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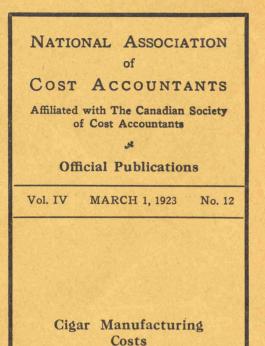
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Cigar Manufacturing Costs	*
BUSH TERMINAL BUILDING 130 WEST 42nd STREET, NEW YORK	

NATIONAL ASSOCIATION OF COST ACCOUNTANTS

Affiliated with The Canadian Society of Cost Accountants

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Cigar Manufacturing Costs.

A. H. BERMAN, Consolidated Cigar Corporation, New York City.

BUSH TERMINAL BUILDING 130 WEST 42nd STREET, NEW YORK CITY

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Максн, 1, 1923

CIGAR MANUFACTURING COSTS

In discussing the various phases of the Tobacco and the Cigar Manufacturing industries a brief outline will be made of a number of factors which must be known in order to understand the cost accounting procedure.

CLASSES OF LEAF TOBACCO

In the manufacture of cigars, leaf tobacco is the raw material used. It is divided into three classes, filler, binder and wrapper. The filler is used for the body of the cigar, the binder to hold the filler in shape and the wrapper for the outside covering of the cigar.

CONDITIONS OF TOBACCO

Tobacco is purchased by a cigar manufacturer in either a stripped or unstripped condition.¹ The tobacco from which the stems (or midribs) have been removed is known as stripped or stemmed tobacco. Tobacco from which the stems have not been removed is known as unstripped or unstemmed tobacco. This distinction should be borne in mind as it is important. The tobacco that enters into the manufacture of a cigar must be stripped. The cigar manufacturer who has purchased unstripped tobacco must arrange to have it stripped. The tobacco must then be selected, graded and blended before being used.

Stripped filler tobacco may generally be stored for an indefinite period without impairing its condition and quality. Stripped binder and wrapper tobacco cannot be stored for a long period after being stripped because of the danger of spoilage. Hence, these two classes of tobacco are used soon after stripping.

In cost accounting for the Cigar Manufacturing industry three major problems arise: First, finding the cost of tobacco before it enters into the manufacture of the cigar; second, determining the cost of leaf tobacco (material), labor and overhead in manufacturing the cigar; and third, calculating the cost of labor, materials and overhead used in packing the cigar.

TYPES OF FACTORIES

When the stripping and preparation of the tobacco is carried on, and under what conditions it is done are factors which must be

¹ These tobaccos are abbreviated U/S and Str.

analyzed. The kind of cost system used depends upon the type of factory.

The first type is known as a stemmery. Among the concerns which have many plants it is customary for them to have some of them engage exclusively in stripping filler tobacco and possibly some binder and wrapper tobacco. A stemmery supplies the various cigar manufacturing plants with the tobacco it has stripped. Cigar manufacturing is not carried on in this type of factory. Here we only meet with the first of our three major problems.

The second type of factory is engaged in stripping filler, binder, and wrapper tobacco and also in the manufacture of cigars. Such a factory may supply other factories with some of the tobacco it strips and use some or all in the manufacture of its own cigars. In addition, such a factory may receive for its own use, tobacco that has been stripped at a stemmery or at another plant, or purchased stripped. The second type of factory, therefore, is a combination of stemmery and cigar factory. It is the general type and in costing all of the three problems mentioned above arise.

The third type of plant is called the cigar factory. Factories of this type receive all of their filler tobacco stripped, and may obtain their binders and wrappers in an unstripped or stripped condition. The binders and wrappers received unstripped are stripped at this factory. The manufacture of cigars is the principal process.

In the cigar factory the three major problems mentioned above also exist. However, the first of the three problems is of minor importance because filler tobaccos are received in a stripped condition. The wrapper and binder tobacco are stripped to take care of current requirements.

This article deals with a cost system used in the third type of factory, namely, the cigar factory.

