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The Origins and Evolution of French Costing Systems

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Wade Rogers Price Waterhouse

and

H. Peter Holzer Department of Accountancy University of Illinois, Champaign, IL Digitized by the Internet Archive in 2011 with funding from University of Illinois Urbana-Champaign

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ABSTRACT

The paper reviews the evolution of French cost accounting from the mid 15th Century to the present. As might be expected, the development of costing techniques accelerated during the late 19th Century. Modern French cost accounting probably begins with Maurice Lucas' book "Le Prix de Revient" and the publications of a special government commission in 1928. Detailed uniform French charts of accounting, (Plan Compatable), which provides for Today's cost accounting concepts and practices seem quite comparable to those in other developed countries.

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The theoretical evolution of most bodies of knowledge knows no national or cultural boundaries. Our expertise in life sciences, for example, has grown based on the aggregate contributions of worldwide research and study. The theories and practices behind the field of accounting, however, have grown up within cultural contexts, relating to the particular cultural group which they are serving. Even with the current worldwide harmonization of accounting standards and practices, there remains a great diversity in underlying theory.

One of the more important players in worldwide accounting development has been France. From the Middle Ages forward, the French have made great contributions to the field, often parallel to, often divergent from the Anglo-American traditions or those of its continental neighbors. Nonetheless, the evolution of French accounting theory is worth investigation.

This paper will consider the French contribution to cost accounting and particularly, the evolution of how the French have worked with "le prix de revient," roughly translated as "cost of goods sold." The primary emphasis will be on historical development; however, there will also be discussion of how the current French uniform accounting plans incorporate these theories. Before going back in history, it would be helpful to first clarify this nebulous term, "le prix de revient."

LE PRIX DE REVIENT

This term has been agonized over for at least twohundred of years by theoreticians and practitioners alike. Literally

translated, it means "the price at which an object returns," which indicates the final cost to the firm of manufacturing or purchasing the product. This is not to be confused with the product's ultimate selling price (in French, le prix de vente). In English one would use "cost of goods sold," which is a narrower term as it relates only to goods which have been sold. The French term relates to goods at any point in the purchasing or selling process.

As we will see, the actual meaning of this term, let alone the method of determining its value, has been an enigma for the Frenchman. Eugene Leautey, a leading accounting author around the turn of the century lamented that this accounting term is "the secret, the Ark of the Covenant, the mysterious 'x'" (Leautey, 1897, pp. xi). While probably lacking the metaphor of Leautey, the following historical exposition may afford a better understanding of this otherwise bewildering term.

HISTORICAL EVOLUTION: BEGINNINGS THROUGH THE 19TH CENTURY

While cost accounting as a body of theory did not truly develop until the 19th century, people have been "keeping the books" for hundreds of years. The earliest traces of actual cost or industrial accounting can be seen as far back as the 14th century. The Italians, particularly Luca Pacioli and his fellow Venetians, pioneered these practices; however, with the spread of European trade, Italian accounting techniques were diffused throughout Europe, the Low Countries being a principal destination.

Florence Edler's studies on the accounts of Christopher Plantin, a Frenchman operating a printing concern in Flemish Antwerp using an Italian bookkeeper, illustrates this interplay between cultural sources. Established in the mid-1500's, Plantin employed an Italian bookkeeper between the years 1563-7. During this period, the journal and ledger of the business were kept in Italian, following the double-entry Venetian form. Plantin himself, however, kept his own subsidiary books in French, following the single-entry form. Aside from the ledger and journal, he kept separate books for wages paid, sales, plant assets and accounts with bookbinders. For each separate book edition printed, he kept a separate record of all direct costs (depreciation or supplies used were not included). Additionally, in his ledger, one could find accounts for raw materials, work in process and finished goods (Edler, pp. 229-31). Plantin's accounts were obviously an early example of a cost accounting system and, specifically, attempts at calculating a product cost or "prix de revient."

Up through the 19th century, however, that was about the extent of cost accounting- individual business owners with their individual self-devised systems. Cost theory was not yet a discipline. With the onslaught of industrialization and increased capital investment in production processes, cost accounting suddenly became quite relevant. Accountants worked feverishly, but publishing was not one of their major activities (Garner, pp. 29). Although the first writer to actually go into detail in industrial accounting was an Englishman, one of the earliest was a Frenchman,

Anselme Payen, who published in 1817, <u>Essai sur la tenue des Livres</u> <u>d'une Manufacture</u>.

