

University of Mississippi

eGrove

Individual and Corporate Publications

Accounting Archive

1920

Practical cost system for printing offices

R. T. Porte

Follow this and additional works at: https://egrove.olemiss.edu/acct_corp

Recommended Citation

Porte, R. T., "Practical cost system for printing offices" (1920). *Individual and Corporate Publications*. 186. https://egrove.olemiss.edu/acct_corp/186

This Book is brought to you for free and open access by the Accounting Archive at eGrove. It has been accepted for inclusion in Individual and Corporate Publications by an authorized administrator of eGrove. For more information, please contact egrove@olemiss.edu.

CA.
T
EM
R
ING
A
E

**THE PRACTICAL COST SYSTEM
FOR PRINTING OFFICES**

R. T. PORTE

The Practical Cost System for Printing Offices

BY

R. T. PORTE

*Author of "How to Figure Costs in
the Printing Business"*

Compiler of "Franklin Printing Price List"

REVISED EDITION

Copyright 1920

PORTE PUBLISHING COMPANY

SALT LAKE CITY

UTAH

TO the grand fellowship of the Printing Craft, without whose wisdom, knowledge, craftsmanship, and business acumen, the great world of letters, literature and art, and the vast energies of commercial life would still be groping their way through the shadows of the dark ages, this book is most respectfully dedicated.

FOREWORD

IN PRESENTING this revised edition of the Practical Cost System for the consideration of the printing craft, we are but responding to a continued and increasing demand for an accurate, inexpensive and simple system of finding cost of production in the medium and small printing offices.

The universal satisfaction expressed by the users of the first edition of this book has convinced the publishers that a revised edition, brought fully up to date, replete with modern ideas, and equipped with the latest and simplest forms, would meet with an even more enthusiastic reception.

There are no ideas or forms in this revised edition but what have been thoroughly tried out and tested in actual use and found to be entirely satisfactory before being incorporated in this edition of the Practical Cost System.

The original edition of this Practical Cost System was the very first attempt ever made to put cost-finding for printing offices into book form.

The first edition was prepared some twelve years ago by Mr. Roy T. Porte, then the head of the Porte Printing Company, of Fargo, North Dakota, assisted by some other cost enthusiasts, who even then saw in

cost-finding the salvation of the printing business—the book was published soon after the work of preparation was completed. When this first edition was published there was no other book on the subject of cost-finding in printing offices in existence.

There was, at that time, no other cost-finding system for printing offices known, except the system previously worked out and installed in a few printing offices in the city of Minneapolis, Minnesota, by Mr. Robert F. Denham, to whom must be given the full credit of being the father of all real cost-finding systems as applied to the printing business. Mr. Denham's system was, however, too cumbersome and too full of details to be used successfully in the medium and smaller printing offices, and this early book of Mr. Porte's was a successful attempt to simplify the Denham system and also to so arrange its methods and forms as to make it applicable to the smaller printing offices where the publishing of a daily or weekly newspaper was combined with the production of commercial printing.

This book met with instant success, but being the first book on cost-finding for printing offices ever published, a pioneer in the field, it contained a few errors of method and application. These errors, however, were quickly discovered and reported, and those portions of the book were at once changed and a corrected edition sent out, which was still the first book on cost-finding in printing offices in the field and the only one on the subject for several years.

The advent of a convenient, complete and mathematically accurate Selling Price List for the products

of the printing office, has, for a short time, drawn the attention of the craft away from the necessity of installing a cost system to determine the production costs in their own plants. They are now, however, awakening to a realization that a cost system will not only give them a knowledge of their own production costs, but will also give a much needed check on the efficiency of their plants in all departments, of their employees and of the entire administration, in both shop and office, of their business as a whole. Further than this they also realize that a cost system will show them the discrepancies, extravagances, and leaks in the business and its administration—all of which make serious inroads into the profits. This realization has created a continuous and increasing demand for a new and revised edition of the Practical Cost System, which we are now presenting to the craft.

The author wishes to express his sincere thanks to the many friends and supporters who have so freely contributed of their ideas and experiences in aiding in the perfecting of the revision of this book; especially to Mr. George E. Wray for his careful and painstaking editing of the text; to Mr. Frederick W. Smith for his thorough and scientific work in rewriting, checking and editing the technical portions of the book; and to all those others who have by their confidence and support made this edition possible.

We cannot claim that this Practical Cost System is absolutely perfect and complete, for the science of cost-finding, like all sciences, is subject to the law of evolution, and new ideas and new methods are constantly presenting themselves. We can and do claim, however,

that this revised edition of the Practical Cost System is far in advance of any book on the subject of cost-finding in printing offices now on the market. As new ideas and methods appear they will be, when thoroughly tried and tested, incorporated in future editions of this book.

We are now submitting this Practical Cost System to our fellow members of the printing craft with the sincere hope that they may find it of the greatest *material benefit in their business and a very helpful aid* in the solving of the problems of their production costs.

Yours very sincerely,

THE AUTHOR.

November, 1920.

THE PRACTICAL COST SYSTEM FOR PRINTING OFFICES

INTRODUCTION

A cost system is like a building—each part complete in itself—the parts to be erected one upon the other, until they constitute a finished structure. The building may be elaborate, many little touches given to it here and there, niceties of finish, and extras of all kinds; all very fine for those who wish something elaborate. The elaboration may be carried to an extreme, but the fundamentals of sound business structures are all the same.

There has been a need of a cost system structure, with the fewest frills; one that is simple, complete and accurate. A plan that can be understood and carried out along the simplest lines to give accurate results. This has been the aim of the compiler and he describes a system that will meet the needs of the great majority of printers, those employing ten or less employees. But, not to be misunderstood, this system is capable of being extended, with but a few changes, larger forms, etc., and will then fit any printing plant in existence.

The blanks here shown, are especially intended for the use of the smaller shops, and particularly those

publishing weekly or daily newspapers in connection with job offices, where there are no hard and fast lines as to employees working in only one department, and where the work of the employees is liable to be of a mixed nature.

A careful reading of the descriptions and study of the forms, with an earnest determination on the part of the user, will give results; you can install as good a cost system in your own plant as can possibly be installed and without engaging an expensive cost expert.

Over a hundred different forms were examined, and a practical tryout of the system made before it was offered to the printers. It is now in use in all kinds and sizes of printing offices, from a one-man shop to a shop having typesetting machines, cylinder presses, job presses, and a complete bindery, and in others where a daily and weekly newspaper is published. In all this range, there has not been a failure in its findings where the system has been carried out according to instructions; everyone has been satisfied and more than pleased.

This is written to impress you with the idea that you need not be afraid to try it; it will work, and do everything any cost system will do in any plant and without individual expert cost instruction.

In order that you may distinguish plainly the items of expense involved in the production of a job of printing, we insert here this diagram. (Cut number 12.)

This diagram fully illustrates all the items that enter into the cost of a job of printing, and the relationship which each item of cost bears to every other item, and also the relation of the whole to the selling price.

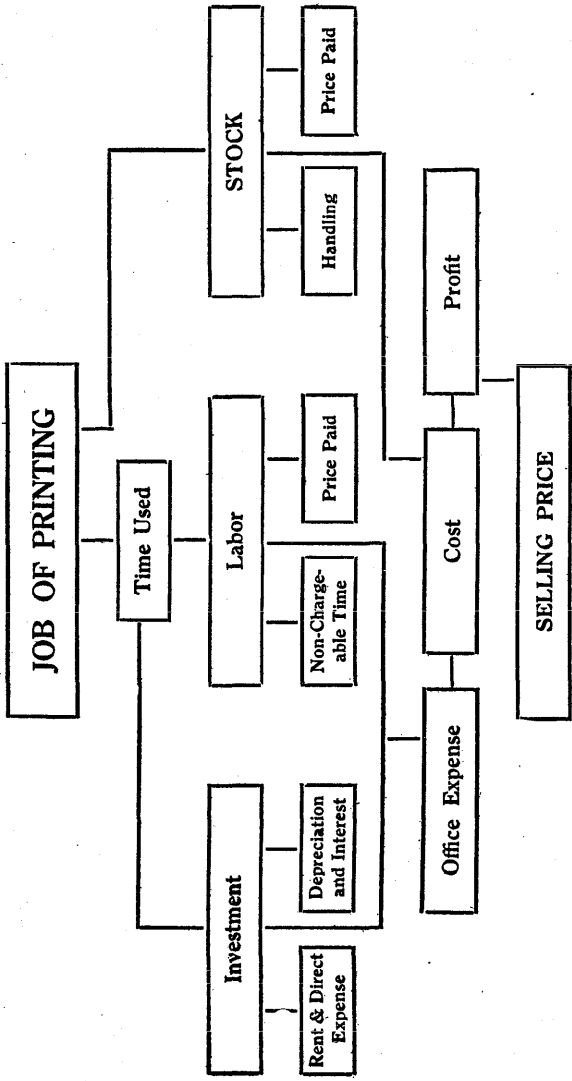


Diagram showing the factors of Cost and Profit in relation to Selling Price as described in this system.
 Number 12.

It is well worth close study, because of its graphic portrayal of the costs of producing a job of printing in their relative order. It plainly shows each increment of cost added to the job in its progress through the factory and their accumulation into the total cost, profit and selling price.

The Stock or Merchandise group is shown on the right. The guide line shows the direct connection of the job of printing through stock to cost. The smaller squares attached to the stock square give force to the fact that cost of stock is the price paid plus the handling cost.

The central group shows the Time Used as the first item of cost, and this is directly connected with labor, showing that labor cost is a burden on the Time Used for the job of printing. Labor cost is made up of the price paid for labor plus the cost of the non-chargeable time as shown in the diagram. The non-chargeable hours in a factory are carried by labor and so add to the cost of the productive labor-hour.

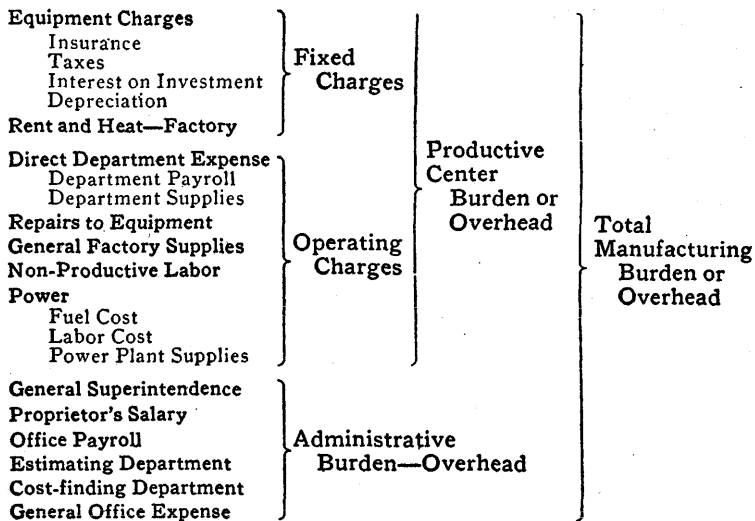
The third group at the left is the Investment group. Investment cost is made up of rent and direct expense plus depreciation and interest. The line from Time Used to Investment indicates that this expense is also a burden on the time used. The line running from Investment to Labor demonstrates that labor cost plus investment expense makes up the actual cost of the time used on the job of printing.

The short line connecting these two groups with Office Expense indicates that to the cost of time used must be added an increment of office expense to complete the manufacturing cost. To this cost square the

line from the Stock or Merchandise group also leads to complete the cost of the job. To cost is attached the profit and to profit the selling price.

This diagram fully illustrates the line of relationship of all the items which the cost of a job must include, and also the relationship of the cost, the profit and the selling price.

The following diagram shows the typical elements of Burden or Overhead Expense in a printing plant as used in the Practical Cost System for Printing Offices. A study of these expense relations will make clear the general principles involved in the classification and distribution of the various items of Manufacturing Burden or Overhead Expense:



The Total Manufacturing burden is made up of the Productive Center, or shop, burden and the Adminis-

trative, or office, burden. The Productive Center burden is made up of the Fixed Charges and the Operating Charges. All these items of the fixed charges are included in the cost of operation of every printing office, however small, as are also all the items of the operating charges except that sub-items under power would not be used in many plants. Under Administrative burden, the item of general superintendence, would be used only in the largest plants where a superintendent has general supervision not only of the plant but also of the selling and a part, at least, of the business of the office. The item of proprietor's salary should appear in every plant, large or small, although if he works in the shop his salary would appear on the shop pay roll to the amount of his labor in that department. The estimating and cost-finding items may be combined with other office work and so not appear as separate items in the cost charges in medium and small shops, but this work should be considered as a part of the administrative burden.

CHAPTER I

THE WORKING OF THE SYSTEM

As every building must be erected on suitable ground, so as to be able to stand, a cost system must have ground to build upon; the groundwork here is a Job Register.

The Job Register: The simplest form possible is used for the Job Register. The first space is the place for the number of the job. Each job going through the office must bear a number, and the Job Register is used to make sure there is no repetition of numbers and no unrecorded jobs. The first job in the illustration of the Register is for a weekly newspaper. The other jobs are a miscellaneous collection of work such as come into any office. Where a price is given in advance, it is so recorded, and that there may be no question about the price at the time of settlement. Cut number 1, on page eight, illustrates a simple, yet complete, form of a Job Register which contains all the necessary record details.

The Job Register is your ground, and from the jobs placed on it, the structure is to be built. The first thing is the foundation, and that foundation is the Job Ticket.

JOB REGISTER

FORM 102-PORTER'S SHORT CUT COST SYSTEM

Number	FOR		
101	<i>The Herald</i>		
Date	Quantity	Description	Price
<i>May 1</i>	<i>1150</i>	<i>#18-Issue May 7</i>	
Number	FOR		
102	<i>Johnson & Peterson</i>		
Date	Quantity	Description	Price
<i>May 2</i>	<i>1000</i>	<i>Letterheads</i>	<i>9⁰⁰</i>
Number	FOR		
103	<i>Johnson & Peterson</i>		
Date	Quantity	Description	Price
<i>May 2</i>	<i>500</i>	<i>Envelopes</i>	<i>4⁰⁰</i>
Number	FOR		
104	<i>Citizens State Bank</i>		
Date	Quantity	Description	Price
<i>May 3</i>	<i>1000</i>	<i>Notes</i>	<i>8⁷⁵</i>
Number	FOR		
105	<i>Carry Land Co</i>		
Date	Quantity	Description	Price
<i>5-3</i>	<i>500</i>	<i>Folders</i>	
Number	FOR		
106	<i>Carry Land Co</i>		
Date	Quantity	Description	Price
<i>May 4</i>	<i>1000</i>	<i>Contracts</i>	
Number	FOR		
107	<i>Farmers Relief Co.</i>		
Date	Quantity	Description	Price
<i>May 4</i>	<i>500</i>	<i>Statements</i>	<i>5⁵⁰</i>
Number	FOR		
108	<i>Gus Johnson</i>		
Date	Quantity	Description	Price
<i>5-5</i>	<i>100</i>	<i>Auction Bills A-12x18'</i>	<i>8⁰⁰</i>
Number	FOR		
109	<i>Ladies Aid Soc.</i>		
Date	Quantity	Description	Price
<i>May 6</i>	<i>250</i>	<i>Wodgers-A-6x9</i>	<i>3⁷⁵</i>
Number	FOR		
110	<i>Miss Ellen Johnson</i>		
Date	Quantity	Description	Price
<i>May 6</i>	<i>100</i>	<i>Calling Cards</i>	<i>2⁰⁰</i>

Number 1.

