

Cost Accounting a Field for Chemists

Advantages of Technical Training Renders Chemists and Chemical Engineers Well Fitted for Cost-Finding in Process Industries*

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TO THOSE employing chemists, the number of applicants for the very limited number of openings is a constantly growing problem. The natural reaction is to give the applicant a chance to demonstrate his ability, or lack of it, but the limitations of laboratory budgets and laboratory space prevent—and the constantly increasing number of students along technical lines in our colleges and universities would indicate that there is no immediate danger of the demand exhausting the supply.

Another consideration which enters the problem is the nature of chemical work, particularly along industrial lines. Since such work is rather highly specialized, the tendency is to keep a man who has become fairly proficient, even if he is not all that might be desired, rather than to replace him with an inexperienced one without the assurance of bettering the situation. This tends toward long tenure and a very low turn-over, which is practically limited to emergency replacements and the filling of such new positions as the development of the industry may demand.

This question of employment has been the subject of considerable thought and discussion, both by educators and the chemical profession at large, and has brought out a great number of suggestions, both sound and visionary—the only really sound ones having to do with the broadening of the scope of chemical activities.

Speaking in commercial language, there are two means of expanding a limited market—first, to seek out an existing unfilled demand, second, to create a demand. Of these, the first method, if applicable, is, of course, the easier and more productive of results. In surveying the industrial field for possible unfilled demands for men with technical training along chemical lines, that portion devoted to "Cost Accounting" ("Plant Accounting-Cost

Finding") appears to have been largely neglected and to give promise of responding to cultivation, particularly that portion of it having to do with the so-called "Process Industries."

Being primarily interested along chemical lines, the speaker is quite as competent to advise in the realm of accounting as the proverbial maiden aunt is to give advice regarding the rearing of a family. Realizing this limitation, the effort will be made to develop this discussion from the viewpoint of the chemist and leave any controversial points to be taken up from the viewpoint of the accountant, should any such be present.

It has been only within a comparatively short time that Cost Accounting has been recognized as a separate and distinct branch of the General Science of Accounting, with its individual problems and methods. Its rapid rise to prominence and its quick recognition as an essential member of the business machine, bear witness to the need which it is attempting to satisfy.

This urge for the accurate determination of costs is, of course, the outgrowth of the trend of modern business, with its smaller margins and greater diversification, and is common to all business enterprises. For the simpler ones, the standard forms of accounting have proven themselves to be quite adequate to give the desired information, but as the business becomes more complex, the problem becomes more involved and when it comes to the Process Industries—those industries taking in various raw materials and producing therefrom, by physical and chemical manipulation, finished products quite different in character, it has been found necessary to depart from the customary routine and attack the problem from a different angle and with different methods, since elements have been introduced quite foreign to standard accounting practice, which is built up on a basis of fixed values.

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Cost accounting, like most technical activities, divides itself into two distinct parts—the field work and office work. The first has to do with the obtaining and collecting of the data, the second records, tabulates, calculates and interprets them.

The relationship between the control laboratory of a process industry and the cost accounting or plant accounting department is a very close one, since the greater proportion of the chemical work done is either directly or indirectly for the cost accounts. In fact, it would be perfectly correct to say that the control laboratory is a very important branch of the cost accounting department, although not usually so considered, and the whole system of cost accounting resolves itself, on a critical analysis, into a chemical engineering problem, in that its function is to evaluate the results of manufacturing operations in terms of cost. If this postulate is conceded, and it would appear to be axiomatic in the case of the process industries, which are the ones under discussion, it would be only logical that the cost accounting system for such an industry should be designed by a chemical engineer and operated under his direction by a staff with chemical training and experience. It is equally logical to demand that this system follow sound accounting practice, and arrive at results in an orderly manner which lends itself to formal records and may be easily and intelligently reviewed. This requires a thorough knowledge of the theory and practice of accounts. In other words, all that is required for such a job is a composite "Chemist-Accountant."

It is very easy to state the demands as above—quite another to fill these demands. There are certain fundamental incompatibilities in the mental attitude of the chemist and accountant which must first be brought into harmony, or sufficiently modified for the purpose at hand. The chemist, by choice, training and necessity is essentially pragmatic in his outlook—the accountant is essentially dogmatic. The conception of relativity is very easy for a chemist, since it is but a formal statement of his credo. All the ultimate realities of his universe have been recognized from the beginning of his training as being only relatively fixed, the degree of precision varying with the demands of the particular problem. Such a conception is beyond the power of imagination of the typical accountant. To a chemist, a figure represents a value plus or minus the probable error in its derivation—to an accountant, a figure is just that—absolute—regardless of the probabilities. This is not leading up to a dilemma. On the contrary, both these mental attitudes

are desirable for the satisfactory solution of the problem proposed.