Payen's cost system is best characterized by his use of two sets of records: a journal and ledger "in money" for transactions with parties exterior to the firm and a journal and ledger "in kind." This latter set of records accounted for raw materials, labor and other inputs which have gone into products to be sold as well as construction of new capital assets. With these records, the system reconciled the total cost of goods produced with the total expenses for the period.

Payen made great strides in the treatment of manufacturing overhead. He applied to product cost (prix de revient) such items as wear on tools, rent, depreciation and interest. Depreciation was simply charged to manufacturing costs by valuing fixed assets at an amount lower than at the beginning of the period (while no systematic depreciation method was proposed, this does illustrate integrated double-entry bookkeeping that Payen into the manufacturing accounts). Another interesting cost applied to overhead was interest, which was that amount paid to creditors for agreeing to wait for payment until a sale was made (Garner, pp. 43). Once total overhead was computed, it was applied to each product; however, Payen provided us with no basis of allocating the overhead.

Payen made substantial contributions in other areas as well. First, he was able to illustrate the transfer of product costs from one segment of the production cycle to another (from workshop to

warehouse, for example). Second, he explained how to compute unit product cost, as well as how to allocate (on a very crude basis) production costs between products. Third, he treated waste and spoilage as an increase in the cost of inventory, rather than as a production cost per se. Finally, he approached the eventual linkage between cost and financial accounting records; in fact, a single entry between the ledger in kind and the ledger in money would have accomplished this (Garner, pp. 50).

Not long after Payen, L.F.G. de Cazaux published a text on farm accounting which paralleled somewhat Payen's ideas, but also advanced some of his own original ideas. Cazaux, like Payen, illustrated the internal movement of products, but improved on Payen in his ability to assign values and use double-entry ' bookkeeping to account for these movements (Edwards, pp.7). Cazaux also set up accounts for each asset type and required an account for each factor of production in order to record gain or loss on each transformation (Garner, pp.52).

Cazaux was a bit more radical than his contemporaries in his desire to isolate the true profit, not just some conservative underestimation (Edwards, pp.7). Examples of this are increasing a fallow field's value by five percent, or adding five percent imputed interest cost for any asset requiring several years to attain full production potential. He also used straight line depreciation rates for each asset, allocating it to each production process deriving benefit from the asset. Unfortunately, he, like Payen, left no clue to a basis for allocating overhead.

Another cost scholar of the early nineteenth century was Godard, who published in 1827, <u>Traite General et Sommaire de la</u> <u>Comptabilite Commerciale</u>. Godard was a very early proponent of the establishment of cost analyses, such as classifications based on departments and processes as well as statistical cost summaries. He also gave a more thorough explanation as to how costs would flow through the production process, building upon each other. He did have some new ideas relating to raw materials, in that the account should be debited at actual purchase cost but credited at some average cost, given the constant fluctuation of materials prices. Additionally, similar to Cazaux, Godard employed a concept of opportunity cost, an example of his being the foregone yield of a field which has been planted as a vineyard (a vineyard requires around four years to become productive) (Edwards, pp. 13).

In spite of the fact that Godard never provided a workable method of pricing the final inventory, he was very diligent in isolating the actual costs of that inventory (prix de revient). He did recognize that his costing method would portray a "faithful image of the progress of manufacture" and that the total cost of the product as shown in the last stage of work in process would be the factory cost of goods sold for the period (Garner, pp. 53).

While all of the preceding authors alluded to some sort of intermediate manufacturing account, Maurice Jeannin was the first to actually identify, in 1829, a specific work in process account (d'objets en fabrication). His modern treatment included raw materials used, direct labor and overhead on the debit side of the

account. On the credit side were completed goods to go to finished goods inventory and losses and waste, to go directly to the profit and loss statement. Of course, all of these values would be "at cost." The problem remains, however: what is cost?

