conveyance therein to destinations outside the United Kingdom, Eire, the Isle of Man and the Channel Islands, or as fuel for use on ships proceeding to such destinations, or as fuel for use on fishing vessels or supply to works situated at ports to be used for the preparation of patent fuel for export.



*Council, and Output and Disposals of the Various Districts during the 1937.*

*page 28.)*

September Quarter.		December Quarter.		District.
Output Allocation.*	Output.†	Output Allocation.*	Output.†	
<b>and Output.</b>				
<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	
4,165,074	3,860,570	4,095,320	3,958,983	Northumberland.
9,152,099	9,038,363	9,474,467	9,250,951	Durham.
450,013	443,517	475,013	461,271	Cumberland.
3,655,567	3,511,804	3,984,940	3,923,490	Lancashire and Cheshire.
19,453,073	17,945,316	21,205,744	20,902,186	Midland Amalgamated.‡
172,385	154,564	171,526	155,350	Shropshire.
1,907,848	1,717,391	1,931,903	1,893,904	North Staffordshire.
397,244	330,977	380,150	346,649	South Staffordshire and
1,208,186	1,128,786	1,353,545	1,325,693	Cannock Chase. [Worcestershire.
1,518,594	1,348,842	1,444,353	1,418,441	Warwickshire.
357,282	339,699	379,123	362,236	Forest of Dean.
24,386	18,473	20,932	18,996	Bristol.
185,627	181,994	198,020	192,225	Somerset.
601,920	509,476	557,704	545,537	Kent.
798,465	738,640	786,736	712,796	North Wales.
10,448,930	10,231,977	10,701,230	10,391,803	South Wales and Monmouthshire.
8,337,927	7,564,687	8,785,744	8,412,277	Scotland.
62,834,640	69,063,076	65,946,420	64,272,788	GREAT BRITAIN.
<b>and Disposals.§</b>				
Export Supply Allocation.*	Export Disposals.†	Export Supply Allocation.*	Export Disposals.†	
<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	
1,407,000	1,321,888	1,250,000	1,070,007	Northumberland.
3,130,000	2,896,867	2,950,000	2,677,739	Durham.
4,000	2,471	3,275	2,040	Cumberland.
89,101	78,687	79,121	73,582	Lancashire and Cheshire.
2,250,000	2,094,270	2,500,000	2,112,637	Midland Amalgamated.‡
—	—	—	—	Shropshire.
14,440	16,535	20,300	15,098	North Staffordshire.
—	—	—	—	South Staffordshire and
—	—	200	191	Cannock Chase. [Worcestershire.
—	—	31	31	Warwickshire.
16,000	14,005	10,615	9,493	Forest of Dean.
—	—	—	—	Bristol.
250	—	250	—	Somerset.
10,000	5,827	10,000	4,787	Kent.
31,380	29,011	32,300	16,175	North Wales.
5,900,000	5,080,691	5,150,000	5,038,223	South Wales and Monmouthshire.
2,200,000	1,904,565	2,000,000	1,555,136	Scotland.
14,452,171	13,444,817	14,006,092	12,575,139	GREAT BRITAIN.
<b>and Disposals.  </b>				
Inland Supply Allocation.*	Inland Disposals.†	Inland Supply Allocation.*	Inland Disposals.†	
<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	
2,268,000	2,019,810	2,509,782	2,359,483	Northumberland.
5,482,376	5,187,357	5,727,856	5,620,945	Durham.
353,253	346,535	376,253	362,744	Cumberland.
3,092,064	2,883,967	3,689,516	3,663,688	Lancashire and Cheshire.
15,500,000	14,526,414	17,920,928	17,597,588	Midland Amalgamated.‡
160,000	140,835	163,421	152,734	Shropshire.
1,635,422	1,416,549	1,742,945	1,714,503	North Staffordshire.
334,221	293,907	346,760	315,068	South Staffordshire and
1,100,300	1,034,188	1,317,455	1,302,638	Cannock Chase. [Worcestershire.
1,389,804	1,197,025	1,416,844	1,392,715	Warwickshire.
330,000	302,201	359,721	339,734	Forest of Dean.
19,250	14,120	17,817	15,587	Bristol.
163,342	149,734	193,542	193,610	Somerset.
503,800	429,308	468,814	458,755	Kent.
646,900	593,475	661,977	617,069	North Wales.
3,950,000	3,862,775	4,345,407	4,279,651	South Wales and Monmouthshire.
5,654,494	5,094,488	6,445,034	6,307,021	Scotland.
42,583,226	39,492,688	47,704,072	46,693,533	GREAT BRITAIN.

† As returned by the Executive Boards to the Central Council.

‡ Including Yorkshire, Nottinghamshire, Derbyshire and Leicestershire.

§ "Inland Supply" means supply otherwise than as Export Supply, including supply to other parts of an undertaking of which the coal mine forms part, but excluding supply for use in working the coal mines and supply free or at reduced rates for the use of persons who are or have been employed in or about the mine and the dependants of persons who have been so employed.

TABLE 11.—*Output of Metalliferous Ores, Average Percentage of the Mine, Quarry, or Works, in each of the Principal Producing*

Principal Districts of Production.	Output of Mineral. Tons.	Average Percentage of Metal in the Mineral. %	Net Selling Value of the Mineral at Mine, Quarry, or Works.	
			Total Amount. £	Average Per Ton. £ s. d.
<i>(a) Iron Ore and Ironstone (clean raw mineral).</i>				
West Coast Hematite (Non-phosphoric) :—				
Cumberland .. .. .	736,669	51	721,372	0 19 7
Lancashire .. .. .	120,236	54	108,006	0 18 0
Total ..	856,905	52	829,378	0 19 4
Jurassic Ironstones :—				
(a) Lower Lias Ironstone :—				
North Lincolnshire (Frodingham) .. .. .	3,044,707	22	411,511	0 2 8
(b) Middle Lias Ironstone :—				
Cleveland (North Yorkshire) .. .. .	2,036,671	29	731,404	0 7 2
(c) Middle Lias Ironstone :—				
South Lincolnshire, Leicestershire, Northamptonshire and Oxfordshire ..	2,000,998	25	245,555	0 2 5
(d) Inferior Oolite (including some Cretaceous) Ironstone :—				
South Lincolnshire, Northamptonshire and Rutlandshire .. .. .	5,836,522	32	1,008,693	0 3 5
Total ..	12,918,898	28	2,397,163	0 3 9
Coal Measure Ironstones (Blackband and Clay-Ironstone) :—				
North Staffordshire .. .. .	141,446	33	357,502	—
South Staffordshire .. .. .	8,249	30		
Scotland .. .. .	22,273	30		
Other Coalfields .. .. .	6,677	33		
Total ..	178,645	32		
Other Occurrences of Iron Ore (Hematite, Brown Ore, &c.)* ..	260,547	—		
<b>Total Iron Ore and Ironstone</b>	<b>14,214,995</b>	<b>30</b>	<b>3,584,043</b>	<b>0 5 1</b>

\* Devonshire, Forest of Dean and Glamorganshire, chiefly the latter.

*Metal in the Mineral, and Net Selling Value of the Mineral at Districts of Great Britain during the Year 1937.*

Principal Districts of Production.	Output of Mineral. Tons.	Average Percentage of Metal in the Mineral. %	Net Selling Value of the Mineral at Mine, Quarry, or Works.	
			Total Amount. £	Average Per Ton. £ s. d.
<i>(b) Chromite.</i>				
Shetland .. .. .	300	25†	300	1 0 0
<i>(c) Copper Precipitate.</i>				
Cornwall (from Mines) .. .. .	34	22	} 1,445	18 5 7
Devonshire (from Open Works) .. .. .	5	55		
Anglesey (from Open Works) .. .. .	40	66		
Total .. .. .	79	46	1,445	18 5 7
<i>(d) Gold Ore (dressed).</i>				
Merionethshire .. .. .	787	—	416	0 10 7
<i>(e) Lead Ore (dressed).</i>				
North of England (Cumberland, Durham, Northumberland, Westmorland and Yorkshire) .. .. .	3,940	80	63,505	16 2 4
Midlands (Derbyshire) .. .. .	14,101	80	201,756	14 6 2
Wales (Caernarvonshire and Flintshire) .. .. .	15,350	78	230,398	15 0 2
Scotland (Lanarkshire) .. .. .	20	79	288	14 7 2
Total .. .. .	33,411	79	495,947	14 16 11
<i>(f) Tin Ore, dressed (Black Tin).</i>				
Cornwall and Devonshire : From Mines and Quarries .. .. .	2,427·89	67	365,729	150 12 9
.. .. . " Foreshores, the Refuse of Dressing Floors, &c. .. .. .	825·40	37	58,682	71 1 11
.. .. . " Old Dumps at the Surface of Mines .. .. .	113·70	44	10,200	89 14 2
Total .. .. .	3,366·99	59	434,611	129 1 7
<i>(g) Tungsten Ore (dressed).</i>				
Cornwall .. .. .	122·32	67‡	24,456	199 18 8
Devonshire .. .. .	4·20	20‡	350	83 6 8
Total .. .. .	126·52	66‡	24,806	196 1 3
<i>(h) Zinc Ore (dressed).</i>				
North of England (Cumberland) .. .. .	204	40	299	1 9 4
Midlands (Derbyshire) .. .. .	10,897§	58	71,977§	6 12 1§
Wales (Flintshire) .. .. .	1,982	60	12,077	6 1 10
Total .. .. .	13,083	58	84,353	6 8 11

† Chromic Oxide (Cr<sub>2</sub>O<sub>3</sub>).    ‡ Tungstic Oxide (WO<sub>3</sub>).    § See \* note to Table 1 on page 119.

TABLE 12.—Number of Persons Employed at Mines, Quarries, &amp;c., in 1920, 1925

Notes.—Prior to 1925, the particulars for coal mines relate to the number of persons "ordinarily employed." Sub-based upon four selected dates. This also applies to metalliferous mines and quarries from 1925 and to that the total number of persons in the lower and upper portions of Section A do not necessarily correspond. For

District.	1913.	1920.	1925.	1927.	1928.	1929.	1930.
<b>A.—Coal.</b>							
<b>England and Wales.</b>							
1. Northumberland .. .. .	60,627	62,335	53,545	50,581	46,922	49,496	47,465
2. Durham .. .. .	165,246	175,170	143,000	130,725	130,155	138,827	133,282
3. Cumberland and Westmorland .. .. .	10,954	11,656	10,956	11,562	10,461	9,776	9,701
4. Lancashire and Cheshire .. .. .	107,656	116,609	99,330	90,532	81,366	79,233	75,746
5. Yorkshire, South .. .. .	96,572	102,407	123,294	124,296	119,475	119,157	119,268
6. Yorkshire, West .. .. .	63,826	70,202	68,662	64,442	56,714	53,588	52,341
7. Nottinghamshire .. .. .	40,473	52,825	57,223	57,955	52,114	52,702	52,339
8. Derbyshire, North .. .. .	55,412	60,244	60,109	56,856	53,064	53,021	52,722
9. Derbyshire, South .. .. .	4,843	5,634	5,263	4,942	4,404	3,921	3,734
10. Staffordshire, North .. .. .	30,453	36,897	35,335	33,114	28,834	28,350	26,396
11. Cannock Chase .. .. .	20,370	25,107	25,796	25,052	23,920	23,773	23,159
12. Staffordshire, South, and Worcester-shire .. .. .	10,153	9,910	6,456	5,825	5,151	4,919	4,725
13. Leicestershire .. .. .	10,327	13,131	11,843	11,536	11,343	11,305	11,079
14. Warwickshire .. .. .	19,137	21,744	20,389	19,483	17,765	17,025	17,459
15. Shropshire .. .. .	3,578	4,350	3,777	3,479	3,006	2,827	2,714
16. Forest of Dean .. .. .	6,741	7,818	7,331	6,628	6,038	5,714	5,373
17. Somersetshire .. .. .	6,211	7,367	5,595	4,376	4,233	4,159	3,842
18. Bristol .. .. .	2,588	2,607	1,523	1,003	965	992	988
19. Kent .. .. .	1,134	2,402	1,373	2,795	3,553	4,357	5,063
20. South Wales and Monmouthshire .. .. .	232,800	271,161	217,809	194,100	168,269	178,315	179,670
21. North Wales .. .. .	15,881	19,010	17,359	15,596	14,758	15,274	14,407
Total .. .. .	964,982	1,078,606	976,468	914,878	842,530	856,731	834,727
<b>Scotland.</b>							
22. Fife, Clackmannan, Kinross and Sutherland .. .. .	30,776	32,007	28,597	23,634	22,374	23,650	23,124
23. Lothians (Mid and East) and Peebles .. .. .	13,944	15,678	15,222	13,534	12,581	13,501	13,477
24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dum-barton .. .. .	79,128	82,690	66,986	57,651	48,891	49,998	48,080
25. Ayrshire, Dumfries and Argyll .. .. .	15,576	16,948	15,169	14,189	12,612	12,794	11,968
Total .. .. .	139,424	147,323	125,974	109,008	96,458	99,943	96,649
<b>Great Britain.</b>							
(i) Wage-earners .. .. .	1,104,406	1,225,929	1,083,637	1,005,006	921,260	939,367	914,328
(ii) Salaried Persons (including Clerks) .. .. .			18,805	18,830	17,728	17,307	17,048
<b>Wage-Earners and Salaried Persons (including Clerks).</b>							
Under 16 years of age .. .. .	73,069	76,408	51,179	42,048	38,729	42,436	36,803
16 and under 18 years of age .. .. .	1,031,337	1,149,521	68,506	56,660	52,160	54,498	53,844
18 " 20 " " .. .. .			62,913	58,575	57,042	57,121	52,952
20 years of age and over .. .. .			910,417	840,863	775,805	815,746	764,256
Total .. .. .	1,104,406	1,225,929	1,093,015	998,146	923,738	969,801	907,855
<b>B.—Other Minerals.</b>							
Iron Ore and Ironstone .. .. .	126,942	22,783	12,819	11,864	11,928	12,884	11,388
Non-ferrous Metalliferous Ores .. .. .			4,508	5,137	5,024	4,904	3,464
Other Minerals .. .. .			100,666	97,399	94,676	95,040	90,522
(a) Mines .. .. .	49,641	42,208	31,078	29,503	28,346	28,802	25,526
(b) Quarries and Other Workings* .. .. .	77,301	65,293	86,915	84,897	83,282	84,026	79,848
(i) Wage-earners .. .. .	126,942	107,500	114,057	110,562	107,781	108,920	101,225
(ii) Salaried Persons (incl. Clerks) .. .. .			3,936	3,838	3,847	3,908	4,149
Total .. .. .	126,942	107,500	117,993	114,400	111,628	112,828	105,374

\* Other workings include brine salt wells and certain other shallow quarries. Particulars in respect of persons

*Great Britain, classified according to the Mineral got, in the Years 1913, and from 1927.*

sequently, the numbers in the main portion of Section A represent the average number of persons on Colliery Books other quarries from 1930 (Section B). Particulars of the ages of coal miners relate to the end of the year only, so further details, see Tables 15 and 17.

1931.	1932.	1933.	1934.	1935.	1936.	1937.	District.
<b>A.—Coal.</b>							
<b>England and Wales.</b>							
43,672	42,425	41,787	43,402	44,199	44,927	45,775	1. Northumberland.
115,184	105,964	102,911	107,873	107,089	108,668	115,971	2. Durham.
8,616	7,044	6,416	6,873	6,356	4,881	5,930	3. Cumberland and Westmorland.
72,492	67,819	65,372	62,327	60,703	60,059	59,985	4. Lancashire and Cheshire.
113,246	106,077	99,741	99,015	97,012	97,566	99,733	5. Yorkshire, South.
51,057	49,353	44,765	44,245	43,298	42,823	43,500	6. Yorkshire, West.
51,307	49,499	46,969	46,852	45,923	45,538	45,579	7. Nottinghamshire.
50,513	48,333	44,591	43,860	42,723	41,656	41,816	8. Derbyshire, North.
3,761	3,684	3,521	3,372	3,203	3,265	3,189	9. Derbyshire, South.
23,782	22,803	22,901	23,144	22,843	23,228	23,865	10. Staffordshire, North.
23,052	23,297	22,998	22,809	22,207	21,565	20,538	11. Cannock Chase.
4,610	4,645	4,513	4,572	4,552	4,544	4,309	12. Staffordshire, South, and Worcester-shire.
10,935	10,812	10,312	9,773	9,272	9,205	9,052	13. Leicestershire.
17,601	17,473	17,308	17,136	16,813	17,192	17,305	14. Warwickshire.
2,668	2,750	2,647	2,656	2,621	2,736	2,582	15. Shropshire.
5,139	5,133	5,178	5,263	5,122	5,299	5,160	16. Forest of Dean.
3,700	3,724	3,659	3,577	3,441	3,451	3,397	17. Somersetshire.
896	955	832	923	854	484	344	18. Bristol.
5,678	6,382	6,625	7,088	7,337	7,385	7,223	19. Kent.
158,162	145,709	142,900	139,806	131,697	126,233	135,901	20. South Wales and Monmouthshire.
13,787	13,075	11,494	10,582	8,741	9,756	9,992	21. North Wales.
779,818	736,966	707,490	705,148	686,016	680,461	701,146	Total.
<b>Scotland.</b>							
20,768	19,928	19,911	20,908	21,725	22,546	23,462	22. Fife, Clackmannan, Kinross and Sutherland.
12,679	12,483	12,447	12,390	12,305	12,470	13,069	23. Lothians (Mid and East) and Peebles.
42,825	38,585	37,856	38,712	38,167	39,995	41,883	24. Lanarkshire, West Lothian (Linlith-gow), Stirling, Renfrew and Dum-barton.
11,774	11,362	11,387	11,052	11,261	11,619	12,178	25. Ayrshire, Dumfries and Argyll.
88,046	82,358	81,601	83,062	83,458	86,630	90,592	Total.
<b>Great Britain.</b>							
851,623	803,615	773,640	772,831	754,800	751,720	776,139	(i) Wage-earners.
16,241	15,709	15,451	15,379	15,174	15,371	15,589	(ii) Salaried Persons (including Clerks).
<b>Wage-Earners and Salaried Persons (including Clerks).</b>							
30,998	26,098	24,972	29,055	31,041	28,945	28,347	Under 16 years of age.
51,922	45,196	40,099	36,726	37,197	41,831	45,748	16 and under 18 years of age.
52,143	50,728	50,730	46,424	40,326	37,255	37,811	18 " " 20 " "
724,760	678,466	678,143	672,568	658,537	663,162	690,178	20 years of age and over.
859,833	800,488	793,044	784,778	767,501	771,193	802,064	Total.
<b>B.—Other Minerals.</b>							
7,742	7,017	6,675	7,981	7,981	8,846	9,663	Iron Ore and Ironstone.
1,380	1,565	2,021	3,270	3,409	3,495	3,926	Non-ferrous Metalliferous Ores.
85,866	78,805	78,039	82,245	84,100	86,980	89,712	Other Minerals.
19,095	17,427	18,022	21,276	21,836	22,917	24,353	(a) Mines.
75,893	69,960	68,713	72,220	73,654	76,404	78,948	(b) Quarries and Other Workings.*
90,931	83,463	82,797	89,326	91,155	94,832	98,633	(i) Wage-earners.
4,057	3,924	3,938	4,170	4,335	4,489	4,668	(ii) Salaried Persons (incl. Clerks).
94,988	87,387	86,735	93,496	95,490	99,321	103,301	Total.

employed at such workings are not available for 1913 and 1920. In 1925 they numbered about 4,300.

TABLE 13.—*Number and Sex of Persons Employed Below and Above ground at Mines under (a) the Coal Mines Act, and (b) the Metalliferous Mines Regulation Acts, in Great Britain\* from 1873.*

*Note.*—For the number and cause of fatal accidents at mines at which these persons were employed see Table 48. Comparative particulars of the output of mineral are shown in Table 4.

	Decennial Period or Year.	Coal Mines Act.				Metalliferous Mines Acts.				Total under both Acts.		
		Below ground.		Above ground.		Total.	Below ground.		Above ground.		Total.	
		Males.	Males.	Fe- males.	Males.		Males.	Fe- males.				
Annual Averages.	1873-1882 ..	403,281	94,687	5,460	503,428	33,256	13,952	3,180	55,388	558,816		
	1883-1892 ..	461,024	106,268	4,427	571,719	25,408	15,548	1,525	42,481	614,200		
	1893-1902 ..	538,446	139,166	4,779	732,391	19,778	13,267	624	33,669	766,060		
	1903-1912 ..	772,234	173,724	5,890	957,848	17,400	11,831	212	29,443	987,291		
	1913-1922 ..	859,927	213,217	8,247	1,081,391	11,765	8,026	195	19,986	1,111,377		
	1923-1932 ..	812,296	204,627	4,767	1,021,692	8,147	6,036	68	14,251	1,035,943		
1913 ..	..	909,834	211,483	6,573	1,127,890	16,525	10,712	175	27,412	1,155,302		
1919 ..	..	945,806	236,131	9,376	1,191,313	12,327	9,063	271	21,661	1,212,974		
1920 ..	..	990,359	249,547	8,318	1,248,224	12,291	8,818	214	21,323	1,269,547		
1921 ..	..	918,066	220,103	6,142	1,144,311	6,563	5,968	96	12,627	1,156,938		
1922 ..	..	933,029	223,748	5,977	1,162,754	7,071	5,383	72	12,526	1,175,280		
1923 ..	..	979,785	234,423	6,223	1,220,431	9,107	6,564	83	16,754	1,236,185		
1924 ..	..	979,108	244,785	6,355	1,230,248	9,223	6,590	74	15,887	1,246,135		
1925 ..	..	890,849	221,212	5,767	1,117,823	8,967	6,550	76	15,593	1,133,421		
1926:												
March	..	899,778	222,744	5,687	1,128,209	8,866	6,618	76	15,560	1,143,769		
December	..	753,208	197,618	4,230	955,056							
1927 ..	..	824,866	207,751	4,774	1,037,391	9,057	6,746	81	15,894	1,053,275		
1928 ..	..	755,044	192,355	4,233	951,632	8,866	6,707	78	15,651	967,283		
1929 ..	..	772,774	192,901	4,061	969,736	9,065	6,544	77	15,686	985,422		
1930 ..	..	748,657	190,777	4,008	943,442	7,704	5,661	52	13,417	956,859		
1931 ..	..	693,386	180,000	3,755	877,141	5,413	4,316	44	9,773	886,914		
1932 ..	..	652,018	171,889	3,532	827,439	5,199	4,069	37	9,305	836,744		
1933 ..	..	625,260	168,544	3,490	797,294	5,491	4,280	36	9,807	807,101		
1934 ..	..	624,437	169,894	3,368	797,699	6,566	5,158	52	11,776	809,475		
1935 ..	..	608,316	167,995	3,191	779,502	6,815	4,928	50	11,793	791,295		
1936 ..	..	605,720	169,143	3,011	777,874	7,034	5,041	44	12,119	789,993		
1937 ..	..	625,890	174,352	3,127	803,369	7,207	5,464	46	12,717	816,076		

\* Including particulars for Ireland up to the year 1921



TABLE 15.—Number of Persons Employed in and about Coal Mines (including Tramways and in Cleaning Coal) classified according to Age and Sex in each

Persons Employed.	ENGLAND									
	1. Northumberland.	2. Durham.	3. Cumberland and Westmorland.	4. Lancashire and Cheshire.	5. Yorkshire, South.	6. Yorkshire, West.	7. Nottinghamshire.	8. Derbyshire, North.	9. Derbyshire, South.	10. Staffordshire, North.
<b>WAGE EARNERS (at 11th December).</b>										
<i>Below ground.</i>										
Males:—										
Under 16 years of age .. .. .	982	2,594	69	842	2,926	668	703	576	28	392
16 and under 18 years of age .. .. .	1,747	5,465	290	1,951	4,722	1,381	1,488	1,378	50	930
18 " " 20 " " .. .. .	1,320	4,751	284	1,699	3,565	1,099	1,373	1,349	85	803
20 years of age and over .. .. .	30,868	80,623	4,324	39,908	67,806	30,266	31,629	28,875	2,203	15,464
Total at 11th December .. .. .	34,917	93,433	4,967	44,400	79,019	33,414	35,193	32,178	2,366	17,589
" 11th September .. .. .	34,643	92,758	4,944	44,185	78,223	32,926	34,723	31,842	2,361	17,427
" 12th June .. .. .	34,640	91,627	4,467	44,137	78,418	33,279	35,037	31,842	2,377	17,513
" 13th March .. .. .	34,525	89,677	3,746	44,812	78,043	33,154	34,988	31,950	2,364	17,108
Average Numbers Employed Below Ground .. .. .	34,681	91,874	4,581	44,333	78,426	33,193	34,985	31,978	2,367	17,414
<i>Above ground.</i>										
Males:—										
Under 16 years of age .. .. .	818	2,552	140	475	1,568	592	545	666	44	324
16 and under 18 years of age .. .. .	912	2,256	151	746	1,472	584	551	727	32	414
18 " " 20 " " .. .. .	575	1,346	69	510	934	384	446	491	31	315
20 years of age and over .. .. .	8,124	16,480	883	11,446	15,260	7,784	7,977	7,226	598	4,905
Females:—										
Under 16 years of age .. .. .	—	1	3	122	—	—	—	—	—	—
16 and under 18 years of age .. .. .	—	1	19	205	—	—	—	—	—	—
18 " " 20 " " .. .. .	—	1	17	209	—	—	—	—	—	—
20 years of age and over .. .. .	28	63	118	781	15	9	13	5	—	13
Total at 11th December .. .. .	10,457	22,700	1,400	14,494	19,249	9,353	9,532	9,115	705	5,971
" 11th September .. .. .	10,342	22,654	1,341	14,196	18,953	9,127	9,494	9,007	694	5,900
" 12th June .. .. .	10,250	22,176	1,280	14,055	18,864	9,142	9,407	8,939	700	5,838
" 13th March .. .. .	10,173	21,820	1,155	14,336	18,725	9,072	9,403	8,947	695	5,723
Average Numbers Employed Above Ground .. .. .	10,306	22,337	1,294	14,270	18,948	9,174	9,459	9,002	698	5,858
Total Average Number of Wage Earners .. .. .	44,987	114,211	5,825	58,653	97,374	42,367	44,444	40,980	3,065	23,272
<b>CLERKS AND SALARIED PERSONS (at 11th December).</b>										
Males .. .. .	731	1,716	98	1,263	2,296	1,104	1,090	820	121	551
Females .. .. .	63	86	9	65	75	38	64	23	2	38
Total at 11th December .. .. .	794	1,802	107	1,328	2,371	1,142	1,154	843	123	589
" 11th September .. .. .	793	1,763	106	1,324	2,370	1,139	1,137	837	123	593
" 12th June .. .. .	787	1,747	105	1,320	2,357	1,128	1,128	836	124	601
" 13th March .. .. .	777	1,727	102	1,354	2,340	1,129	1,120	827	124	590
Average Number of Clerks and Salaried Persons .. .. .	788	1,760	105	1,332	2,359	1,133	1,135	836	124	593
<b>GRAND TOTAL.—WAGE EARNERS AND SALARIED PERSONS (including Clerks) (at 11th December).</b>										
Under 16 years of age .. .. .	1,817	5,192	213	1,461	4,562	1,279	1,298	1,273	74	731
16 and under 18 years of age .. .. .	2,691	7,819	465	2,967	6,340	2,021	2,117	2,150	85	1,330
18 " " 20 " " .. .. .	1,926	6,161	375	2,463	4,587	1,525	1,580	1,866	119	1,161
20 years of age and over .. .. .	39,734	98,763	5,421	53,331	85,150	39,084	40,534	36,847	2,916	20,867
Total at 11th December .. .. .	46,168	117,935	6,474	60,222	100,639	43,909	45,379	42,136	3,194	24,149
" 11th September .. .. .	45,778	117,175	6,391	59,705	99,546	43,186	45,354	41,686	3,178	23,920
" 12th June .. .. .	45,677	115,550	5,852	59,512	99,639	43,549	45,572	41,717	3,201	23,970
" 13th March .. .. .	45,475	113,224	5,003	60,502	99,108	43,355	45,511	41,724	3,183	23,421
Average Numbers Employed in 1937 .. .. .	45,775	115,971	5,930	59,985	99,733	43,500	45,579	41,816	3,189	23,885
Average Numbers Employed in 1936 .. .. .	44,927	108,668	4,881	60,059	97,566	42,323	45,533	41,656	3,265	23,228

Notes.—The Table above includes particulars of all persons who were employed in raising or handling coal, or in connexion other minerals when got with coal, e.g., ironstone, fireclay, &c.



those employed on Sidings at the Pits and on Private Branch Railways and Colliery District of Great Britain in the Year 1937.

AND WALES.											SCOTLAND.					GREAT BRITAIN.	
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	Total in 1937.	Total in 1936.	
Cannock Chase.	Staffordshire, South and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire.	North Wales.	Fife, Cincleargan, Kinross and Suther-land.	Lothians (Mid and East) and Peebles.	Lowland, West Lothian, Highland, Lewis and Dumfriesshire.	Ayrshire, Dumfries and Argyll.			
229	17	20	92	36	72	45	3	145	4,395	157	248	172	414	191	16,016	17,044	
413	39	82	298	79	159	91	6	267	7,704	312	952	490	1,538	593	32,426	29,973	
440	58	113	306	61	192	72	5	227	6,477	334	1,019	580	1,856	645	28,713	28,319	
13,877	3,083	6,572	11,880	1,791	3,848	2,512	243	5,430	97,738	6,805	15,750	8,583	29,094	8,119	547,291	524,838	
14,959	3,197	6,787	12,576	1,967	4,271	2,720	257	6,069	116,314	7,608	17,969	9,825	32,902	9,548	624,445	600,174	
14,993	3,095	6,779	12,492	1,990	4,183	2,674	264	5,986	114,338	7,626	17,875	9,845	31,591	9,197	616,980	590,322	
15,292	3,151	6,845	12,517	2,016	4,322	2,717	270	6,025	112,496	7,738	17,751	9,740	32,178	9,278	615,791	593,259	
15,572	3,285	6,928	12,654	2,063	4,345	2,729	294	6,100	109,059	7,727	17,653	9,533	32,159	9,044	609,512	605,030	
15,904	3,182	6,835	12,560	2,009	4,280	2,710	271	6,045	113,052	7,675	17,912	9,798	32,207	9,287	616,677	597,197	
224	20	56	192	21	27	14	2	81	977	123	515	344	1,085	309	11,719	11,315	
267	34	73	208	23	57	22	1	111	1,275	192	567	226	941	217	12,059	10,844	
169	39	88	161	17	38	19	1	77	816	128	346	184	740	175	8,099	8,010	
4,128	910	1,805	3,827	431	681	559	60	788	18,232	1,666	3,422	2,331	6,117	2,084	127,724	123,211	
—	—	—	—	—	—	—	—	—	—	—	53	8	13	—	200	226	
—	—	—	—	—	—	—	—	—	—	—	94	14	71	—	404	410	
—	—	—	—	—	—	—	—	—	—	—	66	4	61	—	358	326	
7	3	3	8	1	2	1	—	—	25	6	110	17	122	6	1,356	1,302	
4,795	1,006	2,025	4,396	493	805	615	64	1,057	21,325	2,120	5,173	3,128	9,150	2,791	161,919	155,644	
4,822	1,014	1,982	4,329	495	796	593	66	1,052	21,058	2,080	5,106	3,135	8,919	2,706	159,861	153,742	
4,838	1,041	1,988	4,319	499	810	584	64	1,036	20,786	2,069	5,086	3,102	9,075	2,710	158,658	153,670	
4,843	1,046	2,002	4,338	512	813	584	66	1,034	20,240	2,066	5,027	3,044	9,111	2,693	157,410	155,037	
4,826	1,027	1,989	4,345	500	808	594	65	1,045	20,852	2,084	5,098	3,102	9,084	2,710	159,462	154,523	
20,029	4,209	8,834	16,905	2,509	5,088	3,304	336	7,090	133,904	9,769	22,910	12,838	41,271	11,977	776,139	751,720	
468	90	208	370	69	74	92	2	129	1,934	229	462	201	570	190	14,884	14,626	
43	10	11	33	4	1	2	—	—	77	3	96	31	46	14	836	749	
511	100	219	403	73	75	94	8	131	2,011	232	558	232	616	204	15,720	15,375	
512	101	220	399	74	74	93	8	135	2,011	236	553	229	611	200	15,635	15,344	
509	100	217	399	74	73	93	8	133	1,992	234	550	232	610	200	15,557	15,374	
506	98	216	398	73	74	93	8	133	1,975	231	548	229	611	201	15,484	15,392	
509	100	218	400	73	74	93	8	133	1,997	233	552	231	612	201	15,599	15,371	
479	38	83	297	61	100	60	5	230	5,400	286	833	531	1,542	502	28,347	28,945	
708	81	169	520	108	220	113	7	385	9,048	513	1,670	756	2,594	817	45,748	41,831	
631	101	211	481	81	235	94	6	314	7,349	477	1,464	784	2,687	833	37,811	37,255	
18,447	4,083	8,568	16,077	2,283	4,596	3,162	311	6,328	117,853	8,684	19,733	11,120	35,845	10,991	694,178	663,162	
20,265	4,303	9,031	17,375	2,533	5,151	3,429	329	7,257	139,650	9,960	23,700	13,185	42,668	12,543	809,084	771,193	
20,327	4,210	8,981	17,220	2,559	5,053	3,360	338	7,173	137,407	9,942	23,534	13,209	41,121	12,103	792,456	759,408	
20,639	4,292	9,050	17,235	2,589	5,205	3,394	342	7,194	135,274	10,041	23,387	13,074	41,863	12,188	790,006	762,303	
20,921	4,429	9,146	17,390	2,648	5,232	3,406	368	7,267	131,274	10,024	23,228	12,806	41,981	11,880	782,406	775,459	
20,538	4,309	9,052	17,306	2,582	5,160	3,397	344	7,222	135,901	9,992	23,492	13,069	41,883	12,178	791,738	—	
21,565	4,544	9,205	17,192	2,736	5,299	3,451	484	7,385	126,233	9,766	22,546	12,470	39,995	11,619	—	767,091	

therewith, at mines and quarries. In all cases allowance has been made for persons who were employed in raising or handling

TABLE 16.—Average Weekly and Aggregate Number of Days on which Coal was wound, and on which the Pits were idle, in each District in Great Britain during the Year 1937.\*

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DISTRICT.	Average Weekly Number of Days on which the Pits wound Coal or were idle during the four Weeks† ended												Average Weekly Number of Days on which the Pits wound Coal or were idle.		Aggregate Number of Days on which the Pits wound Coal or were idle.	
	30th Jan.	27th Feb.	3rd April. †	1st May.	29th May.	3rd July. †	31st July.	28th Aug.	2nd Oct. †	30th Oct.	27th Nov.	1st Jan. †	1937	1936	1937	1936
	(a) Number of Days on which the Pits wound Coal.															
ENGLAND AND WALES.																
1. Northumberland .. .. .	5.40	5.49	5.08	5.38	5.00	5.40	5.37	5.16	5.46	5.38	5.36	5.21	5.31	5.32	275.89	276.75
2. Durham .. .. .	5.35	5.39	5.03	5.34	5.01	5.39	5.32	5.21	5.44	5.37	5.40	5.19	5.29	5.11	274.87	265.92
3. Cumberland .. .. .	5.60	5.61	5.20	5.72	5.16	5.71	5.68	5.41	5.61	5.67	5.61	5.11	5.50	5.48	285.96	285.03
4. Lancashire and Cheshire .. .. .	5.38	5.50	5.14	5.47	4.87	4.89	4.38	4.39	4.79	4.99	5.14	5.06	5.00	4.77	259.80	248.11
5. Yorkshire, South .. .. .	4.56	5.21	4.64	5.16	4.48	4.67	4.03	4.17	4.77	5.14	5.07	4.62	4.71	4.31	244.78	224.14
6. Yorkshire, West .. .. .	5.42	5.49	4.97	5.40	4.69	4.59	3.61	3.96	4.92	5.01	4.96	4.78	4.82	4.37	250.43	227.47
7. Nottinghamshire .. .. .	5.24	5.44	4.82	5.03	4.35	4.45	3.90	4.20	4.75	4.78	4.74	4.75	4.70	4.21	244.55	218.68
8. Derbyshire, North .. .. .	4.98	5.10	4.59	4.53	4.06	3.77	3.32	3.57	4.15	4.27	4.33	4.36	4.25	3.87	220.95	201.35
9. Derbyshire, South .. .. .	4.71	4.83	4.74	4.45	3.56	2.66	2.60	2.43	3.14	3.30	3.81	4.82	3.76	3.81	195.50	197.99
10. Staffordshire, North .. .. .	5.41	5.44	5.26	5.53	5.00	5.29	4.78	4.01	5.28	5.34	5.37	5.00	5.15	5.02	267.59	261.14
11. Cannock Chase .. .. .	5.59	5.72	5.22	5.78	4.72	3.92	3.97	3.59	4.29	4.32	4.81	5.10	4.74	4.52	246.58	235.28
12. Staffordshire, South, & Worcestershire	5.96	5.99	5.38	5.91	5.18	5.90	5.95	5.15	5.91	5.84	5.92	5.40	5.70	5.75	296.48	299.05
13. Leicestershire .. .. .	5.39	5.55	5.12	4.98	3.86	2.88	3.18	3.23	3.85	4.12	4.67	4.90	4.30	4.05	223.69	210.51
14. Warwickshire .. .. .	5.77	5.75	5.17	5.68	4.79	5.35	5.22	4.51	5.37	5.19	5.53	5.21	5.29	5.20	275.26	270.64
15. Shropshire .. .. .	5.99	5.98	5.49	5.98	5.31	5.98	5.81	5.41	5.73	5.95	5.98	5.40	5.74	5.75	298.56	299.06
16. Forest of Dean .. .. .	5.33	5.36	4.96	5.44	4.72	5.09	4.89	4.67	5.28	5.37	5.42	5.06	5.13	4.98	266.70	259.17

APPENDIX A.—STATISTICAL TABLES.

17. Somersetshire .. .. .	5-99	6-00	5-60	6-00	5-51	5-61	5-54	5-23	5-49	5-55	5-83	5-57	5-65	5-25	293-95	272-88
18. Bristol .. .. .	6-00	6-00	5-60	6-00	5-25	6-00	5-75	5-50	6-00	6-00	6-00	5-60	5-81	5-66	302-00	294-40
19. Kent .. .. .	5-52	5-56	5-05	5-34	4-81	5-52	5-51	4-81	5-54	5-56	5-51	4-98	5-31	5-25	275-86	273-13
20. South Wales and Monmouthshire ..	5-65	5-70	5-26	5-80	4-87	5-86	5-82	5-12	5-78	5-65	5-70	5-12	5-52	5-12	287-23	266-32
21. North Wales .. .. .	5-66	5-72	4-93	5-71	5-10	5-59	5-53	5-00	5-50	5-24	5-68	4-86	5-36	5-49	278-86	265-37
England and Wales .. .. .	5-31	5-47	5-01	5-39	4-74	5-05	4-76	4-58	5-14	5-18	5-24	4-96	5-07	4-78	263-46	248-35
SCOTLAND.																
22. Fife, Clackmannan, Kinross and Sutherland .. .. .	5-57	5-66	5-70	5-67	5-39	5-38	4-21	5-54	5-58	5-53	5-55	5-54	5-45	5-48	283-42	284-75
23. Lothians (Mid and East) and Peebles	5-63	5-80	5-76	5-80	5-65	5-69	4-13	5-68	5-29	5-52	5-65	5-59	5-52	5-49	287-04	285-71
24. Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dumbarton .. .. .	5-65	5-74	5-76	5-87	5-63	5-73	4-26	5-78	5-80	5-67	5-64	5-53	5-60	5-56	291-06	289-13
25. Ayrshire, Dumfries and Argyll .. .. .	5-93	5-99	5-92	5-95	5-73	5-98	4-83	5-49	5-34	5-99	5-96	5-67	5-73	5-65	297-96	293-56
Scotland .. .. .	5-66	5-77	5-77	5-82	5-59	5-67	4-30	5-66	5-60	5-66	5-66	5-56	5-57	5-54	289-39	288-08
GREAT BRITAIN .. .. .	5-35	5-50	5-10	5-44	4-84	5-12	4-70	4-70	5-19	5-24	5-28	5-03	5-13	4-86	266-43	252-86

NUMBERS EMPLOYED, DAYS WORKED AND WAGES.

(b) Number of Days on which the Pits were idle.																
Average Weekly Number of Coal-winding Days lost through :—																
Holidays .. .. .	0-02	0-00	0-42	0-03	0-63	0-07	0-28	0-45	0-06	0-01	—	0-46	0-21	0-19	10-69	10-00
Disputes .. .. .	0-10	0-03	0-01	0-02	0-02	0-01	0-15	0-08	0-03	0-03	0-04	0-01	0-04	0-03	2-17	1-27
Want of Trade .. .. .	0-24	0-20	0-18	0-24	0-24	0-50	0-60	0-49	0-42	0-40	0-34	0-18	0-33	0-65	17-33	33-78
Accidents to Men and Machinery ..	0-03	0-03	0-03	0-03	0-03	0-03	0-03	0-03	0-04	0-03	0-02	0-03	0-03	0-02	1-56	1-18
Other Causes† .. .. .	0-04	0-03	0-04	0-02	0-02	0-04	0-02	0-02	0-04	0-07	0-09	0-06	0-04	0-03	2-18	1-71
Total Number of Coal-winding Days‡ ..	5-78	5-79	5-78	5-78	5-78	5-77	5-78	5-77	5-78	5-78	5-77	5-77	5-78	5-78	300-36	300-80

\* The period covered does not coincide with the calendar year 1937, since it excludes 1st and 2nd January, 1937 (i.e., Friday and Saturday), and includes 1st January, 1938 (i.e., Saturday).  
 † The periods indicated by a † cover five weeks.  
 ‡ Transport difficulties, pit meetings, weather, etc.  
 § The time accounted for represents the total possible coal-winding time amounting on the average to 5½ days per week throughout the year. The remaining ½ day is accounted for by the ordinary stop or idle days, including the Saturday afternoon shift. It is not necessarily implied that all the persons employed worked every day coal was wound.

**TABLE 17.—Number of Persons Employed at Mines, Quarries, &c. (except those producing Coal) in Great Britain during the Year 1937, classified according to Age and Sex and the Kind of Mineral got.**

*Note.*—Persons employed at Quarries which are 20 feet or less in depth are not included except at those producing metalliferous ores (chiefly Jurassic ironstone other than in Cleveland) and certain other minerals of special importance, which are included under "Other Minerals," e.g., Fluorspar, Barytes, Celestine and Bog Ore, etc. (see also footnote (\*) on page 143).

