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NATIONAL ASSOCIATION
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COST ACCOUNTANTS



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Ink Costs in the
Printing Industry

WOOLWORTH BUILDING
233 BROADWAY NEW YORK CITY

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A Method of Obtaining Ink
Costs in the Printing Industry

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National Association of Cost Accountants

A METHOD OF OBTAINING INK COSTS IN THE PRINTING INDUSTRY

One of the most difficult problems in the printing industry today is to find an adequate and accurate method of obtaining the amount and cost of the ink used on the various productive orders. The problem has been doubly difficult during the last three or four years because of the rapidly changing and widely fluctuating market caused by the great war which has just ceased. For example, one might have obtained certain colors one day at 85c a pound, and yet within the course of a week or so the same color could not be bought for less than \$1.00 or \$1.25 a pound. Some ingredients have reached the peak in prices and have now slumped off a little, but others are still rising. This situation increased very materially the difficulty of an already difficult problem. If the problem had been to establish selling prices only for the various inks, the solution would have been comparatively simple. This was not the case, however. When an order has been run through the printing presses and has been completed in the finishing processes, it is the duty of the cost accountant to report to the management of the concern what it actually cost to manufacture the order. Among the various items of the cost of manufacture is the actual number of pounds of the various colors of ink used for the order and the cost per pound of each color, finally making one total to cover the total cost of the ink used.

The method of obtaining these costs outlined here is laid out for use in a large printing plant, which not only buys quantities of finished ink but also has an ink department in which it manufactures a large part of the inks which it uses, thus necessitating the purchase of quantities of dry color and pulp. Under these circumstances the ink department should be considered as an entirely separate branch of the industry apart from any of the productive centers pertaining strictly to the manufacture and printing of any productive order.

The ink department produces and sells to the printing plant a finished product consisting of finished ink. This finished product should be sold to the printing plant at a price which must not include any profit. One of the functions of the cost accountant is to see that each batch of ink sent to the printing plant is accurately priced so that the amount charged to the printing plant during any period, be it six months or a year, covers only the costs incurred by the ink department in making the ink delivered.

In order to do this, it is necessary to divide the expense of the

ink department into two principal divisions. One division is to cover the cost of materials used in the manufacture of the ink, and also the cost of all finished inks which are bought outside. The other division is to cover all the expense incurred in operating the ink department itself. Since the expenses of these two divisions are allocated to the different batches of finished inks under entirely different methods, it is necessary to discuss each division by itself. We will discuss first the division concerning the cost of materials.

Inasmuch as the number of ingredients used in the inks in a large printing plant runs well into the hundreds, and furthermore, as these ingredients are received at the plant in various conditions, such as: finished inks, dry colors, pulp, and so forth, it is highly desirable, in fact almost necessary, to establish a "code," consisting either of numbers or letters, to represent the various ingredients. This code should be kept only in the ink department and the cost department in order to prevent formulae and other information from getting into the hands of competitors. This is also an aid in obtaining accuracy in the records because the cost department clerks are usually not as familiar with the names and uses of the various ingredients as are the foreman and chemist of the ink department. If numbers are used, the range from 1 to 1,000 might be used for finished inks; 1,000 to 2,000, dry colors; 2,000 to 3,000, pulps; and so on.

When it becomes necessary for the ink department to obtain ingredients with which to manufacture its inks, it sends a requisition to the purchasing department requesting that department to obtain certain quantities of various ingredients. All these requisitions bear the code numbers of the various ingredients in question. Upon receipt of the requisition, the purchasing department sends out purchase requisitions for the ingredients desired, sending a copy of each to the cost department. The copy sent out to the trade *does not* bear the code numbers, but the copy sent to the cost department *must have* them entered upon it. Thus it will be seen that the entire classification of ingredients properly originates in the ink department, but the cost department is kept fully informed of the ingredients which are ordered from time to time.