Job Ticket: The foundation must be solid, it must be simple and complete. There is no need of fancy trimmings, only the essentials. This Job Ticket is the simplest form that can be devised, yet so well laid that it will carry the entire structure. Cuts numbers 2 and 3, on pages 11 and 13.

The four great walls of the printing business are the Stock (merchandise or printing paper), the Composing Room, Press Room and the Bindery. These are the primates, and there is no plant, however small, but has these walls of the printing plant. The stock is first, that is necessary in order to print; the composing room handles the type, the presses print, and finally the bindery tabs the work, or folds it, trims it, or wraps it for delivery and puts on the finishing touches.

To begin the work right the Job Ticket must have space to tell all the particulars about the work to be done in any of the departments. It contains the date the job was received, and the job number—the same as entered on the Job Register; whom the job is for, with address, quantity, and general description, whether booklets, letterheads, envelopes, cards, folders, catalogs, or whatever the job may be. Then follows the date when the work is promised, right where it cannot escape notice, so that the work may be finished on time.

The Stock description needs no special rulings, or diagrams, just a plain space where the description, size and weight of paper to be used, can be placed. If it is dodgers or hand-bills, "print paper, size 7x9," conveys all that is necessary; if envelopes, the wholesale or grade number, size of the envelope, etc. A simple blank space is all that is necessary, and the printer can

write the description in terms with which he is most familiar.

The Composition section has a little more definite wording. If the job is to be an exact reprint, a ring around the words "Like Copy" tells the story. If the printer cannot duplicate, and has a little leeway a ring around the words "Like Sample as Near as Possible" is all the description needed. Cut number 2. If the stone proof is to go to any particular person, his name only is necessary, and if a revised proof is to go to the customer or anyone else, room is provided. Cut number 3. If the copy is manuscript, a ring around the different lines gives the compositor an idea as to the setting of the job. Cut number 3. Any particular instructions, such as width to set job, if a booklet or pamphlet, size and style of type to be used, size of type page, and whether to run in one or two colors, can all be indicated. Cut number 3. This is the simplest way; all the essentials to the correct setting of the job can be easily given, from an envelope corner to a large catalog, with no confusing detail.

The Press Work space is boiled down to but two special places. One for color of ink, and one to designate to whom the press proof shall be shown. Cut number 2. The rest of the space is blank, but its uses are manifold. Here can be told on what press to put the job; whether a cheap or high-grade job; whether to run "work-and-turn" and any other special instructions. The workmen in the smaller shops, especially the small town shops, are closer to the customer, and know what he desires, so there is no need of a lot of diagrams or special spaces, which only confuse.

NOTE:--- Ticket must be made out in full, giving every information necessary for completion of job. Use a carbon paper and detach and file record. Number every job.

Date <i>May 2/20</i>	No. <i>102</i>		
For <i>Johnson & Peterson</i>			
Address <i>City</i>			
Quantity <i>1000</i>	DESCRIPTION <i>Letter Heads</i>		
PROMISED <i>This Week</i>			
STOCK <i>Ruled Hammermill Bond 12 # White</i>			
COMPOSITION	Like Copy <i>Like Sample as Near as Possible</i>	Heavy Light Fancy Plain Nice Job Cheap Job	Stone Proof to
	Machine		Revise to <i>office</i>
PRESS WORK		Color Ink <i>Blue</i>	
		Proof to <i>Johnson</i>	
BIND		Block <i>100</i> in a Pad	
		Perforate	
		No.	
Deliver <input checked="" type="checkbox"/>	Delivered		
Delivered by	To Be Called for		
Ship by	To		
Via			
Price	Cost of Stock	Journal	

Number 2.

The Bindery in the average small office is perhaps the least used department of the shop, but the three most important and used operations have spaces. If the work is to be put in tabs or pads, room is provided for that; if to be perforated, there is a space where only a check mark is needed, and if the work is to be numbered, the first number only is necessary to be put in the place.

The Delivery of the work is important, and spaces are left to denote whether work is to be delivered or called for, and date delivered, and by whom. If the product is to be shipped, there is room for instructions. Cut number 3.

The very reason for doing the job—the price—has a place, and then a space for the cost of the stock used. And, last of all, a space for the Journal page when the job is entered upon the books. An important feature of the Job Ticket is that it is made in two parts. The first is a fly sheet, cut number 2, tipped on over a duplicate Job Ticket printed on the Job Envelope, cut number 3. The reverse of the fly sheet is a Job Record, cut number 7. When the Job Ticket is made out, a sheet of carbon paper is placed between the Job Ticket fly sheet and the Job Ticket envelope, and then the directions and particulars of the job are written out, all except the price, which is not usually carboned on the Job Envelope. The fly sheet is detached from the envelope, and placed in a ring binder. The number of the job is again entered on the reverse or Job Record side of the fly sheet in the space left for that purpose. This Job Record remains in the ring binder, is kept in the office and placed in the safe at night, as it will soon

NOTE:-- Ticket must be made out in full, giving every information necessary for completion of job. Use a carbon paper and detach and file record. Number every job.

Date *May 3/20* | No. *105*

For *Barry Land Co.*

Address *Provo, Utah*

Quantity	DESCRIPTION
<i>500</i>	<i>Folders</i>

PROMISED *May 12*

STOCK *68 sheets 24x36-80
Enamel Book*

COMPOSITION	Like Copy	Heavy	Stone Proof to
<i>Set 24x42 Em</i>	Like	Light	
<i>4 Pages</i>	Sample	Fancy	
<i>Title Page</i>	as Near as Possible	Plain	Revise to
	Machine	<u>Nice Job</u>	<i>Barry</i>
		Cheap Job	

PRESS WORK	Color Ink
<i>Two runs on jobber</i>	<i>Black</i>
	Proof to
	<i>Barry</i>

BIND	Block
<i>Fold once</i>	<i>in a Pad</i>
	Perforate
	No.

Deliver	Delivered
<i>✓</i>	
Delivered by	To Be Called for
Ship by	To
<i>Parcel Post</i>	<i>Barry Land Co</i>
	<i>Provo, Utah.</i>
Via	

Price	Cost of Stock	Journal

Number 3.

contain records as valuable as those in the ledger or books of account. This Job Record will be fully explained further on.

In the Job Envelope—the second part of the Job Ticket—is placed the copy for the Job, and having on its face all the instructions for printing, goes to the stock room, where the stock is cut, or ordered from the paper dealer; then to the composing room where the job is set; to the press room where the job is printed, and to the bindery where the job is finally completed. Then the envelope is sent back to the office, where it is to be priced and entered upon the books.

In speaking of the composing room, press room, etc., we have not in mind large offices where there is a separate room or a separate floor for these processes but use the terms to indicate the different departments or production centers of a printing plant.

The Job Ticket, the Job Record, and the Job Envelope has now been laid—the foundation of the Cost System. The structure cannot be built or finished or have any value without this permanent and solid basis.

Now, having laid the foundation, you proceed with the superstructure; this too must needs be correctly put together or the building is in vain.

The Daily Time Ticket is part of the material for the superstructure. On the Daily Time Ticket is entered all the time used in the execution of all orders. This time ticket becomes the superstructure of the Cost System. The time used in the different departments, or production centers, of the plant is a prime factor and the accuracy of the cost system depends largely on the care used in keeping the daily time ticket.

In building, the workmen do not cut boards to any length that suits their ideas, the walls are not one size on one side and different dimensions on the other sides, but the whole is built according to a well-defined plan. The rule of inches and feet is the unit of the building. A stable structure is not possible if each man were to follow his own ideas as to length or breadth. He must use the unit of measurement and be guided by the specifications of the master builder. The man at the case or at the press must needs use a definite unit of time so that the finished product may be produced on the same unit bases in all departments, and correct figures secured for use in the completed records.

The adoption of a unit of time is an important matter in the work of keeping daily time tickets. For general use, the unit of six minutes, this being one-tenth of an hour, greatly simplifies the figuring of time on all tickets and job records and all other time records in the cost system. The six-minute (.1) unit is the best, although the five-minute, the ten-minute, or the fifteen-minute unit are sometimes used. In considering all the units in use, and their applicability to the work of a small office, the use of the six-minute (.1) or tenth of an hour unit is recommended.

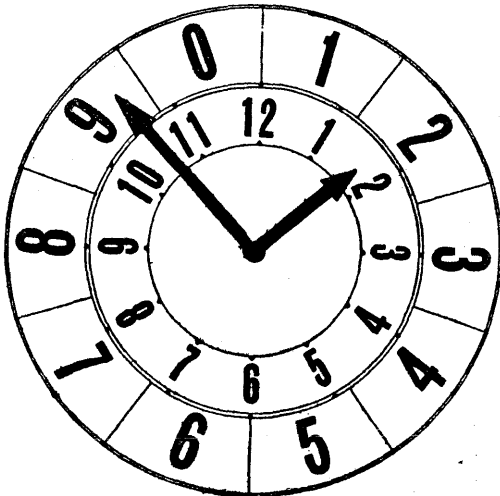
Using a six-minute unit, all work recorded on the Daily Time Ticket is either .1 of an hour, .2, .5, etc., up to .9, 1 hour, 1.1, 1.2, 1.5 and so on. This makes the entering of time, on the part of the workmen and extension by the cost clerk, very simple and easy. While to the non-user of the Cost System, this may seem somewhat awkward at first, in practical use it is recognized as the correct way to record time, and the

use of the decimal unit greatly simplifies the figuring of all tickets and time reports.

Having adopted a unit of time, you can now easily follow the working of the Daily Time Ticket.

Note.—Unit Clock Faces. For the convenience of the users of the Practical Cost System we have prepared two sizes of clock faces, like the illustration, showing the six minutes, (.1) of an hour, time unit. The hour hand points to the hours, the inner circle of numbers, as usual, while the minute hand points to the time units, the outer circle. The time shown in the illustration is 1 o'clock and 9 units, .9 of the hour. Each of the time unit squares on the Daily Time Ticket represents .1 of an hour and the workman would record the time shown on this clock face by drawing a pencil mark through nine of the squares in the column headed 1 to 2.

These dials are printed on a heavy paper and can be easily pasted on the face of a clock. Two sizes are carried in stock—4 inch for the small bench clocks and 11 inch for the large wall clocks. These sell for 50 and 75 cents each.



Note.—Reason for Time Tickets. Before going any further, we want to explain a few things in connection with the time tickets and to allay any misunderstandings and supply the reason and necessity for the Daily Time Ticket.

First and foremost, the Daily Time Ticket is not used for a check on your workmen. It is the same in all essentials as the sale slips generally used by stores throughout the country. Clerks make out sale slips for whatever goods are bought in a store. One of these slips goes to the bookkeeper that he may charge the customer correctly with the goods bought.

The printer sells the products of labor, and he must charge for every productive minute of this labor, just the same as a merchant must charge for every item of his merchandise. The printer cannot correctly charge his customer unless he knows how much labor was used, the same as a merchant cannot correctly charge a customer with merchandise unless the sale slip shows the kind of goods and the amount sold.

Would you deal with a merchant who did not use some system of recording your purchases, item by item, and charging you for them, but who should, instead, at the end of the month make a guess at what you had bought and then charged you for that? Not for a minute. If you buy \$1.00 tea, and only one-half pound, you want to pay for that and not be charged with one pound of 50 cent tea. Without careful records of time, used on each job sold, you are guessing what you should charge. Quit guessing where certainties can readily be secured. No man objects to paying a right price for a right article, and a right price must include the correct amount of labor-time used in its production.

The argument that the workman was slow, that the customer does not get all he pays for when a job seems to carry too much time, is about as clear as trying to say that a pound of tea is worth 90 cents, but should be charged at only 60 cents, and anyway you got but 14 ounces. This argument will not stand with the Daily Time Ticket as devised for this system. The workman records all the time he is working, either chargeable or non-chargeable, and if he worked eight hours a day before the adoption of the system and got out the work; and if, since the adoption he works eight hours and gets out

the work, where is the difference? Even if it seems to take longer to do the work than you thought, do not blame the man or the system—but blame yourself because you have been guessing wrong during the past. Do not guess wrong any longer, but record the facts.

It should be understood that a workman who does not record his time rightly is in the same class as the clerk who undercharges or overcharges a customer. In the one case he cheats his employer and in the other he is cheating the customer.

Honesty in recording time, so that the employer may receive the full benefit of what he pays for, and that the customer shall have charged to him just what he should pay for, is the only correct principle. Unless the Daily Time Ticket shows the time of the employee in full, for the day, an investigation should be made as to why the time is not all accounted for.

The Daily Time Ticket is the sales record of the system, and on its faithful and honest keeping depends the uprightness and prosperity of the business. If these time reports are kept in a careless, slipshod manner, the whole cost system will be disorganized, the charges on jobs will be as unreliable as the old guess-work way—unfair to both the seller and the customer.

Time is one of the most important elements of the cost of production and much depends upon a correct record of the time for every process of work.

The employee should not get the idea that practically all his time should be reported as on productive work. That idea is wrong and, moreover, such a condition is impossible. In the composing room, for instance, even in the most efficiently conducted plants, the non-productive time will range from 25 per cent to as high as 40 per cent of the total time, and even 50 per cent is not uncommon.

The individual efficiency of the employee and the efficiency of the management are both important factors in reducing production costs; and an even more important factor is the efficiency of the plant itself. If the workman is compelled to waste hours each week, because of insufficient

DAILY TIME TICKET

Commented 11:00 A.M.
 6:00 P.M.

THIS SECTION FOR OFFICE USE ONLY.
 Make Ring Around Machine Composition and Cylinder Press
 Time.

Job No.	For Whom (Initials)	Kind of Work	8		9		10		11		12		1	Composition	FREE PRESS WORK	STOCK & OFFICE
			TO	TO	TO	TO	TO	TO	TO	TO						
102	8+P	103														
105	105	301														
"	"	302														
"	"	353														
"	"	354														
			TOTALS													

For Overtime Use Another Sheet Changing Hour Figures.

Number 4.