Persons Employed.	Iron Ore and Ironstone.					Non-Ferrous Metalliferous Minerals.			All Other Minerals.											Total in 1937.	Total in 1936.							
	West Coast Phosphoric.	Hematite (Non-Cleveland).	Jurassic.	Other Sorts.	Other Occurrences (including Coal Measures).	Total.	Tin Ore and Arsenic Compounds.	Lead and Zinc Ores.	Total (including other minerals)*.	Chalk, Chert and Flint.	China Clay, China Stone, Mica Clay and Porters' Clay (including Ball Clay).	Clay, Shale, etc.	Fireclay, Moulding and Pig-bed Sand, and Silica Stone (including Gansiter and Silica Sand) used as Refractory Material.	Gravel and Sand.	Igneous Rocks.	Limestone.	Oil Shale.	Sandstone.	Slate.			Other Minerals. †	Total.					
<b>WAGE EARNERS</b> (at 11th December).																												
<i>Below ground or Inside Quarries.</i>																												
<i>Males:—</i>																												
Under 16 years of age ..	3	39	32	6	80	1	1	3	4	89	60	80	46	87	97	41	49	9	11	573	656	615						
16 and under 18 years of age ..	19	106	48	24	197	28	12	42	15	130	177	156	177	196	198	62	118	29	32	1,290	1,529	1,334						
18 " " 20 ..	48	83	92	37	269	44	31	83	33	107	254	184	242	238	312	75	170	68	43	1,726	2,069	1,796						
20 years of age and over ..	1,248	2,429	2,485	736	6,898	715	1,071	1,903	1,630	2,573	7,573	4,711	5,368	8,513	11,722	1,397	4,767	3,918	1,480	53,652	62,453	59,589						
<b>Total at 11th December ..</b>	<b>1,318</b>	<b>2,657</b>	<b>2,657</b>	<b>803</b>	<b>7,435</b>	<b>788</b>	<b>1,115</b>	<b>2,031</b>	<b>1,822</b>	<b>2,899</b>	<b>8,064</b>	<b>5,131</b>	<b>5,833</b>	<b>9,084</b>	<b>12,329</b>	<b>1,575</b>	<b>5,104</b>	<b>4,024</b>	<b>1,566</b>	<b>57,241</b>	<b>66,707</b>	<b>63,334</b>						
" " 11th September ..	1,400	2,559	2,685	714	7,358	778	1,116	2,001	1,805	2,808	7,758	5,146	6,037	9,650	11,949	1,507	5,276	4,031	1,595	57,362	66,721	63,424						
" " 12th June ..	1,368	2,582	2,577	687	7,214	761	1,103	1,961	1,803	2,743	7,873	5,174	6,123	9,635	12,033	1,492	5,362	4,100	1,597	57,735	66,910	64,184						
" " 13th March ..	1,334	2,585	2,445	673	7,037	778	1,094	1,961	1,846	2,566	8,123	4,968	5,744	8,184	11,240	1,430	4,744	4,007	1,553	54,105	63,103	61,942						
<b>Average Numbers Employed Below Ground or Inside Quarries</b>	<b>1,355</b>	<b>2,596</b>	<b>2,591</b>	<b>719</b>	<b>7,261</b>	<b>776</b>	<b>1,107</b>	<b>1,989</b>	<b>1,809</b>	<b>2,754</b>	<b>7,955</b>	<b>5,104</b>	<b>5,934</b>	<b>9,126</b>	<b>11,888</b>	<b>1,501</b>	<b>5,121</b>	<b>4,041</b>	<b>1,578</b>	<b>56,611</b>	<b>65,861</b>	<b>63,221</b>						
<i>Above ground or Outside Quarries.</i>																												
<i>Males:—</i>																												
Under 16 years of age ..	24	42	24	4	94	50	25	86	4	39	22	58	46	92	106	6	111	184	70	738	918	913						
16 and under 18 years of age ..	39	56	36	9	140	50	48	109	13	57	78	74	92	183	226	16	164	400	102	1,405	1,654	1,459						
18 " " 20 ..	44	33	38	8	123	47	40	91	13	38	77	65	106	189	259	12	185	384	92	1,420	1,684	1,493						
20 years of age and over ..	517	448	750	179	1,894	773	578	1,456	441	1,440	1,092	1,065	1,640	4,525	4,578	358	3,305	4,486	2,843	25,773	29,123	28,147						
Females ..	1	—	—	—	2	4	14	—	—	—	3	5	2	—	2	1	4	—	—	106	122	97						
<b>Total at 11th December ..</b>	<b>625</b>	<b>579</b>	<b>849</b>	<b>200</b>	<b>2,253</b>	<b>929</b>	<b>695</b>	<b>1,756</b>	<b>471</b>	<b>1,574</b>	<b>1,272</b>	<b>1,267</b>	<b>1,886</b>	<b>4,989</b>	<b>5,171</b>	<b>393</b>	<b>3,769</b>	<b>5,454</b>	<b>3,196</b>	<b>29,442</b>	<b>33,451</b>	<b>32,109</b>						
" " 11th September ..	571	577	754	209	2,111	927	729	1,805	434	1,641	1,260	1,244	1,914	5,058	4,913	383	3,777	5,490	3,197	29,333	33,249	31,703						
" " 12th June ..	541	564	780	187	2,072	932	683	1,723	422	1,639	1,275	1,242	1,905	5,051	4,836	330	3,609	5,455	3,188	29,152	32,947	31,816						
" " 13th March ..	532	513	722	188	1,955	896	613	1,606	416	1,541	1,283	1,190	1,826	4,687	4,697	326	3,495	5,397	3,024	27,882	31,443	30,817						
<b>Average Numbers Employed Above Ground or Outside Quarries</b>	<b>567</b>	<b>558</b>	<b>777</b>	<b>196</b>	<b>2,098</b>	<b>921</b>	<b>680</b>	<b>1,722</b>	<b>436</b>	<b>1,599</b>	<b>1,277</b>	<b>1,236</b>	<b>1,883</b>	<b>4,946</b>	<b>4,904</b>	<b>358</b>	<b>3,713</b>	<b>5,449</b>	<b>3,151</b>	<b>28,952</b>	<b>32,772</b>	<b>31,611</b>						
<b>Total Average Number of Wage</b>																												

CLERKS AND SALARIED PERSONS																						
(at 11th December).																						
Males .. .. .	63	89	124	44	320	69	135	221	126	95	470	209	613	588	809	83	388	238	220	3,789	4,330	4,107
Females .. .. .	2	—	2	—	4	6	2	8	12	12	39	24	100	107	79	1	37	5	29	445	457	446
Total at 11th December ..	65	89	126	44	324	75	137	229	138	107	509	233	713	695	888	84	425	243	249	4,234	4,787	4,553
" " 11th September ..	61	88	123	40	312	68	131	217	139	105	489	234	709	682	858	84	416	240	240	4,146	4,675	4,498
" " 12th June ..	60	86	122	27	295	70	128	212	133	105	493	233	701	666	856	83	420	241	241	4,122	4,629	4,478
" " 13th March ..	61	81	119	24	285	74	115	202	134	106	492	231	695	663	844	84	412	241	240	4,092	4,579	4,433
Average Number of Clerks and Salaried Persons ..	62	86	122	34	304	72	128	215	136	106	496	233	705	676	861	84	418	241	243	4,149	4,668	4,489
<b>GRAND TOTAL — WAGE EARNERS AND SALARIED PERSONS (including Clerks)</b>																						
(at 11th December).																						
Under 16 years of age ..	28	84	58	11	181	52	27	91	8	132	94	146	121	202	224	47	171	194	91	1,430	1,702	1,629
16 and under 18 years of age ..	58	168	86	33	345	80	62	155	34	191	272	238	315	412	467	78	299	431	148	2,885	3,385	2,941
18 " " 20 " " ..	94	117	135	46	392	93	76	182	50	149	347	255	387	454	623	88	372	455	145	3,325	3,890	3,453
20 years of age and over ..	1,828	2,956	3,353	957	9,094	1,567	1,782	3,588	2,199	4,108	9,132	5,992	7,608	13,650	17,074	1,789	8,456	8,641	4,627	83,277	95,959	91,973
Total at 11th December ..	2,008	3,325	3,632	1,047	10,012	1,792	1,847	4,016	2,291	4,580	9,845	6,631	8,492	14,718	18,388	2,002	9,298	9,721	5,011	90,917	104,945	99,996
" " 11th September ..	2,032	3,224	3,562	963	9,781	1,773	1,976	4,023	2,178	4,554	9,527	6,624	8,660	15,390	17,720	1,926	9,469	9,761	5,032	90,841	104,645	99,625
" " 12th June ..	1,983	3,232	3,479	901	9,581	1,763	1,914	3,896	2,158	4,487	9,641	6,649	8,729	15,352	17,725	1,855	9,591	9,796	5,026	91,009	104,486	100,472
" " 13th March ..	1,927	3,179	3,266	885	9,277	1,748	1,822	3,769	2,096	4,213	9,898	6,869	8,265	13,534	16,781	1,790	8,651	9,645	4,817	86,079	99,125	97,192
Average Numbers Employed in 1937—At Mines ..	1,984	3,240	3,490	944	9,663	1,769	1,915	3,646	2,181	4,459	9,728	6,573	8,592	14,748	17,853	1,898	9,252	9,781	4,972	89,712	103,801	—
At Quarries, etc. ..	—	—	2,916	5	2,921	271	—	280	2,109	3,954	8,974	1,506	8,505	14,717	17,031	—	9,043	6,589	2,919	75,747	78,948	76,404
<b>TOTAL ..</b>	<b>1,984</b>	<b>3,240</b>	<b>3,490</b>	<b>949</b>	<b>9,663</b>	<b>1,769</b>	<b>1,915</b>	<b>3,926</b>	<b>2,181</b>	<b>4,459</b>	<b>9,728</b>	<b>6,573</b>	<b>8,592</b>	<b>14,748</b>	<b>17,853</b>	<b>1,898</b>	<b>9,252</b>	<b>9,781</b>	<b>4,972</b>	<b>89,712</b>	<b>103,801</b>	<b>—</b>
Total in 1936 ..	1,880	2,910	3,197	859	8,846	1,730	1,563	3,495	2,062	4,068	9,661	6,190	8,230	14,618	16,921	1,824	8,712	9,897	4,797	86,980	—	99,321

\* The other minerals included are Chromite, Copper Precipitate and Ores of Copper, Gold, Manganese and Tungsten.

† Including Alum Clay and Shale, Barytes and Witherite, Bog Ore, Calc spar, Celestine (Sulphate of Strontium), Diatomite, Fluorspar, Fuller's Earth, Gypsum (including Anhydrite), Iron Ore and Ironstone used otherwise than for iron-making, Iron Pyrites, Ochre, Umber, etc., and Salt.

‡ See Note † to Table 14.

§ DRESSERS OR GRINDERS: These figures include 9,480 male and 3 female dressers or grinders employed at the 11th December, 1937. They were chiefly employed as follows:—

At mines, quarries, etc., producing	Number employed.	At mines, quarries, etc., producing	Number employed.
Tin Ore and Arsenic Compounds ..	451	Limestone ..	841
Lead and Zinc Ores ..	200	Sandstone ..	1,804
Gypsum (including Anhydrite) ..	134	Slate ..	3,472
Igneous Rocks ..	2,121		

TABLE 18.—*Number of Persons Employed and Output of Minerals at Quarries under the Quarries Act, 1894, in Great Britain\* from 1895.*

*Note.*—For the number and cause of fatal accidents at the quarries at which these persons were employed see Table 53.

Decennial Period or Year.	Persons employed.			Output. ‡	
	Inside.	Outside.	Total.		
Annual Average.	1895–1904..	60,399	45,023†	105,422	Tons. 40,483,641
	1905–1914..	54,063	31,134	85,197	45,656,426
	1915–1924..	39,027	22,306	61,333	35,807,486
	1925–1934..	48,284	27,640	75,924	62,492,171
1919	.. .. .	36,879	20,197	57,076	31,136,124
1920	.. .. .	43,544	24,206	67,750	39,821,882
1921	.. .. .	44,017	25,962	69,979	31,266,998
1922	.. .. .	41,903	25,586	67,489	33,691,116
1923	.. .. .	46,727	27,711	74,438	42,939,206
1924	.. .. .	50,035	29,393	79,428	49,309,910
1925	.. .. .	53,160	29,558	82,718	54,154,523
1926	.. .. .	52,391	29,442	81,833	48,110,485
1927	.. .. .	51,747	29,945	81,692	60,080,984
1928	.. .. .	50,963	29,003	79,966	59,042,320
1929	.. .. .	51,582	29,195	80,777	63,871,783
1930	.. .. .	47,928	28,737	76,665	66,785,114
1931	.. .. .	45,936	27,176	73,112	65,775,648
1932	.. .. .	42,506	24,637	67,143	60,597,664
1933	.. .. .	42,079	23,888	65,967	67,488,732
1934	.. .. .	44,548	24,820	69,368	79,014,456
1935	.. .. .	45,840	24,945	70,785	83,915,338
1936	.. .. .	47,663	25,867	73,530	93,275,011
1937	.. .. .	49,451	26,472	75,923	102,249,230

\* Including particulars for Ireland up to the year 1921.

† In 1899 a large number of workers employed outside quarries under the Quarries Act were transferred from the jurisdiction of the Mines to the Factory Department of the Home Office.

‡ The tonnage relates to dressed mineral in some cases (e.g., slate) and not the total quantity of rock quarried.

TABLE 19.—Main Provisions of the District Wages Agreements in Operation during the Year 1937.

Note.—For particulars of the percentages actually paid on basis rates during each month of the year and of subsistence wages, see Tables 20 and 21, respectively.

District.	Ratio of Wages : Profits.	Basis Rates for Piece-workers increased by	Minimum Percentage addition to Basis Rates.	Flat rate increases payable per shift or per day.		Period covered by the Ascertainment.	Hours.		Deficiencies.
				Adults.	Boys. (a) Under 18 (b) Under 21		Underground. (N.B.—Figures in parentheses relate to Saturday.)	Surface Workers handling Coal, exclusive of Mealtimes. (The hours of other Surface Workers were not necessarily the same.)	
Northumberland .. ..	87 : 13	Per cent.	40	s. d. 6	d. 3 (a)	Months. 1	Per Shift. Hewers: 7½ (7½ in alternate weeks) Others: 7½ (7½)	Per Week. 49	January and February—carried forward. From March : Accumulated deficiencies up to and including July, 1936, excepting actual trading loss, to be cancelled. Any deficiency outstanding at 31st August, 1938 to be cancelled and until that date one-third of any surplus to be applied to recoupment. Thereafter deficiency to be cancelled annually one year in arrear and one-half of any surplus to be applied to recoupment.
Durham .. .. .	87 : 13	—	65. From 1/5, 70	6	3 (a)	1	7½*	49. From 1/5, 48	Carried forward. From May : Accumulated deficiencies up to December, 1936, cancelled. Thereafter to be cancelled annually one year in arrear, and one-third of any surplus to be applied to recoupment.
Cumberland .. ..	85 : 15	—	27	6	3 (a)	1	7½ (6½)	49	Carried forward.
Lancashire and Cheshire† ..	Standard 87 : 13 Surplus 86 : 14	—	32	1 0 (Females, 6d.)	6 (b)	3	7½ (6½)	49	Cancelled at end of April in each year.
Yorkshire :— South .. .. .	85 : 15	6·1	South. 32. From 1/9, 38. West. Below ground : 32. From 1/9, 38. Above ground : Eastern. 30·34. From 1/9, 36·34. Western. 27. From 1/9, 33.	1 0 (Surface workers under 22, 6d.)	6 (b) Under 22,	1	7½ (6 to 7)	48	Cancelled at end of April in each year, 50 per cent of any surplus to be applied to recoupment.
West .. .. .									

See notes on page 153.

NUMBERS EMPLOYED, DAYS WORKED AND WAGES.

TABLE 19.—Main Provisions of the District Wages Agreements in Operation during the Year 1937—continued.

District.	Ratio of Wages : Profits.	Basis Rates for Piece-workers increased by	Minimum Percentage addition to Basis Rates.	Flat rate increases payable per shift or per day.		Period covered by the Ascertainment.	Hours.		Deficiencies.
				Adults.	Boys. (a) Under 18 (b) Under 21		Underground. (N.B.—Figures in parentheses relate to Saturday.)	Surface Workers handling Coal, exclusive of Mealtimes. (The hours of other Surface Workers were not necessarily the same.)	
Nottinghamshire .. ..	85 : 15	Per cent. 7	38	s. d. 1 0 (merged into minimum percentage from 1 to 3/37)	d. 6 (a)	3	Per Shift. 7½ (usually ½ or ¾ shift)	Per Week. The same hours as underground workers.	Cancelled at end of April in each year.
North Derbyshire .. ..	85 : 15	7	38. From 1/12, the minimum is the new basis.	9 (Workers 18 at face,	4 (b) (over coal 9d.)	3. From 1/12, 12	7½ (usually ¾ shift)	The same hours as underground workers.	Cancelled at end of April in each year.
South Derbyshire .. ..	85 : 15	2	29 (Enginemen, Firemen and Mechanics, 35; boys aged 14-17, 45; 17-17½, 40 and 17½-21, 35. From 1/4, boys, 14-21, 29.)	1 0	6 (b)	3	7½ (½ day)	46 h. 7m.	Carried forward, 40 per cent. of any surplus to be applied to recoupment. Of the remainder of such surplus, 85 per cent. is applied to wages until the percentage payable on basis rates reaches 40, after which 50 per cent. of any remaining surplus is applied to wages.
North Staffordshire ..	86 : 14	4.25	39	1 0	6 (b)	3	7½ (6 or 7)	45 to 46½	One-third carried forward and one-third of any surplus to be applied to recoupment.
Cannock Chase .. ..	85 : 15	5	40 (Mechanics and other surface workers not handling coal, 42)	1 0	6 (b)	2	7½ (½ day)	46 (including mealtimes)	Carried forward, 40 per cent. of any surplus to be applied to recoupment. Of the remainder of such surplus, 85 per cent. is applied to wages until the percentage payable on basis rates reaches 45, after which 50 per cent. of any remaining surplus is applied to wages.
South Staffordshire† ..	—	5	38	1 0	6 (a)	—	7½ (5½ to 7½)	—	—
Leicestershire .. ..	85 : 15	7.1	32	1 0	6 (b)	12	7½ (5)	43h. 10m.	Cancelled at end of March in each year.
Warwickshire .. ..	85 : 15	6	43	1 0	6 (b)	12	7½ (5½)	48½ (including mealtimes except on Saturdays).	Carried forward but not beyond 12 months.
Shropshire† .. ..	—	—	—	1 0	6 (b)	—	7½ (5½)	44 to 49	—



Forest of Dean .. ..	Standard 100:15 Surplus 85:15	—	{ 68.75 From 4/7, 72-125 From 3/10, 75-50 }	{ 9 4½ (a) Continuous Shift- men. 6 3 (a) }	3	7½ (7½)	45 (including mealtimes)	Carried forward.
Somersetshire**								
Radstock Newbury† .. ..	85:15	—	31.5 26	{ 6 3 (b) (Lower men, 8 d.) }	6	7½ (7½)	49	{ Carried forward. — }
Bristol—Coalpit Heath† ..	—	—	Hewers and Pieceworkers, 25. Others, 27.	{ 6 3 (Under 17) From 20/12†† 9 5 }	—	8 bank to bank (7 bank to bank)	49 (average)	—
Kent .. ..	Ratio proportioned in accord- ance with an agreed formula.	—	Lower Paid Men, 37. Others, 32.	5 2½ (b)	3	7½ (6½)	49½	Carried forward but one-eighth of total deficiency cancelled at end of each quarter. From 8rd November: Carried forward, one-half of any sur- plus to be applied to recruit- ment.
South Wales and Mon- mouthshire.	85:15	—	25. From 5/4, 30.	—	3	7½ (7½)	8 hours per day, mealtimes to be arranged at each colliery.	Carried forward. One-third of any surplus to be applied to recruitment.
North Wales .. ..	84:16	—	22	{ 1 0 6 (b) From 11/10, additional increase of 3d. to 6d. for boys and 8d. for adults, subject to maxi- mum inclu- sive daily rate of 8s. 9 5½ d. 4½ (a) }	3	7½ (6½)	44 to 47 (including mealtimes)	Carried forward. Accumulated deficiencies to 1st October, 1937 cancelled.
Scotland .. ..	85:15	—	106.25	9 4½ (a)	2	7½ (7½. From 10/4, 6½)	48	One-half carried forward and one- half of surplus to be applied to recruitment.

\* 6½ hours or 7½ hours bank to bank for hewers and fillers on Saturdays; other classes on Saturdays 6½ hours or 7½ hours bank to bank or 7½ hours plus one winding time. The hours varied according to the arrangements at the different collieries. At most of the collieries, hewers, fillers, etc., worked only 11 shifts per fortnight; but other workers at all collieries worked 12 shifts per fortnight, if required.

† A voluntary increase on gross wages was paid: from January to June, 2½ per cent., July, 8.66 per cent. and from August, 5 per cent.

‡ No agreement applying to the district was in force, but the figures shown represent the conditions normally observed.

\*\* The figures shown for the Radstock District are in accordance with an Agreement which came into operation on 16th February, 1937. There was no Agreement previously, but the hours of surface workers were normally 49½ per week (exclusive of mealtimes). There was no Agreement in the Newbury District.

†† Did not apply to pieceworkers when earnings were above the minimum.

TABLE 20.—Percentages payable in excess of the Basis

Notes.—These percentages, which relate to the main classes of workers in each district, take no account include percentage additions to piece rates which operate in certain districts (see Table 19) to compensate The minimum percentage additions to basis wages rates payable in each district during the year are For particulars of the flat-rate increases payable in 1937, see Table 19.

District.	Date when Basis Rates were fixed.	Percentages on						
		January.	February.	March.	April.	May.	June.	
Northumberland ..	{ 1879 5 & 6/37 }	40·00	40·00	40·00	41·98	40·00	42·50	
Durham .. .. .	{ 1879 5/37 }	65·00	65·00	65·00	65·00	70·00	70·00	
Cumberland .. ..	1915	27·00	27·00	27·00	27·00	27·00	27·00	
Lancashire and Cheshire*	1911	32·00	32·00	32·00	32·00	32·00	32·00	
Yorkshire† .. ..	{ 1911 11/37 (retro- spective to 9/37) }	32·00	34·20	34·20	37·39	36·63	37·42	
Nottinghamshire ..	1911	59·22‡	68·98‡	81·53‡	77·45	80·03	81·35	
North Derbyshire ..	{ 1911 12/37 }	38·00	38·00	44·09	66·02	66·04	62·61	
South Derbyshire ..	1911	29·00	32·41	39·13	41·84	43·62	42·70	
North Staffordshire	1911	39·00	40·00	41·00	41·00	42·00	42·00	
Cannock Chase .. ..	1911	41·09	46·86	48·43	48·43	48·03	48·44	
South Staffordshire and Worcestershire ..	1911	38·00	38·00	38·00	38·00	38·00	38·00	
Leicestershire .. ..	1911	37·77	39·49	39·08	40·30	41·61	42·74	
Warwickshire¶ .. ..	1911	61·00	60·00	60·00	61·00	61·00	64·00	
Forest of Dean .. ..	1919	68·75	68·75	68·75	68·75	68·75	68·75	
Somerset—Radstock ..	1918	{	36·50	36·50	38·40	38·40	38·40	38·40
Newbury .. .. .			26·00	26·00	26·00	26·00	26·00	26·00
Bristol—Coalpit Heath:								
Hewers and Pieceworkers	1917	{	25·00	25·00	25·00	25·00	25·00	25·00
Others .. .. .			27·00	27·00	27·00	27·00	27·00	27·00
Kent .. .. .	1934	32·00	32·00	32·00	32·00	32·00	32·00	
South Wales and Mon- mouthshire .. .. .	{ 1915 4/37 }	25·00	25·00	25·00	30·00	30·00	30·00	
North Wales .. .. .	1911	22·00	22·00	22·00	22·00	22·00	22·00	
Scotland .. .. .	1888	106·25	113·29	118·80	120·93	133·06	133·33	

\* A voluntary increase on gross wages was paid: from January to June, 2½ per cent., July, 8·66 per

† The percentage additions paid throughout the year to surface workers in West Yorkshire were less

‡ Including flat rate increases.

§ From 1st December, new basis rates were fixed to equal basis rates at 30th November, plus 38 per

|| For workers other than those in receipt of basis rates from 5s. 2½d. to 5s. 9d. per shift inclusive, the

¶ At certain collieries lower percentages were payable.

Note.—In Shropshire there is no percentage applying to the whole of the district, individual arrangements

*Wage Rates in each District during the Year 1937.*

of, subsistence allowances to low-paid day-wage workers, for particulars of which see Table 21; nor do they for the reduction in hours of labour since 16th July, 1919. shown in Table 19.

Basis actually paid in						Date when Basis Rates were fixed	District.
July.	August.	September.	October.	November.	December.		
43.28	40.00	40.00	40.00	40.00	40.00	{ 1879 5 & 6/37 }	Northumberland.
70.00	70.00	70.00	70.00	70.00	70.00	{ 1879 5/37 }	Durham.
27.00	27.00	27.00	27.00	27.00	27.00	1915	Cumberland.
32.00	32.00	32.00	32.00	32.00	32.00	1911	Lancashire and Cheshire*.
32.00	32.00	38.00	38.00	38.00	38.00	{ 1911 11/37 (retro- spective) to 9/37 }	Yorkshire,†
76.85	67.38	55.39	55.83	64.10	69.50	1911	Nottinghamshire.
55.25	44.79	38.00	38.00	38.00	4.17‡	{ 1911 12/37 }	North Derbyshire.
39.65	29.24	29.00	29.00	29.00	29.00	1911	South Derbyshire.
41.00	39.00	39.00	39.00	39.00	39.00	1911	North Staffordshire  .
46.18	40.00	40.00	40.00	40.00	40.00	1911	Cannock Chase.
38.00	38.00	38.00	38.00	38.00	38.00	1911	South Staffordshire and Worcestershire.
43.94	42.70	43.02	43.39	42.46	42.64	1911	Leicestershire.
65.00	66.00	66.00	67.00	67.00	68.00	1911	Warwickshire¶.
72.125	72.125	72.125	75.50	75.50	75.50	1919	Forest of Dean.
38.40	38.40	47.52	47.52	47.52	47.52	} 1918	Radstock—Somerset.
26.00	{ 1st— 18th 26.00 19th— 32.90 }	42.02	42.02	42.02	42.02		{ Newbury.
25.00	25.00	25.00	25.00	25.00	25.00	} 1917	Coalpit Heath :—Bristol Hewers and Piece- workers
27.00	27.00	27.00	27.00	27.00	27.00		{ Others.
32.00	32.00	32.00	32.00	32.00	32.00	1934	Kent.
30.00	30.00	30.00	30.00	30.00	30.00	{ 1915 4/37 }	South Wales and Mon- mouthshire.
22.00	22.00	22.00	22.00	22.00	22.00	1911	North Wales.
122.20	113.13	106.25	106.25	106.85	116.50	1888	Scotland.

cent. and from August, 5 per cent. than the figures shown, by 1.66 in the Eastern Sub-Division and by 5 in the Western Sub-Division.

cent., plus subsistence allowance where applicable. percentages paid in February and March were 42; in April and May, 44; in June, 45; and in July, 43. being made at each colliery.

TABLE 21.—*Subsistence Wages paid during the Year 1937 to**Note.*—Except where otherwise stated, the rates apply to underground

District.	Rate of Subsistence Wages.
Northumberland ..	6s. 9½d. per shift, but owing to new Agreement, inoperative after 1st May.
Durham .. ..	6s. 6½d. per shift, but owing to new Agreement, inoperative after 1st May.
Cumberland .. ..	<i>Men 21 years of age and over.</i> 7s. 3½d. per shift. <i>Men 18 years of age and under 21.</i> 6s. 10-25d. per shift, subject to a maximum addition of 8d. per shift. <i>Women.</i> 3s. 10-61d. per shift. From 16th October the above have been merged into basis rates.
Lancashire and Cheshire	<i>Workers 21 years of age and over.</i> An allowance not exceeding 1s. per shift to make up to 7s. 9d. per shift, subject to a minimum of 7s. for men and 4s. 9d. per shift for women. <i>Workers 18 years of age and under 21.</i> An allowance not exceeding 9d. per shift to make up to 7s. per shift. <i>Workers 16 years of age and under 18.</i> An allowance not exceeding 6d. per shift to make up to 5s. per shift.
Yorkshire .. ..	An allowance of 6d. per shift, provided the gross wage does not exceed 8s. 9d. per shift.
Nottinghamshire ..	An allowance of 6d. per shift, subject to a maximum of 8s. 9d. per shift, and a minimum of 7s. 11d. per shift.
Derbyshire, North ..	An allowance of 6d. per shift, subject to a maximum of 8s. 9d. per shift, and a minimum of 7s. 11d. per shift. From 1st December, merged into basis rates.
Derbyshire, South ..	<i>Underground workers—</i> 7s. 8d. per day. From March to July, 7s. 10d. <i>Surface workers—</i> 7s. 4d. per day. From March to July, 7s. 6d.
Staffordshire, North ..	From 1st July, 1934, the subsistence rates previously in operation were merged with the basis rates.
Cannock Chase ..	An allowance of 6d. per shift, provided the gross daily wage does not exceed 8s. 9d. per shift.
Staffordshire, South and Worcestershire.	6s. 2d. per shift.
Leicestershire.. ..	An allowance of not more than 6d. per shift, subject to a maximum of 8s. 3d. per shift, and a minimum of 7s. 6d. per shift for underground workers, and 7s. 2d. per shift for surface workers. From 1st November, merged into basis rates.

*Colliery Workers, subject to the flat rate increases shown in Table 19.*

and surface day-wage workers of 21 years of age and over.

District.	Rate of Subsistence Wages.
Warwickshire.. ..	For the majority of the collieries the subsistence wage varied from 8s. 5½d. to 8s. 6d. per shift for underground workers and from 7s. 5½d. to 7s. 6d. per shift for surface workers. At four collieries the rate for underground workers varied from 8s. 2d. to 8s. 6d. per shift during the year.
Shropshire .. ..	Varying from 5s. 2d. to 6s. per shift, according to colliery.
Forest of Dean .. ..	6s. 1½d. per shift.
Somersetshire :— Radstock District ..	An allowance of 9d. per shift for married workmen (and workmen 18 years of age and over, who are the sole support of their parents), subject to a maximum of 6s. 11d. per shift and 40s. per week. From 16th February, merged into basis rates.
Bristol—Coalpit Heath	6s. 9d. per day for married workmen and for single workmen having a relative entirely dependent on them.
Kent .. .. .	<i>Married men (except Craftsmen).</i> 8s. 7½d. per shift for underground workers, and 8s. 2d. per shift for surface workers. <i>Widowers and Single Men (on Surface).</i> 6s. 9d (7s. 0d. from 3rd November) per shift. <i>Boys (Underground and on Surface).</i> An allowance of 1s. 1½d. per shift. <i>Craftsmen (Surface).</i> An allowance of 1s. 3d. per shift. In addition, all workmen entitled to a subsistence allowance receive 3d. per shift for each child under 14 years of age.
South Wales and Monmouthshire	<i>Adult day-wage workmen and youths over 16 years of age</i> who are the sole support of a family, 8s. 1d. per shift. <i>Youths 14 to 16 years of age</i> who are the sole support of a family, 6s. per shift. <i>All other youths,</i> an allowance of 4d. per shift. From 5th April, new standard wages adopted and subsistence rates discontinued.
North Wales .. ..	6s. per shift.
Scotland .. .. . (Surface workers only.)	<i>Men 18 years of age and over.</i> An allowance of 1s. per shift to make up to 7s. per shift. <i>Youths under 18 years of age.</i> An allowance of 6d. per shift to make up to 3s. 6d. per shift. <i>Women 18 years of age and over.</i> An allowance of 8d. per shift to make up to 5s. per shift. <i>Girls under 18 years of age.</i> An allowance of 4d. per shift to make up to 2s. 6d. per shift. From 1st February, the above have been merged into basis rates.

TABLE 22.—Average Earnings per Shift of Coal Miners in the

Period.	Northumberland.	Durham.	Yorkshire.	North Derbyshire and Nottinghamshire.	South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.	Lancashire, Cheshire and North Staffordshire.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1914.						(a) Cash
June ..	6 2½	6 2½	6 10	6 6½	6 11½	6 0½
1927 ..	8 7½	9 2½	10 10	11 10½	10 6½	9 9
1928 ..	7 6½	8 1½	10 0½	10 4½	9 9	9 3½
1929 ..	7 4½	7 11½	10 0½	10 3½	9 8½	9 3
1930 ..	7 8	8 0½	10 1½	10 4½	9 9½	9 2½
1931 ..	7 8½	8 0½	10 1½	10 4½	9 8½	9 2½
Annual Average.						
1932 ..	7 7½	8 1	10 2	10 4½	9 8½	9 3½
1933 ..	7 8½	8 0½	10 1½	10 5	9 7½	9 3½
1934 ..	7 9½	8 0½	10 2	10 5½	9 8	9 2½
1935 ..	7 11	8 0½	10 3½	10 5½	9 9½	9 4
1936 ..	8 5½	8 7	11 3	11 4½	11 0½	10 4½
1937 ..	8 11½	9 1	11 10½	12 8½	11 5½	10 8
1932.						
Jan. to March	7 8	8 0½	10 2	10 4½	9 8½	9 3½
April „ June	7 7½	8 0½	10 2	10 3½	9 7½	9 3½
July „ Sept.	7 7½	8 1½	10 1½	10 4½	9 8½	9 4
Oct. „ Dec...	7 8	8 1½	10 2½	10 4½	9 8	9 4
1933.						
Jan. to March	7 8½	8 0½	10 1½	10 4½	9 8	9 3½
April „ June	7 8½	8 0½	10 2	10 5½	9 7½	9 4½
July „ Sept.	7 8½	8 0½	10 1½	10 5	9 7½	9 2½
Oct. „ Dec...	7 8½	8 0½	10 2½	10 4½	9 7½	9 2½
1934.						
Jan. to March	7 9½	8 0½	10 2	10 4½	9 7½	9 2½
April „ June	7 9½	8 0	10 1½	10 5	9 7½	9 2½
July „ Sept.	7 9	8 0½	10 2½	10 6	9 8½	9 1½
Oct. „ Dec...	7 9½	8 1½	10 2½	10 5½	9 9	9 2½
1935.						
Jan. to March	7 10½	8 0½	10 2½	10 5½	9 9	9 3
April „ June	7 10½	8 0½	10 3½	10 6	9 9½	9 3½
July „ Sept.	7 11½	8 0½	10 4	10 5½	9 10	9 4½
Oct. „ Dec...	7 11½	8 1½	10 4½	10 6	9 9½	9 4½
1936.						
Jan. to March	8 4½	8 6½	11 2½	11 3½	10 9½	10 3½
April „ June	8 5½	8 7	11 2½	11 6½	11 1	10 4
July „ Sept.	8 6	8 7	11 3½	11 4½	11 0½	10 5
Oct. „ Dec...	8 7½	8 7½	11 3½	11 5½	11 2	10 5½
1937.						
Jan. to March	8 8½	8 8	11 5½	12 1½	11 3½	10 6½
April „ June	8 10½	9 0	11 9½	13 9	11 6	10 6½
July „ Sept.	9 1½	9 3½	11 8	12 7½	11 6	10 9½
Oct. „ Dec...	9 2½	9 4½	12 6	12 4½	11 6	10 9½
Year						(b) Value of
1927 ..	1 1½	1 2½	0 4½	0 4½	0 4½	0 0½
1928 ..	1 0½	1 1	0 4	0 4	0 4	0 0½
1929 ..	1 0	1 0½	0 3½	0 3½	0 4	0 0½
1930 ..	1 1½	1 1½	0 3½	0 3½	0 4	0 0½
1931 ..	1 0½	1 1	0 4	0 3½	0 4½	0 0½
1932 ..	1 0½	1 2	0 4½	0 4	0 4½	0 0½
1933 ..	0 11½	1 1½	0 4	0 4	0 4½	0 0½
1934 ..	0 11	1 1	0 3½	0 4	0 4½	0 0½
1935 ..	0 11½	1 1½	0 3½	0 4	0 4½	0 0½
1936 ..	0 11½	1 1½	0 3½	0 4	0 4½	0 0½
1937 ..	1 0½	1 1½	0 3½	0 3½	0 4½	0 0½

(\* The figures shown for South Wales and Monmouthshire relate to the years

(†) The maximum hours of labour below-ground were reduced from 8 to 7 per was restored in all districts except Yorkshire, Nottinghamshire, North Derbyshire Northumberland and Durham the hours of hewers were increased by 1 hour to and in 1931, for particulars of which see Table 19 of the Tenth and Eleventh Annual

Principal Districts of Great Britain in 1914 and from 1927.

South Wales and Mon- mouth- shire. (*)	Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent.	Scotland.	Great Britain.	
			Average Earnings.	Quantity of Coal raised per man- shift worked. (†)
s. d.	s. d.	s. d.	s. d.	cwts.
<b>Earnings.</b>				
6 9	5 6½	6 9	6 5½	20.32
10 0½	9 0½	9 7½	10 0½	20.61
9 6½	8 8½	9 2½	9 3½	21.29
9 6½	8 7½	9 2	9 2½	21.69
9 6	8 9½	9 2½	9 3½	21.62
8 11½	8 8½	9 0½	9 2½	21.61
8 11½	8 9½	8 9½	9 2	21.99
8 11	8 8	8 9	9 1½	22.47
9 0½	8 8	8 9½	9 1½	22.94
9 3½	8 10½	8 9½	9 3½	23.35
9 8	9 7½	9 6½	10 0½	23.54
10 4½	9 11½	10 4	10 8	23.35
8 11	8 9½	8 10	9 2½	21.98
8 11½	8 9½	8 9½	9 2	21.78
8 11½	8 9½	8 9½	9 1½	21.50
8 11½	8 9	8 9½	9 2½	22.62
8 11	8 8	8 9	9 1½	22.67
8 11	8 8½	8 9	9 1½	22.07
8 10½	8 8	8 8½	9 1½	22.05
8 11	8 7½	8 9	9 1½	23.00
8 11½	8 7½	8 8½	9 1½	23.32
8 11½	8 7½	8 9	9 1	22.59
9 1	8 7½	8 9	9 1½	22.55
9 2½	8 9	8 9½	9 2½	23.23
9 2½	8 9½	8 9½	9 2½	23.40
9 3½	8 9½	8 9½	9 2½	23.10
9 3½	8 10½	8 9½	9 3½	22.93
9 4½	8 11½	8 10	9 4	23.89
9 7	9 6½	9 6½	9 11½	23.95
9 8½	9 6½	9 6½	10 0½	23.26
9 8	9 7½	9 6½	10 0½	23.12
9 8½	9 8½	9 7	10 1	23.76
9 10½	9 9½	10 1½	10 4½	24.00
10 6	9 10½	10 10½	10 9½	23.36
10 6	9 11½	10 3½	10 8	22.72
10 7	10 3½	10 1½	10 10½	23.30
<b>Allowances in Kind.</b>				
0 3½	0 2½	0 0½	0 5	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 3	0 0½	0 4½	—
0 2½	0 3	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—
0 2½	0 2½	0 0½	0 4½	—

ended January, 1928 to 1938.  
 shift on 16th July, 1919. After the stoppage of work in 1926 the eight-hour day and Kent, where the hours of labour were increased from 7 to 7½ daily. In 7½ per day. Further changes in hours of labour took place in December, 1930, Reports. The maximum hours below-ground have since been 7½ per day.

TABLE 23.—Average Quarterly Earnings of Coal Miners in each District from 1931.

Period.	North-umberland.	Durham.	Yorkshire.	North Derbyshire and Nottinghamshire.	South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.	Lancashire, Cheshire and North Staffordshire.	South Wales and Monmouthshire.*	Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somersetshire and Kent.	Scotland.	Great Britain.	
										Average Earnings.	Tonnage of coal raised per person employed.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Tons.
1931 .. ..	25 5 1	24 18 8	27 6 1	28 10 10	28 5 10	27 7 1	28 16 3	28 4 11	32 0 9	27 17 8	65.56
1932 .. ..	24 17 5	24 13 3	26 15 0	27 5 5	27 2 7	26 18 9	28 4 5	28 5 7	32 0 10	27 7 1	65.58
1933 .. ..	26 2 2	24 17 10	27 3 6	27 6 2	26 2 5	27 2 7	28 8 9	28 15 3	32 3 4	27 11 6	67.87
1934 .. ..	27 8 8	26 4 10	28 12 5	28 4 1	27 12 2	28 13 0	29 16 9	30 2 7	33 5 8	28 17 11	72.42
1935 .. ..	27 11 8	26 9 5	29 9 0	28 13 7	28 18 10	29 19 6	30 14 1	30 19 9	33 12 4	29 12 0	74.61
1936 .. ..	30 2 6	29 0 6	33 14 10	32 8 6	34 7 1	34 5 9	31 10 0	34 2 8	36 12 3	32 10 0	76.99
1937 .. ..	31 7 10	31 4 6	37 9 3	39 13 2	36 9 0	35 15 4	35 13 10	35 11 4	39 10 2	36 0 10	78.86
1933.											
Jan. to Mar. ..	26 16 4	25 11 3	29 2 3	29 7 0	29 7 8	29 10 2	28 3 9	29 15 5	32 12 0	28 17 2	71.46
Apr. " June ..	24 4 9	23 13 5	25 2 0	24 6 0	23 10 6	26 2 0	27 17 7	27 5 11	31 2 5	26 0 0	62.78
July " Sept. ..	25 18 10	24 5 0	24 12 6	25 14 5	23 14 2	24 8 0	28 7 1	28 2 7	30 9 9	26 2 4	63.81
Oct. " Dec. ..	27 7 11	26 0 7	29 15 4	29 14 5	27 16 11	28 9 4	29 6 6	29 16 2	34 7 0	29 5 3	73.76
1934.											
Jan. to Mar. ..	27 7 2	26 4 11	30 16 0	31 0 7	31 3 3	30 7 1	28 12 1	30 19 7	33 4 11	29 17 9	76.18
Apr. " June ..	28 15 6	25 14 1	26 11 5	25 11 7	25 6 9	27 18 1	28 10 4	29 5 4	32 17 10	27 11 0	68.45
July " Sept. ..	27 4 0	25 9 8	26 17 11	26 12 7	25 2 5	25 17 5	30 16 0	29 3 6	31 15 8	27 15 2	68.51
Oct. " Dec. ..	28 7 8	27 10 3	30 3 3	29 10 7	28 15 6	30 7 1	31 9 5	31 2 10	35 3 6	30 7 2	76.43
1935.											
Jan. to Mar. ..	27 8 8	26 5 3	30 2 10	29 14 3	30 16 0	31 6 3	29 3 11	31 5 6	33 6 7	29 16 0	75.61
Apr. " June ..	28 5 4	25 17 8	27 12 7	25 19 1	26 18 7	28 16 0	30 0 10	29 19 8	33 6 2	28 6 9	70.87
July " Sept. ..	27 12 7	25 16 10	27 18 6	27 4 10	26 11 0	27 5 4	30 14 7	30 17 0	32 0 2	28 8 10	70.40
Oct. " Dec. ..	28 19 11	27 18 5	32 2 8	31 15 7	31 8 11	32 10 2	32 16 11	31 17 4	35 16 3	31 16 9	81.56
1936.											
Jan. to Mar. ..	29 14 9	29 6 0	36 1 11	35 6 4	37 5 8	36 3 9	29 9 0	35 1 8	36 10 4	33 13 5	80.75
Apr. " June ..	28 19 6	27 12 0	31 3 5	28 18 10	32 4 10	32 15 10	30 15 7	32 17 8	36 14 1	31 3 8	72.40
July " Sept. ..	30 9 9	29 3 1	32 5 3	30 19 2	31 17 9	32 11 10	32 6 9	33 11 7	34 19 9	31 19 4	73.80
Oct. " Dec. ..	31 6 1	30 0 4	35 8 7	34 8 10	36 0 4	35 11 6	33 11 4	34 19 3	38 3 11	34 7 3	80.92
1937.											
Jan. to Mar. ..	29 1 1	28 7 11	36 8 9	39 13 10	37 6 1	35 5 1	33 19 6	33 18 10	37 17 5	34 15 4	80.65
Apr. " June ..	31 1 10	30 19 9	37 16 3	42 5 0	36 5 11	35 19 3	36 6 3	35 9 1	42 4 8	36 15 4	79.45
July " Sept. ..	32 9 1	32 8 5	34 9 10	36 14 6	34 8 0	34 13 2	35 19 4	35 12 9	37 13 1	34 19 9	74.59
Oct. " Dec. ..	32 18 8	32 19 8	41 0 7	39 19 1	37 15 6	37 3 3	36 8 5	37 3 11	40 4 1	37 11 11	80.78
				(b) Value of Allowances in Kind (Average per Quarter).							
1931 .. ..	3 6 8	3 7 7	0 18 0	0 17 6	1 0 1	0 2 8	0 14 9	0 15 9	0 3 3	1 3 4	—
1932 .. ..	3 6 5	3 11 2	0 18 2	0 17 7	0 19 10	0 2 4	0 14 8	0 16 8	0 2 10	1 3 8	—
1933 .. ..	3 5 10	3 10 8	0 17 5	0 17 9	0 19 7	0 2 0	0 14 4	0 15 1	0 2 7	1 3 3	—
1934 .. ..	3 4 9	3 11 3	0 17 0	0 18 3	1 0 0	0 1 0	0 14 6	0 14 2	0 2 5	1 3 8	—
1935 .. ..	3 5 1	3 12 11	0 16 11	0 18 2	1 0 7	0 1 10	0 14 6	0 13 6	0 2 4	1 4 0	—
1936 .. ..	3 7 7	3 16 0	0 18 0	0 18 5	1 2 7	0 2 0	0 14 10	0 15 8	0 2 8	1 5 4	—
1937 .. ..	3 12 3	3 17 9	0 19 7	0 19 2	1 4 3	0 2 0	0 15 5	0 16 5	0 2 10	1 6 8	—

\* The figures shown for South Wales and Monmouthshire relate to the years ended January, 1932 to 1938.



TABLE 24.—Average Costs of Production, Proceeds and Profits of the Coal Mining Industry, and Tonnage of Coal disposable commercially from 1922.

Period.	Pro-ceeds.	Costs of Production.					Balance.		Approximate Tonnage of Coal disposable commercially.
		Wages.	Stores and Timber.	Other Costs.	Royalties.	Total Costs of Production.(a)	Credit.	Debit.	
	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	(s. d.)	
Per ton of coal disposable commercially.									
1922 ..	19 1½	12 1½	2 3½	3 2½	0 7	18 1½	0 11½	—	227,500,000
1923 ..	19 9½	12 4½	2 2	2 8½	0 6½	17 7½	2 2	—	252,600,000
1924 ..	19 9½	13 3	2 1½	2 10	0 6½	18 7½	1 2	—	243,900,000
1925 ..	17 1	(b) 12 9½	1 10½	2 10½	0 6½	(b) 17 11½	0 3½	—	221,700,000
1926 (d) ..	15 8½	(c) 11 4	1 9½	2 8½	0 6½	(c) 16 9½	1 3	—	80,800,000
		(c) 9 7				(c) 14 5½			
1927 ..	15 1½	10 7½	1 9½	2 8½	0 6½	15 7	—	0 5½	230,900,000
1928 ..	13 3½	9 5½	1 7½	2 8½	0 6	14 2½	—	0 11	219,300,000
1929 ..	13 11	9 2	1 6½	2 4½	0 6	13 6½	0 4½	—	239,300,000
1930 ..	14 1	9 3½	1 7½	2 6	0 5½	13 8½	0 4½	—	222,500,000
1931 ..	14 0½	9 2½	1 6½	2 6½	0 6	13 8½	0 3½	—	203,400,000
1932 ..	13 10	8 0½	1 5½	2 8½	0 6	13 8	0 2	—	192,900,000
1933 ..	13 6½	8 9½	1 5	2 8½	0 6	13 3½	0 2½	—	191,500,000
1934 ..	13 4½	8 7½	1 5½	2 6	0 5½	12 11½	0 5	—	204,900,000
1935 ..	13 6	8 6½	1 6½	2 6	0 5½	12 11½	0 6½	—	206,400,000
1936 ..	14 7½	9 2	1 7	2 6½	0 5½	13 8	0 11½	—	212,000,000
1937 ..	15 10½	9 9½	1 11	2 6	0 5½	14 7½	1 2½	—	224,000,000
1932.									
Jan. to March ..	14 0½	9 0½	1 5½	2 6½	0 6	13 6½	0 6½	—	51,500,000
April „ June ..	13 8	9 1½	1 6	2 9½	0 6	13 10	—	0 2	47,700,000
July „ Sept. ..	13 7½	9 3½	1 6	3 0½	0 6½	14 2½	—	0 7½	42,400,000
Oct. „ Dec. ..	13 11	8 9½	1 5	2 6½	0 6	13 2½	0 8½	—	50,600,000
1933.									
Jan. to March ..	13 11	8 9	1 4½	2 6½	0 6	13 1½	0 9½	—	51,400,000
April „ June ..	13 4½	8 11½	1 5½	2 11	0 6½	13 9½	—	0 4½	44,400,000
July „ Sept. ..	13 3½	8 11	1 5½	2 10½	0 6½	13 8½	—	0 5	43,800,000
Oct. „ Dec. ..	13 6½	8 6½	1 4½	2 5½	0 6	12 9½	0 9	—	51,900,000
1934.									
Jan. to March ..	13 7½	8 5½	1 4½	2 4½	0 5½	12 7½	1 0½	—	54,800,000
April „ June ..	13 2½	8 8½	1 5½	2 7	0 6	13 1½	0 0½	—	48,500,000
July „ Sept. ..	13 1½	8 8½	1 5½	2 7½	0 6	13 3½	—	0 1½	47,900,000
Oct. „ Dec. ..	13 6½	8 6½	1 6	2 5½	0 5½	12 11	0 7½	—	53,700,000
1935.									
Jan. to March ..	13 6½	8 6	1 6	2 5	0 5½	12 9½	0 8½	—	53,000,000
April „ June ..	13 3	8 7½	1 6½	2 7½	0 5½	13 2½	0 0½	—	49,500,000
July „ Sept. ..	13 2	8 8½	1 6½	2 8½	0 5½	13 3½	—	0 1½	48,000,000
Oct. „ Dec. ..	13 11½	8 4½	1 6	2 4½	0 5½	12 7½	1 4	—	55,900,000
1936.									
Jan. to March ..	14 8½	8 11½	1 6½	2 4½	0 5½	13 2½	1 5½	—	56,100,000
April „ June ..	14 3½	9 3½	1 7½	2 7½	0 5½	13 11	0 4½	—	49,800,000
July „ Sept. ..	14 4½	9 3½	1 7½	2 7½	0 5½	13 11½	0 5	—	50,500,000
Oct. „ Dec. ..	15 0½	9 1½	1 7½	2 5½	0 5½	13 7½	1 5	—	55,600,000
1937.									
Jan. to March ..	15 6½	9 3½	1 8	2 5	0 5½	13 9	1 9½	—	55,900,000
April „ June ..	15 6	9 11	1 9½	2 5½	0 5½	14 7	0 11	—	56,600,000
July „ Sept. ..	15 10	10 0½	2 0½	2 7½	0 5½	15 2½	0 7½	—	53,300,000
Oct. „ Dec. ..	16 7½	10 0	2 2½	2 5½	0 5½	15 1	1 6½	—	58,200,000

(a) After deducting the proceeds of miners' coal.