Several other 19th century authors also deserve mention for their contributions to the "prix de revient" dilemma. F.N. Simon was the first to recommend that costs such as rent, administrative salaries and taxes be allocated as overhead among the production processes instead of directly to the profit and loss statement. To do so, he employed an arbitrary allocation scheme- 50% to the factory and 50% to the forges, for example. Adolphe Guilbault provided detailed discussion of cost behavior (fixed versus variable) as a tool of evaluation of results. He also advocated that commercial and selling expenses not be allocated to product cost (Garner, pp. 62). Finally, M.E. Claperon discussed a monthly overhead application, using one twelfth of the estimated total annual costs.

By the end of the 19th century, there was quite an assortment of cost accounting literature in the French language, the trend being texts tailored to a specific industries such as agriculture, foundries, etc. According to Garner, the French contribution to cost accounting was on the decline by 1890, with the English and the Americans taking the lead, especially in the area of overhead application and standard costing. However, the Anglo-American scholars virtually ignored the French traditions, an unfortunate fact since the French and their continental neighbors had, among

other things, a superior mastery of accommodating double entry bookkeeping to cost accounting (Garner, pp. 62-3).

FROM THE TURN OF THE CENTURY THROUGH 1928

Probably one of the most influential and widely-published accounting authors of the late nineteenth and early twentieth centuries was Eugene Leautey. One of his earlier works, co-written with Adolphe Guilbault, <u>La Science des Comptes mise a la Portee de tous (The Science of Accounts within the reach of all</u>), gives some very general, but important advice regarding industrial accounting. In it, Leautey and Guilbault criticize the popular practice of the time of opening a single production account and waiting until the end of the year to update it to determine production results. They stress that there must be a constant determination of inventory cost (prix de revient) and that waiting for actual figures at yearend or making arbitrary estimations will plunge the firm into a "dangerous obscurity" (Leautey and Guilbault, undated, pp. ix).

In his 1881 work, <u>Questions Actuelles de Comptabilite</u>, Leautey explains the importance of overhead as a component of product cost and that too many practitioners are simply marking up purchase price or production cost (excluding overhead) by an arbitrary percentage which supposedly approximates overhead (Leautey, 1881, pp. 151). He goes on by delineating between fixed and variable overhead and how manipulating the two can have an effect on fixing selling price and maximizing profit.

Also in his 1881 book, Leautey points out the difference between product cost (prix de revient) in a manufacturing versus

a merchandising firm. Of course, the former receives the bulk of his attention.

In 1897, Leautey devoted an entire book to inventory, <u>Traite</u> <u>des Inventaires et des Bilans</u>. According to Leautey in this work, "every object enters into inventory at a determined cost and must leave it at this same cost" and, following his encouragement of a perpetual inventory system, "the balance (in inventory) must always indicate what is there and its cost (prix de revient)" (Leautey, 1897, pp. 168). He also outlines five elements of a product's cost: raw materials; labor; directly attributable expenses; factory and administrative overhead; and waste and spoilage (Ibid, pp. 169). Here, it seems that cost theory regarding product costing is rapidly approaching modernity. Of course, a basis of allocation is still lacking.

In the preface to his 1897 book, Leautey makes some interesting observation regarding the determination of the "prix de revient." Here, he introduces a source of conflict between accountants and engineers. To effectively determine this value, he reasons, the accountant must put on a technician's hat, which to the firm's engineers and, in many cases, management, is not a desirable situation. He notes that the overriding practice at the time was to keep the actual product cost a mystery to the bulk of factory personnel, including the accountants, out of fear of "indiscretions of the crew" (Leautey, 1897, pp. xi-xii). As a result, most companies preferred an arithmetic estimation of costs.

Leautey continued writing well into the twentieth century, often with the assistance of Adolphe Guilbault. In his works, he continued to emphasize the importance of accurate and constant determination of product cost, or "prix de revient."

Up to the early 1900's there was not yet much discussion concerning the application of production costs, especially overhead to particular products. Alfred and Henri Croize's 1907 book, <u>De</u> <u>l'Inventaire Commercial</u>, was one of the first to treat this problem in any great detail. First, they broke down overhead into two separate components, selling overhead and manufacturing overhead. The first type is to be treated as a period expense related to the selling function. The second type, though, would include those expenses related to the production function and should be allocated as part of the product costs. The Croizes use an allocation basis which is very familiar to today's student of managerial accounting: direct labor hours.