TOTALS

material to work with, such waste will greatly increase production cost. Under present conditions of labor cost and business burden, or overhead, every minute of time wasted actually costs the business an average of $4\frac{1}{2}$ cents, more than this in the cylinder press room and less in the bindery. Wages paid for time wasted, either through lack of equipment or for any other cause, can never by any possibility be recouped but are irretrievably lost. The amount so spent would, if invested in more efficient equipment or in training the employees to greater individual efficiency, and by that we do not mean to work harder, bring in good dividend returns every month of the year.

With these things impressed on your mind, and kept well to the front in all the work of the cost system, you will be ready to undertake the keeping of the Daily Time Tickets.

The Daily Time Ticket, as its name indicates, is a report by the employee of all the time spent by him each day while working for his employer. It has been devised so that a reading will show exactly what he has accomplished. This form is not merely "something to fill out." A properly designed form does not call for any useless information, but it does call for all the necessary information and every item called for on this time ticket is necessary.

As he is being paid to work, you are entitled to know what he is doing, and to what use he has put the time bought. A clerk in a store records his sales, and an employee, who is the primary recorder of the sale of his time and labor, is in the same position as the clerk and should accurately record the sale of his time and to whom sold. If you meet with any objections to the keeping of a Time Ticket by an employee—a careful explanation of what this means to you and an insistence that it be done rightly will soon end all

argument. Because he has never done it before is no reason why it should not be done now, and an employee is honest with himself, his employer, and the customer if he keeps his time report correctly.

A Daily Time Ticket is used each day by each employee, his name, the date, the time he commenced work and time he stopped is recorded on the top line.

If, in case of a small office, fires have to be built or sweeping and cleaning done, this is recorded and charged to Office Time, using No. 456 for kind of work done. When actual productive or chargeable work is begun, the number of the job worked on is recorded, and also the name or initials of the customer, so that in case an error in recording the number of the job is made, it can still be identified. The time work began and time ended must be indicated for each job. Idle time, which is sure to occur, must be accounted for in all cases, showing why idle.

The "Press Work" or "No. Impressions" column is not used in typesetting, except in the case of a typesetting machine when ems or galleys of type set may be recorded in this column. In all cases the column "Kind of Work" is filled in, and the beginning and ending time.

On the improved form of the Time Ticket, which we recommend for the Cost System, cuts numbers 4, 5 and 6, each hour from 8:00 a. m. to 6:00 p. m. is in a column separated from the others by a double line; and each square in this hour column represents the .1 of an hour, or six minutes, time-unit.

After the workman has filled in the spaces for the job number, name of the customer and the kind of

work he has only to draw a pencil line across the squares from the time of starting the job to the time of finishing. For example, if he starts in at 8:00 on a general clean-up of rule, leads, type, etc., the work will be classed as distribution, with the work No. 55. If he works at this until 8:45 he will draw a pencil line from the beginning of the hour to, and including, the time-unit space numbered 48, as if the work lasts beyond the 42-minute space it must be considered as filling the full space following. In other words, do not split a unit of time, for the three minutes which might be added to some jobs will not have any appreciable effect on the cost of the job and will equalize itself in the course of the day. When he completes the next job he will draw a pencil line, in the space following the record of the job number and the work number, starting with the 54-minute space and stopping, as before, with the unit space of the finishing time. See illustration of Time Ticket, cuts numbers 4, 5 and 6. The right hand portion of the Time Ticket, beyond the triple line, is for office use only except that the column headed "Press Work," "No. Impressions" may be filled in by the employee, if desired, as mentioned above.

A further advantage of the use of the improved time report used in the Practical Cost System is that if the workman has to stop on a job before completing it to do some other work he will draw the pencil line through the time squares to the point where he is interrupted, do the other work, and when he returns to the job in hand he will not need to re-enter the job number and kind of work a second time but will record the time of resuming work to the time of finishing. See

illustration of Time Ticket, cut number 4, second line in the afternoon section.

On the back of the Daily Time Ticket, is printed a list of the operations most common in a printing office, and these will now be taken up one at a time and explained.

COMPOSITION—

1. Hand Composition.
2. Hand Alterations.
21. Advertising, Hand Work.
3. Make-up.
4. Lock-up.
5. Machine Composition.
6. Machine Alterations.
31. Machine Composition, Advertising.
(Non-chargeable)
51. Pulling Proofs.
52. Reading Proof.
53. Hand Set Corrections.
54. Machine Corrections.
55. Distribution.
56. Cleaning Machine.

PRESS WORK—

101. Make Ready.
102. Holding Press for Proof.
103. Running.
(Non-chargeable)
151. Changes (Press Corrections).
152. Washup.

STOCK ROOM—

201. Cutting Stock.
202. Handling Stock.
(Non-chargeable)
251. Unpacking and Shelving Stock.
252. Changing or Edging Knife.

BINDERY WORK—

- 301. Tabbings.
- 302. Trimming.
- 303. Folding and Inserting.
- 304. Gathering.
- 305. Perforating and Punching.
- 306. Stitching or Stapling.
- 307. Binding.
- 308. Numbering.
- 309. Counting.
- 310. Mailing.
- (Non-chargeable)
- 351. Clean-up.

OFFICE WORK—(Non-chargeable)

- 451. Bookkeeping.
- 452. Soliciting.
- 453. Collecting.
- 454. Delivering.
- 455. General Office Work.
- 456. Janitor Work.

Note—All work numbers containing any 50's are non-chargeable.

OFFICE WORK

Office Work is an original idea with the Practical Cost System and came about because in the first attempts at a simple system, the office part was neglected, but in a few weeks came a host of inquiries as to charging different kinds of time used in the office, where the proprietor does work in the printing departments, and where to charge general cleaning up, and other things. Then the "Office Work" column was added and the troubles on that score ended.

Under Office Work we have No. 451, bookkeeping; No. 452, soliciting; No. 453, collecting; No. 454, deliver-

ing; No. 455, general office work, and No. 456, janitor work. Nos. 451, 452, 453, are not used or especially needed as separate time unless the proprietor so desires. No. 455 covers nearly all the needs, but the others are added to designate such things as generally come under the heading of Office Work. No. 456 is for janitor work, and is chargeable to the office as it would be practically impossible to divide this time against each separate department, and in any case a general cleaning up is a general expense of the business. Someone in the plant does this work, and the time should be accounted for.

Where the proprietor or manager of a plant works in the printing department, he will make out a time ticket each day, so that his time can be accurately divided against the departments where the work has been done. It is plainly as important that all his work should be charged for as that of the workpeople. If the proprietor makes up the paper, sets a job, does the mailing of the paper, that time should be accounted for, and he will, therefore, as well as his employees, make out a Daily Time Ticket. Unless he does this his shop labor will not appear on the records and the number of labor-hours recorded will be less with a consequent increase in the hour costs.

Delivering, No. 454: The work number for this is in the series covering office work for the reason that in the small plants the proprietor often likes to deliver the work so as to show the customer the excellencies of the job, or his promptness, or as an opportunity to solicit more work. In the larger plants, where they have work for an errand boy, the delivery is sometimes con-

sidered a part of the stock work and is further treated under that heading.

We believe, however, that the delivery should always be considered as a part of the office work for the reason that the operation is a delivery of the product of all the departments which have done work on the job, and not of the stock room alone. Treating it as an office charge the cost of deliveries will be distributed against all departments in proportion.

STOCK WORK

On this Stock Work there may be some difference of opinion, but from practical experience—not theory—a stock handling charge or a cutting charge—essentially the same—must be made on each and every job; both a stock handling and cutting charge should not be made.

Cutting Stock, No. 201: No one will deny that it takes time to cut stock, and that the time should be recorded and charged for. It costs money for the labor, rent is paid for stock and cutter space, there is depreciation and interest on the cutting machine and cost of shelving. There is no argument against a charge for cutting stock, any more than against a charge of time for setting the type; yet very few, before the advent of cost systems, ever thought of doing such a thing as charging for cutting stock. Since this advent a few, possibly not wishing to admit they have been so mistaken in the past, argue against such a charge and put the whole stock room work into Office Expense. That is ridiculous! There is no more reason for doing it,

than for putting press work or tabbing into office expense. Remember this: everything that goes into a job of any kind must be charged for. Any other theory of running a cost system is false, and fails in its purpose, which is, the finding of the correct cost basis, through correct hour costs, on which to build a fair and equitable selling price of the individual job of printing.

Handling Stock, No. 202: All that has been said about cutting stock is true for handling stock, but perhaps it needs a little more explaining. The idea of charging one or more units of time for taking down 500 envelopes and putting them on the press may seem absurd. Is it? That stock occupies room, you have to pay interest on the investment in the merchandise and equipment, insurance, taxes, rent, and the price of shelving to hold it. In the city shops the errand boy very often has to go to the wholesale house for the stock. All this expense must come out of the profits—if there are any—and so it should be charged and paid for. These matters have been neglected for years, and have caused big leaks in the printing business.

A record must be made by the person who takes out the stock, so that it will appear in the final record of the job, showing who took out the stock, the units of time required, and that the proper stock and the correct amount was used. This is as important as to know who set the type on the job. Two other charges are made for stock work—Delivering and Unpacking.

Note.—In our opinion, one of the principal causes for failure to make money in the printing business is because so few have realized that it costs money to handle stock, and to attend to a hundred other trifles. Good old Ben truly said:

"Many mickles make a muckle, or one hundred cents make a dollar." In talking with a prominent wholesale paper dealer, recently, he stated that it cost him nearly fifty per cent to handle broken ream lots, and that he is charging only twenty-five per cent, and the rest comes out of the profits. He said it was unfair to the paper house to only charge twenty-five per cent on twenty-five sheets, as it took nearly the same time and cost nearly as much as to count out a larger quantity, and he contended that it would be much better to make a time charge, but that it was practically impossible to do this, so he must continue to charge on a percentage basis, though he believed it wrong. Some who use a Cost System charge a percentage on the cost of stock for handling, and by so doing they charge more for handling expensive paper than the cheaper. Is this right? Would it not be as correct to charge for typesetting on a percentage of the cost of stock?

It has, however, become a custom of the trade to charge ten per cent on the cost of the stock for handling in the plant, and when the plant is located some distance from the paper house, another ten per cent for freight and drayage into the plant. The principle is wholly wrong as it penalizes the user of the better grades of stock. The charge should properly be for the units of time used in handling the stock while the freight and drayage cost should be added to the cost of stock in the shipment on the basis of weight.

The percentage basis in a cost system at any point is absolutely wrong. The printer is selling labor, or its products, on the basis of the time used, therefore it is that all labor, going into the product should be sold at a rate that will be profitable. Any percentage based on the cost of the paper, any percentage used for ascertaining costs for a correct price for the products of labor, is radically wrong. Customs and habits are hard to change and the user of a cost system must decide for himself whether he will handle this matter in the correct way or follow the custom of the trade.

This may seem like a long argument, but at this point it is really necessary, as the very first thing done on a job, or which should be done, is the stock work, as that is where the labor commences.

Delivery, No. 454: This is a non-chargeable item, as a direct charge cannot be made against the customer for the reason that several jobs may be delivered at the same time. This being non-chargeable is an additional argument for making a stock handling charge. The charge for cutting stock when cut, and for handling stock from off the shelves, when in packages or boxes, in the larger plants includes the cost of delivering, and the cost of the time of the boy or man used in this work is directly charged to that department. See, also, under "Office Work." All labor-time must be reported on the Daily Time Ticket; hence the employee should keep as accurate a record of delivery time as of other work.

The proper time to charge for stock handling is when the stock is first taken from the shelves and the delivery cost is covered in that charge unless it is handled as an office charge as mentioned under "Office Work."

Unpacking and Shelving Paper, No. 251: It takes time to unpack a shipment of paper, check the invoices and put the stock on the shelves; and as it may be used for several jobs, it is non-chargeable.

It is customary, in many plants, to make no distinction between the stock handling and the cutting, but to treat them as belonging in the same department and using the same work number for both. For many reasons, especially in the smaller plants, this method is advantageous as the time units are small for the handling. The only objection to this method is that it has a tendency to make the handling charge a little greater, because of the increment of interest and depreciation

on the cutting machinery, but it will also tend to make the cutting charges a little less. Neither the increase in handling nor the decrease in cutting cost will make any material difference in the cost of the completed job.

To Summarize: Every job must have either a stock cutting or stock handling charge, but not both. Time used in delivering and unpacking paper or shipments of paper is stock work but the time is non-chargeable against the department. We advise, however, that all delivering be treated as office work. We now come to that much-abused department, Composition.

COMPOSING ROOM

This department of the printing business has long been called the "sink hole" of the printing office, and many and long have been the articles published as to how to make it pay. The much-abused "sorts questions" "plenty of material," "new inventions," "quick methods," have all been written and talked about till everyone knows them by heart—but the one thing forgotten has been: "Have you charged the right price for the composition?" "Do you know how long it actually took to set the job?" The question is not what time you thought it would take or what time you guessed it did take. Poor, dear, old composing room!

A swift(?) would look over a piece of manuscript for thirty minutes, figure it all out, then rush up the job in fifteen minutes, and tell the boss he set the job in fifteen minutes, and he was believed. Everybody forgot about that thirty minutes of sizing up which should have been included in the composition time, as

such sizing is a necessary part of the work. No wonder the composing room was a sink hole.

With a cost system—The Cost System—the correct time must be given and the compositor must account for his entire time, what he is doing all day. It will be found that many of the jobs which were formerly reported as set in fifteen minutes, now take forty-five minutes. Remember that every unit of time, from the unit when the compositor receives the copy until the job is on the galley ready for pulling proof, must be recorded as Composition or No. 1.

What is the good of “sorts,” “lots of leads and slugs and quads,” and all the rest, if the time required to do a job is simply guessed at one-third the time it actually takes? That is about the percentage of guesswork. With the correct reporting of time used on the Daily Time Ticket, you know the time used, and have a solid basis on which you can charge for it.

The numbers used in the composing department run from 1 to 6 and from 51 to 56, so that the composing room numbers, all being less than 100, can be readily recognized. Notice that there are two numbers, 21 and 31, which are for composition work on advertisements. All these work numbers will be explained in detail. All work numbers containing a 50 are non-chargeable time.

Composition, No. 1: This includes all hand type-setting and is counted from the time unit when the compositor takes the copy until the job is ready for pulling the proof. Where the composition has been done on a machine the work is counted as hand composition from the time the compositor takes the slugs

until the job is ready for proofing, even though it might be the machine operator who does the work, it is hand composition and should be so recorded. If the composition on a job is not finished during the day only so much time is recorded as is put on it that day and the continuance of the time on the job will appear on the time ticket for the day when it is again taken in hand. This time is chargeable.