(b) Including Subvention.

(c) Excluding Subvention.

(d) January–April. On 1st May, 1926, the production of coal at almost all the mines was suspended and the usual particulars of the proceeds, costs of production, &c., for the last eight months of 1926 are not available.

Note.—Generally speaking, Revenue and Expenditure follow the accounting principles which are adopted by the Industry in making wages ascertainsments.

Proceeds represent the amount received for coal and other minerals\* disposed of commercially per ton of coal sold after deducting selling and delivery expenses.

Wages include subsistence and other allowances to low-paid day-wage workers.

Other Costs of Production include management, salaries, insurances, repairs, office and general expenses, contribution to the Miners' Welfare Fund, remuneration of working proprietors, depreciation, &c. They do not include certain items such as interest on debentures or other loans, bank charges, amortisation and taxation which the Mining Association of Great Britain estimate to amount to 3d. per ton or more.

Royalties include the rental value of freehold minerals where they are worked by the proprietor.

\* Mines where coal is an ancillary mineral are excluded.

TABLE 25.—Average Total Costs of Production per ton of coal  
Average Proceeds of the Coal

Period.	Northumberland.			Durham.		
	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Annual Average.						
1931 .. ..	7 2½	11 6½	11 7½	7 10½	12 9	12 8½
1932 .. ..	7 1½	11 7½	11 2½	7 9½	12 10½	12 6
1933 .. ..	7 0½	11 4½	11 2	7 9	12 8½	12 3½
1934 .. ..	6 11	11 2½	11 1½	7 8½	12 6½	12 3½
1935 .. ..	7 0½	11 5	11 6½	7 8½	12 8	12 4½
1936 .. ..	7 6½	12 1½	12 8	8 3	13 2	13 3
1937 .. ..	8 1½	13 2½	14 3½	8 10½	13 11½	14 6
1934.						
January-March..	6 11	11 1	11 5½	7 7½	12 4	12 4
April-June ..	6 10½	11 2	10 10½	7 8½	12 4½	12 2
July-September	6 11	11 2	10 8½	7 9	12 7½	12 1½
October-December	6 11½	11 4½	11 4½	7 9½	12 8½	12 4½
1935.						
January-March..	7 0	11 5½	11 7½	7 8½	12 7½	12 3½
April-June ..	7 0½	11 5½	11 3	7 8½	12 7½	12 3½
July-September	7 0½	11 4	11 0	7 10	12 10½	12 2½
October-December	6 11½	11 4½	12 2½	7 8½	12 6½	12 7½
1936.						
January-March..	7 5½	11 10	12 9	8 1½	12 11½	13 3
April-June ..	7 6	12 1½	12 4½	8 3½	13 3½	13 2
July-September	7 7	12 2	12 2½	8 3½	13 2½	13 0½
October-December	7 8	12 4½	13 3	8 3½	13 2½	13 5½
1937.						
January-March..	7 9½	12 8½	13 11½	8 4	13 4½	13 11½
April-June ..	8 0½	13 0	13 11½	8 9	13 8½	14 2½
July-September	8 3½	13 5½	14 2½	9 1½	14 2½	14 7½
October-December	8 3½	13 8½	14 11½	9 1½	14 6	15 1½
Period.	Lancashire, Cheshire and North Staffordshire.			South Wales and Monmouthshire.*		
	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Annual Average.						
1931 .. ..	11 7½	16 10	17 0	9 11½	15 2½	15 2½
1932 .. ..	11 2½	16 5½	16 7½	10 0	15 6½	15 6½
1933 .. ..	10 9½	15 10½	15 11½	9 10½	15 5	15 3½
1934 .. ..	10 4	15 3	15 8½	9 9½	15 1½	15 0½
1935 .. ..	10 1-	15 1	15 8½	9 9½	15 2	15 1
1936 .. ..	10 11½	16 0½	17 3½	10 0	15 7½	15 7
1937 .. ..	11 3	16 9½	18 2½	10 9½	16 6½	16 11½
1934.						
January-March..	10 1½	14 7½	16 0	9 7½	14 11½	15 0½
April-June ..	10 6½	15 6½	15 7	9 10½	15 0½	14 11½
July-September	10 7½	16 1½	15 2½	9 9½	15 1½	14 11½
October-December	10 1½	14 11½	15 10½	9 11½	15 4½	15 0½
1935.						
January-March..	10 0	14 8½	15 10½	9 10½	15 6	14 10½
April-June ..	10 2½	15 4½	15 4½	9 10½	15 3½	15 0½
July-September	10 5½	16 1½	15 4	9 10½	15 3½	15 0½
October-December	9 8½	14 4½	16 2½	9 7	14 8½	15 4½
1936.						
January-March..	10 7	15 2½	17 8½	10 0½	15 10½	15 4½
April-June ..	11 0	16 2½	17 0½	10 2½	15 11½	15 5½
July-September	11 5	16 11½	16 8½	10 1½	15 9	15 9
October-December	10 11½	16 0½	17 7½	9 8	15 0½	15 9
1937.						
January-March..	10 10	15 11	18 4½	10 0½	15 7	15 11
April-June ..	11 0	16 2½	17 8	11 0	16 8½	16 10½
July-September	11 9½	17 9½	17 8½	11 1	17 0	17 3
October-December	11 5½	17 3½	19 1½	11 0½	16 11½	17 10½

\* The figures shown for South Wales and Monmouthshire.  
*Note.*—For particulars of the composition of the costs

disposable commercially, distinguishing the Cost of Wages, and Mining Industry from 1931.

Yorkshire.			North Derbyshire and Nottinghamshire.			South Derbyshire, Leicestershire, Cannock Chase and Warwickshire.		
Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
9 2½	13 2½	13 8	9 0½	12 9	13 10	10 3½	14 6½	15 11
9 0½	13 2½	13 8	8 10½	12 10	13 10	10 3½	14 8½	15 9½
8 7½	12 8½	13 5½	8 6	12 4½	13 4	9 11½	14 3½	15 2½
8 4½	12 3½	13 2½	8 3	12 0½	13 0½	9 5½	13 6½	14 10½
8 4½	12 3½	13 1½	8 0½	11 10	12 11½	9 2½	13 3½	14 7½
9 1½	13 1½	14 2½	8 7½	12 5	14 4½	10 1½	14 3½	16 2½
9 8½	14 0½	15 4½	9 4½	13 3½	15 2½	10 5½	14 11½	17 1½
8 2½	11 10½	13 6	8 1	11 6½	13 5	9 1	12 9½	15 4½
8 6½	12 8	13 0½	8 5	12 6½	12 7	9 8½	14 1	14 7½
8 6½	12 8½	12 11½	8 5	12 4	12 9½	9 10½	14 4	14 4½
8 4	12 1½	13 2½	8 1	11 9½	13 2	9 4½	13 4½	14 11½
8 3½	11 10½	13 3½	8 0½	11 8½	13 2	9 0½	12 11	14 9½
8 5½	12 7½	13 11½	8 2½	12 4½	12 7½	9 5	13 7½	14 2
8 6½	12 9½	12 9½	8 1½	12 0½	12 7	9 7½	14 1½	14 2½
8 2½	11 11½	13 5½	7 10	11 4½	13 5½	8 10½	12 8	15 3
8 10	12 5½	14 2½	8 5½	11 10½	14 6½	9 7	13 3½	16 7
9 2½	13 4½	13 11½	8 11½	13 1½	13 11½	10 6½	14 9½	15 8½
9 3½	13 6½	14 0½	8 7½	12 7½	14 1	10 6½	14 11½	15 8½
9 2	13 2	14 8½	8 5½	12 2½	14 10	10 1½	14 4½	16 8½
9 1	12 11½	15 1½	8 8	12 1½	15 2½	9 11½	13 11½	17 1½
9 6½	13 7½	14 11½	10 2	13 11½	14 8½	10 7½	15 0	16 6½
9 11½	14 8½	15 4½	9 6½	13 9	15 0	10 11½	16 0	16 9½
0 2½	14 9½	15 11½	9 1½	13 4½	15 9½	10 4½	15 1½	17 9½
Cumberland, North Wales, South Staffordshire, Shropshire, Bristol, Forest of Dean, Somerset and Kent.			Scotland.			Great Britain.		
Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.	Wages Cost.	Total Costs incl. Wages.	Pro-ceeds.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
10 6½	15 4	15 2½	8 4	12 5½	12 3½	9 2½	13 8½	14 0½
10 3	15 0½	14 10½	7 10½	11 10	11 5½	9 0½	13 8	13 10
9 9½	14 5½	14 6	7 8½	11 6	11 5½	8 9½	13 3½	13 6½
9 9½	14 4½	14 4½	7 6½	11 3	11 8½	8 7½	12 11½	13 4½
9 9½	14 5½	14 7	7 7	11 4½	12 3½	8 6½	12 11½	13 6
10 5	15 0½	15 9½	8 4½	12 4	13 8½	9 2	13 8	14 7½
11 2½	16 5½	17 0½	9 4½	13 10	15 7½	9 9½	14 7½	15 10½
9 6½	13 10½	14 7½	7 5½	11 1½	11 10	8 5½	12 7½	13 7½
9 11½	14 7½	14 2	7 7½	11 4½	11 5½	8 8½	13 1½	13 2½
9 11½	14 7½	14 1	7 8	11 5½	11 6½	8 8½	13 3½	13 1½
9 9½	14 5	14 7½	7 5½	11 0½	12 0½	8 6½	12 11	13 6½
9 8	14 3½	14 7½	7 6½	11 3½	12 3	8 6	12 9½	13 6½
9 11	14 9½	14 4½	7 6½	11 4	11 9½	8 7½	13 2½	13 3
9 11½	14 8½	14 2	7 8½	11 7½	11 10½	8 8½	13 3½	13 2
9 7½	14 2	15 1½	7 6½	11 3½	13 1½	8 4½	12 7½	13 11½
10 2	14 7½	15 11½	8 3	12 0½	13 8½	8 11½	13 2½	14 8½
10 4½	15 2	15 6	8 4½	12 3½	13 2½	9 3½	13 11	14 3½
10 7½	15 3½	15 5½	8 6	12 6½	13 6½	9 3½	13 11½	14 4½
10 6½	15 1½	16 0½	8 6	12 5½	14 5½	9 1½	13 7½	15 0½
10 10½	15 9½	16 6½	9 0	13 1½	15 4½	9 3½	13 9	15 6½
11 1½	16 2½	16 5½	9 8	13 11	15 2	9 11	14 7	15 6
11 3½	16 8½	17 1½	9 5½	14 2½	15 6	10 0½	15 2½	15 10
11 6½	17 2	18 2	9 4½	14 1	16 6½	10 0	15 1	16 7½

relate to the years ended January, 1932 to 1938. production and proceeds see Notes to Table 24.

TABLE 26.—*Output, Costs of Production, Proceeds and Profits*

[The figures included in respect of South Wales and

*Note.*—The particulars are based partly upon the returns made for the purpose of wages Colliery Owners. The definition of the items of cost and proceeds is similar to that of in the item "Wages," and the "proceeds of miners' coal," so far as it is supplied at special The proceeds and the costs of raising ancillary minerals at coal mines are included.

	Quarter ended 31st March.		Quarter ended 30th June.	
Percentage proportion of the Industry to which the particulars relate ..	%		%	
	97		97	
<b>Output of Coal :—</b>	Tons.		Tons.	
1. Tonnage of saleable coal raised	58,499,743		58,910,882	
2. Mine consumption .. ..	2,982,600		2,934,633	
3. Miners' coal .. ..	1,176,088		1,034,405	
4. Tonnage disposable commercially	54,341,055		54,941,844	
	Amount.	<i>Per ton dis- posable com- mercially.</i>	Amount.	<i>Per ton dis- posable com- mercially.</i>
<b>Costs of Production :—</b>	£	<i>s. d.</i>	£	<i>s. d.</i>
5. Wages .. ..	25,219,616	9 3·38	27,260,701	9 11·08
6. Stores and Timber .. ..	4,509,687	1 7·92	4,900,496	1 9·41
7. Other Costs (management, salar- ies, insurances, repairs, office and general expenses, deprecia- tion, &c.) .. ..	6,467,158	2 4·56	6,664,509	2 5·11
8. Miners' Welfare Fund Contribu- tions .. ..	121,738	0 0·54	122,559	0 0·54
9. Royalties (including the rental value of freehold minerals where worked by the proprietor) ..	1,300,629	0 5·75	1,285,111	0 5·61
10. Total Costs .. ..	37,618,828	13 10·15	40,233,376	14 7·75
11. Deduct proceeds of miners' coal	232,510	0 1·03	187,604	0 0·82
12. Net Costs .. ..	37,386,318	13 9·12	40,045,772	14 6·93
<b>Proceeds :—</b>				
13. Commercial disposals .. ..	42,236,298	15 6·54	42,582,525	15 6·01
<b>Balance :—</b>				
14. Debits .. ..	—	—	—	—
15. Credits .. ..	4,849,980	1 9·42	2,536,753	0 11·08
<b>Numbers Employed, Shifts Worked, &amp;c. :—</b>				
16. Number of workpeople employed	725,392		741,469	
17. Number of man-shifts worked (including week-end and over- time shifts) :—				
(a) At the coal face .. ..	18,992,932		19,502,834	
(b) Elsewhere below ground ..	18,740,687		19,513,912	
(c) On the surface .. ..	11,009,545		11,410,601	
(d) Total above and below ground .. ..	48,743,164		50,427,347	
18. Number of man-shifts lost which could have been worked (in- cluding absences due to sick- ness or accident) .. ..	4,135,896		3,494,842	
19. Output per man-shift worked ..	cwts. 24·00		cwts. 23·36	
20. Earnings per man-shift worked (exclusive of allowances in kind)	<i>s. d.</i> 10 4·18		<i>s. d.</i> 10 9·74	
21. Value of allowances in kind per man-shift worked .. ..	0 4·95		0 4·52	

\* Particulars for each of the principal Coal Districts will be found in the White Paper

*of the Coal Mining Industry during the Year 1937.\**

Monmouthshire relate to the Year ended January, 1938.]

ascertainties for certain Districts, and partly upon other returns supplied by individual previous Summaries, *i.e.*, subsistence allowances to low-paid day-wage workers are included prices, are treated as a reduction of the cost of producing the coal disposed of commercially.

Quarter ended 30th September.		Quarter ended 31st December.		Year 1937.	
% 97		% 97		% 97	
Tons. 55,232,375 2,827,357 938,362 51,466,656		Tons. 60,549,286 3,034,532 1,227,199 56,287,555		Tons. 233,192,286 11,779,122 4,876,054 217,037,110	
Amount.	Per ton dis- posable com- mercially.	Amount.	Per ton dis- posable com- mercially.	Amount.	Per ton dis- posable com- mercially.
£ 25,906,631 5,278,860	s. d. 10 0·81 2 0·62	£ 28,181,090 6,192,651	s. d. 10 0·16 2 2·40	£ 106,568,038 20,861,694	s. d. 9 9·34 1 11·09
6,670,198	2 7·10	6,866,051	2 5·28	26,667,916	2 5·49
114,980	0 0·54	126,050	0 0·54	485,327	0 0·54
1,257,217	0 5·86	1,331,396	0 5·68	5,174,353	0 5·72
39,227,886 162,077	15 2·93 0 0·76	42,697,238 242,794	15 2·06 0 1·04	159,777,828 824,955	14 8·68 0 0·91
39,065,809	15 2·17	42,454,444	15 1·02	158,952,343	14 7·77
40,742,037	15 9·99	46,738,615	16 7·29	172,299,475	15 10·53
1,676,228	0 7·82	4,284,171	1 6·27	13,347,132	1 2·76
740,434		749,564		739,215	
18,517,180 18,980,517 11,115,391 48,613,088		19,933,130 20,261,573 11,776,240 51,970,943		76,946,076 77,496,689 45,311,777 199,754,542	
3,783,861		3,810,904		15,225,503	
cwts. 22·72		cwts. 23·30		cwts. 23·35	
s. d. 10 7·90 0 4·53		s. d. 10 10·14 0 4·97		s. d. 10 8·04 0 4·74	

issued quarterly, viz., Cmd. 5508, 5559, 5635 and 5698 and, for the year, Cmd. 5699.

TABLE 27.—*Tonnage of Coal Produced, Shipped Abroad, and Available for Consumption in Great Britain in the Years 1913, 1920, and from 1932.*

**A.—General Distribution of the Coal available.**

	1913.	1920.	1932.	1933.	1934.	1935.	1936.	1937.
	Million Tons.							
Output of Coal in Great Britain ..	287·35	229·42	208·73	207·11	220·73	222·25	228·45	240·41
Quantity Shipped Abroad:—								
Exports of Coal .. .. .	73·40	24·93	38·90	39·07	39·66	38·71	34·52	40·34
"    "    Coke .. .. .	1·24	1·67	2·23	2·28	2·19	2·45	2·31	2·45
"    "    Manufactured Fuel ..	2·05	2·26	0·76	0·80	0·73	0·71	0·51	0·68
Coal Shipped for the use of Steamers engaged in the Foreign Trade ..	21·03	13·91	14·21	13·46	13·49	12·53	11·95	11·70
Total Quantity of Coal Shipped Abroad* .. .. .	98·34	43·68	57·15	56·68	57·09	55·54	50·34	56·30
Coal, and the coal equivalent of coke and manufactured fuel imported and retained .. .. .	0·02	‡	0·03	0·04	0·05	0·06	0·18	0·11
Quantity of Coal available for Home Consumption for all purposes† ..	183·85	180·72	149·50	148·37	161·48	164·47	175·90	181·78
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Consumption per head of Population	89	85	67	66	71	72	77	79

\* Including the coal-equivalent of coke and manufactured fuel. In 1937, 67 tons of gas coke and 68 tons of other sorts of coke were obtained from every 100 tons of coal carbonised, and 94 tons of coal were used for every 100 tons of manufactured fuel made. See Tables 33, 34 and 35 and similar tables for previous years.

† These particulars relate to Great Britain only, the necessary adjustments having been made in respect of shipments to and from Ireland.

‡ Less than 5,000 tons.

**B.—Consumption of Coal in Great Britain.**

Consumer.	1913.	1920.	1932.	1933.	1934.	1935.	1936.	1937.
	i. Quantity (Million Tons).							
1. Gas Works (excluding the coal equivalent of gas coke exported)	16·7	16·88	16·37	16·16	16·66	16·73	17·76	18·17
2. Electricity Generating Stations belonging to authorised undertakings and to railway and tramway authorities .. .. .	4·9	7·36	9·81	10·33	11·17	12·24	13·60	14·75
3. Railway Companies (for locomotive use) .. .. .	13·2	13·42	11·70	11·67	12·17	12·29	12·75	13·05
4. Vessels engaged in the Coastwise Trade (bunkers) .. .. .	1·9	1·28	1·19	1·21	1·26	1·25	1·27	1·23
5. Iron Works (used in Blast Furnaces)*	21·2	17·83	6·53	7·37	10·47	10·79	12·84	14·39
6. Other Iron Works and Steel Works* (appx.)	10·2	12·79	5·16	5·92	7·02	7·47	8·25	8·91
7. Collieries (engine fuel) .. .. .	18·0	17·20	12·04	11·59	11·68	11·61	11·75	12·15
8. General Manufactures and all other purposes (including Domestic use)†	97·7	93·96	86·70	84·12	91·05	92·09	97·66	99·13
Total .. .. .	183·8	180·72	149·50	148·37	161·48	164·47	175·90	181·78
	ii. Percentage Proportion of Total.							
1. Gas Works .. .. .	9·1	9·4	10·9	10·9	10·3	10·2	10·1	10·0
2. Electricity Generating Stations belonging to authorised undertakings and to railway and tramway authorities .. .. .	2·7	4·1	6·6	7·0	6·9	7·4	7·7	8·1
3. Railway Companies (for locomotive use) .. .. .	7·2	7·4	7·8	7·8	7·5	7·5	7·3	7·2
4. Vessels engaged in the Coastwise Trade (bunkers) .. .. .	1·0	0·7	0·8	0·8	0·8	0·8	0·7	0·7
5. Iron Works (used in Blast Furnaces)*	11·5	9·8	4·4	5·0	6·5	6·6	7·3	7·9
6. Other Iron Works and Steel Works* (appx.)	5·5	7·1	3·4	4·0	4·3	4·5	4·7	4·9
7. Collieries (engine fuel) .. .. .	9·8	9·5	8·1	7·8	7·2	7·1	6·7	6·7
8. General Manufactures and all other purposes (including Domestic use)†	53·2	52·0	58·0	56·7	56·5	55·9	55·5	54·5
Total .. .. .	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

\* These figures cover only the coal, or its equivalent in coke, used in the manufacture of products coming within the purview of the British Iron and Steel Federation by whom the figures were supplied.

† These residuary figures are subject to the changes in the stocks of coal held by producers and consumers, as to which information is not available generally. The same considerations apply to the total consumption figures. The consumption of coal for domestic purposes in private houses, public buildings and institutions, including coal for domestic industries and miners' coal, was estimated after the war at 40,000,000 tons a year. Information as to domestic coal consumption in more recent years is not available.

DISTRIBUTION AND CONSUMPTION.

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TABLE 28.—Quantity and Declared Value of Fuel Exported to each Principal Destination from, and Total Imported and Retained in, Great Britain,\* and Quantity of Fuel Shipped for the use of Steamers, etc., engaged in the Foreign Trade (including Fishing Vessels), during the Year 1937.

Destination.	Coal.		Gas Coke.		Other Sorts of Coke.		Manufactured Fuel.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
EXPORTED (Produce of Great Britain and Northern Ireland).								
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Eire .. .. .	2,577,707	2,660,397	5,987	7,750	5,993	11,533	—	—
Channel Islands .. .. .	270,205	337,732	41	65	2,152	2,554	793	1,483
Gibraltar .. .. .	460,516	371,329	68	111	296	478	—	—
Malta and Gozo .. .. .	70,593	67,186	97	147	497	690	—	—
Palestine (including Trans-Jordan) .. .. .	75,211	72,469	321	595	75	249	—	—
Sierra Leone .. .. .	82,269	71,776	—	—	34	114	—	—
Nigeria (inc. British Cameroons) .. .. .	47,720	49,766	—	—	554	1,495	—	—
Anglo-Egyptian Sudan .. .. .	14,932	15,498	649	1,733	313	892	4,000	4,828
Mauritius and Dependencies .. .. .	103	129	141	386	362	821	8,757	9,750
Aden and Dependencies .. .. .	45,535	47,663	24	37	25	66	—	—
British India & Burma .. .. .	23,544	28,364	54	102	1,560	3,281	—	—
Straits Settlements & Dependencies (including Labuan) .. .. .	24,742	25,649	—	—	3,990	7,690	—	—
Ceylon and Dependencies .. .. .	46,900	46,734	—	—	229	558	—	—
Hong-Kong .. .. .	6,192	6,539	50	123	711	1,093	—	—
Canada .. .. .	1,062,128	1,409,554	—	—	5,141	4,055	—	—
Newfoundland and Coast of Labrador .. .. .	160,586	149,559	—	—	240	606	—	—
British West India Islands .. .. .	46,799	44,072	—	—	263	520	3,479	3,325
Falkland Islands .. .. .	7,001	7,886	104	182	—	—	—	—
Other British Countries .. .. .	109,046	120,974	357	890	12,114	22,499	7,071	7,858
Finland .. .. .	1,382,989	1,188,219	2,464	1,908	223,675	308,638	3,668	6,806
Estonia .. .. .	60,239	61,531	—	—	315	60	—	—
Latvia .. .. .	349,402	325,796	—	—	39,483	68,283	—	—
Lithuania .. .. .	217,924	211,111	—	—	9,955	16,902	—	—
Sweden .. .. .	3,307,086	2,752,504	10,564	6,856	137,653	180,121	2,555	4,599
Norway .. .. .	1,597,456	1,355,129	297,373	453,722	175,167	200,057	9,740	17,262
Denmark (including Faroe Islands) .. .. .	3,303,302	2,802,576	460,198	706,866	674,982	897,479	22,495	39,902
Iceland .. .. .	126,488	136,861	88	159	1,378	2,556	—	—
Germany .. .. .	3,284,165	2,709,188	—	—	144,190	190,114	—	—
Netherlands .. .. .	1,090,778	1,017,882	—	—	25,290	34,942	—	—
Belgium .. .. .	924,834	768,928	—	—	—	—	—	—
France .. .. .	8,865,459	8,399,042	—	—	12,675	13,731	315,952	335,864
Algeria .. .. .	772,948	641,039	—	—	623	1,162	40,937	43,452
Tunis .. .. .	172,582	152,157	—	—	769	593	31,705	36,174
French West and Equatorial Africa .. .. .	148,351	119,324	—	—	170	269	54,043	64,849
French Somaliland .. .. .	22,038	19,472	—	—	31	65	21,250	22,193
Syria .. .. .	5,959	5,778	259	486	334	704	17,665	18,411
Switzerland .. .. .	348,689	256,139	—	—	—	—	—	—
Portugal .. .. .	932,325	865,333	13,940	20,609	14,547	19,396	1,490	1,937
Azores .. .. .	18,090	18,368	—	—	250	471	—	—
Madeira .. .. .	71,648	65,690	—	—	220	432	100	140
Portuguese West Africa (excl. Angola) .. .. .	198,933	173,470	—	—	10	19	—	—
Angola .. .. .	5,008	6,070	—	—	198	575	—	—
Spain .. .. .	757,496	846,122	751	1,293	51,830	107,165	2,317	2,742
Canary Islands .. .. .	95,255	82,701	49	63	156	367	—	—
Spanish Ports in North Africa .. .. .	42,680	44,253	154	230	58	141	—	—
Italy .. .. .	2,207,982	2,268,538	—	—	—	—	—	—
Yugoslavia .. .. .	2,001	1,684	—	—	31,082	62,140	—	—
Greece .. .. .	116,603	136,714	937	494	2,837	1,351	2,700	3,425
Roumania .. .. .	5,181	7,146	—	—	—	—	—	—
Turkey .. .. .	—	—	—	—	—	—	—	—
Egypt .. .. .	1,409,562	1,292,886	—	—	826	1,832	—	—
Morocco .. .. .	34,412	36,793	—	—	195	280	12,555	13,615
United States of America .. .. .	108,630	175,092	—	—	29,120	41,436	—	—
Brazil .. .. .	603,381	591,142	500	776	4,863	7,955	66,387	50,956
Uruguay .. .. .	321,764	290,435	1,056	1,632	9,361	16,190	—	—
Argentine Republic .. .. .	2,202,835	2,192,147	1,025	1,648	17,908	36,097	—	—
Other Foreign Countries .. .. .	92,126	102,998	359	730	7,832	17,057	45,396	50,460
Total to British Countries .. .. .	5,131,429	5,533,276	7,893	12,121	34,549	59,134	24,100	27,244
Total to Foreign Countries .. .. .	35,206,601	32,120,253	789,717	1,197,472	1,617,703	2,226,160	650,955	712,787
Grand Total <sup>†</sup> .. .. .	40,338,030	37,653,529	797,610	1,209,593	1,652,252	2,285,294	675,055	740,031
SHIPPED FOR THE USE OF STEAMERS, etc., ENGAGED IN THE FOREIGN TRADE (including Fishing Vessels).								
Total Foreign Bunker Shipments .. .. .	11,708,008	†	—	—	—	—	50	†
IMPORTED AND RETAINED.								
Total .. .. .	16,921	20,691	7,193	10,379	52,335	63,584	586	7,487

\* And Northern Ireland.

† Not Recorded.

TABLE 29.—*Tonnage of Coal Exported to the various Regions Steamers, etc., engaged in the Foreign Trade (including Ports of Great*

Region to which Exported.	Year.	SHIPPED FROM EAST COAST OF			
		Scotland.		North East.	
		Tonnage.	Per-centage Pro-portion Shipped to each Region.	Tonnage.	Per-centage Pro-portion Shipped to each Region.
				(a) Tonnage of	
<b>Baltic Sea ; Soviet Union (Russia), Finland, Estonia, Latvia, Lithuania and Poland (including Dantzig), Sweden, Norway and Denmark (including Farøe Islands).</b>	1937	2,739,729	68·3	4,892,104	36·8
	1936	2,715,124	66·1	4,736,959	39·4
	1935	2,719,383	60·8	4,242,342	32·8
	1934	2,585,161	56·3	4,249,041	31·1
	1933	2,031,811	48·6	3,542,846	26·4
<b>North Sea, English Channel and Irish Sea ; Germany, Netherlands, Belgium, France, Switzerland, Channel Islands and Eire.</b>	1937	982,307	24·5	5,741,194	43·2
	1936	1,082,643	28·4	5,321,399	44·2
	1935	1,141,915	25·6	5,137,468	39·7
	1934	1,214,826	26·4	5,338,963	39·0
	1933	1,299,200	31·1	5,926,986	44·1
<b>Western Mediterranean ; Portugal, Spain, Italy, Malta, Gibraltar, Morocco, Spanish Ports in North Africa, Algeria, Tunis and Libya.</b>	1937	131,382	3·3	1,904,293	14·3
	1936	70,493	1·7	1,095,108	9·1
	1935	280,270	6·3	2,627,274	20·3
	1934	343,232	7·5	3,276,957	24·0
	1933	369,308	8·8	3,100,329	23·1
<b>Eastern Mediterranean ; Austria, Hungary, Czechoslovakia, Yugoslavia, Greece, Crete, Bulgaria, Roumania, European Turkey, Asiatic Turkey, Cyprus, Egypt and Anglo-Egyptian Sudan.</b>	1937	8,946	0·2	320,930	2·4
	1936	3,900	0·1	288,832	2·4
	1935	14,676	0·3	365,200	2·8
	1934	32,902	0·7	339,496	2·5
	1933	28,990	0·7	348,817	2·6
<b>West Coast of Africa, Azores, Madeira, Canary Islands and St. Helena.</b>	1937	10,509	0·3	178,050	1·3
	1936	3,352	0·1	201,330	1·7
	1935	3,261	0·1	146,295	1·1
	1934	2,999	0·1	131,730	1·0
	1933	3,007	0·1	111,542	0·8
<b>East Coast of Africa, Union of South Africa, Madagascar, Réunion, Mauritius and Dependencies, and Seychelles.</b>	1937	902	0·0	34,886	0·3
	1936	—	—	—	—
	1935	—	—	—	—
	1934	—	—	—	—
	1933	—	—	—	—
<b>Arabia, Indian Ocean and Continent, Malay Archipelago, Oceania and Further Asia.</b>	1937	—	—	31,173	0·2
	1936	—	—	21,831	0·2
	1935	—	—	3,598	0·0
	1934	—	—	1,488	0·0
	1933	—	—	—	—
<b>North and Central America .. .. .</b>	1937	100,919	2·5	120,541	0·9
	1936	207,479	5·1	281,348	2·3
	1935	256,958	5·7	314,046	2·4
	1934	364,552	7·9	269,270	2·0
	1933	363,873	8·7	323,787	2·4
<b>South America and Other Regions† .. .. .</b>	1937	36,574	0·9	78,786	0·6
	1936	21,873	0·5	90,401	0·7
	1935	54,862	1·2	110,109	0·9
	1934	52,764	1·1	60,996	0·4
	1933	83,644	2·0	79,966	0·6
<b>All Regions (Total Tonnage Exported and Percentage Proportion Shipped from each Group of Ports).</b>	1937	4,011,268	9·9	13,301,957	33·0
	1936	4,104,864	11·9	12,037,208	34·9
	1935	4,471,325	11·5	12,946,332	35·4
	1934	4,596,436	11·6	13,667,941	34·5
	1933	4,179,833	10·7	13,434,173	34·4
<b>Total Foreign Bunkers and Percentage Proportion shipped from each Group of Ports</b>				(b) Tonnage of Coal shipped for the use of	
	1937	1,025,919	8·8	1,820,265	15·5
	1936	1,172,019	9·8	2,155,384	18·0
	1935	1,252,804	10·0	2,396,687	19·7
	1934	1,262,207	9·4	2,717,852	20·2
	1933	1,214,839	9·0	2,707,045	20·1

\* And Northern Ireland.

† Including Falkland Islands, Southern Whale Fisheries,



of the World, and Tonnage of Coal shipped for the use of Fishing Vessels), from each of the Principal Groups of Britain, from 1933.

GREAT BRITAIN.		SHIPPED FROM WEST COAST OF GREAT BRITAIN.						Total Shipped from Great Britain* (including coal shipped from Ports other than those specified).	
Humber.		Bristol Channel.		North West.		Scotland.		Tonnage.	Percentage Proportion Shipped to each Region.
Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.	Tonnage.	Percentage Proportion Shipped to each Region.		
<b>Coal Exported.</b>									
1,748,582	42.0	376,905	2.3	31	0.0	243,314	18.6	10,218,891	25.3
1,073,735	35.9	288,111	2.2	—	—	167,128	14.5	9,123,586	26.4
958,676	29.2	220,457	1.4	2,076	0.3	185,020	14.9	8,480,374	21.9
1,090,579	33.2	238,280	1.6	21,443	4.7	208,717	16.8	8,574,686	21.6
857,308	26.4	239,860	1.5	6,042	1.0	89,281	7.9	6,686,136	17.6
1,675,899	40.2	7,233,257	44.6	947,538	96.9	656,713	50.2	17,361,837	43.0
1,339,621	44.9	5,678,627	43.1	759,204	96.8	700,288	50.6	14,987,180	43.4
1,516,426	46.2	5,407,659	34.6	705,211	96.4	568,234	43.6	14,614,587	37.7
1,336,537	40.7	5,428,891	34.1	370,180	81.9	379,115	28.8	14,265,795	36.0
1,461,880	44.9	5,799,559	36.1	517,071	86.5	428,926	38.4	15,691,863	40.2
197,283	4.7	2,994,741	18.5	221	0.0	227,993	17.4	5,455,913	13.5
56,603	1.0	2,132,296	16.2	—	—	51,632	4.5	3,417,161	9.9
62,433	1.9	4,266,531	27.3	4,071	0.6	258,319	19.8	7,505,648	19.4
105,634	3.2	4,851,701	30.6	12,158	2.7	473,428	35.9	9,086,050	22.9
156,082	4.8	4,568,748	28.6	6,595	1.1	407,773	26.6	8,646,311	22.1
55,277	1.3	1,204,068	7.4	22,694	2.3	19,877	1.6	1,631,792	4.1
38,817	1.3	1,070,886	8.1	16,983	2.2	24,337	2.1	1,469,947	4.3
87,245	2.7	1,607,395	10.3	13,509	1.8	18,402	1.4	2,161,038	5.6
88,900	2.7	1,256,973	7.9	26,063	6.3	23,294	1.8	1,791,198	4.5
105,467	3.3	1,100,442	6.8	50,420	8.4	6,810	0.6	1,646,401	4.2
40,518	1.0	450,077	2.8	112	0.0	5,561	0.4	685,052	1.7
24,589	0.8	297,793	2.2	5,474	0.7	1,191	0.1	538,830	1.6
20,946	0.7	383,977	2.5	4,249	0.6	513	0.0	559,272	1.4
11,995	0.4	294,540	1.8	4,483	1.0	—	—	445,783	1.1
16,268	0.5	373,007	2.3	3,468	0.6	—	—	507,323	1.3
—	—	84,564	0.5	—	—	9,232	0.7	129,584	0.3
—	—	25,666	0.2	—	—	—	—	25,666	0.1
—	—	22,991	0.1	—	—	—	—	22,991	0.1
—	—	32,199	0.2	—	—	—	—	32,199	0.1
—	—	35,858	0.2	—	—	—	—	35,859	0.1
4,742	0.1	156,888	1.0	2,034	0.2	1,888	0.2	199,772	0.5
6,819	0.2	73,925	0.6	24	0.0	14,498	1.2	117,102	0.3
—	—	79,525	0.6	7	0.0	10,719	0.8	93,850	0.2
—	—	93,435	0.6	8,496	1.9	19,211	1.5	122,630	0.3
7,891	0.2	108,393	0.7	6,604	1.1	16,677	1.5	139,565	0.4
40,790	1.0	981,930	6.0	654	0.1	143,039	10.9	1,390,122	3.5
46,945	1.6	1,117,502	8.5	319	0.0	184,276	15.9	1,888,459	6.3
73,774	2.3	1,353,697	8.6	384	0.0	234,764	18.0	2,235,898	6.8
60,874	1.9	1,388,874	8.7	869	0.2	193,311	14.7	2,279,552	6.8
91,830	2.8	1,564,127	9.7	638	0.1	160,801	14.4	2,505,856	6.4
405,608	9.7	2,740,808	16.9	4,568	0.5	1,725	0.1	3,388,067	8.1
400,681	13.4	2,478,507	18.8	2,497	0.3	12,484	1.1	3,006,453	8.7
558,216	17.0	2,293,481	14.7	2,271	0.3	19,042	1.5	3,040,566	7.9
586,612	17.9	2,333,047	14.7	8,097	1.8	20,471	1.5	3,061,987	7.7
557,474	17.1	2,274,172	14.2	7,097	1.2	6,808	0.6	3,009,063	7.7
4,168,709	10.3	16,223,236	40.2	977,852	2.4	1,309,342	3.2	40,338,030	100.0
2,987,810	8.7	13,163,313	38.1	784,501	2.3	1,155,874	3.3	34,519,394	100.0
3,279,716	8.6	15,635,713	40.4	731,778	1.9	1,305,013	3.4	38,714,104	100.0
3,281,131	8.3	15,917,940	40.1	451,789	1.1	1,317,367	3.3	39,659,890	100.0
3,254,200	8.3	16,064,166	41.1	597,935	1.5	1,116,076	2.9	39,007,926	100.0
<b>Steamers, &amp;c., engaged in the Foreign Trade (including Fishing Vessels).</b>									
2,571,999	22.0	3,014,017	25.8	1,632,010	14.1	940,377	8.0	11,703,003	100.0
2,478,396	20.7	2,715,222	22.7	1,664,531	13.9	952,880	8.0	11,947,625	100.0
2,689,975	21.6	2,753,111	22.0	1,692,232	13.6	979,165	7.8	12,526,170	100.0
2,738,115	20.3	2,946,939	21.8	1,923,325	14.3	1,067,947	7.9	13,487,222	100.0
2,841,270	21.1	2,977,766	22.1	1,877,225	13.9	1,054,408	7.8	13,457,081	100.0

Northern Whale Fisheries, Greenland and Iceland.

TABLE 30.—*Tonnage of Coal, Coke and Manufactured Fuel Exported from**Note.*—Owing to the territorial changes arising out of the Great War

Destination.	1909-1913.		1922.	1923.	1924.	1925.	1926.	1927.	1928.
	Yearly Average.	1913.							
<b>A.—Coal (Thousand)</b>									
<b>Europe and the Mediterranean.</b>									
Russia and Succession States ..	4,008	5,998	1,272	1,481	1,226	927	203	758	538
Sweden .. .. .	4,094	4,563	2,523	3,168	3,550	2,727	665	2,182	1,540
Norway .. .. .	2,069	2,298	1,567	1,610	1,822	1,750	789	1,574	1,117
Denmark (inc. Farøe Islands) ..	2,848	3,034	2,866	3,170	3,551	2,783	1,093	2,150	1,731
Germany .. .. .	8,999	8,952	8,346	14,806	6,824	4,165	1,518	4,241	5,368
Netherlands .. .. .	2,162	2,018	6,068	6,794	2,744	1,527	621	2,315	2,430
Belgium .. .. .	1,707	2,031	3,489	6,505	3,330	2,486	831	2,233	2,259
France .. .. .	10,647	12,776	13,579	18,827	14,535	10,235	3,792	9,262	9,065
Portugal .. .. .	1,024	1,202	784	766	886	850	331	850	962
Spain .. .. .	2,190	2,534	1,711	1,146	1,499	1,756	785	2,361	1,867
Italy .. .. .	9,183	9,647	6,342	7,607	6,706	6,811	3,143	6,792	6,822
Austria-Hungary .. .. .	951	1,057	3	—	—	—	—	—	11
Greece .. .. .	604	723	429	463	642	609	290	679	637
Algeria .. .. .	1,055	1,282	1,032	1,060	1,244	1,120	524	1,462	1,737
Eire .. .. .	—	—	—	1,485	2,472	2,244	1,034	2,408	2,423
Channel Islands .. .. .	169	168	161	164	177	193	111	215	192
Gibraltar .. .. .	307	355	689	453	577	473	151	354	373
Malta and Gozo .. .. .	492	700	214	298	333	225	85	244	160
Egypt (inc. Anglo-Egyptian Sudan) .. .. .	2,872	3,162	1,762	1,707	1,813	1,980	1,029	2,200	2,222
Other European and Mediterranean Countries .. ..	861	888	720	688	805	899	373	928	894
<b>Total .. .. .</b>	<b>56,242</b>	<b>63,393</b>	<b>53,557</b>	<b>72,198</b>	<b>54,736</b>	<b>43,760</b>	<b>17,368</b>	<b>43,208</b>	<b>42,148</b>
<b>Africa and Asia.</b>									
Canary Islands .. .. .	930	1,115	525	611	687	486	232	532	448
Azores and Madeira .. .. .	167	155	95	69	101	70	42	65	69
French West Africa .. .. .	111	149	119	144	113	90	53	131	271
Portuguese W. Africa & Angola ..	278	233	194	242	241	198	91	331	240
Aden and Dependencies .. .. .	170	181	93	64	79	71	26	62	50
British India and Burma .. .. .	217	179	999	85	101	94	15	56	28
Ceylon and Dependencies .. .. .	268	240	233	169	170	159	47	116	80
Straits Settlements and Dependencies (including Labuan) ..	25	30	75	20	45	56	5	85	59
Hong Kong .. .. .	35	52	34	17	40	38	13	57	24
Other Countries .. .. .	394	426	294	282	242	285	87	258	273
<b>Total .. .. .</b>	<b>2,595</b>	<b>2,760</b>	<b>2,661</b>	<b>1,703</b>	<b>1,819</b>	<b>1,547</b>	<b>611</b>	<b>1,693</b>	<b>1,542</b>
<b>South America.</b>									
Chile .. .. .	691	589	84	19	67	100	53	46	58
Brazil .. .. .	1,604	1,887	1,013	1,152	798	1,097	553	1,415	1,751
Uruguay .. .. .	895	724	503	405	420	373	154	391	308
Argentine Republic .. .. .	3,129	3,694	2,021	2,461	3,116	2,645	1,099	2,949	2,659
Other Countries .. .. .	71	65	70	126	92	98	57	181	178
<b>Total .. .. .</b>	<b>6,390</b>	<b>6,959</b>	<b>3,691</b>	<b>4,163</b>	<b>4,493</b>	<b>4,313</b>	<b>1,916</b>	<b>4,982</b>	<b>4,954</b>
<b>North and Central America.</b>									
Canada .. .. .	48	38	831	369	280	568	156	835	629
Newfoundland and Coast of Labrador .. .. .	37	56	82	50	17	64	1	43	45
United States of America .. .. .	11	6	3,100	758	101	379	431	122	374
British West Indies .. .. .	31	25	59	45	27	19	14	84	94
Other Countries .. .. .	51	47	68	53	27	17	15	26	16
<b>Total .. .. .</b>	<b>178</b>	<b>172</b>	<b>4,140</b>	<b>1,275</b>	<b>452</b>	<b>1,047</b>	<b>617</b>	<b>1,110</b>	<b>1,158</b>
<b>Other Destinations .. .. .</b>	<b>116</b>	<b>116</b>	<b>149</b>	<b>120</b>	<b>151</b>	<b>150</b>	<b>84</b>	<b>156</b>	<b>249</b>
<b>Grand Total .. .. .</b>	<b>65,521</b>	<b>73,400</b>	<b>64,198</b>	<b>79,459</b>	<b>61,651</b>	<b>50,817</b>	<b>20,596</b>	<b>51,149</b>	<b>50,051</b>

\* Up to 1st April, 1923, the figures cover exports from Great Britain and Ireland and shipments of coal, coke and manufactured fuel from Great Britain and Northern Ireland and shipments

*Great Britain\* to the Principal Destinations from 1909 to 1913 and from 1922.*

comparisons between pre- and post-war figures are not in all cases exact.