Upon arrival of the goods they are placed in stores by the stores department. The invoice is checked by the purchasing department and the proper code placed against each item. The invoice is then forwarded to the cost department for its records. This latter department will handle the invoice in the following manner: It will enter the quantity, price and total on the debit side of an "Inventory and Price Record" card or folio which it has for this purpose. This record may be kept on a card or in a loose leaf ledger. The card or folio should be ruled in such a manner that one-half represents the debits for incoming ingredients, and the other half represents the credits for ingredients used. At the top of the card or folio there should be noted in a space provided the average prices of the ingredients received and used. A card or

folio should be made for each individual ingredient having a code number. Too much importance cannot be placed upon this record, for upon its accuracy depends the accuracy of the prices which it is proposed to charge for the finished inks.

The invoice is also checked with the copy of the purchase requisition to which it applies. By this method of procedure the cost department is informed whether or not the ingredients called for on the purchase requisition have been received in full or only in part. It also enables the cost department to check the code numbers appearing on the invoice and those on the purchase requisition, thus assuring the accuracy of the classification of the ingredients received.

A report is sent to the ink department covering the quantities and prices of the ingredients called for on the invoice. This report enables the foreman and the chemist of the ink department to be in constant touch with the purchase values of all materials. This is absolutely necessary in order that they may intelligently carry on their experiments and manufacture inks with a view to obtaining the best product at the lowest cost.

After recording the invoice in the manner just mentioned, the cost department forwards it to the financial department to be debited to the stores account and to be entered for payment. There must be a hard and fast rule in the cost department that all these records must be made from the invoices promptly upon their receipt in order that they may be forwarded to the financial department in time for that department to make its records and to take advantage of any cash discounts.

Now that we have discussed the receipt and storage of materials, together with all the necessary records of them up to their delivery to the ink department, it is in order to discuss briefly the proper location and personnel of the ink department. That department should be located in a convenient place immediately adjacent to the press department, from which, however, it should be absolutely separate and apart. It is highly desirable to have only one entrance to it from the press department, which should at all times be closed to press department employees except those who receive permission to enter from the foreman of the ink department. The door at this entrance should have an upper half which may be open while the lower half is closed. Upon the top of the lower half there may be built a broad shelf so that it will be a counter when the upper half of the door is open. Through this entrance, or over this counter, all inks delivered from or returned to the ink department must pass. An employee of the ink department is stationed here at all times during the day to supervise all transactions that occur at this point. This employee must be perfectly trustworthy, have a thorough knowledge of the ingredients used in the ink department, and be more or less of a diplomat; at the same time he must rigidly adhere to all the rules laid down covering the delivery and receipt of inks, for upon him rests a large share of responsibility for the

accuracy of the records of inks delivered to and returned from the press department. For convenience, we will refer to this employee from now on as the ink clerk.

When the ink department desires to obtain ingredients and supplies for the manufacture of its inks, it makes requisitions in duplicate on the stores department for them. The original goes to the store house and the duplicate to the ink clerk. The supplies and ingredients will be delivered by the stores department through the one entrance which has just been described. The ink clerk will check off the receipts on his duplicate copy of the stores requisition and receipt the original requisition which will be sent by the store house with the supplies. The original is then returned to the stores department as its record showing that delivery has been made.

It is assumed that the organization has an up-to-date stores system whereby it undertakes to keep a perpetual inventory. Under that system, all the original stores requisitions for each day's transactions are priced and extended by the stores clerk on the day following the transactions and are then entered on his records and finally sent to the cost department.

It must be understood that these requisitions are to be priced at the *actual cost* of the goods delivered. Emphasis is placed upon this because the purchase prices of individual ingredients have fluctuated widely during the last few years, as stated above. Every lot delivered must be priced at its own purchase value. An average price at this point in the procedure is not practicable.