DEPARTMENTS

For cost accounting purposes the factory is departmentalized as follows: 1, Tobacco Stores; 2, Tobacco Department; 3, Cigar Manufacturing; and 4, Packing.

TOBACCO STORES DEPARTMENT

When tobacco is received at the factory, it is charged against the Leaf Tobacco Stores account. A stock record is kept for the tobacco stock. It has the following main divisions: 1, Unstripped Tobacco; 2, Stripped Tobacco; and 3, Tobacco Department.

The Unstripped Leaf Tobacco division is a record of wrapper and binder tobacco received in an unstripped condition. The following indicates the columnar arrangement of the stock record:

DateCaseWeightsPriceDateInNo.Gross Tare Net ReLb. TotalOut	Remarks
--	---------

The value of the tobacco as shown in the stock books is the invoice cost plus charges for freight, cartage, etc. When the unstripped tobacco is sent to the Tobacco Department, a record is made in the Tobacco Department section of the stock book.

The Stripped Tobacco division of the stock record shows the tobacco received in a stripped condition. The stock record form is the same as the one used for unstripped tobacco.

The Tobacco Department division of the stock record shows the unstripped wrapper and binder tobaccos that are sent to the Tobacco Department to be cased, sweated and stripped and then prepared for manufacturing purposes; and also the stripped tobaccos that are taken out of stores to be prepared for manufacturing purposes. The stock record previously described is used. The weights of the unstripped wrapper or binder tobaccos are not entered until the cases have been stripped, and then the stripped weight is entered. The values are only shown for memorandum purposes. The tobacco loses its identity as an individual case when it is sent to the Tobacco Department, and for cost purposes becomes part of an entire lot of any grade of tobacco (see description on page 7).

The costs of the tobacco increase as it goes through the various processes. Control over these costs are kept through the Leaf Cost Record (see page 6).

The three main divisions of the stock record already mentioned are subdivided according to the three classes of tobacco, filler, binder and wrapper. A further subdivision of these classes according to the various grades of tobacco is provided for. This tobacco classification arrangement is also used for cost purposes.

A separate section of the stock record is used for a record of By-Products such as stems, cuttings, scraps, etc.

TOBACCO DEPARTMENT

The second major department, namely, the Tobacco Department, is departmentalized as follows: 1, Casing and Sweating; 2, Stripping; and 3, Preparation.

All labor and expenses chargeable to the Tobacco Department are charged to the Tobacco Expense Account, which is analyzed at the end of each period to show the distribution of labor and expenses first to the three subdivisions of the tobacco department just mentioned, and then is further analyzed so as to make the distribution according to the various grades of tobaccos used. Such data are used in the preparation of the Leaf Cost Record.

A brief description of the methods in the Casing and Sweating, Stripping and Preparation processes follows:

Casing consists of watering the tobacco so as to put it into condition to be worked.

Tobacco is stored in a sweat or hot room for a period ranging from a few days to several weeks in order to get it into proper condition for manufacturing. Wrapper tobaccos do not go through this process, but binder and filler tobaccos do.

Stripping consists of the removing of the stem of the tobacco leaf.

In the Preparation process each class of tobacco goes through a different process. Wrapper tobaccos are selected according to size and color. The wrappers are then put up in pads of from twenty-five to fifty leaves, to be given to the cigar makers.

Binders are selected according to size and are also put up in pads.

The filler tobaccos must be mixed in order to be properly blended. How the filler tobaccos are mixed and in what proportions depend entirely upon the blends used by the cigar manufacturer.

As tobacco goes through these processes it first takes on weight and later loses it. In the casing and sweating process the tobacco takes on weight because it is full of water. In the stripping process the removal of the stem brings about a large loss in weight. It also loses some of the water it contains. When the tobacco is permitted to dry, it loses most of the water. For cost calculations on the Leaf Cost Record we use first the unstripped weight as it goes through the Casing and Sweating process. After the tobacco has been stripped and dried it is reweighed. The difference between these two weights—unstripped and stripped weights—is shown on the Leaf Cost Record as "loss in weight."

By referring to the Tobacco Cost Record (see page 7), the reader will note how this item is recorded, and that the unstripped weight is no longer used.