1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	Destination.
<b>Tons).</b>									
712	547	357	946	1,063	1,506	1,468	1,774	2,011	<b>Europe and the Mediterranean.</b>
2,336	1,767	1,074	1,365	1,984	2,610	2,527	2,693	3,307	Russia and Succession States.
1,444	1,202	647	867	983	1,371	1,311	1,327	1,597	Sweden.
2,194	1,921	1,590	2,090	2,857	3,088	3,175	3,330	3,303	Norway.
5,521	4,926	3,769	2,308	2,360	2,541	2,885	3,046	3,284	Denmark (inc. Farøe Islands).
3,123	2,860	2,274	1,770	1,587	1,617	1,503	1,310	1,091	Germany.
4,140	3,445	1,979	1,591	1,431	972	631	524	925	Netherlands.
13,045	12,969	10,554	8,886	8,696	7,669	7,130	7,146	8,865	Belgium.
1,050	1,136	1,024	906	992	1,028	1,039	1,002	932	France.
1,783	1,712	1,310	1,079	1,077	1,341	1,243	732	757	Portugal.
7,095	7,167	5,908	5,054	4,793	4,699	3,189	60	2,208	Spain.
4	—	—	—	7	16	—	—	—	Italy.
589	530	354	166	132	179	186	121	117	Austria-Hungary
1,808	1,435	1,292	1,222	1,013	1,060	1,018	875	773	Greece.
2,456	2,469	2,425	1,930	1,255	1,040	2,068	2,459	2,578	Algeria.
209	238	211	215	221	232	266	247	270	Eire.
348	210	138	204	267	458	548	395	461	Channel Islands.
185	103	93	94	81	71	74	76	71	Gibraltar.
2,303	1,817	1,513	1,279	1,302	1,448	1,757	1,260	1,424	Malta and Gozo.
1,033	862	801	759	776	781	727	621	694	Egypt (inc. Anglo-Egyptian Sudan).
51,378	47,316	37,313	32,731	32,870	33,718	32,761	28,998	34,668	Other European and Mediterranean Countries.
456	364	342	281	247	205	228	128	95	<b>Total.</b>
67	56	48	40	58	59	66	63	90	<b>Africa and Asia.</b>
216	146	105	81	95	84	115	185	148	Canary Islands.
300	177	145	67	67	47	62	67	204	Azores and Madeira.
62	32	18	24	21	15	19	12	46	French West Africa.
22	18	17	12	3	2	8	12	24	Portuguese W. Africa & Angola.
112	80	41	37	41	35	23	21	47	Aden and Dependencies.
91	30	23	37	47	46	24	8	25	British India and Burma.
6	6	19	17	6	4	4	6	6	Ceylon and Dependencies.
374	304	165	130	94	95	117	127	310	Straits Settlements and Dependencies (inc. Labuan).
1,706	1,213	923	726	679	592	666	629	995	Hong Kong.
40	2	6	1	—	—	1	—	—	Other Countries.
1,809	1,204	664	815	735	717	606	632	603	<b>Total.</b>
395	301	263	291	270	267	258	286	322	<b>South America.</b>
2,799	2,688	2,091	1,846	1,852	1,937	2,014	1,965	2,203	Chile.
228	127	43	10	19	16	16	10	14	Brazil.
5,271	4,322	3,067	2,963	2,876	2,937	2,895	2,893	3,142	Uruguay.
745	975	906	1,615	1,722	1,747	1,668	1,285	1,062	Argentine Republic.
23	48	68	137	171	157	177	202	161	Other Countries.
335	393	301	234	242	168	187	134	109	<b>Total.</b>
46	31	58	187	190	153	161	175	47	<b>North and Central America.</b>
23	15	27	205	181	57	43	43	11	Canada.
1,172	1,462	1,360	2,378	2,506	2,280	2,236	1,839	1,390	Newfoundland and Coast of Labrador.
740	561	87	101	137	133	156	160	143	United States of America.
60,267	54,874	42,750	38,899	39,068	39,660	38,714	34,519	40,338	British West Indies.
									Other Countries.
									<b>Grand Total.</b>

between Great Britain and Ireland are excluded. From 1st April, 1923, the figures cover shipments from these countries to Eire are included as exports.

TABLE 30.—

Destination.	1909-1913.		1922.	1923.	1924.	1925.	1926.	1927.	1928.
	Yearly Average.	1913.							
<b>B.—Coke. (Thousand)</b>									
<b>Europe and the Mediterranean.</b>									
Soviet Union (Russia) ..	56	96	20	10	47*	41	13	29	102
Sweden ..	198	257	469	531	624	344	97	225	467
Norway ..	140	158	269	265	314	256	112	286	349
Denmark (inc. Farøe Islands) ..	187	229	716	682	863	614	244	670	821
Germany ..	23	20	241	1,210	238	35	16	43	158
Netherlands ..	14	11	160	292	34	12	4	10	17
France ..	10	6	54	298	27	12	3	4	5
Portugal ..	28	30	—	13	13	11	6	13	18
Spain ..	115	101	69	52	102	118	46	156	146
Italy ..	55	70	102	85	142	202	30	105	131
Austria-Hungary ..	18	5	—	—	—	—	15†	23	49
Greece ..	19	20	12	15	22	26	12	23	29
Roumania ..	20	30	—	3	13	1	6	—	6
Egypt (inc. Anglo-Egyptian Sudan) ..	25	24	8	7	11	4	3	4	5
<b>America.</b>									
United States of America ..	17	9	63	42	47	115	71	22	50
Chile ..	16	12	39	23	22	25	5	9	8
Brazil ..	11	14	8	13	21	21	9	16	27
Uruguay ..	12	8	—	3	5	5	2	6	7
Argentine Republic ..	22	25	14	17	23	22	10	23	25
<b>Other Destinations</b> ..	<b>100</b>	<b>110</b>	<b>270</b>	<b>409‡</b>	<b>244‡</b>	<b>248‡</b>	<b>60</b>	<b>135</b>	<b>174</b>
<b>Grand Total</b> { Gas ..	1,086	1,235	911	1,224	964	889	387	995	996
{ Other Sorts ..			1,603	2,746	1,848	1,223	377	807	1,598
<b>C.—Manufactured Fuel.</b>									
<b>Europe and the Mediterranean.</b>									
France ..	192	252	239	326	167	180	51	265	101
Spain ..	161	189	104	70	67	62	28	55	41
Italy ..	232	249	143	117	174	145	70	151	145
Greece ..	21	17	15	10	20	42	12	67	34
Turkey ..	37	32	—	3	1	—	3	3	2
Egypt (inc. Anglo-Egyptian Sudan) ..	42	77	46	26	54	35	12	12	13
Tunis ..	48	69	40	39	39	31	14	27	20
Algeria ..	164	215	190	174	207	153	76	179	151
Morocco ..	6	15	51	38	47	48	29	46	23
<b>America.</b>									
Venezuela ..	11	11	—	—	—	—	—	12	17
Chile ..	138	155	17	10	8	33	10	36	34
Brazil ..	187	224	91	60	113	199	92	225	187
Argentine Republic ..	31	80	13	—	4	28	27	129	127
<b>Other Destinations.</b>									
French West & Equatorial Africa ..	32	29	29	30	22	42	15	23	19
All Other Destinations ..	333	439	249	164	144	163	64	119	118
<b>Grand Total</b> ..	<b>1,635</b>	<b>2,053</b>	<b>1,227</b>	<b>1,067</b>	<b>1,067</b>	<b>1,161</b>	<b>503</b>	<b>1,349</b>	<b>1,032</b>

\* In 1924 and subsequent years the particulars relate to Finland except those for 1925 and 1926 and are included. † In 1926 and subsequent years the particulars relate to Yugoslavia. ‡ Including 1924) and 79,000 (in 1925).

continued.

1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	Destination.
Tons.)									
56	74	50	50	56	57	151	170	226	Europe and the Mediterranean.
523	439	445	312	276	194	208	131	148	Finland.*
381	326	378	355	402	356	422	419	473	Sweden.
903	743	814	817	775	832	987	1,137	1,135	Norway.
212	166	236	103	91	115	198	170	144	Denmark (inc. Farøe Islands).
13	12	16	32	83	70	46	38	25	Germany.
30	41	14	9	5	18	12	7	13	Netherlands.
22	22	20	25	28	32	35	28	28	France.
200	173	69	48	52	50	55	32	53	Portugal.
194	125	127	181	167	105	30	—	—	Spain.
49	41	47	21	64	92	77	11	31	Italy.
29	34	25	31	16	9	7	—	—	Yugoslavia.†
5	5	—	4	3	2	—	—	—	Greece.
4	5	6	3	4	3	2	2	2	Roumania.
36	40	39	67	98	96	71	51	29	Egypt (inc. Anglo-Egyptian Sudan).
11	8	—	—	1	1	3	1	1	America.
36	13	8	10	17	13	8	5	5	United States of America.
10	12	10	9	10	10	8	11	10	Chile.
25	19	21	16	11	15	18	18	19	Brazil.
165	165	73	139	126	123	111	83	104	Uruguay.
1,243	916	977	865	803	814	865	871	798	Argentine Republic.
1,661	1,547	1,421	1,367	1,482	1,379	1,584	1,443	1,652	Other Destinations.
									Gas. } Grand Total.
									Other Sorts. }
(Thousand Tons.)									
149	173	104	96	82	111	107	120	316	Europe and the Mediterranean.
22	20	14	15	18	21	20	11	2	France.
155	144	141	134	130	131	64	—	—	Spain.
41	41	31	21	4	3	2	6	3	Italy.
—	1	—	—	—	—	—	—	—	Greece.
16	9	7	6	4	14	19	8	4	Turkey.
29	34	32	28	31	18	28	28	32	Egypt (inc. Anglo-Egyptian Sudan).
172	138	62	55	72	75	79	49	41	Tunis.
42	31	28	27	18	18	12	14	13	Algeria.
25	14	12	15	10	6	8	13	11	Morocco.
12	2	—	1	—	7	1	1	1	America.
221	145	75	64	84	40	42	63	66	Venezuela.
172	104	172	198	268	197	221	101	—	Chile.
44	49	16	40	11	22	30	31	54	Brazil.
131	101	66	60	63	66	74	70	132	Argentine Republic.
1,231	1,008	760	760	795	729	707	515	675	Other Destinations.
									French West & Equatorial Africa.
									All Other Destinations.
									Grand Total.

when 4,000 tons and 8,000 tons of coke, respectively, were exported to the Soviet Union (Russia) the following tonnages exported to Belgium in the years specified : 261,000 (in 1923); 65,000 (in

TABLE 31.—Quantity and Declared Value (f.o.b.) of Coal Exported from Great Britain and Northern Ireland during the Year 1937, distinguishing the Kind and Quality of the Coal Exported.

Kind of Coal.	Quality of Coal.				
	Small.	Sized.	Through and Through.	Large.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.
Anthracite .. ..	1,093,035	1,996,978	—	715,833	3,805,846
Steam .. ..	4,151,085	8,500,353	3,847,743	10,904,497	27,403,678
Gas .. ..	96,958	1,083,494	2,735,794	107,340	4,023,586
Household .. ..	—	376,614	—	1,209,727	1,586,341
Other Sorts .. ..	657,983	276,283	2,579,408	4,905	3,518,579
Total .. ..	5,999,061	12,233,722	9,162,945	12,942,302	40,338,030
	Percentage Proportion.				
	%	%	%	%	%
Anthracite .. ..	2·7	4·9	—	1·8	9·4
Steam .. ..	10·3	21·1	9·5	27·0	67·9
Gas .. ..	0·2	2·7	6·8	0·3	10·0
Household .. ..	—	0·9	—	3·0	3·9
Other Sorts .. ..	1·7	0·7	6·4	0·0	8·8
Total .. ..	14·9	30·3	22·7	32·1	100·0
	Value f.o.b.				
	£	£	£	£	£
Anthracite .. ..	549,782	3,117,766	—	1,185,545	4,853,093
Steam .. ..	3,031,426	7,849,036	3,287,168	10,638,694	24,806,324
Gas .. ..	66,654	959,819	2,255,978	98,153	3,380,604
Household .. ..	—	405,115	—	1,334,636	1,739,751
Other Sorts .. ..	460,201	251,526	2,155,553	6,477	2,873,757
Total .. ..	4,108,063	12,583,262	7,698,699	13,263,505	37,653,529
	Average Value per ton, f.o.b.				
	s. d.	s. d.	s. d.	s. d.	s. d.
Anthracite .. ..	10 1	31 3	—	33 1	25 6
Steam .. ..	14 7	18 6	17 1	19 6	18 1
Gas .. ..	13 9	17 9	16 6	18 3	16 10
Household .. ..	—	21 6	—	22 1	21 11
Other Sorts .. ..	14 0	18 2	16 9	*	16 4
Total .. ..	19 8	20 7	16 10	20 6	18 8

\* Less than 5,000 tons exported.

TABLE 32.—Coal, Coke and Patent Fuel Transported by Sea, Rail and Canal, etc., from 1928.

(a) Tonnage of Coal Shipped Coastwise and for the use of Vessels engaged in Coastwise Trade, from each of the Principal Groups of Ports of Great Britain and Northern Ireland.

Year.	Shipped from East Coast of Great Britain.						Shipped from West Coast of Great Britain.						Shipped from Great Britain and Northern Ireland (including shipments from Ports other than those specified). Total.
	Scotland.		North East.		Humber.		Bristol Channel.		North West.		Scotland.		
	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	Tonnage.	Percentage of Total.	
(a) Cargo Shipments.													
1928 .. .. .	2,151,088	12.5	9,864,248	57.4	1,161,457	6.8	1,668,579	9.7	1,047,932	6.1	1,244,532	7.2	17,186,109
1929 .. .. .	2,260,909	11.9	11,373,555	60.0	992,657	5.2	1,735,554	9.2	1,129,750	6.0	1,397,625	7.4	18,947,454
1930 .. .. .	2,336,834	12.7	10,801,044	58.6	1,091,988	5.9	1,608,235	8.7	1,109,208	6.0	1,393,480	7.6	18,419,564
1931 .. .. .	2,280,647	12.4	10,763,666	58.6	1,305,357	7.1	1,447,204	7.9	1,010,122	5.5	1,457,208	7.9	18,381,217
1932 .. .. .	2,702,418	14.3	10,817,548	57.2	1,297,214	6.9	1,366,147	7.2	949,082	5.0	1,618,589	8.6	18,915,908
1933 .. .. .	2,835,852	14.6	11,297,487	57.9	1,262,218	6.5	1,310,865	6.7	917,050	4.7	1,710,350	8.8	19,496,673
1934 .. .. .	2,983,126	14.0	12,653,121	59.3	1,240,425	6.8	1,559,359	7.3	1,007,950	4.7	1,748,603	8.2	21,352,267
1935 .. .. .	2,609,046	11.9	13,412,587	61.1	1,171,026	5.3	1,844,796	8.4	1,028,706	4.7	1,739,431	7.9	21,961,960
1936 .. .. .	2,836,338	12.0	14,625,790	61.6	1,205,707	5.1	2,145,202	9.0	1,022,109	4.3	1,788,924	7.6	23,740,121
1937 .. .. .	2,661,924	11.0	14,692,954	60.6	1,391,487	5.8	2,463,916	10.2	1,098,283	4.5	1,813,180	7.5	24,239,166
(b) Bunker Coal.													
1928 .. .. .	249,425	17.8	348,727	24.8	75,447	5.4	133,825	9.5	280,807	20.0	200,742	14.8	1,403,986
1929 .. .. .	276,708	17.8	403,681	26.0	69,482	4.5	149,186	9.6	306,261	19.7	214,208	13.8	1,550,728
1930 .. .. .	237,237	16.4	400,321	27.6	72,679	5.0	147,431	10.2	277,498	19.1	194,665	13.4	1,450,198
1931 .. .. .	213,811	16.0	370,671	27.7	71,396	5.3	136,179	10.2	259,052	19.3	186,614	13.9	1,339,115
1932 .. .. .	231,863	17.9	370,251	27.7	71,245	5.3	130,038	9.7	246,669	18.5	184,477	13.8	1,335,294
1933 .. .. .	234,111	17.4	382,526	28.4	72,495	5.4	140,507	10.4	241,854	17.9	178,892	13.1	1,347,664
1934 .. .. .	237,611	16.9	402,471	28.7	68,575	4.9	149,736	10.7	262,442	18.7	189,288	13.5	1,402,438
1935 .. .. .	223,525	16.0	411,029	29.4	66,885	4.8	149,556	10.7	256,802	18.4	190,014	13.0	1,397,256
1936 .. .. .	229,890	16.3	437,044	31.0	64,950	3.9	143,803	10.2	248,218	17.6	200,347	14.2	1,409,016
1937 .. .. .	217,719	16.0	401,374	29.5	58,109	4.3	144,305	10.6	234,147	17.2	190,388	14.0	1,361,185

(b) Tonnage of Coal, Coke and Patent Fuel Carried on British Railways, and Canals, Waterways, etc.

Carried by	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Rail.*										
Freight Traffic .. ..	187,328,581	207,130,109	193,288,726	173,680,226	167,193,574	165,451,965	173,988,041	174,817,181	177,514,747	169,149,337
Free-hauled Traffic ..	14,381,192	14,262,362	13,788,021	12,856,939	12,206,372	12,031,212	12,664,046	12,695,751	13,004,678	13,555,180
Total .. .. .	201,709,773	221,392,471	207,076,747	186,537,165	179,399,946	177,483,177	186,652,087	187,512,932	190,519,425	201,704,517
Canals, Waterways, etc.† ..	6,744,058	6,751,344	6,269,381	5,618,663	5,428,569	5,391,499	5,611,787	5,686,071	5,860,475	5,983,869

\* Excluding Manchester Ship Canal.

† Excluding Manchester Ship Canal and Lea and Stort Navigations.

DISTRIBUTION AND CONSUMPTION.

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**TABLE 33.—Tonnage of Coal Carbonised at Coke Ovens, and of Coke, Breeze and Gas obtained therefrom, and Number and Kind of Coke Ovens in use in Great Britain during the Year 1937.**

*Note.*—Particulars in respect of ovens situated at Gas Works are excluded from this Table but included in Table 34.

**(a) All Types of Ovens.**

District.	Quantity of Coal Carbonised.	Output of		Average Monthly Number of Ovens in use.			
		Coke.	Breeze.	Non-recovery		By-Product.	Total.
				Beehive.	Other kinds.		
	Tons.	Tons.	Tons.				
North East Coast (including Durham and North Riding of Yorkshire) .. .. .	7,711,806	5,509,387	220,212	288	—	2,277	2,565
Cumberland .. .. .	591,917	418,057	18,961	—	—	138	138
Lancashire and North Wales .. .. .	675,684	519,470	11,927	35	—	145	180
Yorkshire, Lincolnshire, Derbyshire, Northamptonshire, Nottinghamshire and Essex .. .. .	8,937,445	5,629,696	689,430	287	—	2,139	2,426
Staffordshire .. .. .	551,455	354,671	74,862	—	—	192	192
South Wales and Monmouthshire .. .. .	2,465,547	1,829,771	110,748	77	99	824	1,000
Scotland .. .. .	976,783	670,774	39,114	51	—	428	479
<b>Great Britain .. .. .</b>	<b>21,010,027</b>	<b>14,931,826</b>	<b>1,165,254</b>	<b>738</b>	<b>99*</b>	<b>6,143</b>	<b>6,980</b>
<i>Corresponding figures for 1936 .. .. .</i>	<i>20,059,666</i>	<i>13,751,470</i>	<i>1,068,444</i>	<i>679</i>	<i>102*</i>	<i>6,263</i>	<i>7,044</i>

\* Coppée (non-recovery) ovens.

**(b) By-Product Ovens.—(i) Coke and Breeze Production.**

District.	Quantity of Coal Carbonised.	Output of	
		Coke.	Breeze.
		Tons.	Tons.
North East Coast (including Durham and North Riding of Yorkshire) .. .. .	7,529,312	5,393,339	219,992
Cumberland .. .. .	591,917	418,057	18,961
Lancashire and North Wales .. .. .	654,493	506,735	10,912
Yorkshire, Lincolnshire, Derbyshire, Northamptonshire, Nottinghamshire and Essex .. .. .	8,805,801	5,556,160	687,795
Staffordshire .. .. .	551,455	354,671	74,862
South Wales and Monmouthshire .. .. .	2,371,473	1,768,728	110,153
Scotland .. .. .	950,128	652,935	37,833
<b>Great Britain</b> { Waste Heat Ovens .. .. .	4,023,993	2,721,924	256,875
{ Regenerative Ovens .. .. .	17,430,586	11,928,701	903,633
<b>Total .. .. .</b>	<b>21,454,579</b>	<b>14,650,625</b>	<b>1,160,508</b>
<i>Corresponding figures for 1936 .. .. .</i>	<i>19,637,277</i>	<i>13,486,968</i>	<i>1,065,166</i>

*Note.*—The average monthly number of ovens in use in 1937 included 1,434 Otto-Hilgenstock, 1,169 Simon-Carvés' 1,123 Koppers, 510 Becker, 443 Coppée, 408 Simplex, 309 Semet-Solvay, 280 Carlstill, 143 Heussener, 133 Wilputte 121 Kogag, 40 Collin, 24 Piette and 6 Cleveland.

Of the total number 1,919 were Waste Heat Ovens and 4,224 were Regenerative Ovens.

**(b) By-Product Ovens.—(ii) Gas : Production and Disposal.**

District.	Production and Disposal of Oven Gas.					Balance.
	Total Production.	Used by Coke Oven Owners.		Sold.		
		For Heating Ovens.	For all other purposes including supplies to Owners' Collieries, Works, &c.	To Gas Undertakings.	To other independent Undertakings.	
North East Coast (including Durham and North Riding of Yorkshire) .. .. .	82,910.1	43,886.8	20,314.0	6,734.9	4,679.5	2,294.9
Cumberland .. .. .	6,875.2	3,290.6	1,940.2	—	—	1,644.4
Lancashire and North Wales .. .. .	7,330.0	3,872.8	1,734.2	1,265.6	89.8	3,67.6
Yorkshire, Lincolnshire, Derbyshire, Northamptonshire, Nottinghamshire and Essex .. .. .	97,292.0	50,188.3	22,067.5	17,096.3	3,065.9	4,874.0
Staffordshire .. .. .	5,803.4	3,361.9	1,057.5	1,384.0	—	—
South Wales and Monmouthshire .. .. .	23,746.1	12,106.8	8,632.2	892.2	1,099.9	1,015.0
Scotland .. .. .	10,347.3	7,726.0	738.6	112.9	—	1,769.8
<b>Great Britain .. .. .</b>	<b>234,304.1</b>	<b>129,433.2</b>	<b>58,484.2</b>	<b>27,485.9</b>	<b>8,935.1</b>	<b>11,965.7</b>
<i>Corresponding figures for 1936 .. .. .</i>	<i>214,033.3</i>	<i>120,927.0</i>	<i>52,369.7</i>	<i>24,531.3</i>	<i>8,673.0</i>	<i>7,532.3</i>



TABLE 34.—Quantity of Coal used in the Manufacture of Gas, Quantity of Coke (including Breeze) made, and Quantity and Value at Works of the Coke (including Breeze) sold in Great Britain during the Year 1937. (Provisional).

District.	Quantity of Coal used in the Manufacture of Gas.	Quantity of Coke and Breeze made.	Quantity of Coke and Breeze sold.	Value at Works of Coke and Breeze sold.
	Tons.	Tons.	Tons.	£
England .. ..	17,025,469	11,493,080	7,580,815	9,829,007
Wales and Monmouthshire ..	423,300	274,506	151,407	190,825
Scotland. . . .	1,887,790	1,160,022	734,722	744,702
Isle of Man .. .	25,085	15,582	11,380	15,399
<b>Great Britain and the Isle of Man</b>	<b>19,361,644</b>	<b>12,943,190</b>	<b>8,478,324</b>	<b>10,779,933</b>
<i>Corresponding figures for 1936</i> ..	<i>19,054,776*</i>	<i>12,731,591*</i>	<i>8,417,149</i>	<i>9,625,324</i>

\* Revised figures.

NOTES.—1. Particulars of coal carbonised at coke ovens situated at Gas Works are included.  
2. The sales in 1937 included 5,934,828 tons of coke and 465,548 tons of breeze, the value of which, at works, was £8,099,815 and £171,508 respectively. Separate particulars of the quantity and value of coke and breeze making up the balance of sales were not supplied. The bulk of the coke and breeze not sold is used at the gas works for heating retorts in the production of coal gas, in the production of water and producer gas, and for driving engines, etc.

TABLE 35.—Quantity and Kind of Coal used in the Manufacture of Briquettes or Manufactured Fuel, and Quantity and Value of Briquettes produced therefrom at Works in Great Britain during the Year 1937.

District.	Briquettes or Manufactured Fuel made.		Quantity of Coal used in the Manufacture of Briquettes or Manufactured Fuel.				
	Quantity.	Value at Works.	Steam.	Household.	Anthracite.	Other sorts.	Total.
	Tons.	£	Tons.	Tons.	Tons.	Tons.	Tons.
England .. ..	45,239	61,296	16,716	24,066	1,966	—	42,748
Wales and Monmouthshire ..	727,187	744,779	605,373	—	300	76,566	682,239
Scotland .. . .	41,117	61,570	1,361	35,928	621	—	37,910
<b>Great Britain</b>	<b>813,543</b>	<b>867,645</b>	<b>623,450</b>	<b>59,994</b>	<b>2,887</b>	<b>76,566</b>	<b>762,897</b>
<i>Corresponding figures for 1936</i> ..	<i>713,778</i>	<i>653,432</i>	<i>514,670</i>	<i>75,918</i>	<i>2,263</i>	<i>74,806</i>	<i>667,657</i>

TABLE 36.—Quantity of Barytes (excluding Witherite) Raised in Great Britain, Imported and Retained, Exported, and Available for Consumption at Home from 1922.

Year.	Production.	Imports Retained.*	Total.	Exports (Home Produce).*	Available for Consumption at Home.
	Tons.	Tons.	Tons.	Tons.	Tons.
1922	31,728	34,245	65,973	4,410	61,563†
1923	29,607	37,063	66,670	5,254	61,416†
1924	43,097	39,037	82,134	5,515	76,619
1925	40,901	44,868	85,769	5,012	80,757
1926	35,237	38,868	74,105	4,179	69,926
1927	40,160	34,774	74,934	655	74,279
1928	41,857	36,511	78,368	4,713	73,650
1929	47,938	46,826	94,564	2,202	92,362
1930	50,610	47,257	97,867	1,449	96,418
1931	38,224	31,041	69,265	1,862	67,403
1932	50,381	23,588	73,969	2,156	71,813
1933	61,509	33,143	94,652	1,561	93,091
1934	63,582	35,699	99,281	2,389	96,892
1935	68,723	45,156	113,879	3,135	110,744
1936	64,319	52,806	117,125	4,161	112,964
1937	61,426	54,149	115,575	1,765	113,810

\* Including imports into, and exports from, Northern Ireland. For the years 1922 to 1926 the imports and exports of Blanc Fixé are also included as separate particulars are not available. In 1927 the imports and exports of the latter were 2,590 tons and 265 tons, respectively.

† Exclusive of barytes produced in Eire during 1922 and the first 3 months of 1923, the bulk of which was probably consumed in Great Britain. In 1921, 4,600 tons of barytes were obtained in the counties of Cork and Sligo.

TABLE 37.—Quantity of Iron Ore and Ironstone Raised in Great Britain,\* Imported and Retained, and Available for Consumption at Home from 1913.

Year.	Iron Ore and Ironstone Raised.					Iron Ore Imported and Retained.	Iron Ore and Ironstone Available for Consumption. ‡	
	West Coast Hematite (Non-Phosphoric).	Jurassic.		From Coal Measures.	Other Occurrences. †			Total.
		Cleveland.	Other Sorts.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
1913	1,767,088	6,010,800	6,555,484	1,342,053	115,919	15,991,344	7,441,063	24,013,498
1914	1,636,632	5,659,837	6,098,508	1,419,691	113,657	14,856,373	5,697,054	21,142,262
1915	1,656,494	4,797,094	4,498,697	1,123,650	139,531	14,215,526	6,197,140	21,083,597
1916	1,608,353	4,933,273	6,271,123	1,116,392	144,299	13,473,440	6,933,754	21,118,591
1917	1,569,324	4,832,148	7,034,967	1,219,753	165,072	14,321,264	6,189,655	21,650,933
1918	1,515,901	4,567,963	7,257,994	1,121,175	132,384	14,595,417	6,581,728	21,804,512
1919	1,213,677	3,718,017	6,164,242	1,041,231	102,826	12,239,993	5,200,746	17,696,668
1920	1,257,388	3,717,880	6,666,600	950,004	85,798	12,677,670	6,499,551	19,648,049
1921	335,649	1,003,949	1,857,189	229,515	44,214	3,470,516	1,887,642	5,572,922
1922	839,801	1,169,754	4,480,072	273,152	73,728	6,836,507	3,472,575	10,602,667
1923	1,190,036	2,079,964	6,964,745	548,794	91,672	10,875,211	5,866,467	16,985,710
1924	1,051,283	2,234,447	7,172,574	499,738	92,547	11,050,589	5,927,359	17,235,282
1925	951,873	2,284,186	6,464,081	343,021	99,717	10,142,878	4,381,896	14,728,684
1926	497,123	976,562	2,464,290	122,451	33,960	4,094,386	2,087,725	6,350,300
1927	1,240,990	2,529,894	7,013,005	297,707	125,005	11,206,601	5,163,489	16,577,846
1928	1,172,428	2,272,124	7,268,066	369,651	180,054	11,262,323	4,439,866	15,914,015
1929	1,391,756	2,673,903	8,524,102	417,041	208,141	13,214,943	5,689,342	19,148,705
1930	1,134,088	2,167,905	7,835,189	350,603	139,448	11,627,233	4,137,899	16,008,825
1931	709,143	1,496,748	5,330,286	72,657	17,046	7,625,860	2,118,716	9,944,287
1932	551,697	1,083,168	5,482,677	149,194	61,454	7,328,190	1,794,846	9,346,714
1933	632,894	1,012,753	5,614,976	94,691	106,406	7,461,720	2,706,996	10,389,541
1934	813,199	1,641,921	7,840,703	142,963	148,060	10,586,846	4,358,979	15,193,740
1935	839,915	1,640,093	8,102,195	167,072	146,110	10,895,385	4,546,937	15,670,923
1936	879,907	1,848,490	9,568,886	174,165	229,938	12,701,386	5,960,385	18,891,928
1937	856,905	2,036,671	10,882,227	178,645	260,547	14,214,995	7,038,747	21,550,201

\* Including particulars for Ireland up to the year 1921.

† Not including iron ore and ironstone used otherwise than for iron-making.

‡ Including "Purple Ore," or residue of cupreous iron pyrites, imported. Allowance has also been made for British iron ore exported.

NOTE.—The average percentage of metal in the mineral varies in the case of British iron ore and ironstone from about 20 to 55 per cent. and averaged 30 per cent. of the clean raw mineral. Imported ore is mainly hematite and contains more than 50 per cent. of iron. In 1937 the quantity of iron contained in the British iron ore and ironstone raised was 4,264,000 tons. Together with the metal equivalent of the iron ore imported, the residue of cupreous iron pyrites imported, and allowing for a small quantity of British iron ore exported, the quantity of iron contained in the iron ore and ironstone available for consumption at home is estimated at eight million tons, approximately. In the production of pig iron, cinder, scale and scrap are used in addition to iron ore.

TABLE 38.—Quantity and Average Net Selling Value of Limestone, Igneous Rocks, Sandstone and Gravel and Sand obtained in 1937 and 1936, distinguishing the Principal Purposes for which they were used.

Purpose for which used.	1937.			1936.		
	Quantity.		Average Value per ton.	Quantity.		Average Value per ton.
	Tons.	Per-centage of Total.		Tons.	Per-centage of Total.	
<b>(a) Limestone (including Dolomite).</b>						
Lime and cement making .. .. .	5,672,000	29.9	s. d. 3 0	4,950,000	29.1	s. d. 2 11
Artificial stone .. .. .	54,000	0.3	4 1	42,000	0.2	4 0
Concreting* .. .. .	735,000	3.9	3 5	535,000	3.1	3 3
Building stone (including monumental stone)	164,000	0.9	30 8	194,000	1.1	25 8
Paving, kerbs, etc. .. .. .	10,000	0.1	20 4	12,000	0.1	19 7
Roadmaking and ballasting .. .. .	7,194,000	38.0	4 4	6,918,000	40.6	4 4
As a fluxing agent .. .. .	2,869,000	15.1	3 3	2,447,000	14.4	3 0
As a refractory material (Dolomite)	676,000	3.6	3 3	615,000	3.6	3 3
Chemical industries .. .. .	1,186,000	6.2	4 0	1,013,000	6.0	4 0
Glassmaking .. .. .	116,000	0.6	5 2	107,000	0.6	5 3
Other uses and mineral not classified ..	259,000	1.4	7 5	202,000	1.2	6 8
<b>All Purposes .. .. .</b>	<b>18,935,000</b>	<b>100.0</b>	<b>3 11</b>	<b>17,035,000</b>	<b>100.0</b>	<b>3 11</b>
<b>(b) Igneous Rocks.</b>						
Building stone (including monumental stone)	90,000	0.9	24 7	76,000	0.8	35 3
Artificial stone .. .. .	370,000	3.6	5 1	264,000	2.7	5 0
Concreting* .. .. .	231,000	2.2	5 4	166,000	1.7	5 1
Roadmaking and ballasting .. .. .	9,562,000	91.3	5 7	9,211,000	92.7	5 4
Kerbs and sets .. .. .	181,000	1.7	36 9	180,000	1.3	33 1
Other uses and mineral not classified ..	36,000	0.3	4 5	34,000	0.3	3 11
<b>All Purposes .. .. .</b>	<b>10,470,000</b>	<b>100.0</b>	<b>6 3</b>	<b>9,931,000</b>	<b>100.0</b>	<b>6 1</b>
<b>(c) Sandstone.</b>						
Building stone (including monumental stone)	449,000	9.2	25 0	421,000	9.8	24 5
Artificial stone .. .. .	70,000	1.4	4 4	65,000	1.5	4 2
Concreting* .. .. .	625,000	12.7	4 4	552,000	12.9	4 3
Roadmaking and ballasting .. .. .	2,743,000	56.0	4 5	2,301,000	53.8	4 2
Kerbs, sets, flagstones, etc. .. .. .	200,000	4.1	28 0	203,000	4.7	26 8
As a refractory material (Ganister, Silica Stone and Silica Sand) .. .. .	715,000	14.6	7 4	638,000	14.9	7 4
Grindstones, pulpstones, scythestones, etc.	12,000	0.2	65 0	12,000	0.3	59 10
Other uses and mineral not classified ..	88,000	1.8	9 8	91,000	2.1	9 6
<b>All Purposes .. .. .</b>	<b>4,902,000</b>	<b>100.0</b>	<b>7 11</b>	<b>4,283,000</b>	<b>100.0</b>	<b>7 11</b>
<b>(d) Gravel and Sand.</b>						
Building (including brickmaking) .. ..	15,467,000	72.6	2 6	13,534,000	72.0	2 7
Artificial stone .. .. .	345,000	1.6	3 0	259,000	1.4	2 10
Cementing and Concreting* .. .. .	659,000	3.1	3 1	562,000	3.0	3 2
Roadmaking and ballasting .. .. .	3,758,000	17.6	3 1	3,441,000	18.3	3 2
Moulding and pig-bed sand .. .. .	865,000	4.1	3 5	802,000	4.3	3 4
Glassmaking .. .. .	132,000	0.6	4 0	129,000	0.7	4 0
Other uses and mineral not classified ..	81,000	0.4	3 9	64,000	0.3	4 8
<b>All Purposes .. .. .</b>	<b>21,307,000</b>	<b>100.0</b>	<b>2 9</b>	<b>18,791,000</b>	<b>100.0</b>	<b>2 9</b>

\* Including mineral disposed of for cementing and concreting when the ultimate use was unknown. Broken stone, etc., used for concreting in building and constructional operations (other than roadmaking) is also included.

TABLE 39.—Quantity and Declared Value of the Principal Minerals and Manufactures thereof (other than Coal) Imported and Retained in, and Exported from, Great Britain\* during the Year 1937.

Kind of Mineral or Manufacture.	Quantity.		Value.	
	Imported and Retained.	Exported. †	Imported and Retained.	Exported. †
(i) Metalliferous Ores and Manufactures thereof.				
<i>Iron and Steel.</i> —	Tons.	Tons.	£	£
Iron Ore and Concentrates :				
Manganiferous .. .. .	85,980	61	199,471	418
Other Sorts (except Chrome Iron Ore and Pyrites) ..	6,952,767	3,061	7,877,854	17,548
Iron and Steel, Scrap and Waste, fit only for the recovery of metal .. .. .	954,065	230,827	4,579,154	873,004
Iron and Steel and Manufactures thereof (Total) ..	2,025,921	2,574,079	19,663,498	48,370,349
<i>Manganese ore</i> .. .. .	283,458	‡	1,231,244	‡
<i>Chromium ore</i> (Chromite or Chrome Iron Ore) .. ..	44,770	‡	149,451	‡ 2
<i>Aluminium.</i> —				
Bauxite .. .. .	219,432	‡	302,536	‡
<i>Copper.</i> —				
Copper Ore (including Regulus and Matte), and Precipitate and Cement Copper .. .. .	\$ -70	553	\$ -3,808	19,443
Copper, Scrap and Old Metal, fit only for the recovery of metal .. .. .	3,602	12,832	173,255	648,888
Copper Manufactures (including unwrought, etc.) ..	317,587	37,910	18,204,782	2,758,572
Sulphate of Copper .. .. .	105	28,893	2,080	570,203
<i>Iron Pyrites</i> (including Cupreous Pyrites) .. .. .	399,441	5,480	512,336	1,845
<i>Lead.</i> —				
Lead Ore and Concentrates .. .. .	109	13,708	\$ -464	183,090
Lead Manufactures (including Pig Lead) .. .. .	339,012	13,489	7,774,872	473,626
Red Lead and Orange Lead .. .. .	1,706	5,815	43,119	191,091
White Lead (Basic Carbonate) dry .. .. .	3,675	1,511	111,998	58,431
<i>Tin.</i> —				
Tin Ores and Concentrates .. .. .	50,756	27	7,325,076	1,911
Tin Manufactures (including Soft Solder and Tin Blocks, Ingots, Bars and Slabs) .. .. .	8,356	17,547	2,112,114	4,106,917
<i>Arsenic</i> (except metallic).—				
White Arsenic .. .. .	4,329	71	38,697	1,158
Other Arsenic Compounds .. .. .	117	345	6,906	7,860
<i>Zinc.</i> —				
Zinc Ore and Concentrates .. .. .	150,138	23,028	732,018	138,291
Zinc or Spelter, and Manufactures .. .. .	182,870	7,306	4,374,646	233,606
Zinc Oxide .. .. .	927	14,990	15,329	340,076
(ii) Other Minerals.				
<i>Barytes</i> , not ground .. .. .	30,079	244	41,914	1,041
<i>Barytes</i> , ground .. .. .	24,070	1,521	88,948	9,577
<i>Cement-Gypseous</i> , including burnt Gypsum and Plaster of Paris .. .. .	26,886	9,628	42,156	36,059
<i>Gypsum</i> , unburnt (including Alabaster) .. .. .	239,034	‡	156,056	‡
<i>Winospar</i> .. .. .	‡	4,478	‡	9,405
<i>Boron Minerals</i> (Crude and Concentrates of Boracite and Rasorite) .. .. .	23,637	8	170,001	240
<i>Talc, Steatite and Soapstone.</i> —				
Not ground .. .. .	674	‡	5,958	‡
Ground (including French Chalk) .. .. .	29,076	112	123,439	2,223
<i>Salt</i> (Sodium Chloride).—				
Rock .. .. .	12,599	10,156	15,650	21,049
Vacuum .. .. .	5,013	91,826	11,602	273,390
Other .. .. .	31,508	168,703	37,461	431,156
<i>Chalk</i> , prepared (including Whiting) .. .. .	1,126	27,440	3,666	95,390
<i>Clay.</i> —				
Ball .. .. .	72	77,136	281	123,097
China .. .. .	243	534,573	1,521	926,565
Fireclay .. .. .	9,524	35,180	8,417	53,772
Other Sorts .. .. .	14,243	9,827	85,601	38,316
<i>Felspar</i> (including China Stone) .. .. .	24,627	9,109	47,648	19,650
<i>Sand</i> , unground (other than Monazite Sand)—				
Silica Sand, including Quartz Sand .. .. .	221,408	‡	138,253	‡
Other Sorts .. .. .	153,772	‡	109,194	‡
<i>Sand</i> , ground (including ground Silica, Silica Flour and ground Flint) .. .. .	24,211	2,434	41,133	13,111
<i>Stones and Slates</i> , wholly or mainly unmanufactured—				
Granite, raw in blocks .. .. .	19,422	327	61,443	811
Crushed Macadam and Chippings of Granite .. ..	314,471	258	172,833	358
Not elsewhere specified, including other Building Stone and Slate unworked and Quartzite .. .. .	5,479	3,508	32,448	6,685
<i>Stones and Slates</i> , wholly or mainly manufactured—				
Slates for Roofing .. .. .	25,660	4,566	122,202	50,538
All other Stones and Slates .. .. .	116,755	1,689	966,871	44,070

\* And Northern Ireland. † Produce of Great Britain and Northern Ireland. ‡ Particulars are not available, § Re-exports in excess of Imports.

TABLE 40.—Average Declared Value per ton, f.o.b., at each of the Principal Ports, of all classes of Coal (including Anthracite) Exported in each Month of 1937, together with the Annual Average Value for the Years 1937, 1936, 1935, 1934 and 1913.

Port of Shipment.	Average Declared Value per ton, f.o.b., of Coal Exported in															Year 1937.	Year 1936.	Year 1935.	Year 1934.	Year 1913.
	Jan., 1937.	Feb., 1937.	Mar., 1937.	April, 1937.	May, 1937.	June, 1937.	July, 1937.	Aug., 1937.	Sept., 1937.	Oct., 1937.	Nov., 1937.	Dec., 1937.								
<b>England and Wales.</b>	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Blyth .. ..	15 3	15 9	16 2	17 3	17 0	17 2	17 3	18 1	18 4	18 10	19 1	18 3	17 5	14 9	13 9	12 9	12 7			
Newcastle (including North and South Shields)	14 1	14 11	15 0	15 5	15 5	15 7	16 5	16 5	17 2	16 10	17 6	17 1	16 1	13 7	13 1	12 11	12 4			
Sunderland ..	15 0	14 11	15 2	15 0	15 7	15 9	15 9	16 5	16 11	17 0	16 8	17 2	16 0	14 3	13 10	13 10	12 11			
Hull .. ..	17 7	17 9	17 10	19 0	19 3	20 2	19 5	19 9	20 1	19 11	19 10	21 3	19 6	17 0	15 9	15 5	13 9			
Newport .. ..	18 0	17 11	18 2	18 6	19 1	18 2	17 9	19 3	19 10	20 4	20 3	21 0	19 1	17 10	17 4	17 2	15 3			
Cardiff .. ..	17 7	17 11	18 4	18 7	18 11	19 4	19 10	20 6	20 5	20 7	20 8	20 10	19 6	17 6	17 3	17 3	15 10			
Port Talbot ..	19 0	19 4	18 11	19 10	20 7	21 10	20 11	20 3	20 7	21 3	20 1	19 9	20 3	19 11	20 4	20 2	13 2			
Swansea .. ..	21 0	20 3	20 0	20 10	22 6	22 10	23 10	23 7	22 8	22 10	21 8	22 0	22 2	24 4	23 11	24 2	14 8			
Liverpool ..	22 11	22 11	22 9	22 10	22 4	22 0	22 3	22 2	22 0	22 7	23 6	24 10	22 9	22 2	19 6	19 0	14 11			
<b>Scotland.</b>																				
Glasgow .. ..	22 7	22 5	22 0	22 6	21 5	23 3	23 11	23 6	23 10	24 0	22 1	25 7	23 2	22 1	20 4	18 9	13 6			
Burntisland ..	16 0	16 8	16 10	18 0	17 11	19 4	18 8	18 1	17 11	17 9	17 2	17 11	17 9	14 9	13 4	13 4	12 9			
Leith .. ..	15 8	15 11	17 0	16 4	17 4	17 11	16 10	17 2	17 0	17 3	18 5	18 3	17 1	14 11	13 3	13 0	11 9			
Methil and Kirkcaldy ..	16 1	16 3	16 5	16 8	16 6	16 10	17 1	16 7	16 10	16 9	17 10	18 6	16 10	14 11	13 1	12 8	11 7			
<b>All Ports. (Annual Average.)</b>																				
1937 .. ..	17 1	17 4	17 5	18 0	18 7	18 11	19 0	19 1	19 5	19 4	19 6	19 8	18 8	—	—	—	—			
1936 .. ..	16 10	16 5	16 6	16 11	17 0	16 9	17 1	17 3	17 3	17 2	17 4	17 1	—	17 0	—	—	—			
1935 .. ..	16 1	16 2	15 9	15 11	16 4	16 4	16 5	16 2	16 7	16 8	16 6	16 8	—	—	16 4	—	—			
1934 .. ..	16 2	15 10	15 7	16 0	15 11	15 11	16 3	15 10	16 1	16 6	16 4	16 3	—	—	—	16 1	—			
1913 .. ..	13 5	13 6	13 8	14 0	14 0	14 1	13 11	13 10	13 10	13 10	13 10	13 11	—	—	—	—	13 10			

PRICES.

TABLE 41.—Average Declared Value per ton, f.o.b., and the Percentage of Proportion of each principal Kind of Coal Exported in 1913 and from 1927.