Upon receipt of the original stores requisition, the cost department becomes informed that certain ingredients and supplies have been transferred from the storehouse to the ink department and it learns also the value of these materials. The supplies for the department and the ingredients to be used in the inks as called for on the requisitions are totaled separately each day and the requisitions are then filed. At stated periods a final total is made of the daily deliveries. Once every four weeks is usually a convenient time at which to make these final totals, but this depends largely upon the method of accounting in use by the concern in question, and upon the frequency with which it obtains a balance sheet. This final total of the ingredients delivered is debited to the "Ink Department Materials" account, and the supplies to the "Ink Department Supplies" account. The total of the two is credited to the "Stores" account.

We have now traced the materials into the ink department ready to manufacture, that department being charged with them and the stores department credited. As certain expenses are yet to be incurred in the process of handling and manufacturing the inks, it is well to discuss here somewhat briefly the second principal division of expense, which as previously mentioned, covers the operating expenses of the ink department.

The expenses of the department will be subdivided of course into a standard classification, such as: salaries, productive labor,

supplies, machinery repairs, depreciation, taxes, insurance, water, proportion of general auxiliary expense of the entire plant which pertain to the ink department, and the like. There is one item of expense which must not be overlooked in making these subdivisions and that is waste inks. A certain amount must be charged to the department each time the ink records are closed to cover the unavoidable waste. The only method by which this charge can be ascertained is to make tests at various times with the different grades and varieties of ingredients, and thereby learn what the waste in handling and manufacturing actually is.

It now becomes necessary to discuss the system whereby all these items of expense may be properly allocated to the various batches of inks handled and manufactured. In this connection it should be remembered that large quantities of finished inks are bought and delivered to the ink department. The only labor on these inks will be the handling, such as: storing them until they are delivered to the printing plant, testing the shades, and keeping the records covering the transactions. There will be other materials which will need only to be put through the mixing tubs. Finally there is the large bulk of materials which will have not only to be put through the mixing tubs but also over the ink mills, from one to eight or ten times. It is primarily for this latter class of materials that the organization of the ink department has been built up and practically all of its machinery and equipment installed.

Under these circumstances it seems fair that the operating expenses of the department should be borne entirely by those materials which require "Mixing Only" and those which require the whole process of manufacture, that is: "Mixing and Milling." This method is not theoretically accurate, but it aids very materially in simplifying the problem and also it facilitates getting accurate returns to the cost department. It might further be said that it seems hardly reasonable to add an additional charge against the printing plant for finished inks bought outside, over and above their purchase value, to cover the period of time these inks may be in the ink department, which in some instances is only an hour, while in others it is two weeks or longer. The decision of this question, however, must be based on the conditions prevailing in each individual plant. For the purpose of this outline the operating expense of the department is borne by those materials which are "Mixed Only" and "Mixed and Milled."

The foreman of the department receives a daily report of the number of pounds of ingredients which were "Mixed Only" and the number of pounds which were both "Mixed and Milled." The number of pounds milled will represent the number of pounds which went over the mill; for example, if ten pounds of ingredients were milled five times, his report would show fifty pounds milled. From these reports, the cost accountant ascertains how many pounds were mixed and milled during a year, and he will estimate as nearly as possible the number of pounds to be mixed and milled during the

coming year, basing the estimate upon the foreman's experience and the general condition of the company's sales. Having determined the estimated number of pounds to be "Mixed and Milled" for the ensuing year, it is necessary to determine what expense each pound which is "Mixed Only" should bear in relation to each pound which is "Milled Only." For use here it will be arbitrarily fixed at 50 per cent. or one-half of the expense. Thus in determining the final total of the pounds "Mixed" and "Mixed and Milled," it will be necessary to take all the pounds "Milled" plus one-half of the pounds "Mixed." Upon this total the operating expenses of the ink department will be prorated, each pound "Mixed Only" bearing one-third as much expense as a pound which is "Mixed and Milled." Further, a pound which is milled eight times bears a proportionately heavier expense than a pound which is milled only once. In this manner all the operating expenses of the ink department are absorbed by what will be called a "Mixing and Milling Charge." It is necessary that a record be kept in the department covering the "Mixing and Milling" details of each batch of ink made for the various orders, and that copies of these records be sent to the cost department as will be described later.

