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Students' Department

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In regard to the following attempt to present the correct answers to the questions asked in the examination held by the American Institute of Accountants in May, 1919, the reader is cautioned against accepting the answers as official. They have not been seen by the examiners—still less endorsed by them.

INSTITUTE EXAMINATION

AUDITING

Question 1:

How would you verify the accuracy of accounts receivable from trade customers—

(a) In a detailed audit;
(b) In a balance-sheet audit?

Answer to question 1:

(a) In a detailed audit a thorough examination should be made of the records of transactions appearing in the books of original entry. This would involve an inspection of vouchers of all kinds with the object of satisfying the auditor that the books of original entry contain a true record of the transactions which occurred during the period.

The entries in the sales book should be verified by reference to orders, duplicate invoices and shipping records. Vouchers authorizing credits for returns and allowances, freight, discount and other non-cash items should be examined and authorizations noted. The audit of the cashbook will satisfy the auditor as to the adequacy of the system of internal check safeguarding cash receipts and will indicate whether or not there is an opportunity to misappropriate cash and cover the shortage in the accounts receivable by lapping, by substituting non-cash for cash credits or by some other device.

A part of the work of a detailed audit is the verification of the footings of all books of original entry. In so far as column totals are posted to the accounts receivable account, the verification of these totals may be considered to be part of the accounts receivable audit. After proving the correctness of the books of original entry, the postings to the controlling account should be checked. If no controlling account is kept, the auditor should make up one for himself. The total of the trial balance taken from the customers' ledger should, of course, exactly agree with the balance of the controlling account. The customers' ledger should be footed and each individual balance verified, or at least sufficient tests should be made of the balances to satisfy the auditor.

No accounts should be included in this category except those that originate from sales. All accounts representing goods shipped on consignment, advances to salesmen, overdrafts of officers and employees or other cash advances should be rigidly excluded and entered under appropriate classifications.

In order to prove that the balances called for by the ledger represent accounts that are still active and that no part of them has been paid in cash or reduced by rebates and allowances, it is necessary to send an auditor's note to each customer. This is best done by the auditor's using a rubber stamp to print on each statement a polite request to the customer to report any discrepancy direct to the auditor. The statements thus stamped are the regular monthly statements to customers, which the auditor has checked to a trial balance which has already been or soon will be compared with the ledger. The auditor should enclose these statements himself in envelopes with his own return address on them and should mail them himself. Otherwise it would be possible for a fraudulent statement not to be mailed at all, or to be sent to a false address.

These steps will verify the accuracy of the balances. If the question is intended to cover also the accuracy of items making up the accounts, it will be necessary to investigate further. Except for small accounts, the auditor should verify all credits other than cash and should require evidence for returns and allowances, freight, discounts allowed after the usual dates and any other credits which may have been made to take the place of cash remittances which had been abstracted, without disturbing the correctness of the final balance.

If the question is intended to cover the accuracy of the valuation, it will be necessary to ascertain from the records what has been the normal loss from bad debts in the past, as a guide to the size of the reserve that should be established. The accounts should also be classified as to their being current or more or less past due. It may be that this classification will show that doubtful accounts have been kept on the books longer than they should be and that the reserve should be much larger than the dilatory practice of the past would require.

(b) In a balance-sheet audit the principal object is to ascertain whether or not the items appearing on the balance-sheet are represented at their proper values. It will therefore be necessary to prove the accuracy of the balances of customers as a total by testing the controlling account and ascertaining whether the subsidiary ledger is in balance with it. If audit notices are not sent to customers, the sales for the last month should be investigated to see that no fictitious sales have been put through to swell the total. The usual proportion between outstanding customers' balances and sales should be used as a guide in judging whether there is reason to suspect any fictitious increase in the total or not. The individual accounts should be scrutinized in a general way to detect any irregularities, such as the non-payment of a September item when all the October and November bills have been settled, indicating a disputed account. The adequacy of the reserve for bad debts should also be judged in the light of past experience and the condition of the accounts.

Question 2

In a balance-sheet audit how would you verify as to quantities and amounts the inventory items

(a) Goods in process;

(b) Repair and replacement parts for the concern's product?

Answer to question 2:

(a) If an adequate cost system is in use and is being correctly carried out, the various elements of cost will have been added to the goods as the work progresses and the balance of the goods in process account should be a close approximation of the value of the goods themselves.

