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Charles E. Mather

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Depreciation and Appreciation of Fixed Assets *

BY CHARLES E. MATHER

In view of the rapid advancement in all branches of research, it behooves one, in presenting a case, to beware lest his information and opinions be incomplete on the one hand, or, if complete as far as they go, lest on the other hand they have already become obsolete. Mindful of these limitations, I submit the following thoughts as a basis for discussion on the subject of depreciation and appreciation of fixed assets.

My boyhood days were spent in a town where there exists an old circular building, still in use for its original purpose. Had accountants applied the principle of depreciation at as low a rate as one half of one per cent. the cost would have been written off long before the birth of Columbus. The building is known as the Church of the Holy Sepulchre and is one of five similar churches built by the crusaders, four of which are still in use.

Many other similar examples could be cited; nevertheless, these are exceptions that prove the rule and we may say, broadly speaking, that all material things, the product of man's labor, must be regarded as coming to an end of their useful life within a very much shorter period.

Land, however, is not subject to the same rules; its value seems to be dependent not at all on time but upon the migrations of members of the human race, and therefore its value may accordingly go either up or down.

If the original cost of an asset used for profit is not recovered by the time that it becomes valueless, it is clear that a loss has resulted. Any actual profit made must be over and above the original cost spread over the life of the asset. This much, at least, is self-evident.

In looking over some old papers recently, I found a paper on "Depreciation in relation to the audit of accounts" read before the Manchester Institute of Accountants in January, 1876, more than fifty years ago, by my father, John Mather, a public accountant without any letters to his name at that time—no qualifying titles were then in use, except in Scotland. From this I shall quote later, but I recall with some interest that although an expert on depreciation in theory, as far as my memory goes, the

* Address delivered at a meeting of the Society of Certified Public Accountants of the State of New Jersey.

writer of that paper never recognized in his own life the actual fact of depreciation but attributed any breakage or wear and tear in furniture or clothing of his own household to gross carelessness or inexcusable negligence—something, in fact, that ought never to have happened. However, it is the duty of accountants to recognize as a fact the limited life of whatever is employed for profit and to reflect that fact in the accounts with which they deal.

Of course, the actual length of life is, and must be, a guess, but past experience is a good guide in making an estimate. By means of this guide we fix upon a given life and a given scrap or residual value and spread the difference between such value and the original cost over the term accepted as being the life of the article. Many intricate calculations may be used, but for practical purposes a straight-line method seems to serve the ends admirably; that is to say, a charge of an equal amount per annum over the whole life. It is possible and perhaps conservative to disregard the scrap value and divide the entire cost over the period, leaving the scrap value as a little leeway or something to the good.

In the paper to which reference has been made I find some suggestions offered as to rates that may be applied which do not seem altogether unreasonable even today, namely,

Boilers.....	10% per annum
Fixtures.....	7½% “
General machinery.....	5% “
Buildings (brick or stone).....	2½% “

Some twenty or more years ago some leading accountants referred generally to depreciation as “accruing renewals.” This term appeals to me as describing the case fairly accurately except for one thing—that is, the looming fear of obsolescence. This, if it is to be provided against, requires a reserve of something beyond the regular wear and tear year by year.

But this term “accruing renewals” brings up another question: whether provision is to be made merely to keep intact, or restore, the original capital outlay, or to provide for the possibly higher cost of renewal when need arises. It may be argued that strictly accounting principles are met by providing for a restoration of the original outlay and when that is provided, anything over and above is, in fact, profit, even though at the end of the term the owners are left with their original capital in the bank and the worthless plant that would require twice that sum to replace it.

Such a result would probably bring forth from the owners a protest that they did not care for strict accounting—what they wanted was to know where they stood and they had no idea that their business was about to come to an end. Prudence, therefore, would dictate that the observance of such principles, even if strictly correct, is not sufficient, and that provision should be made for such a contingency as the one suggested above. Indeed, in the case of a pending sale, or bond issue, based upon a current valuation, profits stated after depreciation based on cost would be very misleading if taken as a guide to future results.

Whichever view is accepted, the thought underlying the expression “accruing renewals” brings me to my favorite heresy. Until a month ago I believed myself to be in the minority of one with regard thereto, but in a widely circulated publication issued by a prominent manufacturing concern, I find in the September, 1927, issue an article entitled “Principles of depreciation,” in which this very heretical theory is discussed; but it is dismissed with this comment, “however, this method is not to be recommended without discrimination, for being based more on estimates (than other methods discussed) it ought to be put into practice only where the experience of the past furnishes a reliable barometer for the future.”

What are renewals in this sense? When provision is made for an expense, the amount of which is known, such, for instance, as taxes, we know exactly how much to provide as a minimum, and when the payment is made we know exactly that it either is or is not part of the expense for which provision has been made. But where can we draw the line between what are actual renewals or replacements and what are repairs?

By way of illustration, an engine may require a new pump, new piston or new valve or anything else. If the engine is a unit these are generally treated as repairs; if a pump is a unit (whether it is working by itself or as part of an engine), a new pump would be a replacement and a new valve would probably rank as a repair. If a valve were regarded as a unit a new valve would be a replacement and so on down the line to the smallest unit. But anything that forms only part of a unit when broken or worn is replaced and charged as a repair. Or, to express the thought from the other viewpoint, expenditures treated as repairs recognize the part replaced as only an incidental part of a unit; expenditures charged against the reserve recognize the part replaced as a unit. Is there

any logical distinction? Is it not, after all, a question that is decided by the size, importance or more commonly the amount in dollars and cents of the work involved? Perhaps in relation to our own personal affairs we may consider that we "repair" our shoes with the new sole and heel, but do we not "replace" a broken lace? With the above in view is it not necessary, in determining the rate of depreciation, to consider the amounts which are being spent year by year for repairs, so called? Is it not true that if little is spent the period of final renewal is approaching more rapidly and when heavy repair work has been carried out is not the renewal indefinitely postponed, or has it not, in fact, been partly executed?