We have now progressed to that point in the procedure where the ink department is awaiting requisitions from the printing plant stating the kind and shade of ink desired. The pressman at each individual press will estimate the number of pounds of color required for the particular shade he is about to run on his press to cover the order which he has in hand and he will make out a requisition on the ink department for the ink. This requisition must bear the order number which has been assigned to the order which he is about to print, and it must show the customer's name and the color. After obtaining the approval of his foreman, he presents the requisition to the ink clerk, of whom we have spoken previously. If it is a finished ink bought outside and it is on the shelf, the ink clerk will deliver to the pressman the amount called for, and immediately put the code number against the item on the requisition. If the ink is to be manufactured, he forwards the requisition to the foreman of the ink department. Upon completion of the manufacture of the ink, the foreman has the formula recorded upon the requisition and sent back to the ink clerk with the ink. The ink clerk has the batch weighed, putting the actual weight on the requisition, and immediately places all the code numbers against the various items called for in the formula. It must be understood that the formula states the number of times the batch was milled as well as the ingredients used. The ink clerk must receive a requisition for every pound of ink or ingredient which he delivers to the press department, or in fact, to any other department, and he must also verify the weight on all deliveries and see that they are properly coded on the requisitions.

The previous paragraph states that the pressmen estimate their requirements as nearly as possible; this is done with both the

aid of their foreman, and at times of the foreman of the ink department. Nevertheless, some ink will always be left over at the completion of each color run which must be returned to the ink department. In all well-managed printing plants it is the aim of the management to keep this item of returned inks at the lowest possible figure. Every pressman should take pride in being among the number who return the smallest amounts of old inks; this phase of the problem will be taken up again later. Upon emptying the fountains after the color run is completed, the pressman makes out an ink credit slip bearing the color, order number and customer's name, to accompany the old ink which he returns. This credit slip may be of a color different from that of the regular ink requisition in order to be easily distinguished. The ink clerk will weigh the returned ink and place the actual weight upon the ink credit slip, together with the code numbers, which designate the particular shades of old ink returned, and then file the slip with the ink requisitions and ink credit slips which he has received during the day. Absolutely no ink or ingredient should be returned without a credit slip.

By this method a record is kept of all inks and ingredients delivered from and returned to the ink department. At the close of the day, all the requisitions and ink credit slips are forwarded to the cost department, which will have obtained a record of all the transactions made by the ink department. The slips will be sorted in temporary files according to the order numbers which have been placed upon them and the various requisitions. This operation is done each day, thereby assembling all the deliveries of inks against the individual orders upon which they were used.

Upon the completion of each color run, the requisitions and credits pertaining to each are removed from the temporary files for further recording, which will be described later. It is of interest here, however, to explain how the cost department receives information that color runs are completed. It is the duty of each pressman to send to the cost department at the close of each day a press report covering the activities of his press during the day. Among the data to be reported, he must include all the color runs he has completed during the day, stating of course the order number and customer's name to which each pertains. A list of these completed runs is made up daily in the cost department and this gives the required information as to when it is proper to remove the ink requisitions and ink credits from the temporary files for the final records in preparation for pricing and charging to their respective orders.

Upon receipt of the information of the completion of the color run, the cost department will make out a record for this color run which will be called an "Ink Card." One side of this card will bear the order number, customer's name, color, and any other general information desired in regard to the order in question. On the reverse side there will be recorded all the ink requisitions and

credit slips which have been received relating to the color run completed and the requisitions and credit slips will then be placed in permanent files. When entering the requisitions and credits on the ink cards, it is necessary to record the code numbers and the number of millings as well as the quantities and names of the various ingredients. In some instances there may be more than one requisition calling for the same ingredient, in which case they may be assembled and entered as one item. An ink card must be made out for each completed color run.