Where no good cost system is in use, it is next to impossible to verify the value of the partly finished goods. However, even in the crudest factory methods, there is always some system for keeping a certain amount of track of what is being done. The person who keeps these records should be required to indicate the way in which the figures are obtained, and the auditor should be able in a general way to determine how nearly accurate the values are.

The auditor may be guided somewhat by the valuations given in the inventories of raw materials and finished products. If they are found to be fairly obtained, there is every reason to believe that the valuation of goods in process is equally trustworthy.

The condition of the business itself is an important point. A concern that has sufficient capital and is making good profits is not tempted to swell its resources or increase its apparent profits by over-valuing any of its inventories. If the concern is deficient in capital or profits the auditor should be much more thorough in his investigation of the inventories.

(b) This part of the question is understood to mean those articles which are part of the finished product which wear out in a comparatively short time and are either sold to those who have previously purchased the complete product or given to them under the conditions of a guarantee.

In either event an account should be kept with them which would show the original number made, the number entering into original sales and the number subsequently sold or delivered under guarantees. This means that they would be treated in the same way as finished product, part of which is transferred to other departments of the factory and part retained in stock as finished goods on hand. The inventory would be proved by the cost of the goods made, cost of those transferred to other departments, cost of those sold or given away and, finally, cost of those still on hand.

Question 3:

You are informed that during the period covered by a balance-sheet audit, which you have made, a defalcation was going on in the petty cash which was not discovered by you. You are asked to write a letter of explanation to the board of directors. Explain what you would do, and draft such a letter.

Answer to question 3:

It is assumed that when the instructions were given to make the audit it had been distinctly stated in writing that the scope of the work was to be confined to ascertaining the condition of the assets and liabilities of the company. If I had not done this before I began the audit, I should have covered the omission as far as possible in my report at the end. If I had done neither of these, I would find it difficult to persuade the directors that I was not shielding myself behind a mere professional technicality.

My letter would be along some such lines as the following:

To the Directors of the X Co.

Gentlemen:

Referring to the audit recently completed by me for your company, I am informed that there existed at the time a defalcation in the petty cash that I did not discover.

In my written proposal to make the audit of your affairs, I stated that I understood that I was to make what is technically known as a balance-sheet audit, which means an investigation that will suffice to show the present condition of the company, as to whether the assets that the books showed to be on hand were actually on hand and that none had been omitted from the books that were in reality on hand, and also that the assets were valued on a proper basis, that all the liabilities were shown by the books, that they were actual liabilities and that they had been properly incurred.

In an audit the scope of which is limited to this extent, the clerical accuracy of the books must necessarily be taken for granted. The auditor does not verify the additions of the cashbook nor the correctness of ordinary vouchers. It is therefore entirely possible for a small or even a comparatively large defalcation to exist which the auditor would have no means of discovering. To discover any such shortage it would be necessary to make a much more detailed audit.

As this point was explicitly covered in my written contract and in my report, I trust that you will see that I was in no way to blame for not discovering the defalcation which existed.

Yours very truly,

JOHN DOE.

Question 4:

How would you treat cash discounts on capital expenditures, such as for new machinery?

Answer to question 4:

They should be treated as deductions from the cost of the assets purchased, even by those who consider discounts taken on revenue expenditures as rewards or profits of capital. In the latter case the discount increases the net profit, either by reducing the cost of operation or by increasing the financial income in the same way as interest received. In any event it is included in the results of the sales of goods. As profits cannot be made on the purchase, but only on the sale of assets, and as capital assets are purchased only and not sold, the discount gained with them cannot be considered a profit, but must be treated as a saving.

Question 5:

In auditing the accounts of a corporation for the year ended December 31, 1918, you find that for the first time there were taken into consideration goods to be received after January 1, 1919, which you find were covered by firm contracts. The purchase price of the goods was charged to purchases account as of December 31, 1918, and credited to the vendor. In the inventory the goods were taken at 20 per cent. less than cost. You find that the market price was in fact 80 per cent. of cost. Tax statements have been prepared in accordance with the books.

Give your opinion as to the wisdom and propriety of the course adopted and your advice as to reflecting the foregoing in the balance-sheet.

Answer to question 5:

A. Lowes Dickinson says "contracts of purchase made for future delivery form a class of items that call for consideration in connection with inventory valuations. As long as such contracts are made in the ordinary course of business for the purpose of supplying its actual needs as they accrue, no question need be raised in connection with a balance-sheet as of a date prior to the date of delivery."