Hand Alterations, No. 2: All authors' changes from the original copy, resetting of the job, through no fault of the office, corrections and changes in a standing form ordered by the customer, and all such alterations and changes, are chargeable against the job and must be figured into its cost. The neglect in charging such items into cost has been in the past a source of heavy loss in the printing business; care should be taken that all these items are recorded and charged for.

Advertising, No. 21: This is a special work number and covers all hand work in setting advertisements. This work includes also the trimming or cutting of linotype slugs which are to go into advertisements in the newspaper and the necessary whiting out of such machine set lines, and any work done on advertising cuts or plates to make them square, type-high or to fit into the space. This work number would be used only when the proprietor desires to keep the time on advertisement composition separate from other composition for the purpose of ascertaining the cost of advertising composition. In a job shop and ordinarily in the country shop it will not be used. When it is, the time should be added to the other composing room time in Record of Chargeable and Non-chargeable Hours.

Make-up, No. 3: This is a regular part of the composing room time, but we advise the keeping of this process separate from composition, as such, because of the additional statistical information that it gives the proprietor on the division of the working time. It is especially valuable in connection with the issuing of a newspaper and of the work on large jobs. On the small jobs, where there is nothing to be done except to lift from the galley and lock in the chase, this item of work may be omitted and the entire work, from the finishing of the composition to the completed lock-up, may be included in the lock-up which is also composing room time.

Lock-up, No. 4: This work is also composing room time and covers just what its name indicates: all the work of locking up to get the form ready to put on the press. It makes no difference if it is the pressman who locks up this form, the time must be recorded under this work number and recorded as composing room time. When the pressman does this work a proportionate amount of his wage will be charged against the composing room, as will be taken up and explained later when we reach that portion of the Cost System. This time is chargeable.

Machine Composition, No. 5: This work number covers all the productive composition on a typesetting machine of any class and the same rules apply as in hand composition.

Machine Alterations, No. 6: This work number covers the same classifications and is governed by the same rules as are Hand Alterations. The time used is chargeable.

Machine Composition, Advertising, No. 31: This work is, for the machine, the same as No. 21 is for hand composition and is governed by the same rules.

Pulling Proofs, No. 51: This item of work is classed as non-chargeable time and should be so treated and recorded. The reason for this is that as a general thing several jobs are proofed at the same time and it would be a difficult matter to so separate the time that each job could be properly charged. In addition to this the pulling of proofs is work done much more for the protection of the office against errors than for the benefit of the customer. For these and other reasons the time of pulling proofs is considered and treated as non-chargeable.

Exceptions: On large jobs, like books, pamphlets, catalogs, briefs, herd books, fair books, telephone directories, the newspaper, etc., which requires considerable time for pulling proofs, and where the customer asks for proofs and revises, the time may be considered and treated as chargeable. This is a matter that the proprietor must decide on each individual job and should issue his instructions as to the proofing. When this work is to be considered as chargeable time the workman should record it on the time record, using the same work number but prefixing or following the number with a letter C, as C51 or 51C. This will enable the cost clerk to recognize the time as chargeable and make the proper charge for this work against the job. This time, whether chargeable or non-chargeable, must be recorded as part of the Hand Composition work, as all used hours are to be entered in the hour record later.

Reading Proof, No. 52: This work, in all essentials, is similar to No. 51, preceding, and should follow the same rules as to recording and as to whether it is to be considered as chargeable or non-chargeable time. This time should also be recorded in hand composition department. When treated as chargeable the work number should be used with the letter C as above.

Hand Set Corrections, No. 53: As this work is the correction of errors made by the compositor the time required for them is non-chargeable and must be so recorded as part of the time of this department. In every line the business itself is held responsible for the correction of errors and mistakes made by its employees and there is no reason why the errors in composition should be made an exception to this rule. Regardless of any who may argue to the contrary, a printing office has no right, moral or legal, to penalize a customer for its own errors and mistakes or lack of efficiency. Under no circumstances, therefore, should the correction of office errors be charged to the customer.

Machine Corrections, No. 54: This work is the same for the typesetting machines as the preceding number is for the hand composition and should be handled in the same way.

Distribution, No. 55: This work number includes the time spent in the distribution of dead forms, the cleaning and putting away of rules, leads, furniture, quoins and all the material of the composing room equipment, and in addition, all such work as cleaning or wiping up the stones, blowing out cases and all the miscellaneous clean-up work of the department, except

such as may be classed as janitor work. This time is wholly non-chargeable and must be so recorded.

Cleaning Machine, No. 56: This work covers the cleaning, adjusting, oiling, etc., of the typesetting machine, and in addition all work that may be done in cleaning, straightening and repairing of the matrices, space-bands and all the other appurtenances of the machine, including the re-melting and pigging of metal.

This completes the work numbers used for the composing room and they will cover all the work usually done in that department. In all plants where a typesetting machine is used this department is a double-header, as the time work of the hand composition must be kept separate from that of the machine workers.

Numbers 1, 2, 3, 4, 21, 51, 52, 53 and 55 belong to the hand composition, and 5, 6, 31, 54 and 56 to the machine composition. Impress it thoroughly on whoever does the figuring on the time reports that in extending the time into the "For Office Use Only" section of the time report that each item of machine composition time, either chargeable or non-chargeable, must be ringed. The reason will be taken up later.

PRESS ROOM

This production center of the plant follows naturally after the work of the composing room. All the numbers of this department are in the 100's so that the work will be easily distinguished from that of the composing room.

Make-ready, No. 101: This work number covers all the time used in putting the form on the press,

underlaying and overlaying and regulating the impression, regulating the ink, determining the margins, setting the gauge pins or feed guides and pulling a press proof, special wash-up to change ink for a job, and also any other work necessary to be done before starting the press on the "run." It is often necessary to stop the press, for additional make-ready or for making customer's changes, after the run has been started, which should also be recorded under this work number. This time is chargeable against the job and a careful record should be made of it.

Note.—In connection with this work we would suggest that a record be kept of the output of each press to determine the efficiency in use of each. In order to do this, number each jobber from 1 up and assign letters to the cylinders beginning with A. When the pressman enters the work number, have him affix the number of the press to the work number. Thus, make-ready on jobber No. 1 would appear on the time record, in the kind of work column, 101-1, or if on a cylinder, 101-A. The same plan should be followed with the other work numbers in the press room. This will enable the cost clerk to determine the press that the job was run on and especially as to whether it was run on jobber or cylinder press. The cost clerk, when extending the time into the "Office Use" columns, should ring the time when cylinder press is indicated by the work number.

Holding Press for Proof, No. 102: This work is chargeable time where the customer demands a press proof of his job. If on cylinder press, ring the time.

Running, No. 103: The column for "Number of Impressions" should be filled as well as time record kept on this work. This will make a showing on the press efficiency, which is important information. Only the

number of impressions actually run during the running time marked on daily time ticket should be entered, regardless of the number required for the entire job. The additional impressions for the job will naturally appear and be entered on the daily time ticket when running is again resumed. If this "number of impressions" record is to be accurately kept a counter on the press will be a necessity. Running time means the time the press is actually printing on the job in hand. Cost clerk should ring this time if run on cylinder press.

Changes (press corrections), No. 151: This work covers the errors in composition which were not caught when they should have been. They are purely plant errors and as such are non-chargeable time. The press changes on account of customer are treated in No. 101.

Wash-up, No. 152: This work covers all the regular wash-ups and is non-chargeable time. This number should also be used for all time spent in a clean-up of the presses and press room except such as would be classed as janitor work. Wash-ups for a change of ink for a job are treated in No. 101.

General Information: When two people, as pressman and feeder, work on a cylinder press at the same time the time record is made for one man only. The other should enter under "Kind of Work" the word "Assistant" or "As't" and should also enter the number of the press and number of job. His time, in this case, is non-chargeable against the job but as his wages for the time put in are charged against the department the labor-cost of his time automatically becomes a part of the departmental hour cost.

Where a cylinder press with attached folder is used and an extra man is put on to feed an insert his time can be recorded in the same manner as that of the assistant, mentioned above, or it can be recorded as bindery time under number 303. Folding is essentially bindery work and we would consider this method the better way in which to handle this work.

Where a plant has several different sizes of cylinder presses they should be classed in sub-departments and separate time kept for each class as the hour costs will be different. Cylinders 22x32 and smaller are classed as "pony;" from that size to and including 32x44, and in the case of a newspaper press, 33x48, would be classed as "medium," and the larger cylinders should be in a class by themselves. Not more than two of these classes will usually be found in the smaller shops.

It is also advisable to do the same with the jobbers. The 10x15, or 11x17, and smaller should be in one class and the 12x18 and larger in another. If you have an automatic feeder attached to one of the jobbers this should be in a class by itself as the greater investment makes it necessary. In making the time record on a jobber with attached feeder where the pressman is also at the same time running another press or doing other work will require a little additional explanation. A second time ticket should be made out for the automatic fed press with the workman's name and time started and stopped, etc. On this time report the job numbers and kind of work for this press should be entered and also the output in the proper column. The labor, except for the time of the make-ready will be very little but the press must receive the credit for its running

hours. On his regular time ticket the workman should carry the job and work numbers for the jobs being run on both presses on separate lines of the time ticket. On the line following the job number of the job being run on the hand-fed press he should carry his time as usual. On the line recording the number of the job on the automatic-fed press he should enter just the units of his time which are used in attending to that press, in removing the printed sheets and adding stock for the run, in starting it again after an automatic stop, etc. In case any of these attentions require less than a unit of time he can combine two or more of them and record them by drawing the line as usual. The reason for this is that the automatic-fed press should be charged up with the proper proportion of his labor which makes a part of the hour-cost of that press. The time used in attending to the automatic should, of course, be deducted from the time of the hand-fed press, and the best way to handle this is to leave breaks or blank units in the line recording the time on the hand-fed press to correspond with the time-lines shown for the automatic. The hand-fed press is, naturally, not producing when the workman is attending to the automatic. The same method should be used if the workman is doing other work than feeding press while attending the automatic.

In extending the time on the daily time reports the cost clerk should make a ring around all the time of the cylinder press work. This is necessary in order to distinguish between the cylinder and the jobber time in the records to be made later. Some distinguishing mark should also be used for an automatic feed press.

BINDERY WORK

The Bindery is probably the least used department in the average shop, and in the smaller shops the greater portion of this time has been given away and no charge made for the most of its work. While the equipment of this department is usually small, yet from somewhere its interest on investment, insurance, etc., as well as its labor must be paid. It is not possible to run any business with success unless every expense is provided for by an equivalent charge against the product. For easy recognition, all time in this department is carried under work numbers in the 300's.

Tabbing, No. 301: This work, sometimes called padding, or blocking, covers all the time of straightening the sheets, cutting the straw-board, preparing and spreading on the "goo," and the final cutting apart and wrapping for delivery. This time is chargeable and as accurate a record should be kept of it as of any other time in the plant.

Trimming, No. 302: In most shops this work has always been one of the lost "Babes in the Woods" and has disappeared when the charge was made for the job. This work covers any trimming or cutting after a job is completed and is as certainly chargeable as any other time in the plant.

Folding and Inserting, No. 303: This work covers all folding, whether hand or machine, and all inserting work in a job of books, pamphlets, etc. Where a newspaper is issued it also covers the folding on that, either hand or machine.

This department is really a double-headed department. Where the plant does much of its folding by machine the machine folding should be kept as a separate department and the time ringed in the extension columns of the daily time ticket and the other time records. Use the same work number but follow that number by a letter "M" to designate machine folding. In the case of a cylinder press with an attached folder, however, this letter distinction is not necessary as the simpler way is to carry the folder investment as a part of the cylinder press. In that case the only time record to be made would be the time of the feeder, as an assistant to the pressman, when an insert is being folded into the main sheet, and this can be done under No. 303. See, also, second paragraph under General Information following "Press Room."

Gathering, No. 304: This work covers just what the name indicates and is chargeable time. In the smaller shops there is so little of this work that it can as well be carried as part of the folding and inserting time under that number.

Perforating and Punching, No. 305: This work covers the items mentioned when done on perforating or punching machines. It does not cover hand punching nor perforating on the press. Where a small hand punch is used the work is hand work and may be carried under some of the other hand work numbers, as 307. Perforating on a press where the perforating is done in the same run as the printing there would be no extra time charge as the extra time used in putting in the perforator would be covered in the make-ready and the slower run on press where a perforator is used

would be covered by the additional time charge on the job. When perforating is done on a press in an extra run it should be treated as press work and recorded as Running time, No. 203.

Stitching or Stapling, No. 306: This work covers the use of stitching or stapling machines only. Hand stitching or sewing should be included in numbers 303 or 304.

Binding, No. 307: This work is all hand work in the smaller shops and covers all classes of binding that is likely to be done in the small plant, such as order books with tag-board or check-board covers as well as stiff covers, pamphlet binding where the cover is glued on, check book binding, receipts, etc. For the larger plants the cost system includes more detailed forms to cover the various departments of this work. In the smaller shops this detail is not necessary nor advisable.

Numbering, No. 308: This work covers hand machine numbering on checks, receipts, order books, tickets, etc., but does not cover numbering on press. That work is press room time and should be charged as an extra run, if run that way, and be cared for the same as press perforating mentioned above.

Counting, No. 309: This work covers the counting on those jobs where the sheets must be counted into accurate quantities before binding, as with orders, receipts, checks, etc., where they are to be numbered either before or after binding, or wherever the work has to be counted. This time is chargeable, and record should be made of it.

Mailing, No. 310: In the average printing plant the greater part of this work will be on the newspaper.

The time is chargeable and should be accurately recorded and charged against the newspaper. It will also include time used in mailing out any jobs that may be delivered in that manner. It will cover the time used in writing or running off the addresses on the mailing machine, wrapping, etc.

Clean-up, No. 351: This time is non-chargeable and covers all time used in cleaning up the bindery department, washing glue brushes, paste dishes, and all the clean-up work except what would be better carried as janitor work.

General Information: In the larger shops the bindery work is cared for in four different departments: "A"—The heavier machines, cutters, ruling machines, etc., usually run by men. "B"—Men's hand work, such as finishing, forwarding, etc. "C"—Girls' small machine work, perforating, punching, stitching, etc. "D"—Girls' hand work which would include all the cheaper processes, counting, gathering, numbering, sewing, etc.

In the smaller plants we would advise the two department plan unless there is a fairly complete bindery in connection. In the average small shop the "A" and "B" classes are not used. "C" should be made up of the work of trimming, folding—where a separate folding machine is used—perforating and punching, and stitching or stapling. The investment would be greater in machinery in this department and the hourly costs higher than for hand work.

Where there is but one paper-cutter in the plant assign about one-third of the value of the cutter with its interest, depreciation, etc., to Bindery "C" in the departmental inventory.