I was called upon recently to fix a rate of depreciation for the purpose of an annual statement. In doing so I inquired very closely into the amount that had been expended for repairs out of revenue, and finally determined upon 4 per cent. in the main with a higher rate for specific items, as appeared to me to be necessary. A little later when this rate was accepted I was asked to express my views as to what was an adequate depreciation for the last twelve years and I reflected that had I originally required something like 10 per cent., this latter request might have placed me in an embarrassing position.

Coming to the point, my contribution to the discussion of this subject is: Have we not gained sufficient experience to give us a composite rate or rates, applicable to varying depreciating assets, sufficient to cover the extinguishment of the original cost, together with incidental repairs and partial renewals during the life of the asset? If we can determine such a rate this would provide a uniform charge to the operating account for each year and no questions would then arise calling for distinction between operating repairs on the one hand and renewals to come out of the reserve on the other hand. Alternatively, in lieu of a percentage on the cost of the item to be depreciated, the charge could be based on production (with a fixed minimum). It would then increase as the production increased, to cover the presumably heavier strain and wear involved.

If we have not enough data to work upon, is it not time for such data to be collected and filed for the general use of such accountants and clients as desire to use it?

A word about appreciation. Increase in the value of an asset used for operating purposes and not for resale is something entirely

Depreciation and Appreciation of Fixed Assets

outside the purpose of the business and usually arises from conditions beyond the control of the management. The problem is not new, for the paper by John Mather, previously referred to, contains the following reference to it:

“In the case of the C. D. Colliery, whilst auditing the accounts during the period of enhanced prices already referred to, it was found that the Manager, in perfect good faith, had considerably raised the valuation of the permanent rails underground on the principle that if sold at that time they would realize even more than the price stated. On its being pointed out that his business was to make a profit on coals, not on iron rails, he admitted the argument and made the correction. But here we have, I think, an instance where it is legitimate to suspend the depreciation for the time being, though not to take credit for any enhanced value.”

I submit the following for consideration:

- (a) Strictly speaking, accounting is what its name implies, being a “count” of what has been done with cash or its equivalent.
- (b) Usually appreciation in value is something quite outside the ordinary purpose of the business, and while it may not always be improper to take up appreciation in the accounts, it should always require a special reason and be done with caution.
- (c) The amount of appreciation is always an estimate and it is well to limit, as far as possible, the items in a balance-sheet which are subject to estimate.

There is a further consideration, prompted by Robert H. Montgomery in his paper* read at the annual meeting of the American Institute of Accountants, namely, does not the change in conditions of business require a change in the attitude and practice of accountants, including a modification of the strict idea of accounting for cash in dealing with assets? Does it not call (Mr. Montgomery asks in effect) for some expression of values rather than of cost?

This seems to be a point to which accountants must give close consideration in the immediate future. We may, without committing ourselves to any new principle, go as far as to admit that a parenthetical note or explanation as to what is the present market value or appraised value of certain capital assets, whether it be more or less than the book value or the cost, would be of considerable importance in a financial statement and may in certain

* *Accountants' Limitations.* See THE JOURNAL OF ACCOUNTANCY, October, 1927.

cases even be necessary to a fair presentation of the financial condition of the business.

There are, of course, many points not considered in these remarks, such as how depreciation or appreciation should be considered in a cost-plus contract; whether a rate should be used based upon the original cost or on the appraised value, at the time the contract is made; the same principle with regard to fixing rates for public utilities; the question of whether excess depreciation should be written back, when clearly recognized as excessive; the question whether depreciation should be taken at a flat rate on the whole or at an appropriate rate on each individual item. In my judgment, on the last point, no account of depreciation can be intelligently constructed unless based upon the age and expected life of each individual depreciable item in the plant inventory.

The foregoing remarks will apply, in certain instances, both to tangible and intangible assets, but with regard to intangibles the facts may be more difficult of ascertainment, and caution and common sense must, of course, be exercised.

In conclusion, I would extend a recommendation found in the ancient paper referred to already, namely, that an organized body of accountants such as this act as collector or recipient of data relative to both repair charges and depreciation rates, with a view to facilitating the use of a composite inclusive factor and thereby equalizing the annual burden chargeable against the operations of manufacturing concerns.

* * * * *

NOTE: The writer's attention has been drawn to an income-tax law of Porto Rico (now repealed) by virtue of which the board made the following regulation, under the caption of depreciation and incidental repairs and replacements:

"Therefore this board resolves that as a general and uniform ruling for . . . industries where machinery is used . . . the following table of rates on the value of all property subject to depreciation which does not include, of course, lands and intangible assets shall be accepted henceforth as general deduction for depreciation and all kinds of repairs whether incidental repairs or replacements."

The table referred to in the regulation was evidently intended to represent the board's idea of a proper charge to operating for both repairs and depreciation in one amount.

It should be pointed out, however, that most of the machinery to which this applied is used in a seasonal trade, the production of sugar, and is very thoroughly overhauled between seasons.