As the goods will not be on hand until the year in which they are to be used, the loss on them will be a loss of the year in which they are delivered, if there is any loss at all. There will be no actual loss unless the selling price drops so low as to wipe out all the margin of profit. If not, there will be merely a reduction of the amount of profit made, which cannot be determined until the goods are sold. In the meantime the market price may have rallied all of the 20 per cent. or more.

A contract for future delivery is a matter of sufficient importance to be mentioned in a report to stockholders or to bankers, because of the demand which such a contract may make on current funds in the near future. But the goods to be delivered in the future are not a present asset of the purchaser under the contract, and the obligation to pay for them is not a present liability. Even if the market price had not dropped to 80 per cent. of the contract price, it would be incorrect to put the transaction through the books as a purchase because of the resulting overstatement of the purchases, the inventory and the liabilities.

The error is made much more serious by reason of the drop in the market. The effect of putting the contract through at contract price and adding the goods to the inventory at 80 per cent. thereof, is

An overstatement of purchases amounting to 100% of the contracts;
An overstatement of inventory amounting to 80% of the contracts;
An understatement of profit and surplus amounting to 20% of the contracts;
An overstatement of liabilities amounting to 100% of the contracts.

This is contrary to correct accounting principles; moreover, it would unquestionably be disallowed by an income tax inspector because of the understatement of the profits. It might be possible to satisfy the inspector if the company could show that this procedure had been consistently followed in the past, but the question states that this is the first time it has been done.

Question 6:

Discuss the various methods of handling containers in different businesses. In each case describe the duty of the auditor.

Answer to question 6:

Sometimes the containers are charged to the customers at cost through a special column in the sales book and on the ledger, with a corresponding record for those returned and credited. In this case there is an account kept with them, the debit balance of which is supposed to represent the number outstanding at cost. Under such conditions the duty of the auditor is merely to see whether the concern is in the habit of enforcing payment for those not returned. If it is, the amount due for empties is just as much an asset as is the account for goods. If the company is lax in this regard, the auditor should ascertain the usual loss and should set up a reserve against it.

Sometimes the account is kept only in quantities. If the customer has paid cost or more and is allowed to return them at cost or less, no attention need be paid to them by the auditor, except perhaps to see that those returned are required to be in good condition to be used again. The position is simply that the concern is under obligations to purchase at a fair price containers that it constantly needs. If the customer can return them at a higher price than cost, the auditor should require that a reserve be set up against this liability. When the account is kept in quantities the cost of the containers is often included in the selling price of the goods, the return of empties being considered a part payment on the next sale.

Sometimes containers are furnished free with an obligation to return them, but, if there is no penalty for a failure to return, the customer is not likely to be very careful to do so. Therefore the auditor cannot allow all containers in the hands of customers to appear in the inventory, but only such proportions as experience shows are likely to be returned. About the best way to handle such a situation is to ascertain how many containers a concern needs to have for its normal business and to consider this amount as a permanent investment, all new containers bought being charged to operating expense.

Question 7:

In making an audit or investigation for the prospective purchaser of a business to be followed by a report, including a balance-sheet and income and profit and loss statement, would you expect such a report to differ from the report which you would make based upon a balance-sheet audit directed to and made for the president of a corporation? If different, specify fully the points of difference.

Answer to question 7:

Such a report may differ very materially from that based upon an ordinary audit.

The scope of the investigation may be limited by the instructions of the client. He may be capable of judging of the merits of a business in a general way and may instruct the auditor to accept as correct certain portions of the accounts without verifying them and to limit his inquiries to the methods by which the conclusions are reached, such as those in regard to depreciation, the basis of the valuation of inventories, etc. If the scope of the investigation is limited, it should be by written instructions.

The report made to the president covers the result of one year only. That made to a prospective purchaser should cover a series of years, not less than three, preferably as many as ten. These years should not be averaged, but should appear in parallel columns, so that the items can be compared in detail. This is important, as it shows whether the business is steadily increasing, steadily decreasing or is of a fluctuating nature. The percentages of cost of goods and of expenses to sales should be given in detail for each year, in order to show the trend of the business.

It may be that conditions have begun to develop that are not yet apparent to outsiders which will make it at least doubtful whether the business will be as profitable in the future as in the past. Any suspicion of such conditions should be reported to the client, who can make further investigations.