All the other classes of work would be carried in Bindery "D," regardless as to whether the work is done by men or girls. In the smaller shops it is simpler to combine all the bindery work in one department charging against it the value of all the bindery machinery and the proportion of the cutter as mentioned above. This would make the hour-cost of the hand work a little more and the machine work a little less, but not enough in either case to make any material change in the job cost.

CHARGEABLE AND NON-CHARGEABLE TIME

We have accounted for all the different processes liable to be used in the making of a job of printing, and explained each. Perhaps the words Chargeable and Non-chargeable require some explanation. The workman fills in no blanks beyond the triple line on the time ticket, except in the "No. Impressions" column previously mentioned.

The first time ticket reproduced, cut number 4, is one as handed in by the employee at the end of the day. All the items under the heading "These columns for office use only" are then filled out, and totaled by the cost clerk. Every department except "Office Time" is subdivided into two items, chargeable and non-chargeable time and are defined as follows:

Chargeable Time: All those productive units of time used on a job that can be charged direct to and become a part of the cost of the completed work.

Salable units of time as compared with the time that has no salable value such as distribution, office work or janitor work.

Non-chargeable Time: All other portions or units of time used by the workman in his daily work, non-productive time, that cannot be charged against a particular job, or where he assists at a machine whose time is already charged through another workman.

The only items that are generally non-chargeable are, in the composing room Nos. 51 to 56; in press room, 151 and 152; in stock room, 251 and 252; in bindery, 351; and all the office work, 451 to 456, as none of these items can be properly charged to any job. The office work items form a part of what is commonly spoken of as "administrative overhead" or "business burden" while the other items are a part of the "plant overhead" or "shop burden." All the cost of this non-chargeable time as well as the overhead or business burden expense must be carried by the chargeable hour and becomes a part of the hour-cost of those hours.

Extending Chargeable and Non-chargeable Time: After the workman hands in his time ticket for the day, and before the work can be charged to any particular job, all items must be extended to the chargeable and non-chargeable columns. All time in office work is extended to that column. If one of the shop workmen waits on customers, answers telephone calls, or does any of the office work the time so used is to be entered on his time report, using the proper office work number, which is generally No. 455, and the extension is to be entered in the office column. A portion of his wage will be charged to office as shown later.

All work in the numbers under 99 is extended in the composing room time columns, but in the case of machine composition a ring should be placed around the time to keep it separate from the hand work, as the two kinds of work are in different sub-departments.

All work in the 100's is extended as press room time in the proper columns, but in case of cylinder press-work, a ring is placed around the time for the same reason as above; in case of different sized cylinders or jobber with feeder attached the cost clerk must use care that the items are kept separate for use in other records. This will be easy if the various machines are numbered or lettered. Where there is no typesetting machine or cylinder press in the plant the ringing of the time in these two columns is not necessary.

All work in the 200's is extended to the proper stock or bindery columns but a ring is placed around the stock room time for the same reason as above.

All work in the 300's is extended in the proper stock or bindery columns, without a ring. All work numbers containing a "50" are non-chargeable time.

Now the time is posted up in each column, but machine composition time, cylinder press time of the different sizes, the job press with attached feeder, and stock room time is kept separate in the totals as shown in the time ticket reproduced, cut number 5. The total time, both chargeable and non-chargeable on each workman's time record, must equal his entire day's work.

CHAPTER II

THE JOB RECORD

The Job Record: We have accomplished the building of the structure, but we must now go back and take up the Job Record, the reverse side of the fly sheet attached to the Job Envelope, which is the foundation of our Cost System, and to which the structure is firmly attached.

The Job Record is a summary of the time used on any particular job and is taken from the Daily Time Tickets. Even though the work on the job may take several days in any one or several departments yet, as the work progresses each day, the time is taken from the Daily Time Tickets and is entered on the Job Record. The Job Record has four sections that conform to the extension columns on the Daily Time Ticket, and in these sections the daily items of time put in on a job are collated until the job is completed. See illustration in cut number 7.

1.—**Stock Work:** Here the employee's initials or name, with date, and the kind of work, entered by the work numbers, and the total time of that kind of work on the job, in hours and units or tenths is entered.

Sample of Job Record filled out for Job No. 102

JOB RECORD						No. 102					
STOCK WORK					PRESS WORK						
EMPLOYEE	DATE	KIND OF WORK	TIME		Press No.	EMPLOYEE	DATE	KIND OF WORK	TIME		
			H	M					H	M	
R.P.	5/4	202	3		1	R.P.	5/4	101	5		
					"	"	"	103	1		
COMPOSITION											
EMPLOYEE	DATE	KIND OF WORK	TIME								
			H	M							
R.P.	5/4	1	1	2							
NOTE: Indicate Cylinder Press Work by a ring around the time											
SUMMARY OF COST											
ITEMS		TIME		COST							
		H	M	\$	C						
STOCK						3	12				
STOCK WORK				3		48					
MACH. COMP.											
HAND COMP.				1	2	288					
NOTE: Indicate Machine Composition by a ring around the time											
BINDERY											
EMPLOYEE	DATE	KIND OF WORK	TIME		JOB PRESS	INK	BINDERY	RULING	ELECTROS	ENGRAVINGS	EXTRAS
			H	M							
R.P.	5/4	301	3		15	225					
"	"	302	3			20	6	81			
TOTAL COST											974
PROFIT											
LOSS											74
SELLING PRICE											900

Number 7.

2.—**Composition:** This work is to be entered on the Job Record in the same manner as above but care must be taken to put a ring around the time of the typesetting machine. We would advise the entering of the hand composition time in the upper portion of this space and the machine composition in the lower portion.

3.—**Press Work:** In this the number of the press should be used as well as the initials of the workman and the date and kind of work. Care should be taken to ring the cylinder press time and also to properly designate the time of a jobber with attached feeder and the different classes of cylinders.

4.—**Bindery Work:** If you are keeping records of more than one class of this work the time of the different classes should be designated by using a ring for one class or by some other distinguishing mark, as, for instance, using a ring around machine, or class "C" work.

As the job goes through the plant to completion, whether in one day or in several days, the time on that job is collated on this job record. When the job is completed and the job envelope is returned to the office, the time used in each department is totaled and carried to the Summary of Cost on the Job Record and entered opposite the proper items—the total of the hours and units used in each process. This time is then multiplied by the hour cost used and the amount entered in the column headed "Cost." See illustration cut number 7.

The first item in the Summary of Cost is Stock. Get from the Job Envelope the details of the stock used

on the job and figure the cost laid down in your stock room, if you keep your stock costs that way; otherwise use the cost at the paper house plus ten per cent for freight and drayage and plus another ten per cent for handling into the house and onto the shelves and for spoilage, and enter this in the "Cost" column. See note following handling stock No. 202.

Do not forget the cost of the Ink on the job. This is printed large on the job record so that it will not be forgotten. This cost should be at least ten cents, even for the smallest run of cards, for the wastage in wash-up and drying in the containers must be cared for in this charge. On longer runs charge fifteen cents for the first thousand and ten or twelve cents for additional thousands. This will probably care for the ink wasted in wash-up and also for what will dry and harden in the cans.

Ruling is the next item. Enter here the cost which must also include transportation and handling cost of special ruled stock that may be required for the job.

Where electrotypes or engravings are required for the job, enter their cost opposite those items in the summary. Following these are two blanks for extras. Enter here the cost of any other extras for the job such as cords and pencils for dance programs, telegrams or telephone tolls if used to get specific instructions or order special stock, postage when job is mailed to customer, etc.

If all the work up to this point has been carefully kept track of and properly recorded you have stopped all those little leaks which may have nearly swamped your business boat in the past and your plant should

now show you a profit. Of course, it requires some exercise of the backbone to stop these leaks and some nerve to add a fair profit to the job cost as shown on this summary. These should be cultivated and developed.

One advantage of the Job Record in the front office is often lost sight of; it is a daily record of the progress of the job itself in the factory. This is particularly true of a job of more or less size and importance. A reference to the Job Record shows its exact location in the plant and the amount of time so far spent on it. An irate customer calls up the head of the firm regarding the non-delivery of a certain job. Personally, the head of the firm may know nothing of the job, may not have seen it, and perhaps knows little of its actual progress in the plant. While talking on the 'phone he gets the Job Record and thus instantly gets a thorough grip of the situation and knows how far along toward completion the job has progressed; he can then talk intelligently about the matter.

You now have all the items of cost, and by adding these up you get the cost of the job, and it is only necessary to add your profit, and there is your selling price. Seems easy, doesn't it? But how do we know what price to charge per hour. This is the question you now ask, and it must be answered, not by what it costs others but by what it costs you in your own shop.

Now comes the capstone of your building, or the roof, to cover it all, and then, finally, the finishing, the doors and the windows that let the light into your business and completes the whole structure.

CHAPTER III

THE FINISHING TOUCHES

The Finishing Touches: Having completed the foundation and superstructure, we are ready for the roof or capstone, and this consists of the Record of Chargeable and Non-chargeable hours for one month. This is a summing up of the time, and is necessary before anything can be done to ascertain the cost of labor-hours. This procedure is very simple.

Record of Chargeable and Non-chargeable Hours: This record, for each month, occupies two pages in the Summary Book. Notice that there is a line for each day of the month. Across the top of the page are headings for the various department columns and each column has two spaces, one for the chargeable and one for the non-chargeable hours. Illustration, cuts numbers 8 and 9.

Note.—The blank heading following the "Job Press" can be used for a second classification of jobbers or cylinders. In case your plant has more departments than this record will accommodate we can furnish you with larger forms for this purpose.

Each day the daily time tickets are extended and the time in each department totaled. The totals for

Record of Chargeable and Non-Chargeable Hours

Date	Office	Machine Comp.		Hand Composition		Cylinder Press		Job Press		Bindery	
		Charge-able	Non-Chargeable	Charge-able	Non-Chargeable	Charge-able	Non-Chargeable	Charge-able	Non-Chargeable	Charge-able	Non-Chargeable
1		6-		33	125			35			1-
2		<i>Sunday</i>									
3		83		32	92			18			37
4		87		48	32			4-	3		
5		42		145		15	5				8-
6		88		15	12-			2-	2		23
7		113		27	8-	1-	5	13	5		
8		82		4-	7-			53	5		15
9		<i>Sunday</i>									
10		87		43	118			12			
11		75		113				32	5		37
12		38		165		15					87
13		77		3-	133			17			
14		87		65	45			23	5		3-
15		65		2-	35	1-	7	25	7		28
16		<i>Sunday</i>									
17		8-		6-	105			1-	3		12
18		68		47	3-			45	5		5-
19		4-		158		15					87
20		87		25	9-			3-	5		18
21		65		6-	83	22		23			7
22		7-		23	78		5	45	4		
23		<i>Sunday</i>									
24		75		54	10-						41
25		83		135	2-			12	5		13
26		4-		173		15					85
27		87		13	142						13
28		8-		5-	77	18	6	43	5		1-
29		<i>Holiday</i>									
30		<i>Sunday</i>									
31		4-		75	118			5-	5		45
Total		1749		1749	1693	125	28	546	64		683

Month of *May*-1920

Pay Roll Summary

Bindery		Stock Handling		Total Hours	NAMES Include only persons who use Daily Time Reports. No others.	Total Wages for Month
Charge- able	Non- Chargeable	Charge- able	Non- Chargeable	All Departments		
		7		27 —	<i>L. O. Anderson (Prof)</i>	150.00
		5	5	27 2	<i>Richard Peterson</i>	150.00
		1		27 —		
		3		29 —	<i>Mamie Anderson</i>	90.00
		2		27 —		
		7	1	27 —		
		5		27 —		
		2		26 3		
		8		27 —	Total	390.00
		4		31 3	Total Hours, all Departments	685
		3		26 —	Cost per Hour, all Hours	
		5	4	26 4	RECAPITULATION	Use total Hours, both Chargeable and Non-Chargeable for all Departments
		7	15	21 9	Departments	No. Hrs.
		2	4	27 6	Office	180
		6		25 6	Machine Composition	
		5		30 5	Hand Composition	344
		3	6	26 4	Cylinder Press	15
		1		27 —	Job Press	61
		4		22 9	Bindery	68
				27 —	Bindery	
		2		27 —	<i>Stock Handling</i>	17
		4		31 7		
				25 5		
		5		29 4	Total	685
					Must equal total pay roll as above	390.00
		9		34 2		
		12	3	44 9		

NOTE:—The above is to be used only where employees who use Time Reports work in all departments. If employees work in separate departments, without interchanging work, their salaries should be charged direct to their department. The salaries of all others not using Time Reports should be put on line "General Office Salaries" as an office expense.

each department collated from all the time tickets for the day, are then added up and the total time in each of the different departments is then entered on the line numbered for that day in the Record of Chargeable and Non-chargeable hours under the proper department heading. Be sure that the chargeable and non-chargeable time is kept separate and is entered in the proper column. There is but one column for office time as this is non-chargeable.

When all the time for the day has been properly entered on this Record cross-add the time, both chargeable and non-chargeable, and enter the amount in the "Total Hours" column. If the figuring has been done correctly this total will equal the total time for the day, of all shop employees, as shown on the daily time tickets. If it does not equal this time the work should be gone over for errors until these two totals agree. The date line on which Sundays or holidays fall will be skipped, unless work is done on these days. At the end of the month, the entire time is added up in both chargeable and non-chargeable columns. Then cross-add the totals of the departmental columns which should equal the amount of the "Total Hours" column. If it does, the work is correct; if it does not, the error should be found and corrected. Cuts numbers 8 and 9.

Having ascertained the time consumed in each department for a month, you are now ready to finish the building, and know your costs of production in your own plant. For this we have a blank called Summary of Cost and Profit and Loss, and we will take this up item by item, and explain each fully, as we have in all the rest. Illustration, cuts numbers 10 and 11.

SUMMARY OF COST AND PROFIT AND LOSS

The erection of the foundation and superstructure of a building by good workmen, is an easy matter, and can be done without much trouble, but when it comes to the "finishing," a different problem is at hand. The finer touches must be given in the finishing and it is the same with the cost system.

The keeping of the Job Register, the Daily Time Tickets, the Job Record, and your Record of Chargeable and Non-chargeable Hours can be done very easily and by a clerk or girl somewhat familiar with the printing business.

The Statement of Cost, however, presents a different problem, and needs more study and closer application and insight into your business than any other part of the cost system.

The Statement of Cost may well be compared to the doors and windows of a building, through which one can receive light and enter into a full understanding of the productiveness and the profitableness—or lack of it—of the entire plant, or any department of it.