These authors felt that direct labor hours were the most reliable basis of overhead allocation in that they represented a stable cost of the firm, especially relative to fluctuating materials costs. Also, labor is very often the primary cost of a firm, making it a good indicator of production activity. As an example of their allocation method, assume a company had 400,000FF direct labor cost and 100,000FF in manufacturing overhead. This makes overhead 25% of direct labor cost. Applying this, then, in a separate division of the company, if direct labor costs were

50,000FF, then overhead would be applied to that division at 12,500FF (Croize, pp.98).

Consistent with their dichotomization of overhead, the Croizes insist that selling expenses related to the product should not be included in its inventoried cost, a familiar idea to today's practice. They do note that it is important to set selling price of the product at a sufficient level to cover these expenses (Croize, pp. 92).

One of the most comprehensive texts obtained from this period was <u>Comptabilite Industrielle</u>, by Louis Daubresse. While undated, it is known that this was written sometime between 1910 and 1919. It is particularly useful because it treats industrial accounting as an entire discipline, not just a single issue or related to a specific industry.

Daubresse's system is pervaded by a single account entitled "Production," which seems to be parallel to a more familiar work in process account. Under this system, the debits to this account will synthesize and explain all of the activity of the enterprise. Daubresse lists five possible debits to this account (there is only one credit, to finished goods or stores): raw materials used, salaries, depreciation, maintenance and repairs, and general factory overhead (Daubresse, pp.7). He then discusses each of these categories in turn.

Daubresse's consideration of raw materials places direct and indirect materials in the same debit to the production account. In addition, the monthly debit is for the average cost of the

materials used. If a physical inventory of materials is taken, then any differences between recorded inventory and actual inventory should be plugged to the production account as a product cost (Daubresse, pp. 13-14).

Daubresse's debit for salaries is fairly straightforward. This amount should only include those workers directly related to the particular product or process and is for salaries earned, not necessarily paid (Daubresse, pp. 14).

Depreciation as a product cost is not quite so simple. Daubresse recommends a straight line method, using a salvage value of one franc. He also advocates a shortened useful life, since technological progress is probably occurring more rapidly than wear and tear (Daubresse, pp.11).

Arbitrary estimation is the norm for his maintenance and repairs debit to the production account. The recommended method here considers these costs as wildly fluctuating from month to month; therefore, some smoothing of these costs is necessary. Daubresse takes an estimation of the total cost for the year, divides this by twelve and takes that amount as the monthly repairs and maintenance cost. If there is any difference at year-end between actual and estimated, the production account should be adjusted accordingly (Daubresse, pp. 15-16).

Finally, there is a required debit for overhead. First, the author distinguishes between fixed and variable overhead, but then becomes rather vague by noting that since maintenance and repairs are covered separately, there is not much need to consider variable

overhead any further (Daubresse, pp. 18). Again, he proposes using the one-twelfth estimation method as he did with repairs and maintenance or an arbitrary basis such as direct labor hours (Daubresse, pp. 19).

While Daubresse contributes very little to the allocation of cost between production processes, he does provide extensive guidance in setting up a costing system. He describes the requirements of a process passing through several intermediate stages, industries with several different product lines and those with different operating divisions. His pervasive recommendation is that the firm be diligent in assigning cost proportionately to each of these stages, products or divisions.

To truly view the state of the art in French product costing around the mid-1920's, Maurice Lucas' short book, <u>Le Prix de</u> <u>Revient</u>, would be an excellent guide. The last page of the booklet presents a complex formula for calculating this figure (reproduced

in the Appendix of this paper). In this formula, Lucas breaks product cost down into the successive costs which build upon each other to finally produce the final cost of general production (prix de revient final d'exploitation generale). From this amount, he continues through to a determination of selling price of the particular product (Lucas, pp. 36).

Again, the primary concern of the author is the adaptation of a firm's accounting system to these cost calculations as a divisional performance evaluation tool. Unfortunately, he devotes most of his discussion to the components of all of the production

costs, but very little to an allocation of these costs to particular products or processes.

Two years after Lucas, L. Duboc published a description of the overhead components of product costs. While nothing very original was added other than detailed explanation of each component such as rent, managers' salaries and cleaning supplies, he did discuss an interesting addition. Duboc, like some of his contemporaries felt that an important part of overhead costs was the opportunity cost of having working capital tied up in inventory. Accordingly, he charged a 5% rate of interest on inventory to variable overhead costs (Duboc, pp. 16).