It may be that the years of greatest prosperity are the same as those in which a certain manager was employed. The auditor should endeavor to ascertain whether changes instituted by this manager were responsible for the gain, or whether it was due to his personal supervision. This is information of value to the purchaser if he does not intend to retain the manager. The character of the general management of the business should be reported by the auditor, especially if he can suggest any points in which it can be improved.

Of course, the auditor should exclude from his statement of profits any that are not the result of the normal operations of the business. He should also adjust the statement by years if he finds that it has not been properly done. For instance, bad debts may have been ignored for three or four years and then a large amount may have been charged off at one time. The auditor should distribute such debts over the years as far as he is able.

It is not wise for an auditor to forecast the future of a business in any circumstances, but while it may be merely a little injudicious to estimate the effect of certain proposed changes upon a going business remaining under its old management, it is very foolish of him to prophesy as to the results which may follow a change of management consequent upon the sale of the business. If the new parties expect to put in additional capital, the auditor may show that in the past the business has suffered from lack of ready money by losing discounts or by being obliged to buy in small quantities, leaving it to the purchaser to judge whether or not he can avoid such faults in the future. In other words, the auditor can point out mistakes in the past history, but should not attempt to determine whether they can be guarded against in the future.

When the entire business is to be disposed of the auditor should be much more particular than when only a portion of it is for sale. The reasons for selling are very important. They may be entirely legitimate or may be caused by advance information of something impending that will be disastrous to the business. If there are any indications of approaching calamity to be gained from his scrutiny of the business, it is, of course, necessary to report them to his client at once.

Question 8:

How could a manager, who does not keep the books but is interested in the profits of one department of a business, unduly increase the amount of his compensation? In making an audit where profit-sharing agreements exist, should an audit programme differ from that required where there are no such agreements? If so, why?

Answer to question 8:

A manager who has authority to dictate the way in which the accounts shall be kept can so manipulate the charges and credits as to favor one or more departments at the expense of the others. Among the various methods of distributing the factory overhead there may be one which will impose on the favored department a much smaller burden than would any other plan. He may order this method adopted, although to the unprejudiced auditor it may not seem to be the one best suited to the business as a whole. As this is largely a matter of judgment, the manager cannot be charged with dishonesty. It is assumed that the manager is not actually and intentionally dishonest. If he is, he may manipulate inventories, freight charges and other elements of profit and loss to the advantage of the favored department. But without dishonesty there are many points, about which authorities differ, which allow him to choose those most favorable to his biassed judgment.

In making an audit where a profit-sharing agreement exists, the auditor should carefully examine the distribution of all the expenses among the various departments and should determine as well as he can whether or not they are just and reasonable. It would be better if he were told beforehand merely that the manager was interested in one of the departments, but not informed which one. His findings could not then be said to be prejudiced. It may be that the manager may be so honest that he has not been fair to himself. In any event the auditor must ascertain the facts and report accordingly.

The same suggestions would, of course, apply if several employees received shares of the profits from the departments in which they are employed. If the shares are based on the profits of the business as a whole, an improper distribution of income or expense would not affect the remuneration of the employees. In such a case verification of total profits would be very important; but the auditor is supposed to make as careful a verification of profits as possible in any event. The profit-sharing agreement would be merely an added reason for thoroughness.

Question 9:

(a) Would you refuse to sign an audit certificate if you had been refused access to the minute book of a corporation?

(b) If the answer is "Yes," would you sign the certificate with a qualification?

(c) Mention five items for which you would look in examining a minute book.

(d) If the corporation were a "close" one and practically no minutes were kept, what action would you take and why?

Answer to question 9:

(a) I would refuse to sign an audit certificate except as indicated below. There could be no reason for refusing to allow an auditor to read the minutes, except that they contained information which would cause him to modify his certificate to the detriment of the company.

(b) If I signed any certificate it would contain a qualifying clause such as "subject to any adjustments or changes that I might have made if I had been able to read the minutes of the company, access to which was refused me." This would be equivalent to saying that my report was apparently correct, but that there were probably one or more important points in which it might be absolutely untrustworthy.

(c) Bonuses to officers to be paid in the immediate future.

Litigation in regard to infringement of patents involving the possible loss of large sums.

Suits for damages or for non-fulfillment of contracts.

Contracts for additions to plant equipment to an extent that the present business might not seem to justify.

