

may be used for replacements or renewal in kind must be determined by the rate at which the fund is accumulated. If the rate is low and a long period, perhaps the entire life of the mine, is consumed in charging operations with the full amount of the original investment (less salvage) obviously no replacements or renewals should be charged against or paid out of the fund—all must be charged to operations. If the rate be made high enough so that a much shorter period is consumed in getting into the fund the full value of the original investment through charges to operations, certain replacements, renewals, or improvements may be charged against the fund.

The company with which I am connected now follows the uniform rule of charging operations with depreciation of plant and equipment at the rate of 6 per cent. per annum or net (or reducing) values, with credit to depreciation fund. This will cover into the fund about 70 per cent. of the original value in twenty years; it is contemplated that salvage values, that is, the values of all equipment scrapped or removed for use at other points during that period, together with the remainder value, credited to the fund will make up the 30 per cent. or balance of original value not charged to operations in the fixed monthly charges.

We, therefore, do not charge any renewals or replacements against our depreciation fund accumulation, but charge them all to operations. When the charges are so large as to seriously impair monthly comparisons of cost they are spread over the operations of a few months.

Labour.—In the Pittsburgh Coal Mining District labour costs fall into two general divisions, first, that which is paid on a unit basis of work performed, such as the scale rate for pick mining, machine mining subdivided into cutting and loading, and dead work, such as yardage, room turning, break throughs, clay veins, etc., and, second, that which is paid on a per diem basis, such as motormen, drivers, general inside labour, tippie labour, general outside labour, electricians, etc. It would hardly be profitable to follow the subdivisions of labour in this paper—they differ, of course, with changing conditions and according to the viewpoint of the respective operators.

Supplies.—All expenditures for live stock and supplies, after the initial installation at a new mine, should be charged to operations as made, although for purposes of checking and accuracy in monthly comparisons of cost inventories should be taken at the close of each month and entries made debiting inventory account, with credit to operations, for unused supplies at cost and for live stock in the service at a fair valuation.

Fuel.—The mining cost statement at a mine depending upon its own power plant, which does not include a charge for coal consumed in the same is incomplete and apt to be misleading in comparisons with mines purchasing power from central stations. For this reason it is proper to charge the fuel at a representative value to operations, with credit to coal sales account, notwithstanding that operations have already been charged with all the items entering into the cost of the product so consumed. This treatment of the individual power plant fuel of course, must not be lost sight of in the general summary of business done.

Insurance.—Fire, tornado, boiler and employer's liability insurance premiums are increasingly important

as items to be taken into account in mining costs whether these hazards are covered by insurance companies or assumed by the operator. In the latter case a fund or funds should be created and maintained at a charge to operations in sufficient amount to pay all losses, and, conservatism suggests, to accumulate a reasonable surplus.

General Office Expenses and Other General Expense.

—General office expenses and other general expense should be incorporated in mining cost statements in order to get a total outside amount of cost upon which to base selling values; they should, however, be shown separately under appropriate headings, not being included in any of the subdivisions of "Cost at Mine." In a company conducted exclusively as a mining company it is, perhaps, better not to differentiate nicely between that portion of general office expense which is chargeable direct to mining, such as the operating and engineering departments, and the expenses of departments of sales, transportation, finance, accounts, etc. In a broad sense, the base of all the company's business is the production of its mines, hence all of its general office expense may properly be included as a part of its total mining cost.

RELATION OF BIG BUSINESS TO INDUSTRIAL PROSPERITY*

The Sherman Anti-Trust Act was responsible for the tremendous waste in mining through permitting unrestrained competition. When the Sherman Act was passed, immediately the wheels, so far as co-operation was concerned, were turned back to the conditions of the Middle Ages. An interstate trade commission and state trade commissions, which shall have substantially the same power to regulate co-operation in industry that the Interstate Commerce Commissions have in regard to public utilities, should be established. It seems to me that the Interstate and State Commerce Commissions and the administrative bodies for the pure food laws point the way for the next constructive step in the development of the laws. It would, perhaps, be chimerical, with public opinion as at present, to propose the repeal of the Sherman law, but the situation may be met by amendments to this law. The Sherman Act can be left to apply, as defined by the Supreme Court, to monopoly. Unreasonable restraint of trade may be defined as monopolistic restraint of trade, and it is rather generally agreed that monopoly should be prohibited. To make the matter perfectly clear another amendment should allow reasonable co-operation, but such co-operation should be under the watchful eyes of administrative commissions in order to protect the public.

There can be no question that the competitive system, when unrestrained, is positively opposed to the policy of conservation. This is true alike for minerals and timber. The minerals of the earth require the building of the earth for their making. Mineral deposits are doubtless in the process of manufacture at the present time; but even if so, this is at so low a rate as to be negligible. From the point of view of mankind, the stores of minerals in the earth are deposits of definite magnitude upon which we may draw but once and which by no possibility can be increased. In this connection it should be recognized that modern civilization would not be possible without the mineral resources of the earth—no iron ships, no tools except those of stone, no fuel but wood. Without

*Extracts from address before American Mining Congress, Philadelphia, Oct. 2, 1913.