We are now interested in the cost of tobacco that will enter into the cigar. As previously explained, stripped tobacco can only be used for that purpose and our concern, therefore, is only with stripped weights. Since our filler tobacco is received in a stripped condition, we have, therefore, only stripped weights to account for.

As the tobacco goes through these processes tags are attached to each case. These tags are turned into the office as the tobacco goes through any of the various processes. When the tobacco is transferred from stores, a memorandum is prepared and given to the office showing:

1. Grade of tobacco and class.

2. Date issued.

3. Case number.

4. Gross-tare-net weights.

5. Reweight.

When the tobacco enters the casing and sweating departments a tag is attached. This tag is returned to the office when the process is completed. In addition to the information shown on the first tag this data appears:

6. Date in.

7. Date out.

When the tobacco goes through the stripping department another tag accompanies the case. In addition to the information shown on the first tag the dry stripped weight is entered.

TOBACCO COST RECORD

The Tobacco Cost Record (see page 7) will give the reader a clear idea of the details involved in costing the tobacco as it goes through the various processes. As already explained, when the case of tobacco leaves the store room and is sent to the stripping department, it loses its identity as a case and becomes for cost purposes part of a complete lot. To illustrate: The Tobacco Department stock record shows that the following three cases of No. 22 binder were sent from stores to the Tobacco Floor:

Case No. 310 lbs., value \$127.10, an average price of 41c. lb. Case No. 2, 295 lbs., value \$119,48, an average price of 40% c. lb. Case No. 3, 286 lbs., value \$114,40, an average price of 40% c. lb. Total 891 lbs., value \$360.98, an average price of 40.51c. lb.

Items	Fo Pounds	tal Value	Wrapper #11	Binder	Filler #31
1. 2. 3.					
3. 4. 5. 6.					
6. 7.					

Form 1-Tobacco Cost Record.

The following items appear in the first column or items column of the Tobacco Cost Record:

- 1.
- U/S Tobacco on hand to start U/S Tobacco received from stores
- Total
- 2. 3. 4. 5. Less U/S Tobacco returned to stores
- Total
- Less U/S Tobacco on hand to close
- 6. 7.
- Balance to Casing and Sweating Add Casing and Sweating Labor and Expense 8.
- 9. Total
- 10. Add Cased and Sweated Tobacco on hand to start
- 11. Add Cased and Sweated Tobacco received from stores 12. Tota1
- 13. Less Cased and Sweated Tobacco returned to stores 14. Total
- 15. Less Cased and Sweated Tobacco on hand to close
- Balance to Stripping-U/S weight only Less Loss on weight-U/S weight only 16.
- 17.
- Stp. weight and cost of Tobacco stripped 18.
- 19. Add stripping Labor and Expense
- 20. Total
- Add Stp. Tobacco on hand to start
 Add Stp. Tobacco received from stores

23. Total

- 24. Less Stp. Tobacco returned to stores 25. Total
- 26.

Less Stp. Tobacco Inventory to close Balance-To Preparation

- 27.
- 28. 29. Add preparation Labor and Expense
- Total

30. Add Inventory to start

- 31. Tota1
- Less Tobacco returned to stores 32.
- 33. Total
- Less Inventory to close
 Gross Cost of Tobacco Used
- **3**6. Less By-Products Value Only
- 37. Net Cost of Tobacco Used.

The total pounds and value received from Stores are shown on line 2 of the cost record. On line 1 is the opening inventory which we assume was 760 lbs. with a value of \$307.67, an average price of 40.48c. lb. We now have to account for (line 3) a total of 1,651, lbs. valued at \$668.65 with an average price of $40\frac{1}{2}$ c. lb.

No tobacco was returned to stores. The items shown on line 3 are brought forward to line 5. We must now account for the 1,651 lbs. with a value of \$668.65 in our closing inventory (line 6) and the Balance to Casing and Sweating (line 7). A summary is made of all Casing Tickets sent to the office by the Casing Department. We find that 950 lbs. of tobacco went into casing. We had 1.651 lbs. to account for. Therefore, there are still 701 lbs. on hand that have not gone into casing. This quantity is verified by physical inventory, as are all other items listed as inventory.