After these entries have been made, it becomes necessary to price the ingredients used. It is at this point that the "Inventory and Price Record" card, which was mentioned above, comes into use. As previously explained, there is a card or folio for each code number. The card or folio bearing the number which corresponds with the code number against the first item on an ink card is taken from its file. The average price of the ingredient appears at the top of the card and this price is entered against the item on the ink card. The amount of the ingredient used per the ink card is then posted on the *credit side* of the "Inventory and Price Record" card, and priced at the same price as used on the ink card. This operation is followed for each individual item on the ink card with the exception of the credits, which will be discussed later. In this manner, all the ingredients on the ink cards are priced at the prices prevailing at the time they are actually used, and the "Inventory and Price Record" cards receive credit for all the materials issued by the ink department at the same prices at which they are charged to the various productive orders.

The average price on the "Inventory and Price Record" card is obtained by the following process: The total quantity and value of the ingredient received and debited to the "Inventory and Price Record," as previously explained, is extended first. From these totals is deducted the quantity issued by the ink department and the value at which it has been credited to the "Inventory and Price Record." By dividing the remaining value by the balance of the quantity on hand, the average price of the ingredient on hand is obtained. It will be noted that this average price applies to all the ingredient on hand, whether in the store house or in the ink department, for no credits are made on this record until the ingredient has actually been issued by the ink department for use in the printing plant. This method of procedure has a tendency to standardize prices for any one ingredient among the various productive orders, notwithstanding the fact that the purchase prices may have fluctuated very materially. It would hardly be fair to charge one order considerably more or less than another for the same ingredient simply because it was fortunate or unfortunate in receiving ink from a particular lot. Further, it is impracticable and almost impossible to keep the various lots separate in the process of manufacture, in order that accurate records may be sent to the cost department. By the method outlined here, the average price will fol-

low the general tendency of the market, and at all times the full value of the ingredient purchased will be finally absorbed on productive orders. A new average price must be ascertained at stated periods, at least monthly. New average prices should be ascertained for all the ingredients at the same time.

Credit slips are handled somewhat differently from ink requisitions. There are two classes of returned inks or ingredients covered by credit slips. One class includes those inks or ingredients which were never actually put on the press by the pressman, in reality a surplus supply, and which can be issued again on another order requiring those particular inks or ingredients without any further manufacturing labor or expense to make them serviceable. The other class consists of those inks or ingredients which are taken from the press upon the completion of the color run and which have become unserviceable for other orders until they have been re-mixed with other ingredients and re-milled. These are called "Old Inks." When inks or ingredients are returned to the ink clerk, he codes those of the first-class as regular finished ink and places them in stock to be re-issued when required. All those of the second class he codes as old ink, under a code number for each particular standard shade of old color. The cost department is thus informed of the nature and condition of all returned ingredients or inks. When the cost department is entering the various ingredients issued upon the ink card, all those of the first class of returned inks may be deducted from the original amount issued. Credits covering old inks must be entered separately on the ink card. The old inks will then be debited to the "Inventory and Price Record" card.

Credits covering old ink will be priced at a figure which will be established as the result of experiments in the ink department conducted to ascertain how much expense is necessary to make the ink serviceable for new orders. This additional expense is deducted from the average of the original prices of inks of this shade, thus obtaining a fair price for the old inks as they are returned by the press department. It is fair to have the orders for which these inks or ingredients were originally issued bear the difference between the original price for the new ink and the price for the old ink returned, because in the printing of those orders, the inks were converted into old inks. It will be noted that the "Inventory and Price Record" for old inks carries very valuable information concerning the quantities and shades of all old inks returned. These particular cards can be somewhat enlarged if it is desired to show the various presses from which this ink was received. Returned ink is an item to be watched very closely in order to keep the quantity down to the lowest possible minimum.