Here are gathered all the results of the month's work. You take your expenses, your pay roll, your depreciation, interest on investments, taxes and every expenditure made for the benefit of the business, and come to the final steps in determining the time cost of your productive hours; only salable hours are productive hours; all non-salable hours are non-productive. The office work hours, distribution and clean-

Statement of Cost and Profit and Loss

DEPT INVESTMENT	\$ 304 ⁰⁰	\$	\$ 3075 ⁰⁰	\$ 1018 ⁰⁰	\$ 595 ⁰⁰	\$
Units of Investment	12		123	41	24	
ITEMS OF EXPENSE	Office	Machine Comp.	Hand Comp.	Cylinder Press	Job Press	
Department Pay Roll	10247		19587	854	3473	
Rent and Heat	500		2800	480	385	
Light	400					
Power				300	420	
Insurance and Taxes	128		1280	430	250	
Interest on Dep. Investment	204		1625	737	350	
Depreciation	250		4059	852	499	
Bad Accounts	550					
Spoiled Work	725					
Office Stationery and Postage	2875					
Advertising	1575					
Telephone, Telegraph, etc.	900					
Selling Expense and Com.						
General Office Salaries						
Organization Dues, Donations, Charity, etc.	2350					
Water, Soap Towels, etc.	375					
Int. on Borrowed Money or Purchase Contracts	685					
Miscellaneous Expense	550					
<small>These items extend to Office column only</small>						
Total Office Expense	22312					
Direct Department Expenses as per Summary*			550	575	390	
Total Department-Cost, without Office Expense			29911	4228	5767	
Distribution of Office Expense			12127	831	3811	
Total Cost of Departments			42038	5059	9578	
Chargeable Hours of Each Department			175	12	55	
Net Cost per Chargeable Hour			2.40	4.22	1.74	
Average Net Cost for Months						

For the Month of May 1920.

\$378 ⁰⁰		\$170 ⁰⁰		\$5540 ⁰⁰		Dept. Expense Summary		STATEMENT OF PROFIT AND LOSS			
15		7		222		*Carry to separate columns on Direct Department Expense Line					
Bindery	Stock Handling	Total Disbursements		STOCK HANDLING				Items		Amount	
3871	668	390.00		Knife Grinding		50	Amount of Job Work for Month	612.00			
415	420	50.00		Wrapping Paper, Twine, etc.		1.80	Amount of Advertising for Month	124.00			
		4.00		Other Expense		50	Amt Rec'd on Subscription for Mo.	90.00			
		7.20		Total		2.80	Miscellaneous Receipts	35.00			
153	72	2321		MACHINE COMPOSITION				Total Receipts		811.00	
188	128	3232		Oil, Gas 'ne, Gas			Less Amount of Paper and Ink Used As shown on Job Tickets	132.00			
312	148	6177		Metal Waste			Gross Profit	726.00			
		5.50		Repairs			Less Total Expense (†)	693.80			
		7.25		Other Expenses			Net Profit	352.20			
		2875		Total			Net Loss				
		1575		HAND COMPOSITION				Statement of Profit and Loss from Job Tickets			
		9.00		Benzine and Lye		1.50	Amt of Profit Shown on Job Tickets	89.75			
				Proof Paper and Twine		85	Amt of Losses Shown on Job Tickets	36.50			
				Other Expenses		2.75	Net Profit Shown on Job Tickets	428.5			
		2350		Total		5.50	Net Losses Shown on Job Tickets				
		375		CYLINDER PRESSES				Statement of Profit and Loss on Newspaper			
		6.85		Tympan Paper		50	Amt of Advertising for Month	124.00			
		5.50		Rollers & Repairs		5.00	Amt Rec'd on Sub. for Month	90.00			
				Oil, Rags, etc.		2.5	Total Receipts	714.00			
				Other Expenses			Cost of Paper for Month As shown on Job Tickets	221.65			
				Total		5.75	Net Profit on Newspaper				
							Net Loss on Newspaper	7.65			
				JOB PRESSES				BINDERY EXPENSE SUMMARY			
				Tympan Paper		1.00	Knife Grinding				50
210	280	2005		Rollers & Repairs		2.40	Glue, Paste				1.00
5149	2013	69380		Oil, Rags, etc.		50	Repairs				
4712	831						Gas or Gasoline				60
9861	2844			Other Expenses			Other Expenses				
68	12			Total		3.50	Total				210
144	237										

The above total is carried to statement of Profit and Loss in the space marked with a (†)

up hours are of no value to the customer and are, therefore, non-salable hours.

The first important question in figuring your costs is: What is the value of the plant? If you have an accurate inventory, this work is fairly easy. If not, there is only one of two things to do; take an inventory of your plant, or make a fair and full estimate of its value by departments. Using either plan the value of the plant should be fixed on the present purchase prices of the various items of the equipment, and not on what was paid for them when purchased nor on an appraised value of present worth which would be used for insurance purposes. The reason for this will appear later.

The top line of the blank for obtaining your costs is headed "Department Investments." By this is meant, what each department is actually worth at present purchase value. Do not figure what the "business" is worth, but what the material of the equipment in each department is worth at the purchase cost of today, not what it may have cost you when bought. (For additional data on valuation, see page 73.)

That you may have a fair idea of what should be included in each department, we will enumerate items under separate headings. To the value of the material in each department should be added a fair amount to cover the freight and installation charges on the equipment, especially so on all machinery in the plant. Installation charges include the cost of all wiring for motors, all belting and other power connections, also where a cement or other foundation or pit has been put in for the cylinders or other machinery, the cost of these should all be added to the departmental value.

Office: The amount for this department should include all office furniture, such as desks, chairs, tables, typewriters, safes, books, and other items for office use in conducting the business.

Machine Composition: Present cost value of the machine, including all extras, extra magazines, all matrices and liners, metal melting pot, motor or engine, linotype metal, small tools, cabinets, etc. If a monotype, include both caster and keyboard, compressors, motors and all extras.

Hand Composition: The present purchase value of all type, rules, leads, and slugs, wood and metal furniture, cabinets, galleys, stands, stones, proof presses, cuts, chases for cylinder presses, quoins, and every item used in setting type and getting forms ready for the press room.

Cylinder Press: The value of the press, extra rollers, belting, power wiring, motors or engine and all extras of every nature. If attached folder is used, include this in the value. If a detached folder, include that in the bindery.

Job Presses: Value of the presses, including motor or engine wiring, power switches, belting, etc., all extra rollers, extra chases, drying racks, stock table, and everything pertaining to the presses. If you have one engine or motor that runs both the cylinder and job presses, the cost should be divided proportionately between the two production centers, on the basis of power required by each.

Bindery: In a small office, this would only be run as one department and the value of stapling or stitching machines, unattached folder, one-third the cost of

the paper cutter, tabbing implements, perforator, and all other machinery and tools used in the bindery. In larger shops classify the equipment according to the explanation given in chapter covering the bindery work hours, between the two or three bindery departments.

Stock Room: Two-thirds of the value of the paper cutter, the value of the shelving, tables and everything used to store and handle stock, but not the cost of the paper or other merchandise on the shelves.

With these items figured out, and put at the head of each column on line "Department Investment," you have made the first step in getting your own costs of production.

Department Pay Roll: The next item to figure out is the pay roll. This is one of the hardest parts to figure, but we have tried to make the proposition as simple and easy as possible. On the page where you have filled out the chargeable and non-chargeable hours used in your plant, you will find at the right a space headed, "Summary of Pay Roll." Illustration, cut number 9. On the spaces place the names of the employees who have used daily time tickets for the month, and opposite the names the amounts paid them in wages for the month.

Care must be taken to use the full number of working days for the calendar month—not a period of four weeks. The amount of the wages should cover all the time for the month, regardless of whether the amount has been paid the employee or is still to be paid. In other words, this amount is the labor-cost for the month—not the amount paid out. Salaries of people who are not using the daily time tickets, yet draw pay, will be

taken care of later. If the proprietor or manager or one of the office force uses a daily time ticket his salary covering the hours on his time report must be included in the pay roll.

Add up the total pay roll ; then add up the total number of labor-hours, both chargeable and non-chargeable, used during the month from your Record of Chargeable and Non-chargeable hours. The total amount of the pay roll is then divided by the number of labor-hours, and the result is the labor-cost unit per hour in your own plant.

The next step is to ascertain the labor-cost of each department. For this, take the labor-cost per hour as the unit and then multiply the total number of labor-hours, both chargeable and non-chargeable, of each department by the labor-cost unit, which gives the cost of the labor for each department. Add these, and if they do not exactly agree with the total pay roll, make such slight changes in the several departments as will make the two totals agree.

But, you may say, I pay one employee only \$20 a week and another \$35, why combine them? The question of the differences between the individual labor or wage costs has comparatively little effect upon the ultimate cost per hour. The \$20 a week man no doubt needs and gets supervision by the \$35 a week man, and to get a correct cost, the wages of the two must be combined in the totals, and you cannot get labor-hour cost except in this manner.

Remember we advocate this simple way of ascertaining the labor cost in offices where the employees work in all the departments. If the case should be

that an employee is employed on a typesetting machine or the job presses, exclusively, then that labor cost may be charged directly to that department, and the hours not taken into consideration in dividing the labor cost in the other departments. We do not, however, advise this method because as a general principle, for the smaller shops, the first method gives a better and more uniform cost, as general supervision is practically always given by the higher priced help, even though the actual work supervised may not be done in their department, and all departments should bear a just proportion of the supervision cost.

Note.—Many so-called cost experts have fallen down on this by trying to make the distribution of cheaper labor wage meet the preconceived, and usually erroneous, ideas of the "front office." If you want the actual costs, and not such as will conform to a preconceived idea, you must take into consideration some allowance for supervision. The labor-hour cost is but one factor in your hour cost of production, just as rent, heat, etc., are but single factors. You can never base a real cost of production on the price paid for labor, as will be readily seen when you consider all the other elements which enter into the production costs.

All the hours are used in ascertaining the labor-hour cost, and that is one of the reasons why both chargeable and non-chargeable hours have been so carefully kept track of. The non-chargeable time is a large factor in the labor cost, as all the expense of this time must be borne by the chargeable, or productive hours, for these latter are the only salable hours.

Rent and Heat: The next factor or unit of cost is rent and heat. The rent is an easy problem as it is

usually paid by the month. For the item of heat use $1/12$ of the total cost for the year, adding the amount to the rent each month. This amount is to be charged against the departments in proportion to the floor space occupied by each department. In determining the space for each department measure up the square feet of floor space used by each department for its operations. Do not take into account the floor space used for aisles or passageways, toilet rooms, coat rooms, stairways, elevators, etc. This space is for general use and should not be charged against any of the departments. Omitting this space will simply raise the rental rate per square foot of used space a trifling amount and each department will automatically assume its cost in the slightly increased charge for the space they use.

Note.—If the building housing the printing plant is owned by the business itself or is listed as a part of its assets, as in the case of a corporation, or is owned by the proprietor of the business, a rental for the space occupied must be included in the monthly expense to the same amount as would be paid for the same space to any other landlord. In the absence of any stated figure the proper rental charge may be determined as follows: Figure the interest on the present sale value of the land and building, not the appraised value for taxation purposes, at not less than 6 per cent per annum and at a higher rate if local conditions warrant. To this amount add the taxes on the property and the insurance on the building, and also all the expense items which naturally are carried against such property, such as street improvements, street sprinkling, sidewalk and sewer taxes and repairs, using the average annual amount. Depreciation on the building must be figured at a fair and equitable rate. On brick, stone and cement buildings the usual rate for depreciation is from 2 to

3½ per cent, and on frame buildings from 5 to 7 per cent per annum, based on the building cost and the character of the building originally. This amount is to be added to the amounts above, the total divided by 12 which gives the monthly rental charge on the building at cost, but to this should be added a fair rental profit, as the owner is properly entitled to a profit over and above the interest on his investment. If the building is occupied by others besides the printing office the amount of the rental should be adjusted fairly as between the occupants.

Light: Enter the total amount of the cost of lights in the column headed "Office," when it will be later distributed against the departments.

Note.—The old method of distributing light expense in proportion to the candle-power of the lamps installed for use in the departments is palpably wrong, and results in penalizing the less important production centers which are usually located in the darker portions of the work rooms. Every production center is entitled to sufficient light for its operations and if it is so located that it does not receive enough daylight for that purpose it should not be loaded with the expense of artificial light because of its unfortunate location. Light, like water supply, is a general expense and should be carried into the general or office expense where it will be distributed against the various production centers in a proper proportion.

Power: This item should be charged only against the departments using power. If a gasoline engine is used, take the total amount of gasoline used for the month and include all oils, waste, and other costs for running the engine, and divide according to the horsepower-hours. Where the machines are motor driven divide the amount of the power bill each month against

the departments using power according to the horse-power-hours.

Note.—To find the horse-power hours when the machines are equipped with individual motors: Multiply the running hours of each machine for the month by the indicated horse-power of the motor attached, as shown by the number plate on motor. This result will be the horse-power hours for that machine. Repeat the process for each machine using power.

To distribute the power bill: Total the horse-power-hours for all machines. Divide the amount of the power bill by this total and the result will be the unit of cost of the horse-power-hour. Multiply the horse-power-hours of each machine by this unit. The result will be the charge for power against that machine. Total the accounts for all machines and see that the total agrees with the amount of the power bill; if it does not, then add or subtract a few cents to or from the amounts for each machine until the two totals agree. If there are two or more machines in the same departmental groups, as two jobbers, total the amounts of the power cost for the machines in that group. Enter the power cost for each machine or group of machines on the Power line in the Statement of Cost under the proper department heading.

Note.—In a plant where the machines, or groups of machines, are driven from one or more large motors the procedure is similar to the above. The running hours of each machine are to be multiplied by the power required to drive that machine. A 10x15, or smaller, jobber requires $\frac{1}{2}$ horse-power, larger jobbers $\frac{3}{4}$ horse-power, a Universal type jobber 1 horse-power, a pony cylinder $1\frac{1}{2}$ horse-power, a drum cylinder newspaper press $2\frac{1}{2}$ horse-power, two-revolution cylin-

ders 3 to 5 horse-power according to size. If some of the machines have individual motors find the horse-power hours of these and add them to the amounts found for the other machines, then distribute the power bill as shown above.

Where the machines are driven by a gasoline engine, find the amount of the power cost as indicated above and distribute as for one large motor.

Even where a gasoline engine is used, the typesetting machine is usually driven by electric power, and probably from the light circuit, in which case there would be no separate electric power bill. This machine should be charged with the power it uses and this can be found as follows: Electric light bills are usually rendered at a specific price per kilowatt-hour of current used. The motor on a typesetting machine is usually $\frac{1}{4}$ horse-power. Find the horse-power hours of this motor as above and multiply these hours by .746 and the result will be the number of kilowatt-hours consumed as power for the typesetting machine. It is only necessary to multiply these kilowatt-hours by the price shown on the electric bill to obtain the amount to be charged against this machine for power. This amount should be deducted from the electric bill and the remainder entered as light on the "Statement of Cost sheet."