Practically the same problem has confronted other branches of the engineering profession, which they have solved quite satisfactorily. For example, a construction company is asked to furnish plans and make an estimate on the construction of a bridge. The ordinary procedure would be for the field crew to make the necessary surveys to determine the height, length, character and location of footings, etc., determining the data as closely as the character of the job dictates—the degree of precision being entirely different for a wagon bridge over Deer Creek and a cantilever bridge over a navigable stream—but, regardless of the degree of accuracy in obtaining the data, the office calculations are carried through with the same degree of precision—both phases of the work being carried on under the same engineering direction. It would be considered absurd to turn the collected data over to accountants with no engineering training or experience for calculation.

As stated previously, cost accounting divides itself into two phases—what might be called field work and office or clerical work, and both phases, in order to function properly, should be under the supervision of a chemical engineer, or at least someone with considerable technical training and experience. While accounting methods and procedure must be used in the handling of the clerical phase, it would be much simpler and easier for a chemist to master the intricacies of modern accounting practice than for an accountant to acquire technical chemical training.

This is a broad statement which will require some qualifications. It is not intended to imply that any chemist or student of chemistry is a potential cost accountant any more than he is a potential educator, industrial chemist or research man—but, for the man with the appropriate mental bent, the field lies open.

In choosing a career, several things must be taken into consideration besides one's mental bent and aptitudes. Probably the first question should be—what is the importance of the work and does its accomplishments justify the effort?—and, the next should be—what are the opportunities for personal growth and advancement?

One may be kept very busy carrying brick from one side of the yard to another—then carrying them back again—but there is nothing in such employment to stir the imagination or

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Cost Accounting

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give the feeling of accomplishment. Satisfactory employment must do both. The field of cost accounting should be broad enough to satisfy the demands of the most ambitious, since its function is to analyze all the elements of cost entering into a business, distribute them equitably to all its different departments and activities and finally equate them against the product. If properly carried out, the cost accounts become the chart, compass and sextant of modern business, the determining factor in fixing its course and policy. To use another figure, the cost accounts should be the fluoroscope which lays bare all the intimate inner workings of a business, and the cost accountant is in the position of the observing physician—ready to note and act upon any pathological signs which may appear.

With this intimate knowledge of the complete details of a business, it is hardly necessary to enlarge upon the opportunities for service offered.

Few chemists enter the commercial field with chemical work as the ultimate objective. Most have their ambitions directed toward executive positions and regard the laboratory as a good mounting block. In most manufacturing businesses there are three main avenues of advancement open—sales, office and operation. Most workers have but one choice, but for the technically trained cost accountant two avenues are always open, and the distance he can go along either or both is limited only by his capabilities and his willingness to accept responsibility.

With cost accounting, so to speak, just at the transition from an art to a science, it would seem to be an opportune time to urge that the chemical profession recognize cost accounting for the process industries as coming within the scope of its activities, and that educators take what steps are necessary to offer special preparation for this line of chemical work. This is done not from a selfish point of view as preempting a line of employment for chemists, but with a firm conviction that a properly trained chemist is the logical candidate for such a position, and that his employment in this capacity will be for the best interests of all concerned.

The acreage devoted to coconuts in the Philippines during 1930 was 1,359,297 acres reports Trade Commissioner Rohrer at Manila. This compares with 1,312,200 acres devoted to the crop in the previous year, 1929.

Governing Committee

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Meeting, May 14 and 15, 1931, was authorized to draw on the finances of the Society to the sum of \$150.00, to defray expenses of Meeting, Banquet and Entertainments of the Meeting; if the fees collected at Registration Desk were not sufficient. There being no further business, the meeting was adjourned. J. C. P. HELM, *Secy.* W. H. IRWIN, *Chairman.*

Marseilles Olive Oil Market

Conditions in the Marseilles olive oil market were fairly satisfactory during the June quarter. Prices were lower than at the time of the last crushing season, but this is due mainly to the fall in the value of the peseta, as the huge Spanish production necessarily has an effect on all markets. However, prices which were regularly declining up until the end of May showed an upward tendency in June, and the present situation is favorable. The small yield of the past season is expected to remedy the condition caused by the abundant world production of 1929-30, and to clear stocks which were being held. The lower prices have apparently created a new demand for olive oil replacing to a certain extent that for other vegetable oil.

Mexican Oil Seeds 1931

In the quarterly Review of Commerce and Industries of the March quarter of 1931, the coquito crop was estimated at 2,700 tons. The final figures obtained show the production at 2,800 tons. The season ended the present year in the month of May with the great majority of the crop being sent to Guadalajara.

The cod fishing season has come to an end, reports Commercial Attache Lund at Oslo, Norway, under date of July 16, 1931. Production of cod liver oil declined from 78,338 bbls. last season to 58,950 bbls. during the current season.

It was reported in a recent dispatch from Minister Eberhardt at San Jose, Costa Rica, that the leading crusher of oil seeds in Cuba had been instituting inquiries in Costa Rica concerning available supplies of oil seeds and nuts, presumably for export to Cuba.

Howard Kellogg, president of Spencer Kellogg and Sons, Inc., and of its grain elevator subsidiary, has purchased a seat on the Chicago Board of Trade.