Period.	ANTHRACITE.			STEAM.				GAS.		HOUSE-HOLD.	OTHER SORTS.		
	Small.	Sized.	Large.	Small.	Sized.	Through and Through.	Large.	Sized.	Through and Through.	Large.	Small.	Through and Through.	
<b>A.—Average Declared Value per Ton, L.o.b.</b>													
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
Yearly Average:	13 11			10 10				12 5	15 5	*	12 4	13 6	* 12 4
1913 .. ..	10 0	38 8	33 4	12 9	16 8	15 7	19 6	18 6	16 2	20 8	13 11	16 0	
1927 .. ..	8 4	31 11	28 5	11 3	14 6	14 1	16 11	14 6	14 4	18 11	12 6	13 7	
1928 .. ..	8 10	31 2	30 4	11 9	15 4	14 8	17 6	15 0	14 8	20 3	12 6	14 2	
1929 .. ..	10 1	32 8	31 7	12 8	14 9	15 2	17 8	15 2	15 4	20 2	13 4	14 7	
1930 .. ..	8 7	32 4	31 5	11 8	14 1	14 1	17 6	14 8	14 7	20 7	12 5	13 5	
1931 .. ..	8 2	32 2	32 0	11 1	13 10	14 2	17 1	14 7	14 5	19 6	12 5	13 2	
1932 .. ..	7 10	32 1	33 0	11 1	13 8	14 3	16 11	14 7	14 6	19 1	11 10	12 11	
1933 .. ..	8 0	31 4	33 7	11 1	13 10	14 7	16 9	14 10	14 4	19 5	12 1	13 0	
1934 .. ..	8 5	30 11	34 3	11 3	14 3	14 8	17 0	14 10	14 4	18 11	12 6	13 3	
1935 .. ..	8 2	32 0	34 4	11 10	15 8	15 1	17 4	15 5	14 3	21 1	12 9	13 6	
1936 .. ..	10 1	31 8	33 1	14 7	18 6	17 1	19 6	17 9	16 6	22 1	14 0	16 9	
1937 .. ..	8 11	33 0	32 11	12 6	16 8	15 9	18 1	16 7	14 8	22 0	12 9	14 1	
Monthly Average:	8 7	32 0	32 5	13 3	17 0	16 1	18 2	16 6	15 3	22 0	12 7	15 5	
1937.	8 11	31 0	31 9	13 7	17 4	16 6	18 7	16 7	15 5	22 2	13 5	15 6	
January .. ..	9 4	31 5	33 0	13 10	18 1	16 8	19 0	17 5	15 4	22 0	13 4	15 10	
February .. ..	10 3	31 4	32 9	14 0	18 4	16 10	19 2	17 3	16 3	21 4	14 3	15 7	
March .. ..	10 4	31 2	34 3	14 6	18 7	17 1	19 2	17 11	16 3	21 7	13 4	16 1	
April .. ..	10 1	30 11	34 0	14 6	18 5	17 1	19 6	17 10	16 5	21 10	14 4	17 5	
May .. ..	10 0	30 10	33 3	14 11	19 0	18 2	19 8	18 3	16 9	21 9	13 5	16 11	
June .. ..	10 11	30 6	33 4	15 4	18 11	17 10	20 4	17 5	17 5	21 10	14 7	18 2	
July .. ..	10 7	30 7	32 7	15 5	19 2	17 5	20 6	18 3	17 9	21 11	15 2	17 6	
August .. ..	10 9	31 7	32 4	15 9	19 7	18 2	20 6	18 8	17 6	22 11	15 9	18 2	
September .. ..	11 1	31 10	33 7	16 2	19 6	17 10	20 11	19 9	17 5	23 8	15 4	18 4	
October .. ..													
November .. ..													
December .. ..													
<b>B.—Percentage Proportion of Total Tonnage Exported.</b>													
	%	%	%	%	%	%	%	%	%	%	%	%	
Year:	1.9			17.6				4.8	54.3	*	12.8	1.8	* 2.5
1913 .. ..	2.2	1.9	2.0	14.5	8.3	7.3	40.3	0.4	11.4	3.2	1.6	5.4	
1927 .. ..	1.9	2.7	1.8	12.8	10.5	9.2	37.1	1.0	11.0	3.2	1.4	5.7	
1928 .. ..	2.2	3.0	1.8	11.9	13.4	8.2	34.2	1.4	9.5	2.8	1.3	8.3	
1929 .. ..	1.9	3.5	2.1	10.9	14.5	8.3	32.8	1.5	9.6	3.1	1.4	8.6	
1930 .. ..	1.5	4.1	2.4	12.1	13.9	8.1	32.0	1.9	9.2	4.2	2.1	7.0	
1931 .. ..	1.4	5.8	2.8	10.9	16.9	8.2	31.6	2.2	7.9	3.1	3.5	4.6	
1932 .. ..	1.5	6.4	2.5	10.2	19.6	7.6	30.7	2.1	7.1	1.9	3.6	5.0	
1933 .. ..	1.6	6.3	2.5	8.9	22.1	8.6	29.9	2.0	6.4	1.5	2.9	5.8	
1934 .. ..	1.3	6.2	2.2	8.5	22.8	8.7	30.6	2.2	5.5	2.5	2.4	4.8	
1935 .. ..	1.4	6.0	2.2	8.8	23.7	10.1	27.7	2.6	5.2	3.4	2.3	4.1	
1936 .. ..													
1937 .. ..	2.7	4.9	1.8	10.3	21.1	9.5	27.0	2.7	6.8	3.0	1.7	6.4	
Month:	2.5	3.0	1.3	10.2	19.2	11.1	28.0	3.2	6.3	3.4	2.4	6.8	
March, 1937 ..	2.5	6.3	2.4	9.5	21.1	8.3	28.9	2.3	6.0	2.8	2.0	5.7	
June, 1937 ..	3.0	5.6	1.8	10.6	21.0	7.9	28.9	2.0	7.0	2.7	1.5	6.0	
September, 1937	3.0	4.3	1.2	11.7	20.7	11.0	25.3	2.9	5.9	2.9	1.6	7.0	
December, 1937													

\* Not available. The proportion of small (including sized) gas coal exported in 1913 was 1.3 per cent. of the whole, and of "other sorts" of coal 2.2 per cent. The corresponding figures in 1937 were 2.9 per cent. and 2.4 per cent., of which 2.7 and 1.7 per cent, respectively, was sized gas coal and small coal of "other sorts."

TABLE 42.—Market Quotations of various kinds of Coal during each fortnight of the Year 1937.  
 Note.—Extracted from the "Iron and Coal Trades Review," the "Colliery Guardian," and the "Coal and Colliery News."

Fortnight Ended	South Wales Large Steam for Export F.O.B.	South Wales Smokeless Seconds F.O.B.	Durham Gas Coal Best F.O.B.	Lancashire Best House on Wagon at Pit.	Yorkshire Haras at Pit.	Best Bright Coal at Pit (for London Market).*	Nottingham Best Brights at Pit (for London Market).	Nottingham Small Nuts at Pit (for London Market).	Fifeshire Steam Coal.	
									First Class.	Third Class.
									F.O.B. Methil or Burntisland.	
1937.										
January 14	18/3—18/11	18/9—18/10	18/6	28/0—29/0	No Quotations.	29/6	22/0—25/0	17/6—19/6	16/6—17/0	15/6—16/6
28	18/6—20/6	19/0—20/0	18/0—19/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	17/0	16/6
February 11	19/6—23/0	19/0—23/0	19/6—20/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	17/6—18/0	16/6—17/0
25	23/6—24/0	No Quotations	20/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	18/0	16/6—17/6
March 11	23/6—24/0	25/0	20/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	18/0—19/0	17/0—18/0
25	23/6—24/0	25/0	21/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	19/0	18/0
April 8	23/6—24/0	25/0	23/6	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	20/0	18/0—18/6
22	23/6—25/0	25/0—26/0	24/0—25/0	28/0—29/0	"	29/6	22/0—25/0	17/6—19/6	21/0	19/6—20/6
May 6	23/6—25/0	25/0—26/0	24/0	26/4—29/0	"	26/0—29/6	22/0—25/0	17/6—19/6	22/6—23/0	21/0—22/0
20	23/6—25/0	25/0—26/0	24/0	26/4—27/0	"	26/0	20/0—25/0	17/6—19/6	23/0	21/0—22/0
June 3	23/6—27/0	25/0—27/0	25/0	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	21/0—22/0
17	26/0—27/0	26/0—27/0	24/6—25/0	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	21/0—22/0
July 1	25/0—26/0	25/6—26/6	24/6	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	21/0—22/0
15	25/0—26/0	25/0—26/0	23/0	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	20/0—21/0
29	25/0—26/0	25/0—26/0	22/6	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	20/0—21/0
August 12	25/0—26/0	25/0—26/0	23/0—23/6	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	20/0—21/0
26	25/0—26/0	25/0—26/0	23/9	26/4—27/0	"	26/0	20/0—23/0	17/6—19/6	23/0	20/0—21/0
September 9	25/0—26/0	25/0—26/0	23/9	28/10—29/6	"	26/0—27/0	20/0—24/0	17/6—20/6	22/6	20/0—21/0
23	25/0—26/0	25/0—26/0	23/6—23/9	28/10—29/6	"	27/0	21/0—24/0	18/6—20/6	21/6—22/0	19/6—20/0
October 7	25/0—26/0	25/0	23/9	28/10—29/6	"	27/0—28/0	21/0—25/0	18/6—21/6	21/6—22/0	19/6—20/0
21	25/0—26/0	25/0	23/9	28/10—29/6	"	28/0	22/0—25/0	19/6—21/6	21/6	19/6—20/0
November 4	25/0	25/0	23/3	28/10—29/6	"	28/0	22/0—25/0	19/6—21/6	21/6	19/6—20/0
18	25/0	25/0	22/9—23/3	28/10—29/6	"	28/0	22/0—25/0	19/6—21/6	20/0—21/6	18/0—20/0
December 2	25/0	25/0	22/6—22/9	28/10—29/6	"	28/0—29/0	22/0—26/0	19/6—22/6	20/0—21/0	18/0—19/6
16	25/0	25/0	22/6—22/9	28/10—29/6	"	29/0	23/0—26/0	20/6—22/6	20/0	18/0—18/6
30	25/0	25/0	22/6	28/10—29/6	"	29/0	23/0—26/0	20/6—22/6	21/0—21/6	18/0—20/0

\* Information specially supplied.

PRICES.

TABLE 43.—*Plant and Equipment in use at Mines under the Coal Mines Act, in Great Britain in 1913, 1920 and each Year from 1928, so far as particulars are available.*

N.B.—Particulars of the number of machines and plant in use relate generally to the end of the year except in 1929 and following years, when particulars of Electric Motors and of Safety Lamps in use relate to 30th June

Year.	Number of Mines at Work.	Coal-cutting Machines.				Electric Motors in use.				Safety Lamps in use.			
		Total Number in use driven by		Coal cut by Machines.		Below-ground.		Above-ground.		Flame Lamps.		Electric Lamps.	
		Compressed Air.	Electricity.	Tonnage.	Percentage Proportion of Total Output.	Number.	Horse Power.	Number.	Horse Power.	Total.	Percentage Proportion of Total Safety Lamps in use.	Total.	Percentage Proportion of Total Safety Lamps in use.
1913 ..	3,267	1,590	1,305	24,368	3	} Not available.	371,417	} Not available.	256,652	740,001	95	37,823	5
1920 ..	2,838	2,918	2,153	30,194	13		618,763		461,944	635,127	72	245,900	28
1928 ..	2,539	3,545	3,586	61,388	26	19,548	897,660	17,147	824,672	416,018	53	375,186	47
1929 ..	2,419	3,574	3,787	71,950	28	20,268	918,116	17,530	835,588	401,510	51	383,333	49
1930 ..	2,328	3,597	4,040	75,756	31	21,589	954,784	18,390	861,680	379,551	49	389,238	51
1931 ..	2,243	3,345	4,026	78,864	35	21,858	960,921	18,804	872,615	337,345	47	387,251	53
1932 ..	2,158	3,167	3,970	80,286	38	22,282	970,131	19,476	885,131	295,521	43	391,142	57
1933 ..	2,126	2,938	4,211	87,826	42	22,914	984,408	20,309	904,194	270,417	41	391,272	59
1934 ..	2,123	2,955	4,451	103,701	47	24,310	1,022,104	21,032	927,082	242,901	38	394,820	62
1935 ..	2,075	2,837	4,635	113,265	51	25,480	1,057,004	21,980	953,328	222,541	36	397,206	64
1936 ..	2,080	2,803	4,797	125,570	55	27,206*	1,104,318*	22,875*	974,284*	209,539	34	407,318	66
1937 ..	2,120	2,784	4,997	137,118	57	28,930	1,151,665	23,880	1,010,350	177,048	28	461,609	72

Year.	Mechanical Conveyors in use Below-ground.					Mechanical Picks and Drills in use.			Coal Cleaning.					
	At Coal Face.†		Elsewhere.		Tonnage of Coal conveyed.	Percentage Proportion of Total Output.	Pneumatic Picks for		Drills for Boring Shot-holes.	Number of Plants in use.			Cleaned saleable Coal produced.	
	Driven by		Driven by				Coal getting.‡	Ripping, etc.		Washeries.	Dry Cleaning.	Froth Flotation.	Tonnage.	Percentage Proportion of Total Output.
1928 ..	1,311	892	317	336	Thousands.	12	934	1,318	5,504	527	53	5	Thousands.	25
1929 ..	1,534	1,064	350	270	27,976	14	1,383	1,622	5,876	562	74	6	60,326	28
1930 ..	1,676	1,315	394	362	37,150	17	2,214	1,953	6,057	583	91	6	72,715	30
1931 ..	1,661	1,476	394	422	42,495	22	2,557	2,173	6,112	570	109	6	66,655	30
1932 ..	1,665	1,600	381	474	47,308	25	2,665	2,243	6,069	594	128	6	71,576	34
1933 ..	1,839	1,878	446	593	52,666	30	3,576	2,367	6,392	604	141	5	77,470	37
1934 ..	1,942	2,148	534	745	62,156	37	4,465	2,709	6,615	611	151	5	87,458	40
1935 ..	2,133	2,480	630	897	81,493	43	5,524	3,088	6,857	622	151	5	91,919	41
1936 ..	2,199	2,767	670	1,091	95,611	48	6,464	3,450	7,447	617	154	9	98,537	43
1937 ..	2,281	3,006	757	1,256	109,318	51	7,621	3,824	7,747	606	153	18¶	105,214	44

\* Revised figures.

† The numbers of Conveyors in use at the Coal-face in 1913 and 1920 were 359 and 823, respectively.

‡ Including picks used for getting down coal in conjunction with coal-cutting machines. For the years 1930 to 1937, the numbers of such picks were 371, 347, 302, 596, 713, 967, 1,191 and 1,281 respectively.

§ Not available. See page 13 of 16th Annual Report, and page 16 of this volume.

|| In relation to the output of coal which is generally suitable for cleaning, i.e., fine or small coal, the proportion actually so treated is in general considerably higher than is indicated above by the percentage of the total output of coal.

¶ Including 9 plants of a type previously included under Washeries.



Coal conveyed; (d) Safety Lamps  
the Coal Mines Act in Great

Forest of Dean.	Somersetshire.	Bristol.	Kent.	South-Wales and Monmouthshire.
32	13	1	4	436

9	10	1	4	269
340	178	6	477	6,053
H.P.	H.P.	H.P.	H.P.	H.P.
3,754	1,905	—	3,896	87,388
150	120	12	864	875
1,591	2,673	165	10,484	87,240
535	127	30	540	2,559
—	—	—	40	56
28	112	—	109	241
271	77	—	7	3,458
6,327	5,014	207	15,940	181,817
670	—	—	2,300	58,345
407	130	—	2,450	40,306
644	145	—	10	32,678
581	242	95	1,740	34,216
1,151	473	—	4,892	114,797
3,453	990	95	11,392	280,342
9,780	6,004	302	27,332	462,159

December, 1937.)

4	4	1	4	114
—	—	—	—	20
17	4	2	14	435
—	1	—	—	64
17	5	2	14	102
—	—	—	—	417
17	5	2	14	519
Tons.	Tons.	Tons.	Tons.	Tons.
—	—	—	—	263,089
3,940	48,471	23,854	278,914	8,853,699
—	295	—	—	34,464
3,940	48,766	23,854	278,914	9,151,252
16	6	35	14	24

ended 31st December, 1937.)

2	4	1	3	122
10	8	2	47	50
—	—	—	27	828
2	—	—	13	14
—	—	—	6	315
12	8	2	93	1,207
—	—	—	5	2
—	—	—	4	28
Tons.	Tons.	Tons.	Tons.	Tons.
3,150	112,011	23,854	1,300,341	14,387,147
—	—	—	276,750	705,278
3,150	112,011	23,854	1,577,091	15,092,425
14	15	35	81	40

the following quantities of minerals were obtain

<b>Flame Safety Lamps.</b>	
I. Lamps approved under Lighting Schedule	.. .. .
II. Other Lamps	.. .. .
III. Semi-portable Lamps	.. .. .
Total	.. .. .
<b>Electric Safety Lamps.</b>	
I. Lamps approved under Lighting Schedule	.. .. .
Type of Lamp { (a) Hand .. .. .	.. .. .
(b) Cap .. .. .	.. .. .
II. Other Lamps :—	.. .. .
(a) Used by Workmen	.. .. .
(b) Used by Officials	.. .. .
III. Semi-portable Lamps	.. .. .
Total	.. .. .
Type of Battery { Alkaline .. .. .	.. .. .
Lead Acid .. .. .	.. .. .
Dry Cell .. .. .	.. .. .
Total Number of Safety Lamps in use	.. .. .

<b>Quantity of Explosives used (see also Table 46)</b>	
Estimated Number of Shots Fired by :—	
Electric Detonator—	.. .. .
(i) High Tension	.. .. .
(ii) Low Tension	.. .. .
Fuse	.. .. .
Squib	.. .. .
Total	.. .. .
Number of Miss-fire Shots by :—	
Electric Detonator—	.. .. .
(i) High Tension	.. .. .
(ii) Low Tension	.. .. .
Fuse	.. .. .
Squib	.. .. .
Total	.. .. .

Number of Mines at which Horses were employed (at 30th June)	.. .. .
Number of Horses on Colliery Books (at 30th June)	.. .. .
Number of Cases of Injury caused by Accidents below ground causing :—	.. .. .
(i) Death or Destruction	.. .. .
(ii) Unfitness for work for seven consecutive days or more	.. .. .
Number of Horses cast or destroyed by reason of Disease, Old Age or Infirmary	.. .. .
Number of Cases of Ill-treatment reported to Manager	.. .. .

TABLE 44.—(a) Electrical Equipment ; (b) Coal-cutting Machines and Mineral cut ; (c) Conveyors and Loaders used Below ground and Coal conveyed ; (d) Safety Lamps in use ; (e) Explosives used, Shots Fired and the number of Miss-fire Shots ; and (f) Horses employed Below ground, and the Casualties to them at Mines under the Coal Mines Act in Great Britain in the Year 1937.

	ENGLAND AND WALES.																				Total for England and Wales.*	SCOTLAND.					GREAT BRITAIN.		
	Northumberland.	Durham.	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South, and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire.		North Wales.	Fife, Clackmannan, Kinross and Sutherland.	Lothians (Mid and East) and Peebles.	Lanark, West Lothian, (Linlithgow), Stirling, Renfrew and Dumbarton.	Ayrshire, Dumfries and Argyll.	Total for Scotland.	Year 1937.	Year 1936.
<b>TOTAL NUMBER OF MINES AT WORK</b>	103	245	29	160	122	117	46	99	13	65	35	65	16	20	43	32	13	1	4	436	27	1,710	53	34	266	57	410	2,120	2,080

**A.—ELECTRICAL EQUIPMENT.—(30th June, 1937.)**

Number of Mines at which Equipment is installed..	74	167	18	102	87	78	45	57	10	29	22	20	16	15	14	9	10	1	4	269	12	1,073	47	30	163	45	285	1,358	1,332		
Number of Electric Motors in use† ..	4,932	6,640	513	2,701	5,165	2,458	2,976	2,910	239	1,340	1,428	254	680	1,341	134	340	176	6	477	6,053	400	41,443	2,658	1,838	5,335	1,536	11,367	52,810	50,081		
Aggregate Horse-power of the Electric Motors in use:†																															
Below ground—																															
Haulage .. .. .	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Conveyors and Loaders .. .. .	25,746	80,862	4,092	21,224	42,595	15,636	24,372	19,095	2,819	10,487	11,823	2,063	3,984	11,348	938	3,754	1,905	—	3,896	87,388	3,469	381,564	20,096	15,470	31,613	8,646	75,825	457,389	441,584		
Pumping .. .. .	7,324	6,016	247	2,437	6,480	927	7,331	5,532	401	1,872	2,481	40	1,365	2,452	54	150	120	12	864	875	482	47,462	5,822	3,144	5,728	1,887	16,581	64,043	54,013		
Portable Machinery { Coal-cutting Machines	26,810	61,169	2,783	20,734	22,869	10,482	5,419	17,411	1,414	10,450	2,429	1,731	1,485	3,727	808	11,591	2,673	165	10,484	87,240	1,138	306,779	36,584	22,622	47,050	14,049	120,305	427,084	419,636		
Auxiliary Ventilation .. .. .	28,721	21,277	1,538	5,084	10,300	4,345	10,610	12,365	1,425	1,988	5,337	305	3,490	3,806	378	535	127	30	540	2,559	981	115,741	11,155	4,589	23,758	7,265	46,767	162,508	149,945		
Miscellaneous .. .. .	294	870	16	95	254	205	67	320	2	108	38	2	183	31	—	—	—	—	40	56	21	2,832	162	239	316	194	911	3,743	3,375		
Total .. .. .	606	1,754	210	185	343	111	331	174	—	12	31	66	38	100	—	26	112	—	109	241	52	4,510	1,771	1,036	2,998	677	6,482	10,992	10,229		
Above ground—																															
Winding .. .. .	1,226	4,415	486	356	5,016	2,550	490	931	75	47	278	95	67	234	—	—	—	—	7	3,458	295	20,475	2,486	681	1,627	637	5,431	25,906	25,466		
Total .. .. .	90,727	176,363	9,372	50,115	87,857	34,256	48,620	55,828	6,145	24,985	22,417	4,302	10,537	21,850	2,209	16,327	5,014	207	15,940	181,817	6,438	879,363	78,076	47,781	113,090	33,355	272,302	1,151,665	1,104,318		
Total Below and Above ground .. .. .	53,678	152,320	8,784	50,537	135,954	48,260	63,200	37,453	1,216	22,428	15,043	3,494	4,322	15,082	1,435	3,453	990	95	11,392	280,342	6,645	923,292	24,207	14,788	39,020	9,043	87,058	1,010,350	974,284		
Total .. .. .	144,405	328,683	18,156	100,652	223,811	82,516	111,820	93,281	7,361	47,413	37,460	7,796	14,859	36,932	3,644	19,780	6,004	302	27,332	462,159	13,083	1,802,655	102,283	62,569	152,110	42,398	359,360	2,162,015	2,078,602		

**B.—COAL-CUTTING MACHINES AND MINERAL CUT.—(Year ended 31st December, 1937.)**

Number of Mines at which Machines were in use ..	64	92	12	79	68	44	41	50	7	28	20	3	12	14	6	4	4	1	4	114	10	677	43	24	128	39	234	911	864		
Number and Type of Machines in use:—																															
Disc .. .. .	—	15	—	3	—	44	10	—	—	—	—	—	—	—	—	—	—	—	—	20	—	60	12	6	97	8	123	183	206		
Bar .. .. .	738	707	63	339	471	270	312	409	44	208	190	13	99	121	16	17	—	—	—	435	54	4,526	308	127	633	210	1,278	5,804	5,516		
Chain .. .. .	70	426	9	458	149	146	14	58	4	85	11	—	6	8	—	—	—	—	—	64	31	1,540	3	3	24	9	39	1,579	1,627		
Percussive and Other Machines .. .. .	822	605	51	171	306	122	309	379	48	65	168	13	100	122	17	17	—	—	—	14	102	3,469	344	147	800	237	1,528	4,997	4,797		
Total .. .. .	1	550	25	649	314	340	43	94	—	229	35	—	5	7	—	—	—	—	—	417	54	2,763	—	6	15	—	21	2,784	2,803		
Total Number of Machines .. .. .	823	1,155	76	820	620	462	352	473	48	294	203	13	105	129	17	17	5	2	14	519	85	6,232	344	153	815	237	1,549	7,781	7,600		
Tonnage of Coal cut by Coal-cutting Machines:—																															
Disc .. .. .	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bar .. .. .	23,348	28,696	—	353,647	101,329	—	11,470	191,571	40,241	23,966	20,449	—	6,437,574	2,965,177	113,240	2,240,546	4,009,465	294,370	226,940	48,471	23,854	278,914	8,853,699	1,797,488	105,717,731	7,562,744	2,570,827	1,778	78,487	26,352	
Chain .. .. .	128,231	271,914	734	166,567	16,032,818	5,852,223	11,485,275	11,443,757	1,987	170,271	8,542	—	3,472	4,819	—	—	—	—	—	263,089	—	263,089	96,628	234,384	432,007	84,408	847,427	1,967,787	2,387,254		
Percussive and Other Machines .. .. .	12,522,971	11,452,095	851,978	8,056,395	16,032,818	5,852,223	11,485,275	11,443,757	1,987	170,271	8,542	—	3,472	4,819	—	—	—	—	—	8,853,699	1,797,488	105,717,731	7,562,744	2,570,827	1,778	78,487	26,352	23,260,922	128,978,653	116,774,905	
Total .. .. .	298,203	1,587,237	22,086	994,001	520,365	263,520	8,902	103,361	—	—	—	—	—	—	—	—	—	—	—	34,464	—	231,013	4,252,538	802	1,778	78,487	26,352	107,419	4,359,957	4,318,151	
Total Quantity of Coal cut† .. .. .	12,949,405	13,311,246	898,146	9,245,659	16,553,183	6,480,860	11,787,077	11,587,359	732,468	6,631,811	2,994,168	113,240	2,244,018	4,014,284	296,448	226,940	48,766	23,854	278,914	9,151,252	2,028,501	111,597,599	7,787,253	2,860,747	11,715,772	3,157,095	25,520,867	137,118,466	125,570,354		
Percentage of Total Output cut by Machines .. .. .	91	40	67	61	51	51	72	84	83	92	57	8	78	70	45	16	6	35	14	24	73	54	89	60	83	69	79	57	55		

**C.—CONVEYORS AND LOADERS USED BELOW GROUND, AND COAL CONVEYED.—(Year ended 31st December, 1937.)**

Number of Mines at which Conveyors were in use ..	47	63	5	64	57	29	37	39	6	22	16	1	12	12	1	2	4	1	3	122	6	549	33	13	61	18	125	674	637		
Number of Conveyors { Along Coal Face { Electric .. .. .	341	271	9	105	262	53	336	297	29	75	112	1	77	114	5	10	8	2	47	50	19	2,223	264	120	301	98	783	3,006	2,767		
Compressed Air .. .. .	198	109	17	434	311	132	63	38	—	186	19	—	2	21	—	—	—	—	27	828	62	2,249	—	—	32	—	32	2,281	2,199		
Elsewhere { Electric .. .. .	—	113	2	67	119	18	110	110	14	51	38	1	23	74	1	2	—	—	13	14	17	985	110	30	85	46	271	1,256	1,091		
Compressed Air .. .. .	—	30	8	110	142	37	3	10	—	60	2	—	—	2	—	—	—	—	6	315	24	749	—	—	8	—	8	757	670		
Total .. .. .	539	523	36	716	834	240	512	455	43	372	171	2	102	211	6	12	8	2	93	1,207	122	6,206	374	150	426	144	1,094	7,300	6,727		
Number of Loaders { Electric .. .. .	15	37	5	5	56	11	72	67	3	4	31	1	23	20	3	—	—	—	5	2	—	360	13	67	83	8	171	531	527		
Compressed Air .. .. .	—	25	2	26	34	35	29	4	—	9	—	—	—	1	—	—	—	—	—	—	—	197	—	—	3	—	3	200	189		
Tonnage of Coal Conveyed { Direct into Tubs .. .. .	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
With Loaders .. .. .	6,742,451	5,511,067	266,179	8,913,795	15,399,011	2,380,816	8,058,721	6,342,261	430,497	5,899,839	1,711,541	26,313	836,011	3,035,100	30,347	190,150	112,011	23,854	1,300,341	14,387,147	2,253,100	83,824,239	6,326,359	1,075,809	4,031,658	1,706,446	13,140,272	98,984,511	84,093,515		
Total .. .. .	209,913	1,786,620	126,704	919,925	3,757,715	1,409,095	4,999,038	3,350,873	66,023	581,065	784,263	—	943,383	771,811	30,972	—	—	—	276,750	705,278	—	20,745,741	1,005,561	1,709,863	2,287,194	101,801	5,104,419	25,850,160	25,224,627		
Total Tonnage of Coal Conveyed .. .. .	6,952,364	7,297,687	392,883	9,833,720	19,156,726	3,789,911	13,057,759	9,693,134	496,520	6,480,904	2,495,804	26,313	1,779,394	3,806,911	61,319	190,150	112,011	23,854	1,577,091	15,092,425	2,253,100	104,569,980	7,331,920	2,785,672	6,318,8						

APPENDIX A.—STATISTICAL TABLES.

TABLE 44—continued.

	ENGLAND AND WALES.																				Total for England and Wales.*	SCOTLAND.					GREAT BRITAIN.		
	Northumberland.	Durham.	Cumberland and Westmorland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South, and Worcestershire.	Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Somersetshire.	Bristol.	Kent.	South Wales and Monmouthshire.		North Wales.	Fife, Clackmannan, Kinross and Sutherland	Lothians (Mid and East) and Peebles.	Lanark, West Lothian, (Linlithgow), Stirling, Renfrew and Dumbarton.	Ayrshire, Dumfries and Argyll.	Total for Scotland.	Year 1937.	Year 1936.
<b>D.—SAFETY LAMPS IN USE.—(30th June, 1937).</b>																													
<b>Flame Safety Lamps.</b>																													
I. Lamps approved under Lighting Schedule .. .. .	4,889	21,541	758	13,347	5,659	3,448	746	2,329	414	1,500	173	16	119	857	610	—	—	—	44	7,586	447	64,707	2	—	115	34	151	64,858	} 209,441 98
II. Other Lamps .. .. .	4,117	19,162	633	6,580	14,317	5,996	8,558	9,665	586	4,183	4,521	733	1,998	2,083	793	—	—	—	774	16,182	1,851	102,849	1,755	489	5,278	1,755	9,277	112,126	
III. Semi-portable Lamps .. .. .	2	15	—	4	—	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	33	—	—	31	—	31	64	82,733	
Total .. .. .	9,008	40,718	1,391	19,931	19,976	9,444	9,316	11,994	1,000	5,683	4,694	749	2,117	2,950	1,403	—	16	—	818	23,748	2,298	167,589	1,757	489	5,424	1,789	9,459	177,048	209,539
<b>Electric Safety Lamps.</b>																													
I. Lamps approved under Lighting Schedule .. .. .	3,634	25,773	2,838	25,761	56,903	25,277	26,270	20,608	1,202	14,636	13,414	2,006	2,774	7,927	591	—	—	—	4,634	86,780	5,108	326,293	—	2	347	—	349	326,642	} 406,766
Type of Lamp { (a) Hand .. .. .	6,001	9,189	1,137	4,121	4,087	2,181	4,429	3,936	661	1,324	351	105	162	951	54	—	—	—	298	6,738	125	46,033	6,033	4,042	20,052	6,573	36,700	82,733	
(b) Cap .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
II. Other Lamps:—	1,630	7,498	—	1,022	10,571	3,427	2,659	4,280	105	419	1,530	27	97	1,697	446	—	—	—	121	7,521	1,461	44,511	80	—	120	—	200	44,711	
(a) Used by Workmen .. .. .	117	332	20	978	1,683	768	2,659	416	38	190	363	96	79	334	5	—	—	—	79	483	169	6,929	20	—	31	53	6,982		
(b) Used by Officials .. .. .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
III. Semi-portable Lamps .. .. .	21	100	—	21	113	41	74	42	4	9	3	9	20	11	—	—	—	—	1	40	6	515	17	3	6	—	26	541	
Total .. .. .	11,403	42,892	3,995	31,903	73,357	31,694	34,211	29,282	2,010	16,578	15,661	2,243	3,132	10,920	1,096	—	—	—	5,133	101,562	6,869	424,281	6,150	4,047	20,556	6,575	37,328	461,609	407,318
Type of Battery { Alkaline .. .. .	4,401	16,365	492	14,523	35,987	8,876	9,894	7,915	381	6,907	11,054	1,902	189	6,097	804	—	—	—	451	27,312	3,091	156,981	386	1,286	6,689	430	8,791	165,772	
Lead Acid .. .. .	7,002	26,512	3,503	17,307	37,310	22,768	24,288	21,367	1,629	9,659	4,598	341	2,943	4,752	292	—	—	—	4682	74,250	3,755	266,958	5,764	2,761	13,867	6,145	28,537	295,495	
Dry Cell .. .. .	—	15	—	73	60	50	29	—	—	12	9	—	—	71	—	—	—	—	—	—	23	342	—	—	—	—	—	342	278,478
Total Number of Safety Lamps in use .. .. .	20,411	83,610	5,386	51,834	93,333	41,138	43,527	41,276	3,010	22,261	20,355	2,992	5,249	13,870	2,499	—	16	—	5,951	125,310	9,167	591,870	7,907	4,536	25,980	8,364	46,787	638,657	616,857
<b>E.—EXPLOSIVES USED, SHOTS FIRED AND NUMBER OF MISS-FIRE SHOTS.—(Year ended 31st December, 1937).</b>																													
Quantity of Explosives used (see also Table 46) .. .. .	2,699,026	5,298,395	300,889	2,203,653	2,282,299	1,123,314	907,560	1,276,846	126,418	1,204,155	537,848	216,509	473,361	655,020	84,833	51,064	101,202	3,879	49,512	2,320,869	379,252	22,987,421	1,347,042	816,591	3,738,778	865,706	6,768,117	29,755,538	27,307,475
Estimated Number of Shots Fired by:—																													
Electric Detonator—																													
(i) High Tension .. .. .	3,080,326	8,910,496	545,953	3,323,069	1,598,568	1,107,906	574,792	1,346,039	104,727	1,806,975	352,607	—	133,068	384,453	80,796	40,992	—	—	—	2,503,926	408,683	26,303,376	—	—	682,055	154,999	837,054	27,140,430	25,451,757
(ii) Low Tension .. .. .	668,205	746,172	6,895	1,907,746	3,184,807	1,700,225	1,495,712	1,692,767	149,594	616,562	910,554	63,792	406,260	1,021,626	24,242	62,918	10,977	—	83,951	1,801,281	398,282	16,961,509	988,678	166,477	2,397,638	1,089,652	4,642,445	21,603,954	19,140,521
Fuse .. .. .	1,078,736	666,378	90,662	50,060	46,530	45,773	17,248	10,497	15,072	63,141	25,819	241,887	273,276	57,333	68,163	14,356	145,162	2,416	—	334,587	12,730	3,773,614	1,767,609	1,339,226	4,229,896	494,129	7,830,860	11,604,474	11,134,330
Squib .. .. .	1,234,995	477,602	4,440	—	—	—	—	—	—	—	—	—	—	7,730	—	3,935	—	—	—	68,341	—	2,690,660	—	—	—	—	—	—	2,935,443
Total .. .. .	6,061,662	10,800,648	647,950	5,280,875	4,829,705	2,853,904	2,087,752	3,049,303	269,393	2,486,678	1,288,980	305,679	812,604	1,471,142	173,201	122,201	156,139	2,416	83,951	4,708,135	819,695	49,729,159	2,756,287	1,505,703	7,309,589	1,738,780	13,310,359	63,039,518	58,662,051
Number of Miss-fire Shots by:—																													
Electric Detonator—																													
(i) High Tension .. .. .	294	1,376	87	814	502	165	120	379	13	436	109	—	36	142	25	—	—	—	—	555	95	5,148	—	—	1	15	16	5,164	6,601
(ii) Low Tension .. .. .	12	28	—	254	367	299	321	306	32	299	148	13	41	96	4	15	2	—	7	367	82	2,693	90	9	77	112	288	2,981	3,122
Fuse .. .. .	152	155	39	28	30	27	26	27	2	14	4	—	61	30	—	20	64	3	—	299	19	1,235	211	143	688	161	1,203	2,436	2,623
Squib .. .. .	244	176	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	59	—	2,983	—	—	—	—	—	2,983	2,844
Total .. .. .	702	1,735	126	1,096	899	491	467	712	47	749	261	146	138	268	29	35	66	3	7	1,280	196	12,059	301	152	766	288	1,507	13,566	15,190
<b>F.—HORSES EMPLOYED BELOW GROUND, AND THE CASUALTIES TO THEM.—(Year ended 30th June, 1937).</b>																													
Number of Mines at which Horses were employed (at 30th June) .. .. .	62	162	5	6	63	41	41	52	6	7	26	33	12	6	14	10	10	1	—	311	6	890	3	6	38	10	57	947	936
Number of Horses on Colliery Books (at 30th June)	3,128	10,336	124	160	2,147	2,441	1,366	1,694	193	57	975	424	474	182	232	238	69	28	—	7,355	120	32,074	13	50	711	53	827	32,901	33,136
Number of Cases of Injury caused by Accidents below ground causing:—																													
(i) Death or Destruction .. .. .	106	337	11	5	74	91	45	47	3	—	31	16	10	4	6	3	2	1	—	149	1	951	—	—	33	1	34	985	977
(ii) Unfitness for work for seven consecutive days or more .. .. .	349	1,001	16	2	181	359	165	292	33	2	73	29	53	32	18	11	8	2	—	1,199	2	3,930	—	9	71	2	82	4,012	4,194
Number of Horses cast or destroyed by reason of Disease, Old Age or Infirmary .. .. .	243	898	1	8	175	193	120	132	15	3	48	15	52	6	2	17	2	1	—	479	4	2,438	1	3	35	2	41	2,479	2,712
Number of Cases of Ill-treatment reported to Manager .. .. .	3	11	—	—	3	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	22	—	—	—	—	—	22	34

\* Including mines under the Coal Mines Act in Cleveland, Lincolnshire and Northamptonshire, particulars of which are not included in the previous columns.

TABLE 46.—Quantity of Explosives used at Mines, Quarries and certain other Mineral Workings, and the Number of Shots Fired and Number of Miss-fire Shots at Mines under the Coal Mines Act in Great Britain during the Year 1937.

Used at	Nitro-Glycerines.	Ammonium Nitrates (Non-nitro-glycerine).	Nitrate Mixtures.	Gun-powder.	Low Density.	Total.
<b>(a) Quantity (lb.) of Explosives used at Mines, Quarries and certain other Mineral Workings.</b>						
Mines under the Coal Mines Act:						
Permitted .. ..	15,137,420	3,881,952	—	—	3,451,894	22,471,266
Other .. ..	3,384,132	623,841	13,154	3,263,145	—	7,284,272
Total .. ..	18,521,552	4,505,793	13,154	3,263,145	3,451,894	29,755,538
Mines under the Metal-liferous Mines Regula-tion Acts .. ..	1,885,082	141,919	—	638,854	—	2,665,855
Quarries under the Quarries Act* ..	2,310,627	2,694,596	120	3,394,978	829	8,401,150
Other Mineral Workings	—	3,951	—	—	—	3,951
Total .. ..	22,717,261	7,346,259	13,274	7,296,977	3,452,723	40,826,494
<b>(b) Estimated Number of Shots Fired at Mines under the Coal Mines Act.</b>						
By Electric Detonator:						
High Tension .. ..	16,443,199	5,424,573	—	35,500	5,237,158	27,140,430
Low Tension .. ..	14,872,698	2,629,408	—	9,209	4,092,639	21,603,954
Total .. ..	31,315,897	8,053,981	—	44,709	9,329,797	48,744,384
By Fuse .. ..	7,230,996	1,493,562	29,692	2,291,657	558,567	11,604,474
By Squib .. ..	—	—	—	2,690,660	—	2,690,660
Total .. ..	38,546,893	9,547,543	29,692	5,027,026	9,888,364	63,039,518
<b>(c) Number and Proportion of Miss-fire Shots during 1928 and 1937 at Mines under the Coal Mines Act.</b>						
Year.	Shots fired by					
	Electric Detonator.		Fuse.	Squib.	Total.	
	High Tension.	Low Tension.				
<b>(i) Number of Miss-fire Shots.</b>						
1928 .. ..	13,162		5,769	2,510	21,441	
1937 .. ..	5,164	2,981	2,438	2,983	13,566	
<b>(ii) Miss-fire Ratio : ONE in</b>						
1928 .. ..	2,578		2,076	1,898	2,364	
1937 .. ..	5,256	7,247	4,760	902	4,647	

\* In addition 20,943 lb. of Liquid Oxygen were used as an explosive.

Note.—Blasting Appliances.—In addition, 394,620 lb. of Carbon Dioxide were used at Mines under the Coal Mines Act for blasting by means of permitted Cardox Cartridges, and also 35,626 lb. of Hydrox Powder, the number of shots fired being 259,771 and 42,342 respectively (by Electricity—Low Tension).

TABLE 47.—Number of Persons Killed and Injured (disabled for more than three days) at Mines in Great Britain, during the Year 1937.

Place or Cause of Accident.	Killed.				Disabled for more than three days.				Number of Persons seriously Injured† at Mines under the	
	Coal Mines Act.		Metalliferous Mines Regulation Acts.		Coal Mines Act.		Metalliferous Mines Regulation Acts.		Coal Mines Act.	Metalliferous Mines Regulation Acts.
	Coal Mines*	Stratified Ironstone Mines of Cleveland, Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines	Coal Mines*	Stratified Ironstone Mines of Cleveland, Northamptonshire.	Iron Ore and Ironstone Mines	Other Mines		
Explosions of Firedamp or Coal-dust ..	68	—	—	—	55	—	—	1	59	1
<b>FALLS OF GROUND.</b>										
At the working face .. .. .	394	7	4	4	39,959	206	34	117	1,226	8
On roads while repairing or enlarging ..	47	—	—	—	4,952	6	1	4	167	1
On roads while otherwise working or passing .. .	48	—	—	—	3,136	2	3	3	123	1
In shafts .. .	—	—	—	1	8	—	—	5	—	—
<b>Total .. .</b>	<b>429</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>48,055</b>	<b>214</b>	<b>38</b>	<b>129</b>	<b>1,516</b>	<b>10</b>
<b>SHAFT ACCIDENTS.</b>										
Overwinding .. .	2	—	—	—	28	—	—	—	28	—
Ropes or chains breaking .. .	—	—	—	—	6	—	—	—	—	—
Whilst descending or ascending by machinery .. .	1	—	—	—	27	—	—	1	1	—
Falling into shaft from surface .. .	3	—	—	—	3	—	—	4	2	1
Falling from part way down .. .	8	—	—	—	2	—	—	—	1	—
Things falling into shaft from surface .. .	2	—	—	1	43	—	—	3	1	1
Things falling from part way down .. .	1	—	—	—	227	3	1	17	8	1
Other shaft accidents .. .	13	—	—	—	—	—	—	—	—	—
<b>Total .. .</b>	<b>30</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>334</b>	<b>3</b>	<b>1</b>	<b>25</b>	<b>41</b>	<b>3</b>
<b>UNDERGROUND HAULAGE ACCIDENTS.</b>										
Ropes or chains breaking .. .	8	—	—	—	135	—	—	1	22	—
Run over or crushed by trams or tubs‡:										
Mechanical haulage .. .	70	—	—	—	6,269	23	—	—	269	2
Horse haulage .. .	24	—	—	—	4,757	50	—	—	100	—
Hand haulage .. .	13	—	—	—	5,843	8	—	32	155	1
Runaway trams or tubs .. .	51	—	1	—	465	1	—	—	111	1
Total .. .	168	—	1	—	17,334	82	—	—	635	4
Other haulage accidents .. .	12	—	—	—	16,057	60	42	85	147	1
<b>Total .. .</b>	<b>178</b>	<b>—</b>	<b>1</b>	<b>—</b>	<b>33,528</b>	<b>142</b>	<b>74</b>	<b>141</b>	<b>804</b>	<b>5</b>
<b>MISCELLANEOUS UNDERGROUND</b>										
By explosives .. .	13	—	—	3	194	3	2	15	213	18
Suffocation by natural gases .. .	13	—	—	2	18	—	—	7	2	3
By underground fires .. .	5	—	—	—	14	—	—	—	15	—
Irruptions of water .. .	—	—	—	—	1	—	—	6	—	—
Electricity .. .	2	—	—	—	30	—	—	—	44	—
By machinery .. .	23	—	—	2	2,037	1	4	28	106	—
Other accidents .. .	25	1	—	2	43,999	296	95	403	249	11
<b>Total .. .</b>	<b>81</b>	<b>1</b>	<b>—</b>	<b>7</b>	<b>46,293</b>	<b>300</b>	<b>101</b>	<b>459</b>	<b>629</b>	<b>32</b>
<b>Total Underground .. .</b>	<b>781</b>	<b>8</b>	<b>5</b>	<b>13</b>	<b>128,263</b>	<b>659</b>	<b>214</b>	<b>755</b>	<b>3,049</b>	<b>51</b>
<b>ON SURFACE.</b>										
By machinery .. .	15	—	—	—	629	2	2	18	53	1
Boiler explosions .. .	3	—	—	—	15	—	—	—	3	—
On railways, sidings or tramways:										
While engaged in moving wagons .. .	8	—	—	—	1,559	2	—	—	53	1
While engaged in coupling or uncoupling wagons .. .	3	—	—	—	303	1	—	—	6	—
Run over while passing along or across railways or tramways .. .	5	—	—	—	97	—	—	—	9	—
Crushed between wagons & structures .. .	7	—	—	—	304	4	—	—	10	—
In other ways .. .	7	—	—	—	1,345	2	—	—	36	4
Total .. .	30	—	—	—	3,608	9	—	—	114	5
Electricity .. .	2	—	—	—	14	—	—	—	16	—
Other accidents .. .	20	—	—	—	7,422	24	31	203	128	8
<b>Total on Surface .. .</b>	<b>70</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>11,688</b>	<b>35</b>	<b>44</b>	<b>278</b>	<b>314</b>	<b>14</b>
<b>Grand Total .. .</b>	<b>851</b>	<b>8</b>	<b>5</b>	<b>13</b>	<b>139,951</b>	<b>694</b>	<b>258</b>	<b>1,033</b>	<b>3,363</b>	<b>65</b>
<i>Total in 1936 .. .</i>	<i>784</i>	<i>6</i>	<i>—</i>	<i>12</i>	<i>135,329</i>	<i>630</i>	<i>250</i>	<i>945</i>	<i>3,117</i>	<i>63</i>

\* Including Shale and Fireclay Mines.

† The following classes of accidents, which are reported at the time of their occurrence to H.M. Divisional Inspectors of Mines are included, viz. (a) Accidents causing fracture of head or limb, or dislocation of limb, or any other serious personal injury; (b) Accidents caused by explosion of gas or dust, or any explosive, or by electricity, or by over-winding, and causing any personal injury whatever. The majority of these accidents involve a period of disablement of more than three days and are included in the preceding column.

‡ Not including accidents primarily due to ropes or chains breaking.

TABLE 48.—Number of Deaths from Accidents and Death-rates in and about Mines in Great Britain\* from 1873, classified according to the Cause of Accident.

A.—MINES UNDER THE COAL MINES ACT.

B.—MINES UNDER THE METALLIFEROUS MINES REGULATION ACTS.