POST-1928 COSTING METHODS

By this time, there was great opposition in the French accounting profession to overhead application using some arbitrary allocation base such as materials used or direct labor hours. As a result of this opposition, the C.E.G.O.S. (Commission Generale d'Organisation Scientifique du Travail), a government agency involved with research in industrial management, formed an ad-hoc committee in 1927 under the direction of Lieutenant-Colonel Rimailho charged with investigating the problem. A year later, the committee published a pamphlet describing their results and recommended method, entitled the homogeneous sections method (la methode des sections). This method has become the accepted method in France for inventory valuation after being accepted by the Accounting Normalization Commission and later incorporated into the Uniform Accounting Plans of 1945 through the present.

The committee's report began by defining three types of costs, or prix de revient. The first is the accounting cost (determined a posteriori), the second is rational imputation cost (which normalizes the imputation of fixed costs) and the third is the estimated cost (used primarily for billing purposes). For each of these costs, the report directs the user to net the costs at each stage of the production process: purchases of raw materials and their reception at location of delivery; storage of raw materials inventory; the product's transformation in the factory; its storage on the sales floor; and finally, the required activities of the company's commercial and administrative services (Lauzel, 1971, pp. 43-4).

One of the areas in which this method truly made progress is its linkage with the financial accounting system. To accomplish this, the expenses of the entity are recorded for financial purposes in a given set of accounts (today's class 6 of the chart of accounts). From there, they flow through to the cost system via a set of "comptes reflechis," or contra accounts. These accounts are simply transfer accounts, being credited for the exact amounts found on the debit side of the expense accounts. Once "re-debited" into the cost system, they may or may not be applied at the same amount as in the financial system. An example of this would be the use of a different depreciation method for each system. Any differences would be applied to a special account for application differences. Exhibit 2 of the Appendix portrays this integration.

remained intact, as it will through the present (Fortin, pp. 136-7).

With the 1947 plan still in effect, a study group was formed in 1953, the object of which was to investigate possible revisions to the cost portion of the plan, given the huge advances in cost theory during the 1950's. These studies were part of the impetus toward the 1957 uniform accounting plan.

The 1957 plan signaled a trend away from the post-war national accounting pattern towards a more individual manager-oriented cost accounting system. Provisions were added for budgeting and variance analysis, standard costing and fixed/variable cost behavior. The firm was given the choice of using real or standard costs in its cost analyses; however, real costs via the homogeneous sections method were required for inventory pricing (Fortin, pp. 136-7).

The 1957 plan has basically carried over to the more recent plan revisions, with certain modifications. For instance, the 1979 revision discusses the effects of data processing (Fortin, pp. 465). All in all, though, there has been a definite movement towards the needs of the individual manager. Nonetheless, the CEGOS plan for determining the "prix de revient" remains. In the French terminology of the current "Plan Comptable General" the term "prix" in the concept of "prix de revient" has been replaced by the term "coût". Depending on the level of cost analysis it may include acquisition cost, production cost or all costs of operations, in which case we speak of "coût de revient". Ther term "prix" is now used only for transactions with outside parties, (e.g., prix

The CEGOS report differentiates between two different kinds of costs, the distinction having a bearing on their application into the cost system. The first type is direct costs which can be easily applied to a single product or process. The other, indirect costs, concerns several different products or processes and must be allocated. The method of applying these costs to production was the major work of Rimailho's committee.

The method proposed and accepted was to divide the operations of the firm into "sections." Each section should correspond to an actual department of the company and, ideally, to a specific manager. Not only will this form of responsibility accounting work for costing purposes, but it will also assist in budgeting, control and performance evaluation (Lauzel, pp. 51).

The primary characteristic of a section is its ability to relate its costs to a single "work unit", thus making it a "homogeneous" section. With this common work unit in place as a measurement device, the section's costs can be applied to production costs.

Based on these definitions, sections are often designated functionally, such as administrative (including accounting), purchasing, or distribution. Further, a section may be principal, the costs of which would normally be traceable directly to a product or process, or auxiliary, whose costs would have to flow first through a principal section before being applied directly to production. For example, a foreman's salary could be directly applied to a principal section (such as "Product A"), but the costs of the maintenance crew would probably need to be collected into

d'achat = purchase price, or prix de vente = sales price), (Memento Pratique Francis Lefebvre Comptable, section 1145).