On line 6 we enter 701 lbs. using for valuation purposes the average value per pound of 401/2c., which amounts to \$283.90, and on line 7 we enter 950 lbs., also at this average price per pound of 40½c., which amounts to \$384.75.

The same procedure is followed in completing the Tobacco Cost Record.

To arrive at the net cost of tobacco, credit must be given for By-Products produced during the period, which are stems, cuttings and scraps. For costing purposes market prices are used in placing valuations upon our by-products. This necessary data is prepared on the following schedule:

By-Products Schedule Cuttings Stems Scraps Pounds Value Pounds Value Pounds Value On hand to start Produced Total Less Shipments On hand at end Distribution of Production-Values Only Filler Wrapper Binder Pounds Used Stems Cuttings Scrap Total

The distribution of credits for by-products is made on the basis of pounds of tobacco used. For example: Credit for stems, as we only strip wrapper and binder tobaccos, will be distributed between these two classes. Credit for cuttings are also apportioned between these two classes. Credit for scraps is given entirely to the filler tobacco.

For example, assume that stems and cuttings valued at \$70 are produced. Suppose we used during the month the following quantities:

	Pounds Used	By-Product Credit
Wrapper No. 11	100	\$5.00
Wrapper No. 12	150	7.50
Binder No. 21	800	40.00
Binder No. 22	350	17.50
Total	1,400	\$70.00
	======	

The credit per pound, \$70, divided by 1,400 lbs., equal to .05c. per pound, is pro-rated as shown above. It will also be noted that credit is only given for the value of the by-product and not the weight, with the exception of stems where credit is given for both weight and value. The tobacco stripped at the factory has already been given credit for the weight of the stems (see line 17, Tobacco Cost Record). Credit in pounds against the pounds used is not given for cuttings of scraps of the tobacco. For cost purposes the weight shown as used in the production of cigars is the stripped weight of the tobacco.

When we have completed the details called for in the Tobacco Cost Record, we have determined the net cost of the tobacco before it enters into the making of the cigar.

CIGAR MANUFACTURING

The next steps are finding: (1) the cost of tobacco entering into the manufacture of each cigar; (2) the direct labor cost of making each kind of cigar, and (3) overhead chargeable against manufacturing.

1. Cost of Tobacco in Manufacturing.

Two methods are generally employed to determine the cost of tobacco used in the manufacture of each kind of cigar. One method is based on the Pay Roll Card System of tobacco distribution. Limitation of space, unfortunately, prevents a discussion of this method. The Predetermined Cost Basis, which is the method most used, will be discussed.

As a unit for all calculations 1,000 cigars are used as a basis. In this connection the term "Loose Cigar" refers to the cigar after its manufacture and before it is packed.

For the purpose of illustration assume that the factory is engaged in the manufacture of three different kinds of cigars. By tests made in the manufacturing department the predetermined costs of these cigars are as follows:

Weight Calculation P	er 1,000 C	ligars	
Cigar No.	1	2	3
Wrapper No. 11	1.75	2.25	2.00
Binder No. 21	5.00	5.50	5.00
Filler No. 31	6.50	7.25	8.00
32	7.50	7.25	
33			7.00
Total Filler	14.00	14.50	15.00
Total all Tobaccos.	20.75	22.25	22.00
Production	25,000	40,000	75,000

A similar schedule is drawn up showing the cost calculation of the various cigars. These two schedules form the basis of the current cost calculations. Tests are made from time to time by the manufacturing department in order to prove their accuracy.

In the total column of the Cigar Tobacco Cost Record (see page 10) is posted the net cost of tobacco used as indicated by line 37 of the Tobacco Cost Record.