Decennial Period or Year	Under-ground.							On Surface.	Total.	Under-ground.							On Surface.	Total.	Decennial Period or Year.
	By Explosions of Fire-damp or Coal-dust.	By Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Miscellaneous Accidents.	From all Causes.	From all Causes.			By Explosions of Fire-damp.	By Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Miscellaneous Accidents.	From all Causes.	From all Causes.			
Annual Average.	1873-1882	263	453	130	128	63	1,037	92	1,129	—	31	24	1	22	78	13	91	1873-1882	
	1883-1892	147	460	88	151	80	926	106	1,032	†	24	13	1	16	54	7	61	1883-1892	
	1893-1902	104	448	79	168	96	895	120	1,015	—	16	9	1	13	39	5	44	1893-1902	
	1903-1912	133	573	81	235	108	1,130	145	1,275	—	16	7	1	8	32	6	33	1903-1912	
	1913-1922	88	607	53	249	116	1,113	130	1,243	—	10	5	1	6	22	4	26	1913-1922	
	1923-1932	52	536	42	239	115	984	95	1,079	1	6	2	1	4	14	2	16	1923-1932	
1929	34	581	41	220	120	996	80	1,076	—	3	1	1	10	15	4	19	1929		
1930	70	515	33	241	81	940	73	1,013	—	6	1	—	3	10	2	12	1930		
1931	107	418	20	174	71	790	69	859	—	5	—	2	2	9	1	10	1931		
1932	69	444	39	174	82	808	73	881	8	2	1	—	—	11	1	12	1932		
1933	35	454	28	158	79	754	66	820	—	2	—	1	8	11	—	11	1933		
1934	296	442	16	156	89	999	74	1,073	—	7	—	3	5	15	1	16	1934		
1935	37	458	16	186	77	774	87	861	—	15	3	—	3	22	3	23	1935		
1936	71	380	20	165	96	732	58	790	—	6	—	—	6	12	—	12	1936		
1937	63	436	30	178	82	789	70	859	—	9	1	1	7	18	—	18	1937		
Annual Average.	1873-1882	.65	1.12	.32	.32	.16	2.57	.92	2.24	—	.94	.72	.03	.66	2.35	.58	1.62	1873-1882	
	1883-1892	.32	1.00	.19	.33	.17	2.01	.96	1.81	.02	.94	.52	.04	.63	2.15	.39	1.44	1883-1892	
	1893-1902	.18	.76	.13	.29	.16	1.52	.83	1.39	—	.83	.44	.03	.66	1.96	.37	1.31	1893-1902	
	1903-1912	.17	.74	.11	.30	.14	1.46	.78	1.23	—	.93	.41	.06	.47	1.87	.47	1.30	1903-1912	
	1913-1922	.10	.71	.06	.29	.14	1.30	.59	1.15	—	.79	.44	.08	.51	1.82	.44	1.25	1913-1922	
	1923-1932	.06	.66	.05	.29	.14	1.20	.45	1.05	.10	.76	.26	.06	.54	1.72	.28	1.10	1923-1932	
1929	.04	.75	.05	.29	.16	1.29	.41	1.11	—	.33	.11	.11	1.10	1.65	.60	1.21	1929		
1930	.09	.69	.04	.32	.11	1.25	.37	1.07	—	.78	.13	—	.39	1.30	.35	.89	1930		
1931	.16	.60	.03	.25	.10	1.14	.38	.98	—	.92	.13	.37	.37	1.66	.23	1.02	1931		
1932	.11	.68	.06	.27	.12	1.24	.42	1.06	1.54	.39	.19	—	—	2.12	.24	1.29	1932		
1933	.06	.72	.05	.25	.13	1.21	.38	1.03	—	.36	—	.18	1.46	2.00	—	1.12	1933		
1934	.47	.71	.03	.25	.14	1.60	.43	1.35	—	1.06	—	.46	.76	2.28	.19	1.36	1934		
1935	.06	.75	.03	.30	.13	1.27	.51	1.10	—	2.20	.44	.15	.44	3.23	.60	2.12	1935		
1936	.12	.63	.03	.27	.16	1.21	.34	1.02	—	.85	—	—	.85	1.70	—	.99	1936		
1937	.10	.70	.05	.28	.13	1.26	.39	1.07	—	1.25	.14	.14	.97	2.50	—	1.42	1937		

DEATH-RATES FROM ACCIDENTS UNDER AND ABOVE-GROUND PER 1,000,000 TONS OF MINERAL RAISED.

Annual Average.	Year.	Year.	Year.
1873-1882	7.42	1927	4.36
1883-1892	5.65	1928	4.04
1893-1902	4.70	1929	4.05
1903-1912	4.76	1930	4.04
1913-1922	4.92	1931	3.82
1923-1932	4.26	1932	4.13
		1933	3.87
		1934	4.74
		1935	3.77
		1936	3.36
		1937	3.47

\* Including particulars for Ireland up to the year 1921.  
 † There were five persons killed in 1887 and one in 1888 by explosions of firedamp.  
 ‡ The death-rates for underground accidents are based upon the number of persons so employed, and those for surface accidents upon the number of persons employed above-ground.  
 Note.—For comparable particulars of the output of mineral and the number of persons employed, see Tables 4 and 13.

TABLE 49.—Number of Persons Killed and Injured by Accidents at Mines in Great Britain per 100,000 Man-shifts worked from 1922.

Year.	Mines under the Coal Mines Act (except stratified ironstone mines in Cleveland, Lincolnshire and Northamptonshire).													Iron Mines.*		Other Mines. ‡
														Cleveland, Lincoln & Northants.	Elsewhere.	
	Persons Employed Below and Above Ground.			Under-Ground.*						Surface.*	Under-Ground and Surface.					
	Killed.	Seriously Injured.	Total Injured.	Persons Killed and Injured by—										All Causes.		
Explosions of Firedamp or Coal Dust.				Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Other Causes.	All Causes Under-Ground.	Accidents on Railways, &c.	Other Causes.						
Rate per 100,000 man-shifts worked.																
Annual Average	1922-26 ..	0.40	1.61	65.1	0.1	28.5	0.4	21.0	27.2	77.2	6.9	17.8	65.5	62.5	42.9	31.6
	1927-31 ..	0.43	1.71	69.3	0.1	31.6	0.3	22.5	29.4	83.9	6.7	15.5	69.7	69.5	35.3	33.8
	1932-36 ..	0.44	1.58	65.5	0.1	31.1	0.2	22.6	26.6	80.6	6.8	14.1	65.9	61.5	32.4	31.1
1927 .. ..	0.45	1.85	68.5	0.1	30.7	0.5	21.0	30.0	82.3	6.9	16.4	68.9	70.4	39.6	33.8	
1928 .. ..	0.42	1.77	69.0	0.1	31.3	0.3	23.2	28.5	83.4	6.6	15.7	69.4	70.4	35.1	35.6	
1929 .. ..	0.43	1.70	70.9	0.1	32.7	0.2	21.9	30.9	85.8	6.6	16.0	71.4	71.4	37.6	37.6	
1930 .. ..	0.43	1.62	70.8	0.1	32.6	0.2	23.0	30.4	86.3	6.4	15.5	71.2	70.0	33.8	31.0	
1931 .. ..	0.41	1.57	66.9	0.1	30.7	0.2	23.7	27.1	81.8	7.1	13.8	67.3	62.5	26.2	28.3	
1932 .. ..	0.45	1.63	63.7	0.1	30.2	0.2	23.2	24.5	78.2	6.6	13.3	64.1	61.7	26.6	27.6	
1933 .. ..	0.43	1.52	63.7	0.1	30.7	0.1	22.4	25.1	78.4	6.6	13.6	64.1	57.5	26.2	26.1	
1934 .. ..	0.53	1.60	66.1	0.3	31.4	0.2	22.3	27.2	81.4	6.5	14.5	66.6	57.8	34.4	30.9	
1935 .. ..	0.43	1.63	67.1	0.1	31.7	0.1	23.0	27.6	82.5	7.5	14.3	67.5	61.0	37.0	33.1	
1936 .. ..	0.39	1.52	66.6	0.1	31.3	0.2	22.1	28.4	82.1	7.0	14.6	67.0	66.6	35.2	35.7	
1937 .. ..	0.40	1.56	65.3	0.1	30.0	0.2	20.8	28.7	79.8	6.9	15.4	65.6	64.6	34.5	35.6	

\* The rates for underground and surface accidents are based upon the number of man-shifts worked below and above-ground, respectively. The estimated number of shifts worked in 1937 was 161,688,000 below-ground and 82,793,000 above-ground at mines under the Coal Mines Act (as defined above); 1,086,000 at stratified ironstone mines; 763,000 at other iron mines; and 2,935,000 at mines other than coal and iron mines. The actual number of persons killed and injured in 1937 (including those disabled for more than 3 days) are shown in Table 47.

Note.—The maximum hours of labour below-ground at coal mines in 1922 were 7 hours per day which were increased to 8 hours in July, 1926. In certain districts the increased hours were limited by agreement to 7½, and since 1st December, 1930, this has been the statutory limit. In the case of surface workers engaged in the manipulation of coal the hours of presence in 1922-6 were 46½ in a full week, but have since been subject to modifications similar to those of workers below-ground.

ACCIDENTS.

TABLE 50.—Principal Colliery Disasters\* from All Causes  
from 1901.

Year.	Date.	Name of Colliery.	County.	Nature of Disaster.	No. of Persons Killed.
1901	May 24	Universal .. .. .	Glamorganshire ..	Explosion .. ..	81
1902	Sept. 3	McLaren, No. 1 Pit .. ..	Monmouthshire ..	Explosion .. ..	16
1905	Jan. 21	Elba .. .. .	Glamorganshire ..	Explosion .. ..	11
	Mar. 10	Cambrian .. .. .	Glamorganshire ..	Explosion .. ..	33
	July 11	National .. .. .	Glamorganshire ..	Explosion .. ..	119
1906	Oct. 10	Wingate Grange .. .. .	Durham .. .. .	Explosion .. ..	25
1907	Oct. 4	Foggs .. .. .	Lancashire .. ..	Shaft accident ..	10
1908	Feb. 20	Washington "Glebe" .. ..	Durham .. .. .	Explosion .. ..	14
	Mar. 4	Hamstead .. .. .	Staffordshire ..	Underground fire ..	25
	April 9	Norton Hill .. .. .	Somersetshire ..	Explosion .. ..	10
	Aug. 18	Maypole .. .. .	Lancashire .. ..	Explosion .. ..	75
1909	Feb. 18	West Stanley .. .. .	Durham .. .. .	Explosion .. ..	168
	Oct. 29	Darran .. .. .	Glamorganshire ..	Explosion .. ..	27†
	Dec. 10	Caprington, No. 41 .. ..	Ayrshire .. .. .	Irruption of water ..	10
1910	May 11	Whitehaven, Wellington Pit ..	Cumberland .. ..	Explosion .. ..	136
	Dec. 21	Hulton No. 3 Bank Pit .. ..	Lancashire .. ..	Explosion .. ..	344
1912	July 9	Cadeby Main .. .. .	Yorkshire .. ..	Explosion .. ..	88‡
1913	Feb. 7	Rufford .. .. .	Nottinghamshire ..	Shaft accident .. ..	14
	Aug. 3	Cadder, No. 15 Pit .. .. .	Lanarkshire .. ..	Underground fire ..	22
	Oct. 14	Senghenydd .. .. .	Glamorganshire ..	Explosion .. ..	439§
1914	May 30	Wharcliffe Silkstone .. ..	Yorkshire .. ..	Explosion .. ..	12
1915	Feb. 25	New Hem Heath .. .. .	Staffordshire ..	Underground fire ..	12
	June 30	Bentnick .. .. .	Nottinghamshire ..	Shaft accident .. ..	10
	Sept. 21	Exhall .. .. .	Warwickshire ..	Smoke and fumes descending shaft.	14
1916	Aug. 13	Woodhorn .. .. .	Northumberland ..	Explosion .. ..	13
1918	Jan. 12	Podmore Hall, Minnie Pit .. ..	Staffordshire ..	Explosion .. ..	155
	July 9	Stanrigg and Arbuckle .. ..	Lanarkshire .. ..	Inrush of moss and water.	19
1922	July 13	Plean .. .. .	Stirlingshire .. ..	Explosion .. ..	12
	Sept. 5	Whitehaven, Haig Pit .. ..	Cumberland .. ..	Explosion .. ..	39
1923	April 26	Caldean .. .. .	Carmarthenshire ..	Runaway trams .. ..	10
	July 28	Maltby Main .. .. .	Yorkshire .. ..	Explosion .. ..	27
	Sept. 25	Redding, No. 23 .. .. .	Stirlingshire .. ..	Inrush of water .. ..	40
1925	Mar. 30	Montagu Main .. .. .	Northumberland ..	Inrush of water .. ..	38
1927	Mar. 1	Marine No. 1 .. .. .	Monmouthshire ..	Explosion .. ..	52
	Mar. 1	Bilthorpe .. .. .	Nottinghamshire ..	Shaft accident .. ..	14
1928	Feb. 12	Whitehaven, Haig Pit .. ..	Cumberland .. ..	Explosion .. ..	13
1830	Feb. 26	Lyme .. .. .	Lancashire .. ..	Explosion .. ..	13
	Oct. 1	Grove .. .. .	Staffordshire .. ..	Explosion .. ..	14
1931	Jan. 29	Whitehaven, Haig Pit .. ..	Cumberland .. ..	Explosion .. ..	27
	Oct. 31	Bowhill .. .. .	Fifeshire .. .. .	Explosion .. ..	10
	Nov. 20	Bentley .. .. .	Yorkshire .. ..	Explosion .. ..	45
1932	Jan. 25	Llwynypia, No. 1 .. .. .	Glamorganshire ..	Explosion .. ..	11
	Oct. 10	Bickershaw, No. 3 .. .. .	Lancashire .. ..	Shaft accident .. ..	19
	Nov. 12	Garswood Hall No. 9 .. ..	Lancashire .. ..	Explosion .. ..	27
	Nov. 16	Cardowan .. .. .	Lanarkshire .. ..	Explosion .. ..	11
1933	Nov. 19	Grassmoor No. 8 Pit .. ..	Derbyshire .. ..	Explosion .. ..	14
1934	Sept. 22	Gresford .. .. .	Denbighshire .. ..	Explosion .. ..	265
1935	Aug. 24	South Kirkby .. .. .	Yorkshire .. ..	Explosion .. ..	10
	Sept. 12	North Gawber, Lidgett .. ..	Yorkshire .. ..	Explosion .. ..	19
1936	Aug. 6	Wharcliffe Woodmoor, Nos. 1, 2 and 3.	Yorkshire .. ..	Explosion .. ..	58
1937	July 2	Holditch .. .. .	Staffordshire .. ..	Explosion .. ..	30

\* Accidents involving the loss of 10 lives or more.  
† Including five persons killed during rescue operations.  
‡ There were two explosions on the same day. As a result of the first 35 persons were killed, the second explosion causing the loss of 53 members of the rescue parties.  
§ In addition, one other man lost his life on the following day while working at a fall of stone.  
|| Including three persons killed during rescue operations and one person killed when the sealing blew off the downcast shaft three days later.



**TABLE 51.—Summary of Principal Colliery Disasters\* and of all Accidents caused by Explosions of Firedamp or Coal-dust for Decennial Periods from 1851.**

*Note.*—Particulars of these accidents from 1851 to 1900 will be found in Appendix IV of Part II of the Report of H.M. Chief Inspector of Mines for the year 1900, and for subsequent years in Table 50 opposite.

District.	1851-1860.	1861-1870.	1871-1880.	1881-1890.	1891-1900.	1901-1910.	1911-1920.	1921-1930.	1931-1937 (7 years).	From 1851 to 1937.
(i) Number of Separate Accidents.										
Northumberland .. .. .	2	2	—	—	—	—	1	—	—	5
Durham .. .. .	2	1	2	5	1	3	—	—	—	14
Yorkshire .. .. .	4	2	4	2	2	—	2	1	4	21
Lancashire and Cheshire .. .. .	10	11	9	5	—	2	—	1	1	39
North Wales .. .. .	—	3	—	1	—	—	—	—	1	5
Derbyshire, Nottingham and Leicester .. .. .	—	—	1	1	—	—	—	—	1	3
Staffordshire, Shropshire, Worcester and Warwick .. .. .	2	3	5	3	1	—	1	1	1	17
South Wales and Monmouth .. .. .	10	10	11	6	4	—	1	1	1	50
Other English Districts:—										
Cumberland .. .. .	—	—	—	1	—	1	—	2	1	5
Somersetshire .. .. .	—	1	—	1	1	1	—	—	—	4
Scotland .. .. .	1	—	3	1	1	—	—	1	2	9
All Districts { Disasters* ..	31	33	35	26	10	13	5	7	12	172
{ All Accidents ..	820	565	424	245	189	182	135	136	74	2,770
(ii) Number of Deaths.										
Northumberland .. .. .	98	42	—	—	—	—	13	—	—	153
Durham .. .. .	57	24	190	194	20	207	—	—	—	692
Yorkshire .. .. .	264	420	221	42	202	—	100	27	132	1,408
Lancashire and Cheshire .. .. .	359	338	462	355	—	419	—	13	27	1,973
North Wales .. .. .	—	33	—	20	—	—	—	—	265	318
Derbyshire, Nottingham and Leicester .. .. .	—	—	26	45	—	—	—	—	14	85
Staffordshire, Shropshire, Worcester and Warwick .. .. .	22	122	163	112	10	—	155	14	30	628
South Wales and Monmouth .. .. .	410	454	700	411	478	287	439	52	11	3,242
Other English Districts:—										
Cumberland .. .. .	—	—	—	30	—	136	—	52	27	245
Somersetshire .. .. .	—	11	—	10	10	10	—	—	—	41
Scotland .. .. .	61	—	252	73	13	—	—	12	21	432
All Districts { Disasters* ..	1,271	1,444	2,014	1,292	733	1,059	707	170	527	9,217
{ All Accidents ..	2,441	2,267	2,686	1,661	1,024	1,357	944	433	686	13,499

\* Accidents involving the loss of 10 lives or more.

TABLE 52.—Number of Persons Killed and Injured (disabled for more than three days) at Quarries in Great Britain, under the Quarries Act, 1894, during the Year 1937.

Place or Cause of Accident.	Killed.		Disabled for more than three days.*	
	1937.	1936.	1937.	1936.
<b>INSIDE THE QUARRIES.</b>				
<i>(i.e., inside the actual pits, holes or excavations.)</i>				
<b>Falls of Ground.</b>				
From beyond the person's own working-place ..	17	17	} 824	824
From the person's own working place .. ..	21	15		
<b>Total .. .. .</b>	<b>38</b>	<b>32</b>	<b>824</b>	<b>824</b>
<b>By Blasting.</b>				
While charging or tamping .. .. .	1	1	4	3
From stones projected by shots, when persons had not taken sufficient shelter .. .. .	2	3	20	24
From miss-fire shots .. .. .	—	2	—	10
Other accidents .. .. .	—	1	14	9
<b>Total .. .. .</b>	<b>3</b>	<b>7</b>	<b>38</b>	<b>46</b>
<b>During Descent or Ascent.</b>				
Falling from paths, steps or ladders .. ..	1	1	47	52
When descending or ascending by machinery ..	—	—	1	1
Other accidents .. .. .	—	1	34	39
<b>Total .. .. .</b>	<b>1</b>	<b>2</b>	<b>82</b>	<b>92</b>
<b>Miscellaneous.</b>				
Ropes or chains breaking .. .. .	—	—	7	9
Machinery .. .. .	6	3	161	159
Boiler explosions .. .. .	—	—	1	1
On inclined and engine planes .. .. .	—	—	27	22
On railways, sidings or tramways .. .. .	5	3	655	814
Falling from ledges .. .. .	10	4	73	82
Electricity .. .. .	1	—	—	2
Other accidents .. .. .	11	11	3,138	2,462
<b>Total .. .. .</b>	<b>33</b>	<b>21</b>	<b>4,062</b>	<b>3,551</b>
<b>Total Inside Quarries .. ..</b>	<b>75</b>	<b>62</b>	<b>5,006</b>	<b>4,513</b>
<b>OUTSIDE THE QUARRIES.</b>				
Machinery .. .. .	4	4	115	163
Boiler explosions .. .. .	—	—	7	10
On inclined and engine planes .. .. .	—	2	—	—
On railways, sidings or tramways .. .. .	—	4	308	394
Electricity .. .. .	—	—	—	2
Other accidents .. .. .	5	4	1,022	1,074
<b>Total Outside Quarries .. ..</b>	<b>9</b>	<b>14</b>	<b>1,452</b>	<b>1,643</b>
<b>Grand Total .. .. .</b>	<b>84</b>	<b>76</b>	<b>6,458</b>	<b>6,156</b>

\* For particulars of the number of persons injured by serious accidents see Table 54, Section III.

ACCIDENTS.

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TABLE 53.—Number of Deaths from Accidents and Death-rates per 1,000 persons employed at Quarries under the Quarries Act, 1894, in Great Britain\* from 1895, classified according to the Cause of Accident.

Decennial Period or Year.	Inside the Quarries.					Outside the Quarries.	Total.	
	By Falls of Ground.	By Blasting.	During Descent or Ascent.	Miscellaneous Accidents.	From all Causes.	From all Causes.		
(a) Number of Deaths.								
Annual Average	1895-1904	44	11	3	37	95	20	115
	1905-1914	36	10	1	28	75	15	90
	1915-1924	21	8	1	19	49	11	60
	1925-1934	25	6	1	19	51	12	63
1922 .. .. .	16	7	1	15	39	7	46	
1923 .. .. .	31	11	2	21	65	14	79	
1924 .. .. .	29	6	1	28	64	12	76	
1925 .. .. .	22	11	—	29	62	12	74	
1926† .. .. .	24	10	1	22	57	10	67	
1927 .. .. .	35	3	1	14	53	15	68	
1928 .. .. .	29	4	1	24	58	8	66	
1929 .. .. .	30	7	2	13	52	17	69	
1930 .. .. .	20	9	—	29	58	12	70	
1931 .. .. .	22	3	—	15	40	10	50	
1932 .. .. .	23	1	1	16	41	10	51	
1933 .. .. .	19	6	—	13	38	8	46	
1934 .. .. .	24	6	1	20	51	13	64	
1935 .. .. .	25	3	1	15	44	7	51	
1936 .. .. .	32	7	2	21	62	14	76	
1937 .. .. .	38	3	1	33	75	9	84	
(b) Death-rate per 1,000 Persons Employed. ‡								
Annual Average	1895-1904	.73	.19	.04	.61	1.57	.45	1.09
	1905-1914	.66	.19	.01	.53	1.39	.47	1.06
	1915-1924	.55	.21	.02	.49	1.27	.48	.98
	1925-1934	.51	.13	.02	.40	1.06	.42	.82
1922 .. .. .	.38	.17	.02	.36	.93	.27	.68	
1923 .. .. .	.66	.24	.04	.45	1.39	.51	1.06	
1924 .. .. .	.58	.12	.02	.56	1.28	.41	.96	
1925 .. .. .	.41	.21	—	.55	1.17	.41	.89	
1926† .. .. .	.46	.19	.02	.42	1.09	.34	.82	
1927 .. .. .	.67	.06	.02	.27	1.02	.50	.83	
1928 .. .. .	.57	.08	.02	.47	1.14	.28	.83	
1929 .. .. .	.58	.14	.04	.25	1.01	.58	.85	
1930 .. .. .	.42	.19	—	.60	1.21	.42	.91	
1931 .. .. .	.48	.06	—	.33	.87	.37	.68	
1932 .. .. .	.54	.02	.02	.38	.96	.41	.76	
1933 .. .. .	.45	.14	—	.31	.90	.33	.70	
1934 .. .. .	.54	.13	.02	.45	1.14	.52	.92	
1935 .. .. .	.55	.06	.02	.33	.96	.28	.72	
1936 .. .. .	.67	.15	.04	.44	1.30	.54	1.03	
1937 .. .. .	.77	.06	.02	.67	1.52	.34	1.11	

\* Including particulars for Ireland up to the year 1921.

† Employment in 1926 at certain quarries was indirectly affected by the dispute in the coal mining industry. The general effect on the quarry industry, however, was only slight, and similarly in the case of the effect upon death-rates from accidents.

‡ The death-rates for accidents inside the quarries are based upon the number of persons so employed, and those for accidents outside the quarries upon the number of persons employed outside.

Note.—For comparable particulars of the output of mineral and the number of persons employed see Table 18.



*Accidents at Mines and Quarries in Great Britain in the Year 1937.  
Mines in Cleveland, Lincolnshire, and Northhamptonshire, see Section II.)*

in each district in 1937 see pp. 198 and 199.

WALES.											SCOTLAND.					GREAT BRITAIN.	
13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	1937.	1936.			
Leicester-shire.	Warwick-shire.	Shropshire.	Forest of Dean.	Bristol.	Somerset-shire.	Kent.	South Wales and Monmouth-shire.	North Wales.	Fife, Cincinnann, Kinross and Sutherland.	Lothians (Mid and East) and Peebles.	Lincolnshire, West Riding, Staffordshire, and Dumbarton.	Ayrshire, Dumfries and Argyll.					
—	—	—	—	—	—	—	6	—	—	—	1	8	1	63	71		
4	6	1	2	—	1	4	71	3	9	8	27	4	894	283			
—	1	2	—	—	—	—	15	—	1	1	2	—	47	48			
—	—	—	—	—	—	—	17	—	—	—	—	1	48	46			
4	8	3	2	—	1	4	108	3	10	9	31	5	429	377			
1	—	—	—	—	—	—	—	—	—	—	—	—	2	—			
—	—	—	—	—	—	—	—	—	—	—	—	—	1	3			
—	—	—	—	—	—	—	—	—	—	—	1	—	3	1			
—	—	—	—	—	1	—	—	—	—	—	—	—	8	7			
—	—	—	—	—	—	—	1	—	—	—	—	—	2	—			
—	2	—	—	—	—	—	1	—	—	—	—	—	1	1			
1	2	—	—	—	1	—	3	—	—	—	3	—	13	8			
—	—	—	—	—	—	—	4	—	—	—	1	—	8	13			
1	4	—	—	—	—	2	21	2	2	2	3	2	70	75			
1	—	—	—	—	—	—	10	—	—	—	—	—	24	18			
2	2	—	—	—	—	—	2	—	—	—	2	—	13	8			
—	6	—	—	—	—	2	9	—	3	1	5	1	51	42			
—	—	—	—	—	—	4	42	2	5	3	10	3	158	143			
—	—	—	—	—	—	1	—	—	—	—	2	—	12	7			
2	6	—	—	—	—	5	46	2	5	3	13	3	178	163			
—	—	—	1	—	—	—	—	—	1	—	2	—	13	10			
—	2	—	1	—	—	—	4	—	—	—	2	—	13	8			
—	—	—	—	—	—	—	—	—	—	—	2	—	5	1			
—	—	—	—	—	—	—	—	—	—	—	—	—	—	7			
—	—	—	—	—	—	—	—	—	—	—	—	—	2	5			
—	—	—	—	—	—	—	3	—	—	—	3	—	23	28			
—	—	—	—	—	—	2	6	—	—	1	1	—	25	36			
—	2	—	2	—	—	2	18	—	1	1	10	—	81	95			
7	18	3	4	—	2	11	171	5	16	14	60	9	781	726			
—	—	—	—	—	—	—	3	1	1	1	1	—	15	20			
—	—	—	—	—	—	—	3	—	—	—	—	—	3	1			
—	—	—	—	—	—	—	2	—	1	—	—	1	8	9			
—	—	—	—	—	—	—	—	—	1	—	1	—	3	1			
—	—	—	—	—	—	—	—	—	—	—	1	—	5	5			
—	1	1	—	—	—	—	1	—	1	—	—	—	7	5			
—	1	1	—	—	—	—	3	—	5	—	2	1	7	8			
—	—	—	—	—	—	—	1	—	—	1	—	—	30	28			
1	—	—	—	—	—	1	1	1	3	—	—	1	2	1			
—	—	—	—	—	—	—	—	—	—	—	—	1	20	8			
1	1	1	—	—	—	1	11	2	9	2	3	2	70	58			
8	19	4	4	—	2	12	182	7	25	16	63	11	851	—			
10	9	4	3	—	3	5	148	8	19	14	62	19	—	784			

Place or Cause of Accident.	ENGLAND AND											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
	Northumberland.	Durham.	Cumberland.	Lancashire and Cheshire.	Yorkshire, South.	Yorkshire, West.	Nottinghamshire.	Derbyshire, North.	Derbyshire, South.	Staffordshire, North.	Cannock Chase.	Staffordshire, South and Worcestershire.
<b>B. NUMBER OF PERSONS</b>												
<b>Explosions of Firedamp or Coal Dust</b>	2	10	—	3	—	—	1	6	—	4	—	—
<b>FALLS OF GROUND.</b>												
At the working face .. .. .	2,233	5,061	297	2,532	5,005	1,993	2,655	2,404	168	1,061	708	187
On roads while repairing or enlarging	71	371	15	391	789	325	374	199	15	90	142	29
On roads while otherwise working	—	—	—	—	—	—	—	—	—	—	—	—
or passing .. .. .	89	544	34	180	408	158	157	150	3	40	29	9
In shafts .. .. .	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total .. .. .</b>	<b>2,393</b>	<b>5,976</b>	<b>346</b>	<b>3,044</b>	<b>6,202</b>	<b>2,476</b>	<b>3,186</b>	<b>2,754</b>	<b>186</b>	<b>1,191</b>	<b>879</b>	<b>225</b>
<b>SHAFT ACCIDENTS.</b>												
Overwinding .. .. .	—	9	—	—	17	—	—	—	—	—	—	—
Ropes or chains breaking .. .. .	—	2	—	—	1	—	—	—	—	—	—	—
Whilst descending or ascending by	—	—	—	—	—	—	—	—	—	—	—	—
machinery .. .. .	1	12	—	—	3	1	1	—	—	1	—	—
Falling down shaft .. .. .	2	1	—	—	—	—	—	—	—	—	—	—
Things falling down shaft .. .. .	2	1	—	3	7	2	1	8	—	1	2	—
Other shaft accidents .. .. .	5	36	2	27	7	1	11	5	—	3	3	2
<b>Total .. .. .</b>	<b>10</b>	<b>63</b>	<b>2</b>	<b>30</b>	<b>35</b>	<b>4</b>	<b>13</b>	<b>13</b>	<b>—</b>	<b>5</b>	<b>5</b>	<b>2</b>
<b>UNDERGROUND HAULAGE</b>												
<b>ACCIDENTS.</b>												
Ropes or chains breaking .. .. .	5	11	2	24	23	3	4	11	—	2	1	1
Run over or crushed by trams	—	—	—	—	—	—	—	—	—	—	—	—
or tubs .. .. .	—	—	—	—	—	—	—	—	—	—	—	—
Mechanical haulage .. .. .	515	1,392	42	416	997	255	390	462	14	149	84	38
Horse haulage .. .. .	625	2,529	21	18	144	165	67	109	10	1	73	52
Hand haulage .. .. .	237	1,083	150	417	1,058	441	295	291	14	79	91	21
Runaway trams or tubs .. .. .	13	96	15	47	44	18	27	22	3	11	10	—
<b>Total .. .. .</b>	<b>1,390</b>	<b>5,100</b>	<b>228</b>	<b>898</b>	<b>2,243</b>	<b>879</b>	<b>769</b>	<b>854</b>	<b>41</b>	<b>240</b>	<b>258</b>	<b>111</b>
Other haulage accidents .. .. .	804	2,561	156	1,161	2,732	1,123	689	772	45	362	343	98
<b>Total .. .. .</b>	<b>2,199</b>	<b>7,672</b>	<b>386</b>	<b>2,063</b>	<b>4,998</b>	<b>2,005</b>	<b>1,462</b>	<b>1,627</b>	<b>86</b>	<b>604</b>	<b>602</b>	<b>210</b>
<b>MISCELLANEOUS UNDERGROUND</b>												
By explosives .. .. .	29	35	2	9	6	—	7	7	3	15	4	2
Suffocation by natural gases .. .. .	1	—	—	—	—	—	—	—	—	3	5	—
By underground fires .. .. .	—	1	—	—	1	—	—	—	—	—	—	—
Irruptions of water .. .. .	—	—	—	—	—	—	—	—	—	—	—	—
Electricity .. .. .	3	4	2	—	—	—	1	—	—	—	—	—
By machinery .. .. .	119	272	25	169	411	120	75	140	5	31	52	3
Other accidents .. .. .	2,398	4,548	350	3,354	5,590	1,797	3,663	2,619	117	1,497	935	198
<b>Total .. .. .</b>	<b>2,550</b>	<b>4,860</b>	<b>379</b>	<b>3,532</b>	<b>6,008</b>	<b>1,917</b>	<b>3,746</b>	<b>2,766</b>	<b>125</b>	<b>1,546</b>	<b>996</b>	<b>203</b>
<b>Total Underground .. .. .</b>	<b>7,154</b>	<b>18,581</b>	<b>1,113</b>	<b>8,692</b>	<b>17,249</b>	<b>6,402</b>	<b>8,408</b>	<b>7,206</b>	<b>397</b>	<b>3,350</b>	<b>2,482</b>	<b>640</b>
<b>ON SURFACE.</b>												
By machinery .. .. .	39	121	7	41	107	38	25	38	8	8	13	2
Boiler explosions .. .. .	—	2	—	—	1	—	—	—	—	—	—	—
On railways, sidings or tramways :												
While engaged in moving waggons	115	248	19	90	216	65	60	102	12	54	31	14
While engaged in coupling or												
uncoupling waggons .. .. .	28	69	5	15	55	14	18	17	—	1	2	5
Run over while passing along or												
across railways or tramways	2	21	—	4	6	6	6	6	—	—	1	1
Crushed between waggons and												
structures .. .. .	29	64	1	23	32	9	14	15	—	8	7	2
In other ways .. .. .	89	185	7	107	175	102	41	69	6	40	29	12
<b>Total .. .. .</b>	<b>263</b>	<b>687</b>	<b>32</b>	<b>239</b>	<b>484</b>	<b>196</b>	<b>139</b>	<b>209</b>	<b>18</b>	<b>103</b>	<b>70</b>	<b>34</b>
Electricity .. .. .	—	5	1	3	1	—	—	—	—	—	—	—
Other accidents .. .. .	476	998	74	634	808	374	435	400	27	198	179	59
<b>Total on Surface .. .. .</b>	<b>778</b>	<b>1,713</b>	<b>114</b>	<b>915</b>	<b>1,403</b>	<b>609</b>	<b>599</b>	<b>647</b>	<b>53</b>	<b>300</b>	<b>262</b>	<b>95</b>
<b>Grand Total .. .. .</b>	<b>7,932</b>	<b>20,294</b>	<b>1,227</b>	<b>9,607</b>	<b>18,652</b>	<b>7,011</b>	<b>9,007</b>	<b>7,853</b>	<b>450</b>	<b>3,650</b>	<b>2,744</b>	<b>735</b>
<b>Corresponding figures for the Year</b>												
<b>1936 .. .. .</b>	<b>8,339</b>	<b>18,936</b>	<b>941</b>	<b>9,902</b>	<b>17,629</b>	<b>6,285</b>	<b>8,764</b>	<b>7,512</b>	<b>475</b>	<b>3,805</b>	<b>2,863</b>	<b>800</b>
Estimated number of } Underground	9,547	24,546	1,255	11,459	18,708	8,137	8,302	7,541	567	4,461	3,729	1,004
man-shifts worked } Surface ..	3,358	7,230	436	4,518	6,121	2,975	3,090	2,898	221	2,008	1,540	427
<b>in 1937 (thousands)</b>												

\* Not including accidents primarily due to ropes or chains breaking.

continued.

WALES.																					SCOTLAND.					GREAT BRITAIN.		
13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	1937.		1936.													
Leicestershire.	Warwickshire.	Shropshire.	Forest of Dean.	Bristol.	Somersetshire.	Kent.	South Wales and Monmouthshire.	North Wales.	Fife, Clackmannan, Kinross and Sutherland.	Lothians (Mid. and East) and Peebles.	Highland, West Lothian (Midlothian), Galloway, Dumfriesshire, Perth and Argyll.	Argyll, Dumfries and Argyll.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously Injured. †	Total Number of Persons disabled for more than 3 days.													
338	757	119	163	17	121	445	9,679	375	971	540	1,681	449	39,959	1,220	39,596													
90	144	40	11	3	11	74	1,443	82	75	61	139	28	4,952	167	4,540													
21	32	17	7	1	18	81	903	46	32	49	92	36	3,186	123	3,190													
—	1	1	—	—	—	—	3	—	1	—	—	—	8	—	8													
449	834	177	181	21	150	600	12,028	503	1,079	850	1,912	513	48,055	1,510	47,334													
—	—	—	—	—	—	—	—	—	—	—	—	—	28	—	28													
—	—	—	—	—	—	—	—	—	—	—	—	—	6	—	6													
—	4	—	—	—	—	—	—	—	—	—	—	—	27	1	28													
—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	3													
—	1	—	—	—	—	—	—	—	—	—	—	—	2	—	2													
1	6	—	—	—	—	—	5	—	—	—	—	—	43	2	45													
—	—	—	—	—	—	—	19	—	—	—	—	—	20	—	20													
—	—	—	—	—	—	—	—	—	—	—	—	—	8	—	8													
3	11	—	—	—	1	2	28	—	62	10	25	10	334	41	238													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
2	4	—	—	—	—	8	12	4	4	1	12	1	135	22	145													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
35	123	17	26	—	6	71	605	114	139	75	231	83	6,269	268	6,247													
24	18	38	19	—	3	—	803	13	—	1	22	2	4,757	98	5,381													
61	146	7	26	—	26	15	551	38	90	124	461	121	5,843	155	6,469													
2	7	4	4	—	1	11	54	5	12	10	35	14	465	111	434													
122	294	66	75	—	36	97	2,013	170	241	210	749	220	17,334	632	15,531													
86	324	65	70	2	39	345	2,497	180	323	205	830	245	16,057	147	14,847													
210	622	131	145	2	75	450	4,522	354	568	416	1,591	468	33,586	801	33,523													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
—	4	—	—	—	—	—	15	—	1	7	20	4	194	210	175													
—	—	—	—	—	—	—	2	—	—	—	5	—	18	2	2													
—	—	—	—	—	—	—	1	—	—	—	11	—	14	15	7													
—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1													
—	—	—	—	—	—	—	5	—	5	5	5	—	30	44	25													
37	69	—	—	—	7	14	279	22	37	24	94	32	2,037	106	3,000													
539	1,359	151	254	16	171	483	8,476	488	1,289	686	2,292	735	43,999	249	40,069													
573	1,432	152	254	16	178	500	8,778	511	1,350	722	2,427	772	48,293	626	43,301													
1,236	2,999	460	580	39	404	1,552	25,367	1,368	3,059	1,900	5,969	1,762	128,263	3,087	124,458													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
—	18	2	5	—	2	1	76	11	13	13	33	5	629	53	734													
—	1	—	—	—	—	—	11	—	—	—	—	—	15	3	7													
16	26	6	2	—	3	12	251	22	41	22	95	37	1,559	53	1,472													
4	1	2	—	—	1	—	33	3	3	2	11	9	303	6	296													
1	—	—	—	—	—	—	26	3	2	1	3	6	97	9	123													
2	5	—	—	—	—	—	3	1	1	1	2	3	304	10	399													
14	19	3	7	—	4	4	238	12	38	18	99	27	1,945	96	1,223													
37	52	11	11	—	8	19	588	41	95	63	223	91	3,608	114	3,513													
—	—	—	—	—	—	—	2	—	—	—	1	—	14	16	32													
88	235	21	26	1	34	91	1,301	93	191	142	429	128	7,422	128	6,611													
128	306	34	42	1	44	91	1,978	145	299	208	691	224	11,688	314	10,877													
1,364	3,305	494	622	40	448	1,643	27,345	1,513	3,358	2,008	6,680	1,986	139,951	3,351	—													
1,245	3,321	545	643	63	431	1,780	24,762	1,704	3,433	2,074	7,140	1,921	—	3,091	135,329													
1,641	3,220	583	1,168	78	763	1,577	29,972	2,098	5,330	2,953	10,276	2,773	161,638	—	152,554													
607	1,323	200	272	24	213	358	6,999	742	1,825	1,105	3,387	916	52,788	—	50,522													

† See Note † to Table 47.

TABLE 54

II.—Metalliferous Mines (including the Stratified Ironstone)

Place or Cause of Accident.	Iron Ore and Ironstone Mines.					Other Mines under the Metalliferous Mines Regulation Acts.						
	Under the Coal Mines Act.		Under the Metalliferous Mines Regulation Acts.		All Iron Ore and Ironstone Mines.		At Tin Mines in Cornwall.	At Lead and Zinc Mines.	At Slate Mines.	At all other Mines.	All Non-ferrous Metalliferous Mines.	
	Cleveland.	Lincolnshire and Northamptonshire.	Cumberland and North Lancashire.	Elsewhere.	1937.	1936.					1937.	1936.
<b>A. NUMBER OF PERSONS KILLED.</b>												
Explosions of Firedamp ..	—	—	—	—	—	—	—	—	—	—	—	—
<b>FALLS OF GROUND.</b>												
At the working face ..	7	—	4	—	11	1	—	—	2	2	4	6
On roads while repairing or enlarging ..	—	—	—	—	—	3	—	—	—	—	—	1
On roads while otherwise working or passing ..	—	—	—	—	—	—	—	—	—	—	—	—
In shafts ..	—	—	—	—	—	—	—	1	—	—	1	—
<b>Total ..</b>	<b>7</b>	<b>—</b>	<b>4</b>	<b>—</b>	<b>11</b>	<b>3</b>	<b>—</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>6</b>
<b>SHAFT ACCIDENTS.</b>												
Overwinding ..	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or chains breaking ..	—	—	—	—	—	—	—	—	—	—	—	—
Whilst descending or ascending by machinery ..	—	—	—	—	—	—	—	—	—	—	—	—
Falling into shaft from surface ..	—	—	—	—	—	—	—	—	—	—	—	—
Falling from part way down ..	—	—	—	—	—	—	—	—	—	—	—	—
Things falling into shaft from surface ..	—	—	—	—	—	—	—	1	—	—	1	—
Things falling from part way down ..	—	—	—	—	—	—	—	—	—	—	—	—
Other shaft accidents ..	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total ..</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>—</b>
<b>UNDERGROUND HAULAGE ACCIDENTS.</b>												
Ropes or chains breaking ..	—	—	—	—	—	—	—	—	—	—	—	—
Run over or crushed by trams or tubs ..	—	—	1	—	1	1	—	—	—	—	—	—
Other haulage accidents ..	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total ..</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>—</b>	<b>1</b>	<b>2</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>MISCELLANEOUS UNDERGROUND.</b>												
By explosives ..	—	—	—	—	—	1	—	2	1	—	3	5
Suffocation by natural gases ..	—	—	—	—	—	—	—	2	—	—	2	—
By underground fires ..	—	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water ..	—	—	—	—	—	—	—	—	—	—	—	—
By electricity ..	—	—	—	—	—	—	—	—	—	—	—	—
By machinery ..	—	—	—	—	—	—	—	—	—	—	—	—
Other accidents ..	1	—	—	—	1	—	1	—	1	—	2	4
<b>Total ..</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>—</b>	<b>7</b>	<b>6</b>
<b>Total Underground ..</b>	<b>8</b>	<b>—</b>	<b>5</b>	<b>—</b>	<b>13</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>14</b>
<b>ON SURFACE.</b>												
By machinery ..	—	—	—	—	—	—	—	—	—	—	—	—
Boiler explosions ..	—	—	—	—	—	—	—	—	—	—	—	—
On railways, sidings or tramways ..	—	—	—	—	—	—	—	—	—	—	—	—
Electricity ..	—	—	—	—	—	—	—	—	—	—	—	—
Other accidents ..	—	—	—	—	—	—	—	—	—	—	—	—
<b>Total on Surface ..</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Grand Total ..</b>	<b>8</b>	<b>—</b>	<b>5</b>	<b>—</b>	<b>13</b>	<b>—</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>—</b>
<i>Corresponding figures for the Year 1936 ..</i>	<i>5</i>	<i>1</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>6</i>	<i>2</i>	<i>1</i>	<i>4</i>	<i>5</i>	<i>—</i>	<i>11</i>
Estimated number of man-shifts worked in 1937 (thousands) ..	938	148	615	148	1,849	1,650	474	579	838	1,044	2,985	2,631



continued.

Mines in Cleveland, Lincolnshire and Northamptonshire).

Iron Ore and Ironstone Mines.						Other Mines under the Metalliferous Mines Regulation Acts.							
Under the Coal Mines Act.		Under the Metalliferous Mines Regulation Acts.		All Iron Ore and Ironstone Mines, 1937.		Total Number of Persons disabled for more than 3 days in 1936.	At Tin Mines in Cornwall.	At Lead and Zinc Mines.	At Slate Mines.	At all other Mines.	All Non-ferrous Metalliferous Mines, 1937.		Total Number of Persons disabled for more than 3 days in 1936.
Cleveland.	Lincolnshire and Northamptonshire.	Cumberland and North Lancashire.	Elsewhere.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously Injured*						Total Number of Persons disabled for more than 3 days.	Number of Persons seriously Injured*	

B. NUMBER OF PERSONS INJURED WHO WERE DISABLED FOR MORE THAN 3 DAYS.

—	—	—	—	—	—	—	—	1	—	—	1	1	—
186	20	28	6	240	7	248	32	14	32	39	117	7	161
6	—	1	—	7	—	4	—	3	—	1	4	1	1
2	—	1	2	5	1	7	1	3	—	—	3	—	11
—	—	—	—	—	—	1	—	—	—	2	5	—	1
194	20	30	8	252	8	260	33	22	33	42	129	8	174
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	1	—	1	1	—	—
—	—	—	—	—	—	—	—	1	1	—	2	1	3
—	—	—	—	—	—	—	—	1	—	2	3	1	2
3	—	1	—	4	—	2	2	6	—	9	17	1	15
3	—	1	—	4	—	2	3	8	—	14	25	3	22
—	—	—	—	—	—	—	—	—	—	1	1	—	—
69	13	20	12	114	5	89	10	15	6	24	55	2	59
53	7	39	3	102	1	94	15	31	10	29	85	—	66
122	20	59	15	216	6	183	25	46	16	54	141	2	125
—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	1	2	—	5	5	8	2	4	3	6	15	16	12
—	—	—	—	—	—	—	7	—	—	—	7	3	1
—	—	—	—	—	—	—	6	—	—	—	6	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	1	4	—	5	—	5	5	8	12	3	23	—	37
266	30	74	21	391	4	334	72	60	159	112	403	7	335
268	32	80	21	401	9	347	92	72	174	121	459	28	385
587	72	170	44	873	23	792	153	149	222	231	755	40	706
—	2	2	—	4	—	11	1	3	8	6	18	1	26
—	—	—	—	—	—	—	—	—	—	—	—	—	1
9	—	9	2	20	1	40	5	10	19	23	57	4	64
17	7	26	5	55	2	46	13	22	116	52	203	6	148
28	9	37	7	79	3	87	19	35	143	81	278	11	239
613	81	207	51	952	28	—	172	184	365	312	1,033	51	—
550	89	209	41	—	39	889	164	194	299	288	—	50	945

See opposite.