Other Cost Items: You now come to the items which depend entirely upon the amount invested in the respective departments, viz: Insurance and Taxes, Interest on Department Investment, and Depreciation.

To make easy figuring, it is suggested that you divide the investments into \$10, \$25 or \$50 units, according to whether you have a small or large plant. If a small plant, \$1,000 or \$2,000, use the \$10 unit. If large, use either of the others. After you have the total units, you can easily work out the amounts. The \$1,000 plant will have one hundred \$10 units. A \$5,000 plant will have one hundred \$50 units, and so on.

Insurance and Taxes: Use one-twelfth of the total amount of insurance and taxes paid for the year. Divide this amount by the total number of investment units of the whole plant and then multiply this result by the number of units in each department. Total these amounts and if the total does not agree with the first amount make such slight changes in the various departmental amounts until the two amounts are the same. Then enter these amounts in the respective department columns.

Interest on Department Investment: You are entitled to a certain and fixed amount of interest on the capital you have invested in your plant, because if it were invested in any securities it would bring you an interest return and the investment here must do as much. As explained about department investment, this is not what the business is worth, it is not profit, but it is the interest that your invested capital must earn before you can make any profit. Interest on your investment must be figured into cost of production, even if there is no profit shown in the business. What that interest rate should be is for you to decide. Practically all cost system users figure the rate at seven per cent except in those states where the common rate is more. It should never be less than six per cent. Capital invested in a manufacturing business is not as secure as if invested in farm mortgages and should, therefore, carry a higher interest rate. Ten per cent would not be too high, under most conditions, for a printing plant. The units mentioned under insurance and taxes are to be used again. One-twelfth of the amount of Interest on Investment for the year is divided by the total

departmental units, and this result is multiplied by the number of units of each department to get the proper amount to be charged to each. If the total of these departmental amounts does not agree with the total Interest on Investment, slight changes should be made in each department, to make the totals agree.

Depreciation: The principal reason for figuring depreciation in cost-finding is that the wear and tear on your printing equipment must be cared for through your costs, as it is a legitimate expense of the business. The true purpose of depreciation is to establish a replacement fund, which will care for the natural wear and tear of the equipment, and also provide for the destruction of any portion of its usefulness through accident or breakage. The amount figured for depreciation should be carried on your general ledger as a Replacement Fund account.

Type, machinery and other equipment will wear out, and must needs be replaced. There is no exact basis on which to figure the time it takes for the material to wear out, as some presses, for instance, have been in use for twenty years or more and are still doing good or fair work. New inventions, new styles in type and improved materials and machinery are coming out at frequent intervals, causing obsolescence of the old type and machinery, and the new will be used to replace the old and obsolete. The natural wear and tear must also be taken care of, and so depreciation becomes a large factor in the cost of production. In all modern cost systems for printing plants depreciation is figured at the rate of 10 per cent per annum on all machinery and equipment except type,

and this is figured on a basis of 25 per cent per annum. Because the life of much of the machinery and equipment of the printing plant will in actual service wear longer than the ten years indicated by this percentage, it may look large, but in that amount must be contained an amount for replacement to provide for the junking or scrapping of machinery or other material which will be replaced before it is worn out by new and more efficient machinery or equipment. It must also provide for accidental breakages. It has now become the custom of the trade to figure all depreciation on the bases given above.

As stated in the paragraph devoted to inventory, all machinery, type and equipment should be carried on the books on the basis of the present purchase values—not what it cost you ten years ago, and not an appraisal value—because any replacements made in your equipment, and any additions to the equipment purchased out of your capital stock investment, must necessarily be made at the present purchase price, not at the price of ten years ago. If the older basis of prices were used when your replacements are purchased the replacement fund would be very quickly exhausted, as the present prices are approximately double what they were ten years ago, and the investing of the entire replacement fund would not restore the equipment of your plant to its original efficiency and value. For this reason we strongly advise the figuring of depreciation into your costs on the basis of the present purchase price of all your machinery and other equipment.

Note.—We would suggest that the monthly increment of the depreciation be set aside and, if possible, deposited in the

bank under a separate fund for replacement purposes, so that when any of your equipment wears out or needs to be replaced you will have the cash on hand to so replace it.

In distributing the amount of the depreciation to the various departments of the plant use one-twelfth of the annual depreciation as outlined above. The same process of figuring is used as in the distribution of the interest on department investment, viz: divide the total annual depreciation by twelve, divide that result by the total of the departmental units, then multiply this unit of distribution by the number of departmental units in each department. Total these results and if it does not agree with the total amount of the depreciation make a few minor adjustments in the various departments until these totals do agree. Then enter the proper amounts under the department headings on the "Depreciation" line.

You are now done with the Department Investment; the rest of the factors in your costs are items of general expense that become a direct charge to the respective departments, and must be different in every office and are changed as experience and costs show. These factors will be taken up and discussed.

OFFICE EXPENSE

Bad Accounts: The average business loses one per cent of its accounts each year. If you do \$1,000 worth of work a month, at least \$10 should be set apart to take care of uncollectible accounts which will come up, if not in this month then in some other, and must be provided for. Bad accounts are part of the expense

of doing business and must be taken into account in finding the costs. You cannot run a business of any size or kind without losing some money; you are prepared for this loss if you have the amount figured into your costs.

Another method, frequently used, of ascertaining the monthly increment of bad accounts to be included in production costs is to take from your book accounts the actual losses for a period of two to five years past, average these losses to find the average loss per year and then use one-twelfth of this amount each month.

This item should be entered in the office column only.

Spoiled Work: Of course you spoil a job once in a while and as long as dependence must be placed on human heads and hands mistakes will be made. This expense is a legitimate part of production cost and must be provided for. Thus it becomes a part of the expense of your business, and must enter into your costs. Sometimes jobs have been spoiled that you knew nothing of. With the introduction of a Cost System, jobs are accounted for, and when a job is spoiled it has to be done over, and a new Job Ticket made out. The amount is usually two per cent of the total business, but records carefully kept may change this. If you have no spoiled work this month, you may have some later, so it is necessary to be prepared for it. The amount should be placed in office column only. Spoiled work may be charged each month as made, if so desired, and this is possibly the better way. All these special items should be charged month by month

and your experience will show which is the best way to handle them under the conditions in your plant.

Office Stationery and Postage. This is an item of expense, hence all stationery, office and cost system forms, etc., printed should be figured at cost prices and the amount entered into the expenses. Postage under this heading does not include postage paid for mailing the newspaper; the latter is a cost against the paper and not against the entire business. The amount is entered in the office column only.

Advertising. Every well-conducted printing office does some advertising. May be it is only a few imprints, or blotters, or it may be a well-defined campaign of publicity. However much or little, it is a legitimate business expense, and should be figured into the cost of doing business. If you advertise your job printing in your newspaper, the paper should be given credit for that, and the amount charged to expense. If you make an exhibit of your productions at the county fair the cost of making the exhibit, including the preparations of the specimens should be entered as Advertising. The same holds true of a window display. These items should all be charged and then be sure that you do the right kind of advertising—advertising that will bring results—for the amount charged. This amount is placed in the office column only.

Telephone, Telegraph, Etc. This includes the regular monthly telephone charge, all long distance tolls, and all telegrams. This amount is placed in the office column only.

Selling Expense and Commissions. This is probably but very little used in the average small shop. It covers

the cost of salesmen who solicit work either on salary or commission. It does not include salaries or commissions paid for selling advertising in or subscriptions to, the newspaper. That is a distinct charge to the paper. In city shops, this item may be used to cover commissions to printing brokers. Any allowances or deductions made to secure a settlement of an account receivable should also be included in this amount. This amount should be placed in the office column only, as it is wholly a general expense.

General Office Salaries. This is for salaries of all persons in the office who do not make out daily time tickets, but are carried on the pay roll, and draw a salary, this includes the proprietor who must also draw a salary just the same as any other employee of the business. If you are a proprietor of a shop and have no fixed salary, the first thing you should do is to decide on the salary, and then get it—just the same as your employees. It is a mighty poor business that will not pay a salary to at least one “Boss.” If you are just drawing enough out of your business to live on you cannot count that as a salary and it certainly is not a profit. A mere-existence style of living is a poor advertisement of the prosperity of your business. You are entitled to wages the same as your employees but at a considerably higher rate because of the greater responsibility, and in addition to that a legitimate profit over and above all salaries and expenses, as compensation for all your worry and trouble, to say nothing of what you have invested in the business and from this you are fully entitled to receive a reasonable interest return. Put yourself on the pay roll for a

salary—and draw it. Then if there are any profits left—you are making money, but not otherwise. This amount should be placed in the office column only.

Organization Dues, Donations, Etc. You say, perhaps, that you cannot afford to belong to a printers' organization. You can if you use a cost system, as this item is figured into the costs. Organizations are necessary for mutual protection and benefit of the members of the craft and their interests and the expense is a part of the cost of properly carrying on your business. Donations may be only a little yet printers often give more liberally than they should. All donations made for business reasons are an expense and should enter into your costs. If you do a job for nothing for church or lodge (which you should not do) the amount of the job at full price, should appear in this item. In this item should also be included subscriptions to the trade papers and all technical expenses of like nature. The amount is entered in the office column only.

Water, Soap, Towels, Etc. The dear old office towel would be renewed oftener, and might occasionally visit the laundry, if you could afford it. These three items are a necessity, though often considered a luxury, and are an item of expense that enter into your costs. The amount should be entered in the office column only.

Interest on Borrowed Money or Purchase Contracts. In discussing this item some time ago, a printer said this should come out of the profits. We don't see why. It is part of the expense of the plant. It is necessary in a great many instances to borrow money

to start in business and interest is demanded on deferred payments when machinery is bought on the installment plan. That is a part of the expense of doing business and should be figured in the costs. If your business has expanded beyond what your own capital will carry and it is necessary to borrow money to keep the business running smoothly, interest on such borrowed money becomes a proper charge against cost and should be included. Such money becomes, in fact, a part of the invested capital and as such is entitled to an interest return. There are so many chances of not making a profit, that every legitimate item of expense should be considered and included. If, by good luck, the printing business shall ever get to the point where the printer can make a certain and sure profit on every job, and get out of debt, this item need not worry him; but until that blessed day, it should be an item of cost. The amount is placed in the office column only.

Miscellaneous Expense. Under this head may come any additional expense that has not been enumerated above. You may have some unusual expense that comes up and should be taken care of. The amount should be charged to the department which receives the benefit, or if it is for the benefit of the business as a whole it should be entered in the office column. You now have all your office expense, which is totaled at the bottom of the office column, on the line entitled "Total Office Expense."

DIRECT DEPARTMENT EXPENSE

A special summary has been placed on the blank that the many small direct expenses in each of the departments may be taken care of and then brought forward to the line of direct department expenses. Illustration, cut number 11. These can be gathered from your cash-book expense and the monthly bills. These items should be entered for the month in which they were incurred, even though they may not have been paid in that month. They are a part of the cost of doing business for the month.

In the Stock Room you have knife grinding, wrapping paper, twine, etc., repairs, and other small expenses.

In Machine Composition you have oil, gasoline or gas, metal waste, repairs, etc. The metal waste on a typesetting machine is a big item. It is asserted that metal deteriorates at the rate of 20 per cent per annum. Of course this depends largely upon the amount of metal in use, and how often it is remelted. The value of the amount of the metal on hand, at current prices, should be ascertained, and a proper charge made for the waste. In the smaller plants, probably, 12 to 15 per cent per annum of the metal value would cover this waste. One-twelfth the annual amount should be charged the department each month. All repairs should be charged to this department as made.

On Hand Composition, there is benzine and lye for washing type, proof paper and twine, and other small expenses.

The Cylinder Press requires oil, rollers, tympan paper, rags and other items, which are an expense to this department. There is always a loss of time with poor rollers, and enough should be charged to cover the buying of proper rollers so that good work can be done.

On the Job Presses there will be the same items of expense as on the cylinders and the same disposition is made.

The Bindery uses glue, paste, brushes, gas or gasoline to heat the glue, and the knife of the paper cutter needs sharpening. These items all enter into your costs.

After ascertaining the direct department expenses the amount should be brought forward and entered under the right department heading and on line entitled "Direct Department Expense."

The departmental columns should then be added up and the total entered on the line "Total Department Cost Without Office Expense." This will give the amount of the cost of the different departments. You have still the cost of the office overhead or administrative burden left to be distributed against the departments.

Distribution of Office Expense: Right here is where a large amount of beading, brackets, wainscoting and other fancy trimmings can be added to the building now nearly completed. In the large plants there are several classes of expense which should, technically, be distributed on different bases to obtain accurate results. In the small and medium plants there are practically none of the classes of expense

which would, in the large plants, technically require a different base for distribution. Nearly all the expenses in the smaller plants have a direct relation to the product which is salable, or chargeable, hours so the base of distribution here used is, to all intents and purposes, technically correct. As the Practical Cost System is intended more particularly for the medium and small plants, and as we desire to make it as simple and easily handled as possible, we very strongly advise that this item of office expense be distributed against the departments on the basis of the chargeable hours of each department. This method is much the simpler and fully as accurate.

We have figured the summaries in a number of the medium and small plants in all the various ways and we find this simple method is as fully accurate as the others and that the variations in the hour costs found as between this method and the others is too small to be of any real moment, as it amounts to less than a quarter of a cent on the average hour.

We have now reached the chargeable hour again. On the line reading "Chargeable Hours of Each Department," place the number of chargeable hours as given in the pay roll summary. The costs are ascertained according to the chargeable hours, and the chargeable hour is, therefore, the unit or factor that determines the cost of your product.

Enter the number of chargeable hours on the line "Chargeable Hours of Each Department," and in the proper department column. Total these hours and divide the amount of "Total Office Expense" by the total number of the chargeable hours. This will give

the hour cost of the office overhead, or the hour unit of office cost. Multiply the number of chargeable hours of each department by this unit which gives the amount of office expense to be charged against each department. Total these amounts and if this total is not the same as the total of the office expense, make such slight changes in the departmental amounts as may be necessary to make them agree.

Now find the total department cost by adding the two amounts, in each departmental column, of "Total Department Cost Without Office Expense" and "Distribution of Office Expense." This amount represents the total overhead, both shop and administrative.

The hour cost of each department may then be found by dividing the "Total Cost of Departments" by the chargeable hours shown for each department. In finding the hour cost, if there is a fourth of a cent or more fractional remainder, add the full cent to the hour cost.

If this work has been done correctly and no details of expense omitted, you will now have the accurate departmental hour costs in your own plant. These will enable you to fill out the Job Record summary of job costs with authoritative figures from which there can be no appeal. It will then only be necessary to add to the cost of a job whatever amount you consider to be necessary as a profit and thus get the selling price of the job.