Settlement of a claim against the company for a much larger sum than the books show as a liability.

(d) I should request a written statement from the officers that no material facts in regard to the assets and liabilities had been kept from me, and particularly that there were no contingent liabilities that had not been disclosed. I should also inform them that they were incurring serious responsibilities by not keeping proper records.

Question 10:

When plant and deferred asset accounts are increasing, should an auditor attempt to ascertain whether or not production is increasing to the same relative extent? What is the auditor's general duty in regard to (a) capital expenditures and (b) increases in inventories? Answer fully.

Answer to question 10:

As a plant is intended to be the means of producing a certain output, any increase in the plant account should be reflected in a corresponding increase in production. If the one increase does not follow the other, the auditor should investigate to find what is wrong. He may find that the items which caused the increase were not proper charges to plant account at all, but were really for maintenance only.

An increase in deferred assets may be only temporary, owing, perhaps, to an opportunity to make a saving by anticipating future payments. It might not have any connection with the volume of business. The auditor should take into consideration the whole expenditure for each class of assets and determine what effect each would have in relation to increased production.

(a) The general duty of the auditor in regard to capital expenditures is to make sure that the proper distinction has been observed between items affecting capital or income. An examination of vouchers alone will not be sufficient, since the same material may be used either in new work or in repairs and replacements. If there is not a proper system of work tickets to show exactly where all material and labor went, he must satisfy himself, as well as he can, by inspection or by judicious inquiry of foremen and others that the material and labor have produced something that is a distinct addition to the permanent assets. He should also investigate if he has any reason to believe that items properly chargeable to capital have been charged against income, as is sometimes done by those who wish to be conservative. An understatement of profits is an error, though not nearly as serious as an overstatement.

(b) An auditor should ascertain the reasons for any marked increase in inventories. Possession of a larger amount of raw material than is normally required to be on hand at any one time may be evidence of shrewd buying of goods that have already risen in price or may be expected to rise in a short time. If the material is all serviceable—that is, if the increase is not fictitious—the amount carried is a matter of judgment.

The same thing is true to a large extent of an increase in an inventory of finished product. There may be reasons for expecting a largely increased demand for the goods. Of course, it may be caused by a sudden slump in sales. So long as there are no unsalable goods being carried, no special comment is required, unless the auditor has reason to believe that it is the habit to carry excessive inventories.

Treasury Stock and Surplus

Editor, Students' Department:

Sir: Will you kindly let me know what would be the proper entries to make in the following instances:

When we paid the income tax for the year 1917, it of course was paid this last year, 1918. Should this be charged off in the expense account as taxes this year, or should it be charged off from our surplus account of 1917?

We also have about half of our capital stock subscribed and paid for by the members; the rest we will not sell, as we wish to hold it, wanting no more new members. We can transfer enough of our surplus fund to pay the rest of the authorized capital stock and hold this in the treasury as treasury stock. What would be the proper entry in this case?

J. J. F.

The income tax paid in 1918 was based on and was therefore a deduction from the profits of the year 1917. On December 31, 1917, there should have been set up a reserve for federal tax. The offsetting debit would, of course, have been a charge to profit and loss, as a deduction from profits, not as an operating expense. The result would have been a reduction of surplus at December 31, by the amount of the tax. The surplus being too large, it must be corrected by charging the tax to surplus account, and not to the profit and loss account of 1918. When the tax is not definitely known, as at the end of 1918, an amount large enough to cover what it probably will be should be set up.

The definition of treasury stock is "stock that has been once fully paid for and issued, and that has since been re-acquired by the issuing corporation through purchase or donation." Under this definition the stock referred to would not be treasury stock. It may be fully paid for, but it has not been issued. Waiving that point, however, it is a little difficult to see how the stock can be gotten into the treasury stock account.

Either no entry has yet been made covering the stock not yet subscribed or else the capital stock account shows the full amount of the authorized capital, and there is a debit account of unissued stock. To put the new stock on the books would necessitate a debit to surplus and a credit to capital stock or to unissued stock. If treasury stock is now charged, the only credit would be to surplus, reversing the original charge and thus nullifying the entry which paid up the stock.

The fact of the matter is that no stock can be paid up out of surplus, except as a division of profits, that is, dividend. The only way to get the stock into treasury stock account would be to declare a stock dividend of 100 per cent. of the outstanding stock, on condition that each stockholder would at once donate his dividend stock back to the company. This gift would be a credit to surplus equal to the debit of the dividend, and the balance of the surplus account would be the same as it was before. This must be so because the only debits to surplus must be either losses or permanent dividends. This issue of stock is neither of these.