CONCLUSION

The French system of cost accounting as an integrated portion of the uniform accounting plan as well as their cost allocation methods are well-regarded from within the country as well as from without. According to the 1957 Plan, "the method of allocation which proceeds from a distribution of expenses over similar cost centers is far more satisfactory than that which proceeds to apply a fixed percentage to the cost of direct materials or direct labor" (Most, pp. 596).

Additionally, the Anglo-American author Kenneth Most has praised the system of contra accounts employed by the French. He notes that by crediting cost transfers to contra accounts instead of to expense accounts, there is a full integration of cost and financial data, while at the same time keeping the two systems autonomous and complete. This avoids the problem of "netting" in accounts, giving greater clarity to and respect for budgets and control (Most, pp. 596).

The French have always viewed cost accounting as something clearly distinct from financial accounting. French writers stress that it is "auxiliaire" and "facultative," that is, something that is in addition to financial accounting, but not obligatory. As in most other industrial countries, there are special requirements for government contracts. These regulations state that enterprises working on government contracts can be required to present a cost

accounting system (Code des marchés publics, art. 233, quoted in Moment Pratique, section 1281). Throughout the evolution of costing in France, the emphasis has been on the importance of accurate cost numbers for management purposes, such as product profitability evaluation or pricing policies, and not on the needs of the financial accounting system. A clear example of this separation would be the inclusion of non-manufacturing costs in the definition of a global "cout de revient." Dating back to the late 1800's there are frequent references to the usefulness of cost numbers in management decision-making.

The major U.S. influence on French accounting dates back to the early years of the Marshall Plan (early 1950's), when a number of leading French accountants studied management accounting in the United States. Thus we notice in the following years an increased emphasis on budgeting and management control. This is reflected in the writers' terminology. Authors using the term "comptabilite analytique" began using the term "comptabilite de gestion" as a broader concept, roughly equivalent to management accounting and "controle de gestion " comparable to our notion of controllership. The present day literature on managment accounting in France is not too different from that of the U.S., the existence of the plan comptable, however, does appear to induce companies to greater uniformity and higher minimum standards in their costing system.

DU PRIX DE REVIENT

par échelons successifs

DEPUIS LE PRIX NOMINAL D'ACHAT JUSQU'AU PRIX DE VENTE

Prix nominal d'achat d'une matière ou d'un produit.	p. 8)_
- Escompte ou rabais obtenu. + Majoration ou frais facturés.	p. 8 }
Prix net d'achat au lieu de livraison. (voir facture) + Fràis d'enlèvement.	p. 8 }=
Prix de revient d'achat sur wagon départ. (v. facture) + Frais de route.	p. 8 }= p. 9 }=
Prix de revient d'achat, gare d'arrivée. (voir entrée stock) + Frais de réception.	p. 9 }= p. 9 }=
Prix de revient d'achat, rendu au stock. (v. entrée stock) + Plus ou moins-value du stock.	p. 10 }=
Prix de revient moyen de l'existant. (voir existant stock) + Frais de magasinage.	p. 10 }=
Prix de revient d'entrée en consommat ^{on} (v.sortiestock) + Frais de fabrication 1 ^{re} phase.	p. 10 p. 14 }=
Prix de revient d'atelier, 1 ^{er} phase. (voir sorties ateliers) + Frais de fabrication 2 ^e phase.	$p. 20 \ p. 25 \ =$
Prix de revient d'atelier, 2 ^e phase. (voir sorties ateliers; + Frais de fabrication n ^e phase.	$\begin{array}{c} p. 25 \\ p. 25 \end{array} = $
Prix de revient final de fabrication. (voir sorties ateliers) + Frais d'un groupe d'ateliers.	p. 26 }=
Prix de revient final de production. (v. entres prod ¹⁵ finis) + Frais généraux industriels.	p. 27 = p. 27 = p. 27
Prix de revient final d'exploitation technique . (d•) + Frais généraux administratifs.	$p. 28 \ p. 29 \ =$
Prix de revient final d'exploitation générale. (voir sorties produits finis) + Frais génératur commerciaur	p. 30 p. 28 {=
Prix de revient net de la vente. (voir entrées ventes)	D 08)
+ Frais généraux financiers. + Bénéfice net.	p. 28 = p. 2
Prix net de vente. (voir sorties ventes) + Escompte ou rabais accordé	p. 28 = 20
Prix nominal de vente.	p. 30