\* See Note † to Table 47.

TABLE 54—  
III.—Quarries more

Place or Cause of Accident.	Quarries at which the Principal Mineral got was						Great Britain.		
	Iron-stone.	Lime-stone (other than Chalk, &c.).	Sand-stone.	Slate.	Igneous Rocks.	Clay and Brick Earth.	Other Minerals.	1937.	1936
<b>A. NUMBER OF PERSONS KILLED.</b>									
<b>INSIDE THE QUARRIES.</b> (i.e., inside the actual pits, holes, or excavations.)									
<b>Falls of Ground.</b>									
From beyond the person's own working-place .. .. .	—	4	5	—	5	1	2	17	17
From the person's own working-place .. .. .	—	5	3	—	1	4	8	21	15
<b>Total .. .. .</b>	—	<b>9</b>	<b>8</b>	—	<b>6</b>	<b>5</b>	<b>10</b>	<b>38</b>	<b>32</b>
<b>By Blasting.</b>									
While charging or tamping .. .. .	—	1	—	—	—	—	—	1	1
From stones projected by shots, when persons had not taken sufficient shelter .. .. .	—	1	—	—	—	1	—	2	3
From miss-fire shots .. .. .	—	—	—	—	—	—	—	—	2
Other accidents .. .. .	—	—	—	—	—	—	—	—	1
<b>Total .. .. .</b>	—	<b>2</b>	—	—	—	<b>1</b>	—	<b>3</b>	<b>7</b>
<b>During Descent or Ascent.</b>									
Falling from paths, steps or ladders .. .. .	—	—	—	—	1	—	—	1	1
When descending or ascending by machinery .. .. .	—	—	—	—	—	—	—	—	1
Other accidents .. .. .	—	—	—	—	—	—	—	—	1
<b>Total .. .. .</b>	—	—	—	—	<b>1</b>	—	—	<b>1</b>	<b>2</b>
<b>Miscellaneous.</b>									
Ropes or chains breaking .. .. .	—	—	—	—	—	—	—	—	—
Machinery .. .. .	—	3	1	—	—	1	1	6	3
Boiler explosions .. .. .	—	—	—	—	—	—	—	—	—
On inclined and engine planes .. .. .	—	—	—	—	—	—	—	—	—
On railways, sidings or tramways .. .. .	—	—	1	—	1	2	1	5	3
Falling from ledges .. .. .	—	5	4	1	—	—	—	10	4
Electricity .. .. .	—	—	—	—	—	1	—	1	—
Other accidents .. .. .	1	7	—	—	—	1	2	11	11
<b>Total .. .. .</b>	<b>1</b>	<b>15</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>33</b>	<b>21</b>
<b>Total Inside Quarries .. .. .</b>	<b>1</b>	<b>26</b>	<b>14</b>	<b>1</b>	<b>8</b>	<b>11</b>	<b>14</b>	<b>75</b>	<b>62</b>
<b>OUTSIDE THE QUARRIES.</b>									
Machinery .. .. .	—	—	2	—	1	1	—	4	4
Boiler explosions .. .. .	—	—	—	—	—	—	—	—	—
On inclined and engine planes .. .. .	—	—	—	—	—	—	—	—	2
On railways, sidings or tramways .. .. .	—	—	—	—	—	—	—	—	4
Electricity .. .. .	—	—	—	—	—	—	—	—	—
Other accidents .. .. .	—	1	1	—	1	1	1	5	4
<b>Total Outside Quarries .. .. .</b>	—	<b>1</b>	<b>3</b>	—	<b>2</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>14</b>
<b>Grand Total .. .. .</b>	<b>1</b>	<b>27</b>	<b>17</b>	<b>1</b>	<b>10</b>	<b>13</b>	<b>15</b>	<b>84</b>	—
<i>Corresponding figures for the Year 1936</i> .. .. .	<i>4</i>	<i>13</i>	<i>4</i>	<i>6</i>	<i>15</i>	<i>14</i>	<i>20</i>	—	<i>76</i>
<b>Average Number of Persons employed in 1937 .. .. .</b>	<b>2,785</b>	<b>17,031</b>	<b>9,043</b>	<b>6,589</b>	<b>14,717</b>	<b>13,144</b>	<b>12,614</b>	<b>75,923</b>	<b>73,530</b>

continued.

than 20 feet deep.

Quarries at which the Principal Mineral got was							Great Britain, 1937.		Total Number of Persons disabled for more than 3 days.	Number of Persons seriously injured.*	Total Number of Persons disabled for more than 3 days in 1936.
Iron-stone.	Lime-stone (other than Chalk, &c.)	Sand-stone.	Slate.	Igneous Rocks.	Clay and Brick Earth.	Other Minerals.	Total Number of Persons disabled for more than 3 days.	Number of Persons seriously injured.*			
15	275	113	49	146	145	81	824	21 32	824		
15	275	113	49	146	145	81	824	53	824		
—	2	—	2	—	—	—	4	4	3		
—	9	2	3	—	6	—	20	23	24		
—	7	1	1	1	3	1	14	14	10 9		
—	18	3	6	1	9	1	38	41	46		
5	10	8	1	9	5	9	47	—	52		
—	—	1	—	—	—	—	1	—	1		
—	5	2	9	10	6	2	34	2	39		
5	15	11	10	19	11	11	82	2	92		
1	—	—	—	3	1	2	7	—	9		
8	25	22	9	33	18	46	181	7	159		
—	1	—	—	—	—	—	1	—	1		
2	9	1	1	1	3	10	27	3	22		
24	210	62	30	100	120	109	655	18	814		
5	20	20	1	5	10	12	78	14	82		
—	—	—	—	—	—	—	—	—	2		
104	934	382	443	793	198	284	3,138	67	2,462		
144	1,199	487	484	935	350	463	4,062	109	3,551		
184	1,507	614	549	1,101	515	556	5,006	205	4,513		
2	19	14	7	24	7	42	115	27	163		
—	2	—	1	1	—	—	7	—	10		
9	96	19	51	57	34	42	308	17	394		
—	—	—	—	—	—	—	—	—	2		
19	144	116	381	180	35	147	1,022	42	1,074		
30	261	149	440	262	77	223	1,452	86	1,643		
194	1,768	763	989	1,363	592	789	6,458	291	—		
202	1,748	532	947	1,339	626	762	—	345	6,156		

See opposite.

\* See Note † to Table 47.

TABLE 55.—Total Number of Persons Injured by Accidents at Mines and Quarries in Great Britain in the Year 1937, classified according to the Period of Disablement and the Nature of the Injury received.

Period of Disablement.	Fractures.					Injuries (including other fractures) to:—								Total for all injuries.	
	Thigh.	Leg.	Arm.	Spine.	Pelvis.	Head.	Arm.	Hand.	Thigh or Leg.	Foot.	Eye.	Back.	Other Parts of Body.	1937.	1936.
<b>(i) MINES UNDER THE COAL MINES ACT.*—Workers Below Ground (161,688,000 Man-shifts worked in 1937).</b>															
Number of Persons Injured who were disabled for —															
More than 3 days and under 8 days ..	—	—	—	—	—	1,651	1,678	5,347	2,979	2,341	1,559	1,611	1,429	18,595	17,452
8 days and under 2 weeks ..	—	—	—	—	—	2,569	2,576	8,632	4,509	2,976	1,786	2,524	2,239	27,811	26,207
2 weeks and under 6 weeks ..	2	15	52	5	3	3,223	4,575	20,063	9,958	5,838	2,184	4,894	4,921	55,738	54,850
6 weeks and under 13 weeks ..	2	132	178	5	8	562	998	4,420	2,628	1,690	429	974	1,266	13,292	13,105
13 weeks and under 26 weeks ..	10	208	69	10	30	152	179	611	772	311	127	264	410	3,158	3,241
26 weeks or longer ..	21	76	12	10	14	30	40	96	107	35	35	49	53	578	561
Number of Persons who had not recovered from injury at end of year ..	105	638	152	132	102	492	616	2,447	1,797	900	399	888	893	9,551	9,608
<b>Total ..</b>	<b>140</b>	<b>1,070</b>	<b>463</b>	<b>164</b>	<b>157</b>	<b>8,696</b>	<b>10,665</b>	<b>41,626</b>	<b>23,757</b>	<b>14,093</b>	<b>6,514</b>	<b>11,205</b>	<b>11,214</b>	<b>123,754</b>	<b>125,067</b>
<b>(ii) MINES UNDER THE COAL MINES ACT.*—Surface Workers (52,793,000 Man-shifts worked in 1937).</b>															
Number of Persons Injured who were disabled for —															
More than 3 days and under 8 days ..	—	—	—	—	—	111	131	444	254	232	102	117	106	1,497	1,335
8 days and under 2 weeks ..	—	—	—	—	—	180	229	753	320	304	112	177	197	2,283	1,892
2 weeks and under 6 weeks ..	—	1	11	—	—	250	368	1,977	776	639	151	322	457	4,952	4,626
6 weeks and under 13 weeks ..	—	9	48	3	—	38	127	438	205	175	37	46	128	1,254	1,291
13 weeks and under 26 weeks ..	1	10	13	—	2	14	26	70	49	28	15	14	55	297	306
26 weeks or longer ..	2	6	1	1	—	1	2	7	5	4	2	2	6	39	38
Number of Persons who had not recovered from injury at end of year ..	5	39	35	6	3	39	76	277	122	86	29	44	111	872	768
<b>Total ..</b>	<b>8</b>	<b>65</b>	<b>103</b>	<b>10</b>	<b>5</b>	<b>643</b>	<b>960</b>	<b>3,987</b>	<b>1,731</b>	<b>1,468</b>	<b>448</b>	<b>723</b>	<b>1,061</b>	<b>11,197</b>	<b>10,262</b>

## (iii) STRATIFIED IRONSTONE MINES OF CLEVELAND, LINCOLNSHIRE AND NORTHAMPTONSHIRE. (1,086,000 Man-shifts worked in 1937).

Number of Persons Injured who were disabled for :—															
More than 3 days and under 6 days ..	—	—	—	—	—	10	2	23	15	7	3	4	5	69	46
8 days and under 2 weeks ..	—	—	—	—	—	7	15	45	10	11	6	16	11	121	120
2 weeks and under 6 weeks ..	—	—	—	—	—	14	23	117	49	35	3	26	46	313	295
6 weeks and under 13 weeks ..	—	2	1	—	—	4	3	27	13	15	—	12	10	87	78
13 weeks and under 26 weeks ..	—	1	—	—	—	2	1	1	3	7	—	4	3	26	21
26 weeks or longer ..	—	1	—	—	—	—	—	1	—	1	—	—	3	6	2
Number of Persons who had not recovered from injury at end of year ..	1	2	1	—	—	3	4	17	17	9	4	2	12	73	77
<b>Total†</b> .. .. .	<b>1</b>	<b>6</b>	<b>2</b>	<b>—</b>	<b>—</b>	<b>39</b>	<b>49</b>	<b>232</b>	<b>112</b>	<b>81</b>	<b>16</b>	<b>64</b>	<b>90</b>	<b>694</b>	<b>639</b>

## (iv) MINES UNDER THE METALLIFEROUS MINES REGULATION ACTS—(3,698,000 Man-shifts worked in 1937).

Number of Persons Injured who were disabled for :—															
More than 3 days and under 8 days ..	—	—	—	—	—	18	12	60	27	21	11	13	13	175	160
8 days and under 2 weeks ..	—	—	—	—	—	14	23	96	45	36	7	15	28	294	241
2 weeks and under 6 weeks ..	—	—	3	—	—	20	53	254	74	58	11	28	54	555	547
6 weeks and under 13 weeks ..	—	3	8	—	—	9	5	48	27	29	7	7	16	169	119
13 weeks and under 26 weeks ..	—	8	—	—	—	1	2	7	6	1	—	3	3	31	36
26 weeks or longer ..	1	1	—	1	1	—	1	1	—	2	—	1	—	9	3
Number of Persons who had not recovered from injury at end of year ..	—	9	3	—	1	7	7	31	14	6	4	6	10	98	89
<b>Total</b> .. .. .	<b>1</b>	<b>21</b>	<b>14</b>	<b>1</b>	<b>2</b>	<b>69</b>	<b>108</b>	<b>497</b>	<b>198</b>	<b>153</b>	<b>40</b>	<b>73</b>	<b>124</b>	<b>1,281</b>	<b>1,195</b>

## (v) QUARRIES MORE THAN 20 FEET DEEP—(75,923 persons employed in 1937).

Number of Persons Injured who were disabled for :—															
More than 3 days and under 8 days ..	—	—	—	—	—	57	77	276	123	103	87	60	57	840	777
8 days and under 2 weeks ..	—	—	—	—	—	81	106	494	165	148	83	89	79	1,245	1,229
2 weeks and under 6 weeks ..	—	4	9	2	—	139	236	1,186	416	374	130	171	258	2,925	2,752
6 weeks and under 13 weeks ..	—	18	11	1	—	38	39	245	111	112	35	40	91	741	719
13 weeks and under 26 weeks ..	—	20	7	—	—	12	7	53	33	27	14	10	17	200	177
26 weeks or longer ..	—	9	—	2	—	—	3	10	4	3	3	5	2	41	48
Number of Persons who had not recovered from injury at end of year ..	2	49	17	—	4	28	31	112	56	45	27	26	57	454	445
<b>Total†</b> .. .. .	<b>2</b>	<b>101</b>	<b>46</b>	<b>5</b>	<b>4</b>	<b>355</b>	<b>500</b>	<b>2,378</b>	<b>908</b>	<b>814</b>	<b>380</b>	<b>402</b>	<b>568</b>	<b>6,459</b>	<b>6,156</b>

\* Excluding Stratified Ironstone mines of Cleveland, Lincolnshire and Northamptonshire. See Section (iii).

† Including cases in which the period of disablement was not known.

TABLE 56.—Number of Persons killed and injured by Accidents, and the number killed and injured per 1,000 persons employed at Mines in Great Britain under the Coal Mines Act (except Stratified Ironstone Mines of Cleveland, Lincolnshire and Northamptonshire) during the Year 1937, classified according to Age.

Inspection Division.	Persons Employed Below-ground Aged					Persons Employed Above-ground Aged				
	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages.	Under 16 years.	16 and under 18 years.	18 and under 20 years.	20 years and over.	All Ages.
<b>(a) Number of Persons Killed.</b>										
Scotland .. ..	1	1	2	95	99	2	2	1	11	16
Northern .. ..	7	10	6	123	146	1	3	—	9	13
Yorkshire .. ..	7	4	2	86	99	—	—	—	9	9
North Midland ..	1	4	3	91	99	2	—	—	6	8
North Western ..	2	3	1	94	100	—	1	—	4	5
Cardiff and Forest of Dean .. ..	3	4	5	104	116	—	—	—	2	2
Swansea .. ..	—	5	1	53	59	1	—	1	7	9
Midland and Southern	—	1	4	58	63	1	—	1	6	8
<b>All Divisions :</b>										
1937 .. ..	21	32	24	704	781	7	6	3	54	70
1936 .. ..	24	24	30	648	726	5	2	1	50	58
<b>(b) Number of Persons Injured and Disabled for more than 3 Days.</b>										
Scotland .. ..	207	627	576	11,180	12,590	216	227	100	879	1,422
Northern .. ..	1,428	2,374	1,687	21,359	26,848	501	451	230	1,423	2,605
Yorkshire .. ..	993	1,364	816	20,472	23,645	192	201	85	1,524	2,012
North Midland ..	364	670	481	15,732	17,247	99	108	77	1,143	1,427
North Western ..	300	580	408	12,122	13,410	86	117	80	1,086	1,369
Cardiff and Forest of Dean .. ..	731	1,206	963	14,789	17,689	96	124	58	1,017	1,295
Swansea .. ..	312	528	397	7,021	8,258	37	43	34	611	725
Midland and Southern	119	219	187	8,051	8,576	48	56	31	698	833
<b>All Divisions :</b>										
1937 .. ..	4,454	7,568	5,515	110,726	128,263	1,275	1,327	705	8,381	11,688
1936 .. ..	4,736	7,079	5,797	106,840	124,452	1,186	1,168	661	7,862	10,877
<b>(c) Number of Persons Killed and Injured per 1,000 Persons Employed.</b>										
Scotland .. ..	195	174	139	179	177	91	101	60	56	64
Northern .. ..	398	321	270	187	205	142	132	111	52	71
Yorkshire .. ..	279	224	175	209	211	87	90	67	59	64
North Midland ..	276	226	166	228	227	73	71	67	59	61
North Western ..	215	181	143	195	192	80	71	64	53	56
Cardiff and Forest of Dean .. ..	237	231	230	225	226	168	133	98	80	87
Swansea .. ..	248	221	173	216	214	85	96	114	80	82
Midland and Southern	208	182	160	205	203	81	77	59	59	61
<b>All Divisions :</b>										
1937 .. ..	281	236	194	204	207	105	101	78	59	67
1936 .. ..	279	237	205	204	203	101	99	74	57	64

TABLE 57.—Number of Persons Injured by Accidents at Mines under the Coal Mines Act from 1908, so far as particulars are available, distinguishing the Principal Causes.

Period or Year.	Below Ground.						Above Ground.		Total Below and Above Ground.	Number of Persons Injured per 1,000 Persons Employed.	
	Explosions of Firedamp or Coal-dust.	Falls of Ground.	Shaft Accidents.	Haulage Accidents.	Other Miscellaneous Accidents.	Total Below Ground.	On Railways, Sidings or Tramways.	Other Accidents.			
<b>(a) Total Number of Persons injured.*</b>											
Annual Average	1908-1912	166	65,218	813	40,766	45,943	142,906	3,987	7,400	154,293	148.1
	1913-1917†	118	59,687	795	39,483	54,717	154,800	3,972	9,254	168,026	153.8
	1918-1922†	103	48,970	627	33,953	44,182	127,835	3,486	8,752	140,073	116.7
	1923-1927†	111	63,794	1,012	46,982	62,267	174,166	4,348	11,283	189,797	164.8
	1928-1932	101	53,992	334	39,402	49,137	142,966	3,487	7,810	154,263	168.8
1933-1937	65	46,863	235	33,524	41,834	122,521	3,408	7,200	133,129	168.3	
1929 .. .. .	108	61,910	378	41,640	59,134	163,170	3,721	9,008	175,899	181.4	
1930 .. .. .	123	58,026	348	41,142	54,717	154,356	3,488	8,437	166,281	176.2	
1931 .. .. .	96	49,068	202	37,975	43,638	130,979	3,551	6,941	141,471	161.3	
1932 .. .. .	109	44,824	223	34,595	36,655	116,406	3,153	6,315	125,874	152.1	
1933 .. .. .	64	44,068	158	32,216	36,429	112,935	3,094	6,390	122,419	153.5	
1934 .. .. .	93	47,286	247	33,733	41,233	122,592	3,153	7,114	132,859	166.6	
1935 .. .. .	59	47,156	196	34,352	41,361	123,124	3,639	6,993	133,756	171.6	
1936 .. .. .	56	47,535	238	33,649	43,556	125,034	3,537	7,997	135,968	174.8	
1937 .. .. .	55	48,269	337	33,668	46,593	128,922	3,617	8,106	140,645	175.1	
<b>(b) Number of Persons seriously injured.‡</b>											
Annual Average	1908-1912	198	2,244	198	1,443	920	5,003	192	534	5,729	5.5
	1913-1917	139	1,989	135	1,305	709	4,277	175	476	4,928	4.8
	1918-1922†	128	1,721	96	1,117	765	3,827	166	404	4,397	3.8
	1923-1927†	125	1,885	114	1,242	854	4,220	161	383	4,764	4.1
	1928-1932	107	1,615	65	967	629	3,383	125	236	3,744	4.1
1933-1937	72	1,400	67	751	586	2,876	110	189	3,175	4.0	
1929 .. .. .	120	1,837	94	1,052	724	3,827	128	273	4,228	4.4	
1930 .. .. .	128	1,620	31	1,002	689	3,470	125	217	3,812	4.0	
1931 .. .. .	101	1,449	66	873	507	2,996	113	196	3,305	3.8	
1932 .. .. .	110	1,381	35	826	527	2,879	123	210	3,212	3.9	
1933 .. .. .	73	1,319	48	716	483	2,639	97	188	2,924	3.7	
1934 .. .. .	99	1,376	111	730	602	2,918	102	196	3,216	4.0	
1935 .. .. .	67	1,442	74	763	623	2,969	105	183	3,257	4.2	
1936 .. .. .	63	1,349	60	742	592	2,806	132	179	3,117	4.0	
1937 .. .. .	59	1,516	41	804	629	3,049	114	200	3,363	4.2	

\* In 1924 and subsequent years accidents which disabled the persons injured for more than 3 days were reportable, the limit in 1923 and earlier years being 7 days.  
 † Excluding in Section (a) the years 1915-18, for which particulars are not available, and in Sections (a) and (b) the years 1921 and 1926, which were affected by prolonged stoppages of work.  
 ‡ See Note † to Table 47.

ACCIDENTS.

TABLE 58.—Number of Cases of Accident and Disease\* in respect of which Compensation was Paid under the Workmen's Compensation Acts, and the Amount of Compensation paid in the Mining and Quarrying Industries from the Year 1908, so far as particulars are available.

Year.	Average Number of Persons Employed.	Number of Cases.				Amount of Compensation Paid.				Total Amount Paid.
		Accidents.		Diseases.		Accidents.		Diseases.		
		Fatal Cases.	Disablement Cases. †	Fatal Cases.	Disablement Cases.	Fatal Cases.	Disablement Cases. †	Fatal Cases.	Disablement Cases.	
<b>Mines.</b>										
1908	1,047,862	1,301	137,622	—	1,689	£ 226,226	£ 601,848	£ —	£ 15,382	£ 841,456
1909	984,994	1,456	154,798	3	2,730	237,308	724,269	493	26,795	988,865
1910	1,072,571	1,347	166,709	—	3,783	220,973	818,302	—	42,507	1,081,782
1911	1,059,642	1,711	178,466	1	5,026	281,183	905,999	24	68,017	1,285,223
1912	1,086,113	1,246	167,959	2	5,949	202,367	897,900	439	85,831	1,185,727
1913	1,114,210	1,312	195,387	—	7,478	227,418	1,010,637	—	113,203	1,351,258
1914	1,046,357	1,768	179,899	—	8,928	307,085	1,024,054	—	164,833	1,495,922
1915-8					Particulars are not available.					
1919	1,184,038	1,248	134,991	1	9,174	271,051	1,250,096	200	225,422	1,746,769
1920	1,249,884	1,231	134,738	1	9,407	274,727	1,711,674	79	343,094	2,329,574
1921	1,109,023	833	103,784	1	8,711	184,464	1,677,110	300	395,637	2,257,511
1922	1,122,511	1,067	201,370	—	12,585	232,009	2,605,300	—	587,295	3,424,604
1923	1,214,660	1,282	245,479	1	15,765	280,357	2,935,172	189	594,943	3,810,661
1924	1,202,597	1,265	214,171	2	15,504	348,830	2,352,447	547	674,390	3,376,214
1925	1,157,085	1,235	197,388	3	15,779	375,642	2,290,134	115	609,656	3,275,547
1926	772,883	787	117,252	5	13,187	228,767	1,945,489	1,297	540,726	2,716,279
1927	1,052,216	1,129	118,978	2	15,273	354,696	2,170,878	249	483,338	3,014,161
1928	944,666	1,073	185,823	3	14,772	324,211	2,199,485	992	501,990	3,026,678
1929	930,780	1,161	196,851	3	16,126	333,664	2,227,126	829	489,307	3,049,826
1930	933,813	1,123	190,745	2	16,847	333,188	2,162,192	611	505,458	3,001,449
1931	862,314	996	170,887	1	16,828	308,512	2,092,452	220	540,005	2,941,189
1932	807,848	907	154,355	5	16,016	272,232	2,007,389	1,049	504,549	2,785,219
1933	781,361	901	147,441	1	15,208	278,972	1,868,117	300	426,307	2,573,696
1934	784,643	906	158,852	3	15,184	276,034	1,937,489	1,040	445,080	2,659,652
1935	770,091	1,235	161,509	2	15,264	376,141	2,070,726	516	445,059	2,829,433
1936	765,783	888	164,905	2	15,098	273,221	2,205,679	643	447,647	2,927,190
1937†	792,744	914	169,212	—	13,966	274,313	2,186,296	—	347,403	2,808,012
<b>Quarries.</b>										
1908	65,475	88	5,284	1	2	11,501	23,056	230	11	34,798
1909	85,680	83	5,536	—	1	12,072	28,586	—	2	40,660
1910	90,318	91	5,823	—	2	11,199	35,056	—	4	46,259
1911	91,957	83	5,817	—	2	11,177	38,274	—	149	49,600
1912	84,703	64	5,440	—	2	8,665	39,143	—	5	47,813
1913	87,541	66	6,001	—	5	8,638	35,855	—	36	44,229
1914	82,709	83	5,674	—	1	11,799	35,435	—	2	47,526
1915-8					Particulars are not available.					
1919	49,235	34	2,973	—	3	6,897	35,768	—	9	42,674
1920	68,792	56	4,151	—	8	12,010	53,169	—	52	65,231
1921	62,722	42	3,687	—	1	9,238	55,929	—	4	65,171
1922	62,781	35	3,897	—	1	8,422	63,159	—	14	71,595
1923	68,979	49	5,292	—	7	11,162	72,408	—	70	83,640
1924	74,771	57	6,359	—	9	14,512	72,610	—	35	87,157
1925	76,274	89	6,742	—	5	29,194	78,506	—	54	107,754
1926	77,791	62	6,267	—	6	17,318	80,173	—	35	97,526
1927	76,017	61	6,575	—	22	18,349	87,451	—	83	105,863
1928	73,691	52	6,638	—	5	14,403	78,830	—	28	93,288
1929	79,430	60	6,926	—	14	17,056	83,029	—	64	100,149
1930	73,599	72	6,657	—	9	21,901	85,341	—	158	107,400
1931	72,639	51	6,530	—	15	14,063	84,724	—	98	98,885
1932	70,401	50	5,656	—	17	16,996	74,655	—	322	91,973
1933	61,847	44	5,199	—	15	14,197	75,778	—	208	90,183
1934	65,597	46	5,910	—	21	15,974	75,090	—	315	91,379
1935	65,918	68	6,447	—	27	18,487	86,659	—	503	105,649
1936	71,518	65	7,048	—	36	17,254	94,831	—	901	112,986
1937†	74,895	55	7,750	1	32	16,915	104,356	300	312	121,883

\* Excluding cases resulting from Schemes made under Section 47 of the Workmen's Compensation Act, 1925, and the Workmen's Compensation (Silicosis and Asbestosis) Act, 1930.

† Including cases where the payment for compensation was continued from the previous year. This circumstance largely accounts for the smaller number of accident disablement cases shown in the preceding Tables, which relate only to cases reported during the year.

‡ Provisional figures.



**TABLE 59.—Number of Cases of Disease\* amongst Miners for which Compensation under the Workmen's Compensation Acts was paid from 1908, so far as particulars are available.**

Nature of Disease.	Annual Averages-					1933	1934	1935	1936	1937†
	1908-12	1913-17	1918-22	1923-7	1928-32					
<b>(i) NEW CASES.</b>										
Nystagmus	944	2,587	3,225	3,097	12,888	1,535	1,745	1,839	1,522	1,165
Subcutaneous Cellulitis of the hand (beat hand)	718	819	980	1,422	7,060	1,238	1,200	1,189	1,197	1,212
Subcutaneous Cellulitis or Acute Bursitis: Arising at or about the knee (beat knee)	1,043	1,620	1,421	2,542	15,827	3,111	3,686	4,149	4,523	4,848
Over the elbow (beat elbow)	91	151	158	311	2,145	435	554	581	628	700
Inflammation of the synovial lining of the wrist joint and tendon sheaths	122	187	119	181	1,485	366	328	358	347	373
Ankylostomiasis	6	3	—	—	—	—	—	—	—	—
Other diseases	9	11	9	29	184	48	70	105	101	129
<b>(ii) CASES CONTINUED FROM PREVIOUS YEAR.</b>										
Nystagmus	816	2,684	4,319	7,682	38,975	8,068	7,174	6,591	6,202	5,048
Subcutaneous Cellulitis of the hand (beat hand)	32	50	62	143	645	112	112	120	101	99
Subcutaneous Cellulitis or Acute Bursitis: Arising at or about the knee (beat knee)	42	76	75	140	1,086	207	219	225	315	254
Over the elbow (beat elbow)	6	4	15	17	146	34	46	40	54	44
Inflammation of the synovial lining of the wrist joint and tendon sheaths	5	10	5	12	73	24	15	16	27	24
Ankylostomiasis	—	—	—	—	—	—	—	—	—	—
Other diseases	2	1	2	6	89	31	38	53	82	70
<b>(iii) TOTAL NUMBER OF CASES.</b>										
Nystagmus	1,760	5,271	7,544	10,779	51,863	9,603	8,919	8,430	7,724	6,213
Subcutaneous Cellulitis of the hand (beat hand)	750	869	1,042	1,565	7,705	1,350	1,312	1,309	1,298	1,311
Subcutaneous Cellulitis or Acute Bursitis: Arising at or about the knee (beat knee)	1,085	1,696	1,496	2,682	16,913	3,318	3,905	4,374	4,838	5,102
Over the elbow (beat elbow)	7	155	173	328	2,291	489	600	621	682	744
Inflammation of the synovial lining of the wrist joint and tendon sheaths	127	197	124	193	1,558	390	343	374	374	397
Ankylostomiasis	6	3	—	—	—	—	—	—	—	—
Other diseases	11	12	11	35	273	79	108	158	183	199

\* See note \* to Table 58.

† Excluding the years 1915-18, for which particulars are not available, and the years 1921 and 1926, which were affected by prolonged stoppages of work.

‡ Provisional figures.

§ In July, 1913, the reference to "Nystagmus" in the Third Schedule of the Workmen's Compensation Act, 1906, was amended so as to cover "the disease known as miners' nystagmus . . . whether the symptom of oscillation of the eyeballs be present or not."

TABLE 60.—Number of Prosecutions, Convictions and Total Amount of Fines and Costs imposed during the Year 1937 for Offences at Mines and Quarries.

## (i) MINES.

Nature of Offence.	Prosecutions ( <i>i.e.</i> , No. of separate charges.)	Con- victions.	Charges with- drawn or not proven.	Charges dis- missed.	Total Amount of Fines and Costs imposed.
<b>A. Owners, Agents, Managers and Under Managers.*</b>					
Contraventions of provisions as to:—					£ s. d.
Ventilation .. .. .	49	47	—	2	792 0 0
Travelling roads and haulage .. .. .	10	10	—	—	107 10 0
Support of roof and sides .. .. .	2	2	—	—	28 5 0
Machinery .. .. .	3	3	—	—	12 3 0
Inspection as to safety .. .. .	2	2	—	—	30 0 0
Accidents .. .. .	2†	1	—	—	7 5 0
Explosives .. .. .	21	—	—	21	2 6 0
Employment of boys, girls or women .. .. .	1	1	—	—	} 28 5 0
Failing to keep statutory records .. .. .	2	2	—	—	
Endangering the safety of persons in the mine .. .. .	2	—	—	2	—
<b>Total in 1937 .. .. .</b>	<b>94†</b>	<b>68</b>	<b>—</b>	<b>25</b>	<b>1,007 14 0</b>
<i>Total in 1936 .. .. .</i>	<i>60</i>	<i>48</i>	<i>2</i>	<i>10</i>	<i>206 14 6</i>
<b>B. Under Officials and Workmen.</b>					
Contraventions of provisions as to:—					£ s. d.
Safety Lamps .. .. .	16	12	—	4	23 16 3
Matches and smoking .. .. .	74	63	—	11	107 5 0
Explosives .. .. .	49	29	1	19	38 17 0
Timbering .. .. .	14	9	—	5	11 0 0
Trams or Tubs (underground haulage) .. .. .	31	30	—	1	26 5 0
Travelling on haulage roads, travelling or working on roads or in working places not made secure .. .. .	34	30	—	4	34 14 0
Inspection as to safety .. .. .	5	—	3	2	—
Electricity .. .. .	2	2	—	—	3 0 0
Offences connected with the inspection of shaft or workings .. .. .	1	1	—	—	4 0
Wilfully damaging, removing or interfering with apparatus, etc., or wilfully defacing notices, etc. .. .. .	23	22	1	—	19 0 0
Disobeying orders .. .. .	10	10	—	—	8 14 0
Being about the mine in a state of intoxication .. .. .	4	4	—	—	8 10 0
Sleeping in the mine .. .. .	14	14	—	—	15 10 0
Carrying timber, parts of machines, tools, etc., while ascending the shaft in a cage .. .. .	18	13	—	5	8 18 6
Behaving in a violent or disorderly manner .. .. .	53	50	—	3	68 4 0
Contraventions of rules as to care and treatment of animals, or cruelty to animals‡ .. .. .	10	8	—	2	9 15 6
Entering or working in an unauthorised part of the mine .. .. .	6	6	—	—	9 1 0
Endangering life and limb .. .. .	29	29	—	—	35 15 6
Riding ponies underground .. .. .	8	2	—	6	10 6
Failing to report dangerous occurrence .. .. .	1	1	—	—	5 0
Failing to fence shafting in washery .. .. .	1	1	—	—	5 0 0
Failing to examine and report upon machinery .. .. .	1	1	—	—	19 0
Making false statement in statutory report .. .. .	2	2	—	—	§
Releasing tub before receiving necessary signal .. .. .	1	1	—	—	5 0
<b>Total in 1937 .. .. .</b>	<b>407</b>	<b>340</b>	<b>5</b>	<b>62</b>	<b>435 9 3‡</b>
<i>Total in 1936 .. .. .</i>	<i>326</i>	<i>294</i>	<i>15</i>	<i>17</i>	<i>383 14 7</i>

\* The number of mines to which these proceedings related was 8 in 1937 and 11 in 1936.

† One case was adjourned *sine die*.

‡ In addition, there were five prosecutions under the Protection of Animals Act, resulting in five convictions. Penalties amounting to £13 8s. 0d. were imposed, and one offender was sentenced to one month's imprisonment with hard labour.

§ Included under "Matches and smoking."

¶ In addition, two offenders were sentenced to imprisonment for 3 months (with hard labour) and 30 days, respectively.

(ii) **QUARRIES.**—There were five prosecutions against the owners of quarries, involving 19 charges as follows:—2 charges of "Failing to make a report on examination of machinery" (Special Rule 53) and 1 charge of "Working face of quarry in overhanging position" (Special Rule 8), taken under the Quarries Act; 6 charges of "Obstructing Inspectors in the execution of their duties", taken under Section 17 of the Metal-liferous Mines Regulation Act as applied to quarries; 7 charges of "Failing to fence machinery", taken under Section 10 (1) of the Factory and Workshop Act; and 3 charges of breaches of Electricity Regulations 7, 21 and 28 made under the Factory and Workshop Acts.

Three charges of "Obstructing the Inspectors" were dismissed and one charge of "Failing to fence machinery" was withdrawn. Convictions were recorded in the other cases, and fines and costs amounting to £85 4s. 0d. were imposed.

**TABLE 61.—Results of Examinations for Firemen's, Examiners' and Deputies' Certificates and Shotfirers' Certificates, in the Year 1937.**

*Note.*—Subsection 1 of Section 15 of the Coal Mines Act, 1911, provides that after the first day of January, 1913, a person shall not be qualified to be appointed or to be a *fireman, examiner, or deputy*, unless he:—

- (a) is the holder of a first or second class certificate of competency under this Act or is twenty-five years of age or upwards and has had at least five years' practical experience underground in a mine, of which not less than two years have been at the face of the workings of a mine; and
- (b) has obtained a certificate in the prescribed form from a mining school or other institution or authority approved by the Secretary of State as to his ability to make accurate tests (so far as practicable with a safety lamp) for inflammable gas, and to measure the quantity of air in an air current and that his hearing is such as to enable him to carry out his duties efficiently; and
- (c) has within the preceding five years obtained from such approved school, institution, or authority as aforesaid, or from a duly qualified medical practitioner, a certificate in the prescribed form to the effect that his eyesight is such as to enable him to make accurate tests for inflammable gas and that his hearing is such as to enable him to carry out his duties efficiently, the expense of obtaining which shall in the case of a person employed at the time as fireman, examiner or deputy, be borne by the owner of the mine.

*Shotfirers.*—The Explosives in Coal Mines Order provides that in mines in which permitted explosives are required to be used no person shall be qualified to be appointed a Shotfirer unless, having other qualifications, he has obtained the like certificates as to his ability to make accurate tests for inflammable gas and as to his eyesight as are required in the case of firemen, examiners or deputies.

The provisions as to gas testing and eyesight certificates are not applicable to persons employed in mines in which inflammable gas is unknown.

Particulars of the results of the Examinations under Subsections 1 (b) and 1 (c) of Section 15 of the Coal Mines Act, 1911, held during the year 1937 are as follows:—

	INSPECTION DIVISION.								Great Britain.
	Scotland	Northern	Yorkshire	North Midland	North Western	Cardiff and Forest of Dean	Swansea	Midland and Southern	
<b>A.—RESULT OF EXAMINATIONS FOR FIREMEN'S, EXAMINERS' AND DEPUTIES' CERTIFICATES (INCLUDING SHOTFIRERS' CERTIFICATES).</b>									
Number of Candidates presenting themselves for examination ..	448	1,313	586	340	297	427	49	301	3,761*
Number who passed in—									
All Subjects for Full Certificate	430	1,136	489	251	266	285	37	240	3,124
Subjects qualifying them to act as Firemen at Mines where gas is unknown, viz., Air Measuring and Hearing ..	—	21	2	2	1	3	—	12	41
Subjects qualifying them to act as Shotfirers, viz., Gas Testing ..	—	—	—	—	11	1	2	5	19
<b>Total ..</b>	<b>430</b>	<b>1,157</b>	<b>491</b>	<b>253</b>	<b>278</b>	<b>289</b>	<b>39</b>	<b>257</b>	<b>3,194</b>
Number who failed in the following subjects:—									
Gas Testing .. .. .	2	49	10	27	6	52	—	3	149
Hearing .. .. .	1	—	—	—	11	—	—	—	12
Air Measurement .. ..	11	90	77	48	—	57	9	29	321
Air Measurement and Gas Testing .. .. .	4	13	8	12	1	24	1	12	75
Gas Testing and Hearing ..	—	—	—	—	1	4	—	—	5
Air Measurement and Hearing ..	—	—	—	—	—	—	—	—	—
All Subjects .. .. .	—	4	—	—	—	1	—	—	5
<b>Total ..</b>	<b>18</b>	<b>156</b>	<b>95</b>	<b>87</b>	<b>19</b>	<b>138</b>	<b>10</b>	<b>44</b>	<b>587</b>
<b>B.—RE-EXAMINATION OF PERSONS HOLDING FIREMEN'S, EXAMINERS' AND DEPUTIES' CERTIFICATES (INCLUDING SHOTFIRERS).</b>									
Number of Candidates Re-examined	27	190	379	267	549	—	10	194	1,616
Number who passed .. .. .	25	190	378	260	548	—	10	183	1,599
Number who failed to pass in:—									
Eyesight .. .. .	2	—	1	6	1	—	—	5	15
Hearing .. .. .	—	—	—	1	—	—	—	1	2
Eyesight and Hearing .. ..	—	—	—	—	—	—	—	—	—
<b>Total ..</b>	<b>2</b>	<b>—</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>6</b>	<b>17</b>

\* Of these candidates, 93 were re-admitted to subsequent examinations. Having passed in one or more subjects at one examination they were allowed to take the subjects in which they had failed, at a subsequent examination.

TABLE 62.—Numbers of Candidates who Attended the Examinations for Certificates of Competency and for Surveyors' Certificates in 1937, the Numbers Passing, and the Percentages of Passes.

Examination Centre.	Written Test.			Oral Test.			Whole Examination.		
	Attend- ed.	Qualified.		Attend- ed.	Qualified.		Qualified and Recommended for Certificate.	Failed but Qualified for Re-examination in	
		No.	Per-centage.		No.	Per-centage.		One or Two Written Papers.	Oral Test.
(a) Examinations for First-Class (Managers') Certificates.									
Edinburgh .. ..	42	17	40	17	17	100	12	2	1
Newcastle .. ..	30	14	47	14	14	100	10	2	—
Sheffield .. ..	70	28	40	28	27	96	21	2	1
Wigan .. ..	19	6	32	6	6	100	5	—	—
Cardiff .. ..	56	20	36	20	20	100	14	2	—
Birmingham .. ..	22	15	68	15	12	80	7	1	—
<b>Total .. ..</b>	<b>*239</b>	<b>100</b>	<b>42</b>	<b>100</b>	<b>96</b>	<b>96</b>	<b>69</b>	<b>9</b>	<b>2</b>
(b) Examinations for Second-Class (Under-Managers') Certificates.									
Edinburgh .. ..	38	16	42	17	16	94	10	1	1
Newcastle .. ..	51	27	53	27	27	100	22	—	—
Sheffield .. ..	109	54	49	56	52	93	44	1	2
Wigan .. ..	30	9	30	9	9	100	8	—	—
Cardiff .. ..	60	29	48	29	29	100	23	—	1
Birmingham .. ..	29	16	55	17	14	82	8	—	1
<b>Total .. ..</b>	<b>†317</b>	<b>151</b>	<b>48</b>	<b>†155</b>	<b>147</b>	<b>95</b>	<b>115</b>	<b>2</b>	<b>5</b>
(c) Examinations for Mine Surveyors' Certificates.									
	Written Test.			Oral and Practical Tests.			Whole Examinations.		
	Attend- ed.	Qualified.		Attend- ed.	Qualified.		Qualified and Granted Certificates.		
		No.	Per-centage.		No.	Per-centage.	No.	Per-centage.	
Edinburgh .. ..	27	11	41	11	10	91	10	37	
Newcastle .. ..	22	3	14	3	3	100	3	14	
Sheffield .. ..	46	14	30	14	11	79	11	24	
Wigan .. ..	7	4	57	4	4	100	4	57	
Cardiff .. ..	14	3	21	3	1	33	1	7	
Birmingham .. ..	14	6	43	6	5	83	5	36	
<b>Total .. ..</b>	<b>130</b>	<b>41</b>	<b>32</b>	<b>41</b>	<b>34</b>	<b>83</b>	<b>34</b>	<b>26</b>	

\* Including 5 attendances for re-examination in one written subject (four for Surveying and one for Mining Legislation).

† Including 2 attendances for re-examination in written subjects, viz., one for Machinery and one for Surveying.

‡ Including 3 attendances for re-examination in the oral test and one attendance for a "deferred" oral test.

NOTE.—Mine Surveyor Candidates do not invariably take the Written and the Oral and Practical Tests at the same Centre.

TABLE 63.—Numbers of Candidates who were Examined by the Board for Mining Examinations for Certificates of Competency and for Surveyors' Certificates, and the Numbers passing in each Year from 1913 to 1937.

Year.	Certificates of Competency.						Surveyors' Certificates.		
	First Class.			Second Class.			Number of Candidates.	Passes.	
	Number of Candidates.	Passes.		Number of Candidates.	Passes.			No.	Per-centage.
		No.	Per-centage.		No.	Per-centage.			
1913..	268	71	26.5	545	165	30.3	199	51	25.6
1914..	211	75	35.5	472	169	35.8	177	94	53.1
1915..	212	87	41.0	424	185	43.6	111	65	58.6
1916..	273	97	35.5	409	189	46.2	139	68	48.9
1917..	327	134	41.0	469	187	39.9	137	63	46.0
1918..	402	120	29.9	463	151	32.6	132	67	50.8
1919..	450	157	34.9	526	178	33.8	264	99	37.5
1920..	639	205	32.1	666	229	34.4	375	113	30.1
1921*	407	152	37.3	511	209	40.9	112	30	26.8
1922..	668	206	30.8	685	238	34.7	195	24	12.3
1923..	787	230	31.2	778	209	26.9	223	36	16.1
1924..	681	189	27.8	744	188	25.3	312	36	11.5
1925..	806	198	32.7	642	149	23.3	312	27	8.7
1926*	359	111	30.9	385	105	27.3	185	26	14.1
1927..	450	154	34.2	540	195	36.1	302	41	13.6
1928..	415	107	25.8	412	121	29.4	286	55	19.2
1929..	387	121	31.3	340	128	37.6	271	52	19.2
1930..	377	105	27.9	338	108	32.0	256	37	14.5
1931..	294	76	25.9	325	99	30.5	210	37	17.6
1932..	284	67	23.6	306	101	33.0	189	41	21.7
1933..	297	85	28.6	274	102	37.2	198	38	19.2
1934..	307	67	21.8	305	72	23.6	219	35	16.0
1935..	240	59	24.6	278	66	23.7	177	29	16.4
1936..	243	53	21.8	250	68	27.2	151	38	25.2
1937..	239	69	28.9	321	115	35.8	130	34	26.2

\* Only one examination was held in these years.

Note.—From and including 1934, the numbers of candidates attending the examinations for Certificates of Competency include re-examinees in written subjects and the oral tests.

TABLE 64.—*Pithead Baths at Coal Mines: Accommodation in Use and in Course of Construction at 31st December, 1937.*

Note—Exclusive of accommodation for mine officials only. Full particulars of the baths included in this statement will be found in the Annual Report of the Miners' Welfare Committee for the Year 1937.

A bath installation which has been erected in two instalments is included in the group appropriate to the larger instalment.