If capital stock account has been credited only with the stock already issued, it will answer every purpose if unissued stock is charged and capital stock credited. This will bring the capital stock account to the full amount authorized, but the unissued stock will appear as such and not as treasury stock. There is no material difference unless it is proposed to sell it at a discount. In some states treasury stock may be sold at a discount, while unissued original stock cannot be, except with a liability for the discount on the part of the purchaser. As this concern has a surplus equal to the unissued stock, there would not seem to be much risk in this case.

Interest on Unpaid Cumulative Dividends

Editor, Students' Department:

Sir: I shall appreciate very much your opinion on the following problem:

The preferred stock certificates of a certain corporation include the following printed matter:

"The preferred stock is entitled in preference to the common stock to cumulative dividends at the rate of 7 per cent. yearly, with interest on any deficiency, and on liquidation or dissolution is entitled to payment in full of its par value, plus accumulated dividends unpaid, with interest."

(a) Is not this provision for "interest on any deficiency" an unusual one?

(b) Does this clause conflict with the fact that cumulative dividends on preferred stock are not a liability until declared, and therefore interest should not accrue until the date payable has passed, or does this clause, in your opinion, refer only to dividends after being declared and made payable at a certain date? On the latter basis, any interest accruing from the date when the dividend was made payable would be charged to interest account as interest on a current account payable.

(c) If the clause is to be construed to mean that interest accumulates from the date when the dividend accrues, without reference to the date when it is made payable after being declared, would the interest be a proper charge against the interest account or would it be more proper to charge the amount directly to surplus along with the amount of the dividend (after being declared), on the principle that it was not interest on accounts payable, but rather affected only the equities of the common and preferred stockholders.

In the case of this corporation, the past eight preferred stock dividends have accumulated but have not been declared.

Trusting to obtain your opinion through your columns in THE JOURNAL, I am

Yours truly,

C. K.

(a) The provision for interest on unpaid preferred dividends from date of delinquency is very unusual. As the clause fixing the dividends does not state that they are to be paid other than "at the rate of 7% yearly," the dividends would not be delinquent until after the end of each year.

(b) Although these dividends are not an active liability that can be expressed on the books, they are a contingent liability that must be taken into consideration in any statement of the financial condition of the company. If a surplus exists, any balance-sheet submitted to creditors or stockholders should contain a note stating that this surplus is subject to unpaid preferred dividends. If no surplus exists, the contingent liability is of no interest to creditors, since profits must be made and through them funds provided with which to pay the dividends before they can become active liabilities. They are of interest to the preferred and common stockholders, as showing priority of claim on the part of the preferred to any present or future profits.

As these dividends are a liability, although only a deferred or contingent one, there is no reason why they should not be made to bear interest, if they have been earned but not yet declared.

(c) The interest would be a proper charge against the interest account, if the dividends were earned and had not been declared because the directors needed the money in the business. The directors are virtually making a forced loan from the stockholders. If the dividends are not earned there ought not to be any interest on them, but since the contract seems to call for it, the interest when paid should be charged direct to surplus as an extraneous and not a normal expense.

DECEPTIVE AVERAGING, AGAIN

Editor, Students' Department:

SIR: A corporation having a string of large warehouses has a system of accounting for purchases and sales, as follows:

Material purchased is charged to the warehouse at cost price and sales are made on the basis of 10% gross profit. As additional purchases are made, the amount remaining in stock is added to the new purchase and an average cost is arrived at after each new purchase. This average cost is used as a basis for computing the sales until another purchase is made, when the average again may change.

At the end of the year an inventory is taken of the goods remaining on hand and priced at the average prevailing at the date of the inventory. Should not the difference between the inventory at the first of the year plus the charges to the merchandise account and the inventory at the last of the year equal the profit on sales made—assuming that the stock has turned over at least once, and that the purchases during the year have been at prices no less than the value of the inventory at the first of the year, and presumably at higher prices? Assuming that this difference is the true profit, should it not equal one-eleventh of the total sales made during the year, if 10% is the rate used to add to material sold?

I am very much interested in this problem and would appreciate a reply.