Assume that the pounds of Wrapper Tobacco No. 11, used as indicated on the Tobacco Cost Record, amount to 295 lbs. The calculations made are shown in the following schedule:

1	2	3	4	5	6	7
Cigar		Calcul	lation	Adjust-	Pot	inds
No.	Production	Per M	Total	ment	Total	Per M
1	. 25,000	1.75	44	2	46	1.84
2	. 40,000	2.25	90	3	93	2.33
3	. 75,000	2.00	150	6	156	2.08
Total	. 140,000		284	11	295	••••

Thoma	Weight	Talua	Woisht	ITe lase	Total				
Items	Weight	Varue	Weight	Value	Weight	Value			
				}					
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Form 2-Cigar Tobacco Cost Record.

The following items appear in the first or items column of the Cigar Tobacco Cost Record:

Cigar Production Wrapper No. 11 Average Weight per M Average Cost per M Binder No. 21 Average Weight per M Average Cost per M Filler No. 31 32 33 Total Fillers Average Weight per M Average Cost per M Summary Total Pounds Total Value Average Weight per M Average Cost per M

Production in column 2 multiplied by calculation per M shown in column 3 equals the cost of total production, which appears in column 4. The grand total of this column is subtracted from the grand total of column 6. Column 6 represents the actual pounds of wrapper tobacco used as shown on the Tobacco Cost Record. The difference which appears in column 5 shows in this instance that we have used 11 pounds more tobacco than our calculations call for. This is equal to (based on the calculated weight of 284 pounds to be used) an average of pounds used of .0387%. By multiplying this average by the pounds shown in column 4, we pro-rate the difference in pounds used among the cigars made (see column Column 4 plus column 5 equals the total pounds of 5). tobacco used. Dividing these individual amounts by our production we arrive at the pounds used per M cigars. The total and average pounds per M are posted to the Cigar Tobacco Cost Report.

The same procedure is followed for the Binder and Filler Tobaccos. The cost value of all of the tobaccos are also determined along the same lines.

The total cost of tobacco (wrapper, Binder and Fillers) used in the production of each cigar and also the average cost per 1,000 cigars is posted to the Loose Cigar Cost Report (see page 11).

Wrepper			Bin		Filler				Total Tobacco Labor				Qverhead			Total					
tems	Quan.	Amt .	Avg.	М	Amt.	Avg.	М,	Amt.	Avg.	An An	ı۴.	Avg. A	1.	Amu.	A⊽g•	н.	Amt.	A⊽g.	м.	Ant.	Avg .
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Form 3-Loose Cigar Cost Report.

The following items appear in the first or items column of the Loose Cigar Cost Report:

Cigar No. On Hand to Start Production Total Packed On Hand to End Cigar No. On Hand to Start Production Total Packed On Hand to End Cigar No. On Hand to Start Production Total Packed On Hand to End Cigar No. On Hand to Start Production Total Packed On Hand to End Recapitulation On Hand to Start Production Total Packed On Hand to End

-. Labor Costs.

An analysis of the pay roll records will show the amount of wages paid for manufacturing the various cigars made. The total amount, for the period under review, is posted to the Loose Cigar Cost Report.

3. Overhead.

The following items (for which individual ledger accounts are kept) comprise manufacturing overhead:

Salaries of Superintendent Cigar Foremen General Help Office Expense and Supplies Rent Insurance Taxes Repairs and Maintenance of Machinery and Equipment Depreciation of Machinery and Equipment Power and Light Miscellaneous Expenses

Overhead is distributed on a basis of production, as indicated below:

Cigar 1 2 3	40,000	Overhead \$75.00 120.00 225.00	
Tota1	140,000	\$420.000	Avg. \$3.00

The total overhead, \$420, divided by the total production of 140,000 cigars shows the average overhead is \$3 per 1,000 cigars. On this basis the overhead is distributed (as illustrated) among the three kinds of cigars made. These items are then posted to the Loose Cigar Cost Report.

This report now shows the total cost and the cost per 1,000 cigars of all tobaccos used (material), labor and overhead. These three items are added together and the total cost of production is determined.