We have now discussed the method of pricing ink requisitions and ink credits in the ink card. One other item remains for pricing and that is the "Mixing and Milling" record. The method of arriving at a "Mixing and Milling" charge per pound has been previously explained. The number of mixings and

millings per pound recorded upon the ink card will be priced at the cost per pound which has been previously ascertained.

The various items on the ink card are extended and totaled to give a total cost of ink actually used on each particular color run. The ink card is now in condition to be charged to the productive order upon which the ink was used.

The foregoing outline covers in a general manner the various methods and records necessary to obtain the quantity and value of inks used upon individual orders. It is now in order to discuss the method of closing the records of the ink department in order to ascertain whether or not the prices charged for ink and ingredients have been sufficient to cover the expense incurred. In discussing this phase of the subject, it must be assumed that the concern in question has a modern accounting system and that all ink department expenses are properly recorded, according to the standard expense accounts already outlined.

It is highly desirable to close the accounts every six months; never less frequently than once a year. The various debits to the ink department may be summarized as follows: A monthly total of all the requisitions received by the cost department from the stores department covering materials and ingredients delivered by it to the ink department will be obtained as previously explained. A six months' or a year's total will then be ascertained, to give the total cost of *materials* delivered to the ink department.

The various operating expenses of the department which have been charged in the regular routine will also be totaled monthly, and finally assembled in a six months' or year's total. There is one item of expense, however, which must be deducted from these totals, and that covers the waste ink. This is merely a blanket charge made against the department to assure that a sufficient amount is charged against productive orders to cover all waste. If this item were not deducted, it would appear twice in the records; once when the materials are delivered to the ink department, and again when these same inks or ingredients are considered as waste. The total of these two main divisions, namely: materials and operating expenses, gives the total cost of operating the ink department.

It is now necessary to obtain the amount charged to productive orders during the same period. At the close of each four-week period, the total of the credit sides of all "Inventory and Price Record" card is ascertained, thus giving the total amount of all ingredients and materials issued by the ink department and charged to productive orders or otherwise. A six months' or a year's total of these materials issued can be compared with the total cost of materials received by the ink department as outlined above. These totals, of course, must be adjusted by an actual inventory taken in the ink department.

A daily record will be kept by the cost department showing the total charges made against productive orders for "Mixing"

and "Mixing and Milling." This record is obtained by totaling the charges made on the individual "Cost Cards" which are completed each day. A six months' or year's total from these daily totals can be compared with the total of the operating expense which was ascertained as previously explained. The sum of the charges to productive orders covering "Mixing only" and "Mixing and Milling" should exceed the operating expense by the amount of the charge made for waste inks, whereas the total of the charges against productive orders for materials should be less than the total of materials received in the ink department by the amount of this charge for waste inks.

In all large printing plants there are peculiar conditions surrounding their particular product which do not exactly fit into any system outlined for use in the industry as a whole. In these instances the system will, of necessity, have to be modified and adjusted to cover these conditions. It is the purpose of this outline to consider two of these instances, in order to explain how the system may be adjusted to cover them.

For instance, some large plants have obtained certain valuable shades of color, the formulae for which are known only to themselves. By experimenting for a long time they have produced these shades and naturally they are very careful that these formulae do not become the property of the trade. Frequently by mixing these special shades with other ingredients they are able to secure very desirable colors to be used on customers' orders. Sometimes it is the custom of the ink department to manufacture large batches of these shades and keep them on hand to be mixed with other colors when desired. The record of these batches is kept in the following manner: A daily report is made to the foreman of the ink department covering batches manufactured and the ink department has a daily formula report which it sends to the cost department covering them. Each shade of these special inks has a separate code number assigned to it as if it had been bought outside. This code number is placed on the daily formula report and against it is recorded the amounts of the various ingredients used in obtaining the shade, along with a total amount in pounds actually obtained after the process of manufacture has been completed. The names of the ingredients *do not* appear on the report, but only the various code numbers covering the ingredients are shown. The report shows also the number of mixings and millings necessary. By following this method, the company reduces the risk of having its formulae become known should the report be lost in transit from one department to another. Upon receipt of these reports in the cost department, the various ingredients used are priced, as has already been explained, and credited to the proper "Inventory and Price Record" card, the credits showing that they have been used on the formulae. The total amount of the shade manufactured will be debited to its proper "Inventory and Price Record" card at the price ascertained