Average Hour Costs: When you have obtained the hour costs for the first month, in each of your departments, they will be entirely reliable for use as a basis of obtaining your job costs and, consequently, the

selling price of your product for the second month. When the hour cost has been obtained for the second month, we advise the averaging of the hour costs for the two months for use in figuring job costs during the third month.

In getting the average hour costs for the two months do not add these hour costs together for each department and divide by two, as that will not give you the true average. This method is merely averaging averages and is not mathematically correct. The true way of obtaining the average hour cost is as follows: Taking for example the department of hand composition, add together the total "cost of department" for the first and second months. Divide this amount by the total productive hours for the two months. The result will be the actual average hour cost for these two months. Do the same with each of the departments.

At the end of the third month find, by the same method, the average hour cost for the three months. Repeat this process each month during the first year of the use of the system. You will then have your average hour costs for the preceding twelve months. At the end of the thirteenth month drop the figures representing the department cost and productive hours of the first month and in their place use the department cost and productive hours of the thirteenth month. At the end of the fourteenth month drop the same items of the second month and use those of the fourteenth month. Continuing this month by month, you will always have an average hour cost for the preceding twelve months.

The reason for using these average hour costs is: That during some of the months of the year your productive hours may very materially fall off, thus largely increasing your hour costs for that month. During other months of the year you may be rushed with work and your productive hours will greatly increase which will make your hour cost for that month lower. You can readily see that if an active month is followed by a month of low production, that you will be losing money in using your low hour cost for making selling prices during the month of smaller production. The reverse of this is also true. By averaging these hour costs for a series of months, the exceptionally high and the exceptionally low monthly hour costs are both absorbed in the average hour costs. This gives an hour cost which is wholly safe to use in establishing selling prices for the product of your plant, as it covers all changes in production costs. This method of averaging the hour costs also provides for a gradual increase in cost caused by increase in labor cost, or an increase in material cost or in rent. It would also equally well provide against any reductions in the cost of doing business; so that there will be neither a sudden increase in your hour costs nor a sudden decrease.

While finding the average cost entails a little more work, it still amounts to but a few minutes each month, and it provides a measure of safety and protection, both for yourself and your customer, which renders it well worth while.

CHAPTER IV

PROFITS OR LOSSES

The cost structure is now finished; you have ascertained what the hour cost is in your own plant and by carefully studying the result, many leaks that appear can be traced and stopped. If the hour cost of a department seems too large, or is greater than the average in other plants, about the only known and practical remedy for that condition is to get more work for that department with a consequent increase of its productive hours. The hour costs found by the working of this Practical Cost System are absolutely accurate and correct under the existing conditions in your plant.

The Right Price: A printer needs only determination and backbone to get the right price for his work and be sure of a profit on all work done. What is a just profit? The general opinion is that 25 per cent of the cost is about right on the general run of work in the smaller plants. That means a one-fifth or 20 per cent net profit on the selling price.

Profit and Loss: For a further statement of the details of the business, and to put on an extra finishing touch, we have added a "Statement of Profit and Loss."

This is a simple little form that is certainly an eye-opener. Illustration, cut number 11.

All the job records that have been completed the previous month are taken and their amounts added and the total amount shown entered on the line provided. The total amount of advertising for the month is entered, then the total amount received on subscriptions. These, with miscellaneous receipts, which are not usual but may sometimes appear, are then totalled, which gives the total receipts or the gross amount of business done for the month. The total amount of the stock used for the month, including ink as shown by the job records, which will, of course, include the stock and ink used for the newspaper, is then deducted from the gross amount of business. This gives the gross profit, and from this must be deducted all the expenses as shown by total of column headed "Total Disbursements" in the statement of cost. The result will show whether you have made any real money or not. If you do not publish a newspaper, the part pertaining to it need not be taken into consideration.

Another statement form is that of profit and loss as shown by job tickets. Every job record has a place for profit or loss. Add these items up as shown by the job records for the month, deduct the losses shown on the job records and you can easily see what the result is and whether the job end of the business has made a profit or a loss.

To find whether you are making or losing money on your newspaper, take the job records showing the cost of your paper for the month, then figure the amount of your advertising, add the amount received on subscrip-

tions to this and deduct the cost of producing the paper and you will then know whether the paper is a paying or losing game, and what you will have to do to make it pay if it shows a loss.

The Newspaper: The printing of your newspaper should be like the printing of any other job in your office. A job ticket should be made for every issue, daily or weekly, and all the time used on the paper, and all the extras such as plate, ready-prints, editors' and reporters' salaries or the portion of the proprietor's salary for the time he may spend in editorial work should be charged directly to the job record. This will give the cost of the paper, issue by issue. It is not possible to run a system satisfactorily any other way, and you cannot get your correct hour costs without treating the newspaper just as though it were an outside job.

Paying Investment: If you will take the time to build your cost system and to keep its records accurately you will find it the best paying investment you ever made, for no work you can possibly do will bring you better returns for the time required and money invested.

A Larger System: This system here described is especially suitable for the small and medium sized offices of ten or less shop employees, where the owner desires to operate a cost system without the need of calling in an expensive cost expert. In fact, the services of a cost expert are wholly unnecessary, for with this Practical Cost System, if the user will but give these instructions close study and proceed with the

work step by step, as here indicated, he cannot fail to get the accurate hour costs for his shop.

Large offices will probably find it a paying investment to hire an expert, although this Practical Cost System, with the use of more and larger forms, can readily be installed and operated by anyone who has a fair knowledge of the principles underlying the science of cost-finding.

A great many experts who do not thoroughly understand cost-finding work nor cost systems have entered the field and printers should be warned that incapable cost men do more harm than good.

Should you desire to extend your knowledge of figuring and finding costs or to learn of short cuts, or to extend your knowledge of the principles involved, send for Mr. Porte's book "How to Figure Costs in the Printing Business."

INDEX

	Page		Page
Advertising		Commissions	
Hand Composition on.....	34	Agents.....	76, 77
Machine Composition on.....	36	Disposition of.....	77
Of Business.....	76	Newspaper, on.....	77
Work number of.....	34	Composing Room	
Alterations		Expenses, list of.....	80
Authors'.....	34	Inventory of.....	83
Hand Composition, what are.....	34	Sink hole, was.....	32
Machine Composition, what are.....	35	Work numbers of.....	33
Attached Folder		Work of.....	33
Classification of.....	43	Composition	
Feeder, as press assistant.....	41	Alterations.....	34, 35
Feeder, time of.....	41	Clean up, hand.....	37
Feeder, wage of.....	41	Clean up, machine.....	38
Automatic Feeder		Corrections:	
Classification of.....	41	Non-chargeable.....	37
Time on, how kept.....	41	What are.....	37
Bindery		Distribution:	
Little used.....	12, 43	Non-chargeable.....	37
Binding.....	45	What is.....	37
Classification of work.....	43-46	Time of.....	33
Expense, distribution of.....	81	Time, guessing at.....	32, 33
Folder, attached, time on.....	41, 44	Work of.....	33, 34
Folder, hand fed, time on.....	43, 44	Cost of	
Folding, hand.....	43, 44	Departments, how found.....	81, 82
Folding, machine.....	43, 44	General relations.....	5
Inventory of.....	62	Handling stock.....	29
Work numbers of.....	43	Labor hour.....	65
Work of.....	43	Job, relation to.....	4
Burden		Production.....	5, 18, 50
Diagram of.....	5	Statement of.....	59-82
Elements of.....	6, 48	Summary of.....	59
Business		Cost Clerk	
Bad accounts in.....	74	Extending time.....	48, 49
Borrowed money for.....	78	Ring time, auto feeder.....	42
Expansion, capital for.....	78	Ring time, bindery work.....	49, 52
Profit or loss, found.....	86, 87	Ring time, cylinders.....	49
Changes		Ring time, stock room.....	49
Authors.....	34	Ring time, linotype.....	38, 52
On press.....	40	Cost Experts	
Chargeable Time		Mistakes of.....	66
Definition of.....	47, 48, 59	Needless, this system.....	2, 88
Distribution of.....	82, 83	Warning.....	89
Record of.....	55, 58	Cost System	
Classification		Larger form.....	1, 88
Automatic fed jobber.....	41	Need of.....	1
Bindery.....	46, 47	Now in use.....	2
Folder, attached.....	41	Paying investment.....	88
Folder, hand fed.....	41, 44	Custom of Trade	
Paper cutter.....	46, 63	Handling stock.....	29
Presses, cylinder.....	39, 41	Cutting Stock	
Presses, platen.....	39, 41	Combination, handling.....	31, 32
Presses, proof.....	63	Losses on.....	28, 29
Clock		Why chargeable.....	28
Unit face for.....	16		

	Page		Page
Cylinder Presses		Efficiency	
Classification of	41	Of employees	18
Feeder, time on	40	Of equipment	18, 19, 20, 33
Inventory of	63	Of management	18
Ringing time on	42, 49	Envelope	
Daily Time Ticket		Job, explanation of	9-13
Accuracy of	14	Job, copy in	14
A sales record	18, 20	Expenses	
Explanation of	20-26	Direct department	80, 81
Extension, time on	42, 47-8-9	General	74-79
Extension to hour record	55, 58	Miscellaneous	79
Improved form	24	Office	74-79
Reason for	15, 17	Power, relation to	5
Working of	20	Experts	
Work numbers on	25, 26, 48	Cost, mistakes of	66
Delivering		Cost, needless	2, 88
Chargeable to office	27, 28	Cost, warning	89
Chargeable to stock	31	Extending Time	
Time ticket for	31	On job record	50-54
Departments		On job tickets	47, 48
Classification of	14, 25, 32-47, 55	To hour record	55-58
Cost of, how found	81, 82	Feeder	
Direct expense of	80, 81	Auto. press, time on	41, 42
Labor cost of	65	Cylinder, time on	40
Pay roll, summary of	64	Folder, time on	41
Depreciation		Press assistant	40
As replacement	72	Fly Sheet	
Bases of	72, 73	As job record	12, 50
Distribution of	74	Job ticket, part of	12
Rate of	72	Kept in office	12
Why used	72	Folder	
Diagrams		Attached, time on	41
Expense relations	5	Inventory of	63
Job of printing, costs	3	Separate, time on	43, 44
Distribution		General Expense	
Chargeable time	47, 48	List of	74-79
Composing room	37	Handling Stock	
Department investment	62, 63	Cost of	29
Ditto, interest on	71, 72	Inventory	64
Depreciation	74	Losses of	29
Direct expense	80, 81	Hour Cost	
General expense	74-79, 81-85	Average	83-85
Heat	66, 67	How found	83
Insurance	71	Relation to newspaper	88
Interest:		Inventory	
On borrowed money	78, 79	Installation cost, part of	62
On investment	71, 72	Items of	63, 64
On purchase contracts	78, 79	Present cost used	63, 64
Light	68	Valuation bases	63, 64
Miscellaneous expense	79	Investment	
Office expense	74-79, 81-85	Amount, how found	62
Pay roll	5, 6, 64	Department	62, 63
Power	5, 69	Interest on	71
Rent	67	Valuation bases	62
Selling expense	77	Interest	
Spilled work	75	Distribution of	71, 72
Taxes	71	Time burden	4, 5
		Use in cost system	4, 5, 71, 78

	Page		Page
Insurance		Non-chargeable Hours	
Distribution of	71	Burden on labor	4, 48, 66
Impressions		Not salable	59
Record of	39	Record of	48, 55-58, 66
Job Costs		Unavoidable	18
Diagram of	3	Office Expense	
How found	50-54	Distribution of	74-79, 81-85
Record of	50-54	Office Work	
Total of	52, 53	Delivery as	27, 28
Job Envelope		Description of	26-28
Description of	9	Non-chargeable	42, 61, 62
Fly sheet, part of	12	Organizations	
Simple form of	9-13	Dues to	78
Use of	9-13	Necessity of	78
Job of Printing		Overhead	
Diagram of	3	Administrative	5, 6, 74-79
Progress in plant	3, 4	Diagram of	5
Cost on	50-54	Elements of	5, 6
Job Presses		Office expense as	6, 74-79
Automatic fed	41	Part of cost	6
Classification of	39, 41	Pay Roll	
Inventory of	63	Hour cost of	65, 66
Job Record		Office, disposition of	5, 6, 77
Advantage of	54	Proprietor on	5, 6, 65
Form of	51	Shop, distribution of	5, 64
Profit and loss from	50-54	Percentage	
Time to	50-56	Handling stock on	30
Use of	50	Wrong principle	30
Job Register		Plant Inventory	
Description of	7, 8	Basis of value	62
Job Ticket		Items of	63, 64
Explanation of	9-13	Power	
Labor		Distribution of	5, 69
Burden on	3, 4	Division of	68
Cost of	4, 20	From light current	70
Cost of, to find	65	From one motor	69, 70
Hours, cost of	83	From gasoline engine	68, 70
Supervision of	65, 66	Press Room	
Leaks and Losses		Auto. feeder	41
Alterations	34	Classification in	39-41
Bindery	43	Inventory in	63
Cutting stock	28	Number impressions	22
Guessing time	33	Production Cost	
Handling stock	29, 30	Labor, relation of	66
Inefficiency of plant	29, 30	Office expense part of	4, 5
Proprietor, work of	6, 27	Shop expense part of	4, 5
Spoiled work	75	Profit and Loss	
Trimming	43	Job work, how found	50-54
Wasted time	20	Newspaper, how found	87, 88
Light		Summary of	86, 87
General expense only	68	Proofs	
Power from, wires	70	Exception, chargeable	36
Newspaper		Pulling, non-chargeable	36
Advertising job work	76	Reading, non-chargeable	37
As a job	88	Proprietor	
Commissions on	77	Salary of	6, 65
Direct expense on	77, 88	Shop work of	6, 27, 65
Profit or loss on, how found	87, 88		
Relation to hour cost	88		

	Page		Page
Record		Summary of Cost	
Chargeable hours	55-58, 66	Job record	54
Hours, extension to	55-58	Plant, total of	59
Job record	50-56	Time	
Rent		Burden on	4
Distribution of	67	Chargeable	55
How to find	67, 68	Element of cost	13
Replacement		Non-productive	18
Fund for	73	Unit of	15, 16
Why needed	72, 73	Time Ticket	
What it is	72, 73	Explanation of	14
Ringling Time		Illustration of	19, 21, 23
Cylinder press	42, 49	Reason for	15, 17
Stock work	49	Working of	20
Type setting machine	49	Type Setting Machine	
Salaries		Cleaning	38
General office	4, 5, 77	Inventory	63
Proprietors	4, 5, 77	Power, to find	70
Stock Room		Work, Classes of	
Cutting, cost of	28, 31, 32	Bindery	26, 43-47
Delivery, work of	31	Composing room	25, 33-37
Handling stock	29, 31, 32	Office	26, 27
Unpacking and shelving	31	Stock room	25, 26-32
		Work numbers	25, 26