Yours very truly,

R. G. H.

There is nothing so deceptive as averages, and more mistakes are made by business men in reasoning about them than in any other way.

There is one invariable rule that is little understood. An average price can be relied on only when either quantities or prices are the same. Of course where the price is the same all the way through that is also the average price. But when the quantities and the prices both vary, averaging the prices will not work. For example:

10,000	@	$1.00	is	$10,000
10,000	@	1.05	is	10,500
10,000	@	1.10	is	11,000
10,000	@	1.25	is	12,500
40,000	@	$1.10	is	$44,000

In this case the prices add up 4.40 for 40,000 or an average of 1.10, which is correct, because the quantities are the same. But if

10,000	@	$1.00	is	$10,000
20,000	@	1.05	is	21,000
30,000	@	1.10	is	33,000
40,000	@	1.25	is	50,000
100,000	@	1.14	is	$114,000

Although the individual prices are the same as before, the average is not the same, because the quantities vary.

In the case in point the basis of sales constantly varies because the quantity of goods on hand each month added to the purchase of the month gives a constantly varying amount on which the sales are calculated.

The reason for this will appear if the two tables given above are analyzed. In the first table the first item is 10,000 times 10 cents below the average price of $1.10, and the second item is 10,000 times 5 cents below, while the last item is 10,000 times 15 cents above. The amounts of $1,000 and $500 below cancel the $1,500 above. In the second table the amounts of $1,000 and $1,000 for the two items below the average do not offset 40,000 @ 15 cents or $6,000 above by $4,000. This adds $4,000 to the total of the 100,000 quantity or 4 cents to the average price.

No-Par-Value Stock and Convertible Notes

Editor, Students' Department:

Sir: There are a few questions that I would like to ask regarding a certain company with which this office is familiar, and I submit the following figures with questions:

In the fall of 1917 the company was re-organized with the following capitalization: five year 6% notes, $6,000,000, and 250,000 shares common stock of no par value of which 190,000 shares were issued immediately and 60,000 shares were reserved for conversion of the notes.

In the 1918 annual report one of the asset items is

Investments (subsidiary companies, etc.) (including $1,936,000 of the company's five-year 6% convertible notes)	$4,418,129.84

and on the liability side are, among other items, the following:

Notes	$5,265,500.00
Capital	15,934,500.00

During the year the company converted $734,500 of the company's notes ($1,000 par value of notes for ten shares of stock), and purchased on the open market $1,936,000 of the notes.

I judge from the asset item that the purchased notes are not yet cancelled, so I should subtract this item from the liability "notes" item to arrive at the actual amount of notes outstanding; but I do not understand how with a "no-par-value" stock the liability "capital" item is entered as it is. At what price is such capital stock entered? In the report for 1917 the capital item was shown as $15,200,000.00, thus showing the issuance of $734,500 stock for the notes converted in 1918 figures. Will you kindly explain to me how the "no-par-value" capital is handled in a case of this kind?

Sincerely yours,

C. M. B.

The proper way to handle stock with no par value is to treat it very much like the capital of a partnership as far as its book valuation is concerned. Capital stock should be credited with whatever is paid in the same as partners' capitals are credited with their contributions.

In this case the original 190,000 shares issued were evidently paid for at 80.

The question then comes up as to the 7,345 shares issued in conversion of the notes. One view is that the original sale at 80 has established that figure as the book value and that the issue of other stock at 100 means that 7,345 shares whose established par was 80 were sold at 25 per cent. above par. Taking this view, capital stock would be credited with $587,600 and contributed surplus, or simply surplus, with $146,900.

The other view is that the stock is to be valued at the amount paid for it, in which case the capital stock would be as shown, $15,934,500. In any event the number of shares outstanding should be given as 197,345, so that each stockholder can know the book value of his holdings.

Where there is only one class of stock it does not make much difference which view is adopted, since the book value of each share is found by dividing the sum of the capital account and the surplus account by the number of shares outstanding, whether the surplus is paid in or earned. It is important only for the purpose of fixing the amount of the capital stock which cannot be impaired by payment of dividends.

Unless the notes purchased are of such a character that they may be re-issued, it would seem as if they ought to be charged off. If there is a chance that they may be re-issued they should be carried as notes in treasury and should be deducted from the credit balance of notes in the balance-sheet. However, long time notes should not be called simply "notes"; their character should be specified. They are in no sense investments, as that term implies outside securities available for the payment of creditors.