APPENDIX EXHIBIT 2



(From Lauzel, 1971, pp. 45)

APPENDIX EXHIBIT 3



(From Lauzel, 1971, pp. 53)

BIBLIOGRAPHY

- Barbier, Guy. "Accounting in France." <u>Accountancy</u>, October, 1972, pp. 10-17.
- BEFEC Mulquin & Associes, Ed. Francis Lefebvre. <u>Memento Pratique</u> <u>Francis Lefebvre Comptable 1988</u>.
- Berry, Bernard. "Uniform Accounting in France-I: Le Plan Comptable." <u>The Accountant</u>, February 26, 1948, pp. 157-161.
- Berry, Bernard. "Uniform Accounting in France-II: Le Plan Comptable." <u>The Accountant</u>, March 5, 1949, pp. 176-180.
- Burlaud, A. and C. Simon. <u>Analyse des Coûts et Controle de</u> <u>Gestion</u>. Paris: Librairie Vuibert, 1981.
- Cépède, Michel. <u>Du Prix de Revient au Produit Net en</u> <u>Aqriculture</u>. Paris: Presses Universitaires de France, 1946.
- Cibert, A. Comptabilité Analytique. Paris: Dunod, 1968.
- Coenenberg, A.G. and H.M.W. Schoenfeld. "The Development of Managerial Accounting in Germany." Unpublished manuscript.
- Colasse, Bernard. "Les trois ages de la comptabilité." <u>Revue</u> <u>Francaise de Gestion</u>, Septembre-Octobre 1988, pp. 83-87.
- Convert, F. <u>Comptabilité Agricole</u>. Paris: J-B Bailliere et Fils, 1920.
- Croizé, Alfred and Henri Croizé. <u>De l'Inventaire Commercial</u>. Paris: Librairie Comptable Pigier, 1907.
- Daubresse, Louis. <u>Comptabilité Industrielle</u>. Publisher unknown, 191-?.
- Degos, Jean-Guy. "Les Grands Précurseurs de la Comptabilité." <u>Revue Française de la Comptabilité</u>, October, 1985, pp. 34-41.
- Delesalle, Eric, Louis Klee, Claude Pérochon and André Prost. "La Notion de la Valeur d'Entrée en Comptabilité." <u>Revue</u> <u>Française de la Comptabilité</u>, December, 1988, pp. 51-62.
- Duboc, L. <u>Des Frais Generaux et de leur Influence sur le Prix</u> <u>de Revient ou de Vente</u>. Paris: Librairie Comptable Pigier, 1928.
- Dumarchey, J. <u>Theorie Positive de la Comptabilité</u>. Lyon: A. Rey, 1914.

- Edler, Florence. "Cost Accounting in the Sixteenth Century." The Accounting Review, September, 1937, pp. 226-237.
- Edwards, Roland S. <u>A Survey of French Contributions to the Study</u> of Cost Accounting during the Nineteenth Century. London: & Co., Ltd., 1937.
- Filios, Vassilios P. "Four Schools of European Accounting Thought." <u>The Accounting Historians' Journal</u>, Fall, 1981, pp. 61-78.
- Filios, Vassilios P. "The French Contribution to the Theory of Accounting." <u>Advances in International Accounting</u>, Vol. 1, Kenneth S. Most, ed. Greenwich, Connecticut: JAI Press, Inc., 1987, pp. 137-151.
- Fortin, Anne. <u>The Evolution of French Accounting Thought as</u> <u>Reflected by the Successive Uniform Systems (Plans</u> <u>Comptables Généraux)</u>. Ann Arbor: University Manuscripts, Inc., 1986.
- Fourastié, Jean. <u>La Comptabilité</u>. Paris: Presses Universitaires de France, 1984.
- Garner, Paul. <u>Evolution of Cost Accounting to 1925</u>. University, Alabama: University of Alabama Press, 1954.
- Lair, Louis. <u>Principes de Technique Comptable</u>. Paris: Presses Universitaires de France, 1945.
- Lassègue, Pierre. <u>Comptabilité de l'Entreprise</u>. Paris: Sirey, 1967.
- Lassègue, Pierre. <u>Gestion de l'Entreprise et Comptabilité</u>. Paris: Librairie Dalloz, 1967.
- Lauzel, Pierre. <u>Comptabilité Analytique et Contrôle de Gestion</u>. Paris: Editions Sirey, 1964.
- Lauzel, Pierre. <u>Comptabilité Analytique et Contrôle de Gestion</u>, 2nd ed. Paris: Editions Sirey, 1967.
- Lauzel, Pierre. <u>Comptabilité Analytique et Contrôle de Gestion</u>, 3rd. ed. Paris: Editions Sirey, 1971.
- Lauzel, Pierre. <u>Le Plan Comptable Francais</u>. Paris: Presses Universitaires de France, 1965.
- Léautey, Eugène and Adolphe Guilbault. <u>Principes Généraux de</u> <u>Comptabilité</u>. Paris: Berger-Levrault, 1919.
- Léautey, Eugène. <u>Questions Actuelles de Comptabilité</u>. Paris: Librairie Guillaumin et Cie., 1881.