In addition to production on the Loose Cigar Cost Report, the following data appear:

			Total	Cost
	Quantity	55	Amount	Avg.
On hand to start	15,000		\$750.00	\$50.Ö 0
Production	25,000	{} ₹ 2	1,262.50	50.50
Total	40,000		2,012.50	50.31
Packed	30,000	~ 25	1,509.35	50. 31
On hand at end	10,000	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	503.15	50.31

As previously explained, the cost of production, consisting of tobacco, material, labor and overhead, are shown. The same information is not shown for the other items, the costs of which only appear in total. As indicated on the schedule above, the total cost of the loose cigars on hand are added to the total costs of cigars produced during the period and new total costs and an average cost per 1,000 of total loose stock are arrived at.

Out of this total loose stock some are packed and the balance on hand at the end of the period is carried over to the following period. The cost of these cigars is determined by the average cost of the total loose stock (as shown above). The total cost and cost per 1,000 of the packed cigars are then posted to the Packed Cigar Cost Report (see page 14).

CIGAR PACKING COSTS

The term Packed Cigar denotes that the cigars have been placed in a container. A cigar that has been banded is referred to as Packed and Banded. If, in addition to being banded the cigar is foiled (or tissued) it is referred to as Packed, Banded and Foiled (or tissued). A number of other terms to denote the styles of packing are also used.

Packing department costs are divided into two divisions, as follows:

- 1. Packing costs consisting of
 - A. Packing labor
 - B. Boxes (or any other kind of container used)
 - C. Packing overheead

- 2. Banding costs consisting of
 - A. Banding labor
 - B. Cigar bands
 - C. Banding overhead

From an analysis of the payroll records, labor costs of packing and of banding are determined. Packing overhead is distributed on a basis of cigars packed during the period and banding overhead is distributed on the basis of cigars banded during the period. The method of distribution is the same as the one used in the distribution of manufacturing overhead.

Stock records are kept of boxes and bands. From these records the cost of those used is determined.

The packing costs are entered in detail on a schedule drawn up in the following manner:

~ ~	Analysis	of Packing Co	sts		
Cigar No. Packed Labor Boxes Overhead Total	Amount	Per M	****	Amount	Per M

The total amount is then posted to the Packed Cigar Cost Report.

A similar schedule is drawn up for the Banding Costs, and the total costs are posted to the Packed Cigar Cost Report.

The Report of Packing Costs is arranged along the same lines as the Loose Cigar Cost Report. A procedure similar to that followed in the latter report (also see illustration) is followed in the determination of the costs of

Packed Cigars on hand at start Packed Total Cigars shipped On hand at end

			Cost Loose		ng	Bandin	ng	Total		
Items	Quantity	Amount	AVE. M.	Amount	Avg. M.	Amount	Avg. M.	Amount	Ave. M.	
	1									
· ·										
i l										

Form 4-Packed Cigar Cost Report.

The following items appear in the first or items column of the Packed Cigar Cost Report:

Cigar On Hand to Start Packed Total Shipped On Hand to End Cigar On Hand to Start Packed Total Shipped On Hand to End Cigar On Hand to Start Packed Total Shipped On Hand to End Cigar On Hand to Start Packed Total Shipped On Hand to End Recapitulation On Hand to Start Packed Total Shipped On Hand to End

We have now concluded the discussion of the methods used in arriving at the total factory cost of the cigar prior to its sale.

TAX REGULATIONS

Before selling his cigars the cigar manufacturer is required by the Internal Revenue Tax Regulations to attach to each container in which the cigars are packed a Revenue Stamp. The reader is referred to the U. S. Internal Revenue Regulations No. 8, Revised 1922, for complete details in connection with Revenue Stamp requirements. It might also be added that under the Internal Revenue regulations the tobacco and cigar manufacturing industries are required to keep many records and to submit various reports in connection with their tax payments to the Government. These requirements are also discussed in detail in Regulations No. 8. The cost of the Revenue Stamps is considered as a factory cost of sale and must be added to the production, packing and banding costs in order to determine the gross factory profit or loss.

CONCLUSION

As previously stated, this article has been confined to a discussion of a cost system used in a factory in which the manufacture of cigars is the principal process. Costing for tobacco at the other types of factories, the stemmery and combination stemmery and cigar factory, requires a special system of cost accounting. Vol. I

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Vol. II

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