Welfare District.	Number of Collieries equipped with Baths.*		Number of Persons Employed at the Collieries at December, 1936.	Accommodation of the Baths Provided.			
	Completed.	In course of construction.		Total.	By the Colliery Owners.	Mainly out of the Miners' Welfare Fund.	Under the Mining Industry Act, 1926.
<b>ENGLAND AND WALES.</b>							
Northumberland .. ..	12 (3)	3 (1)	14,892	13,025	400	1,039	11,586
Durham .. ..	21 (6)	8 (4)	47,912	55,590	—	2,114	53,476
Cumberland and Westmorland	2	—	1,960	1,916	—	—	1,916
Lancashire and Cheshire .. ..	22 (12)	6 (6)	28,068	28,766	339	—	28,427
Yorkshire, South .. ..	29 (11)	8 (8)	66,495	69,330	1,688	9,888	57,754
Yorkshire, West .. ..	13 (10)	6 (5)	20,746	22,502	—	—	22,502
Nottinghamshire .. ..	10 (6)	6 (6)	23,413	25,730	—	—	25,730
Derbyshire, North .. ..	10 (8)	3 (1)	19,218	21,276	—	—	21,276
Derbyshire, South .. ..	—	—	—	—	—	—	—
Staffordshire, North .. ..	12 (10)	2 (2)	16,295	18,836	612	—	18,224
Cannock Chase .. ..	3	2 (2)	6,290	6,052	—	—	6,052
Staffordshire, South and Worcestershire .. ..	2 (2)	1 (1)	3,133	3,030	—	—	3,030
Leicestershire .. ..	2 (1)	—	1,938	2,016	—	—	2,016
Warwickshire .. ..	6 (6)	1 (1)	7,829	7,856	—	—	7,856
Shropshire .. ..	—	—	—	—	—	—	—
Forest of Dean .. ..	1 (1)	—	1,159	1,056	—	—	1,056
Somersetshire .. ..	2	—	691	720	—	—	720
Bristol .. ..	—	—	—	—	—	—	—
Kent .. ..	4 (3)	—	7,248	7,035	—	—	7,035
South Wales and Monmouthshire .. ..	28 (7)	9 (8)	41,107	47,820	—	—	47,820
North Wales .. ..	1 (1)	1	4,160	4,500	—	—	4,500
Total .. ..	180 (87)	56 (45)	312,554	337,056	3,039	13,041	320,976
<b>SCOTLAND.</b>							
Fife, Clackmannan, Kinross and Sutherland .. ..	9 (1)	3 (1)	12,756	11,874	20	—	11,854
Lothians (Mid and East) and Peebles .. ..	6 (3)	3 (1)	5,378	6,096	—	—	6,096
Lanarkshire, West Lothian (Linlithgow), Stirling, Renfrew and Dumbarton	26 (21)	7 (7)	18,313	20,743	770	—	19,973
Ayrshire, Dumfries and Argyll	8 (1)	1 (1)	6,274	5,648	—	—	5,648
Total .. ..	49 (26)	14 (10)	42,721	44,361	790	—	43,571
Great Britain .. ..	229 (113)	70 (55)	355,275	381,417	3,829	13,041	364,547

\* The figures in brackets denote the numbers of baths provided with a Canteen.

TABLE 65.—*Development in the Sinking of New Pits and Drifts in Great Britain in the Year 1937.*

## A.—COAL MINES ACT.

Note.—The names of Drifts and Small Pits are shown in italics.

## (I) PITS STARTED AND COMPLETED. (113.)

**Northumberland:** *Church Hill Drifts, Robin Rock Drift. Durham:* *Blackburn Fell Drift, Burnopfield Five Quarter Drift, Coal Bank No. 3 Busty Drift (since abandoned), Coronation Drift, Cow Close, Duke of York Drift, East Park No. 3, Hill Top Harvey, Hindon Bridge, Kibblesworth Shield Row, Leazes Drift, Luntun Hill Brockwell Drift, Newfield Drift, Newton Cap, North Crane Row, North Tees, Princes Street, Waldrige Fell Drift, West Crane Row, West Morley. Cumberland:* *Blaghill. Lancashire and Cheshire:* *Arch Lane, Brookside (since abandoned), Harts Lane, Hartshead, Lathom, Lodge, Lowside No. 2 (since abandoned), Ludworth Moor, Otterswift Nook, Parr (since abandoned), Priestbooth, Seneley Green, Stanley. South Yorkshire:* *Bitholmes No. 2, Haggstones, Manor Wortley. West Yorkshire:* *Bellstring Nos. 2 and 3, Denholme, Pool Hill, Tanhouse Lane. Lincolnshire:* *Wing. North Derbyshire:* *Barnes Lane, Beighton Fields, Cawltun Drift, Hillside, Hollis No. 2, Shady Haw (since abandoned), South Wingfield Park, Wingfield Park No. 2, Yew Tree. North Staffordshire:* *Coronation Footrail, Harriseahead, Ravens Lane No. 2, Sladderhill Footrail No. 3, Target Wood Footrail (since abandoned), Winpenny. Cannock Chase:* *Coronation, Glenthorne, Holly Lane. South Staffordshire and Worcestershire:* *Bentley Clay, Cricket Field (since abandoned), Dock Drift, Dunn's Bank, Etingshall Hall, Gay Fields, Grosvenor No. 2, Little John, Meadow Lane. Warwickshire:* *Griff No. 4 (new shaft), Kingsbury (deepening down-cast), Orchard. Shropshire:* *Brandlee, Lawley Coppice (Big Flints), Lawley Drift Extension. South Wales and Monmouth:* *Coedybrain, Cwm Evan Bach, Garth Merthyr, Graig Ddu, Major Red Ash, Manmoel, Ochur-y-Waun, Penlan, Pentwyn No. 2, Penylan Ganol, Rock, Verdun No. 2, Waun Ebbw No. 2, Waun Pull-Dur, Wernddu Rider, Ysguborfawr No. 2. North Wales:* *Delph No. 4, Erith, Moss. Fife and Clackmannan:* *Rhynd. Lanarkshire, etc.:* *Broomknowe, Easter Whin No. 2 (since abandoned), Fernieshaw, Glenrigg No. 7 (since abandoned), Houldsworth, Lauchope No. 5, Leand No. 3 (since abandoned), Lochrigg No. 4, Mauldsie No. 3, Okersdyke, Overwood, Royal George, Torbush No. 1, Wester Dunsyston No. 3, Windsor.*

## (II) PITS STARTED AND NOT COMPLETED. (65.)

**Northumberland:** *Shilburnhaugh. Durham:* *Coal Bank No. 5 Victoria Drift, Harraton Annabella Drift, Kays Lea Drift, South Softley. Cumberland:* *Klondyke Drift, Moorside Drift No. 3. Lancashire and Cheshire:* *Coronation, Crowknowl, Red Earth Drift. South Yorkshire:* *Bentley (deepening to Parkgate), Houghton Main (deepening to Parkgate), Kilnhurst (sinking a new shaft). West Yorkshire:* *Allerton Main Primrose Hill (sinking to Beeston). Nottinghamshire:* *Calverton. Cannock Chase:* *Pool Hayes. South Staffordshire and Worcestershire:* *Bayton No. 6, Coseley. Warwickshire:* *Valley. Shropshire:* *Benthall, Good Hope, Plants Farm. South Wales and Monmouth:* *Coronation, Coronation Nine Feet, Coronation Peacock, Eryl, Gorsto, Graig Baglan Isaf, Marchowel (since abandoned), New Rockwood Drift, Onllwyn Eighteen Feet Level, Onllwyn Four Feet Level, Tormynydd No. 2, Upper Ynisarwed, Wernfawr No. 2. Fife and Clackmannan:* *Donibristle Surface, Falfield (since abandoned), Lassodie Estate (since abandoned). Lothians (Mid and East):* *Birmiehill (since discontinued), Dalkeith Nos. 4, 5 and 6. Lanarkshire, etc.:* *Arns, Blackbraes, Carey Glen No. 2 (since abandoned), Cathburn No. 1, Claremount, Dumback No. 2, East Benhar No. 2, Edge,*

*Gimmerscroft, Greencraig, Herbertshire New Pit, High Darngavil No. 4, Hopefield, Knowenoble, Laverickknowe (since abandoned), Maddiston, Mosside Nos. 3 and 4 (since abandoned), Quarry, Rankin, Roman Camp No. 7, South Linridge No. 3, Todholeburn, Wester Windyedge. Ayrshire, etc.: Greenhill, Lochwood.*

## (III) OTHER PITS IN PROGRESS OR SINKING RESUMED. (9.)

**Cumberland:** *River Drift.* **Lancashire and Cheshire:** Newton No. 4 (new shaft). **West Yorkshire:** Sharlston (deepening shaft). **South Wales and Monmouth:** *Bron Aran Slant, Drefach Slant, Glanamman No. 2.* **Fife and Clackmannan:** Comrie. **Lanarkshire, etc.:** *Canderrigg Nos. 6 and 7, Roman Camp No. 6.*

## (IV) PITS COMPLETED (EXCEPT THOSE WHICH WERE STARTED DURING THE YEAR). (29.)

**Northumberland:** *Bayldon, Burnhouse No. 2, Gloria, Haresby Drift, Joy.* **Lancashire and Cheshire:** *Bassey Mine (Midgelden), Garswood Hall No. 7 (deepening to Orrell Yard Seam), Sumners Hall Drift.* **South Yorkshire:** *Stocksbridge, Treeton (deepening shaft).* **West Yorkshire:** *Shuttle Eye (deepening shaft).* **Nottinghamshire:** *Oakwood Grange (development).* **Cannock Chase:** *Spring Meadow.* **South Staffordshire and Worcestershire:** *Milking Bank, Yew Tree Hill (formerly Netherton).* **South Wales and Monmouth:** *Kilgetty, Llwynyrhaf, Trolley, West End No. 2.* **Lanarkshire, etc.:** *Bannockburn No. 3, Bishop No. 2, Drumshangie No. 4, Lochend No. 5, Midton No. 4, North Drumgray (formerly Berryhill), Tomfine.* **Ayrshire, etc.:** *Bowhill, Newtonhead Nos. 3 and 4, Shieldmains Nos. 8 and 9.*

## B.—METALLIFEROUS MINES REGULATION ACTS.

## (I) MINES STARTED AND COMPLETED. (17.)

Fluorspar—Glebe, Seven Rakes (North Derbyshire).  
 Fluorspar and Lead Ore—Allerscleugh, Stanhope Burn (Durham).  
 Gravel—Park Lane (North Staffordshire).  
 Gypsum—Birks Head (Westmorland), Baldwin's Bunny, Silverseal (Nottinghamshire).  
 Iron Ore—Yeathouse Drift (Cumberland), Davy (Lancashire, detached part).  
 Lead Ore—Threlkeld (Cumberland).  
 Moulding Sand—Orchard Head (Yorkshire).  
 Potters Clay—Trigon (Dorset).  
 Sandstone—Dinas Rock (Brecon, East).  
 Slate—Rigg Head No. 1 (Cumberland).  
 Tin Ore—Wheal Bellan, White Works (Cornwall).

## (II) MINES STARTED AND NOT COMPLETED. (7.)

Gypsum—New Stamphill (Westmorland).  
 Iron Ore—Enid (Cumberland).  
 Lead Ore—Black Dene (Durham), Pries Level (North Yorkshire), Gefnfordd Halkyn (development) (Flintshire).  
 Tin Ore—Great North Downs, Royal Polberro (Cornwall).

## (III) MINES IN PROGRESS. (4.)

Barytes—Potts Ghyll (Cumberland).  
 Iron Ore—Aldby, David Lawn (Cumberland), Yarlside No. 1 (Lancashire, detached part).



TABLE 66.—Imports of Petroleum and its Products into Great Britain and Northern Ireland during the Year 1937.  
(Provisional figures.)

Country of Consignment.	Crude Oil.	Refined Products.							Grand Total.	
		Kero-sene.	Motor Spirit.	Other Spirit.	Lubricat-ing Oil.	Gas Oil.	Fuel Oil.	Other Sorts.		Total.
<i>British Empire—</i>										
Thousand Gallons.										
Trinidad and Tobago .. .. .	14,289	249	72,606	—	*	2,943	56,468	—	132,266	146,555
Straits Settlements and Dependencies	—	—	4,671	1,988	1	*	2	—	6,662	6,662
Canada .. .. .	—	—	—	—	229	—	*	*	229	229
Eire .. .. .	—	1,522	690	49	39	1,253	1,338	1	4,892	4,892
Other British Countries .. .. .	—	3	18	—	14	—	4	*	39	39
<b>Total: British Empire .. .. .</b>	<b>14,289</b>	<b>1,774</b>	<b>77,985</b>	<b>2,037</b>	<b>283</b>	<b>4,196</b>	<b>57,812</b>	<b>1</b>	<b>144,088</b>	<b>158,377</b>
<i>Foreign Countries—</i>										
United States of America .. .. .	20,016	44,500	171,691	10	85,534	14,401	63,507	327	379,970	399,986
Mexico .. .. .	9,912	12,770	17,328	324	12,372	15,961	92,289	*	151,044	160,956
Ecuador .. .. .	2,595	—	323	—	—	44	—	—	367	2,962
Dutch West India Islands .. .. .	130,899	59,691	606,623	—	—	29,641	314,892	—	1,010,847	1,141,746
Venezuela .. .. .	82,939	—	—	—	2	—	13,593	—	13,595	96,534
Peru .. .. .	78,473	—	*	—	—	—	197	—	197	78,670
Dutch Borneo .. .. .	—	—	11,520	505	13	17	7	—	12,062	12,062
Sumatra .. .. .	—	977	11,960	2,787	—	—	*	—	15,724	15,724
Other Dutch East Indies .. .. .	—	—	—	—	5	13	—	—	18	18
Iran (Persia) .. .. .	72,749	68,883	300,183	—	—	24,121	135,800	*	528,987	601,736
Iraq .. .. .	118,077	—	—	—	—	—	—	—	—	118,077
Egypt .. .. .	—	*	1,835	—	—	—	—	*	1,835	1,835
Soviet Union (Russia) .. .. .	—	8,331	51,731	*	15,152	4,817	5,667	—	85,698	85,698
Roumania .. .. .	—	16,948	75,948	11,127	1	45,632	3,906	—	153,562	153,562
Poland .. .. .	—	—	—	—	2,280	—	—	—	2,280	2,280
Germany .. .. .	*	*	—	1	3,991	—	889	86	4,967	4,967
Netherlands .. .. .	*	1,302	28,906	—	48	2	513	5	30,776	30,776
Belgium .. .. .	—	—	158	—	1,066	298	706	186	2,414	2,414
France .. .. .	*	3,886	—	7	649	1,623	15,517	6	21,688	21,688
Other Foreign Countries .. .. .	*	1,449	*	—	39	*	*	26	1,514	1,514
<b>Total: Foreign Countries .. .. .</b>	<b>515,660</b>	<b>218,737</b>	<b>1,278,206</b>	<b>14,761</b>	<b>121,152</b>	<b>136,570</b>	<b>647,483</b>	<b>636</b>	<b>2,417,545</b>	<b>2,933,205</b>
<b>Grand Total .. .. .</b>	<b>529,949</b>	<b>220,511</b>	<b>1,856,191</b>	<b>16,798</b>	<b>121,435</b>	<b>140,766</b>	<b>705,295</b>	<b>637</b>	<b>2,561,633</b>	<b>3,091,582</b>
<i>Total in 1936 (Revised)</i>	<i>511,744</i>	<i>213,149</i>	<i>1,268,143</i>	<i>18,874</i>	<i>117,943</i>	<i>109,019</i>	<i>677,525</i>	<i>438</i>	<i>2,405,091</i>	<i>2,916,835</i>

\* Less than 500 gallons.

PETROLEUM.

TABLE 67.—Quantity of Petroleum Products Imported, Exported and Retained for Home Consumption in Great Britain and Northern Ireland during the Years 1934 to 1937.

Note.—The figures for 1937 are subject to revision.

Year.	Imports.				Home Production from Imported Petroleum and from Oil Shale.			Retained.*	
	Total.	Submitted to Further Refining.	Re-exported.	Retained.	Total.	Exported.	Retained.	Total.	Percentage of Retained Home Production to Total.
<i>Million Gallons.</i>									%
<b>Motor Spirit.</b>									
1934..	1,125.9	17.7	26.3	1,081.9	144.8	56.9	87.9	1,169.8	7.5
1935..	1,231.0	16.9	28.6	1,185.5	133.8	79.6	54.2	1,239.7	4.4
1936..	1,268.1	18.4	27.9	1,221.8	125.2	54.0	71.2	1,293.0	5.5
1937..	1,356.2	21.0	29.2	1,306.0	118.2	60.2	58.0	1,364.0	4.3
<b>Other Spirit.</b>									
1934..	19.8	15.6	0.4	3.8	24.4	1.9	22.5	26.3	85.6
1935..	16.1	11.3	0.1	4.7	20.1	1.5	18.6	23.3	79.8
1936..	18.9	8.2	0.8	9.9	17.9	0.7	17.2	27.1	63.5
1937..	16.8	8.4	0.9	7.5	22.7	2.4	20.3	27.8	73.0
<b>Kerosene.</b>									
1934..	221.5	9.0	9.2	203.3	34.5	10.5	24.0	227.3	10.6
1935..	192.0	8.5	4.7	178.8	33.5	8.2	25.3	204.1	12.4
1936..	213.1	10.6	5.5	197.0	37.2	17.7	19.5	216.5	9.0
1937..	220.5	9.1	4.6	206.8	39.2	23.4	15.8	222.6	7.1
<b>Gas Oil.</b>									
1934..	130.5	—	4.8	125.7	53.4	24.4	29.0	154.7	18.7
1935..	107.9	—	3.8	104.1	51.3	23.5	27.8	131.9	21.1
1936..	109.0	—	4.0	105.0	63.2	23.5	39.7	144.7	27.4
1937..	140.7	3.1	6.8	130.8	47.9	27.7	20.2	151.0	13.4
<b>Lubricating Oil.</b>									
1934..	103.4	†	6.4	†	24.7†	10.1	†	111.6	†
1935..	103.4	†	6.2	†	25.7†	12.8	†	110.1	†
1936..	117.9	†	6.6	†	26.6†	11.5	†	126.4	†
1937..	121.4	†	7.9	†	33.1†	14.0	†	132.6	†
<b>Fuel and Diesel Oil.</b>									
1934..	663.4	13.4	6.9	648.1	133.4	9.8	123.6	771.7	16.0
1935..	655.4	34.0	7.2	614.2	161.1	17.5	143.6	(353.0)†	18.9
1936..	677.5	50.9	5.0	621.6	170.8	21.4	149.4	757.8	19.4
1937..	705.3	21.4	16.1	667.8	197.7	16.3	181.4	(311.1)†	21.4
								771.0	
								(302.1)†	
								849.2	
								(343.6)†	

\* These figures take no account of changes in stocks. The quantities stated are exclusive of motor spirit and other products obtained from coal and coal products, see page 18.

† As the figures of home production from imported petroleum and from shale do not include lubricating oils manufactured at home from imported lubricants by blending or by further chemical treatment, it is not possible to differentiate between retained imports and retained home production.

‡ The figures in brackets, which are included in the total, represent the quantities shipped as bunkers for the use of steamers engaged in Foreign trade and fishing vessels.

## APPENDIX B.

## LIST OF OFFICIAL COMMITTEES, ETC., IN CONNEXION WITH THE MINING AND QUARRYING INDUSTRIES, WITH MEMBERSHIP AS AT 1st AUGUST, 1938.

ADVISORY COMMITTEE FOR COAL AND THE COAL INDUSTRY.  
Appointed under Section 4 of the Mining Industry Act, 1920.

	<i>(Vacancy)</i>	<i>Chairman.</i>
Mr. W. Hargreaves .. ..	.. ..	} Representatives of Owners of Coal Mines,
Mr. M. F. Maclean, J.P. .. ..	.. ..	
Sir A. Nimmo, K.B.E. .. ..	.. ..	
Sir Evan Williams, Bart., LL.D., D.L., J.P. .. ..	.. ..	
<i>(4 Vacancies)</i> .. ..	.. ..	} Representatives of Workers in or about Coal Mines.
Mr. B. Talbot, J.P. .. ..	.. ..	} Representatives of Employers in other Industries.
Sir D. Milne Watson, Bart, M.A., LL.B., LL.D., D.L. .. ..	.. ..	
<i>(Vacancy)</i>		
Mr. B. Tillett .. ..	.. ..	} Representatives of Workers in other Industries.
Mr. A. G. Walkden .. ..	.. ..	
<i>(Vacancy)</i> .. ..	.. ..	
<i>(Vacancy)</i> .. ..	.. ..	} Representing Mining Engineers.
<i>(Vacancy)</i> .. ..	.. ..	} Representatives of Agents or Managers or Under Managers of Coal Mines hold- ing First Class Certificates.
Capt. P. Muschamp .. ..	.. ..	
<i>(Vacancy)</i> .. ..	.. ..	} Representing Coal Exporters.
Mr. H. C. Rickett, O.B.E. .. ..	.. ..	} Representing Coal Factors and Merchants.
Sir E. F. Stockton .. ..	.. ..	} Representing those sections of Commerce engaged otherwise than in the pro- duction and distribution of coal.
Mr. T. G. Arnold, J.P. .. ..	.. ..	} Representing Co-operative Traders.
Lord Cadman, G.C.M.G., D.Sc. .. ..	.. ..	} Representing the Medical or Other Sciences.
<i>(2 Vacancies)</i> .. ..	.. ..	

ADVISORY COMMITTEE FOR THE METALLIFEROUS MINING AND  
QUARRYING INDUSTRY.

Appointed under Section 4 of the Mining Industry Act, 1920.

MR. R. A. THOMAS, O.B.E., J.P., *Chairman.*

Major A. Hibbert, D.S.O., M.C. .. ..	.. ..	} Representatives of Owners of Iron Ore Mines and Quarries.
Mr. I. L. Johnson .. ..	.. ..	
Mr. H. G. Atkinson-Clark .. ..	.. ..	
Major W. D. Barratt .. ..	.. ..	
Mr. F. Scopes .. ..	.. ..	
Mr. H. Dack, O.B.E., J.P. .. ..	.. ..	} Representatives of Workers in or about Iron Ore Mines and Quarries.
Mr. C. Edmonds, J.P., F.G.S. .. ..	.. ..	
Mr. H. Nixon, J.P. .. ..	.. ..	
Mr. J. Pickavance .. ..	.. ..	
<i>(Vacancy)</i> .. ..	.. ..	

Mr. J. H. Bennetts .. ..	Representing Workers in or about Tin Mines.
Mr. E. J. Fox .. ..	Representing the Iron and Steel Industry.
Mr. A. Wilson, M.I.M.M., M.I.M.E., J.P.	Representing Owners of Lead and Zinc Mines.
Mr. A. Dalgleish .. ..	Representing Workers in or about Lead and Zinc Mines.
Prof. H. Louis, M.A., D.Sc., etc...	} Economic Geologists and Mining Engineers.
Mr. J. C. Allan .. ..	
Mr. F. W. Harbord, C.B.E. ..	Metallurgist.
Mr. C. Cookson .. ..	Representing the Non-Ferrous Metal Trade.
Sir K. W. Goadby, K.B.E., M.R.C.S., L.R.C.P.	Representing Medical Science.

Mr. R. E. L. Cleaver, *Secretary*.

#### BOARD FOR MINING EXAMINATIONS.

Appointed under Section 8 of the Coal Mines Act, 1911.

Major D. H. Curren Briggs, J.P., M.A., Assoc.M.Inst.C.E. ..	} Representatives of Owners, or Agents of Mines, or Managers of Mines or Mining Engineers.
Mr. Trevor L. Mort, J.P. .. ..	
Mr. J. Hamilton .. ..	
Mr. F. L. Booth, O.B.E., J.P., M.Inst.C.E. .. ..	
Lt.-Col. G. A. Lewis, C.M.G. ..	
Major James Gardiner .. ..	} Representatives of Workmen employed in Mines.
Rt. Hon. J. Brown, P.C., O.B.E., J.P.	
Mr. G. H. Jones, J.P. .. ..	
Mr. Oliver Harris .. ..	
Mr. W. Lawther .. ..	
(Vacancy)	} H.M. Chief Inspector of Mines.
Mr. J. Allen Parkinson, C.B.E., M.P. .. ..	
Mr. F. H. Wynne, C.B.E., B.Sc.	} H.M. Divisional Inspectors of Mines.
Mr. J. M. Carey, O.B.E., M.Inst.C.E.	
Mr. W. J. Charlton, O.B.E. ..	
Sir R. A. S. Redmayne, K.C.B., M.Inst.C.E.	} Persons eminent in Mining and Scientific Knowledge.
Prof. J. A. S. Ritson, D.S.O., O.B.E., M.C., T.D., B.Sc., M.Inst.M.M.,	

Sir Richard Redmayne at present acts as Chairman of the Board.

Mr. A. B. Collier, A.C.A., *Secretary*.

#### MINERS' WELFARE COMMITTEE.

Appointed under the Mining Industry Acts 1920 to 1934.

Major-General The Rt. Hon. Sir Frederick Sykes, G.C.S.I., G.C.I.E., G.B.E., K.C.B., C.M.G., <i>Chairman</i> .	} Nominated by the Mining Association of Great Britain.
Mr. J. T. Browne .. ..	
Mr. F. Llewellyn Jacob, J.P. ..	
The Rt. Hon. Lord Aberdare ..	Nominated by the Royalty Owners of Great Britain.

(Vacancy)  
 Mr. W. Lawther .. .. } Nominated by the Mine-workers' Federa-  
 Mr. Joseph Jones, C.B.E., LL.D., } tion of Great Britain.  
 J.P. .. .. }  
 Prof. E. L. Collis, C.B.E., M.A.,  
 M.D., M.R.C.P.  
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Assessors are appointed for the assistance of the Committee by the Minister of Health, Board of Education and Secretary for Scotland.

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 SELECTION COMMITTEE.

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 Mr. R. J. Moffat, M.B.E., *Secretary.*

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*(Vacancy), Chairman.*

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Mr. F. W. Cooper.	Sir James Milne, C.S.I.	
Mr. H. L. Greig.	Mr. G. S. Szlumper, C.B.E.	
Mr. H. J. Heath.	Sir L. A. P. Warner, C.B.E., J.P.	
Mr. H. V. Hunter, J.P.	(2 <i>Vacancies.</i> )	

Mr. W. D. Duffield, O.B.E., *Ministry of Transport* } *Secretaries.*  
 Mr. R. J. Moffat, M.B.E., *Mines Department*

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Appointed under Section 5 of the Coal Mines Act, 1930.

*National Committee.*

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Mr. A. C. Campbell, *Secretary.*

*District Committees.*

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Durham.	Col. H. G. Faber.	
Cumberland.	Mr. W. C. Sumner.	
Lancashire and Cheshire.	Prof. R. A. Eastwood, LL.D.	
Scotland.	Sheriff G. Morton, K.C., M.A., LL.B.	
Midland (Amalgamated) Shropshire.	Mr. H. Rhodes, M.A. Mr. E. G. M. Carmichael, O.B.E., J.P.	
North Staffordshire.	Mr. W. Allen, K.C.	
South Staffordshire (exclusive of Cannock Chase) and Worcester.	Mr. T. N. Winning.	
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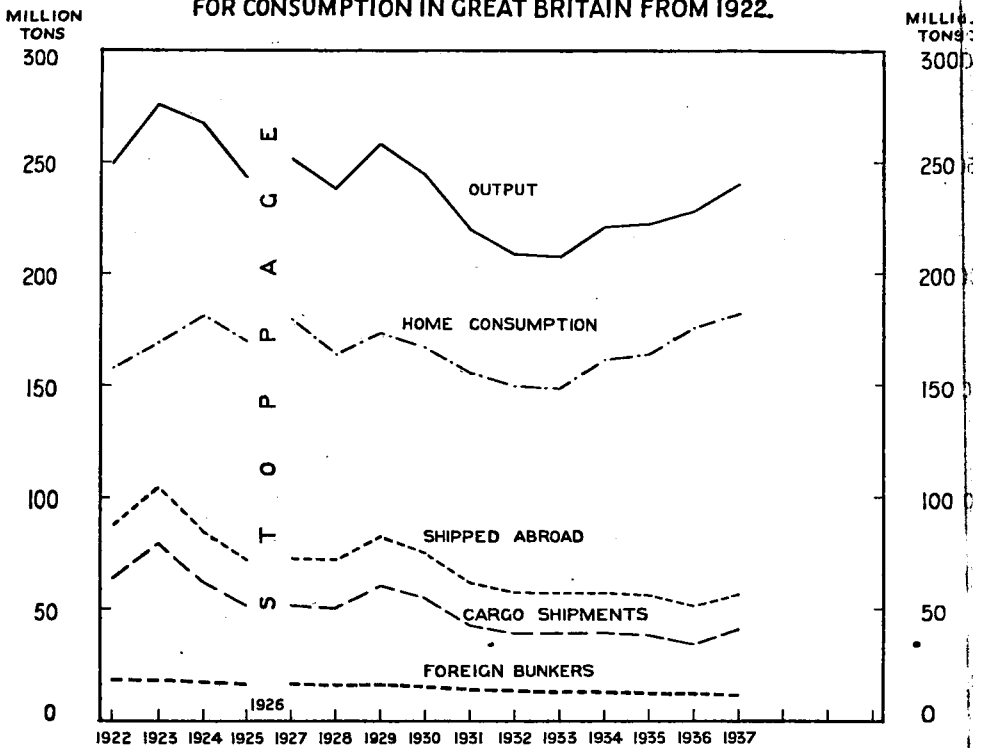
\* Mr. Jones' appointment will date from 1st December, 1938.

APPENDIX C.—CHARTS.

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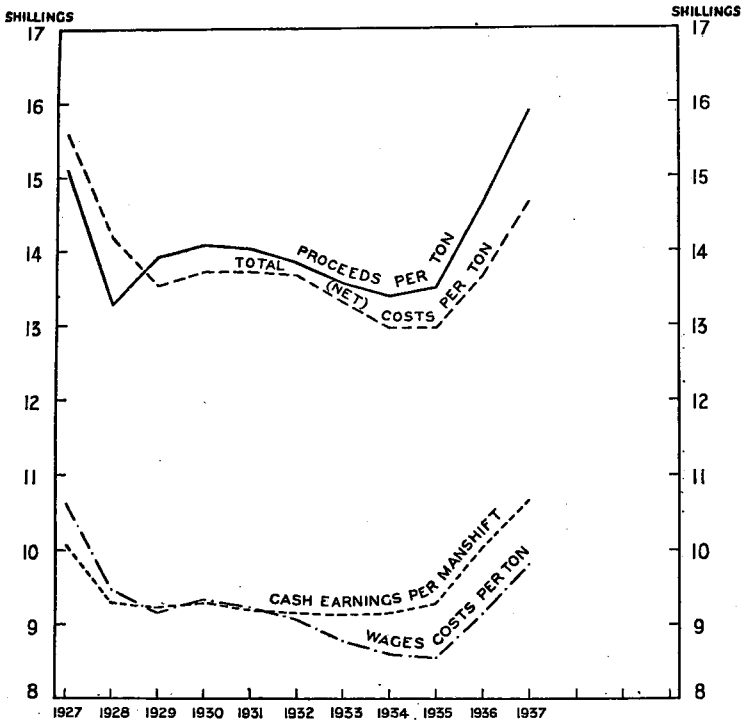
- CHART I.—Saleable Coal Produced, Shipped Abroad and Available for Consumption in Great Britain from 1922.
- CHART II.—Average Total Costs of Production, Wages Costs and Proceeds per ton disposable commercially and Cash Earnings per Manshift in the Coal Mining Industry from 1927.
- CHART III.—Average Annual Earnings (including the value of Allowances in Kind) per Person Employed from 1927.
- CHART IV.—Distribution by Causes of Persons Killed and Seriously Injured.
- CHART V.—Number of Deaths from Accidents per 1,000 Persons Employed at Coal and Metalliferous Mines in Great Britain from 1881, expressed as a percentage of the average rates per 1,000 persons employed below and above ground, respectively, in the years 1900–1909.
- CHART VI.—Coal Cutting Machines and Conveyors in Use, Percentage of total Saleable Output Cut and Conveyed and Percentage of Output Cleaned in Great Britain from 1927.
- CHART VII.—Number of Safety Lamps in Use from 1922.
- CHART VIII.—Estimated Death Rates from Accidents per 100,000 Manshifts worked at Coal Mines in the Principal Producing Countries for the Five-Year Periods 1927 to 1931 and 1932 to 1936 and for the Year 1936.
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CHART I SALEABLE COAL PRODUCED, SHIPPED ABROAD AND AVAILABLE FOR CONSUMPTION IN GREAT BRITAIN FROM 1922.

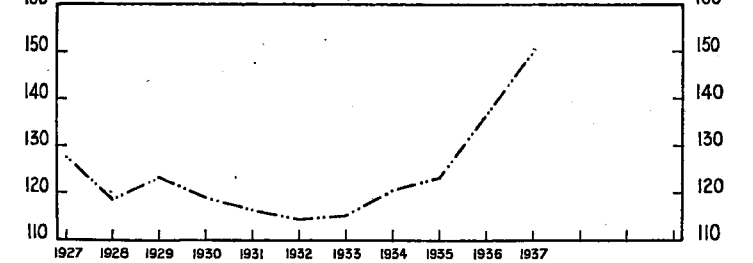


Note.—“ Available for Home Consumption ” relates to Great Britain only, the necessary adjustments having been made in respect of shipments to and from Eire and Northern Ireland. “ Shipped Abroad ” includes cargo shipments, foreign bunker shipments and the coal equivalent of coke and manufactured fuel exported.

**CHART II. AVERAGE TOTAL COSTS OF PRODUCTION, WAGES COSTS AND PROCEEDS PER TON DISPOSABLE COMMERCIALY AND CASH EARNINGS PER MANSHIFT IN THE COAL MINING INDUSTRY FROM 1927.**



**CHART III AVERAGE ANNUAL EARNINGS (INCLUDING THE VALUE OF ALLOWANCES IN KIND) PER PERSON EMPLOYED FROM 1927.**



**CHART IV. COAL MINES ACT.  
DISTRIBUTION BY CAUSES OF PERSONS KILLED AND SERIOUSLY INJURED,**

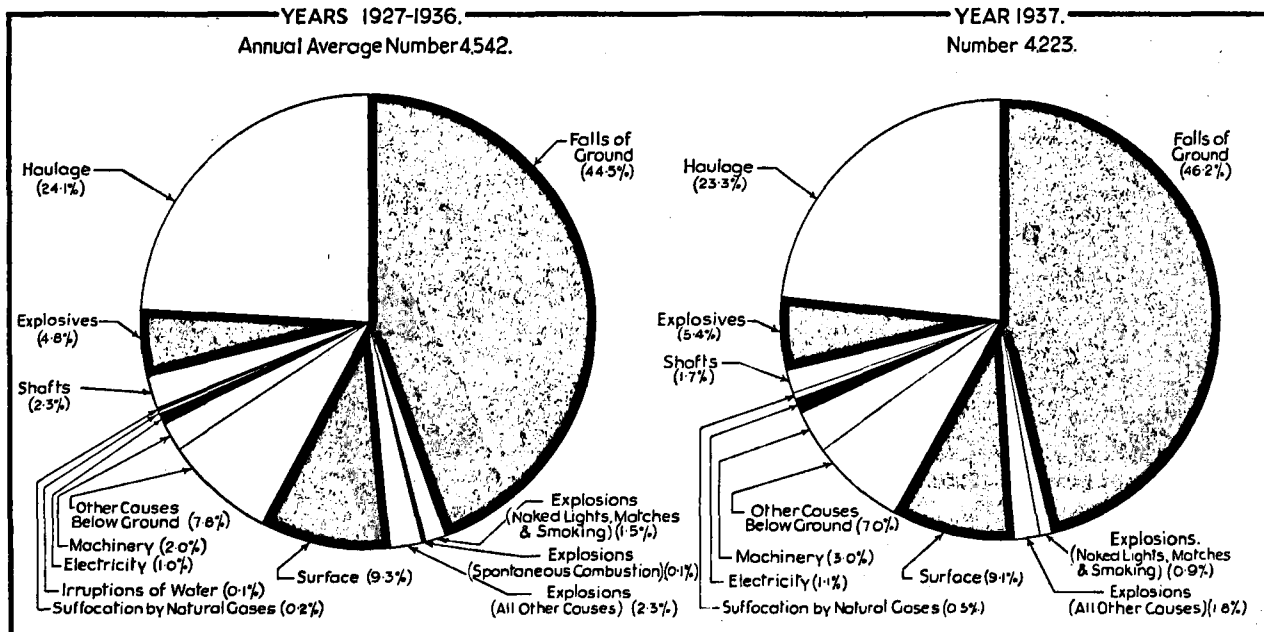
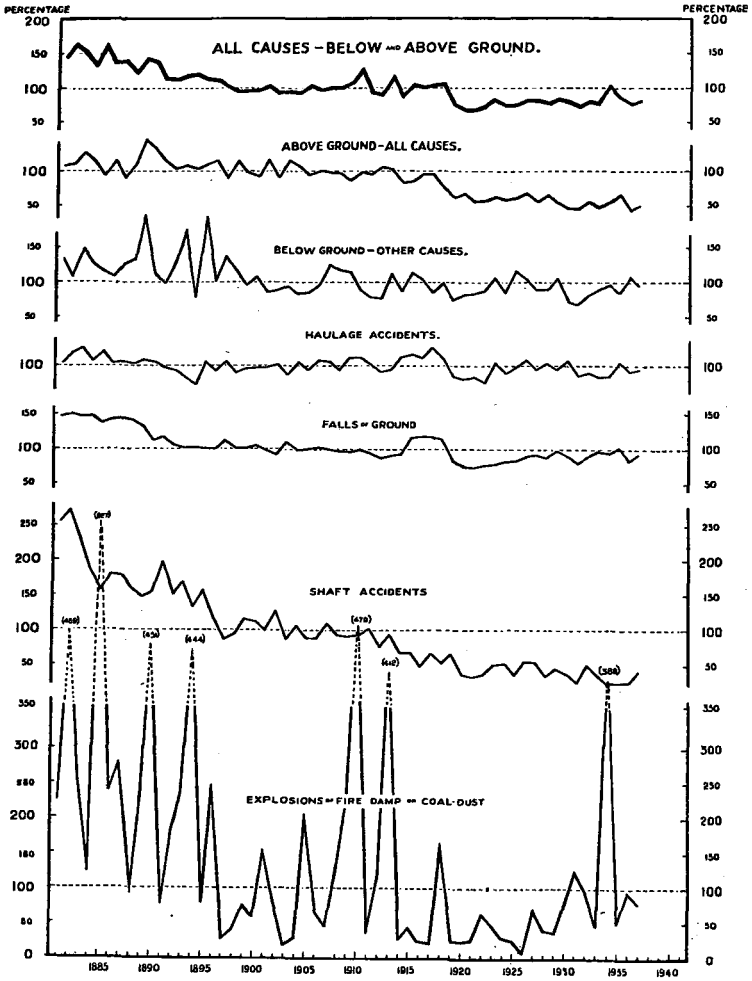


CHART V NUMBER OF DEATHS FROM ACCIDENTS PER 1000 PERSONS EMPLOYED AT COAL AND METALLIFEROUS MINES IN GREAT BRITAIN FROM 1881 EXPRESSED AS A PERCENTAGE OF THE AVERAGE RATES PER 1000 PERSONS EMPLOYED BELOW AND ABOVE GROUND RESPECTIVELY IN THE YEARS 1900-1909.



NOTE: PARTICULARS FOR IRELAND ARE INCLUDED UP TO THE YEAR 1921.

CHART VI. COAL CUTTING MACHINES AND CONVEYORS IN USE, PERCENTAGE OF TOTAL SALEABLE OUTPUT CUT AND CONVEYED AND PERCENTAGE OF OUTPUT CLEANED IN GREAT BRITAIN FROM 1927.

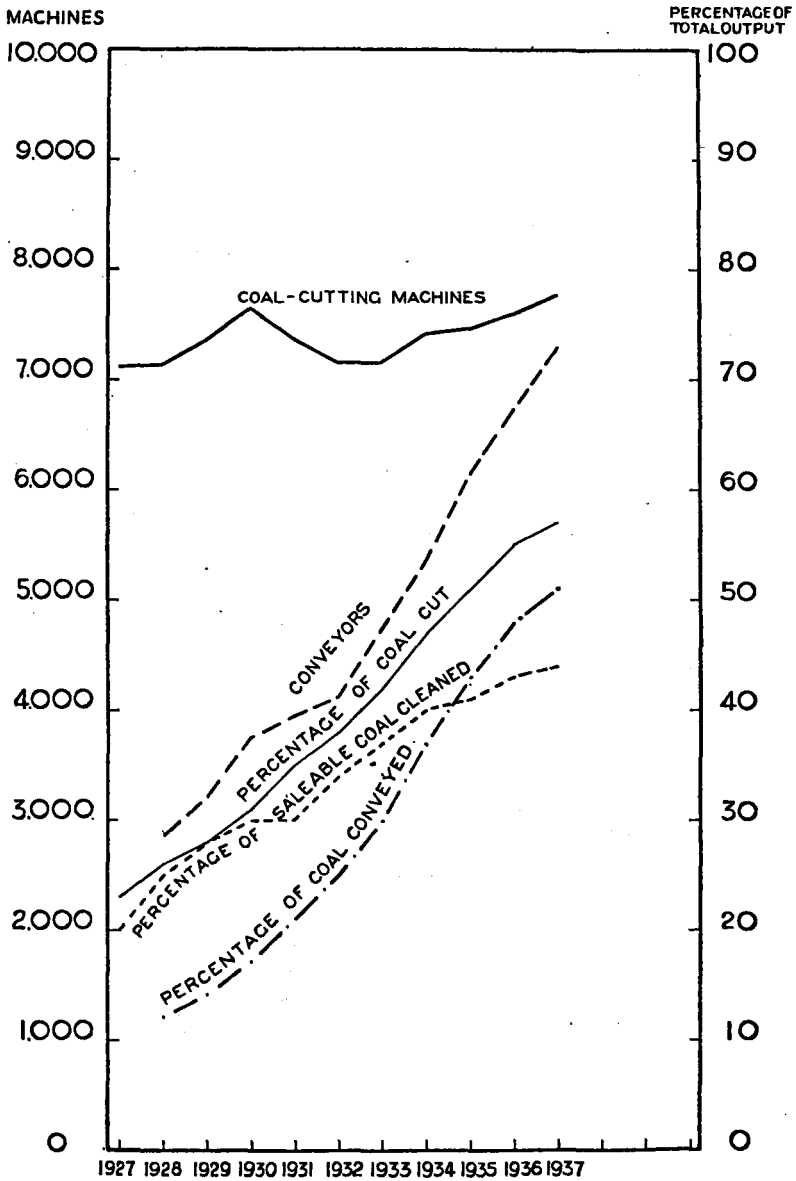
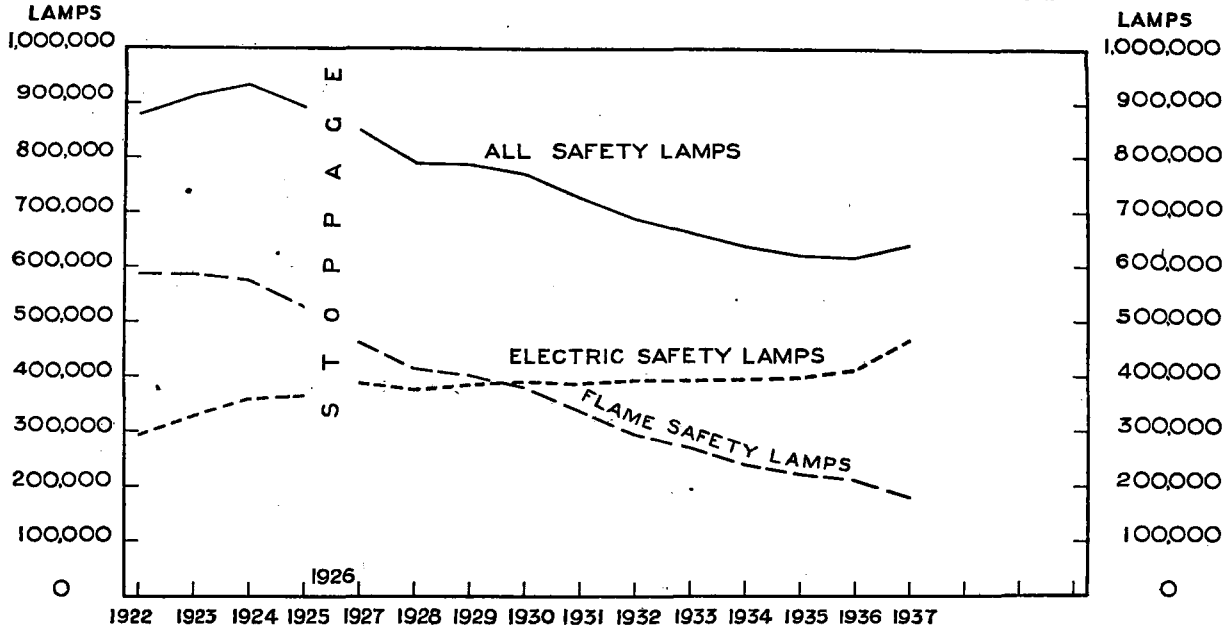


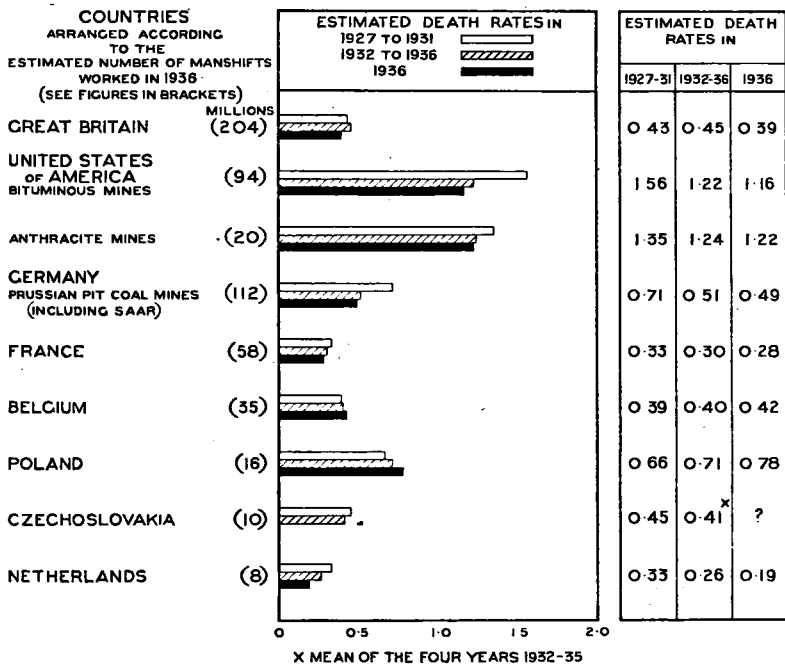


CHART VII. NUMBER OF SAFETY LAMPS IN USE FROM 1922



NOTE: From 1929 the particulars relate to the middle of the year.

CHART.VIII. ESTIMATED DEATH RATES FROM ACCIDENTS  
PER 100,000 MANSHIFTS WORKED AT COAL MINES IN THE  
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FOR THE FIVE-YEAR PERIODS 1927 TO 1931 AND 1932 TO 1936  
AND FOR THE YEAR 1936.



**Note.**—In order that the death rates for the various countries may be reasonably comparable, minor adjustments have been made to the published figures of manshifts worked.

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