- Léautey, Eugène and Adolphe Guilbault. <u>La Science des Comptes</u> <u>mise à la portée de tous</u>. Paris: Librairie Comptable et Administrative, undated.
- Leautey, Eugène. <u>Traite des Inventaires et des Bilans au Point</u> <u>de Vue Comptable, Economique, Social et Juridique</u>. Paris: Librairie Comptable et Administrative, 1897.
- Levasseur, M. <u>Appréciations sur 'La Science des Comptes mise à</u> <u>la portee de tous'</u>. Paris: Bibliotheque des Sciences Commerciales et Economiques, 1889.
- Littleton, A.C. <u>Accounting Evolution to 1900</u>. University, Alabama: The University of Alabama Press, 1981.
- Loft, Anne. "Towards A Critical Understanding of Accounting: The Case for Cost Accounting in the U.K., 1914-25." <u>Accounting, Organizations and Society</u>, Vol. 11, No. 2, 1986, pp. 137-169.
- Lucas, Maurice. <u>Le Prix de Revient</u>. Thaon-les-Vosges: S.A. de l'Imprimerie de Thaon, 1926.
- Most, Kenneth. "Classification and Coding: Official Charts of Accounts in Germany and France." <u>The Accountant</u>, January 26, 1957, pp. 87-91.
- Most, Kenneth. "Uniform Accounting in France: The New Plan Comptable Generale." <u>The Accountant</u>, November 23, 1957, pp. 594-596.
- Parenteau, Jean and Claude Charmont. <u>Calcul des Prix de Revient</u> <u>et Comptabilité Industrielle</u>. Neuilly-sur-Seine: Editions Hommes et Techniques, 1967.
- Parker, Lee. "Henri Fayol, Accounting and Control: An Environmental Reflection." <u>The Accounting Historians</u> <u>Notebook</u>, Spring, 1986, pp. 1, 19-26.
- Perrin, G. <u>Prix de Revient et Contrôle de Gestion par la Méthode</u> <u>G.P.</u> Paris: Dunod, 1963.
- Rapin, A. and J. Poly. <u>Comptabilité Analytique d'Exploitation</u>. Paris: Dunod, 1961.
- Sarocchi, Pierre. <u>De la Comptabilité Analytique au Contrôle</u> <u>Budgétaire.</u> Paris: Les Editions d'Organisation, 1972.
- Schoenfeld, Hanns-Martin. "Development and Present State of Cost Theory in Germany." <u>International Journal of Accounting</u> <u>Education and Research</u>, Fall, 1972, pp. 43-65.
- Stevelinck, Ernest. "Comment tenir ses livres en 1676." <u>Revue</u> <u>Française de la Comptabilité</u>, April, 1988, pp. 34-40.

Stevelinck, Ernest, ed. <u>La Comptabilité à travers les Ages</u>. Brussels: Bibliothèque Royale Albert ler, 1970.

Vlaemminck, Joseph H. <u>Histoire et Doctrines de la Comptabilité</u>. Brussels: Editions du Truerenberg, 1956.