by figuring the formula at the various prices of the ingredients used. Any of this shade delivered from the ink department will be issued on a regular ink department requisition under its own code number and priced at the average price appearing upon its own "Inventory and Price Record" card. When obtaining the daily charges for "Mixing only" and "Mixing and Milling," the charges on these formula reports must be included with those appearing upon the ink cards. It will be necessary also *not* to include in the total of deliveries made from the ink department any credits appearing upon the "Inventory and Price Record" cards designated as having been used in formulae. The record for these particular ingredients covers simply a transaction which has occurred wholly within the ink department proper.

The second instance of peculiar conditions selected for illustration pertains more especially to the lithograph branch of the industry. It has been found impracticable in some plants to require the pressmen to obtain from the ink department all the ingredients required for their color runs in each particular instance. In some cases it is necessary to add just a touch of color to certain inks to secure the desired shade, or a small amount of magnesia, varnish or drier may be required to bring the shade to standard or to proper quality and consistency. In these instances it would be futile to require the pressmen to requisition from the ink department each of these small quantities needed. To overcome this difficulty, each pressman is given a list of ingredients which he may requisition from the ink department in small quantities to be kept at his press for use when necessary. When requisitioning these ingredients, called "General Use Supplies" for convenience, he must enter his press number upon the requisition. These requisitions are coded by the ink clerk like all others and sent to the cost department. To be easily distinguished these particular requisitions may be of a different shade of paper from either the regular ink requisition or ink credit slip. The cost department separates these from the regular ink requisitions and prices them in the same manner as the ink cards, entering them upon the credit side of the "Inventory and Price Record" cards. These credits must be designated, however, as "General Use Supplies" and at the end of each four-week period, a total of them is charged to the press department. Thus the ink department receives credit for its deliveries but the various productive orders must receive their proper share of these charges to cover the amounts used on the respective orders. This is accomplished as follows: When the pressman makes his daily report of completed color runs to the cost department, he reports the amounts of the "General Use Supplies" used on each completed color run. The cost department makes out a charge against the various completed color runs on the ink cards covering these "General Use Supplies" used, and prices them according to the average prices prevailing at the time they are used. These charges, however,

are not credited on the "Inventory and Price Record" cards because they were previously credited when they were issued by the ink department. At the end of each four-week period, the total of these charges to productive orders is credited to the press department. Any discrepancy between the amount charged to the press department and the amount reported back and charged against productive orders, remains either as a debit or credit to the press department expense. A monthly report is made to the press department covering these particular transactions in order that the foreman may always be informed as to whether or not the pressmen are reporting the "General Use Supplies" used. This report is of great importance, because if the pressmen fail to report these amounts, the various productive orders would not show the proper amounts of inks and ingredients used.

There are many other details too numerous to take up in this outline. The system of obtaining ink costs explained here, in a general way, will give accurate ink costs in the printing industry if the rules laid down are rigidly enforced by the management. These costs are not only valuable for showing the cost of the ink actually used upon any particular productive order, but they should be used also as a basis for estimating quantities and costs for future orders. It can readily be realized how serious the consequences may be when estimates for future orders are based upon a haphazard system of keeping ink costs, or purely upon the judgment of the various foremen without accurate records to aid them. In certain branches of the industry, such as the bill poster branch, the results may be especially misleading.